

# UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification					DATE: <b>February 2007</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY / BA-5</b>			R-1 ITEM NOMENCLATURE SSN-21 Development/0604561N					
COST (\$ in Millions)	FY 2006	FY 2007	FY 2008	FY 2009	FY2010	FY2011	FY2012	FY2013
Total PE Cost	2.878	3.245	2.457	2.538	2.708	2.770	2.823	2.875
SSN-21 Developments/1946	2.878	3.245	2.457	2.538	2.708	2.770	2.823	2.875

**Defense Emergency Response funds (DERF) Funds:**

**Not Applicable**

**A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:**

**1946 SSN-21 Developments:** The SEAWOLF Submarine is a multi-mission ship that provides unprecedented performance capabilities. It is the quietest, most heavily-armed attack submarine the Navy has ever built. The design of the SEAWOLF is based on an extensive research and development program and incorporates technological advancements to provide: order of magnitude improvement in ship quieting; improved acoustic sensors; more capable combat systems; greater weapon capacity and capability; quieter launch; weapon launch at high ship speed; advanced reactor; improved performance machinery program; an advanced propulsor; increased operating depth; improved ship control; and enhanced survivability. Beginning in FY05, SEAFAC Range Upgrade funding is included in 1946 (FY05- \$1.5M, FY06 - \$2.0M, FY07 - \$1.5M).

**SEAFAC Range Upgrade:** The SEAWOLF Class submarine is a multi-mission ship that provides numerous unprecedented submarine performance capabilities such as more capable combat systems, greater weapons capacity and capability, advanced reactor, improved acoustic sensors, increased operating depth, improved ship control, and enhanced survivability. Among these capabilities is an unprecedented acoustic stealth performance as a result of an order of magnitude improvement in ship quieting.

Maintaining the acoustic stealth advantage and upholding the effectiveness and survivability of the SEAWOLF and future class submarines require that radiated acoustic signatures are periodically measured and understood. To this end, Southeast Alaska Acoustic Measurement Facility (SEAFAC) range will be upgraded with new underwater acoustic measurement systems capable of measuring new generation quiet-class submarines stationed in the Pacific fleet. The SEAFAC Range Upgrade Program comprises of a multi-year effort to design, develop, procure, install and test High Gain Measurement Systems (HGMS) in the Static and Underway Sites at SEAFAC. Efforts to upgrade the Static Site began in FY03 and efforts to upgrade the Underway Site began in FY04. (Note: Please refer to RDT&E,N PE0604561N/1946 R2 and OPN BLI 094200/H1RC08 budget exhibits for associated SEAFAC Upgrade Program funding.)

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Exhibit R-2, RDTEN Budget Item Justification

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APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments	PROJECT NUMBER AND NAME 1946 / SSN-21 Developments
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**B. PROGRAM CHANGE SUMMARY:**

Funding:	FY 2006	FY 2007	FY 2008	FY 2009
FY07 Pres Controls	2.878	3.260	2.708	2.756
FY08 Pres Controls	2.878	3.245	2.457	2.538
Total Adjustments	0.000	-0.015	-0.251	-0.218

Summary of Adjustments

Congressional Increase	0.002	0.000	0.000	0.000
Program Reductions	-0.002	-0.015	-0.266	-0.258
Program Increases	0.000	0.000	0.015	0.040
Subtotal	0.000	-0.015	-0.251	-0.218

Schedule:

Not applicable.

Technical:

Not applicable.

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Exhibit R-2, RDTE Budget Item Justification

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EXHIBIT R-2a, RDT&E Project Justification			DATE: <b>February 2007</b>																															
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N / BA-5</b>	PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments	PROJECT NUMBER AND NAME 1946 / SSN-21 Developments																																
<p><b>A. Mission Description and Budget Item Justification: See page 1 of R-2.</b></p> <p><b>B. Accomplishments/Planned Program</b></p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 10%;">FY06</th> <th style="width: 10%;">FY07</th> <th style="width: 10%;">FY08</th> <th style="width: 10%;">FY09</th> </tr> </thead> <tbody> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: center;">0.572</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>RDT&amp;E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><u>FY-06:</u> Conduct follow-on OPEVAL testing for the class.</p> </div> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 10%;">FY06</th> <th style="width: 10%;">FY07</th> <th style="width: 10%;">FY08</th> <th style="width: 10%;">FY09</th> </tr> </thead> <tbody> <tr> <td>Accomplishments/Effort/Subtotal Cost</td> <td style="text-align: center;">2.000</td> <td style="text-align: center;">1.500</td> <td style="text-align: center;">0.000</td> <td style="text-align: center;">0.000</td> </tr> <tr> <td>RDT&amp;E Articles Quantity</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><u>FY-06, FY-07 Plan:</u> System test and validation, and corrective action efforts are planned for the SEAFAC Static Site. System development, engineering, and integration efforts are planned for the SEAFAC Underway Site.</p> <p>Note: Please refer to OPN BLI 094200/H1RC08 P5 budget exhibits for associated SEAFAC Upgrade Program funding.</p> </div>						FY06	FY07	FY08	FY09	Accomplishments/Effort/Subtotal Cost	0.572	0.000	0.000	0.000	RDT&E Articles Quantity						FY06	FY07	FY08	FY09	Accomplishments/Effort/Subtotal Cost	2.000	1.500	0.000	0.000	RDT&E Articles Quantity				
	FY06	FY07	FY08	FY09																														
Accomplishments/Effort/Subtotal Cost	0.572	0.000	0.000	0.000																														
RDT&E Articles Quantity																																		
	FY06	FY07	FY08	FY09																														
Accomplishments/Effort/Subtotal Cost	2.000	1.500	0.000	0.000																														
RDT&E Articles Quantity																																		

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**B. Accomplishments/Planned Program (Cont.)**

	FY06	FY07	FY08	FY09
Accomplishments/Effort/Subtotal Cost	0.239	0.663	0.671	0.000
RDT&E Articles Quantity				

FY-06, FY-07, FY-08 Plan: Re-engineering and correction of Ship Control System (SCS) and acoustic sail deficiencies.

	FY06	FY07	FY08	FY09
Accomplishments/Effort/Subtotal Cost	0.067	0.060	0.000	0.000
RDT&E Articles Quantity				

FY-06, FY-07, Plan: Re-engineering and correction of interfaces to the External Hydraulic Pump.

	FY06	FY07	FY08	FY09
Accomplishments/Effort/Subtotal Cost	0.000	1.022	1.786	2.538
RDT&E Articles Quantity				

FY-07, FY-08- FY09 plan: Technology Insertion for the SSN23.

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<b>RDT&amp;E, N / BA-5</b>	0604561N / SSN-21 Developments	1946 / SSN-21 Developments

**C. OTHER PROGRAM FUNDING SUMMARY:**

<u>Line Item No. &amp; Name</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
(U) SCN #201200	6.194	0.000	0.000	0.000	0.000	0.000	0.000		8086.180
(U) MILCON P-398									27.300
(U) Related RDT&E:									
(U) P.E. 0603570N (Advanced Nuclear Power Systems)									
(U) P.E. 0604524N (Submarine Combat Systems)									
(U) P.E. 0604567N (Ship Contract Design/Live Fire T&E)									

**D. ACQUISITION STRATEGY:**

- (U) Delivered three SEAWOLF submarines under cost cap.
- (U) To continue to correct SEAWOLF Acoustics deficiencies.
- (U) To increase commonality with Virginia Class Submarines.
- (U) Continue to review all areas for possible cost reductions.

**E. MAJOR PERFORMERS:**

Naval Surface Warfare Center (NSWC) Carderock, MD - FY06 - \$2.095M, FY07 \$3.005 M (Acoustics, NPE, Shock, Test & Evaluation, SEAFAC and Tech Insertion), FY08 \$1.968M (Acoustics and Tech Insertion, and FY09 \$2.388M (Acoustics and Tech Insertion)  
 Contract awards were January 2006 for FY06 and November 2006 for FY07. Contract awards scheduled for October 2008 (FY08) and October 2009 (FY09).  
 Naval Undersea Warfare Center (NUWC) Newport RI - FY06 - \$302K (Test and Evaluation). Contract was awarded on January 2006 for FY06.

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Exhibit R-3 Cost Analysis (page 1)										DATE: <b>February 2007</b>				
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<b>RDT&amp;E, N / BA-5</b>			0604561N / SSN-21 Developments			1946 / SSN-21 Developments								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development		NSWC Carderock/Variou	1.500	2.000		1.500		0.000					5.000	
Ancillary Hardware Development														
Systems Engineering	SS/CPFF	General Dynam Groton C	369.671	0.000	Various	0.000	Various	0.000	Various	0.000	Various	0.200	369.871	369.871
Systems Engineering	SS/CPFF	NGNN Newport News VA	119.530	0.000	Various	0.000	Various	0.000	Various	0.000	Various	0.200	119.730	119.730
Systems Engineering	WR/RC	NSWC Carderock, MD	320.331	0.095	Various	1.505	Various	1.968	Various	2.388	Various	10.176	336.463	
Systems Engineering	WR/RC	NUWC Newport, RI	50.932	0.302	Various	0.000	Various	0.000	Various	0.000	Various	0.000	51.234	
Systems Engineering	Various	Various	470.794	0.110	Various	0.110	Various	0.110	Various	0.110	Various	0.440	471.674	
Licenses													0.000	
Tooling													0.000	
GFE													0.000	
Award Fees													0.000	
Subtotal Product Development			1,332.758	2.507		3.115		2.078		2.498		11.016	1,353.972	
Remarks:														
Development Support													0.000	
Software Development													0.000	
Training Development													0.000	
Integrated Logistics Support													0.000	
Configuration Management													0.000	
Technical Data													0.000	
GFE													0.000	
Award Fees													0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000	0.000	
Remarks:														

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Exhibit R-3, Project Cost Analysis

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<b>RDT&amp;E, N / BA-5</b>			0604561N / SSN-21 Developments			1946 / SSN-21 Developments								
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	FY 08 Cost	FY 08 Award Date	FY 09 Cost	FY 09 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	SS/CPFF	General Dynam Groton C	68.994	0.000		0.000		0.000		0.000		0.000	68.994	68.994
Developmental Test & Evaluation	WR	NSWC Carderock MD	96.091	0.000		0.000		0.000		0.000		0.000	96.091	
Developmental Test & Evaluation	Various	Various	125.461	0.331	Various	0.090	Various	0.339	Various	0.000	Various	0.000	126.221	
Operational Test & Evaluation													0.000	
Tooling													0.000	
GFE													0.000	
Award Fees													0.000	
Subtotal T&E			290.546	0.331		0.090		0.339		0.000		0.000	291.306	
Remarks:														
Contractor Engineering Support													0.000	
Government Engineering Support													0.000	
Program Management Support & ET	Various	Various	48.435	0.000		0.000		0.000		0.000		0.000	48.435	
Travel			0.078	0.040		0.040		0.040		0.040		0.160	0.398	
Labor (Research Personnel)													0.000	
SBIR Assessment			0.043										0.043	
Subtotal Management			48.556	0.040		0.040		0.040		0.040		0.160	48.876	
Remarks:														
Total Cost			1,671.860	2.878		3.245		2.457		2.538		11.176	1,694.154	
Remarks:														

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**Exhibit R-3, Project Cost Analysis**