Exhibit R-2, RDT&E Budget Item Justification: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*							
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	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	Continuing	Continuing
XX46: *Sea Based X-Band Radar (SBX) Sustainment*	143.878	167.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	311.031
MD46: *Sea-Based X-band (SBX) Sustainment*	0.000	0.000	153.056	0.000	153.056	150.104	159.832	160.163	197.099	Continuing	Continuing

Note

In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Project XX46 for FY2009-2010 is now captured in Project MD46.

Since its emphasis is on proving component and subsystem maturity prior to integration into a more complex integrated system, the Sensors and SBX programs fall under RDT&E Budget Activity 4, Advanced Component Development and Prototypes (ACD&P).

The best way to dissuade, deter, and defeat ballistic missile threats is through integrated ballistic missile defense capabilities -- weapons, sensors, and Command and Control Battle Management and Communications (C2BMC). A potential or actual attack may cross regions and may fly higher and faster than stand-alone, autonomous capabilities operated by a single Military Service can defend against. Integrated BMD capabilities draw on space-, land-, and sea-based assets operated by multiple Services to provide both the best sensor information on the enemy missile`s location and track as well as a more diverse and effective set of weapon options for the Combatant Commander to defeat the attack -- all connected by a unifying C2BMC system. As a result, an effort funded in a Program Element may be critical to the success of efforts in the other Program Elements -- we refer to these connections as ``interdependencies``. Throughout the budget justification materials we have attempted to highlight interdependencies in order to fully explain the relationship between different parts of the proposed program.

Sensors software development efforts will add system capabilities in compliance with BMDS Integrated Build C and D specifications for enhanced capabilities to support both Regional and Strategic missions. For BMDS Integrated Build C, these capabilities include integration of Hercules Suite I algorithms, and support for C2BMC taskings, such as sensor resource management. For BMDS Integrated Build D, these capabilities include improved sensor registration, integration of discrimination enhancements, and support for C2BMC correlation and sensor management improvements. In FY 2010 and FY 2011, these builds will provide System-level sensor resource management with track forwarding in support of Regional and Strategic Missions, limited peer-to-peer weapon system engagement coordination in support of Regional missions, and enhanced BMDS capability with increased defended area and integration of System-level sensor and BMDS System Track data.

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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 threats; continue a viable Homeland Defense against rogue threats beyond 2030; demonstrate our proven technologies to show Missile Defense works; and develop technologies to hedge against future missile threat growth.

A. Mission Description and Budget Item Justification

Given the unique characteristics of short range ballistic missiles (SRBMs), medium range ballistic missiles (MRBMs), intermediate range ballistic missiles (IRBMs), and intercontinental ballistic missiles (ICBMs), no one missile defense interceptor or sensor system can effectively counter all ballistic missile threats. War fighters are not only faced with the challenge of intercepting relatively small objects at great distances and very high velocities, but they may have to counter large raid sizes involving combinations of SRBMs, MRBMs, IRBMs, and ICBMs and, in the future, countermeasures associated with structured ballistic missile attacks. Stand-alone missile defense systems must be integrated into a layered BMDS to achieve cost- and operational-efficiencies, while improving protection performance with increased defended area and minimizing force structure costs.

The most operationally effective missile defense architecture is a layering of endoatmospheric and exoatmospheric missile interceptor systems with ground and space sensors connected and managed by a robust Command and Control, Battle Management and Communication (C2BMC) infrastructure. The FY 2011 program is balanced to develop, rigorously test, and field an integrated BMDS architecture to counter existing regional threats, continue developing our limited ICBM defense, prove our Missile Defense System works, and develop new technologies to address future threats. The current program has four focus areas:

1. Enhance missile defense to defend deployed forces, allies, and friends against theater threats
2. Continue a viable homeland defense against rogue threats beyond 2030
3. Prove missile defense works
4. Develop technologies to hedge against future missile threat growth.

THE KEY ENABLER FOR THESE FOCUS AREAS IS A PERVASIVE SENSOR NET.

BMDS effectiveness depends upon quality of services (that is, data of sufficient accuracy and low enough latency) rendered by the interdependent BMDS programs to each other. The BMD Sensors program provides essential data for the command and control of BMDS weapon systems, such as Terminal High Altitude Area Defense (THAAD) and Ground-based Midcourse Defense (GMD). These sensors, connected to the BMDS through C2BMC, enable detection and tracking of targets, and provide fire-control quality ballistic missile position, velocity, and discrimination data to BMDS weapon systems. As threats expand and mature, the need for

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continuously available sensors supports investment in the operations, sustainment, and enhancement of existing radars, as well as the development of new sensors, such as the Precision Tracking Space System (PTSS). The Ballistic Missile Defense System (BMDS) development approach allows sensor technologies and capabilities to be incorporated as they mature and evolve into a layered network of sensors. Overlapping sensor coverage with a diversity of sensor types will improve detection, track, discrimination and kill assessments. The extended sensor coverage and accuracy provided by a network of layered sensors makes the BMDS more efficient, reduces the number of target engagements needed, conserving interceptor inventory and ensuring a high probability of successful engagement.

The Sea-Based X-Band Radar (SBX) is a major contributor to a viable homeland defense. The largest X-Band radar in the world, it serves as the primary midcourse sensor in the BMDS layered network of radars. Self-propelled and semi-submersible, the SBX operates in various locations in the Pacific Ocean. It enables Combatant Commanders to engage ballistic missile threats in all phases of flight. The SBX provides high resolution cued search, acquisition, tracking, target discrimination, and debris assessments. GMD relies on SBX radar data for fire control solutions. Operations and sustainment of satellite communications to the BMDS are provided by C2BMC, and enable sensor tasking/control by the Ground-Based Midcourse fire control (GFC).

The major goals of this system element are to:

Operate and sustain the SBX and its subsystems to support BMDS flight testing and operations as required
Deliver advanced X-Band Radar (XBR) algorithms to address evolving threats
Continue to enhance SBX capabilities and integrate into the BMDS
Participate in BMDS ground and flight tests and Targets of Opportunity testing (funding for testing is carried under PE 0603884C (Test and Evaluation line))
Achieve American Bureau of Shipping (ABS) certification
Support the transfer of SBX to the U.S. Navy
Enhance XBR data provided to GMD high fidelity digital simulation efforts

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Missile Defense Agency	DATE: February 2010
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B. Program Change Summary ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	146.895	174.576	0.000	0.000	0.000
Current President's Budget	143.878	167.153	153.056	0.000	153.056
Total Adjustments	-3.017	-7.423	153.056	0.000	153.056
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		-7.423			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	-0.753	0.000			
• SBIR/STTR Transfer	-2.264	0.000			
• Other Adjustment Detail	0.000	0.000	153.056	0.000	153.056

Change Summary Explanation

No FY 2011 data provided in PB10.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency			DATE: February 2010
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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
XX46: *Sea Based X-Band Radar (SBX) Sustainment*	143.878	167.153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	311.031
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

For all Ballistic Missile Defense (BMD) System Level Test Schedule information, please refer to the Ballistic Missile Defense (BMD) System Level Test Schedule tab.

Project XX46 describes the SBX program for FY 2009 and 2010. Program plans for FY 2011 are found in Project MD46 for FY 2011-2015.

A. Mission Description and Budget Item Justification

This project provides for the operations and support of the Sea-Based X-Band (SBX) Radar and its four major sub-systems: the self-propelled vessel; the X-Band Radar (XBR); the In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT); and the communications network.

The SBX is the largest X-Band radar in the world and serves as the primary midcourse sensor in the BMDS layered network of radars. Self-propelled and semi-submersible, the SBX operates in various locations in the Pacific Ocean. It enables Combatant Commanders to engage ballistic missile threats in all phases of flight. The SBX provides high resolution cued search, acquisition, tracking, target discrimination, and debris assessments. The Ground-Based Midcourse system (PE 0603882C) relies on SBX radar data for fire control solutions. Operations and sustainment of satellite communications to the BMDS are provided by C2BMC, and enable sensor tasking/control by the Ground-Based Midcourse fire control (GFC).

The major goals of this system element are to:

Operate and sustain the SBX and its subsystems to support BMDS flight testing and operations as required;
Deliver advanced XBR algorithms to address evolving threats;
Continue to enhance SBX capabilities and integrate into the BMDS;
Participate in BMDS ground and flight tests and Targets of Opportunity testing (funding for testing is carried under PE 0603884C (Test and Evaluation line));
Achieve American Bureau of Shipping (ABS) certification;
Support the transfer of the SBX to the U.S. Navy;
Enhance XBR portion of GMD models and simulation (GMDSIM) to provide high fidelity digital simulation.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Sea-Based X-Band Radar Development	16.733	14.350	0.000	0.000	0.000

See Description Below

FY 2009 Accomplishments:

Continued software development and maintenance, with focus on advanced discrimination and algorithms
Continued X-Band Radar (XBR) software build 2.2 integration and testing
Began development of XBR software build 3.0 and conducted System Readiness Review (SRR) and Critical Design Review (CDR)
Participated in Glory Trip 195 (U.S. Air Force Targets of Opportunity) and GMD intercept flight test FTG-05 (which demonstrated SBX target tracking capability)
Continued maturation of SBX advanced algorithms

FY 2010 Plans:

Continue development, integration, testing, and maintenance of XBR software, including Build 3.0, in support of BMDS Integrated Build C
Participate in GMD Intercept Flight Test FTG-06 as follows:

Acquire target and send track reports to GMD Fire Control
Transition to non-tactical mode to collect critical engagement conditions/empirical measurement events (CEC/EME)** data for verification and validation of models and simulation
Complete Formal Qualification Testing (FQT) for Build 3.0
Verify and validate SBX analytical model
Continue maturation of SBX advanced algorithms

**CEC/EMEs are the conditions and events ;where data is obtained from flight and ground tests in order to anchor models and simulations.

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: FY11 planned program is described in Project MD46. *FY 2011 OCO Plans:* NA					
SBX System Integration See Description Below *FY 2009 Accomplishments:* Supported BMDS system ground and flight tests, including USAF Glory Trip 195 and GMD intercept flight test FTG-05 (which demonstrated SBX target tracking capability) ; Supported Transition and Transfer of SBX to US Navy Supported advanced algorithm maturation for X-Band radars *FY 2010 Plans:* Support Transition and Transfer of SBX to US Navy Support GMD Intercept Flight Test FTG-06 Support development of advanced X-Band Radar (XBR) algorithms to address evolving threats *FY 2011 Base Plans:* FY11 planned program is described in Project MD46. *FY 2011 OCO Plans:* NA	4.652	3.600	0.000	0.000	0.000
System Force Protection See Description Below	9.984	6.600	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: Continued to provide on-board force protection for the SBX and portside security for the SBX and its off-shore support vessel "The Dove" *FY 2010 Plans:* Continue to provide on-board force protection for the SBX and portside security for the SBX and its off-shore support vessel "The Dove" *FY 2011 Base Plans:* FY11 planned program is described in Project MD46. *FY 2011 OCO Plans:* NA					
SBX Vessel Operations and Support See Description Below *FY 2009 Accomplishments:* Provided SBX and motor vessel Dove crews, provisioning, spares, and motor vessel Dove lease Continued ongoing operations, maintenance, and logistical support of the SBX and the motor vessel Dove Completed shipyard activities to include: Galley upgrades Starboard crane upgrade Port crane installation Fast-rescue boat installation Liquid Conditioning and Cooling System modifications	87.837	99.003	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Fuel oil system modifications Sewage lift station repairs and upgrades *FY 2010 Plans:* Provide SBX crews, provisioning, spares, and motor vessel Dove lease Continue ongoing operations, maintenance, and logistical support of the SBX and the motor vessel Dove Participate in BMDS ground and flight tests to include Targets of Opportunity (TOO) Acquire hardware and supply items in preparation for shipyard period beginning 4th Qtr FY10 Initiate hardware and software obsolescence planning for potential replacement of processors, controls, and displays Complete 5-year vessel surveys *FY 2011 Base Plans:* FY11 planned program is described in Project MD46. *FY 2011 OCO Plans:* NA					
XBR Operations and Support See Description Below *FY 2009 Accomplishments:* Continued to operate and maintain the X-Band radar and associated equipment Conducted shipyard period Completed Operational Control Center (OCC) enhancements Completed installation of Emergency Radome Pressurization System (ERPS).	24.672	41.800	0.000	0.000	0.000

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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: Continue to operate and maintain the X-Band radar (XBR) ;and associated equipment Maintain mission hardware Provide and support operations crew Initiate XBR workstation replacement planning *FY 2011 Base Plans:* FY11 planned program is described in Project MD46. *FY 2011 OCO Plans:* NA					
SBX Communications Operations and Sustainment See Description Below *FY 2009 Accomplishments:* This Operations and Support (O&S) effort supports the Sea-Based X-Band radar (SBX) Communications suite. It includes communication suite operational spares, repair, and replacement; communications operators / maintainers; communications support costs; and sustains SATCOM operations 24 hours a day 365 days a year. Continued round-the-clock sustainment for Communications capabilities associated with SBX Continued sustaining engineering support and integrated logistics support for fielded hardware and software *FY 2010 Plans:* Continue ;round-the-clock sustainment for Communications capabilities associated with SBX	0.000	1.800	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency		DATE: February 2010
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B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Continue on-site SATCOM support aboard SBX and at earth stations for hardware and software Continue sustaining engineering support and integrated logistics support Continue Space segment lease *FY 2011 Base Plans:* FY11 planned program is described in Project MD46. *FY 2011 OCO Plans:* NA					
Accomplishments/Planned Programs Subtotals	143.878	167.153	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: *Ballistic Missile Defense Technology*	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603881C: *Ballistic Missile Defense Terminal Defense Segment*	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314
• 0603882C: *Ballistic Missile Defense Mid-Course Segment*	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: *Ballistic Missile Defense Boost Defense Segment*	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: *Ballistic Missile Defense Sensors*	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: *Ballistic Missile Defense System Interceptor*	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
	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

Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency			DATE: February 2010
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C. Other Program Funding Summary ($ in Millions)

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
• 0603888C: *Ballistic Missile Defense Test and Targets*	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603890C: *Ballistic Missile Defense Enabling Programs*	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603891C: *SPECIAL PROGRAMS - MDA*	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
• 0603892C: *BMD AEGIS*	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603893C: *SPACE TRACKING & SURVEILLANCE SYSTEM*	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603894C: *MULTIPLE KILL VEHICLE*	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603895C: *BMD SYSTEM SPACE PROGRAM*	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603896C: *BMD C2BMC*	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603897C: *BMD HERCULES*	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603898C: *BMD JOINT WARFIGHTER SUPPORT*	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603901C: *DIRECTED ENERGY RESEARCH*	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603904C: *MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)*	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603906C: *REGARDING TRENCH*	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603908C: *BMD EUROPEAN INTERCEPTOR SITE*	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603909C: *BMD EUROPEAN MIDCOURSE RADAR*	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226

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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
• 0603911C: *BMD EUROPEAN CAPABILITY*											
• 0603912C: *BMD European Comm Support*	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: *ISRAELI COOPERATIVE*	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545
• 0604880C: *LAND-BASED SM-3*	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: *Aegis SM-3 BLOCK IIA CO-DEVELOPMENT*	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: *PRECISION TRACKING SPACE SYSTEM*	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: *AIRBORNE INFRARED (ABIR)*	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: *Small Business Innovative Research BMDO*	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: *Pentagon Reservation*	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: *Management Headquarters-MDA*	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

D. Acquisition Strategy

The SBX will continue to follow the Missile Defense Agency`s capability-based acquisition strategy that emphasizes testing, development and evolutionary acquisition.

Products and services will be acquired with competitive means to the extent possible and practical.

E. Performance Metrics

NA

Exhibit R-3, RDT&E Project Cost Analysis: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT XX46: *Sea Based X-Band Radar (SBX) Sustainment*	

Product Development ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sea-Based X-Band Radar Development SBX and XBR Development XX46	SS/CPAF	Boeing AL/AK/AZ/CA/ CO/HI/MA/TX/VA	16.733	14.350	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
SBX System Integration SBX Systems Integration XX46	SS/CPAF	Boeing AL/AK/AZ/CA/ CO/HI/MA/TX/VA	4.652	3.600	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
		Subtotal	21.385	17.950		0.000		0.000		0.000			

Remarks

NA

Support ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
System Force Protection Systems Force Protection XX46	SS/CPFF	ALUTIIA AK/VA	9.984	6.600	Oct 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing
SBX Vessel Operations and Support SBX Operations and Support (Vessel) XX46	SS/CPAF	Boeing AL/AK/AZ/CA/ CO/HI/MA/TX/VA	44.106	33.677	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
	TBD/TBD	DEFUEL	10.000	8.926	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT XX46: *Sea Based X-Band Radar (SBX) Sustainment*

Support ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SBX Vessel Operations and Support Fuel XX46		-											
SBX Vessel Operations and Support Support Vessel XX46	SS/CPFF	Boeing/TBD AL/AK/AZ/CA/ CO/HI/MA/TX/VA	31.000	32.000	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
SBX Vessel Operations and Support ABS Certification XX46	SS/TBD	TBD AL/AK	0.000	3.400	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
SBX Vessel Operations and Support Vessel Voyage Repairs XX46	SS/TBD	TBD AL/AK/HI	0.000	13.000	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
SBX Vessel Operations and Support Navy Hybrid Program Office XX46	TBD/TBD	US Navy AL/AK/HI	2.373	8.000	Oct 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing
SBX Vessel Operations and Support Mooring line, Dove Dry dock, Site Visit, Ammunition XX46	TBD/TBD	PH NS, HQUSAJMC, NSWC Crane HI, IN	0.358	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
XBR Operations and Support XBR Operations and Support XX46	SS/CPIF	Raytheon AL/AK/HI	24.672	31.200		0.000		0.000		0.000	Continuing	Continuing	Continuing
XBR Operations and Support Replace XBR Superdomes XX46	SS/CPIF	Raytheon AL/AK/HI	0.000	10.600	Oct 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing
SBX Communications Operations and	TBD/TBD	DISA VA	0.000	1.800	Oct 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT XX46: *Sea Based X-Band Radar (SBX) Sustainment*	

Support ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sustainment SBX Comms O&S XX46													
		Subtotal	122.493	149.203		0.000		0.000		0.000			

Remarks

NA

Test and Evaluation ($ in Millions)

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

Remarks

NA

Exhibit R-3, RDT&E Project Cost Analysis: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT XX46: *Sea Based X-Band Radar (SBX) Sustainment*

Management Services ($ in Millions)

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

Remarks

NA

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	143.878	167.153		0.000		0.000		0.000			

Remarks

NA

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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT XX46: *Sea Based X-Band Radar (SBX) Sustainment*

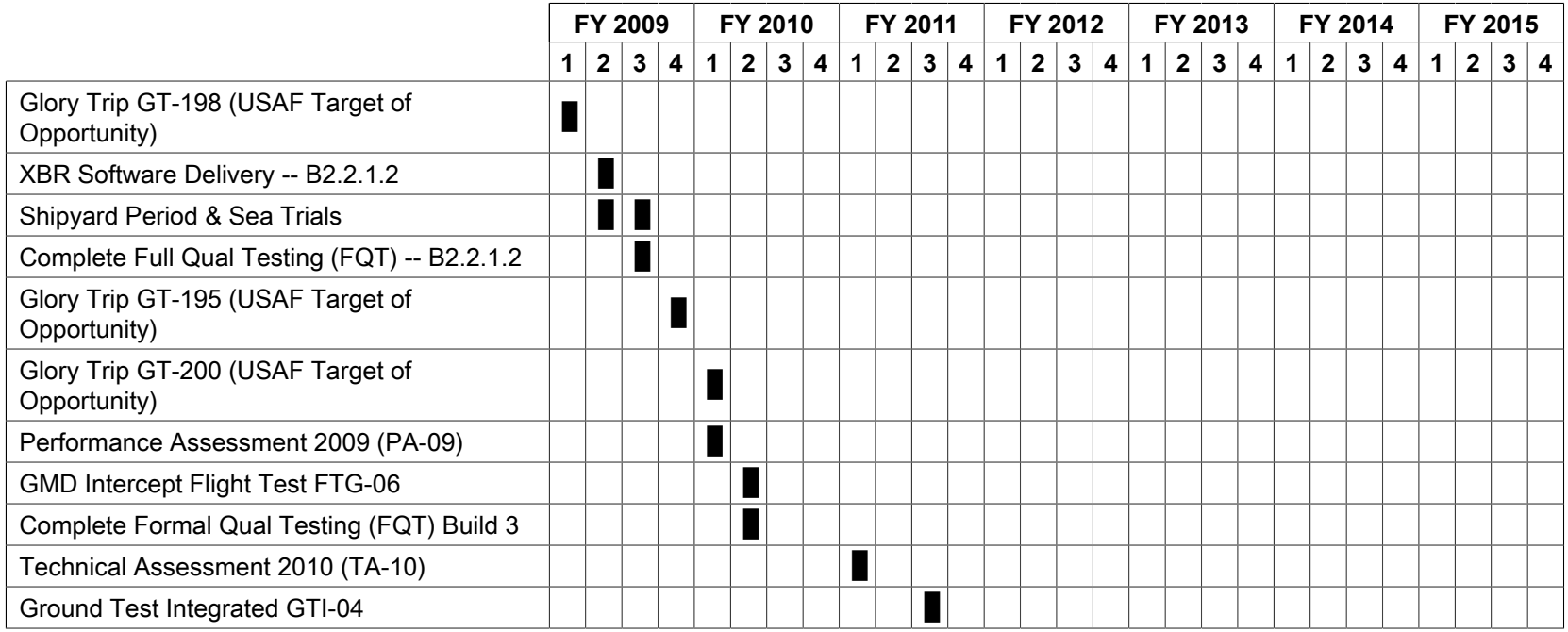

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603907C: *SEA BASED X-BAND RADAR (SBX)*	**PROJECT** XX46: *Sea Based X-Band Radar (SBX) Sustainment*

Schedule Details

	Start		End	
Event	**Quarter**	**Year**	**Quarter**	**Year**
Glory Trip GT-198 (USAF Target of Opportunity)	1	2009	1	2009
XBR Software Delivery -- B2.2.1.2	2	2009	2	2009
Shipyard Period & Sea Trials	2	2009	3	2009
Complete Full Qual Testing (FQT) -- B2.2.1.2	3	2009	3	2009
Glory Trip GT-195 (USAF Target of Opportunity)	4	2009	4	2009
Glory Trip GT-200 (USAF Target of Opportunity)	1	2010	1	2010
Performance Assessment 2009 (PA-09)	1	2010	1	2010
GMD Intercept Flight Test FTG-06	2	2010	2	2010
Complete Formal Qual Testing (FQT) Build 3	2	2010	2	2010
Technical Assessment 2010 (TA-10)	1	2011	1	2011
Ground Test Integrated GTI-04	3	2011	3	2011

Exhibit R-2A, RDT&E Project Justification: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT MD46: *Sea-Based X-band (SBX) Sustainment*	

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
MD46: *Sea-Based X-band (SBX) Sustainment*	0.000	0.000	153.056	0.000	153.056	150.104	159.832	160.163	197.099	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Project XX46 for FY 2009-2010 is now captured in Project MD46 for FY 2011-2015.

A. Mission Description and Budget Item Justification

Continuously available, transportable, and mobile BMDS sensors provide real-time detection and tracking data to the system and the warfighter through C2BMC. The BMDS relies on space-based (Defense Support Program, space-based infrared satellites and, in the future, an operational Precision Tracking Space System (PTSS)), ground-based (Cobra Dane, Upgraded Early Warning Radar (UEWR), AN/TPY-2), and sea-based mobile (Aegis BMD ships and Sea-Based X-band radar (SBX)) sensors to provide detection, tracking, classification and hit assessment information.

The SBX is the largest X-Band radar (XBR) in the world and serves as the primary midcourse sensor in the BMDS layered network of radars. Self-propelled and semi-submersible, the SBX operates in various locations in the Pacific Ocean. It enables Combatant Commanders to engage ballistic missile threats in all phases of flight. The SBX provides high resolution cued search, acquisition, tracking, target discrimination, and debris assessments. The Ground-Based Midcourse system (PE 0603882C) relies on SBX radar data for fire control solutions. C2BMC operates and sustains satellite communications to the BMDS, and enables sensor tasking/control by the Ground-Based Midcourse fire control (GFC).

The major goals of this system element are to:

Operate and sustain the SBX and its subsystems to support BMDS flight testing and operations as required
Deliver advanced X-Band Radar (XBR) algorithms to address evolving threats
Continue to enhance SBX capabilities and integrate into the BMDS;
Participate in BMDS ground and flight tests and Targets of Opportunity testing (funding for testing is carried in the Sensors Program Element (0603884C))
Continue American Bureau of Shipping (ABS) certification;
Support the transfer of the SBX to the U.S. Navy

Exhibit R-2A, RDT&E Project Justification: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	**PROJECT** MD46: *Sea-Based X-band (SBX) Sustainment*

Critical engagement conditions (CECs) and empirical measurement events (EMEs)** associated with the SBX are tracked in the BMD Sensors Program Element 0603884C. The FY 2011 Sensors test program will execute 68 CEC/EME required data collections to reach a cumulative 76% completion (145 of 190 total) of data collections necessary for validation, verification, and assessment (VV&A) of BMDS modeling and simulation (M&S). These CECs/EMEs increase confidence in the models to inform COCOM assessment and deployment decisions. The following table illustrates the CEC/EME data collection schedule for FY 2011 and beyond:

Total Collection Opportunities: 190 Pre-FY09: 50 FY09: 14 FY10: 13 FY11: 68 FY12: 9 FY13: 8 FY14: 20 FY15: 5 FY16: 3
Cum Total: Pre-FY09: 50 FY09: 64 FY10: 77 FY11: 145 FY12: 154 FY13: 162 FY14: 182 FY15: 187 FY16: 190
% Executed Cum: Pre-FY09: 26% FY09: 34% FY10: 41% FY11: 76% FY12: 81% FY13: 85% FY14: 96% FY15:98% FY16: 100%

**CEC/EMEs are the conditions and events where data is obtained from flight and ground tests in order to anchor models and simulations.

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Vessel Operations and Support	0.000	0.000	98.029	0.000	98.029

See Description Below

FY 2009 Accomplishments:
FY09 Accomplishments are found in Project XX46.

FY 2010 Plans:
FY10 planned program is described in Project XX46.

FY 2011 Base Plans:
This funding covers the ongoing operations and sustainment of the Sea-Based X-Band Radar (SBX) platform, its support vessel (the motor vessel Dove), and land-based support facilities. These activities include fueling, provisioning, and staffing of the SBX platform and support vessel, care and lodging of crews, and transportation of crews and equipment. For FY 2011, the SBX program plans to:

Exhibit R-2A, RDT&E Project Justification: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT MD46: *Sea-Based X-band (SBX) Sustainment*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Continue ongoing operations, maintenance, and support of the SBX, the support vessel, and support facilities Execute shipyard period for ABS certifications, possible Navy Inspections and Survey (INSURV) corrections and complete items necessary for Transition and Transfer to the Navy Continue to support operations of the Navy Transition Office Implement Independent Readiness Review Team (IRRT) recommendations IRRT assessed the extent to which SBX is on course to meet two major milestones: ``Full Mission Capability`` (FMC) designation by STRATCOM Transition of operation and sustainment responsibilities to the US Navy All aspects needed for an effective, sustainable and responsive mission critical weapon system component were addressed Recommendations are being implemented to ensure SBX is properly integrated into the Ballistic Missile Defense System in a timely manner *FY 2011 OCO Plans:* NA					
XBR Operations and Support See Description Below *FY 2009 Accomplishments:* FY09 Accomplishments are found in Project XX46. *FY 2010 Plans:* FY10 planned program is described in Project XX46.	0.000	0.000	43.127	0.000	43.127

Exhibit R-2A, RDT&E Project Justification: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT MD46: *Sea-Based X-band (SBX) Sustainment*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: Operations and sustainment of the SBX`s X-Band radar (XBR) ;include: manpower for operating and maintaining the radar, spare and repair parts procurement, and hardware maintenance. The on-vessel XBR personnel perform the functions of round-the-clock radar operations, calibration of the radar and support/test equipment, and maintenance and repair of the radar associated equipment. For FY 2011, the SBX program plans to: Continue to operate and maintain the X-Band radar and associated equipment Maintain mission hardware Provide and support operations crew Complete XBR upgrades during shipyard period Continue XBR Superdome replacement planning *FY 2011 OCO Plans:* NA					
SBX Communications Operations and Support See Description Below *FY 2009 Accomplishments:* FY09 Accomplishments are found in Project XX46. *FY 2010 Plans:* FY10 planned program is described in Project XX46.	0.000	0.000	1.900	0.000	1.900

Exhibit R-2A, RDT&E Project Justification: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT MD46: *Sea-Based X-band (SBX) Sustainment*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: This operations and support (O&S) effort supports the SBX Communications Suite. It includes communications suite operational spares, repair, and replacement; communications operators / maintainers; communications support costs; and sustains satellite communications (SATCOM) operations 24 hours a day 365 days a year. For FY 2011, Sensors plans to: Continue round-the-clock sustainment for communications capabilities for Sea-Based X-Band radar (SBX) Continue on-site SATCOM support of fielded sites for hardware and software Continue sustaining engineering support and integrated logistics support for fielded hardware and software Continue space segment lease. *FY 2011 OCO Plans:* NA					
System Force Protection See Description Below *FY 2009 Accomplishments:* FY09 Accomplishments are found in Project XX46. *FY 2010 Plans:* FY10 planned program is described in Project XX46. *FY 2011 Base Plans:* Force protection for the Sea-Based X-Band Radar (SBX) is an ongoing effort comprising two major functions: on-board protection of the vessel, and portside security augmentation, if required, for the	0.000	0.000	10.000	0.000	10.000

Exhibit R-2A, RDT&E Project Justification: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT MD46: *Sea-Based X-band (SBX) Sustainment*

B. Accomplishments/Planned Program ($ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
SBX vessel and its Off-Shore Support (OSS) vessel "The Dove", while docked. On-board protection security functions include: on-board visitor control, access control to sensitive areas, inspection of incoming personnel and equipment, and protection against hostile boarding. Portside security functions include: inspection and control of supplies and equipment being readied for transport onto the SBX, access control of the docking area, and visitor control to the SBX and support vessel. For FY 2011, the SBX program plans to: Continue to provide on-board force protection for the SBX and portside security for the SBX and its off-shore support vessel "The Dove" *FY 2011 OCO Plans:* NA					
Accomplishments/Planned Programs Subtotals	0.000	0.000	153.056	0.000	153.056

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: *Ballistic Missile Defense Technology*	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603881C: *Ballistic Missile Defense Terminal Defense Segment*	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314
• 0603882C: *Ballistic Missile Defense Mid-Course Segment*	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: *Ballistic Missile Defense Boost Defense Segment*	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: *Ballistic Missile Defense Sensors*	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483

Exhibit R-2A, RDT&E Project Justification: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT MD46: *Sea-Based X-band (SBX) Sustainment*	

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603886C: *Ballistic Missile Defense System Interceptor*	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
• 0603888C: *Ballistic Missile Defense Test and Targets*	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: *Ballistic Missile Defense Enabling Programs*	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: *SPECIAL PROGRAMS - MDA*	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: *BMD AEGIS*	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
• 0603893C: *SPACE TRACKING & SURVEILLANCE SYSTEM*	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: *MULTIPLE KILL VEHICLE*	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: *BMD SYSTEM SPACE PROGRAM*	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: *BMD C2BMC*	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: *BMD HERCULES*	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: *BMD JOINT WARFIGHTER SUPPORT*	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: *DIRECTED ENERGY RESEARCH*	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: *MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)*	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: *REGARDING TRENCH*	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603908C: *BMD EUROPEAN INTERCEPTOR SITE*	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728

Exhibit R-2A, RDT&E Project Justification: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT MD46: *Sea-Based X-band (SBX) Sustainment*

C. Other Program Funding Summary ($ in Millions)

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

D. Acquisition Strategy

The SBX will continue to follow the Missile Defense Agency`s capability-based acquisition strategy that emphasizes testing, development and evolutionary acquisition.

Products and services will be acquired with competitive means to the extent possible and practical.

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 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

Exhibit R-2A, RDT&E Project Justification: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	**PROJECT** MD46: *Sea-Based X-band (SBX) Sustainment*

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

Exhibit R-3, RDT&E Project Cost Analysis: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT MD46: *Sea-Based X-band (SBX) Sustainment*

Product Development ($ in Millions)

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

Remarks

NA

Support ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Vessel Operations and Support SBX Operations and Support (Vessel) MD46	SS/CPAF	Boeing AL/AK/AZ/CA/ CO/TX/VA/HI	0.000	0.000		68.303	Jan 2011	0.000		68.303	Continuing	Continuing	Continuing
Vessel Operations and Support Fuel MD46	SS/Various	Boeing/TBD AL/AK/AZ/CA/ CO/TX/VA/HI	0.000	0.000		13.300	Jan 2011	0.000		13.300	Continuing	Continuing	Continuing
Vessel Operations and Support Vessel Voyage Repairs MD46	SS/Various	TBD AL/AK/HI	0.000	0.000		7.729	Jan 2011	0.000		7.729	Continuing	Continuing	Continuing
Vessel Operations and Support Navy Hybrid Program Office MD46	TBD/TBD	US Navy AL, NCR	0.000	0.000		8.000	Jan 2011	0.000		8.000	Continuing	Continuing	Continuing
	SS/CPAF	Boeing AL	0.000	0.000		0.697	Jan 2011	0.000		0.697	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT MD46: *Sea-Based X-band (SBX) Sustainment*

Support ($ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Vessel Operations and Support ABS Certification MD46													
XBR Operations and Support XBR Operations and Support MD46	SS/CPAF	Raytheon AL/AK/HI	0.000	0.000		32.200	Jan 2011	0.000		32.200	Continuing	Continuing	Continuing
XBR Operations and Support Replace XBR Superdomes & Workstations (Planning) MD46	SS/CPAF	Raytheon AL/AK/HI	0.000	0.000		1.600	Jan 2011	0.000		1.600	Continuing	Continuing	Continuing
XBR Operations and Support XBR SW upgrades/Maint. MD46	SS/CPAF	Raytheon MA	0.000	0.000		9.327		0.000		9.327	Continuing	Continuing	Continuing
SBX Communications Operations and Support SBX Comms O&S MD46	TBD/TBD	DISA VA	0.000	0.000		1.900	Oct 2010	0.000		1.900	Continuing	Continuing	Continuing
System Force Protection System Force Protection MD46	SS/CPFF	Chenega On Vessel/AK	0.000	0.000		10.000	Jan 2011	0.000		10.000	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		153.056		0.000		153.056			

Remarks

NA

Exhibit R-3, RDT&E Project Cost Analysis: 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 0603907C: *SEA BASED X-BAND RADAR (SBX)*	PROJECT MD46: *Sea-Based X-band (SBX) Sustainment*	

Test and Evaluation ($ in Millions)

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

Remarks

NA

Management Services ($ in Millions)

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

Remarks

NA

	Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		153.056		0.000		153.056			

Remarks

NA

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 0603907C: *SEA BASED X-BAND RADAR (SBX)*		PROJECT MD46: *Sea-Based X-band (SBX) Sustainment*

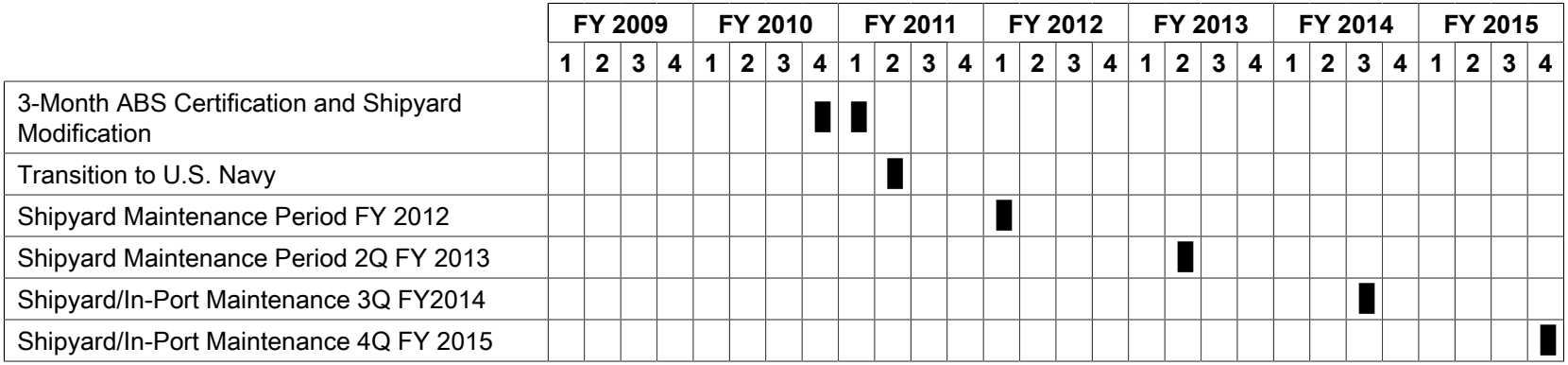

Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 ITEM NOMENCLATURE** PE 0603907C: *SEA BASED X-BAND RADAR (SBX)*	**PROJECT** MD46: *Sea-Based X-band (SBX) Sustainment*

Schedule Details

	Start		End	
Event	**Quarter**	**Year**	**Quarter**	**Year**
3-Month ABS Certification and Shipyard Modification	4	2010	1	2011
Transition to U.S. Navy	2	2011	2	2011
Shipyard Maintenance Period FY 2012	1	2012	1	2012
Shipyard Maintenance Period 2Q FY 2013	2	2013	2	2013
Shipyard/In-Port Maintenance 3Q FY2014	3	2014	3	2014
Shipyard/In-Port Maintenance 4Q FY 2015	4	2015	4	2015