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EXHIBIT R-2, RDT&E Budget Item Justification						DATE: FEBRUARY 2006		
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		46.807	49.833	46.390	45.552	31.529	32.226	6.580
0167 / 5" Rolling Airframe Missile		11.553	29.657	41.673	40.761	26.663	27.297	1.556
0173 / NATO SEASPARROW		17.934	5.849	4.717	4.791	4.866	4.929	5.024
9081 / PHALANX CIWS SeaRAM		17.320	9.827					
9853/ PHALANX CIWS future concepts		0.000	2.000					
9854 / PHALANX CIWS self-destructing		0.000	2.500					
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>This program element provides funding for the development of systems that fulfill a portion of the third phase of the Ship Self Defense: Engage Hard Kill. Development in this line will focus on hard kill capabilities in which missiles are used to intercept incoming Anti-Ship Cruise Missiles (ASCM).</p> <p>(U) ENGAGEMENT: Missile and system improvements necessary to meet their requirements are being addressed via NATO SEASPARROW Missile System (NSSMS) (0173), 5" Rolling Airframe Missile (RAM) (0167), and Phalanx CIWS SeaRAM (9081). Missile improvements are to include improved kinematic performance plus advanced seeker and low elevation fusing/warhead capability improvements. System improvements include incorporation of Phalanx detection capability into RAM system (SeaRAM).</p>								

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 27)

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE				PROJECT NUMBER AND NAME 0167 / ROLLING AIRFRAME MISSILE			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		11.553	29.657	41.673	40.761	26.663	27.297	1.556
RDT&E Articles Qty								
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>The purpose of this program is to develop a surface-to-air self-defense system utilizing a dual mode, passive Radio Frequency/Infrared 5" Rolling Airframe Missile. The baseline system (Block 0) provides a self-defense capability against active radar-guided anti-ship missiles and was developed on an equal cost share basis with the Government of the Federal Republic of Germany. The RAM Block 1 provides a capability against passive anti-ship missiles, very low altitude missiles, and maneuvering missiles through the incorporation of an infrared all-the-way mode seeker and improved fuse. The RAM Block 1 MOD 3 upgrade program, which provides an additional capability against helicopters, aircraft and surface craft, is a joint requirement of the U.S. and Federal Republic of Germany agreed to in a Memorandum of Agreement (MOA) signed by both parties. Funding is used for development and testing of a Block II upgrade to the RAM. This upgrade will allow RAM to regain battlespace lost to emerging, more maneuverable ASCM threats. This system is designed to counter anti-ship cruise missile raids and other threats to provide for ship survivability with accurate terminal guidance, proven lethality, and no shipboard post launch dependence.</p>								

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B. Accomplishments/Planned Program				
		FY 05	FY 06	FY 07
RAM Testing		0.000	0.734	0.750
RDT&E Articles Quantity				
FY05-07 funds Block 1 FOT&E and government MOD 3 testing and analysis.				
		FY 05	FY 06	FY 07
RAM Block 1 Eng/Interface Support		0.000	0.100	0.700
RDT&E Articles Quantity				
FY06-07 Supports on-going efforts in RAM engineering for emergent issues/obsolescence issues including EDS interface transition.				
		FY 05	FY 06	FY 07
Improvement for Missile Deficiency		1.112	1.166	1.851
RDT&E Articles Quantity				
FY05-07 funding for improvements of emergent RAM missile/launcher deficiencies.				
		FY 05	FY 06	FY 07
Block II		10.294	27.495	38.206
RDT&E Articles Quantity				
FY05-07 funding initiates development of RAM Block II upgrade.				
		FY 05	FY 06	FY 07
Travel		0.147	0.162	0.166
RDT&E Articles Quantity				
Travel				

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<p>C. PROGRAM CHANGE SUMMARY:</p> <table> <tr> <td>Funding:</td> <td>FY 2005</td> <td>FY 2006</td> <td>FY 2007</td> </tr> <tr> <td>FY 2006 Presidents Budget</td> <td>11.790</td> <td>30.112</td> <td>44.367</td> </tr> <tr> <td>FY 2007 Presidents Budget</td> <td>11.553</td> <td>29.657</td> <td>41.673</td> </tr> <tr> <td>Total Adjustments</td> <td>-0.237</td> <td>-0.455</td> <td>-2.694</td> </tr> <tr> <td colspan="4">Summary of Adjustments</td> </tr> <tr> <td>Other General Provisions</td> <td>-0.009</td> <td>-0.455</td> <td>0.000</td> </tr> <tr> <td>Revised rates & inflation indices</td> <td>0.000</td> <td>0.000</td> <td>0.241</td> </tr> <tr> <td>SBIR</td> <td>-0.244</td> <td>0.000</td> <td>0.000</td> </tr> <tr> <td>Programmatic Adjustments</td> <td>0.016</td> <td>0.000</td> <td>-2.935</td> </tr> <tr> <td>Subtotal</td> <td>-0.237</td> <td>-0.455</td> <td>-2.694</td> </tr> </table> <p>Schedule:</p> <p>The Block II upgrade was initiated in FY05.</p> <p>Technical: Not Applicable</p>			Funding:	FY 2005	FY 2006	FY 2007	FY 2006 Presidents Budget	11.790	30.112	44.367	FY 2007 Presidents Budget	11.553	29.657	41.673	Total Adjustments	-0.237	-0.455	-2.694	Summary of Adjustments				Other General Provisions	-0.009	-0.455	0.000	Revised rates & inflation indices	0.000	0.000	0.241	SBIR	-0.244	0.000	0.000	Programmatic Adjustments	0.016	0.000	-2.935	Subtotal	-0.237	-0.455	-2.694
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EXHIBIT R-2a, RDT&E Project Justification								DATE: FEBRUARY 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE			PROJECT NUMBER AND NAME 0167 / ROLLING AIRFRAME MISSILE				
D. OTHER PROGRAM FUNDING SUMMARY:										
<u>Line Item No. & Name</u>	<u>FY2004 and Prior</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
OPN LINE 523800 (RAM)	575.710	26.784	25.657	9.987	8.978	8.601	8.766	8.896	0.000	673.379
WPN LINE 224200 (RAM)	286.851	46.956	85.799	56.874	84.462	79.684	81.848	93.260	487.500	1,303.234
E. ACQUISITION STRATEGY:										
RAM Block 1 MOD 3 Development and Testing FY05; improvements of missile capability deficiency against emergent threat FY2005-2007; Block II development FY05-10.										
F. MAJOR PERFORMERS:										
Raytheon Systems Company - Tucson, AZ - RAM Prime Contractor for Development and Contractor Test and Evaluation. Award Dates: FY05 - 3/05; FY06 - 2/06; FY07 - 11/06										
Naval Air Weapons Center, China Lake - China Lake, CA - Missile ISEA supporting RAM development and testing.										
- Award dates are N/A, since funding will be provided under NAVSEA Seataask to field activity.										
Naval Surface Warfare Center, Port Hueneme - Port Hueneme, CA - Launcher ISEA supporting development, testing, integration and test ranges.										
- Award dates are N/A, since funding will be provided under NAVSEA Seataask to field activity.										

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Exhibit R-3 Cost Analysis (page 1)										DATE: FEBRUARY 2006				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT					PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604756N SHIP SELF DEFENSE					0167 / ROLLING AIRFRAME MISSILE						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY05 Cost	FY05 Award Date	FY06 Cost	FY06 Award Date	FY07 Cost	FY07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPFF	Raytheon Co, Tucson AZ & Louisville, KY	4.571			1.112	03/05	0.540	02/06	1.211	11/06	Continuing	Continuing	
Primary Hardware Dev Spt	WX	NAWC/China Lake						0.626	11/05	0.640	11/06	Continuing	Continuing	
Block 1 MOD 3 Eng/Interface Spt	SS/CPFF	Raytheon Co, San Diego								0.400	11/06	Continuing	Continuing	
Block 1 MOD 3 Interface Spt	CPFF	JHU/APL	0.774					0.100	11/05	0.300	11/06	Continuing	Continuing	
Block II upgrade	SS/CPAF	Raytheon Co, Tucson AZ & Louisville, KY				6.765	03/05	24.083	02/06	31.556	11/06	Continuing	Continuing	
Block II upgrade	WX	CL/NRL/DD				3.229	11/04	3.012	11/05	6.250	11/06	Continuing	Continuing	
Block II upgrade	CPFF	JHU/APL				0.300	11/04	0.400	11/05	0.400	11/06	Continuing	Continuing	
Subtotal Product Development			5.345			11.406		28.761		40.757		Continuing	Continuing	
Development Support														
Software Development														
Integrated Logistics Support														
Configuration Management														
Technical Data														
Studies & Analyses														
GFE														
Award Fees														
Subtotal Support			0.000			0.000		0.000		0.000		0.000	0.000	
Remarks:														

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Exhibit R-3 Cost Analysis (page 2)										DATE: FEBRUARY 2006					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME								
RDT&E, N / BA-5			0604756N SHIP SELF DEFENSE				0167 / ROLLING AIRFRAME MISSILE								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost				FY05 Cost	FY05 Award Date	FY06 Cost	FY06 Award Date	FY07 Cost	FY07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
DT&E/OT&E/FOT&E/CTE	SS/CPAF	Raytheon Co, Tucson AZ & Louisville, KY	2.284										Continuing	Continuing	
FOT&E	WX	China Lake CA, PHD CA	4.674										Continuing	Continuing	
Test Support	WX	China Lake CA, PHD CA							0.734	11/05	0.750	11/06	Continuing	Continuing	
CTE Support	WX	NSWC/PHD CA											Continuing	Continuing	
Miscellaneous		Various	1.421										Continuing	Continuing	
Subtotal T&E			8.379				0.000		0.734		0.750		Continuing	Continuing	
Contractor Engineering Support															
Government Engineering Support															
Program Management Support															
Travel			0.156				0.147	10/04	0.162	10/05	0.166	10/06	Continuing	Continuing	
Transportation															
SBIR Assessment															
Subtotal Management			0.156				0.147		0.162		0.166		Continuing	Continuing	
Total Cost			13.880				11.553		29.657		41.673		Continuing	Continuing	

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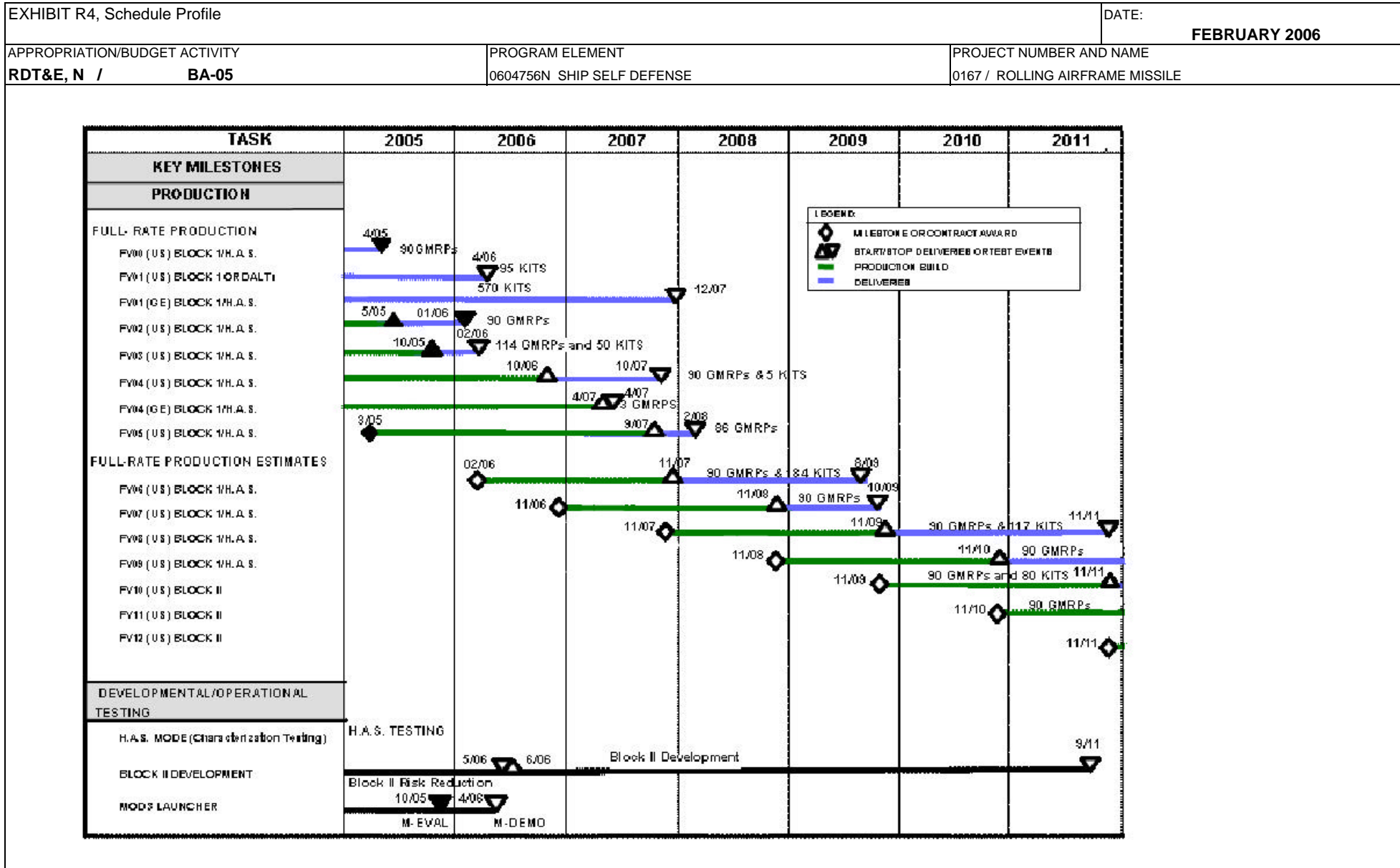
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Exhibit R-3, Project Cost Analysis
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Exhibit R-4, Schedule Profile
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Exhibit R-4a, Schedule Detail						DATE: FEBRUARY 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N BA-5		PROGRAM ELEMENT 0604756N SHIP SELF DEFENSE			PROJECT NUMBER AND NAME 0167 / ROLLING AIRFRAME MISSILE			
Schedule Profile		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
	FY00 Full Rate Production (FRP) Deliveries	1Q-3Q						
	FY02 FRP Deliveries	3Q-4Q	1Q-2Q					
	FY03 FRP Deliveries		1Q-2Q					
	FY04 FRP Deliveries			1Q-4Q	1Q			
	FY05 FRP Contract Award	2Q						
	FY05 FRP Deliveries			4Q	1Q-2Q			
	FY06 FRP Contract Award		2Q					
	FY06 FRP Deliveries				1Q-4Q	1Q		
	FY07 FRP Contract Award			1Q				
	FY07 FRP Deliveries					1Q-4Q	1Q	
	FY08 FRP Contract Award				1Q			
	FY08 FRP Deliveries						1Q-4Q	1Q
	FY09 FRP Contract Award					1Q		
	FY09 FRP Deliveries							1Q-4Q
	FY10 FRP Contract Award						1Q	
	FY10 FRP Deliveries							
	FY11 FRP Contract Award							1Q
	FY11 FRP Deliveries							
	M-Eval/M-Demo	1Q-4Q	1Q-3Q					
	Block II Development	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
	Block II DT/OT							1Q-4Q

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE-ENGAGE			PROJECT NUMBER AND NAME 9081 / PHALANX CIWS SEA RAM			
COST (\$ in Millions)		FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost		17.320	9.827	0.000	0.000	0.000	0.000	0.000
RDT&E Articles Qty								
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The purpose of this ECP effort is to combine the PHALANX CIWS radar with the Rolling Airframe Missile (RAM) Block 1 Missile System. The overall SeaRAM strategy is to field a low-risk-development cost system utilizing the proven capabilities and infrastructure of the RAM and PHALANX CIWS systems. This U.S. Navy SeaRAM development leverages the successful demonstration by the United Kingdom of an industry prototype system aboard the HMS York. The SeaRAM ORDALT ECP will provide improved detection and performance capabilities in a stand-alone self-defense system that will defeat the near-term, stressing Anti-Ship Cruise Missile (ASCM) threats. FY05-06 funding completes development and testing of the ECP.								

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Exhibit R-2a, RDTEEN Project Justification
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B. Accomplishments/Planned Program																			
<table border="1" style="width: 100%; border-collapse: collapse;"><thead><tr><th style="width: 30%;"></th><th style="width: 10%;"></th><th style="width: 15%;">FY 05</th><th style="width: 15%;">FY 06</th><th style="width: 15%;">FY 07</th></tr></thead><tbody><tr><td>SeaRAM Development/Phalanx Improvements</td><td></td><td style="text-align: center;">15.722</td><td style="text-align: center;">1.851</td><td style="text-align: center;">0.000</td></tr><tr><td>RDT&E Articles Quantity</td><td></td><td></td><td></td><td></td></tr></tbody></table>							FY 05	FY 06	FY 07	SeaRAM Development/Phalanx Improvements		15.722	1.851	0.000	RDT&E Articles Quantity				
		FY 05	FY 06	FY 07															
SeaRAM Development/Phalanx Improvements		15.722	1.851	0.000															
RDT&E Articles Quantity																			
FY05-06 funding used to continue development of the SeaRAM ECP for the RAM MK31 Guided Missile Weapon System.																			
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		FY 05	FY 06	FY 07															
SeaRAM Testing		1.568	7.876	0.000															
RDT&E Articles Quantity																			
FY05-06 Contractor Test and Evaluation, analysis, and planning for DT/OT.																			
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<p>D. OTHER PROGRAM FUNDING SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Line Item No. & Name</th> <th style="text-align: right; border-bottom: 1px solid black;">FY2004 and Prior</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2005</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2006</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2007</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2008</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2009</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2010</th> <th style="text-align: right; border-bottom: 1px solid black;">FY 2011</th> <th style="text-align: right; border-bottom: 1px solid black;">To Complete</th> <th style="text-align: right; border-bottom: 1px solid black;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN LINE 523800 (RAM)</td> <td style="text-align: right;">575.710</td> <td style="text-align: right;">26.784</td> <td style="text-align: right;">25.657</td> <td style="text-align: right;">9.987</td> <td style="text-align: right;">8.978</td> <td style="text-align: right;">8.601</td> <td style="text-align: right;">8.766</td> <td style="text-align: right;">8.896</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">673.379</td> </tr> <tr> <td>WPN LINE 224200 (RAM)</td> <td style="text-align: right;">286.851</td> <td style="text-align: right;">46.956</td> <td style="text-align: right;">85.799</td> <td style="text-align: right;">56.874</td> <td style="text-align: right;">84.462</td> <td style="text-align: right;">79.684</td> <td style="text-align: right;">81.848</td> <td style="text-align: right;">93.260</td> <td style="text-align: right;">487.500</td> <td style="text-align: right;">1,303.234</td> </tr> </tbody> </table> <p>E. ACQUISITION STRATEGY:</p> <p style="margin-left: 20px;">SeaRAM Development and Testing</p> <p>F. MAJOR PERFORMERS:</p> <p style="margin-left: 20px;">Raytheon Systems Company - Tucson, AZ - SeaRAM Prime Contractor for Development. Award Date: FY05 -3/05; FY06 - 2/06</p> <p style="margin-left: 20px;">Naval Air Weapons Center, China Lake - China Lake, CA - Supporting SeaRAM development and testing.</p> <p style="margin-left: 20px;">- Award dates are N/A, since funding will be provided under NAVSEA Seatask to field activity.</p> <p style="margin-left: 20px;">Naval Surface Warfare Center, Port Hueneme - Port Hueneme, CA - Supporting development, testing, integration and test ranges.</p> <p style="margin-left: 20px;">- Award dates are N/A, since funding will be provided under NAVSEA Seatask to field activity.</p>											Line Item No. & Name	FY2004 and Prior	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost	OPN LINE 523800 (RAM)	575.710	26.784	25.657	9.987	8.978	8.601	8.766	8.896	0.000	673.379	WPN LINE 224200 (RAM)	286.851	46.956	85.799	56.874	84.462	79.684	81.848	93.260	487.500	1,303.234
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R-1 SHOPPING LIST - Item No. 127

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)											DATE: FEBRUARY 2006			
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME								
RDT&E, N / BA-5		0604756N SHIP SELF DEFENSE (ENGAGE: HARD KILL)				9081 / PHALANX CIWS SEARAM								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY05 Cost	FY 05 Award Date	FY06 Cost	FY 06 Award Date	FY07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	SS/CPFF	Raytheon Co, Tucson AZ & Louisville, KY	3.840			14.340	3/05	0.851	2/06	0.000			19.031	
Ancillary Hardware Development														
Aircraft Integration														
SeaRAM Engineering		NSWC DD/PHD/LOU				0.382	11/04	0.500	11/05	0.000			0.882	
Ship Suitability														
Systems Engineering	FFP	EG&G				0.500	11/04	0.500	11/05	0.000			1.000	
Training Development														
Studies/Analysis	CPFF	APL				0.500	11/04			0.000			0.500	
Tooling														
GFE														
Award Fees														
Subtotal Product Development			3.840			15.722		1.851		0.000			21.413	
Remarks:														
Development Support														
Software Development														
Integrated Logistics Support														
Configuration Management														
Technical Data														
Studies & Analyses														
GFE														
Award Fees														
Subtotal Support			0.000			0.000		0.000		0.000		0.000	0.000	
Remarks:														

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Exhibit R-3 Cost Analysis (page 2)											DATE: FEBRUARY 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-25		PROGRAM ELEMENT 0604756N SHIP SELF DEFENSE (ENGAGE: HARD KILL)				PROJECT NUMBER AND NAME 9081 / PHALANX CIWS SEARAM								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost			FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Contractor Test & Evaluation	SS/CPFF	Raytheon, Tucson AZ & Louisville, KY				0.612	3/05	1.404	2/06				2.016	
CT,DT&E, OT	WX	NSWC/PHD& China Lake				0.956	11/04	6.472	11/05				7.428	
Live Fire Test & Evaluation														
Test Assets														
Tooling														
GFE														
Award Fees														
Subtotal T&E			0.000			1.568		7.876		0.000			9.444	
Remarks:														
Contractor Engineering Support														
Government Engineering Support														
Program Management Support														
Travel						0.030	10/04	0.100	10/05				0.130	
Transportation														
SBIR Assessment														
Subtotal Management			0.000			0.030		0.100		0.000			0.130	
Remarks:														
Total Cost			3.840			17.320		9.827		0.000			30.987	
Remarks:														

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EXHIBIT R4, Schedule Profile

DATE:

FEBRUARY 2006

	APPROPRIATION/BUDGET ACTIVITY
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[illegible]

	PROJECT NUMBER AND NAME
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RDT&E, N / BA-5

0604756N SHIP SELF DEFENSE (ENGAGE: HARD KILL)

9081 / PHALANX CIWS SEARAM

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R-1 SHOPPING LIST - Item No.

127

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE:
							February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME		
RDTE, N / BA-5	SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N				NATO SEASPARROW/0173		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	17.934	5.849	4.717	4.791	4.866	4.929	5.024
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

This project encompasses two (2) primary efforts to enhance ship self defense:

1. (U) EVOLVED SEASPARROW MISSILE (ESSM): A cooperative effort among 10 NATO SEASPARROW Nations, including the U.S., to improve the capability of the SEASPARROW Missile to counter the low altitude, highly maneuverable Anti-Ship Cruise Missile threat. The program consists of evolving the SEASPARROW Missile through the development of a new rocket motor with tail control; thrust vector control and ordnance (warhead) upgrade; modifications to the MK 41 VLS to fire from a single cell with 4 ESSM (QuadPack); and modifications to the NATO SEASPARROW Missile System (NSSMS) to provide ESSM capability.

2. (U) NATO SEASPARROW - MK 91 Rearchitecture/SDSMS: The MK 91 Rearchitecture Program integrates NSSMS into the Ship Self Defense System (SSDS) Architecture to provide ship missile defense utilizing an open architected system. This effort consists of combining the Firing Officer Console and Radar Set Console functionality into a single Advanced Display System Console (AN/UYQ-70); modifying the Signal Data Processor and eliminating the MK 157 Computer Signal Data Converter and System Evaluation and Trainer, and redistributing this functionality within SSDS compatible microprocessors. This approach will eliminate the analog, point-to-point architecture, limited input-output channel and computer processing reserve deficiencies resident in the existing MK 57 NSSMS, and is required for ESSM. This modification also allows for full exploitation of the capabilities of the future ESSM and provides significant reductions (over 50%) in NSSMS cost of ownership and manning requirements.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N	PROJECT NUMBER AND NAME NATO SEASPARROW/0173	
B. Accomplishments/Planned Program			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	2.109	3.165	3.239
RDT&E Articles Quantity			
<p>Continued AEGIS S Band development. Conducted U.S. Unique DT-IIC/OT-IIC firings on SDTS and TECHEVAL/OPEVAL (DT-IIE/OT-IID) on AEGIS platforms. Correct engineering deficiencies identified as a result of TECHEVAL / OPEVAL. Provides funding for the ESSM S2S/HOH firings and firings associated with DT/OT on Aegis/DDG platforms.</p> <p>This provides for the U.S. share of Cooperative efforts associated with ESSM engineering studies and other development Initiatives.</p>			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.707	1.200	0.500
RDT&E Articles Quantity			
<p>Development: Utilizing existing technology and the Mk 29 Trainable Launcher, develop a program for the adaptation and U.S. certification of the launching system and make available for U.S. Navy deployment. Provide for the development to accommodate Evolved SEASPARROW Missiles which will provide full dimensional protection against the evolutionary threat of ASCMs on non-AEGIS platforms. Conduct restrained firings and DT/OT on the Self Defense Test ship in FY 05. Correct engineering deficiencies identified as a result of DT/OT.</p>			
	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	7.337	0.000	0.000
RDT&E Articles Quantity			
<p>FY05 Introduced Test and Evaluation of the ESSM Baseline Missile software for CV/CVNs. The CV/CVN/LHD Classes will see introduction of ESSM in FY 05 with the MK29/ESSM Launcher. RNSSMS/SSDS MK 2. FOT &E will be required to validate Combat system effectiveness.</p>			

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / 5	PROGRAM ELEMENT NUMBER AND NAME SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N	PROJECT NUMBER AND NAME NATO SEASPARROW/0173

B. Accomplishments/Planned Program (Cont.)

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	7.781	0.750	0.000
RDT&E Articles Quantity			

FY05-06 SSDS Post Integration: Building upon the current NSSMS MK 57 Mod 4 - 9 upgrade (Re-architected NSSMS) that provided an initial capability with SSDS MK 2 in support of the Maritime Force Protection (MFP) program, evolve the fire control system component to implement the additional organic capabilities required by the MFP Performance & Compatibility Requirements (P&CR) for CVNs. This effort will maintain compatibility with RNSSMS and evolving Next Generation Ship Defense post SSDS Mk 2, fully exploit RNSSMS performance capabilities, and develop RNSSMS capabilities consistent with the full-approved Integration Specifications. It will also support the evolutionary weapons and control system development to counter future evolving threats. Efforts scheduled for completion in FY 06.

	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	0.000	0.734	0.978
RDT&E Articles Quantity			

FY06-07 Provides funding for the Combat System Integration Technical Direction Agent (TDA) who will provide engineering support for combat system performance and risk mitigation. The TDA will leverage it's technical expertise & leadership to cover a broad range of activities such as defining near-term and future requirements for current systems and future upgrades, maintain system performance models to evaluate system improvements, threat changes and operational environment conditions, verify models and simulations to promote program success through application of rigorous and disciplined systems engineering principles and practices in a consistent manner across system elements over the program life cycle, make prudent use of authoritative technical expertise for advice and independent review, identify a range of technically acceptable alternatives to resolve engineering issues, assist in development of T&E planning, and continue to maintain NSPO essential research and engineering capabilities and corporate memory.

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EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006																																														
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification						DATE:	
						February 2006	
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME			PROJECT NUMBER AND NAME		
RDT&E, N / BA-5		SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N			NATO SEASPARROW/0173		

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
WPN BA-2 Other Missiles, Evolved SEASPARROW (ESSM) (230700)	79.5	98.5	99.6	102.3	105.4	34.8	15.4
OPN BA-4 NATO SEASPARROW (523700, 523705)	24.9	37.9	4.6	28.7	12.3	12.7	12.7
Related RDT&E:							
PE 0603609N (Conventional Munitions)							
PE 0604307N (AEGIS Combat System Engineering)							
PE 0604755N (K2178 Quick Reaction Combat Capability (QRCC))							

E. ACQUISITION STRATEGY:

ESSM is a directed sole source contract to Raytheon Missile Systems Company for LRIP, and upon successful completion of TECHEVAL/OPEVAL . Entered into Full Rate Production FY 04. The MK 29 ESSM Launcher Upgrade and RAERC?SSDS Intergration effort was a directed sole source contract to Raytheon Company (IDS).

F. MAJOR PERFORMERS:

1. Raytheon Missile Co. Tuscon ESSM Testing/ Engineering support
2. Raytheon Company (IDS) Portsmouth R.I. - MK 29 GMLS/ESSM Dev 2/04 -2/05
3. Naval Air Weapons Center China Lake, Point Mugu CA - Missile TDA supporting Development/Testing Funding under SEATASKs to field activities , 1/06
4. Naval Surface Warfare Center - Port Hueneme CA., Dahlgren Va - provide ISEA support to ESSM in development testing. Dahlgren - Performs safety analysis/Development testing. Funding issued under SEATASKs to field activities, 1/06

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)										DATE: February 2006				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N / BA-5			SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N				NATO SEASPARROW/0173							
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY07 Cost	FY 07 Award Date			Cost to Complete	Total Cost	Target Value of Contract
ESSM-Primary Hardware Development	LC/CPAF	RAYTHEON	141.230	2.126	11/04							Continuing	Continuing	
	RX	TDW	3.746										3.746	3.746
Ancillary Hardware Development	CPAF	LOCKHEED/UDLP	46.706										46.706	46.706
Systems Engineering	VARIOUS	VARIOUS	22.622										22.622	22.622
MK 29/ESSM Launcher Upgrade	LC/CPAF	RAYTHEON SYS	7.239	0.707	01/05	0.575	01/06					Continuing	Continuing	
NATO-Primary Hdwe Dev	CPFF	RAYTHEON SYS	30.627									0.000	30.627	30.627
Software development / Test	CPFF	RAYTHEON SYS	3.331	1.650	12/04	1.289	01/06	1.438	12/06			Continuing	Continuing	
Systems Engineering/Firing Spt		VARIOUS	5.306										5.306	
SSDS Integration	CPFF	RAYTHEON SYS	4.545	7.690	12/04	0.750	01/06					Continuing	Continuing	
Subtotal Product Development			265.352	12.173		2.614		1.438				Continuing	Continuing	
Remarks:														
ESSM / NATO														
Integrated Logistics Support	WR	NSWC PHD	3.568									0.000	3.568	
Engr Support	WX	VARIOUS	3.895	0.312	10/04							0.000	3.895	
MK 29/ESSM Launcher Upgrade	WX	Dahlgren/PHD	0.375									0.000	0.375	
Engr Support	WX	VARIOUS	0.195									Continuing	Continuing	
NATO-MK 91/SSDS Integ	WX	Dahlgren/PHD	0.834									0.000	0.834	
Engr Support	WX	VARIOUS	6.044	0.320	10/04							0.000	6.364	
Engr Support	WX	NSWC PHD	0.081	0.154	10/04	0.145	01/06	0.185	10/06			Continuing	Continuing	
Subtotal Support			14.992	0.786		0.145		0.185				Continuing	Continuing	
Remarks:														

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 23 of 27)

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Exhibit R-3 Cost Analysis (page 2)											DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N			PROJECT NUMBER AND NAME NATO SEASPARROW/0173								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date			Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC CL	13.653										13.653	
OPEVAL/TECHEVAL/Test Firings	WR	VARIOUS(Corona, IHD,Dalhgren,NSWC PHD)	5.884	2.799	11/04	1.696	01/06	1.707	12/06			0.000	12.086	
Developmental Test & Evaluation	CPFF	APL	0.941	0.523	12/04	0.279	01/06	0.267	12/06			Continuing	Continuing	
Developmental Test & Evaluation	WR	DALHGREN	0.200	0.218	12/04							Continuing	Continuing	
Subtotal T&E			20.678	3.540		1.975		1.974				Continuing	Continuing	
Remarks:														
ESSM-ENGR SPT	WX	VARIOUS	4.663	0.250	VARIOUS							Continuing	Continuing	
ESSM-PM SPT	WX	VARIOUS	0.498									Continuing	Continuing	
ESSM-LABOR	PD/WX		6.713	0.860	10/04	0.865	01/06	0.870	10/06			Continuing	Continuing	
ESSM - TRAVEL	PD/WX		1.797	0.225	10/04	0.180	01/06	0.180	10/06			Continuing	Continuing	
ESSM- MISC	VARIOUS	VARIOUS	2.045	0.020	10/04							Continuing	Continuing	
NATO TRAVEL/MISC	PD/WX	VARIOUS	1.611	0.080	10/04	0.070	01/06	0.070	10/06			Continuing	Continuing	
Subtotal Management			17.327	1.435		1.115		1.120				Continuing	Continuing	
Total Cost			318.349	17.934		5.849		4.717				Continuing	Continuing	
Remarks:														

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EXHIBIT R4, Schedule Profile						DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT NUMBER AND NAME SHIP SELF DEFENSE(Engage: Hard Kill) 0604756N			PROJECT NUMBER AND NAME NATO SEASPARROW/0173	
Activity Name	FY05	FY06	FY07	FY08	FY09	FY10	FY11
Production / In-Service • Major Milestone	3/05 △ Depot Repair CA						
• First of Class Firings	3/05 △ CA 05 △ 3/05 △ TBD	NE DC IV/APAR 5/06 △ US FOT&E	NO 10/06 △ AT FFG	Mid FY07 △ US CV/CVN US CG	GR - Approx CY07 TK - To Be Determined SP - CY08 US - DD(X) Approx FY12 US - CVN 21 To Be Determined		
Production MOU							
<u>Buy Yr</u> FY00							
FY01							
FY02	3/05 △						
FY03/04	4/05 △	Delivery	10/06 △				
FY05/06			11/06 △	Delivery	10/08 △		
FY07/08		11/06 △	CA	11/08 △	Delivery	10/10 △	
FY09/10				11/08 △	CA	11/10 △	Delivery
Expiration of Production MOU							
Third Party Sales Production							
<u>Buy Yr</u> FY04	10/05 △	12/05 △	Delivery	5/06 △			

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CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE:	
						February 2006	
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT				PROJECT NUMBER AND NAME		
RDT&E, N / BA-5	SHIP SELF DEFENSE (Engage: Hard Kill) 0604756N				NATO SEASPARROW/0173 (ESSM)		
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Functional Configuration Audit (FCA)							
MK 29 /ESSM Launcher SDTS	1Q-2Q		1Q				
DT-ILC/OT-ILC Aegis		2Q					
ESSM S2S/HOH Firingd			1Q				
Test Firings			1Q				
MK 29 /ESSM Launcher CVN Test Event			2Q				
MK 29 /ESSM Launcher SDTS				1Q			
AEGIS CG DT/OT				2Q	2Q		
SDTS Firings						2Q	
DDX Test Support							2Q
Low-Rate Initial Production I Delivery							
Low-Rate Initail Production II Delivery	1Q						
IOC							
Full Rate Production (FRP) Decision							
Full Rate Production Start							
First Deployment							
FY05 PROCUREMENT	1Q						
FY06 PROCUREMENT		1Q					
FY 03/04 DELIVERY		3Q-4Q					
FY 07 PROCUREMENT			1Q				
FY 05 DELIVERY			1Q-4Q				
FY 08 PROCUREMENT				1Q			
FY06 DELIVERY				1Q-4Q			
FY07 DELVERY					1Q-4Q		
FR 08 DELIVERY						1Q	

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Exhibit R-4a, Schedule Profile
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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006																
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604756N SHIP SELF DEFENSE	PROJECT NUMBER AND NAME Congressional Adds: various																	
CONGRESSIONAL PLUS-UPS:\$4.500																			
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;"></td><td style="width: 10%; text-align: center;">FY 06</td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 30%;"></td></tr><tr><td>9853N</td><td></td><td></td><td></td><td></td></tr><tr><td>PHALANX CIWS future concepts</td><td style="text-align: center;">2.000</td><td></td><td></td><td></td></tr></table> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;">FY06 Congressional Add provides funding for Phalanx CIWS future concepts studies.</div>						FY 06				9853N					PHALANX CIWS future concepts	2.000			
	FY 06																		
9853N																			
PHALANX CIWS future concepts	2.000																		
<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 30%;"></td><td style="width: 10%; text-align: center;">FY 06</td><td style="width: 15%;"></td><td style="width: 15%;"></td><td style="width: 30%;"></td></tr><tr><td>9854N</td><td></td><td></td><td></td><td></td></tr><tr><td>PHALANX CIWS self-destructing</td><td style="text-align: center;">2.500</td><td></td><td></td><td></td></tr></table> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;">FY06 Congressional Add provides funding for Phalanx CIWS self-destructing ammunition development.</div>						FY 06				9854N					PHALANX CIWS self-destructing	2.500			
	FY 06																		
9854N																			
PHALANX CIWS self-destructing	2.500																		

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Exhibit R-2a, RDTEN Project Justification
(Exhibit R-2a, page 27 of 27)