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

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</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	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	Continuing	Continuing
MD10: <i>Precision Tracking Space System (PTSS)</i>	0.000	0.000	64.716	0.000	64.716	119.322	178.793	337.438	466.016	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	0.000	0.000	2.253	0.000	2.253	4.529	6.007	10.922	16.936	Continuing	Continuing

Note
Space-based missile defense sensors are required in the Ballistic Missile Defense System to successfully overcome the adversaries' future ballistic missile capabilities. Additionally, space-based sensors offer on-demand, geographically independent, persistent coverage with no need for Indications and Warning, enabling earlier intercept opportunities. With the successful launch of the two Space Tracking and Surveillance System (STSS) demonstration spacecraft on September 25, 2009, the agency has assets on-orbit to inform the design and operation of the Precision Tracking Space System (PTSS) prototype. The Precision Tracking Space System is a new start in FY 2011.

A. Mission Description and Budget Item Justification
The FY 2011 program is balanced, reflecting the goals of the current Missile Defense Program: Continue a defense of the territory of the United States against rogue nation ballistic missile threats, Enhance missile defense to defend our deployed forces, allies, and friends against regional threats, Prove our Ballistic Missile Defense System works before making production decisions, Deliver reliable, high quality, and fiscally sustainable missile defense products, and develop future missile defense capabilities that are adaptable and responsive to intelligence based judgments including defeating large missile raid sizes of all ranges early in their flight.

The best way to dissuade, deter, and defeat ballistic threats is through integrated ballistic missile defense capabilities - weapons, sensors, and Command and Control, Battle Management and Communications. 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 missile defense capabilities draw on space-, land-, and sea-based assets operated by multiple Services to provide both the best sensor information on the enemy missile's location and track as well as a more diverse and effective set of weapon options for the Combatant Commander to defeat the attack - all connected by a unifying command, control, battle management and communication system. As a result, an effort funded in a Program Element may be critical to the 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.

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Our submission reflects the greater emphasis on defense of U.S. forces, allies, and friends from regional threats posed by thousands of short- and medium-range ballistic missiles. The most cost-effective missile defense architecture is one that emphasizes intercepts of a threat missile in the early phases of flight. The BMDS sensors can observe early intercepts to determine if a second or third intercept attempt is necessary. Additionally, intercepting earlier in the flight forces the threat to deploy countermeasures early, decreasing their effectiveness.

As the Department shifts focus to address the looming threat of regional forces in large numbers, we've aligned our sensors' investments with these objectives. Our systems engineering and architecture work uncovered gaps in our ability to 1) address large raid sizes, and 2) intercept the enemy early in his trajectory when the enemy is most vulnerable - assess - then reengage if necessary.

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	0.000	0.000	0.000	0.000	0.000
Current President's Budget	0.000	0.000	66.969	0.000	66.969
Total Adjustments	0.000	0.000	66.969	0.000	66.969
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment Detail	0.000	0.000	66.969	0.000	66.969

Change Summary Explanation

In FY10 the MDA Engineering and Advanced Technology Directorates will conduct requisite system architecture studies and system engineering to define space-born sensor system capability needs that will provide the system engineering foundation for the FY11 new start.

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APPROPRIATION/BUDGET ACTIVITY
0400: *Research, Development, Test & Evaluation, Defense-Wide*
BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE
PE 0604883C: *PRECISION TRACKING SPACE SYSTEM*

No FY 2011 data provided in PB10.

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</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
MD10: <i>Precision Tracking Space System (PTSS)</i>	0.000	0.000	64.716	0.000	64.716	119.322	178.793	337.438	466.016	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

The Precision Tracking Space System (PTSS) is a new start in FY 2011.

A. Mission Description and Budget Item Justification

This Program Element encompasses and funds the development of space-borne sensor systems. As threats expand and mature, the need for continuously available sensors and faster interceptors supports investment in a Precision Tracking Space System development beginning in FY 2011. Lessons learned from the two demonstration spacecraft currently on orbit, will guide our decisions on the development of a fiscally sustainable, continuously available, operational precision track space system constellation.

The greatest hedge against missile defense threats of greatest concern, regional MRBMs and IRBMs, remains a highly available early missile tracking capability from space. A goal of this effort is to prove the effectiveness of a Precision Tracking Space System by developing, launching and operating a set of prototypes by FY 2014. The Precision Tracking Space System prototype will demonstrate early, precise, real-time tracking of ballistic missiles. This capability significantly improves BMDS performance and the associated functionalities, when approved, will be captured in future BMDS Integrated Build documentation.

In the near term, planned terrestrial (surface and airborne) sensor network will be augmented with precision tracking from space. Precision Tracking Space System avoids some of the challenges of terrestrial sensors.

- Eliminates the need for host nation agreements.
- Does not require transport to theater or limit our operational flexibility.
- Limits impacts of weather effects (clouds for airborne, crosswinds and icing, rain for radar).
- Robust to surprise - can deal with threats arising from unexpected locations or adversaries.
- Lowers operation and maintenance costs.

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>		PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>				
<p>Observes deep launches.</p> <p>Precision Tracking Space System supports essential BMDS functions by:</p> <p>Continuously observing the regional ballistic missile threat in post-boost. Sending fire-control quality tracks to interceptors - enabling full engagement of the raid. Tracking large raids of nearly simultaneously launched missiles - enabling full engagement of the raid. Providing radiometric data supporting challenging post-boost detection requirements, object classification, and hit/kill assessments. Adding infrared-based tracking to the existing radio frequency sensors in the architecture.</p> <p>Goals for the Precision Tracking Space System are:</p> <p>Develop an operational, end-to-end, missile tracking capability from space focusing on regional MRBMs and IRBMs. Begin the operational approach by developing and testing a space system prototype and integrated ground system with BMDS to precisely track missiles with a sufficient Quality of Service (QOS) (that is, sufficient accuracy and low enough latency) to enable Command and Control, Battle Management and Communications (C2BMC) to provide sensor data to BMDS interceptors to defeat large raids of theater and regional threats. Establish the technical and programmatic foundation for procuring the operational system. Develop space qualified technology to hedge against future missile threat growth.</p> <p>B. Accomplishments/Planned Program (\$ in Millions)</p>								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Precision Tracking Space System See Description Below <i>FY 2009 Accomplishments:</i> NA				0.000	0.000	64.716	0.000	64.716

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>				
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> NA</p> <p><i>FY 2011 Base Plans:</i> Complete trades, alternatives analysis, technology readiness assessment, and concept review for Precision Tracking Space System prototype. Conduct systems engineering efforts to allocate performance between the prototype space segment and ground segment. Determine location of PTSS prototype ground segment and interfaces to the BMDS. Define and document internal and external interfaces including Quality of Service (that is, data accuracy and latency) requirements for successful Command and Control, Battle Management and Communications (C2BMC) and sensor integration. Allocate functions among major components (satellite, ground station, and command and control). Define feasible system implementation to meet requirements including establishing technical trades. Conduct integrated fire-control risk reduction activity with software-in-the-loop testing initially, but moving towards more complicated hardware-in-the-loop testing. Conduct initial System Requirements Review. Conduct initial System Design Review. Conduct initial Preliminary Design Review.</p> <p>Program Enhancement(s)</p> <p>Initiate Precision Tracking Space System effort informed by the two on-orbit Space Tracking and Surveillance System Demonstration (STSS-D) spacecraft testing events. Benchmark models and simulations using Space Tracking and Surveillance System (STSS) on-orbit tests and data collections. Conduct risk reduction activities in optics, focal plane arrays, and radiation hardening of spacecraft technology.</p>						

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

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Allocate requirements, interface controls, and operations concepts, for the end-to-end system. Deliver on-orbit prototype(s) in less than 51 months. Award contracts to industry for joint government, defense lab, and industry for Systems Engineering and Integration during Precision Tracking Space System prototyping (i.e. bring industry in early). Compete operational system procurement upon successful completion of integration, verification and validation of the prototype satellite(s). FY 2011 OCO Plans: NA					
Accomplishments/Planned Programs Subtotals	0.000	0.000	64.716	0.000	64.716

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
• 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

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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>
• 0603886C: <i>Ballistic Missile Defense System Interceptor</i>	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
• 0603888C: <i>Ballistic Missile Defense Test and Targets</i>	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: <i>Ballistic Missile Defense Enabling Programs</i>	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: <i>SPECIAL PROGRAMS - MDA</i>	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: <i>BMD AEGIS</i>	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
• 0603893C: <i>SPACE TRACKING & SURVEILLANCE SYSTEM</i>	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: <i>MULTIPLE KILL VEHICLE</i>	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: <i>BMD C2BMC</i>	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: <i>BMD HERCULES</i>	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: <i>BMD JOINT WARFIGHTER SUPPORT</i>	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: <i>DIRECTED ENERGY RESEARCH</i>	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: <i>MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)</i>	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: <i>REGARDING TRENCH</i>	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: <i>SEA BASED X-BAND RADAR (SBX)</i>	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722

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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>
• 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i>											
• 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i>	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: <i>BMD EUROPEAN CAPABILITY</i>	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: <i>BMD European Comm Support</i>	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: <i>ISRAELI COOPERATIVE</i>	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545
• 0604880C: <i>LAND-BASED SM-3</i>	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 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's FY 2011 budget submission reflects an emphasis on early intercept research and development. The acquisition strategy to conduct this technology effort consists of three focus areas.

First, Precision Tracking Space System will leverage the technical expertise of Federally Funded Research and Development Centers, University Affiliated Research Centers, National and DoD Laboratories. A national lab team will develop the PTSS prototype
 Second, PTSS Precision Tracking Space System will involve industry early in the laboratory-led prototype phase awarding up to 5 contracts to join the PTSS Integrated System Engineering Team.

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<p>Third, the operational acquisition results from a competitively awarded contract with industry and founded on a fly-before-you-buy philosophy. The prototype effort is planned to define the system performance and industry will focus on cost-effective manufacturability.</p> <p>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.</p> <p><u>E. Performance Metrics</u> NA</p>		

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

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Product Development (\$ in Millions)

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

Remarks

NA

Support (\$ in Millions)

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

Remarks

NA

Test and Evaluation (\$ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Precision Tracking Space System System Definition MD10	Various/ Various	Various Various	0.000	0.000		25.407		0.000		25.407	Continuing	Continuing	Continuing

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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			
Precision Tracking Space System Risk Reduction MD10	Various/ Various	Various Various	0.000	0.000		33.179		0.000		33.179	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		58.586		0.000		58.586			

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			
Precision Tracking Space System MDA Civilians MD10	TBD/TBD	MDA Various	0.000	0.000		1.522		0.000		1.522	Continuing	Continuing	Continuing
Precision Tracking Space System OGA Civilians MD10	TBD/TBD	NRL Various	0.000	0.000		0.348		0.000		0.348	Continuing	Continuing	Continuing
Precision Tracking Space System Travel and Transportation MD10	TBD/TBD	MDA Various	0.000	0.000		0.130		0.000		0.130	Continuing	Continuing	Continuing
Precision Tracking Space System	Various/ Various	Various Various	0.000	0.000		4.130		0.000		4.130	Continuing	Continuing	Continuing

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

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</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			
Contractor Support Services MD10													
Subtotal			0.000	0.000		6.130		0.000		6.130			

Remarks

NA

Project Cost Totals	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
		Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Project Cost Totals	0.000	0.000		64.716		0.000		64.716			

Remarks

NA

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

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

0400: *Research, Development, Test & Evaluation, Defense-Wide*
 BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE

PE 0604883C: *PRECISION TRACKING SPACE SYSTEM*

PROJECT

MD10: *Precision Tracking Space System (PTSS)*

	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 Demonstration Tests and Planned Mission Life				■	■	■	■	■	■	■	■	■																
Precision Tracking Space System Prototype Initiation									■																			
Industry as part of Precision Tracking Space System Prototype Integrated Systems Engineering Team (ISET)									■	■	■	■	■	■	■	■	■											
Prototype Concept Development									■	■	■	■																
Prototype System Design Review										■																		
Prototype Preliminary Design Review												■																
Prototype Critical Design Review																■												
Prototype Independent Verification & Validation																				■								
Prototype Launch																											■	
Precision Tracking Space System Operational System Development & Deployment																					■	■	■	■	■	■	■	■

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

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>PRECISION TRACKING SPACE SYSTEM</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>
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Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Space Tracking and Surveillance System Demonstration Tests and Planned Mission Life	4	2009	4	2011
Precision Tracking Space System Prototype Initiation	1	2011	1	2011
Industry as part of Precision Tracking Space System Prototype Integrated Systems Engineering Team (ISET)	1	2011	1	2013
Prototype Concept Development	1	2011	4	2011
Prototype System Design Review	2	2011	2	2011
Prototype Preliminary Design Review	4	2011	4	2011
Prototype Critical Design Review	1	2013	1	2013
Prototype Independent Verification & Validation	2	2014	2	2014
Prototype Launch	1	2015	1	2015
Precision Tracking Space System Operational System Development & Deployment	1	2013	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0604883C: <i>PRECISION TRACKING</i> <i>SPACE SYSTEM</i>				PROJECT MD40: <i>Program-Wide Support</i>				
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost	
MD40: <i>Program-Wide Support</i>	0.000	0.000	2.253	0.000	2.253	4.529	6.007	10.922	16.936	Continuing	Continuing	
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0			
Note NA												
A. Mission Description and Budget Item Justification Program-Wide Support provides funding for common non-headquarters support functions across the entire program. Includes costs for both government civilians performing these functions, as well as outside services and support contractors that augment government staff in these areas. Other costs included provide facility capabilities for MDA Executing Agent locations (with the exception of Federal Office Building 2), such as physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses. Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510, legal settlements, and foreign currency fluctuations on a limited number of foreign contracts.												
B. Accomplishments/Planned Program (\$ in Millions)												
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total		
Civilian Salaries and Support See Description Below <i>FY 2009 Accomplishments:</i> NA <i>FY 2010 Plans:</i> NA <i>FY 2011 Base Plans:</i> NA						0.000	0.000	2.253	0.000	2.253		

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

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>PRECISION TRACKING</i> <i>SPACE SYSTEM</i>	PROJECT MD40: <i>Program-Wide Support</i>
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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 OCO Plans: NA					
Accomplishments/Planned Programs Subtotals					
	0.000	0.000	2.253	0.000	2.253

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
• 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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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency										DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			R-1 ITEM NOMENCLATURE PE 0604883C: <i>PRECISION TRACKING</i> <i>SPACE SYSTEM</i>				PROJECT MD40: <i>Program-Wide Support</i>				
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603893C: <i>SPACE TRACKING & SURVEILLANCE SYSTEM</i>	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: <i>MULTIPLE KILL VEHICLE</i>	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: <i>BMD SYSTEM SPACE PROGRAM</i>	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: <i>BMD C2BMC</i>	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: <i>BMD HERCULES</i>	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: <i>BMD JOINT WARFIGHTER SUPPORT</i>	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: <i>DIRECTED ENERGY RESEARCH</i>	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: <i>MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)</i>	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: <i>REGARDING TRENCH</i>	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: <i>SEA BASED X-BAND RADAR (SBX)</i>	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: <i>BMD EUROPEAN INTERCEPTOR SITE</i>	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: <i>BMD EUROPEAN MIDCOURSE RADAR</i>	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: <i>BMD EUROPEAN CAPABILITY</i>	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: <i>BMD European Comm Support</i>	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: <i>ISRAELI COOPERATIVE</i>	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545

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

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0604883C: <i>PRECISION TRACKING</i> <i>SPACE SYSTEM</i>	PROJECT 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</u> <u>Base</u>	<u>FY 2011</u> <u>OCO</u>	<u>FY 2011</u> <u>Total</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0604880C: <i>LAND-BASED SM-3</i>	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: <i>Aegis SM-3 BLOCK IIA CO-DEVELOPMENT</i>	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604884C: <i>AIRBORNE INFRARED (ABIR)</i>	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: <i>Small Business Innovative Research BMDO</i>	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: <i>Pentagon Reservation</i>	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: <i>Management Headquarters-MDA</i>	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

D. Acquisition Strategy

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

E. Performance Metrics

NA

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