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 0604558N/VIRGINIA Class Design Development			
COST ($ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Total PE Cost	**192.053**	**240.731**	**112.355**	**118.303**	**120.706**	**111.775**	**94.713**	**84.259**
F1947/VIRGINIA Class HM&E Development	**111.599**	**125.915**	**75.842**	**87.118**	**92.703**	**80.172**	**70.299**	**58.801**
F1950/VIRGINIA Class Combat Systems Dev	**75.718**	**90.852**	**30.445**	**27.362**	**25.236**	**28.761**	**21.509**	**22.469**
F2887/SSN Combat Sys Tech Insert/Refresh	**4.736**	**4.890**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
F3062/Submarine Multi Mission Team Trainer	**0.000**	**16.239**	**6.068**	**3.823**	**2.767**	**2.842**	**2.905**	**2.989**
F9231/Shipmates for VIRGINIA Class	**0.000**	**1.662**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
F9232/COTS Combat Control Framework	**0.000**	**1.173**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Quantity of RDT&E Articles								

Defense Emergency Response Funds (DERF): NOT APPLICABLE

A. (U) Mission Description and Budget Item Justification: The U.S. Navy must maintain a submarine fleet that is of sufficient capability and numbers to defend American interests. The VIRGINIA Class Submarine, formerly the New Attack Submarine (New SSN), is being designed to fulfill this need. It will counter the potential threats of the next century in a multi- mission capable submarine that has the ability to provide covert, sustained combat presence in denied waters. The primary goal of the program is to develop an affordable yet capable submarine by evaluating a broad range of system and technology alternatives, and pursuing cost reduction, producibility improvement, and technical risk management. This Program Element (PE) provides the technology, prototype components, and systems engineering needed to design and construct the VIRGINIA Class Submarine and build and its Command, Control, Communications, and Intelligence (C3I) System. This PE directly supports the following VIRGINIA Class Submarine missions: (1) covert strike warfare; (2) anti-submarine warfare; (3) covert intelligence collection/surveillance, indication and warning, and electronic warfare; (4) anti-surface ship warfare; (5) special warfare; (6) mine warfare; and (7) battle group support.

(U) Project F2887: The Congressional plus-up is for MPP SBIR follow-on for Technology Insertion and refresh for VIRGINIA SSN Combat System.

(U) Project F9231: The Congressional plus-up is for Shipmates for the VIRGINIA Class. Develop a Non-Tactical Data Application Processing System application for the shipboard LAN.

(U) Project F9232: The Congressional plus-up is for COTS Combat Control Framework to develop a software architecture that supports migration of the Global Command and Control System-Maritime (GCCS-M) segments into the planned IT-21 server.

(U) Project F3062: The Submarine Multi-Mission Team Trainer (SMMTT) program replaces the proprietary mainframe computer system by re-hosting functions on industry standard Local Area Network (LAN) workstations. The mainframes can no longer be upgraded due to service life. The SMMTT modification applies to both the Combat Control System (CCS) trainers and the Acoustic trainers and will occur in three distinct phases. SMMTT Phase 1 and Phase 2 were funded in OPN BLI 5661 to complete the trainer-unique software offload and enables further enhancements. SMMTT Phase 3, funded in this RDT&E line will provide the architectural foundation to replace all MIL Standard hardware with commercial emulation hardware, and rehost existing proprietary based software into COTS software systems, therefore enabling platform independence and wide area network capability. The use of open architecture trainer systems allows for the continuous growth of functional flexibility, ultimately leading to employment training conducted for any submarine combat system.

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME F1947/VIRGINIA Class HM&E DEVELOPMENT			
COST ($ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**111.599**	**125.915**	**75.842**	**87.118**	**92.703**	**80.172**	**70.299**	**58.801**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

A (U) Mission Description and Budget Item Justification: (U) This project encompasses all the ship system development efforts for the VIRGINIA Class Submarine and the Technology Insertion Program for reducing cost and upgrading performance of future hulls by virtue of improvements in ship and combat systems. Technology developments, training, and logistics for developmental items, and VIRGINIA Class test & evaluation are included. This project is essential to achieve balanced platform capability, affordability, and flexibility in a low rate production environment. The thrust of these efforts will be to develop and apply multiple advanced system technologies which are integrated into the design of the VIRGINIA Class Submarine. New technologies are being transitioned from industry and government research and development programs where doing so offers substantial performance improvement and/or affordability payoffs. Transition opportunities include those from the Defense Advanced Research Projects Agency (DARPA) Sensors & Payloads program.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	F1947/VIRGINIA Class HM&E DEVELOPMENT	

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	80.168	87.671	21.845	20.412
RDT&E Articles Quantity				

HM&E DEVELOPMENT

FY02 Accomplishments: Continued the design concepts for reducing propulsor change out time. Continued design, manufacturing, and qualification testing of prototype technologies and components such as: ship service turbine generator (SSTG), weapons stowage and handling systems; propulsor improvements, electromagnetic signature reduction; and ship control system. Continued shock qualification testing and analyses of various components. Continued system verification studies, tests, and analyses in support of ship design including signature, hydrodynamics, materials, and survivability analyses and tests. Provided Integrated Product and Process Development (IPPD) (Design/Build) team support at shipyards, Navy laboratories and in-house. Supported ship design and construction efforts with engineering evaluations and ship integration assessments for emergent ship design and systems development issues. Technology Insertions included: (1) continued development of Accelerated Electro-Magnetic (EM) Silencing, Conformal Acoustic Velocity Sensor (CAVES) Array technology, the Advanced Sail, Advanced Processor Build (Acoustic) (APB (A)) 01, Advanced Processor Build (Tactical) (APB(T)) 01; (2) initiated development of APB(A) 02 update, APB(T) 02, Information Assurance, Onboard Team Trainer (OBTT) Enhancements (Phases I and II); and (3) completed development of APB (A) 99 update, draft specs for VIRGINIA Class submarine implementation of CAVES large array and wireless infrastructure architecture concept.

FY03 Plan: Continue design, manufacturing, and qualification testing of prototype technologies and components such as: ship service turbine generator (SSTG), main propulsion unit improvements, weapons stowage and handling systems; propulsor improvements, electromagnetic signature reduction; and ship control system. Initiate shock qualification of weapons handling module and other major components and complete shock qualification of air flasks. Continue system verification studies, tests, and analyses in support of ship design including signature, hydrodynamics, materials, and survivability analyses and tests. Provide Integrated Product and Process Development (IPPD) (Design/Build) team support at shipyards, Navy laboratories and in-house. Support ship design and construction efforts with engineering evaluations and ship integration assessments for emergent ship design and systems development issues. Complete the design of concept to reduce propulsor change out time and improve acoustic performance. Complete Ship Control Station. Complete limited evaluation of common VIRGINIA/SEAWOLF Acoustic Lessons Learned. Technology Insertions include (1) initiating the development of Non-Tactical Data Processing Improvements (NTDPS) (SUBLAN), APB (A) 03, (2) continuing APB (T) 01-02, and (3) completion of APB (A) 01-02.

FY04 Plan: Continue design, manufacturing, and qualification testing of prototype technologies and components such as: ship service turbine generator (SSTG), weapons stowage and handling systems; electromagnetic signature reduction; and ship control system. Continue shock qualification of weapons handling module and other major components. Continue system verification studies, tests, and analyses in support of ship design including signature, hydrodynamics, materials, and survivability analyses and tests. Complete development of Diesel Generator. Provide Integrated Product and Process Development (IPPD) (Design/Build) team support at shipyards, Navy laboratories and in-house. Support ship design and construction efforts with engineering evaluations and ship integration assessments for emergent ship design and systems development issues.

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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	F1947/VIRGINIA Class HM&E DEVELOPMENT

B. Accomplishments/Planned Program (continued)

HM&E DEVELOPMENT (continued)
FY05 Plan: Continue design, manufacturing, and qualification testing of prototype technologies and components such as: weapons stowage and handling systems and ship control system. Complete the shock qualification of weapons handling module and other major components. Continue system verification studies, tests, and analyses in support of ship design including signature, hydrodynamics, materials, and survivability analyses and tests. Provide Integrated Product and Process Development (IPPD) (Design/Build) team support at shipyards, Navy laboratories and in-house. Support ship design and construction efforts with engineering evaluations and ship integration assessments for emergent ship design and systems development issues.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	14.362	10.196	9.009	8.632
RDT&E Articles Quantity				

ADMINISTRATIVE/ENVIRONMENTAL
Continue analyses and evaluations relating to force effectiveness assessment and component performance tradeoffs. Maintain cost based approach to VIRGINIA Class submarine construction through use of IPPD's concurrent engineering processes. Continue coordination of VIRGINIA Class submarine specification at the shipbuilder. Continue cost estimating and validation of cost reduction ideas for VIRGINIA Class submarine overall design development. Continue environmental compliance and pollution prevention efforts.

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	4.198	6.451	1.519	0.715
RDT&E Articles Quantity				

LOGISTIC SUPPORT
FY02 Continued VIRGINIA Class trainers/training development to support VIRGINIA Class. Through FY03, these efforts include the On-board Team Trainer Master Controller (OBTT MC), VIRGINIA Ship Control Operator Trainer (VSCOT), VIRGINIA Ship Control Maintenance Trainer (VSCMT), Weapons Launch Console (WLC) Trainer upgrade and the Emergency Diesel Generator Trainer. The FY04 effort will also include the Common Operational Analysis and Employment Equipment Trainer (COAEET). FY05 will continue development efforts in progress.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	F1947/VIRGINIA Class HM&E DEVELOPMENT	

B. Accomplishments/Planned Program (Cont.)

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	12.871	21.597	43.469	57.359
RDT&E Articles Quantity				

TEST AND EVALUATION

FY02 Continued the development of the Test and Evaluation Master Plan (TEMP), Vulnerability Analysis Report (VAR) and Total Ship Survivability Trial (TSST). Planned and coordinated second shipbuilder Test and Evaluation efforts. Provided IPPD support to Commander Operational Test and Evaluation Force (COTF) operational test OT-IIB at the COATS facility. Prepared test plans, schedules and support associated with developmental testing, conducted Command and Control System Off-hull Test Series, Shock, Acoustic and Launchers Trials Testing, Weapons System Accuracy Trials and Technical Evaluation. Conducted engineering evaluation of test results. Live, Fire, Test and Evaluation (LFT&E) modeling and analysis. Continued development of the total ship test plan in support of Developmental Testing (DT) and Operational Test (OT).

FY03 Continue the development of the Test and Evaluation Master Plan (TEMP), Vulnerability Analysis Report (VAR) and Total Ship Survivability Trial (TSST). Plan and coordinate second shipbuilder Test and Evaluation efforts. Conduct shipbuilder trials, and dockside testing. Prepare test plans, schedules and support associated with developmental testing, conduct Operational Testing - Phase IIB, Shock, Acoustic and Launchers Trials Testing, Weapons System Accuracy Trials and Technical Evaluation. Conduct engineering evaluation of test results. LFT&E modeling and analysis. Continue development of the total ship test plan in support of DT/OT-IIA-IIF.

FY04 Conduct shipbuilder at-sea trials, and dockside testing. Plan and coordinate second shipbuilder Test and Evaluation efforts. Prepare test plans, schedules and support associated with developmental testing, conduct Operational Testing - Phase IIC, Shock, Acoustic and Launchers Trials Testing, Weapons System Accuracy Trials. Conduct engineering evaluation of test results. LFT&E modeling and analysis. Continue the development of the Test and Evaluation Master Plan (TEMP), Vulnerability Analysis Report (VAR) and Total Ship Survivability Trial (TSST). Continue development of the total ship test plan in support of DT/OT-IIA-IIF.

FY05 Conduct Full Ship Shock Test on SSN775. Conduct Acoustic Trials as well as EM Silencing Trials and Launcher Trials. Continue planning for TECHEVAL and OPEVAL.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	F1947/VIRGINIA Class HM&E DEVELOPMENT

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
Previous President's Budget: (FY 03 Pres Controls)	120.103	128.741	125.730	132.895
Current BES/President's Budget: (FY04/05 PRES Controls)	111.599	125.915	75.842	87.118
Total Adjustments	-8.504	-2.826	-49.888	-45.777
Summary of Adjustments				
Reprogramming	-0.256	-0.009		
Miscellaneous adjustments			-48.101	-43.871
SBIR/STTR TRANSFER	-1.945			
NWCF RATES ADJUSTMENTS			-0.037	-0.028
Business Process Reform		-0.515		
Economic Assumptions	-0.324	-0.722		
IT Cost Growth		-0.237		
FY02 BTR	-1.26			
FY02 Actuals	-4.719			
Inflation Adjustment		-1.343	-1.750	-1.878
Subtotal	-8.504	-2.826	-49.888	-45.777

Schedule:

"Not Applicable"

Technical:

"Not Applicable."

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	F1947/VIRGINIA Class HM&E DEVELOPMENT	

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
SCN Line 201300 PE: 0203281N	2479.22	2427.434	2528.107	2874.671	2883.068	4089.941	4126.144	5338.55	39908.1	75140.9
SCN Line 201310 PE: 0203281N	0	0	0	0	0	0	0	0	0	589.2
O&M'N BA-2 1B2B PE: 0204283N	0	0	19.293	29.156	29.14	49.161	69	69	cont.	cont.
OPN BA-8 Line Item 094200	0	0	0	51.53	217.722	268.511	223.163	235.964	cont.	cont.

(U) Related RDT&E
(U) PE 0603561N (Advanced Submarine System Development)
(U) PE 0603570N (Advanced Nuclear Power Systems)
(U) PE 0602121N (Surface Ship Technology)

E. ACQUISITION STRATEGY: *

The VIRGINIA Class Submarine Program has implemented Integrated Product and Process Development (IPPD). The traditional distinct phasing of the design process has been replaced with the continuous concurrent engineering IPPD process. The IPPD approach has facilitated a smoother transition from design to manufacturing, with Design expected to complete this year, and has reduced the number of changes typically encountered during construction of the lead and early follow-on ships. In September 1997, Congress passed a law allowing Electric Boat (EB) and Northrop Grumman Newport News (NGNN) to team for production of the first four VIRGINIA Class Submarines. Under the teaming agreement, EB remained the design yard for the VIRGINIA Class Submarine and NGNN became a part of the IPPD process. The Program Office is expected to continue the EB/NGNN teaming arrangement and is considering a block buy for FY03 and is also considering other alternate strategies. Future focus will be to complete ship design, continuance of Logistics product development, Technology Insertion and testing for the VIRGINIA Class submarines.

F. MAJOR PERFORMERS: **

1. Electric Boat Corporation, Groton CT - Virginia Class Lead Shipbuilder - Contract Award Date 28 Sept. 2000.
2. Naval Surface Warfare Center, Carderock Division, Bethesda, MD - Research, Development, Test & Evaluation Laboratory
3. Naval Undersea Warfare Center, Newport, RI - Research, Development, Test & Evaluation Laboratory

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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	0604558N/VIRGINIA Class Design Development	F1947/VIRGINIA Class HM&E DEVELOPMENT

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
Component Development	Contract	EB-2112 Groton, CT	445.686	35.580	11/02	10.049	11/03	4.898	11/04	1.814	498.027	
Component Development	SS/CPFF	EB-4030 Groton, CT	234.056	1.400	11/02	2.400	11/03	1.600	11/04	1.600	241.056	
Component Development	SS/CPFF	LM-6226	10.202	7.800	11/02	0.000	11/03	0.000	11/04	0.000	18.002	
Component Development	WR	NSWC Carderock MD	396.015	40.305	11/02	9.732	11/03	9.648	11/04	40.940	496.640	
Component Development	WR	NSWC Crane, IA	4.029	0.000	11/02	0.000	11/03	0.000	11/04	0.000	4.029	
Component Development	WR	NUWC Newport, RI	74.710	3.742	11/02	2.311	11/03	0.818	11/04	0.530	82.111	
Component Development	WR	NFPC Phila, PA	3.523	2.000	11/02	0.000	11/03	0.000	11/04	0.000	5.523	
Component Development	WR	NAWC Orlando, FL	22.212	2.591	11/02	0.000	11/03	0.000	11/04	0.000	24.803	
Component Development	Various	Misc	199.706	4.170	Various	5.069	Various	9.897	Various	49.124	267.966	
Technology Insertion	Various	Misc	18.192	2.179	Various	0.000	Various	0.000	Various	385.560	398.288	
											0.000	
Subtotal Product Development			1,408.331	99.767		29.561		26.861		479.568	2,044.088	

Remarks:

Development Support											0.000	
Software Development											0.000	
Trainers											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	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2003**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

PROGRAM ELEMENT: 0604558N/VIRGINIA Class Design Development

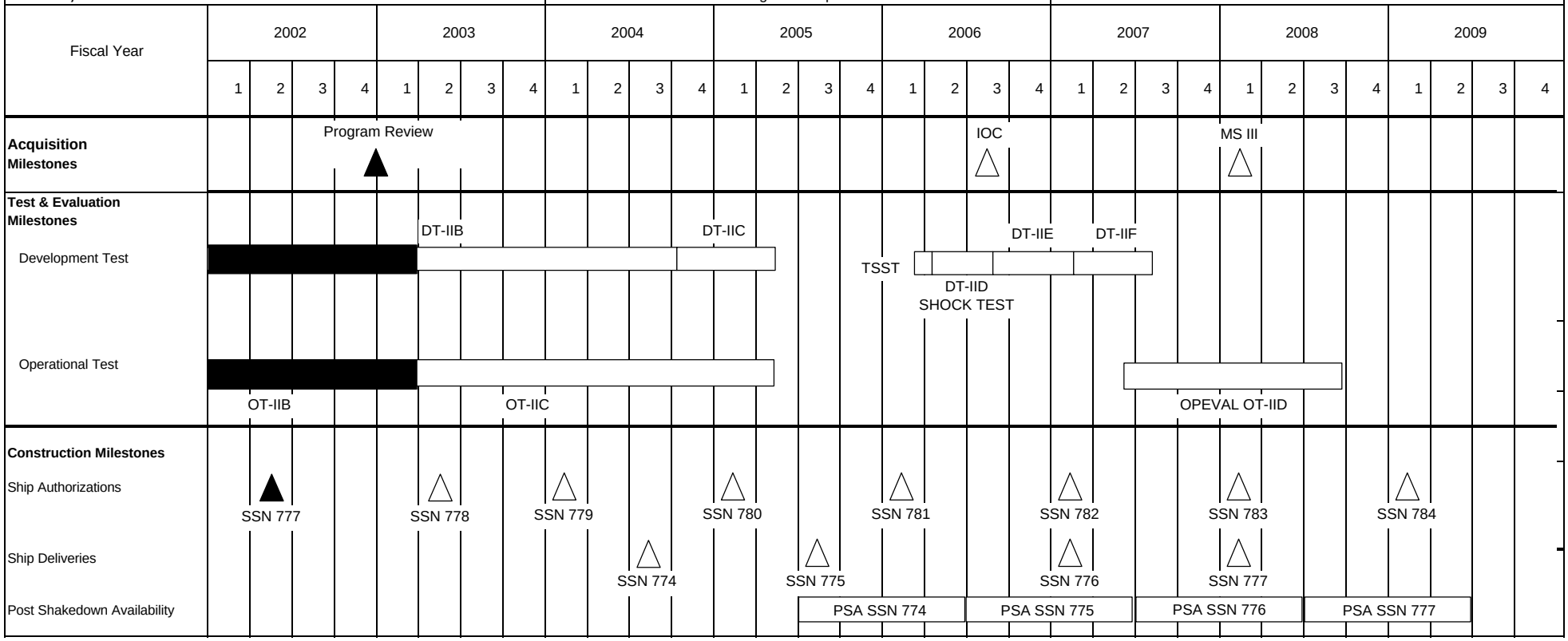
PROJECT NUMBER AND NAME: F1947/VIRGINIA Class HM&E DEVELOPMENT

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
Test & Evaluation	Contract	EB-2112 Groton, CT	2.059	1.432	11/02	4.008	11/03	11.670	11/04	31.301	50.470	
Test & Evaluation	WR	NSWC Carderock MD	14.099	10.085	11/02	20.488	11/03	16.281	11/04	45.889	106.842	
Test & Evaluation	WR	NUWC Newport, RI	11.138	2.887	11/02	6.170	11/03	6.516	11/04	36.267	62.978	
Test & Evaluation	C/CPAF	EG&G C6411 Rockville, MD	6.461	2.234	11/02	2.555	11/03	2.795	11/04	14.835	28.880	
Test & Evaluation	Various	Miscellaneous	10.056	4.959	11/02	10.248	11/03	20.097	11/04	79.844	125.204	
Test & Evaluation											0.000	
Test & Evaluation											0.000	
Subtotal T&E			43.813	21.597		43.469		57.359		208.136	374.374	
Remarks:												
Contractor Engineering Support	C/CPAF	SEAPORT D7019 Rockville MD	5.261	4.551	11/02	2.812	11/03	2.898	11/04	34.210	49.732	
Program Management Support	C/CPAF	EG&G C6411 Rockville, MD	21.537								21.537	
Program Management Support	Various	Miscellaneous	19.232								19.232	
Travel											0.000	
Award Fees		EG&G C6411 Rockville, MD	1.032								1.032	
SBIR Assessment											0.000	
Subtotal Management			47.062	4.551		2.812		2.898		34.210	91.533	
Remarks:												
Total Cost			1,499.206	125.915		75.842		87.118		721.914	2,509.995	
Remarks:												

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development	PROJECT NUMBER AND NAME F1947/VIRGINIA Class HM&E DEVELOPMENT



R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2003**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME F1947/VIRGINIA Class HM&E DEVELOPMENT			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Program Review	4Q							
Developmental Test (DT-IIB)	1Q-4Q	1Q-4Q	1Q-4Q					
Operational Test (OT-IIB)	1Q-3Q							
Operational Test (OT-IIC)	3Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q				
Ship Authorization (SSN 777)	2Q							
Ship Authorization (SSN 778)		2Q						
Ship Authorization (SSN 779)			1Q					
Ship Delivery (SSN 774)			3Q					
Developmental Test (DT-IIC)			4Q	1Q-2Q				
Ship Authorization (SSN 780)				1Q				
Post Shakedown Availability (PSA SSN 774)				3Q-4Q	1Q-2Q			
Ship Delivery (SSN 775)				3Q				
Ship Authorization (SSN 781)					1Q			
Total Ship Survivability Trial (TSST)					1Q-2Q			
Developmental Test (DT-IID) Full Ship Shock Test					2Q-3Q			
Initial Operating Capability (IOC)					3Q			
Post Shakedown Availability (PSA SSN 775)					3Q-4Q	1Q-2Q		
Developmental Test (DT-IIE)					3Q-4Q	1Q		
Developmental Test (DT-IIF)						1Q-3Q		
Ship Authorization (SSN 782)						1Q		
Ship Delivery (SSN 776)						1Q		
Operational Evaluation (OT-IID) (OPEVAL)						2Q-4Q	1Q-3Q	
Post Shakedown Availability (PSA SSN 776)						3Q-4Q	1Q-2Q	
Milestone III (MS III)							1Q	
Ship Authorization (SSN 783)							1Q	
Ship Delivery (SSN 777)							1Q	
Post Shakedown Availability (PSA SSN 777)							3Q-4Q	1Q-2Q
Ship Authorization (SSN 784)								1Q

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME F1950/VIRGINIA Class Combat System Development			
COST ($ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**75.718**	**90.852**	**30.445**	**27.362**	**25.236**	**28.761**	**21.509**	**22.469**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

A. (U) Mission Description and Budget Item Justification: (U) This project encompasses the top level systems development, test and integration into the ship of the VIRGINIA Class Submarine C3I System (formerly referred to as Combat Systems), which includes multiple subsystems. The scope of the system is expanded from Sonar and Combat Control subsystems to include AN/BLQ-10 Electronic Support (ES) Measures, Exterior Communications, Submarine Regional Warfare System, Navigation, Total Ship Monitoring, Imaging, Tactical Acoustic Communications, Radar, Interior Communications, Tactical Support Devices, Fiber Optic Cable Subsystem, and Special Purpose Subsystems, such as Battle Force Team Trainer and others. VIRGINIA Class Submarine specific development efforts includ requirements definition, software, hardware development, software/hardware test, prototype production, and electronic integration as well as physical integration into the platform.

(U) The VIRGINIA Class Submarine implementation approach is based on Open System, Commercial-off-the-Shelf (COTS) Non-Developmental Items or subsystems. The program leverages on-going subsystems developments or developing new subsystems where needed to satisfy VIRGINIA Class requirements. The recurring cost of VIRGINIA Class Submarine C3I Systems is being reduced to meet the program's affordability goals. Modifications to many subsystems must be developed to: (1) reduce the shipbuilding and construction recurring costs through the use of COTS components; (2) use proven computer technologies to evolve to an Open System design; (3) enhance capabilities to support expanded operational requirements, reduced manning, and reduced shipboard component footprint.

(U) To meet the collective future threat, the submarine force must operate as effectively in littoral regions as it traditionally has in open ocean. Close coordination with surface battle groups and airborne units is essential to mission accomplishment. To meet the VIRGINIA Class Submarine mission, the following capabilities are provided by the VIRGINIA Class Submarine C3I System: (1) Passive and Active detection of multiple contacts, including early warning threat determination through processing and analysis of sensor data; (2) classification of sensor data for the purpose of identifying contacts; (3) localization (tracking) of contacts through target motion analysis; (4) preset, launch, and control of weapons and countermeasures; (5) improved communication and connectivity with other battle group elements, airborne units, and special operations forces; (6) incorporation of vertical launch system to enhance strike warfare; and (7) more effective covert surveillance through video imaging with onboard digital enhancement capabilities, and improved electronic warfare analysis capabilities.

(U) This FY04/05 budget submit expands the original definition of the F1950 project mission to include an ongoing post VIRGINIA Class TECH/OPEVAL RDT&E effort to continue the development of VIRGINIA Unique Combat System Improvements. The VIRGINIA Class C3I will continue to leverage backfit communities efforts, but even with “common” systems that the Navy has developed there will continue to be VIRGINIA Unique capability improvements required. The FY08 and out funding identified is for those efforts.

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	F1950/VIRGINIA Class Combat System Development

B. Accomplishments/Planned Program --- C3I Systems Engineering

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	38.910	55.456	14.827	13.207
RDT&E Articles Quantity				

1. (U) FY 2002 ACCOMLISHMENTS:
• (U) ($38.910M) Initial system level development activities continued in the following areas: development and validation of C3I System test and evaluation procedures to support integration testing and installation/test into the platform; conducted system engineering functions such as requirements management, interface control, test and evaluation planning in support of formal DT/OT; and completed C3I System Integration and Interface Operability Testing. Continued development of system changes identified during integration efforts. Continued development of technology refreshment changes to C3I System/subsystems.

2. (U) FY 2003 PLAN:
• (U) ($55.456M) Continue development of high priority ship safety/self-protect deficiencies identified during integration efforts. Complete development of high priority technology refreshment changes to C3I System/subsystems.

3. (U) FY 2004 PLAN:
• (U) ($14.827M) Continue development of high priority ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts.

4. (U) FY 2005 PLAN:
• (U) ($13.207M) Continue development of high priority ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Begin the detailed planning for C3I System/subsystems testing as part of VIRGINIA Class TECH/OPEVAL.

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	F1950/VIRGINIA Class Combat System Development

B. Accomplishments/Planned Program (Cont.) --- Sonar Combat Control and Architecture Subsystems

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	36.808	35.396	15.618	14.155
RDT&E Articles Quantity				

1. (U) FY 2002 ACCOMLISHMENTS:

• (U) ($36.808M) Completed detailed S/CC/A engineering support to shipyard intra- and inter-subsystem integration. Continued development of S/CC/A subsystem changes identified during integration efforts. Continued development of deliveries for technology refreshment changes to S/CC/A subsystems. Continued integration of Tactical Tomahawk capability into S/CC/A.

2. (U) FY 2003 PLAN:

• (U) ($35.396M) Continue development of S/CC/A subsystem changes identified during integration efforts. Complete development of high priority technology refreshment changes to S/CC/A subsystems. Continue integration of Tactical Tomahawk capability into S/CC/A.

3. (U) FY 2004 PLAN:

• (U) ($15.618M) Continue development of high priority S/CC/A ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Complete integration of Tactical Tomahawk capability into S/CC/A.

4. (U) FY 2005 PLAN:

• (U) ($14.155M) Continue development of high priority S/CC/A ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Begin the detailed planning

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	F1950/VIRGINIA Class Combat System Development	

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Budget:	79.707	92.907	62.390	51.839
GY 2004 President's Budget	75.718	90.852	30.445	27.362
Total Adjustments	-3.989	-2.055	-31.945	-24.477
Summary of Adjustments				
Reprogramming	-0.170	-0.006		
Miscellaneous Adjustments			-27.784	-23.944
NETWORK ARCHITECTURE AND TIDS			-3.500	
SBIR/STTR TRANSFER	-1.619			
NWCF RATES ADJUSTMENT			0.041	0.057
Business Process Reform		-0.371		
Economic Assumptions	-0.216	-0.521		
IT Cost Growth		-0.171		
FY02 Actuals	-1.984			
Inflation Adjustment		-0.986	-0.702	-0.590
Subtotal	-3.989	-2.055	-31.945	-24.477

Schedule:

"Not Applicable"

Technical:

"Not Applicable"

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2003
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	F1950/VIRGINIA Class Combat System Development

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
SCN Line 201300 PE: 0203281N	2479.22	2427.434	2528.107	2874.671	2883.068	4089.941	4126.144	5338.55	39908.1	75140.9
SCN Line 201310 PE: 0203281N	0	0	0	0	0	0	0	0	0	589.2
O&M'N BA-2 1B2B PE: 0204283N	0	0	19.293	29.156	29.14	49.161	69	69	cont.	cont.
OPN BA-8 Line Item 094200	0	0	0	51.53	217.722	268.511	223.163	235.964	cont.	cont.

(U) Related RDT&E
(U) PE 0603504N (Advanced Submarine Combat Systems Development
(U) PE 0603561N (Advanced Submarine System Development)
(U) PE 0603562N Submarine Tactical Warfare Systems)
(U) PE 0603570N (Advanced Nuclear Power Systems)
(U) PE 0604503N (Submarine System Equipment Development)
(U) PE 0604574N (Navy Tactical Computer Resorses)
(U) PE 0604777N (Navigation/ID Systems)
(U) PE 0101226N (Submarine Acoustic Warfarte Development)
(U) PE 0604562N (Submarine Tactical Warfare System)
(U) PE 0604524N (Submarine Combat System)

E. ACQUISITION STRATEGY: *

The VIRGINIA Class Submarine Program has implemented Integrated Product and Process Development (IPPD). The traditional distinct phasing of the design process has been replaced with the continuous concurrent engineering IPPD process. The IPPD approach has facilitated a smoother transition from design to manufacturing, with Design expected to complete this year, and has reduced the number of changes typically encountered during construction of the lead and early follow-on ships. In September 1997, Congress passed a law allowing Electric Boat (EB) and Northrop Grumman Newport News (NGNN) to team for production of the first four VIRGINIA Class Submarines. Under the teaming agreement, EB remained the design yard for the VIRGINIA Class Submarine and NGNN became a part of the IPPD process. The Program Office is expected to continue the EB/NGNN teaming arrangement and is considering a block buy for FY03 and is also considering other alternate strategies. Future focus will be to complete ship design, continuance of Logistics product development, Technology Insertion and testing for the VIRGINIA Class submarines.

F. MAJOR PERFORMERS: **

Lockheed Martin, Manassas, Virginia. C3I Prime Contractor, Development and Limited Production of the S/CC/A Subsystems, Contract Award Date 24 April 1996.

Naval Undersea Warfare Center, Newport, Rhode, Island, Technical Direction Agent for all Virginia Class Electronics.

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2003**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	F1950/VIRGINIA Class Combat System Development

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
C3I Prime Contract E&MD Total	C/CPAF	Lockheed Manassas, VA	233.173	12.646	Various	4.671	Various	0.735	Various	0.143	251.368	251.368
C3I Prime Contract E&MD Award Fe	C/CPAF	Lockheed Manassas, VA	6.899	0.532	Various	0.500	Various	0.500	Various	0.028	8.459	8.459
C3I Prime Contract Post Delivery	C/FFP	Lockheed Manassas, VA	16.500	3.135	Various	2.509	Various	2.509	Various	3.877	28.530	28.530
Unique Virginia Class Improvments	TBD	Various/TBD	0.000							96.206	96.206	96.206
Advanced Display Sys (AN/UYQ-70)	SS/CPFF		0.000								0.000	
	CPIF	Lockheed St. Paul, MN	24.191	1.900	11/02	1.600	11/03	1.500	11/04	9.688	38.879	38.879
Multi-Purpose Processor	SS/CPIF	Digital Sys Fairfax, VA	41.449								41.449	41.449
Multi-Purpose Processor	SS/CPIF	Lockheed Manassas, VA	1.755								1.755	1.755
Photonics	C/CPIF	Kollmorgen Northhampton, M	24.656	4.000	11/02	1.956	11/03	1.590	11/04	11.562	43.764	43.764
Non-Penetrating Periscope	C/CPIF	Kollmorgen Northhampton, M	4.060								4.060	4.060
Electronic Support Measures	C/FFP	Lockheed Syracuse, NY	37.858	0.209	11/02	0.213	11/03	0.217	11/04	6.902	45.399	45.399
Platform Integration	SS/CPFF	EB Corp Groton, CT	27.382	4.300	11/02	2.500	11/03	2.500	11/04	19.723	56.405	56.405
Platform Integration	SS/CPFF	NNews Shipbuilding NNews,	3.065								3.065	3.065
Integrated Electronic Mast	SS/CPIF	Goleta Portsmouth, RI	8.897								8.897	8.897
Tactical Simulator	SS/CPFF	Goleta Portsmouth, RI	2.750								2.750	2.750
High Frequency Sail Array	SS/CPFF	Applied Research Austin, TX	3.273								3.273	3.273
Navigation/Radar	SS/CPFF	Sperry Corp Charlottsville, VA	6.153								6.153	6.153
Technology Refreshment	Various	Various/TBD	9.757	21.142	Various	0.810	Various	1.301	Various	1.805	34.815	
Open System Module	SS/CPFF	UNISYS Corp St. Paul, MN	2.500								2.500	2.500
Technical Direction Agent	N/A	NUWC Newport, RI	188.083	11.473	Various	6.105	Various	5.831	Various	48.900	260.392	
Technology Refreshment/Info. Assur.	C/CPFF	Progeny Systems,Manassas,	9.828	2.500	11/02	0.000	11/03	0.000	11/04	0.000	12.328	
Systems Engineering	N/A	NSWC Cardock, MD	3.995	0.330	11/02	0.335	11/03	0.340	11/04	0.600	5.600	
Systems Engineering	N/A	NSWC Crane, IN	3.439	0.400	11/02	0.415	11/03	0.430	11/04	0.800	5.484	
Systems Engineering	N/A	SSC Charleston, SC	2.333								2.333	
Systems Engineering	N/A	SSC San Diego, CA	1.635	0.105	11/02	0.110	11/03	0.115	11/04	0.200	2.165	
Systems Engineering	N/A	NUWC Keyport, WA	4.876	1.330	11/02	0.240	11/03	0.250	11/04	1.500	8.196	
Miscellaneous	Various	Various	41.478	23.756	Various	5.399	Various	3.960	Various	82.084	162.149	
Subtotal Product Development			709.985	87.758		27.363		21.778		284.018	1,136.374	

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:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2003**

APPROPRIATION/BUDGET ACTIVITY: **RDT&E, N / BA-5**

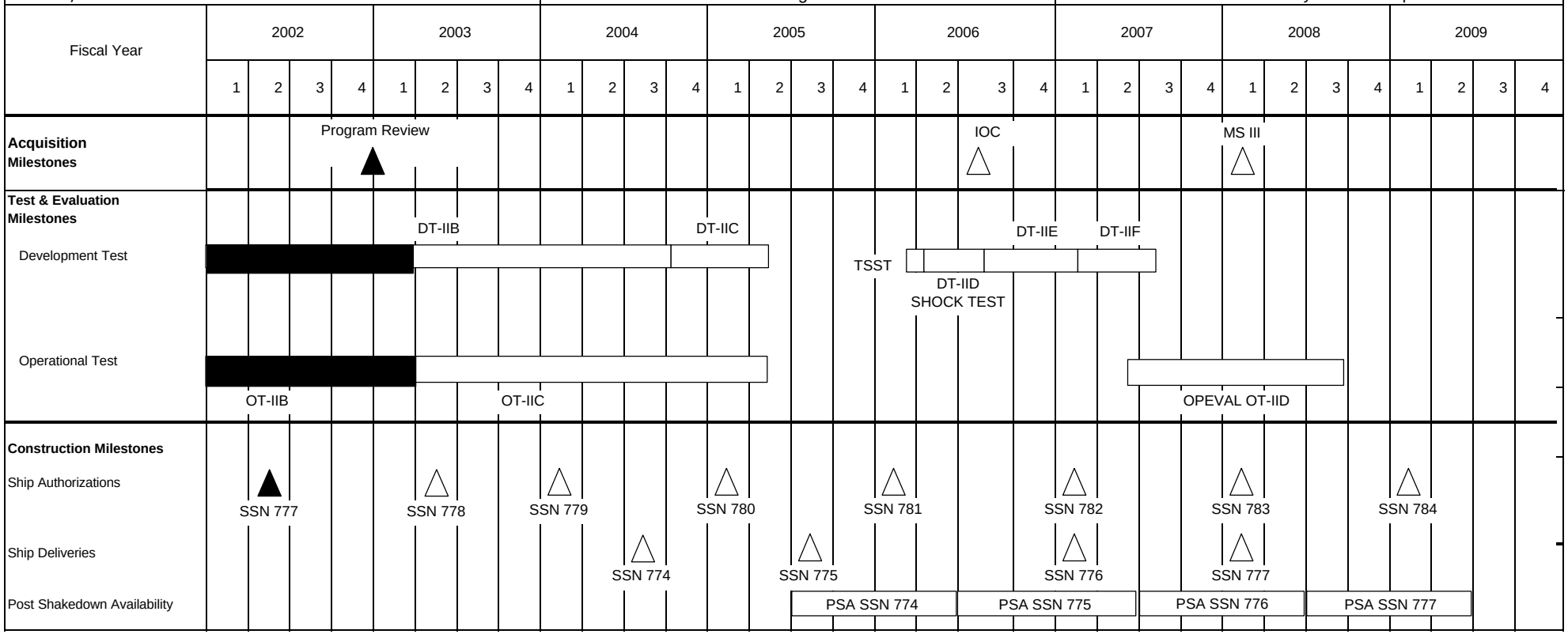
PROGRAM ELEMENT: 0604558N/VIRGINIA Class Design Development

PROJECT NUMBER AND NAME: F1950/VIRGINIA Class Combat System Development

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											0.000	
Operational Test & Evaluation											0.000	
Test & Evaluation	Various	Various		0.300	Various	0.300	Various	2.805	Various	15.691	19.096	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fees											0.000	
Subtotal T&E			0.000	0.300		0.300		2.805		15.691	19.096	
Remarks:												
Contractor Engineering Support			0.000								0.000	
Contractor Support Services/ETS	C/CPAF	EG&G Rockville, MD	3.040	2.794	Various	2.782	Various	2.779	Various	26.378	37.773	
Contractor Support Services/ETS	C/CPAF	EG&G Rockville, MD	14.406								14.406	
CSS/ETS Award Fee	C/CPFF	EG&G Rockville, MD	1.195								1.195	
Contractor Support Services/ETS	C/CPFF	EG&G Rockville, MD	8.857								8.857	
Contractor Support Services/ETS	C/CPFF	SWL Inc. Vienna, VA	5.705								5.705	
Contractor Support Services/ETS	C/CPFF	American Sys Chantilly, VA	2.099								2.099	
Miscellaneous	Various	Various	4.676								4.676	
Program Management Support			0.000								0.000	
Travel			0.000								0.000	
Subtotal Management			39.978	2.794		2.782		2.779		26.378	74.711	
Remarks:												
Total Cost			749.963	90.852		30.445		27.362		326.087	1,224.709	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile		DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Dev	PROJECT NUMBER AND NAME F1950/VIRGINIA Class Combat System Development



R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2003**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME F1950/VIRGINIA Class Combat System Development			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Program Review	4Q							
Developmental Test (DT-IIB)	1Q-4Q	1Q-4Q	1Q-4Q					
Operational Test (OT-IIB)	1Q-3Q							
Operational Test (OT-IIC)	3Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q				
Ship Authorization (SSN 777)	2Q							
Ship Authorization (SSN 778)		2Q						
Ship Authorization (SSN 779)			1Q					
Ship Delivery (SSN 774)			3Q					
Developmental Test (DT-IIC)			4Q	1Q-2Q				
Ship Authorization (SSN 780)				1Q				
Post Shakedown Availability (PSA SSN 774)				3Q-4Q	1Q-2Q			
Ship Delivery (SSN 775)				3Q				
Ship Authorization (SSN 781)					1Q			
Total Ship Survivability Trial (TSST)					1Q-2Q			
Developmental Test (DT-IID) Full Ship Shock Test					2Q-3Q			
Initial Operating Capability (IOC)					3Q			
Post Shakedown Availability (PSA SSN 775)					3Q-4Q	1Q-2Q		
Developmental Test (DT-IIE)					3Q-4Q	1Q		
Developmental Test (DT-IIF)						1Q-3Q		
Ship Authorization (SSN 782)						1Q		
Ship Delivery (SSN 776)						1Q		
Operational Evaluation (OT-IID) (OPEVAL)						2Q-4Q	1Q-3Q	
Post Shakedown Availability (PSA SSN 776)						3Q-4Q	1Q-2Q	
Milestone III (MS III)							1Q	
Ship Authorization (SSN 783)							1Q	
Ship Delivery (SSN 777)							1Q	
Post Shakedown Availability (PSA SSN 777)							3Q-4Q	1Q-2Q
Ship Authorization (SSN 784)								1Q

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification								DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME F3062/Submarine Multi-Mission Team Trainer			
COST ($ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Project Cost	**0.000**	**16.239**	**6.068**	**3.823**	**2.767**	**2.842**	**2.905**	**2.989**
RDT&E Articles Qty								

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

To achieve desired submarine force readiness levels, it is necessary to construct highly sophisticated shorebased Combat System Team Trainers capable of training personnel in all aspects of submarine approach, attack and surveillance operations in a controlled, simulated environment.

The Combat Control System (CCS) MK 1 and CCS MK 2 are installed on SSN and SSBN (TRIDENT) Class submarines, and there are currently plans to further upgrade these systems with the next H/W and S/W revisions which provide enhanced warfighter capabilities. The Tactical Acoustic Rapid COTS (commercial-off-the-shelf) Insertion (ARCI) Phased upgrades are also being installed with the next revision which provides enhanced warfighter capabilities. These CCS and ARCI upgrades directly impact shore based Team Trainers. In addition, the Advanced Processing Builds (APB), which feed technology insertion into the CCS/Acoustic development, also impact the trainers.

The Submarine Multi-Mission Team Trainer (SMMTT) supports operator, employment, strike, and Battle Group training for enlisted and officer pipelines. The SMMTT provides individual operators and combat teams the opportunity to train ashore, prior to, and between deployments. The shore based training provides a means of maintaining team proficiency in stand alone or in combined team mode prior to ship deployment.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604558N/VIRGINIA Class Design Development	F3062/Submarine Multi-Mission Team Trainer

B. Accomplishments/Planned Program

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	16.239	6.068	3.823
RDT&E Articles Quantity				

FY03 Develop/integrate new software capabilities and system interfaces. Initiate development of display software.
FY04 Incorporate visualization/simulation (VIS/SIM) technology into appropriate displays. Develop Weapons Console emulations.
FY05 Combine components and tailor interfaces to create immersive environment. Incorporate latest Advanced Processor Build (APB).

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 02	FY 03	FY 04	FY 05
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

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CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604558N/VIRGINIA Class Design Development	F3062/Submarine Multi-Mission TeamTrainer

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2002	FY 2003	FY 2004	FY 2005
FY 2003 President's Budget:	0.000	16.605	6.458	4.071
FY 2004 President's Budget	0.000	16.239	6.068	3.823
Total Adjustments	0.000	-0.366	-0.390	-0.248
Summary of Adjustments				
Inflation Adjustment		-0.176	-0.140	-0.082
Reprogramming	0.000	-0.097		
Miscellaneous Adjustments			-0.250	-0.166
Economic Assumptions		-0.093		
Subtotal	0.000	-0.366	-0.390	-0.248

Schedule:

"Not Applicable."

Technical:

"Not Applicable."

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N /BA-5	0604558N/VIRGINIA Class Design Development	F3062/Submarine Multi-Mission Team Trainer	

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
566100, Submarine Training Device Modification	19.1	18.4	24.5	38.9	32.2	21.2	19.8	20.1	0	194.2

E. ACQUISITION STRATEGY: *

The SMMTT program phase 3 software development is accounted for in this RDT&E line. All production kits and software procured in OPN BLI 566100 PE 0804731N.

F. MAJOR PERFORMERS: **

NSWCCD

R-1 SHOPPING LIST - Item No. 117

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	0604558N/VIRGINIA Class Design Development	F3062/Submarine Multi-Mission Team Trainer

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
											0.000	
											0.000	
Component Development	WR	NSWCCD, Bethesda, MD	0.000	16.239	various	6.068	various	3.823	various	11.503	37.633	N/A
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			0.000	16.239		6.068		3.823		11.503	37.633	

Remarks:

											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000	0.000	

Remarks:

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)

DATE: **February 2003**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604558N/VIRGINIA Class Design Development	F3062/Submarine Multi-Mission Team Trainer

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
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal T&E			0.000	0.000		0.000		0.000		0.000	0.000	

Remarks:

											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Management			0.000	0.000		0.000		0.000		0.000	0.000	

Remarks:

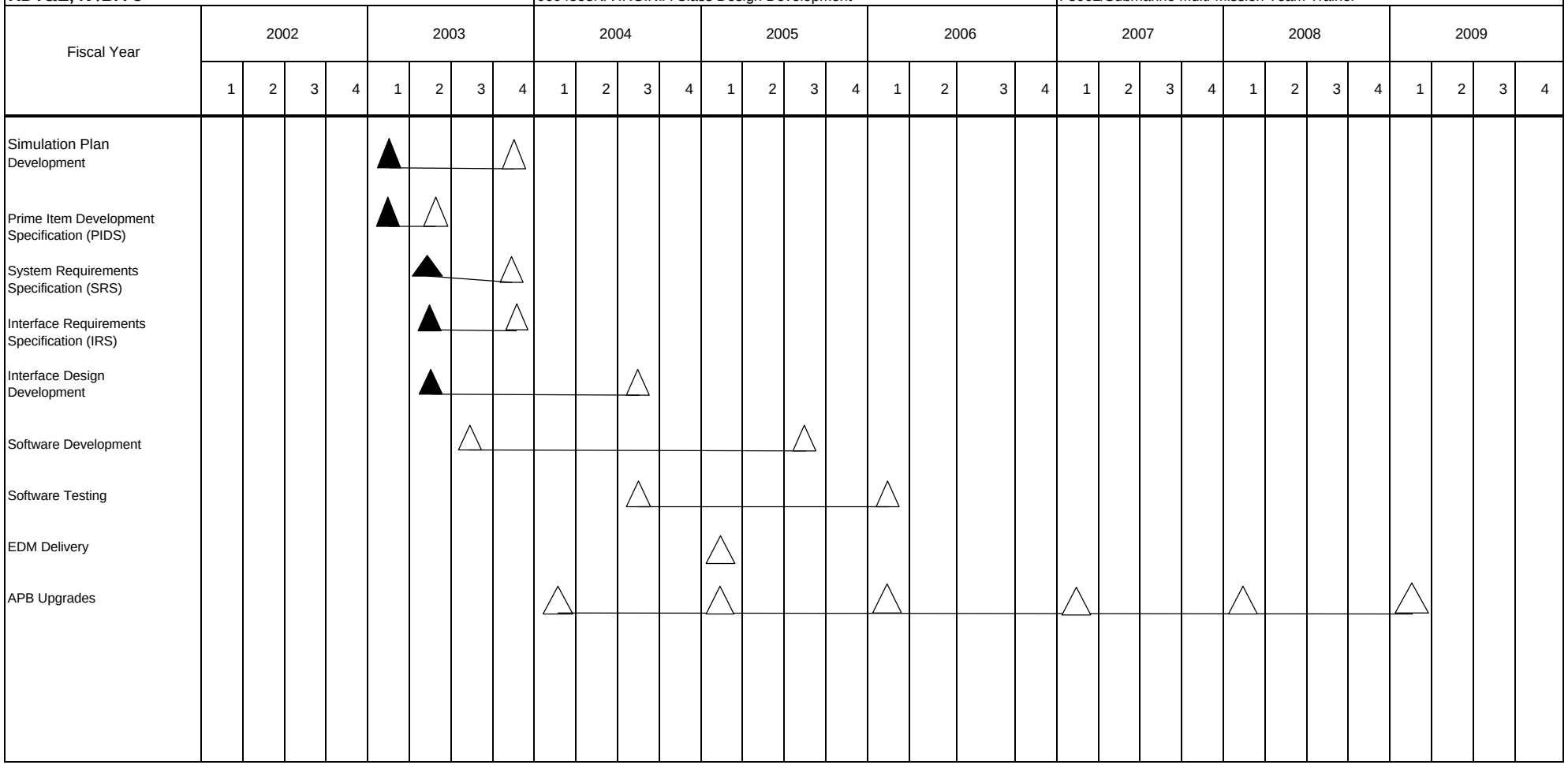
Total Cost			0.000	16.239		6.068		3.823		11.503	37.633	

Remarks:

R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

EXHIBIT R4, Schedule Profile			DATE: **February 2003**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N /BA-5	0604558N/VIRGINIA Class Design Development	F3062/Submarine Multi-Mission Team Trainer	



R-1 SHOPPING LIST - Item No. 117

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2003**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-5**	PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME F3062/Submarine Multi-Mission Team Trainer			
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Simulation Plan Development		1Q-4Q						
PIDS		1Q-2Q						
SRS		2Q-4Q						
IRS		2Q-4Q						
Interface Design Development		2Q-4Q	1Q-3Q					
Software Development		3Q-4Q	1Q-4Q	1Q-3Q				
Software Testing			3Q-4Q	1Q-4Q	1Q			
EDM Delivery				1Q				
APB Upgrades			1Q	1Q	1Q	1Q	1Q	1Q

R-1 SHOPPING LIST - Item No. 117