

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5					R-1 ITEM NOMENCLATURE SSN-21 Development/0604561N			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	5.448	16.353	13.482	3.057	3.093	3.726	3.078	3.135
SSN-21 Developments/F1946	5.448	3.883	3.708	3.057	3.093	3.726	3.078	3.135
SEAFAC Range Upgrade/F9233	0.000	12.470	9.774	0.000	0.000	0.000	0.000	0.000
Defense Emergency Response funds (DERF) Funds: Not Applicable A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: F1946 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. F9233 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 weapon 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. Toward this end, Southeast Alaska Acoustic Measurement Facility (SEAFAC) range will be upgraded with new underwater acoustic measurement suites capable of measuring new generation quiet-class submarines stationed in the Pacific fleet. The SEAFAC Range Upgrade Program comprises a multi-year, multi-phase effort that begins with the design, development, procurement, installation and testing of High Gain Array (HGA) systems in the Static Site at SEAFAC. Future phases, if approved, will upgrade the Underway Site at SEAFAC.								

R-1 SHOPPING LIST - Item No.

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Exhibit R-2, RDTEN Budget Item Justification
(Exhibit R-2, page 1 of 16)

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5		PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments			PROJECT NUMBER AND NAME F1946 / SSN-21 Developments			
COST (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	5.448	3.883	3.708	3.057	3.093	3.726	3.078	3.135
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

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.

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B. Accomplishments/Planned Program																			
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	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	0.483	0.395	0.670	1.263															
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	FY 02	FY 03	FY 04	FY 05															
Accomplishments/Effort/Subtotal Cost	1.000	0.000	0.000	0.000															
RDT&E Articles Quantity																			

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B. Accomplishments/Planned Program (Cont.)																			
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Accomplishments/Effort/Subtotal Cost	3.430	3.038	1.696	1.444															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px;"><p><u>FY-02 Accomplishments:</u> Re-engineering and correcting deficiencies in Non-Propulsion Electronics Systems (NPE) including Ship Control System (SCS) and Exterior Communications System (ECS). Multifunctional Crypto System Assessment and Development. Investigation of acoustic deficiencies, including Main Ballast Tanks and wind tunnel testing associated with Sail. Continue risk management efforts in all high risk areas. <u>FY-03 Plan:</u> Re-engineering and correction of NPE Systems, including SCS and ECS. Investigation of acoustic deficiencies associated with Main Ballast Tanks and Sail. Continue risk management efforts in all high risk areas. <u>FY-04 Plan:</u> Re-engineering of NPE Systems and investigation of acoustic deficiencies. <u>FY-05 Plan:</u> Re-engineering and correction of SCS and Dry Deck Shelter (DDS) Interface (TIDS Migration).</p></div>																			
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Accomplishments/Effort/Subtotal Cost	0.000	0.000	1.192	0.250															
RDT&E Articles Quantity																			
<div style="border: 1px solid black; padding: 5px;"><p><u>FY-04 Plan:</u> Technology insertion effort for the SSTG Governor Redesign. <u>FY-05 Plan:</u> Technology insertion effort for the Impressed Current Cathodic Protection (ICCP) System.</p></div>																			
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Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000															
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C. PROGRAM CHANGE SUMMARY:

	FY 2002	FY 2003	FY 2004	FY 2005
Funding:				
Previous President's Budget: (FY 03 Pres Controls)	5.711	3.981	4.262	3.102
Current BES/President's Budget: (FY04 President Controls)	5.448	3.883	3.708	3.057
Total Adjustments	-0.263	-0.098	-0.554	-0.045
Summary of Adjustments				
SBIR/STTR Transfer	-0.095	0.000	0.000	0.000
Congressional undistributed reductions	0.000	-0.034	0.000	0.000
Congressional rescissions	-0.012	0.000	0.000	0.000
Economic Assumptions	-0.015	-0.064	-0.084	-0.064
Reprogrammings	-0.049	0.000	0.000	0.000
Other Navy/OSD Adjustments	-0.092	0.000	-0.470	0.019
Subtotal	-0.263	-0.098	-0.554	-0.045

Schedule:

Not applicable.

Technical:

Not applicable.

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D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
(U) SCN #201200	10.877	2.324	0.970	30.901	0.002	0.000	0.000	0.000		8223.314
(U) OPN #51000/05, #094100/05	11.015	16.630	8.830	41.092	51.246	50.922	43.890	41.881		641.978
SEAWOLF shares the above OPN lines with PMS392 & PMS398. The large plus-ups in FY-05 to 09 belong to the SSGN Program (PMS398). SEAWOLF OPN controls end in FY-02.										
(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)										

E. ACQUISITION STRATEGY: *

(U) To deliver 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.

F. MAJOR PERFORMERS: **

Naval Surface Warfare Center (NSWC) Carderock, MD - FY-02 \$1.520; FY-03 \$1.626; FY-04 \$1.616; FY-05 \$1.058 (Acoustics, NPE, Shock, Test & Evaluation, and Tech Insertion).
 Naval Undersea Warfare Center (NUWC) Newport RI - FY-05 \$.500 (Test and Evaluation)
 SPAWAR San Diego CA - FY-02 \$.800; FY-03 \$.700 - Multi-Function Crypto System Development
 Award dates are various and are dependent upon availability of funds each fiscal year as dictated by the CRA.

* Not required for Budget Activities 1,2,3, and 6
 ** Required for DON and OSD submit only.

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Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDTE&E, N / BA-5			0604561N / SSN-21 Developments			F1946 / SSN-21 Developments						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development											0.000	
Ancillary Hardware Development											0.000	
Systems Engineering	SS/CPFF	General Dynam Groton CT	369.541	0.055	Various	0.075	Various	0.100	Various	0.200	369.971	369.971
Systems Engineering	SS/CPFF	NGNN Newport News VA	118.601	0.355	Various	0.375	Various	0.100	Various	0.200	119.631	119.631
Systems Engineering	WR/RC	NSWC Carderock, MD	317.639	1.094	Various	1.566	Various	1.058	Various	4.085	325.442	
Systems Engineering	WR/RC	NUWC Newport, RI	49.158	0.250	Various	0.403	Various	0.000	Various	0.000	49.811	
Systems Engineering	Various	Various	469.201	1.352	Various	0.619	Various	0.536	Various	8.087	479.795	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			1,324.140	3.106		3.038		1.794		12.572	1,344.650	
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	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 7 of 16)

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Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDTE, N / BA-5			0604561N / SSN-21 Developments			F1946 / SSN-21 Developments						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	SS/CPFF	General Dynam Groton CT	68.994	0.000		0.000		0.000		0.000	68.994	68.994
Developmental Test & Evaluation	WR	NSWC Carderock MD	95.800	0.150	Various	0.050	Various	0.000		0.000	96.000	
Developmental Test & Evaluation	Various	Various	124.296	0.245	Various	0.620	Various	1.263	Various	0.460	126.884	
Operational Test & Evaluation											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			289.090	0.395		0.670		1.263		0.460	291.878	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support & ETS	Various	Various	48.075	0.382		0.000		0.000		0.000	48.457	
Travel											0.000	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			48.075	0.382		0.000		0.000		0.000	48.457	
Remarks:												
Total Cost			1,661.305	3.883		3.708		3.057		13.032	1,684.985	
Remarks:												

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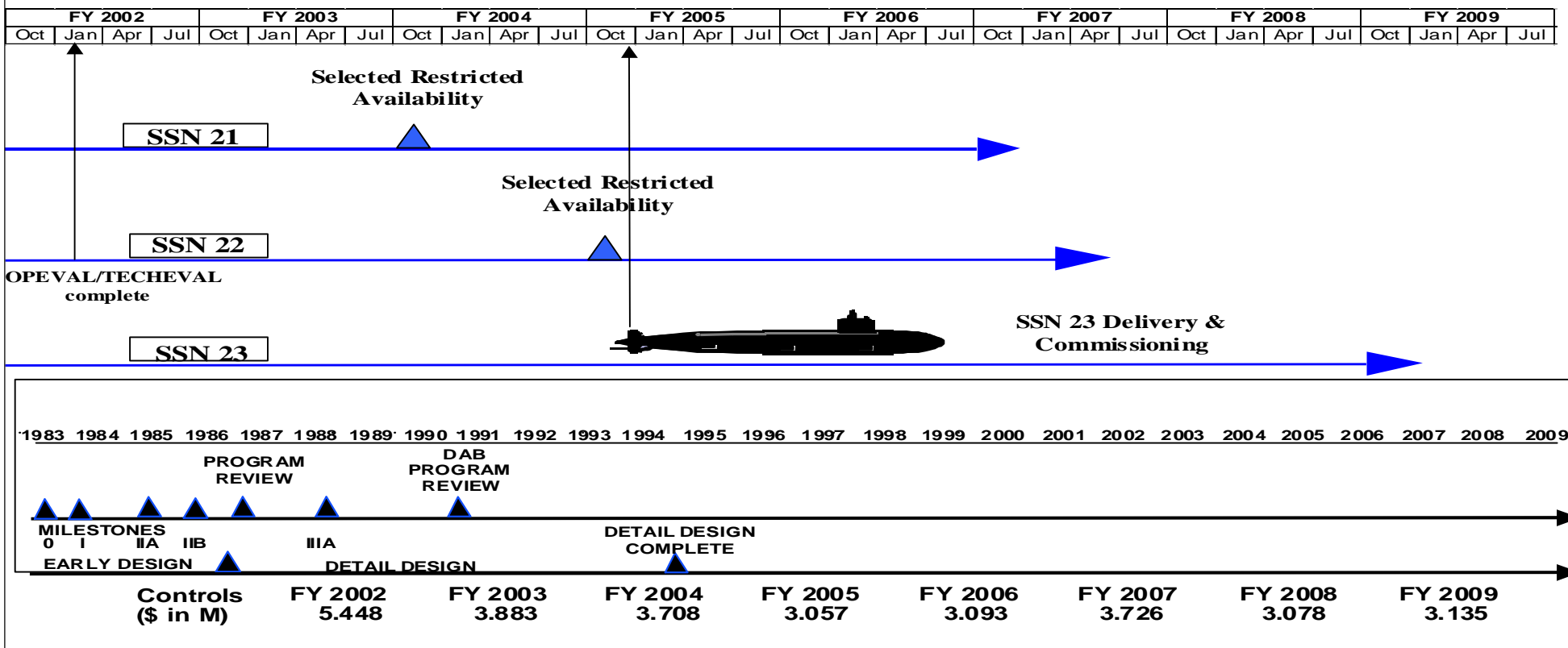
Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 8 of 16)

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EXHIBIT R4, Schedule Profile										DATE:		February 2003	
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT NUMBER AND NAME				PROJECT NUMBER AND NAME					
RDT&E, N / BA-5				0604561N / SSN-21 Developments				F1946 / SSN-21 Developments					

Program Timeline



R-1 SHOPPING LIST - Item No. 118

* Not required for Budget Activities 1, 2, 3, and 6

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Exhibit R-4, Schedule Profile
(Exhibit R-4, page 9 of 16)

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RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This is a new start effort.

The SEAWOLF Class submarine is a multi-mission ship that provides numerous unprecedented submarine performance capabilities such as more capable combat systems, greater weapon 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. Toward this end, Southeast Alaska Acoustic Measurement Facility (SEAFAC) range will be upgraded with new underwater acoustic measurement suites capable of measuring new generation quiet-class submarines stationed in the Pacific fleet. The SEAFAC Range Upgrade Program comprises of a multi-year, multi-phase effort that begins with the design, development, procurement, installation and testing of High Gain Array (HGAs) systems in the Static Site at SEAFAC. Future phases, if approved, will upgrade the Underway Site at SEAFAC.

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B. Accomplishments/Planned Program				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	12.470	9.774	0.000
RDT&E Articles Quantity				
<div>FY03 Plan: Detailed system design of the SEAFAC Static Site High Gain Arrays, suspension systems, and associated laboratory measurement systems. Initiate procurement of long lead time material such as cables, sensors, data acquisition equipment.</div> <div>FY04 Plan: System development and integration.</div>				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				
	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost				
RDT&E Articles Quantity				

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<p>C. PROGRAM CHANGE SUMMARY:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"></th> <th style="text-align: right;">FY 2002</th> <th style="text-align: right;">FY 2003</th> <th style="text-align: right;">FY 2004</th> <th style="text-align: right;">FY 2005</th> </tr> </thead> <tbody> <tr> <td>Funding:</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Previous President's Budget: (FY 03 Pres Controls)</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Current BES/President's Budget: (FY04 President Controls)</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">12.470</td> <td style="text-align: right;">9.774</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td>Total Adjustments</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">12.470</td> <td style="text-align: right; border-top: 1px solid black;">9.774</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> </tr> <tr> <td colspan="5" style="padding-top: 10px;">Summary of Adjustments</td> </tr> <tr> <td> Congressional program reductions</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td> Congressional undistributed reductions</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">-0.074</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td> Congressional rescissions</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td> SBIR/STTR Transfer</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td> Economic Assumptions</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">-0.206</td> <td style="text-align: right;">-0.226</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td> Reprogrammings</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td> Congressional increases</td> <td style="text-align: right;">0.000</td> <td style="text-align: right;">12.750</td> <td style="text-align: right;">10.000</td> <td style="text-align: right;">0.000</td> </tr> <tr> <td> Subtotal</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> <td style="text-align: right; border-top: 1px solid black;">12.470</td> <td style="text-align: right; border-top: 1px solid black;">9.774</td> <td style="text-align: right; border-top: 1px solid black;">0.000</td> </tr> </tbody> </table> <p style="margin-top: 20px;">Schedule:</p> <p style="margin-left: 20px;">Not applicable.</p> <p>Technical:</p> <p style="margin-left: 20px;">Not applicable.</p>						FY 2002	FY 2003	FY 2004	FY 2005	Funding:					Previous President's Budget: (FY 03 Pres Controls)	0.000	0.000	0.000	0.000	Current BES/President's Budget: (FY04 President Controls)	0.000	12.470	9.774	0.000	Total Adjustments	0.000	12.470	9.774	0.000	Summary of Adjustments					Congressional program reductions	0.000	0.000	0.000	0.000	Congressional undistributed reductions	0.000	-0.074	0.000	0.000	Congressional rescissions	0.000	0.000	0.000	0.000	SBIR/STTR Transfer	0.000	0.000	0.000	0.000	Economic Assumptions	0.000	-0.206	-0.226	0.000	Reprogrammings	0.000	0.000	0.000	0.000	Congressional increases	0.000	12.750	10.000	0.000	Subtotal	0.000	12.470	9.774	0.000
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R-1 SHOPPING LIST - Item No. 118

UNCLASSIFIED

UNCLASSIFIED

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2003		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5			PROGRAM ELEMENT NUMBER AND NAME 0604561N / SSN-21 Developments			PROJECT NUMBER AND NAME F9233 / SEAFAC Range Upgrade			

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	To Complete	Total Cost
Not applicable.										

E. ACQUISITION STRATEGY: *

Not applicable.

F. MAJOR PERFORMERS: **

Naval Surface Warfare Center (NSWC) Carderock Division, MD for system design and development.
Prime contractor (TBD) and subcontractors (TBD) for system development, procurement, integration, installation, and test.

* Not required for Budget Activities 1,2,3, and 6
** Required for DON and OSD submit only.

R-1 SHOPPING LIST - Item No. 118

UNCLASSIFIED

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CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NUMBER AND NAME						
RDT&E, N / BA-5			0604561N / SSN-21 Developments			F9233 / SEAFAC Range Upgrade						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	TBD		8.508	Various	7.974	Various				16.482	
Ancillary Hardware Development											0.000	
Component Development											0.000	
Ship Integration											0.000	
Ship Suitability											0.000	
Systems Engineering	WR	NSWC Carderock MD		3.962	TBD	0.400	TBD				4.362	
Training Development											0.000	
Licenses											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			0.000	12.470		8.374		0.000		0.000	20.844	
Remarks: Award dates are dependent upon availability of funds at the beginning of each fiscal year as dictated by the CRA.												
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	
Remarks:												

UNCLASSIFIED

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: February 2003				
APPROPRIATION/BUDGET ACTIVITY RDTE, N / BA-5			PROGRAM ELEMENT 0604561N / SSN-21 Developments			PROJECT NUMBER AND NAME F9233 / SEAFAC Range Upgrade						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 03 Cost	FY 03 Award Date	FY 04 Cost	FY 04 Award Date	FY 05 Cost	FY 05 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NSWC Carderock MD				1.400	TBD				1.400	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.000		1.400		0.000		0.000	1.400	
Remarks: Award date is dependent upon availability of funds at the beginning of each fiscal year as dictated by the CRA.												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support											0.000	
Travel											0.000	
Labor (Research Personnel)											0.000	
SBIR Assessment											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	
Remarks:												
Total Cost			0.000	12.470		9.774		0.000		0.000	22.244	
Remarks:												

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 15 of 16)

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Exhibit R-4a, Schedule Detail
(Exhibit R-4a, page 16 of 16)