

# UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Navy									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)				R-1 ITEM NOMENCLATURE PE 0604366N: Standard Missile Improvements							
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	222.937	167.200	96.186	0.000	96.186	57.474	28.191	10.578	7.689	Continuing	Continuing
0439: Standard Missile Improvement	11.894	30.227	26.054	0.000	26.054	20.473	4.919	0.255	0.263	Continuing	Continuing
3092: Standard Missile 6 Program	208.051	136.176	70.132	0.000	70.132	37.001	23.272	10.323	7.426	Continuing	Continuing
9999: Congressional Adds	2.992	0.797	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.682

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

Standard Missile (SM) is the Navy's premier Anti-Air Warfare (AAW) missile, providing both area air defense for the fleet and self defense for individual Aegis CGs and DDGs, as required by the Joint Theater Air Missile Defense (TAMD), Mission Need Statement (MNS), Defense Planning Guidance (DPG), Quadrennial Defense Review (QDR), and Ship Class AAW Self Defense Capstone Requirements Document. Agility, fuzing, and computer modifications to SM are in development to restore performance in the near term against a specific existing proliferating Anti-Ship Cruise Missile (ASCM) threat. Continuous analysis of missile capabilities vs. ever-evolving and proliferating aircraft and ASCM threats and long-range planning are required to keep pace with the threat.

In FY04 the STANDARD Missile 6 (SM-6) program was started to develop an advanced surface missile system with an active seeker and an extended range. The SM-6 missile system will leverage the Navy investment in the AEGIS Weapon System (AWS), Cooperative Engagement Capability (CEC), and airborne early warning systems, which will be upgraded in concert with missile development to support a fully integrated extended range detect-to-engage capability. SM-6 is the enabler for Integrated Fire Control (IFC). Funding to support those upgrades are also included in this line. SM-6 is currently executing the ground based flight test program and planning for the DT/OT flight test phase of the SD&D effort.

Together, this family of systems will provide the air superiority and the umbrella of protection against the full spectrum of projected future cruise missile (anti-ship and land attack) and manned aircraft threats discussed in the Joint TAMD MNS, DPG, QDR, and TAMD Capstone Requirements Document.

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1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)		PE 0604366N: Standard Missile Improvements			
B. Program Change Summary (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	236.976	182.197	0.000	0.000	0.000
Current President's Budget	222.937	167.200	96.186	0.000	96.186
Total Adjustments	-14.039	-14.997	96.186	0.000	96.186
• Congressional General Reductions		-0.697			
• Congressional Directed Reductions		-15.000			
• Congressional Rescissions	0.000	-0.100			
• Congressional Adds		0.800			
• Congressional Directed Transfers		0.000			
• Reprogrammings	-7.471	0.000			
• SBIR/STTR Transfer	-6.569	0.000			
• Program Adjustments	0.000	0.000	96.186	0.000	96.186
• Rate/Misc Adjustments	0.001	0.000	0.000	0.000	0.000
Congressional Add Details (\$ in Millions, and Includes General Reductions)					
Project: 9999: Congressional Adds				FY 2009	FY 2010
Congressional Add: Automated Missile Tracking				0.000	0.797
Congressional Add: Extensible Launching Systems				2.992	0.000
Congressional Add Subtotals for Project: 9999				2.992	0.797
Congressional Add Totals for all Projects				2.992	0.797
Change Summary Explanation					
Technical: Not applicable.					
Schedule: Not applicable.					
FY11 from previous President's Budget is shown as zero because no FY11-15 data was presented in President's Budget 2010.					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Navy								<b>DATE:</b> February 2010			
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<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>
0439: <i>Standard Missile Improvement</i>	11.894	30.227	26.054	0.000	26.054	20.473	4.919	0.255	0.263	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
<b>A. Mission Description and Budget Item Justification</b> Modifications to SM-2 BLK IIIB are required for use on DDG-1000 class destroyers. The Joint Universal Waveform Link (JUWL) will be integrated with ESSM and Standard Missile to communicate with the DDG-1000 SPY-3 radar. SM-2 missile software will be updated with interrupted continuous wave illumination (ICWI) in order to allow operation with DDG-1000.											
<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>
Standard Missile Improvement  DDG-1000 Pre Plan Product Improvement (P3I)Link Integration/Interrupted Continuous Wave Illuminator (ICWI)  <i>FY 2009 Accomplishments:</i> ESSM takes lead role in P3I Link implementation. After requirements definition, ESSM designs, reviews and orders Proof of Design (POD) hardware from suppliers.  <i>FY 2010 Plans:</i> ESSM assembles POD assets, conducts testing, holds Critical Design Review, and orders hardware for Production Representative Model of ESSM. SM-2 finalizes requirements, designs, reviews and orders POD hardware.							11.894	30.227	26.054	0.000	26.054

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Navy				<b>DATE:</b> February 2010	
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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>	
<b>FY 2011 Base Plans:</b> ESSM assembles and tests PRMs and orders missiles to support flight test program. SM-2 assembles POD assets, conducts testing, holds Critical Design Review, and orders hardware for Production Representative Model of SM-2.					
Accomplishments/Planned Programs Subtotals				11.894	30.227
				26.054	0.000
				26.054	
<b>C. Other Program Funding Summary (\$ in Millions)</b>					
N/A					
<b>D. Acquisition Strategy</b>					
Development is expected to conclude by FY15 for the X-band (JUWL) and SM-2 IIIB ICWI. Production representative missiles will be built between FY11 & FY13 for the 86 ESSM missiles and 48 SM-2 missiles required to support Developmental Test & Operational Test (DT&OT) in FY13 through FY15.					
<b>E. Performance Metrics</b>					
<ul style="list-style-type: none"> <li>- ESSM initial engineering design for X-Band Joint Universal Weapons Link (JUWL) capability was completed and Engineering Development Models (EDMs) were built and tested.</li> <li>- ESSM successfully completed its Preliminary Design Review in October 2009.</li> <li>- ESSM will order material/parts and assemble Proof of Design units to conduct design verification tests.</li> <li>- In October 2010 ESSM will conduct its Critical Design Review.</li> <li>- SM-2 begins full scale engineering development of X-Band JUWL capability and implementation of interrupted continuous wave illumination (ICWI) functionality.</li> <li>- SM-2 PDR is planned for December 2010.</li> </ul>					

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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	
Design and Analysis1	SS/CPAF	RAYTHEON Tucson, AZ	165.205	30.227	Nov 2009	26.054	Nov 2010	0.000		26.054	Continuing	Continuing	Continuing	
Design and Analysis2	C/CPFF	JHU/APL Laurel, MD	3.750	0.000		0.000		0.000		0.000	0.000	3.750	Continuing	
Design and Analysis3	MIPR	MIT/Lin Lab Lexington, MA	0.050	0.000		0.000		0.000		0.000	0.000	0.050	Continuing	
Design and Analysis4	WR	NSWC Dahlgren	787.314	0.000		0.000		0.000		0.000	0.000	787.314	Continuing	
Design and Analysis5	WR	NSWC Indian Head	0.940	0.000		0.000		0.000		0.000	0.000	0.940	Continuing	
Design and Analysis6	WR	NAWC China Lake	3.030	0.000		0.000		0.000		0.000	0.000	3.030	Continuing	
Design and Analysis7	Various/ CPFF	LOCKHEED MARTIN Moorestown, NJ	17.775	0.000		0.000		0.000		0.000	0.000	17.775	Continuing	
Design and Analysis8	WR	CNO Washington, DC	0.010	0.000		0.000		0.000		0.000	0.000	0.010	Continuing	
Design and Analysis9	WR	CMDP Phoenix, AZ	4.795	0.000		0.000		0.000		0.000	0.000	4.795	Continuing	
Design and Analysis11	WR	NSWC Crane	0.257	0.000		0.000		0.000		0.000	0.000	0.257	Continuing	
Design and Analysis12	WR	DOI&CNAP Washington, DC	0.487	0.000		0.000		0.000		0.000	0.000	0.487	Continuing	
Design and Analysis13	WR	COMPTEVFOR Norfolk, VA	0.100	0.000		0.000		0.000		0.000	0.000	0.100	Continuing	

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**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
Design and Analysis14	Various/ CPFF	LOCKHEED MARTIN Moorestown, NJ	2.000	0.000		0.000		0.000		0.000	0.000	2.000	Continuing
Design and Analysis15	WR	CARDEROCK Bethesda, MD	0.050	0.000		0.000		0.000		0.000	0.000	0.050	Continuing
Design and Analysis16	WR	NWAS Corona	0.325	0.000		0.000		0.000		0.000	0.000	0.325	Continuing
Design and Analysis17	Various/ CPFF	CORVID Moorestville, NC	0.100	0.000		0.000		0.000		0.000	0.000	0.100	Continuing
Design and Analysis18	Various/ CPFF	BAE Rockville, MD	0.101	0.000		0.000		0.000		0.000	0.000	0.101	Continuing
Design and Analysis19	MIPR	MDA Dahlgren,VA	1.257	0.000		0.000		0.000		0.000	0.000	1.257	Continuing
<b>Subtotal</b>			987.546	30.227		26.054		0.000		26.054			

**Remarks**

**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
DEVELOPMENTAL TEST & EVALUATION1	WR	NSWC PHD	0.185	0.000		0.000		0.000		0.000	0.000	0.185	Continuing

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**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
DEVELOPMENTAL TEST & EVALUATION2	WR	WSMR New Mexico	1.600	0.000		0.000		0.000		0.000	0.000	1.600	Continuing
DEVELOPMENTAL TEST & EVALUATION3	WR	NAWC Pt Mugu	0.098	0.000		0.000		0.000		0.000	0.000	0.098	Continuing
DEVELOPMENTAL TEST & EVALUATION4	WR	PMRF Hawaii	0.338	0.000		0.000		0.000		0.000	0.000	0.338	Continuing
DEVELOPMENTAL TEST & EVALUATION5	WR	NSWC PHD	0.567	0.000		0.000		0.000		0.000	0.000	0.567	Continuing
<b>Subtotal</b>			2.788	0.000		0.000		0.000		0.000	0.000	2.788	

**Remarks**

**Management Services (\$ 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
CONTRACTOR ENGINEERING SUPPORT	C/CPAF	VARIOUS VARIOUS	1.993	0.000		0.000		0.000		0.000	0.000	1.993	Continuing
PROGRAM MANAGEMENT SUPPORT	C/CPAF	VARIOUS VARIOUS	2.294	0.000		0.000		0.000		0.000	0.000	2.294	Continuing
TRAVEL	Allot	IWS3	0.056	0.000		0.000		0.000		0.000	0.000	0.056	Continuing

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<p><b>Management Services (\$ in Millions)</b></p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <tr> <th colspan="4"></th> <th colspan="2">FY 2010</th> <th colspan="2">FY 2011 Base</th> <th colspan="2">FY 2011 OCO</th> <th colspan="2">FY 2011 Total</th> <th colspan="2"></th> </tr> <tr> <th>Cost Category Item</th> <th>Contract Method &amp; Type</th> <th>Performing Activity &amp; Location</th> <th>Total Prior Years Cost</th> <th>Cost</th> <th>Award Date</th> <th>Cost</th> <th>Award Date</th> <th>Cost</th> <th>Award Date</th> <th>Cost</th> <th>Cost To Complete</th> <th>Total Cost</th> <th>Target Value of Contract</th> </tr> <tr> <td></td> <td></td> <td>Arlington, VA</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td align="right" colspan="3"><b>Subtotal</b></td> <td>4.343</td> <td>0.000</td> <td></td> <td>0.000</td> <td></td> <td>0.000</td> <td></td> <td>0.000</td> <td>0.000</td> <td>4.343</td> <td></td> </tr> </table> <p><b>Remarks</b></p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <tr> <th></th> <th>Total Prior Years Cost</th> <th>FY 2010</th> <th>FY 2011 Base</th> <th>FY 2011 OCO</th> <th>FY 2011 Total</th> <th>Cost To Complete</th> <th>Total Cost</th> <th>Target Value of Contract</th> </tr> <tr> <td align="right"><b>Project Cost Totals</b></td> <td>994.677</td> <td>30.227</td> <td>26.054</td> <td>0.000</td> <td>26.054</td> <td></td> <td></td> <td></td> </tr> </table> <p><b>Remarks</b></p>																		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			Arlington, VA												<b>Subtotal</b>			4.343	0.000		0.000		0.000		0.000	0.000	4.343			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>	994.677	30.227	26.054	0.000	26.054			
				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																																																																										
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<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>
3092: <i>Standard Missile 6 Program</i>	208.051	136.176	70.132	0.000	70.132	37.001	23.272	10.323	7.426	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

## A. Mission Description and Budget Item Justification

This program leverages existing missile technology and advanced missile technology. It aligns missile technology roadmaps across the Services (NAVSEA, NAVAIR, USAF, USMC and USA) and missile variants within the Services, taking advantage of the Navy's investment in the AEGIS Weapon System (AWS), CEC, and airborne early warning systems. This

missile will provide an extended range engagement capability to provide the air superiority and the umbrella of protection for joint U.S. forces and allies against the full spectrum of manned-fixed and rotary-wing aircraft, unmanned aerial vehicles, and land attack and anti-ship cruise missiles in flight, thereby contributing to the continuous protection of forward deployed ground maneuver forces as well as theater rear assets as discussed in the Joint TAMD MNS, DPG, QDR, TAMD Capstone Requirements Document, Forward From the Sea, Joint Vision 2010/2020, the 2002/2003 Naval Transformational Roadmap and the Operational Requirements Document for SM-6 Extended Range Active Missile (ERAM).

This project addresses the Navy's requirement for an extended range area air defense missile. The SM-6 Extended Range Active Missile (ERAM) is the Navy's transformational enabler for the Sea Shield Operational Concept and enables the opportunity for Sea Basing Sea Strike. This effort includes risk reduction, System Development and Demonstration (SD&D) design, insensitive munitions improvement, transition to production and operational test of the latest STANDARD Missile with the kinematic performance to defeat current and projected threats that possess low altitude, high altitude, and high velocity and maneuver characteristics at the max kinematic range of the missile. SM-6 is currently executing the ground based flight test program and planning for the DT/OT flight test phase of the SD&D effort.

The Joint Integrated Fire Enhancement funding is JROC directed for the integration of the Joint Land Attack Elevated Netted Sensor (JLENS) into the Naval Integrated Fire Control-Counter Air (NIFC-CA) kill chain; specifically, SM-6 integration with the JLENS and the AEGIS Weapon System (AWS). The funding identified in this budget is part of an integrated funding package that also includes funding for PEO IWS 1.0, PEO IWS 6.0, PEO IWS 7.0 and the Army's Cruise Missile Defense Systems JLENS Product Office.

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

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Joint Integrated Fire Enhancement Joint Integrated Fire Enhancement  FY 2009 Accomplishments: Modeling and Simulation Integration.  FY 2010 Plans: Initial scenario and test planning development and integration and test efforts.  FY 2011 Base Plans: Scenario and test planning development and integration and test activities and end-to-end scenario test predictions.	1.220	2.581	4.579	0.000	4.579
SM 6 Missile Development Missile development  FY 2009 Accomplishments: CTV-1 (Control Test Vehicle) Low Rate Initial Production (LRIP) Milestone C prep and execution; DT/OT Flight test preparation and targets prep.  FY 2010 Plans: GTV-3; DT/OT Flight Test execution at Pacific Missile Range Facility (PMRF); 17 flight tests planned.  FY 2011 Base Plans: OT Flight Test analysis; ACB 12 and CSEDS integration and test; Captive Carry Flight Test; Integrated Fire Control (IFC) integration and test; FOT&E prep	164.543	111.202	54.422	0.000	54.422
Insensitive Munitions (IM)	27.136	10.100	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
SM-6 Insensitive Munitions (IM)  FY 2009 Accomplishments: Perform system design and development activities on the IM designs. Begin testing of the MK72 composite case including ambient and environmental tests and a propellant mitigation capable MK72. Start forward dome demonstrations.  FY 2010 Plans: Perform (3) Slow Cook Off (SCO) tests: (1) strip down demo with MK104/MK72 with dual chemical sensor initiators and (2) with warhead-full up missile. Perform tactical MK72 composite case tests with forward dome functionality, then with forward dome capable cases.					
SM6/AWS & VLS Integration  SM6/AWS & VLS Integration  FY 2009 Accomplishments: AEGIS Weapons System and MK 41 Vertical Launch Integration of SM-6.  FY 2010 Plans: AEGIS Weapons System and MK 41 Vertical Launch Integration of SM-6.  FY 2011 Base Plans: AEGIS Weapons System and MK 41 Vertical Launch Integration of SM-6.	14.022	12.293	2.700	0.000	2.700
SM6 OT&E Support  FY 2011 Base Plans: This effort will complete activities related to the SM-6 OT Flight Testing and analyzing test results to support COTF.	0.000	0.000	8.431	0.000	8.431

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Navy							<b>DATE:</b> February 2010				
<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>			<b>R-1 ITEM NOMENCLATURE</b> PE 0604366N: <i>Standard Missile Improvements</i>			<b>PROJECT</b> 3092: <i>Standard Missile 6 Program</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>	
Defense Acquisition Workforce Development Fund						1.130	0.000	0.000	0.000	0.000	
Defense Acquisition Workforce Development Fund											
<i>FY 2009 Accomplishments:</i> Defense Acquisition Workforce Development Fund											
Accomplishments/Planned Programs Subtotals						208.051	136.176	70.132	0.000	70.132	
<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>
• WPN 2234: <i>Standard Missile</i>	118.471	90.734	285.977	0.000	285.977	496.670	651.591	655.818	637.392	2,498.429	5,435.082
<b>D. Acquisition Strategy</b>											
The Navy awarded a contract for SM-6 development, design, testing, production and support (including spares) to Raytheon using other than full and open competition pursuant to the authority of 10 U.S.C. 2304(c)(1).											
The active seeker guidance section for the SM-6 will be built in a joint production facility with the Advance Medium Range Air to Air Missile (AMRAAM).											
The remainder of the SM-6 AUR components will be produced in existing production facilities that are currently producing other variants of the STANDARD missile.											
No new facilities will be required for SM-6 production, and existing equipment will be used whenever possible.											
No source other than Raytheon is capable of producing a shipboard ERAM missile within the Navy's schedule.											
SM-6 Acquisition Strategy signed by OSD AT&L 3 March 2004.											

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Navy		<b>DATE:</b> February 2010
<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604366N: <i>Standard Missile Improvements</i>	<b>PROJECT</b> 3092: <i>Standard Missile 6 Program</i>
<b><u>E. Performance Metrics</u></b> Accomplishments - SM-6 PABT WSESRB Executive Board - 12 May 09 - ASN (RDA) Gate 6 - 14 May 09 - ASN (RDA) OIPT - 2 Jun 09 - ASN (RDA) DAB - 29 Jul 09 - CTV-1A Flight Test - 28 Aug 09 - LRIP Lot Contract Award - 4 Sep 09 - DT/OT SSSTRP - 7 Dec 09 - DT/OT WSESRB - 16 Dec 09  SM-6 SD&D Contract SPI is currently at 0.978 and CPI at 0.976  Upcoming Milestones - GTV-3 Flight Test - 11 Jan 10 - DT/OT TRR - Feb 10 - OIPT (Cost Certification) - Mar 10 - DAB (Cost Certification) - Mar 10 - DT/OT Flight Tests @ PMRF - Mar/Apr 10 - OT TRR - Aug 10 - OT Flight Tests at PMRF - Sep/Oct 10		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy											DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604366N: Standard Missile Improvements				PROJECT 3092: Standard Missile 6 Program					
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	
Design & Analysis	C/CPIF	Raytheon Tucson, AZ	559.764	73.736	Nov 2009	42.692	Nov 2010	0.000		42.692	0.000	676.192	Continuing	
Design & Analysis	C/CPFF	JHU/APL Laurel MD	31.881	6.041	Jan 2010	2.759	Nov 2010	0.000		2.759	0.000	40.681	Continuing	
Design & Analysis	MIPR	MIT/Lin Lab Leington, MA	0.550	0.000		0.000		0.000		0.000	0.000	0.550	Continuing	
Design & Analysis	WR	NAWC China Lake	2.907	0.300	Nov 2009	0.015	Nov 2010	0.000		0.015	0.000	3.222	Continuing	
Design & Analysis	WR	NSWC Dahlgren	7.735	1.102	Nov 2009	0.403	Nov 2010	0.000		0.403	0.000	9.240	Continuing	
Design & Analysis	WR	NSWC Iindian Head	2.734	0.527	Nov 2009	0.010	Nov 2010	0.000		0.010	0.000	3.271	Continuing	
Design & Analysis	WR	NSWC PHD	7.125	0.471	Nov 2009	0.221	Nov 2010	0.000		0.221	0.000	7.817	Continuing	
Design & Analysis	WR	NSWC Crane	0.891	0.150	Nov 2009	0.150	Nov 2010	0.000		0.150	0.000	1.191	Continuing	
Design & Analysis	MIPR	JSPO Eglin AFB	11.922	10.800	Nov 2009	7.600	Nov 2010	0.000		7.600	0.000	30.322	Continuing	
Design & Analysis	C/CPFF	LOCKHEED Martin Moorestown, NJ	5.794	0.000		0.000		0.000		0.000	0.000	5.794	Continuing	
Design & Analysis	WR	NSWC Corona	12.334	3.604	Nov 2009	0.621	Nov 2010	0.000		0.621	0.000	16.559	Continuing	
Design & Analysis	Reqn	ONR Arlington, VA	5.150	0.000		0.000		0.000		0.000	0.000	5.150	Continuing	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy											DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604366N: Standard Missile Improvements				PROJECT 3092: Standard Missile 6 Program					
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	
Design & Analysis	Reqn	NRL Washington, DC	0.090	0.000		0.000		0.000		0.000	0.000	0.090	Continuing	
Design & Analysis	WR	COMPTVEFOR Norfolk, VA	1.194	0.711	Nov 2009	0.250	Nov 2010	0.000		0.250	0.000	2.155	Continuing	
Design & Analysis	WR	CARDEROCK Philadelphia, PA	2.149	0.200	Nov 2009	0.200	Nov 2010	0.000		0.200	0.000	2.549	Continuing	
Design & Analysis	WR	NSWC Pt Mugu	0.213	0.400	Nov 2009	0.000		0.000		0.000	0.000	0.613	Continuing	
Design & Analysis	C/CPFF	BAE Rockville, MD	5.793	0.653	Nov 2009	0.000		0.000		0.000	0.000	6.446	Continuing	
Design & Analysis	MIPR	ARMY Redstone	0.050	0.000		0.000		0.000		0.000	0.000	0.050	Continuing	
Design & Analysis	WR	NAWCAD Pax River, MD	0.392	0.000		0.000		0.000		0.000	0.000	0.392	Continuing	
Design & Analysis	C/CPFF	CORVID Mooresville, NC	2.050	0.450	Nov 2009	0.450	Nov 2010	0.000		0.450	0.000	2.950	Continuing	
Design & Analysis	C/CPFF	RNB Arlington, VA	0.010	0.000		0.000		0.000		0.000	0.000	0.010	Continuing	
Design & Analysis	WR	SPAWAR Arlington, VA	0.007	0.000		0.000		0.000		0.000	0.000	0.007	Continuing	
Design & Analysis	WR	ARMY Cecom	0.066	0.000		0.000		0.000		0.000	0.000	0.066	Continuing	
Design & Analysis	C/FP	General Dynamics Falls Church, VA	1.660	0.000		0.000		0.000		0.000	0.000	1.660	Continuing	

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2011 Navy</b>											<b>DATE:</b> February 2010		
<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0604366N: <i>Standard Missile Improvements</i>				<b>PROJECT</b> 3092: <i>Standard Missile 6 Program</i>					
<b>Product Development (\$ in Millions)</b>													
				<b>FY 2010</b>		<b>FY 2011 Base</b>		<b>FY 2011 OCO</b>		<b>FY 2011 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Design & Analysis	Various/ Various	VARIOUS (IWS 1A)	43.797	8.916	Nov 2009	3.000	Nov 2010	0.000		3.000	0.000	55.713	Continuing
Design & Analysis	Various/ Various	VARIOUS (VLS)	21.646	2.065	Nov 2009	0.805	Nov 2010	0.000		0.805	0.000	24.516	Continuing
<b>Subtotal</b>			727.904	110.126		59.176		0.000		59.176	0.000	897.206	
<b>Remarks</b>													
<b>Test and Evaluation (\$ in Millions)</b>													
				<b>FY 2010</b>		<b>FY 2011 Base</b>		<b>FY 2011 OCO</b>		<b>FY 2011 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Total Prior Years Cost</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Developmental Test & Evaluation	WR	NSWC PHD	0.200	0.000		0.000		0.000		0.000	0.000	0.200	Continuing
Developmental Test & Evaluation	WR	NSWC WSMR	16.321	1.000	Jan 2010	1.000	Nov 2010	0.000		1.000	0.000	18.321	Continuing
Developmental Test & Evaluation	WR	PMRF Hawaii	3.089	20.000	Jan 2010	0.000		0.000		0.000	0.000	23.089	Continuing
Developmental Test & Evaluation	WR	NAWC Pt Mugu	0.369	0.400	Jan 2010	0.000		0.000		0.000	0.000	0.769	Continuing
Developmental Test & Evaluation	C/CPAF	Raytheon Tucson, AZ	0.000	0.000		5.431	Dec 2010	0.000		5.431	0.000	5.431	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Navy											DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0604366N: Standard Missile Improvements					PROJECT 3092: Standard Missile 6 Program				
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	
Developmental Test & Evaluation	C/CPFF	JHU/APL Laurel, MD	0.000	0.000		1.250	Nov 2010	0.000		1.250	0.000	1.250	Continuing	
Developmental Test & Evaluation	WR	NSWC Corona	0.000	0.000		1.000	Nov 2010	0.000		1.000	0.000	1.000	Continuing	
Developmental Test & Evaluation	WR	COMPTEVFOR Norfolk	0.000	0.000		0.250	Nov 2010	0.000		0.250	0.000	0.250	Continuing	
Developmental Test & Evaluation	WR	NSWC Dahlgren	0.000	0.000		0.500	Nov 2010	0.000		0.500	0.000	0.500	Continuing	
Subtotal			19.979	21.400		9.431		0.000		9.431	0.000	50.810		
Remarks														
Management Services (\$ 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	
Contractor Engineering Services	C/CPAF	Various Various	15.905	4.500	Jan 2010	1.500	Nov 2010	0.000		1.500	0.000	21.905	Continuing	
Travel	Various/ Various	IWS3 Arlington, VA	0.728	0.150	Dec 2009	0.025	Nov 2010	0.000		0.025	0.000	0.903	Continuing	
DAWDF	C/FP	Not Specified Not Specified	1.130	0.000		0.000		0.000		0.000	0.000	1.130	Continuing	

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2011 Navy</b>											<b>DATE:</b> February 2010																																												
<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>					<b>R-1 ITEM NOMENCLATURE</b> PE 0604366N: <i>Standard Missile Improvements</i>					<b>PROJECT</b> 3092: <i>Standard Missile 6 Program</i>																																													
<b>Management Services (\$ in Millions)</b> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <tr> <th colspan="4"></th> <th colspan="2">FY 2010</th> <th colspan="2">FY 2011 Base</th> <th colspan="2">FY 2011 OCO</th> <th colspan="2">FY 2011 Total</th> <th colspan="2"></th> </tr> <tr> <th>Cost Category Item</th> <th>Contract Method &amp; Type</th> <th>Performing Activity &amp; Location</th> <th>Total Prior Years Cost</th> <th>Cost</th> <th>Award Date</th> <th>Cost</th> <th>Award Date</th> <th>Cost</th> <th>Award Date</th> <th>Cost</th> <th>Cost To Complete</th> <th>Total Cost</th> <th>Target Value of Contract</th> </tr> <tr> <td align="right" colspan="3"><b>Subtotal</b></td> <td align="right">17.763</td> <td align="right">4.650</td> <td></td> <td align="right">1.525</td> <td></td> <td align="right">0.000</td> <td></td> <td align="right">1.525</td> <td align="right">0.000</td> <td align="right">23.938</td> <td></td> </tr> </table>																		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	<b>Subtotal</b>			17.763	4.650		1.525		0.000		1.525	0.000	23.938	
				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																																										
<b>Subtotal</b>			17.763	4.650		1.525		0.000		1.525	0.000	23.938																																											
<b>Remarks</b>																																																							
<table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <tr> <th></th> <th>Total Prior Years Cost</th> <th>FY 2010</th> <th>FY 2011 Base</th> <th>FY 2011 OCO</th> <th>FY 2011 Total</th> <th>Cost To Complete</th> <th>Total Cost</th> <th>Target Value of Contract</th> </tr> <tr> <td align="right"><b>Project Cost Totals</b></td> <td align="right">765.646</td> <td align="right">136.176</td> <td align="right">70.132</td> <td align="right">0.000</td> <td align="right">70.132</td> <td align="right">0.000</td> <td align="right">971.954</td> <td></td> </tr> </table>															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>	765.646	136.176	70.132	0.000	70.132	0.000	971.954																									
	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>	765.646	136.176	70.132	0.000	70.132	0.000	971.954																																																
<b>Remarks</b>																																																							

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**Exhibit R-4, RDT&E Schedule Profile: PB 2011 Navy**

**DATE:** February 2010

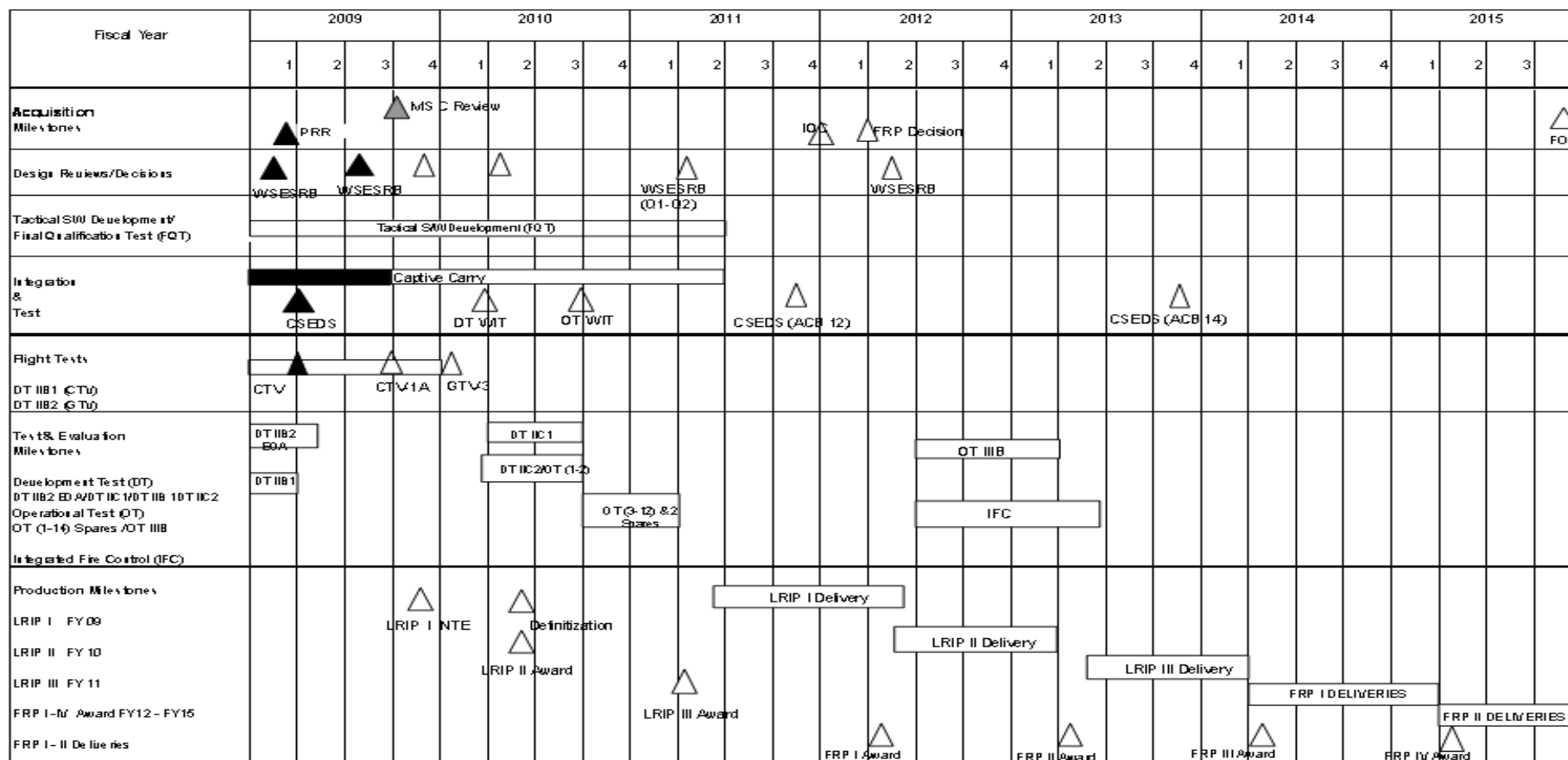
**APPROPRIATION/BUDGET ACTIVITY**

1319: *Research, Development, Test & Evaluation, Navy*  
BA 5: *Development & Demonstration (SDD)*

## R-1 ITEM NOMENCLATURE

PE 0604366N: *Standard Missile Improvements*

## PROJECT

3092: *Standard Missile 6 Program*

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2011 Navy			<b>DATE:</b> February 2010
<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604366N: <i>Standard Missile Improvements</i>	<b>PROJECT</b> 3092: <i>Standard Missile 6 Program</i>	

## Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Preproduction Readiness Review (PRR)	1	2009	1	2009
Milestone C (MS C) Review	3	2009	4	2009
IOC/Deployment	4	2011	1	2012
Full-Rate Production (FRP) Decision	1	2012	2	2012
Full Operational Capability (FOC)	4	2015	4	2015
WSESRB	1	2009	2	2012
Software Design/Final Qualification Test (FQT)	1	2009	2	2011
Captive Carry	1	2009	2	2011
CSEDS (ACB 12) (ACB 14)	1	2009	4	2013
DT WIT, OT WIT	1	2010	4	2010
Flight Test (CTV), (CTV1A), (GTV3)	1	2009	1	2010
Developmental Testing (DT-IIB2) Early Operational Assessment	1	2009	2	2009
Developmental Testing (DT-IIC1)	2	2010	3	2010
Developmental Testing (DT-IIB1)	1	2009	1	2009
Developmental Testing (DT-IIC2/OT-[1&2])	1	2010	3	2010
Operational Testing (OT-[3-12 & 2 Spares])	4	2010	1	2011
OT IIIB	3	2012	1	2013
Integrated Fire Control (IFC)	3	2012	2	2013

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2011 Navy			<b>DATE:</b> February 2010
<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604366N: <i>Standard Missile Improvements</i>	<b>PROJECT</b> 3092: <i>Standard Missile 6 Program</i>	

Event	Start		End	
	Quarter	Year	Quarter	Year
Low-Rate Initial Production I (LRIP I NTE)	4	2009	4	2009
Low-Rate Production I (Definitization)	2	2010	2	2010
Low-Rate Initial Production II (LRIP II Award)	2	2010	2	2010
Low-Rate Initial Production III (LRIP III Award)	1	2011	2	2011
Low-Rate Initial Production I Delivery	2	2011	2	2012
Low-Rate Initial Production II Delivery	2	2012	1	2013
Low-Rate Initial Production III Delivery	2	2013	1	2014
Full Rate Production (FRP) I-IV Award	2	2012	2	2015
Full Rate Production I (FRP) Deliveries	2	2014	1	2015
Full Rate Production II (FRP) Deliveries	2	2015	4	2015

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2011 Navy								<b>DATE:</b> February 2010			
<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>				<b>R-1 ITEM NOMENCLATURE</b> PE 0604366N: <i>Standard Missile Improvements</i>				<b>PROJECT</b> 9999: <i>Congressional Adds</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>
9999: <i>Congressional Adds</i>	2.992	0.797	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.682
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

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

The Extensible Launching System (ExLS) is a potential low cost alternative method to integrate existing certified encanistered missiles/munitions (like Nulka) into VLS equipped platforms. ExLS is a Launcher-in-a-Launcher that requires no VLS canister development. This approach maximizes the USN investment by leveraging All Up Round (AUR) and electronics development, testing, certification and associated qualification costs.

Automated Missile Tracking will evalutate a multitude of Radio Frequency Identification (RFID) passive devices to ensure that safe implementation is possible aboard a US Navy combatant.

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

	FY 2009	FY 2010
Congressional Add: Automated Missile Tracking <i>FY 2010 Plans:</i> N/A	0.000	0.797
Congressional Add: Extensible Launching Systems <i>FY 2009 Accomplishments:</i> N/A	2.992	0.000
Congressional Adds Subtotals	2.992	0.797

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Navy		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>Development &amp; Demonstration (SDD)</i>	R-1 ITEM NOMENCLATURE PE 0604366N: <i>Standard Missile Improvements</i>	PROJECT 9999: <i>Congressional Adds</i>
<b>C. Other Program Funding Summary (\$ in Millions)</b> N/A		
<b>D. Acquisition Strategy</b> N/A		
<b>E. Performance Metrics</b> Congressional Add.		