

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE 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
Total Program Element	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	Continuing	Continuing
MD33: <i>MD Space Exp Center (MDSEC)</i>	0.000	0.000	10.535	0.000	10.535	10.842	11.156	11.581	12.017	Continuing	Continuing
WX16: <i>Near Field Infrared Experiment (NFIRE)</i>	10.989	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	10.989
WX23: <i>BMDs Space Test Bed</i>	5.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	5.000
WX33: <i>MD Space Exp Center (MDSEC)</i>	7.142	10.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	17.361
ZX40: <i>Program-Wide Support</i>	0.119	2.273	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	2.392
MD40: <i>Program-Wide Support</i>	0.000	0.000	0.407	0.000	0.407	0.340	0.191	0.168	0.138	Continuing	Continuing

**Note**

In accordance with the Missile Defense Agency revised budget structure, funding for the Missile Defense Space Experimentation Center (MDSEC) in FY 2009 and FY 2010 remains in PE 0603895C in Project WX33. Beginning in FY 2011, funding for MDSEC is now captured in Project MD33.

Near Field Infrared Experiment (NFIRE) Program funding will be captured in Program Element 0603893C, Project WX12, for FY 2010 only. There is no funding allocated in this Program Element 0603895C for NFIRE after FY 2009.

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 BMDs architecture to counter existing regional threats, continue a viable Homeland Defense against rogue threats beyond 2030; demonstrate our proven technologies show Missile Defense works; and develop technologies to Hedge against future missile threat growth.

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

**UNCLASSIFIED**

R-1 Line Item #87

Page 1 of 56

**UNCLASSIFIED**

<b>Exhibit R-2, RDT&amp;E Budget Item Justification:</b> PB 2011 Missile Defense Agency	<b>DATE:</b> February 2010
---	----------------------------

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>
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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 success of efforts in other Program Elements -- we refer to these connections as ``interdependencies.`` Throughout the budget justification material, 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**

This Program Element encompasses and funds the Missile Defense Space Experimentation Center (MDSEC) and the development of the Near Field Infrared Experiment (NFIRE) which transferred to Program Element 0603893C, Space Tracking and Surveillance System (STSS) beginning FY 2010.

Missile Defense Space Experimentation Center

The Missile Defense Space Experimentation Center (MDSEC) provides MDA elements with a single location for BMDS space sensor layer operations and integration to support the ballistic missile defense mission. MDSEC annual operating expenses provide security, configuration management, engineering, test, experiment, data, and logistics support for MDA stakeholders within the MDSEC. The MDSEC will develop and refine on-orbit operations for the STSS Demonstration Satellites and NFIRE.

MDSEC is a collaborative experimentation environment for all BMDS elements that rely on, experiment with, integrate with, or seek to improve the BMDS capability by utilizing space-based, systems-derived data. Programs currently interacting within the MDSEC activity are: STSS, NFIRE, External Sensors Laboratory (ESL), BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA), and Command and Control, Battle Management and Communications (C2BMC). Through these experiments MDSEC supports the full range of MDA 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. The MDSEC Sensor Registration Health & Status Monitoring (SRHSM) Experiment feeds directly into UMDF efforts such as Sensor Registration (reporting of sensor errors/biases) and Correlation (ensuring the information from multiple sensors seeing a threat relates to the same object). Other MDSEC experiments support UMDFs ranging from, 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), to Communications (providing the worldwide connection of sensors and shooters to command authorities). These MDSEC experiments support the UMDFs and are implemented across the BMDS elements to create and utilize system level data and decisions that allow Combatant Commanders the ability to automatically and manually optimize sensor coverage and interceptor inventory to defend against all ranges of ballistic threats.

**UNCLASSIFIED**

R-1 Line Item #87

Page 2 of 56

**UNCLASSIFIED**

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>
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Modeling and Simulation (M&S) activities at the Missile Defense Space Experimentation Center (MDSEC) support all phases of Space Tracking and Surveillance System (STSS) maturation, including: development and necessary revision of Mission Planning and Analysis Tools, Data Collection Events, System Functional and Performance Tests, flight test missions, ground tests, wargames, exercises, and performance assessments (PAs).

Goals for the MDSEC:

- Develop and refine ground operational concepts for MDA space systems, sensors, data, services, and networks
- Conduct satellite operations for MDA space sensor satellites (STSS, Near Field Infrared Experiment (NFIRE))
- Develop and install MDSEC Interchange System (MIS) to provide robust access to MDA space data and stakeholder net-centric sensor tasking request interface
- Develop a security environment to support data integration, test, demonstrations, and experiments across multiple security levels
- Develop an integration laboratory to support testing, demonstrations, experiments, integration and algorithm development
- Demonstrate connectivity and integration of space sensor layer data for the BMDS community and external users
- Conduct experiments to test algorithm validity for Missile Defense Space Systems
- Provides infrastructure to demonstrate integration of missile defense space capabilities with other defense and national security systems

Near Field Infrared Experiment (NFIRE)

The NFIRE satellite is operated from the MDSEC by the Ballistic Missile Defense Space System. Data products are utilized by multiple programs to improve missile engagement performance. Funding for NFIRE in FY 2010 is provided under Program Element 063893C, Space Tracking and Surveillance System (STSS).

**UNCLASSIFIED**

**UNCLASSIFIED**

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**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	24.686	12.549	0.000	0.000	0.000
Current President's Budget	23.250	12.492	10.942	0.000	10.942
Total Adjustments	-1.436	-0.057	10.942	0.000	10.942
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		-0.057			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	-1.071	0.000			
• SBIR/STTR Transfer	-0.365	0.000			
• Other Adjustment Detail	0.000	0.000	10.942	0.000	10.942

**Change Summary Explanation**

FY 2009 decrease of \$1.436 million reflects MDA programmatic changes to support program requirements and SBIR/STTR transfer.

FY 2010 decrease of \$.057 million reflects Congressional undistributed reductions.

No FY 2011 data provided in PB10.

**UNCLASSIFIED**

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Missile Defense Agency									<b>DATE:</b> February 2010		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>				<b>PROJECT</b> MD33: <i>MD Space Exp Center (MDSEC)</i>			
<b>COST (\$ in Millions)</b>	<b>FY 2009 Actual</b>	<b>FY 2010 Estimate</b>	<b>FY 2011 Base Estimate</b>	<b>FY 2011 OCO Estimate</b>	<b>FY 2011 Total Estimate</b>	<b>FY 2012 Estimate</b>	<b>FY 2013 Estimate</b>	<b>FY 2014 Estimate</b>	<b>FY 2015 Estimate</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
MD33: <i>MD Space Exp Center (MDSEC)</i>	0.000	0.000	10.535	0.000	10.535	10.842	11.156	11.581	12.017	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
<b>Note</b> In accordance with the Missile Defense Agency revised budget structure, funding for Program Element 0603895C, Project MD33 moves from Project WX33 in FY 2011.											
<b>A. Mission Description and Budget Item Justification</b> The Missile Defense Space Systems operates the Missile Defense Space Experimentation Center (MDSEC) to provide a single location for MDA elements to conduct satellite on-orbit operations and to conduct flight test, demonstrations, experiments, data integration, algorithm development and test, and concept exploration. The annual operating expenses for the MDSEC provide overhead functions to include security, configuration management, engineering, test, demonstration, experiment, data analysis and integration, and logistics support for satellite operations and other MDA stakeholders such as the Sensors Directorate`s External Sensors Lab. The MDSEC Space Layer activities include integration and experimentation across a broad range of BMDS activities to include target signatures, sensor registration, health and status, sensor performance, sensor and weapons netting (with Command and Control, Battle Management and Communications (C2BMC) and X-Lab), modeling and simulation, and advanced features, discrimination, typing, clutter mitigation, and target kill and impact point assessments.  In addition to the satellite operations for Space Tracking and Surveillance System (STSS) and Near Field Infrared Experiment (NFIRE) at the MDSEC, the facility provides a multi-level security environment for sensor data management and integration across all space and terrestrial sensor data activities. MDSEC experiments leverage DoD (Defense Support Program, Space Based Infrared System) and National Security Space capabilities. MDSEC activities support analysis, demonstration and integration of space sensor capabilities into developmental and operational MDA elements. MDSEC enables the development of advanced technology and algorithms including fusion of multiple sensor types (radar, overhead persistent infrared, electro-optical and other merging sensor technologies). MDSEC supports mission integration of space-based missile tracking (boost and midcourse phases), sensor and weapons cueing via C2BMC, features and discrimination, kill and impact point assessments into C2BMC, Aegis, Terminal High Altitude Area Defense (THAAD), Ground-based Midcourse Defense (GMD), and other (non-MDA) mission areas to include space situational awareness, technical intelligence, and battle space characterization.  The MDSEC provides infrastructure to operate and control MDA satellites such as STSS and NFIRE. In addition, the MDSEC provides infrastructure to integrate and demonstrate missile defense space capabilities with other defense and national security systems. The MDSEC infrastructure provides MDA stakeholders capabilities											

**UNCLASSIFIED**

R-1 Line Item #87

Page 5 of 56

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Missile Defense Agency				<b>DATE:</b> February 2010		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> MD33: <i>MD Space Exp Center (MDSEC)</i>				
for supporting flight tests, conducting concept development, demonstrations, experiments, and developing and evaluating algorithms within a multi-security level environment.						
The Missile Defense Space Experimentation Center (MDSEC) capabilities include the MDSEC Interchange System (MIS) and the MDSEC Integration Lab. The MIS will provide a common, secure data architecture for MDA, DoD, and National Security Space sensor data and a satellite sensor tasking request tool interface with stakeholders. The MDSEC Lab provides a common location for stakeholder collaboration with access to the space sensor layer data via the MIS during tests and experiments.						
<b>B. Accomplishments/Planned Program (\$ in Millions)</b>						
		<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>
Missile Defense Space Experimentation Center (MDSEC) See Description Below  <i>FY 2009 Accomplishments:</i> FY 2009 Accomplishments: Referenced in Project WX33  <i>FY 2010 Plans:</i> FY 2010 Planned Program: Referenced in Project WX33  <i>FY 2011 Base Plans:</i> Continue maturation of the Space Tracking and Surveillance System (STSS) ;and potentially Near Field Infrared Experiment (NFIRE) ;satellite on-orbit operations Participate in cooperative tests with other BMDS elements to include planning, execution and analyses; perform data collection on other targets of opportunity Use test data, modeling and simulation, and integrated BMDS ground tests to demonstrate space-based infrared sensor contributions to BMDS performance Provide core infrastructure support and conduct joint experiments with the External Sensors Laboratory (ESL), X-Lab, and the BMDS Operational Overhead Persistent Infrared (OPIR) Architecture (BOA)		0.000	0.000	10.535	0.000	10.535

**UNCLASSIFIED**

R-1 Line Item #87

Page 6 of 56

**UNCLASSIFIED**

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> MD33: <i>MD Space Exp Center (MDSEC)</i>
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<b>B. Accomplishments/Planned Program (\$ in Millions)</b>					
	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>
<i>FY 2011 OCO Plans:</i> NA					
Accomplishments/Planned Programs Subtotals	0.000	0.000	10.535	0.000	10.535

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• 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
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314
• 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

**UNCLASSIFIED**

**UNCLASSIFIED**

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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 &amp; 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
• 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 &amp; 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
	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387

**UNCLASSIFIED**

R-1 Line Item #87

Page 8 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> MD33: <i>MD Space Exp Center (MDSEC)</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>
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>											
• 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**

All functions and operations of the Missile Defense Space Experimentation Center (MDSEC) are currently financed through a 10-year MDSEC Joint National Integration Center (JNIC) Research and Development Contract (JRDC) Services Contract. The annual operating expenses has been consolidated into one centralized delivery order on the contract which will include core capabilities (labor and hardware) that are performed in the MDSEC and will support all of the MDSEC participants.

Competition will be used for future procurement and services as appropriate.

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. Advisory and Assistance Services (A&AS) support includes engineering and technical services; studies, analyses, and evaluation; and management and professional services.

**E. Performance Metrics**

NA

**UNCLASSIFIED**

R-1 Line Item #87

Page 9 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> MD33: <i>MD Space Exp Center (MDSEC)</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			
Missile Defense Space Experimentation Center (MDSEC) MDSEC Support (JRDC Services Contract) MD33	TBD/TBD	MDIOC CO	0.000	0.000		6.892		0.000		6.892	Continuing	Continuing	Continuing
Missile Defense Space Experimentation Center (MDSEC) MDSEC/ External Sensors Laboratory (ESL) Experiments MD33	Various/ Various	Various Various	0.000	0.000		1.913		0.000		1.913	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	0.000		8.805		0.000		8.805			

**Remarks**

Operations of the Missile Defense Space Experimentation Center (MDSEC) are currently financed through a 10-year MDSEC Joint National Integration Center (JNIC) Research and Development Contract (JRDC) Services Contract. The annual operating expenses have been consolidated into one centralized delivery order on the contract which will include core capabilities (labor and hardware) that are performed in the MDSEC and will support all of the MDSEC participants.

**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			
Missile Defense Space Experimentation Center (MDSEC) Contract	Various/ Various	MDIOC, MDA CO. AL	0.000	0.000		0.706		0.000		0.706	Continuing	Continuing	Continuing

**UNCLASSIFIED**

R-1 Line Item #87

Page 10 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> MD33: <i>MD Space Exp Center (MDSEC)</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 (CSS) MD33													
<b>Subtotal</b>			0.000	0.000		0.706		0.000		0.706			

**Remarks**

Contract Support Services (CSS) above reflect Joint National Integration Center (JNIC) Technical Advisory and Assistance Services (JTAAS) and systems engineering support. 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.

Starting FY 2010, CSS efforts will begin to transition to an enterprise-wide Advisory and Assistance Services (A&AS) contract. This approach is being pursued 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. A&AS support includes engineering and technical services; studies, analyses, and evaluation; and management and professional services.

**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			
<b>Subtotal</b>			0.000	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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> MD33: <i>MD Space Exp Center (MDSEC)</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			
Missile Defense Space Experimentation Center (MDSEC) Space Dynamics Laboratory (SDL) MD33	TBD/TBD	SDL UT	0.000	0.000		1.024		0.000		1.024	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	0.000		1.024		0.000		1.024			

**Remarks**  
Space Dynamics Laboratory (SDL) is funded via University Affiliated Research Center (UARC) contract.

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
<b>Project Cost Totals</b>	0.000	0.000		10.535		0.000		10.535			

**Remarks**  
NA

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> MD33: <i>MD Space Exp Center (MDSEC)</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
Space Tracking and Surveillance System (STSS) Demonstration Satellites Operations-1Q2011-4Q2011									■	■	■	■																
STSS Demonstration Satellites Operations-1Q2012-4Q2012													■	■	■	■												
STSS Demonstration Satellites Operations-1Q2013-4Q2013																	■	■	■	■								
STSS Demonstration Satellites Dedicated Flight Test - FTS-02 (STSS Demonstrator Flight Test)																					■							
STSS Demonstration Satellites Operations-1Q2014-4Q2014																					■	■	■	■				
STSS Demonstration Satellites Operations-1Q2015-4Q2015																									■	■	■	■
External Sensors Lab Engineering Baseline Release (5.1/5.2)																■												
STSS External Sensors Laboratory (ESL)-BMDs Operational Overhead Persistent Infrared (OPIR) Architecture (BOA) Midcourse Tracking Experiments-1Q2011-4Q2011									■	■	■	■																
External Sensors Lab Engineering Baseline Release (6.1/6.2)																■												
Space Tracking and Surveillance System (STSS) External Sensors Laboratory (ESL)-													■	■	■	■												

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2011 Missile Defense Agency		<b>DATE:</b> February 2010
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> MD33: <i>MD Space Exp Center (MDSEC)</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
BMDS Operational Overhead Persistent Infrared (OPIR) Architecture (BOA) Midcourse Tracking Experiments-1Q2012-4Q2012																												
STSS/ESL-BOA/X-Lab System Track Experiments-1Q2011-4Q2011									■	■	■	■																
STSS/ESL-BOA/X-Lab System Track Experiments-1Q2012-4Q2012												■	■	■	■													
STSS/ESL-BOA OPIR Cueing Experiments-1Q2011-4Q2011									■	■	■	■																
STSS/ESL-BOA OPIR Cueing Experiments-1Q2012-4Q2012												■	■	■	■													
STSS Sensor Registration Health & Status Experiments-1Q2011-4Q2011									■	■	■	■																
Normalized ESL Operations-1Q2013-4Q2013															■	■	■	■										
Normalized ESL Operations-1Q2014-4Q2014																		■	■	■	■							
Normalized ESL Operations-1Q2015-4Q2015																						■	■	■	■			
Normalized Command and Control, Battle Management and Communications (C2BMC) X-Lab Operations-1Q2013-4Q2013															■	■	■	■										
Normalized C2BMC X-Lab Operations-1Q2014-4Q2014																		■	■	■	■							
Normalized C2BMC X-Lab Operations-1Q2015-4Q2015																						■	■	■	■			

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> MD33: <i>MD Space Exp Center (MDSEC)</i>
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**Schedule Details**

Event	Start		End	
	Quarter	Year	Quarter	Year
Space Tracking and Surveillance System (STSS) Demonstration Satellites Operations-1Q2011-4Q2011	1	2011	4	2011
STSS Demonstration Satellites Operations-1Q2012-4Q2012	1	2012	4	2012
STSS Demonstration Satellites Operations-1Q2013-4Q2013	1	2013	4	2013
STSS Demonstration Satellites Dedicated Flight Test - FTS-02 (STSS Demonstrator Flight Test)	1	2014	1	2014
STSS Demonstration Satellites Operations-1Q2014-4Q2014	1	2014	4	2014
STSS Demonstration Satellites Operations-1Q2015-4Q2015	1	2015	4	2015
External Sensors Lab Engineering Baseline Release (5.1/5.2)	4	2012	4	2012
STSS External Sensors Laboratory (ESL)-BMDS Operational Overhead Persistent Infrared (OPIR) Architecture (BOA) Midcourse Tracking Experiments-1Q2011-4Q2011	1	2011	4	2011
External Sensors Lab Engineering Baseline Release (6.1/6.2)	4	2012	4	2012
Space Tracking and Surveillance System (STSS) External Sensors Laboratory (ESL)-BMDS Operational Overhead Persistent Infrared (OPIR) Architecture (BOA) Midcourse Tracking Experiments-1Q2012-4Q2012	1	2012	4	2012
STSS/ESL-BOA/X-Lab System Track Experiments-1Q2011-4Q2011	1	2011	4	2011
STSS/ESL-BOA/X-Lab System Track Experiments-1Q2012-4Q2012	1	2012	4	2012
STSS/ESL-BOA OPIR Cueing Experiments-1Q2011-4Q2011	1	2011	4	2011
STSS/ESL-BOA OPIR Cueing Experiments-1Q2012-4Q2012	1	2012	4	2012
STSS Sensor Registration Health & Status Experiments-1Q2011-4Q2011	1	2011	4	2011

**UNCLASSIFIED**

R-1 Line Item #87

Page 15 of 56

**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2011 Missile Defense Agency		<b>DATE:</b> February 2010
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> MD33: <i>MD Space Exp Center (MDSEC)</i>

Event	Start		End	
	Quarter	Year	Quarter	Year
Normalized ESL Operations-1Q2013-4Q2013	1	2013	4	2013
Normalized ESL Operations-1Q2014-4Q2014	1	2014	4	2014
Normalized ESL Operations-1Q2015-4Q2015	1	2015	4	2015
Normalized Command and Control, Battle Management and Communications (C2BMC) X-Lab Operations-1Q2013-4Q2013	1	2013	4	2013
Normalized C2BMC X-Lab Operations-1Q2014-4Q2014	1	2014	4	2014
Normalized C2BMC X-Lab Operations-1Q2015-4Q2015	1	2015	4	2015

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Missile Defense Agency								<b>DATE:</b> February 2010			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>				<b>PROJECT</b> WX16: <i>Near Field Infrared Experiment (NFIRE)</i>			
<b>COST (\$ in Millions)</b>	<b>FY 2009 Actual</b>	<b>FY 2010 Estimate</b>	<b>FY 2011 Base Estimate</b>	<b>FY 2011 OCO Estimate</b>	<b>FY 2011 Total Estimate</b>	<b>FY 2012 Estimate</b>	<b>FY 2013 Estimate</b>	<b>FY 2014 Estimate</b>	<b>FY 2015 Estimate</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
<i>WX16: Near Field Infrared Experiment (NFIRE)</i>	10.989	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	10.989
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**Note**

Near Field Infrared Experiment (NFIRE) funding ends in this Program Element in FY 2009; FY 2010 funding is in PE 0603893C, Project WX12, Space Tracking and Surveillance System.

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

The Near Field Infrared Experiment (NFIRE) technology effort collected high and low resolution images of a boosting rocket to improve our understanding of exhaust plume phenomenology and plume-to-rocket body discrimination. MDA is using this data to validate the models and simulations that are fundamental to developing the guidance and endgame homing algorithms for boost phase interceptors. A secondary objective of the experiment has been to collect hyper-temporal short wave infrared and visible data for assessing early launch detection and tracking capability. The experiment has included three plume signature mission types: targets of opportunity, dedicated fly-bys, and ground observations. Targets of opportunity may include aircraft flights, space launches and missile tests at a viewing distance of 100 to 1000 kilometers. Dedicated fly-bys were high resolution observations of a dedicated target vehicle at a range of less than 10 kilometers. Ground observations may included bright burning events such as forest fires, volcanoes, and static tests of rocket engines. In addition to the plume data collections, NFIRE carries a Laser Communication Terminal and has conducted communication experiments with the German Terra SAR-X satellite. These experiments tested low earth orbit satellite-to-ground and satellite-to-satellite capabilities of the terminal for potential incorporation into the Ballistic Missile Defense System. The laser communication experiments have been conducted on a non-interference basis with the other MDA missions. The NFIRE satellite continues to be operated from the Missile Defense Space Experimentation Center (MDSEC). Data products are utilized by multiple programs to improve missile engagement performance.

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

	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>
Near Field Infrared Experiment (NFIRE) See Description Below	10.989	0.000	0.000	0.000	0.000

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX16: <i>Near Field Infrared Experiment (NFIRE)</i>
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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>                      Conducted data analysis on position/orientation of the Near Field Infrared Experiment (NFIRE) Mission 2B missile target relative to the exhaust plume in order to be able to predict future position and velocity of missile body as well as assess the impact of the earth, earth limb, and space backgrounds                      Performed On-Orbit Operations at the Missile Defense Space Experimentation Center (MDSEC) ;to support data collection and analysis on targets of opportunity                      Pursued laser communication experiments to assess viability of the technology                      Supported Space Situational Awareness as requested by Air Force Space Command (AFSPC) and other agencies</p> <p><i>FY 2010 Plans:</i>                      FY 2010 Planned Program: Referenced in PE 0603893C, Project WX12</p> <p>Funding moved to PE 0603893C, Space Tracking and Surveillance System</p> <p><i>FY 2011 Base Plans:</i>                      N/A</p> <p><i>FY 2011 OCO Plans:</i>                      NA</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	10.989	0.000	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
	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314

**UNCLASSIFIED**

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX16: <i>Near Field Infrared Experiment (NFIRE)</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>
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>											
• 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 &amp; 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
• 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
	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699

**UNCLASSIFIED**

R-1 Line Item #87

Page 19 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX16: <i>Near Field Infrared Experiment (NFIRE)</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>
• 0603904C: <i>MISSILE DEFENSE INTEGRATION &amp; OPERATIONS CENTER (MDIOC)</i>											
• 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
• 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

**UNCLASSIFIED**

R-1 Line Item #87

Page 20 of 56

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Missile Defense Agency	<b>DATE:</b> February 2010
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<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX16: <i>Near Field Infrared Experiment (NFIRE)</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**

N/A

**E. Performance Metrics**

NA

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX16: <i>Near Field Infrared Experiment (NFIRE)</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			
Near Field Infrared Experiment (NFIRE) Prime Contractor WX16	SS/CPAF	General Dynamics AZ	5.209	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Near Field Infrared Experiment (NFIRE) Science Team WX16	TBD/TBD	MIT/LL MA	3.623	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Near Field Infrared Experiment (NFIRE) Track Sensor Payload WX16	TBD/TBD	AFRL NM	0.238	0.000		0.000		0.000		0.000	0	0.238	0.238
Near Field Infrared Experiment (NFIRE) Missile Defense Integration and Operations Center (MDIOC) Research and Development Contract WX16	SS/CPAF	MDIOC CO	8.947	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Near Field Infrared Experiment (NFIRE) International Telecommunication Union (ITU) Registration WX16	TBD/TBD	NA Switzerland	0.012	0.000		0.000		0.000		0.000	0	0.012	0.012
<b>Subtotal</b>			18.029	0.000		0.000		0.000		0.000			

**UNCLASSIFIED**

R-1 Line Item #87

Page 22 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX16: <i>Near Field Infrared Experiment (NFIRE)</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			

**Remarks**  
NFIRE funding will be forwarded to several contractors and organizations to include General Dynamics, Air Force Research Laboratory (AFRL), and the Missile Defense Integration and Operations Center (MDIOC).

**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			
<b>Subtotal</b>			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			
<b>Subtotal</b>			0.000	0.000		0.000		0.000		0.000			

**Remarks**  
NA

**UNCLASSIFIED**

R-1 Line Item #87

Page 23 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX16: <i>Near Field Infrared Experiment (NFIRE)</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			
<b>Subtotal</b>			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	
<b>Project Cost Totals</b>	18.029	0.000		0.000		0.000		0.000				

**Remarks**  
NA

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2011 Missile Defense Agency		<b>DATE:</b> February 2010
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX16: <i>Near Field Infrared Experiment (NFIRE)</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
Targets of Opportunity	■	■	■	■																								
Laser Comm Terminal Experiments/ Operations	■	■	■	■																								
On-Orbit Operations	■	■	■	■																								

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX16: <i>Near Field Infrared Experiment (NFIRE)</i>
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Targets of Opportunity	1	2009	4	2009
Laser Comm Terminal Experiments/Operations	1	2009	4	2009
On-Orbit Operations	1	2009	4	2009

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Missile Defense Agency								<b>DATE:</b> February 2010				
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>				<b>PROJECT</b> WX23: <i>BMDS Space Test Bed</i>				
<b>COST (\$ in Millions)</b>	<b>FY 2009 Actual</b>	<b>FY 2010 Estimate</b>	<b>FY 2011 Base Estimate</b>	<b>FY 2011 OCO Estimate</b>	<b>FY 2011 Total Estimate</b>	<b>FY 2012 Estimate</b>	<b>FY 2013 Estimate</b>	<b>FY 2014 Estimate</b>	<b>FY 2015 Estimate</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
<i>WX23: BMDS Space Test Bed</i>	5.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	5.000	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0			
<b>Note</b> NA												
<b>A. Mission Description and Budget Item Justification</b> This is a congressionally directed study to conduct an objective and independent assessment of the technical feasibility, cost effectiveness, and operational effects of adding a Space Based Interceptor layer to the Ballistic Missile Defense System as an alternative option against future ballistic missile threats.												
<b>B. Accomplishments/Planned Program (\$ in Millions)</b>												
						<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>		
Space-Based Intercept Studies See Description Below  <i>FY 2009 Accomplishments:</i> Completed source selection for independent team to conduct an independent study of the feasibility and advisability of developing a space-based interceptor element to the BMDS. The study began in August 2009 and will continue through August 2010, with a final report delivered by December 2010.  <i>FY 2010 Plans:</i> N/A  <i>FY 2011 Base Plans:</i> N/A						5.000	0.000	0.000	0.000	0.000		

**UNCLASSIFIED**

R-1 Line Item #87

Page 27 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX23: <i>BMDS Space Test Bed</i>
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<b>B. Accomplishments/Planned Program (\$ in Millions)</b>					
	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>
<i>FY 2011 OCO Plans:</i> NA					
Accomplishments/Planned Programs Subtotals	5.000	0.000	0.000	0.000	0.000

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• 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
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314
• 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

**UNCLASSIFIED**

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification: PB 2011 Missile Defense Agency</b>										<b>DATE:</b> February 2010	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>			<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>				<b>PROJECT</b> WX23: <i>BMDS Space Test Bed</i>				
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• 0603893C: <i>SPACE TRACKING &amp; 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
• 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 &amp; 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
	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387

**UNCLASSIFIED**

R-1 Line Item #87

Page 29 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX23: <i>BMDS Space Test Bed</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>
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>											
• 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**

N/A

**E. Performance Metrics**

NA

**UNCLASSIFIED**

R-1 Line Item #87

Page 30 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX23: <i>BMDs Space Test Bed</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			
Space-Based Intercept Studies Planning & Analysis WX23	Various/ Various	Various Various	5.000	0.000		0.000		0.000		0.000	0	5.000	5.000
<b>Subtotal</b>			5.000	0.000		0.000		0.000		0.000	0.000	5.000	5.000

**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			
<b>Subtotal</b>			0.000	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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX23: <i>BMDS Space Test Bed</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			
<b>Subtotal</b>			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			
<b>Subtotal</b>			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			
	5.000	0.000		0.000		0.000		0.000	0.000	5.000	5.000

Remarks  
NA

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX23: <i>BMDS Space Test Bed</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				
Studies and Scenario Development				■	■	■	■	■																								
Report Preparation							■	■	■																							

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX23: <i>BMDS Space Test Bed</i>
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Studies and Scenario Development	4	2009	4	2010
Report Preparation	3	2010	1	2011

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Missile Defense Agency								<b>DATE:</b> February 2010			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>				<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</i>			
<b>COST (\$ in Millions)</b>	<b>FY 2009 Actual</b>	<b>FY 2010 Estimate</b>	<b>FY 2011 Base Estimate</b>	<b>FY 2011 OCO Estimate</b>	<b>FY 2011 Total Estimate</b>	<b>FY 2012 Estimate</b>	<b>FY 2013 Estimate</b>	<b>FY 2014 Estimate</b>	<b>FY 2015 Estimate</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
WX33: <i>MD Space Exp Center (MDSEC)</i>	7.142	10.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	17.361
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
<b>Note</b> In accordance with the Missile Defense Agency revised budget structure, funding for the Missile Defense Space Experimentation Center (MDSEC) is now captured in Project MD33 beginning FY 2011.											
<b>A. Mission Description and Budget Item Justification</b> The Missile Defense Space Systems operates the Missile Defense Space Experimentation Center (MDSEC) to provide a single location for MDA elements to conduct satellite on-orbit operations and to conduct flight test, demonstrations, experiments, data integration, algorithm development and test, and concept exploration. The annual operating expenses for the MDSEC provide overhead functions to include security, configuration management, engineering, test, demonstration, experiment, data analysis and integration, and logistics support for satellite operations and other MDA stakeholders such as the Sensors Directorate`s External Sensors Lab. The MDSEC Space Layer activities include integration and experimentation across a broad range of BMDS activities to include target signatures, sensor registration, health and status, sensor performance, sensor and weapons netting (with Command and Control, Battle Management and Communications (C2BMC) and X-Lab), modeling and simulation, and advanced features, discrimination, typing, clutter mitigation, and target kill and impact point assessments.  In addition to the satellite operations for the Space Tracking and Surveillance System (STSS) and Near Field Infrared Experiment (NFIRE) at the MDSEC, the facility provides a multi-level security environment for sensor data management and integration across all space and terrestrial sensor data activities. MDSEC experiments leverage DoD (Defense Support Program, Space Based Infrared System) and National Security Space capabilities. MDSEC activities support analysis, demonstration and integration of space sensor capabilities into developmental and operational MDA elements. MDSEC enables the development of advanced technology and algorithms including fusion of multiple sensor types (radar, overhead persistent infrared, electro-optical and other merging sensor technologies). MDSEC supports mission integration of space-based missile tracking (boost and midcourse phases), sensor and weapons cueing via C2BMC, features and discrimination, kill and impact point assessments into C2BMC, Aegis, Terminal High Altitude Area Defense (THAAD), Ground-based Midcourse Defense (GMD), and other (non-MDA) mission areas to include space situational awareness, technical intelligence, and battle space characterization.  The Missile Defense Space Experimentation Center (MDSEC) provides infrastructure to operate and control MDA satellites such Space Tracking and Surveillance System (STSS) and Near Field Infrared Experiment (NFIRE). In addition, the MDSEC provides infrastructure to integrate and demonstrate missile defense space											

**UNCLASSIFIED**

R-1 Line Item #87

Page 35 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</i>
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capabilities with other defense and national security systems. The MDSEC infrastructure provides MDA stakeholders capabilities for supporting flight tests, conducting concept development, demonstrations, experiments, and developing and evaluating algorithms within a multi-security level environment.

MDSEC capabilities include the MDSEC Interchange System (MIS) and the MDSEC Integration Lab. The MIS will provide a common, secure data architecture for MDA, DoD, and National Security Space sensor data and a satellite sensor tasking request tool interface with stakeholders. The MDSEC Lab provides a common location for stakeholder collaboration with access to the space sensor layer data via the MIS during tests and experiments.

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Missile Defense Space Experimentation Center (MDSEC)  See Description Below  <i>FY 2009 Accomplishments:</i> Developed and refined satellite on-orbit operations Established access to Space Tracking and Surveillance System (STSS) data at multiple security levels Provided for the exchange of archived and real-time data and data products from established and future BMDS programs Provided a net-centric satellite sensor tasking request tool for stakeholders Integrated new MDSEC stakeholders as appropriate  <i>FY 2010 Plans:</i> Continue maturation of Space Tracking and Surveillance System (STSS) and Near Field Infrared Experiment (NFIRE) satellite on-orbit operations Participate in cooperative tests with other BMDS elements to include planning, execution and analyses; perform data collection on other targets of opportunity Use test data, modeling and simulation, and integrated BMDS ground tests to demonstrate space-based infrared sensor contributions to BMDS performance Provide core infrastructure support and conduct joint experiments with the External Sensors Laboratory (ESL), X-Lab, and the BMDS Operational Overhead Persistent Infrared (OPIR) Architecture (BOA)	7.142	10.219	0.000	0.000	0.000

**UNCLASSIFIED**

R-1 Line Item #87

Page 36 of 56

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification: PB 2011 Missile Defense Agency</b>										<b>DATE:</b> February 2010	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>				<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</i>			
<b>B. Accomplishments/Planned Program (\$ in Millions)</b>											
						<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>	
<i>FY 2011 Base Plans:</i> FY 2011 Planned Program: Referenced in Project MD33  <i>FY 2011 OCO Plans:</i> NA											
Accomplishments/Planned Programs Subtotals						7.142	10.219	0.000	0.000	0.000	
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• 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
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314
• 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

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</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>
• 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 &amp; 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
• 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 &amp; 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
	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545

**UNCLASSIFIED**

R-1 Line Item #87

Page 38 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</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>
• 0603913C: <i>ISRAELI COOPERATIVE</i>											
• 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**

All functions and operations of the Missile Defense Space Experimentation Center (MDSEC) are currently financed through a 10-year MDSEC Joint National Integration Center (JNIC) Research and Development Contract (JRDC) Services Contract. The annual operating expenses has been consolidated into one centralized delivery order on the contract which will include core capabilities (labor and hardware) that are performed in the Missile Defense Space Experimentation Center (MDSEC) and will support all of the MDSEC participants.

Competition will be used for future procurement and services as appropriate.

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.

**UNCLASSIFIED**

R-1 Line Item #87

Page 39 of 56

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Missile Defense Agency		<b>DATE:</b> February 2010
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</i>

**E. Performance Metrics**

NA

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</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			
Missile Defense Space Experimentation Center (MDSEC) MDSEC Support (JRDC Services Contract) WX33	TBD/TBD	MDIOC CO	9.314	7.160	Jul 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Missile Defense Space Experimentation Center (MDSEC) MDSEC/ External Sensors Laboratory (ESL) Experiments WX33	Various/ Various	Various Various	3.683	1.600	Apr 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
<b>Subtotal</b>			12.997	8.760		0.000		0.000		0.000			

**Remarks**

Operations of the Missile Defense Space Experimentation Center (MDSEC) are currently financed through a 10-year MDSEC Joint National Integration Center (JNIC) Research and Development Contract (JRDC) Services Contract. The annual operating expenses have been consolidated into one centralized delivery order on the contract which will include core capabilities (labor and hardware) that are performed in the MDSEC and will support all of the MDSEC participants.

**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			
Missile Defense Space Experimentation Center (MDSEC) Other	Various/ Various	MDIOC, MDA, AFSPC CO, AL	0.386	0.477	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing

**UNCLASSIFIED**

R-1 Line Item #87

Page 41 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</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			
Government Agency Contract Support Services (CSS) WX33													
<b>Subtotal</b>			0.386	0.477		0.000		0.000		0.000			

**Remarks**

Other Government Agency (OGA) Contract Support Services (CSS) above reflect Joint National Integration Center (JNIC) Technical Advisory and Assistance Services (JTAAS) and systems engineering support. 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.

Starting FY 2010, CSS efforts will begin to transition to an enterprise-wide Advisory and Assistance Service (A&AS) contract. This approach is being pursued 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 overhead costs. A&AS support include engineering and technical services; studies, analyses, and evaluation; and management and professional services.

**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			
<b>Subtotal</b>			0.000	0.000		0.000		0.000		0.000			

**Remarks**

NA

**UNCLASSIFIED**

R-1 Line Item #87

Page 42 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</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			
Missile Defense Space Experimentation Center (MDSEC) Space Dynamics Laboratory (SDL) WX33	TBD/TBD	SDL UT	0.482	0.982	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.482	0.982		0.000		0.000		0.000			

**Remarks**  
Space Dynamics Laboratory (SDL) is funded via University Affiliated Research Center (UARC) contract.

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
	13.865	10.219		0.000	0.000	0.000		

**Remarks**  
NA

**UNCLASSIFIED**

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2011 Missile Defense Agency		<b>DATE:</b> February 2010
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</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
Near Field Infrared Experiment (NFIRE) Satellite Operations-1Q2009-1Q2010	■	■	■	■	■																							
NFIRE Satellite Operations-2Q2010-4Q2010						■	■	■																				
Space Tracking and Surveillance System (STSS) Demonstration Satellites Operations-4Q2009-1Q2010						■	■																					
STSS Demonstration Satellites Operations-2Q2010-4Q2010						■	■	■																				
Target Signature Experiments-1Q2009	■																											
Target Signature Experiments-2Q2009		■																										
Target Signature Experiments-3Q2009			■																									
Target Signature Experiments-4Q2009				■																								
Space Tracking and Surveillance System (STSS)/External Sensors Laboratory (ESL)-BMD Operational Overhead Persistent Infrared (OPIR) Architecture (BOA) Midcourse Tracking Experiments-1Q2009 - 1Q2010	■	■	■	■	■																							
External Sensors Lab Engineering Baseline Release (4.0/4.1)											■																	
Space Tracking and Surveillance System (STSS)/External Sensors Laboratory (ESL)-BMD Operational Overhead Persistent Infrared (OPIR) Architecture (BOA) Midcourse Tracking Experiments-2Q2010 - 4Q2010						■	■	■																				

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</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
Space Tracking and Surveillance System (STSS)/External Sensors Laboratory (ESL)-BMD Operational Overhead Persistent Infrared (OPIR) Architecture (BOA)/X-Lab System Track Experiments-1Q2009 - 1Q2010	■	■	■	■	■																							
Modified Common Network Interface Processor (CNIP) Software																												
STSS/ESL-BOA/X-Lab System Track Experiments-2Q2010 - 4Q2010																												
STSS/ESL-BOA OPIR Cueing Experiments-1Q2009 - 1Q2010	■	■	■	■	■																							
Modified Tactical Digital Information Link (TADIL) J 3.6 Message (with acceleration)																												
STSS/ESL-BOA OPIR Cueing Experiments-2Q2010 - 4Q2010																												
Sensor Netting Experiments (MDSEC)																												
Sensor Tracking Experiments (MDSEC)																												
Target Signature Experiments (MDSEC)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	
STSS Sensor Registration Health & Status Experiments-1Q2009 - 1Q2010	■	■	■	■	■																							
STSS Sensor Registration Health & Status Experiments-2Q2010 - 4Q2010																												
Targets of Opportunity-1Q2010-4Q2010																												

**UNCLASSIFIED**

R-1 Line Item #87

Page 45 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</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
Command and Control, Battle Management and Communications (C2BMC) Policy Project-1Q2009-4Q2009	■	■	■	■																								
Command and Control, Battle Management and Communications (C2BMC) Policy Project-1Q2010-2Q2010						■	■																					
Missile Defense Space Experimentation Center (MDSEC) Interchange System (MIS)-1Q2009-1Q2010	■	■	■	■	■																							
MDSEC Interchange System (MIS)-2Q2010-4Q2010						■	■	■																				

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</i>
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**Schedule Details**

Event	Start		End	
	Quarter	Year	Quarter	Year
Near Field Infrared Experiment (NFIRE) Satellite Operations-1Q2009-1Q2010	1	2009	1	2010
NFIRE Satellite Operations-2Q2010-4Q2010	2	2010	4	2010
Space Tracking and Surveillance System (STSS) Demonstration Satellites Operations-4Q2009-1Q2010	4	2009	1	2010
STSS Demonstration Satellites Operations-2Q2010-4Q2010	2	2010	4	2010
Target Signature Experiments-1Q2009	1	2009	1	2009
Target Signature Experiments-2Q2009	2	2009	2	2009
Target Signature Experiments-3Q2009	3	2009	3	2009
Target Signature Experiments-4Q2009	4	2009	4	2009
Space Tracking and Surveillance System (STSS)/External Sensors Laboratory (ESL)-BMDs Operational Overhead Persistent Infrared (OPIR) Architecture (BOA) Midcourse Tracking Experiments-1Q2009 - 1Q2010	1	2009	1	2010
External Sensors Lab Engineering Baseline Release (4.0/4.1)	4	2010	4	2010
Space Tracking and Surveillance System (STSS)/External Sensors Laboratory (ESL)-BMDs Operational Overhead Persistent Infrared (OPIR) Architecture (BOA) Midcourse Tracking Experiments-2Q2010 - 4Q2010	2	2010	4	2010
Space Tracking and Surveillance System (STSS)/External Sensors Laboratory (ESL)-BMDs Operational Overhead Persistent Infrared (OPIR) Architecture (BOA)/X-Lab System Track Experiments-1Q2009 - 1Q2010	1	2009	1	2010
Modified Common Network Interface Processor (CNIP) Software	4	2010	4	2010

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**UNCLASSIFIED**

<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2011 Missile Defense Agency				<b>DATE:</b> February 2010	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>		<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>		<b>PROJECT</b> WX33: <i>MD Space Exp Center (MDSEC)</i>	
		<b>Start</b>		<b>End</b>	
<b>Event</b>	<b>Quarter</b>	<b>Year</b>	<b>Quarter</b>	<b>Year</b>	
STSS/ESL-BOA/X-Lab System Track Experiments-2Q2010 - 4Q2010	2	2010	4	2010	
STSS/ESL-BOA OPIR Cueing Experiments-1Q2009 - 1Q2010	1	2009	1	2010	
Modified Tactical Digital Information Link (TADIL) J 3.6 Message (with acceleration)	4	2010	4	2010	
STSS/ESL-BOA OPIR Cueing Experiments-2Q2010 - 4Q2010	2	2010	4	2010	
Sensor Netting Experiments (MDSEC)	3	2009	4	2010	
Sensor Tracking Experiments (MDSEC)	4	2009	4	2010	
Target Signature Experiments (MDSEC)	1	2009	4	2010	
STSS Sensor Registration Health & Status Experiments-1Q2009 - 1Q2010	1	2009	1	2010	
STSS Sensor Registration Health & Status Experiments-2Q2010 - 4Q2010	2	2010	4	2010	
Targets of Opportunity-1Q2010-4Q2010	1	2010	4	2010	
Command and Control, Battle Management and Communications (C2BMC) Policy Project-1Q2009-4Q2009	1	2009	4	2009	
Command and Control, Battle Management and Communications (C2BMC) Policy Project-1Q2010-2Q2010	1	2010	2	2010	
Missile Defense Space Experimentation Center (MDSEC) Interchange System (MIS)-1Q2009-1Q2010	1	2009	1	2010	
MDSEC Interchange System (MIS)-2Q2010-4Q2010	2	2010	4	2010	

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> 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>	0.119	2.273	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	2.392
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**Note**

**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  <i>FY 2011 Base Plans:</i> NA	0.119	2.273	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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> ZX40: <i>Program-Wide Support</i>
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<b>B. Accomplishments/Planned Program (\$ in Millions)</b>					
	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>
<i>FY 2011 OCO Plans:</i> NA					
Accomplishments/Planned Programs Subtotals	0.119	2.273	0.000	0.000	0.000

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<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
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314
• 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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**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification: PB 2011 Missile Defense Agency</b>										<b>DATE:</b> February 2010	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>			<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>				<b>PROJECT</b> ZX40: <i>Program-Wide Support</i>				
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• 0603893C: <i>SPACE TRACKING &amp; 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
• 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 &amp; 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
	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387

**UNCLASSIFIED**

R-1 Line Item #87

Page 51 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> 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 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>
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>											
• 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

**UNCLASSIFIED**

R-1 Line Item #87

Page 52 of 56

**UNCLASSIFIED**

<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Missile Defense Agency								<b>DATE:</b> February 2010				
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>				<b>PROJECT</b> MD40: <i>Program-Wide Support</i>				
<b>COST (\$ in Millions)</b>	<b>FY 2009 Actual</b>	<b>FY 2010 Estimate</b>	<b>FY 2011 Base Estimate</b>	<b>FY 2011 OCO Estimate</b>	<b>FY 2011 Total Estimate</b>	<b>FY 2012 Estimate</b>	<b>FY 2013 Estimate</b>	<b>FY 2014 Estimate</b>	<b>FY 2015 Estimate</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
MD40: <i>Program-Wide Support</i>	0.000	0.000	0.407	0.000	0.407	0.340	0.191	0.168	0.138	Continuing	Continuing	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0			
<b>Note</b> NA												
<b>A. Mission Description and Budget Item Justification</b> 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>B. Accomplishments/Planned Program (\$ in Millions)</b>												
						<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>		
Civilian Salaries and Support See Description Below  <i>FY 2009 Accomplishments:</i> NA  <i>FY 2010 Plans:</i> NA  <i>FY 2011 Base Plans:</i> NA						0.000	0.000	0.407	0.000	0.407		

**UNCLASSIFIED**

R-1 Line Item #87

Page 53 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> MD40: <i>Program-Wide Support</i>
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<b>B. Accomplishments/Planned Program (\$ in Millions)</b>					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 OCO Plans: NA					
<b>Accomplishments/Planned Programs Subtotals</b>					
	0.000	0.000	0.407	0.000	0.407

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<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
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314
• 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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<b>Exhibit R-2A, RDT&amp;E Project Justification: PB 2011 Missile Defense Agency</b>										<b>DATE:</b> February 2010	
<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>			<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>				<b>PROJECT</b> MD40: <i>Program-Wide Support</i>				
<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011 Base</b>	<b>FY 2011 OCO</b>	<b>FY 2011 Total</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• 0603893C: <i>SPACE TRACKING &amp; 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
• 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 &amp; 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
	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387

**UNCLASSIFIED**

R-1 Line Item #87

Page 55 of 56

**UNCLASSIFIED**

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

<b>APPROPRIATION/BUDGET ACTIVITY</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	<b>PROJECT</b> MD40: <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 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>
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>											
• 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

**UNCLASSIFIED**

R-1 Line Item #87

Page 56 of 56