CLASSIFICATION:

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2005	
APPROPRIATION/BUDGET ACTIVITY **RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA-5**					R-1 ITEM NOMENCLATURE 0604558N/VIRGINIA Class Design Development			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	**141.459**	**171.205**	**155.807**	**139.177**	**142.810**	**116.362**	**131.053**	**154.614**
1947/VIRGINIA Class HM&E Development	**72.328**	**109.984**	**110.322**	**96.373**	**103.182**	**85.729**	**93.967**	**111.351**
1950/VIRGINIA Class Combat Systems Dev	**38.332**	**49.426**	**42.871**	**40.130**	**36.879**	**27.802**	**34.197**	**40.316**
2887/SSN Combat Sys Tech Insert/Refresh	**10.613**	**5.616**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
3062/Submarine Multi Mission Team Trainer	**5.755**	**3.704**	**2.614**	**2.674**	**2.749**	**2.831**	**2.889**	**2.947**
9386/SSN Development - SBIR Phase III Research	**4.802**	**2.475**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
9387/VIRGINIA Class SSN Development	**9.629**	**0.000**	**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 2887: The Congressional plus-up is for the Multipurpose Processor (MPP) SBIR follow-on for Technology Insertion and refresh for VIRGINIA SSN Combat System.

(U) Project 3062: 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.

(U) Project 9386: The Congressional plus-up is for VIRGINIA Class SSN Development SBIR Phase III Research to establish and extend a Technology Insertion program.
(U) Project 9387: The Congressional plus-up is for VIRGINIA Class SSN Development of Navigation Upgrades and critical HM&E technology development.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 1947/VIRGINIA Class HM&E DEVELOPMENT			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**72.328**	**109.984**	**110.322**	**96.373**	**103.182**	**85.729**	**93.967**	**111.351**
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 and Payloads program.

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1947/VIRGINIA Class HM&E DEVELOPMENT

B. Accomplishments/Planned Program

	FY04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	33.613	47.468	38.591	29.106
RDT&E Articles Quantity				

HM&E DEVELOPMENT

FY04 Accomplishments: Continued 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 block upgrades. Complete Shock Qualification of Air and Nitrogen Flasks. Continued shock qualification of weapons handling module and other major components. Continued system verification studies, tests, and analyses in support of ship design including signature, hydrodynamics, materials, and survivability analyses and tests. Completed development of Diesel Generator. 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. Develop concept for Multi-Mission Module (MMM) for adding future payloads to VIRGINIA.

FY05 Plan: Continue design, manufacturing, and qualification testing of prototype technologies and components such as: weapons stowage and handling systems and ship service turbine Generator (SSTG) and ship control system block upgrades. Complete shock qualification of weapons handling module initiate shock qualification of torpedo tube and continue shock qualification of 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. Initiation of development of the Conformal Acoustic Velocity Sensor (CAVES) large Wide Aperture Array (LWAA). Resolve propulsor manufacturing and 'change out' scheduling problems. Remove SHT Test Patch. Continue ship control station block upgrades. Continue integration of improved main seawater system component. Initiate preliminary design for Multi-Mission Module. Execute feasibility demonstrations for Large Aperture Bow (LAB) Array and Automation for Reduced Manning Congressional Plus-Ups.

FY06 Plan: Continue design, manufacturing, and qualification testing of prototype technologies and components such as: ship service turbine generator (SSTG). 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 shock qualificaiton of torpedo tube system. Initiate shock qualification of the large hull penetrators and incompletely qualified SEAWOLF components. Technology Insertions include (1) continuation of development of the composite advanced sail and (2) Conformal Acoustic Velocity Sensor (CAVES) Large Wide Aperture Array (LWAA). Continue design integration of improved main seawater system components.

FY07 Plan: Complete shock qualification of air induction valve, diesel exhaust valve, hatch operators, and large penetrators. Continue development of (1) the Advanced Sail (including 1/4 scale evaluation on the large scale model (LSV) CUTTHROAT and (2) CAVES Large WAA. Resolve Sea Trial Issues. Complete design integration of improved main seawater components.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1947/VIRGINIA Class HM&E DEVELOPMENT

B. Accomplishments/Planned Program (continued)

	FY04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	6.518	5.075	4.378	4.347
RDT&E Articles Quantity				

ADMINISTRATIVE/ENVIRONMENTAL

FY04 Accomplishments: Continued analyses and evaluations relating to force effectiveness assessment and component performance tradeoffs. Maintained cost based approach to VIRGINIA Class submarine construction through use of Integrated Product and Process Development (IPPD) concurrent engineering processes. Continued coordination of VIRGINIA Class submarine specification at the shipbuilder. Continued cost estimating and validation of cost reduction ideas for VIRGINIA Class submarine overall design development. Continued environmental compliance and pollution prevention efforts.

FY05 - FY07 Plans: 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.

FY06 Plan is to complete environmental compliance and pollution prevention under VIRGINIA design efforts.

	FY04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	3.140	1.659	0.175	0.075
RDT&E Articles Quantity				

LOGISTIC SUPPORT

FY04 Accomplishments: Provided government technical support services to the Design Yard for On Board Team Trainer (OBTT) MC developmental efforts. Delivered the VIRGINIA Ship Control Operator Trainer with Block 1 to Naval Submarine School, Groton. Awarded the Diesel Front Panel Simulator Contract to EB. Completed and Delivered the Weapons Launch Console Team Trainer (WLCTT) to Naval Submarine School, Groton. Continued the development of the VIRGINIA ship Control Maintenance Trainer with Block 0.

FY05 - FY07 Plans: Continue providing government technical support services to the Design Yard for OBTT MC development efforts. Deliver the Diesel Front Panel Simulator to Naval Submarine School, Groton. Deliver the VIRGINIA Ship Control Maintenance Trainer with Block 1. Update OBTT MC Electronic Tutorial.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1947/VIRGINIA Class HM&E DEVELOPMENT

B. Accomplishments/Planned Program (Cont.)

	FY04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	29.057	55.782	67.178	62.845
RDT&E Articles Quantity				

TEST AND EVALUATION

FY04 Accomplishments: Conducted shipbuilder at-sea trials, and dockside testing. Prepared test plans and schedules associated with developmental testing: Hydrodynamic Performance/Ship Contol trials, Weapons System Accuracy Trials (WSAT), Launchers Trials Testing, Acoustic Trials, Lockout Trunk testing and Total Ship Survivability Trials. Continued development of the test plans and schedules associated with the dedicated TECHEVAL period. Continued the development of the Test and Evaluation Master Plan (TEMP), TEMP Rev D was signed this FY, have begun work on TEMP Rev E. Continued development of the Vulnerability Analysis Report (VAR). Continued development of the total ship test plan in support of DT/OT-IIA-IIF.

FY05 Plan: Conduct Hydrodynamic/ Ship Contol trials, WSAT, Launcher Trials, Acoustic Trials, Lockout Trunk Testing, C3I Testing, and one of four TSST drills. Continue planning for TECHEVAL and OPEVAL. Continue TEMP Rev E development. (Funding for the FY05 Full Ship Shock Test is included in the budget but work has been temporarily deferred pending decisions on test execution.)

FY06 Plan: Conduct Full Ship Shock Test on SSN775. Conduct Total Ship Survivability Test on SSN775. Continue planning for TECHEVAL/OPEVAL including development of detailed schedules and test plans for the events. Obtain final concurrence on TEMP Rev E.

FY07 Plan: Begin conduct of Tech EVAL. Continue OPEVAL Planning. Conduct planning for DDS Testing.

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1947/VIRGINIA Class HM&E DEVELOPMENT

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2004	FY 2005	FY2006	FY2007
FY05 President's Budget:	71.495	99.719	110.649	96.006
FY06 President's Budget:	72.328	109.984	110.322	96.373
Total Adjustments	0.833	10.265	-0.327	0.367
Summary of Adjustments				
Execution Realignments & Cancelled Accounts	0.833			
Programmatic/Other Adjustments		12.000		
Various (SBIR & Misc)		-1.235	-0.327	0.367
	0.833	10.765	-0.327	0.367

Schedule:

"Not Applicable"

Technical:

"Not Applicable."

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1947/VIRGINIA Class HM&E DEVELOPMENT

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
SCN Line 201300 PE: 0203281N	2698.3	2572.4	2401.5	2413.9	2528.5	3589.1	3780.4	3790.3	48389.5	84993.1
SCN Line 201310 PE: 0203281N	0	0	0	0	0	0	0	0	0	589.2
O&M'N BA-2 1B2B PE: 0204283N	14.4	18.6	24.6	38.2	54.6	67.2	65.6	68.3	cont.	cont.
OPN BA-8 Line Item 094200	0	57.8	175.6	192.1	182.4	209.7	223.0	232.2	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 awarded a multi-year contract for the FY04-08 ships. Future focus will be 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. 1998.
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

R-1 SHOPPING LIST - Item No.113

CLASSIFICATION:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)

DATE: **February 2005**

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

PROGRAM ELEMENT: 0604558N/VIRGINIA Class Design Development

PROJECT NUMBER AND NAME: 1947/VIRGINIA Class HM&E DEVELOPMENT

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
Component Development	Contract	EB-2112 Groton, CT	476.919	22.098	11/04	11.233	11/05	7.956	11/06	36.285	554.491	
Component Development	SS/CPFF	EB-4030 Groton, CT	236.311	1.600	11/04	1.600	11/05	0.000		0.000	239.511	
Component Development	SS/CPFF	LM-6226	18.015	0.000		0.000		0.000		0.000	18.015	
Component Development	WR	NSWC Carderock MD	453.309	10.817	11/04	13.505	11/05	8.192		69.869	555.692	
Component Development	WR	NSWC Crane, IA	4.029	0.000		0.000		0.000		0.000	4.029	
Component Development	WR	NUWC Newport, RI	80.698	1.832	11/04	1.182	11/05	0.989		21.261	105.962	
Component Development	WR	NFPC Phila, PA	6.256	0.400	11/04	0.000		0.000		0.000	6.656	
Component Development	Various	Misc	210.639	10.655	Various	0.000		0.000		0.000	221.294	
Technology Insertion	Various	Misc	25.032	3.500		14.386	Various	15.603	various	421.309	479.830	
Subtotal Product Development			1,511.208	50.902		41.906		32.740		548.724	2,185.480	

Remarks:

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
Development Support												
Software Development												
Integrated Logistics Support	WR	NSWC Carderock MD	0.867	0.000		0.000				0.000		
Integrated Logistics Support	WR	NAWC Orlando, FL	25.711	1.065		0.000				0.000	26.776	
Integrated Logistics Support	WR	NUWC Newport, RI	2.269	0.342		0.000				0.000	2.611	
Integrated Logistics Support	C/CPAF	SEAPORT D7019 Rockville MD	3.306	0.075	11/04	0.075	11/05	0.075	11/06	0.000	3.531	
Misc	Various	Misc	0.000	0.177	11/04	0.100				0.000	0.277	
Award Fees											0.000	
Subtotal Support			32.153	1.659		0.175		0.075		0.000	33.195	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2005**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**		PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 1947/VIRGINIA Class HM&E DEVELOPMENT						
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
Test & Evaluation	Contract	EB-2112 Groton, CT	5.174	9.955	11/04	13.313	11/05	6.799	11/06	0.000	35.241	
Test & Evaluation	WR	NSWC Carderock MD	42.190	31.707	11/04	30.857	11/05	16.995		35.284	157.033	
Test & Evaluation	WR	NUWC Newport, RI	24.538	7.270	11/04	8.995	11/05	16.343		24.472	81.618	
Test & Evaluation	C/CPAF	EG&G C6411 Rockville, MD	7.469	0.000		0.000		0.000		0.000	7.469	
Test & Evaluation	C/CPAF	SEAPORT D7019 Rockville MD	13.084	0.850	11/04	1.100	11/05	0.979	11/06	5.613	21.626	
Test & Evaluation	Various	Miscellaneous	13.361	6.000	11/04	12.913	11/05	21.729		14.753	68.756	
Subtotal T&E			105.816	55.782		67.178		62.845		80.122	371.743	

Remarks:

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 Engineering Support	C/CPAF	SEAPORT D7019 Rockville MD	10.678	1.641	11/04	1.063	11/05	0.713	11/06	33.497	47.592	
Program Management Support	C/CPAF	EG&G C6411 Rockville, MD	21.537								21.537	
Program Management Support	Various	Miscellaneous	19.232								19.232	
Travel												
Award Fees		EG&G C6411 Rockville, MD	1.032								1.032	
Subtotal Management			52.479	1.641		1.063		0.713		33.497	89.393	

Remarks:

Total Cost			1,701.656	109.984		110.322		96.373		662.343	2,680.678	

R-1 SHOPPING LIST - Item No. 113

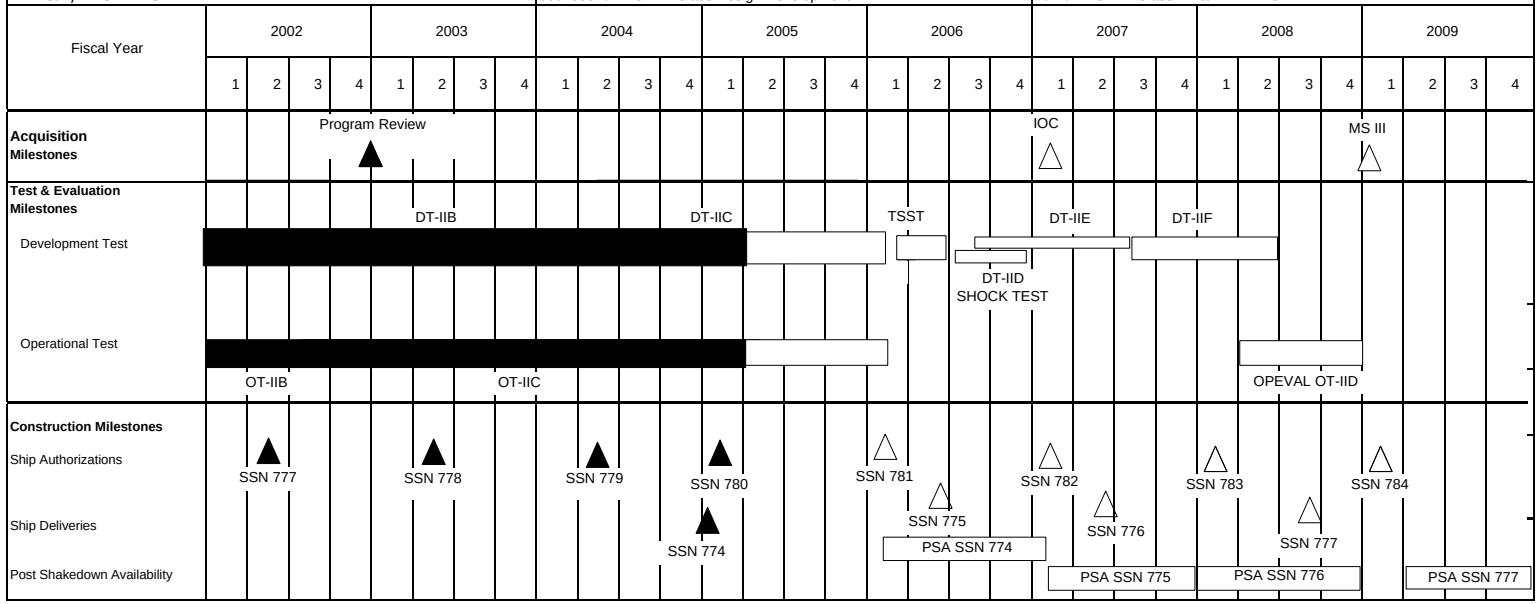
CLASSIFICATION:

EXHIBIT R4, Schedule Profile | DATE: **February 2005**

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

PROGRAM ELEMENT NUMBER AND NAME: 0604558N/VIRGINIA Class Design Development

PROJECT NUMBER AND NAME: 1947/VIRGINIA Class HM&E DEVELOPMENT



R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2005**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 1947/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-4Q				
Ship Authorization (SSN 777)	2Q							
Ship Authorization (SSN 778)		2Q						
Ship Authorization (SSN 779)			1Q					
Ship Delivery (SSN 774)				1Q				
Developmental Test (DT-IIC)			4Q	1Q-4Q				
Ship Authorization (SSN 780)				1Q				
Post Shakedown Availability (PSA SSN 774)					1Q-4Q			
Ship Delivery (SSN 775)					2Q			
Ship Authorization (SSN 781)					1Q			
Total Ship Survivability Trial (TSST)					1Q-2Q			
Developmental Test (DT-IID) Full Ship Shock Test					3Q-4Q			
Initial Operating Capability (IOC)						1Q		
Post Shakedown Availability (PSA SSN 775)						1Q-4Q		
Developmental Test (DT-IIE)					3Q-4Q	1Q-3Q		
Developmental Test (DT-IIF)						3Q-4Q	1Q-2Q	
Ship Authorization (SSN 782)						1Q		
Ship Delivery (SSN 776)						2Q		
Operational Evaluation (OT-IID) (OPEVAL)							2Q-4Q	
Post Shakedown Availability (PSA SSN 776)							1Q-4Q	
Milestone III (MS III)								1Q
Ship Authorization (SSN 783)							1Q	
Ship Delivery (SSN 777)							3Q	
Post Shakedown Availability (PSA SSN 777)								2Q-4Q
Ship Authorization (SSN 784)								1Q

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 1950/VIRGINIA Class Combat System Development			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	**38.332**	**49.426**	**42.871**	**40.130**	**36.879**	**27.802**	**34.197**	**40.316**
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 include 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) The FY04/05 budget submit expanded 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.

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1950/VIRGINIA Class Combat System Development

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

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	23.809	39.827	29.672	25.191
RDT&E Articles Quantity				

1. (U) FY 2004 ACCOMPLISHMENTS:

• (U) ($23.809M) Continued development of high priority ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Continued the information assurance implementation of Non Propulsion Electronics System (NPES) systems/subsystems. Developed a Network Centric Architecture for Non-Tactical Data Processing System as well as additional GCCS-M capabilities for the Sonar Subsystem

2. (U) FY 2005 PLAN:

• (U) ($39.827M) 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. Continue the Voyage Management System and information assurance implementation for NPES system/subsystems. The FY 2005 controls include $18.2M of Congressional Plus-Up funding for the following: $1.5M for Information Assurance; $8.0M for Common Submarine Radio Room; $2M for NTDPS Mates; $1.7M for Shipboard Wireless LAN; $3.5M for COTS Web Enabled Tool kit, and $1.5M for Enhanced Open System Module.

3. (U) FY 2006 PLAN:

• (U) ($29.672M) Continue development of high priority ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Continue the detailed planning for C3I System/subsystems testing as part of VIRGINIA Class TECH/OPEVAL. Continue the Voyage Management System and information assurance implementation for NPES system/subsystems.

4. (U) FY 2007 PLAN:

• (U) ($25.191M) Continue development of high priority ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Conduct C3I System/subsystems testing as part of VIRGINIA Class TECH/OPEVAL. Complete the Voyage Management System implementation. Continue the information assurance implementation for NPES system/subsystems.

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1950/VIRGINIA Class Combat System Development

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

	FY 04	FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost	14.523	9.599	13.199	14.939
RDT&E Articles Quantity				

FY 2004 Acomplishments: (U) ($14.523M) Continued development of high priority S/CC/A ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Completed integration of Tactical Tomahawk capability into S/CC/A.

FY 2005 Plan: ($9.599M) 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 for S/CC/A subsystems testing as part of VIRGINIA Class TECH/OPEVAL.
FY 2006 Plan: ($13.199M) Continue development of high priority S/CC/A ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Continue the detailed planning for S/CC/A subsystems testing as part of VIRGINIA Class TECH/OPEVAL. Begin the development of SCCA System Improvements to maintain VIRGINIA Class Commonality to backfit fleet.

FY 2007 Plan: ($14.939M) Continue development of high priority S/CC/A ship safety/self-protect deficiencies identified during integration and lead ship sea test efforts. Conduct S/CC/A subsystems testing as part of VIRGINIA Class TECH/OPEVAL. Continue the development of SCCA System Improvements to maintain VIRGINIA Class Commonality to backfit fleet.

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1950/VIRGINIA Class Combat System Development

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2004	FY 2005	FY 2006	FY 2007
FY05 President's Budget:	38.573	39.805	40.725	38.459
FY06 President's Budget:	38.332	49.426	42.871	40.130
Total Adjustments	-0.241	9.621	2.146	1.671
Summary of Adjustments				
Reprogramming	4.576			
Programmatic/Other Adjustments	-4.817	-8.579	2.146	1.671
FY05 Congressional Plus-Ups		18.200		
Subtotal	-0.241	9.621	2.146	1.671

Schedule:

"Not Applicable"

Technical:

"Not Applicable"

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1950/VIRGINIA Class Combat System Development

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY2010	FY2011	To Complete	Total Cost
SCN Line 201300 PE: 0203281N	2698.3	2572.4	2401.5	2413.9	2528.5	3589.1	3780.4	3790.3	48389.5	84389.5
SCN Line 201310 PE: 0203281N	0	0	0	0	0	0	0	0	0	589.2
O&M'N BA-2 1B2B PE: 0204283N	14.4	18.6	24.6	38.2	54.6	67.2	65.6	68.3	cont.	cont.
OPN BA-8 Line Item 094200	0	57.8	175.6	192.1	182.4	209.7	223.0	232.2	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 awarded a multi-year contract for the FY04-08 ships. 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.

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1) | DATE: **February 2005**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT	PROJECT NUMBER AND NAME
RDT&E, N / BA-5	0604558N/VIRGINIA Class Design Development	1950/VIRGINIA Class Combat System Development

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 04 Cost	FY 04 Award Date	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
C3I Prime Contract E&MD Total	C/CPAF	Lockheed Manassas, VA	253.983	3.908	Various	1.085	Various	0.099	Various	0.056	Various	0.000	259.131	259.131
C3I Prime Contract E&MD Award Fee	C/CPAF	Lockheed Manassas, VA	7.820	0.051	Various	0.150	Various	0.010	Various	0.006	Various	0.000	8.037	8.037
C3I Prime Contract Post Delivery	C/FFP	Lockheed Manassas, VA	19.635	2.260	Various	1.255	Various	1.297	Various	0.642	Various	0.000	25.089	25.089
ARCI Prime Contract	SS/CPAF	Lockheed Manassas, VA	0.000	2.300	12/03							0.000	2.300	2.300
Unique Virginia Class Improvments	TBD	Various/TBD	0.000					4.158	11/05	4.706	11/06	91.794	100.658	100.658
Advanced Display Sys (AN/UYQ-70)	SS/CPIF	Lockheed St. Paul, MN	26.921			0.906		0.845	11/05	0.956	11/06	7.887	37.515	37.515
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	30.762	1.000	11/03	1.590	11/04	2.706	11/05	2.136	11/06	8.318	46.512	46.512
Non-Penetrating Periscope	C/CPIF	Kollmorgen Northhampton, M	4.060										4.060	4.060
Electronic Support Measures	C/FFP	Lockheed Syracuse, NY	38.067									6.410	44.477	44.477
Platform Integration	SS/CPFF	EB Corp Groton, CT	28.916	0.700		1.000	11/04	1.400	11/05	1.000	11/06	13.823	46.839	46.839
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	10.765			0.769	Various		Various		Various	9.590	21.124	
Open System Module	SS/CPFF	UNISYS Corp St. Paul, MN	2.500										2.500	2.500
Technical Direction Agent	N/A	NUWC Newport, RI	205.692	7.031	Various	8.500	Various	8.404	Various	7.728	Various	47.891	285.246	
Technology Refreshment/Info. Assur.	C/CPFF	Progeny Systems,Manassas,	12.820	6.412	11/03	3.290	Various	2.000	11/05	1.000	11/06	6.372	31.894	
NTDPS Network Centric Architecture	SS/CPFF	DSR, Fairfax, Virginia	0.000	3.760	01/04								3.760	
Systems Engineering	N/A	NSWC Cardock, MD	4.460	0.315	11/03	0.320		0.325		0.330		2.880	8.630	
Systems Engineering	N/A	NSWC Crane, IN	3.722										3.722	
Systems Engineering	N/A	SSC Charleston, SC	2.333										2.333	
Systems Engineering	N/A	SSC San Diego, CA	2.545										2.545	
Systems Engineering	N/A	NUWC Keyport, WA	7.858	1.119	11/03	1.140	11/04	1.160	11/05	1.180	11/06	10.400	22.857	
Miscellaneous	Various	Various	63.477	7.712	Various	24.572	Various	13.156	Various	12.404	Various	61.467	182.788	
Subtotal Product Development			793.678	36.568		44.577		35.560		32.144		266.832	1,209.359	

Remarks:

Development Support			0.000										0.000	
Software Development			0.000										0.000	
Training Development			0.000										0.000	
Integrated Logistics Support			0.000										0.000	
Configuration Management			0.000										0.000	
Technical Data			0.000										0.000	
GFE			0.000										0.000	
Award Fees			0.000										0.000	
Subtotal Support			0.000	0.000		0.000		0.000		0.000		0.000	0.000	

Remarks:

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2) | DATE: **February 2005**

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

PROGRAM ELEMENT: 0604558N/VIRGINIA Class Design Development

PROJECT NUMBER AND NAME: 1950/VIRGINIA Class Combat System Development

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 04 Cost	FY 04 Award Date	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			0.000										0.000	
Operational Test & Evaluation			0.000										0.000	
Test & Evaluation	Various	Various	0.000			2.070	Various	4.130	Various	4.712	Various	1.500	12.412	
Test Assets			0.000										0.000	
Tooling			0.000										0.000	
GFE			0.000										0.000	
Award Fees			0.000										0.000	
Subtotal T&E			0.000	0.000	0.000	2.070		4.130		4.712		1.500	12.412	
Remarks:														
Contractor Engineering Support			0.000										0.000	
Contractor Support Services/ETS	C/CPAF	EG&G Rockville, MD	5.834	1.675	Various	2.779	Various	2.790	Various	2.800	Various	23.633	39.511	
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	0.089	Various			0.391		0.474		2.143	7.773	
Program Management Support			0.000										0.000	
Travel			0.000										0.000	
Subtotal Management			42.772	1.764		2.779		3.181		3.274		25.776	79.546	
Remarks:														
Total Cost			836.450	38.332		49.426		42.871		40.130		294.108	1,301.317	
Remarks:														

R-1 SHOPPING LIST Item No. 113

CLASSIFICATION:

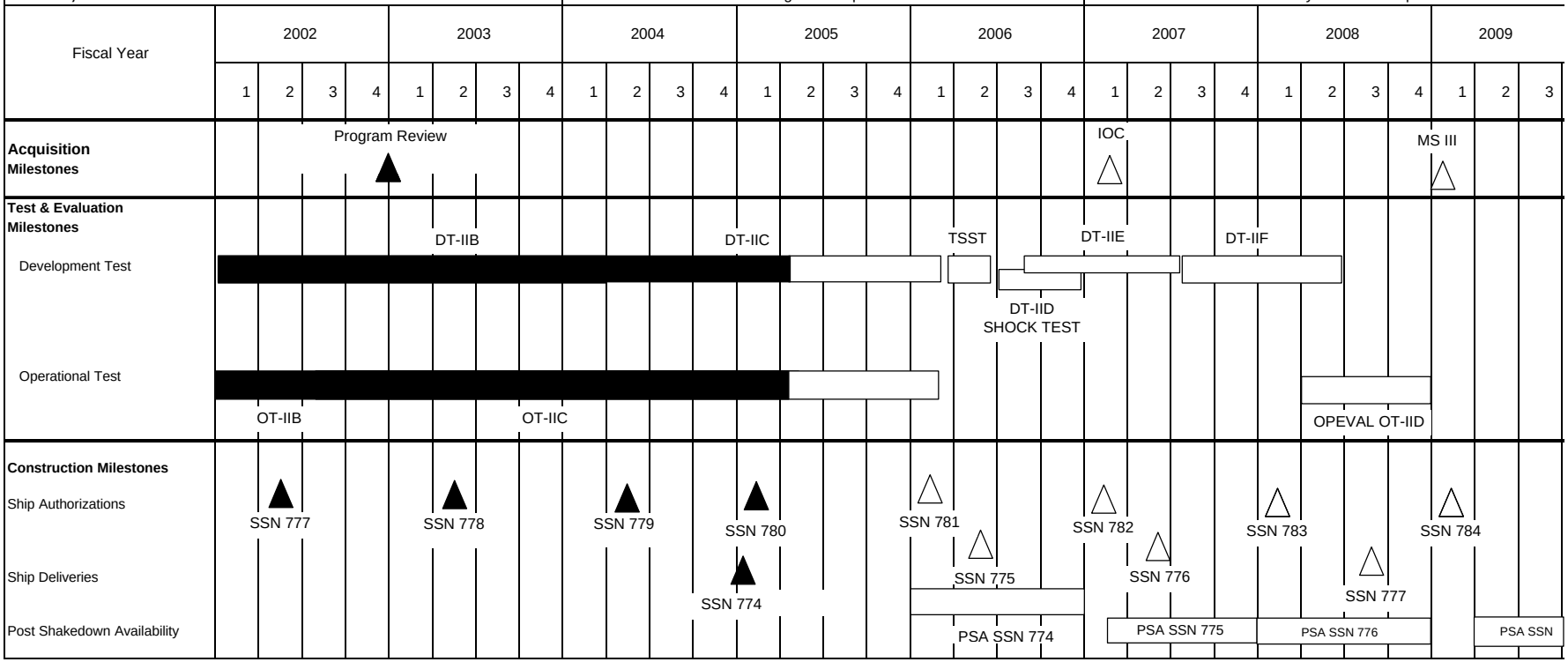
EXHIBIT R4, Schedule Profile

DATE: **February 2005**

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

PROGRAM ELEMENT NUMBER AND NAME: 0604558N/VIRGINIA Class Design Development

PROJECT NUMBER AND NAME: 1950/VIRGINIA Class Combat Systems Development



R-1 SHOPPING LIST - Item No. 113

Exhibit R-4a, Schedule Detail						DATE: **February 2005**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 1950/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-4Q				
Ship Authorization (SSN 777)	2Q							
Ship Authorization (SSN 778)		2Q						
Ship Authorization (SSN 779)			1Q					
Ship Delivery (SSN 774)				1Q				
Developmental Test (DT-IIC)			4Q	1Q-4Q				
Ship Authorization (SSN 780)				1Q				
Post Shakedown Availability (PSA SSN 774)					1Q-4Q			
Ship Delivery (SSN 775)					2Q			
Ship Authorization (SSN 781)					1Q			
Total Ship Survivability Trial (TSST)					1Q-2Q			
Developmental Test (DT-IID) Full Ship Shock Test					3Q-4Q			
Initial Operating Capability (IOC)						1Q		
Post Shakedown Availability (PSA SSN 775)						1Q-4Q		
Developmental Test (DT-IIE)					3Q-4Q	1Q-3Q		
Developmental Test (DT-IIF)						3Q-4Q	1Q-2Q	
Ship Authorization (SSN 782)						1Q		
Ship Delivery (SSN 776)						2Q		
Operational Evaluation (OT-IID) (OPEVAL)							2Q-4Q	
Post Shakedown Availability (PSA SSN 776)							1Q-4Q	
Milestone III (MS III)								1Q
Ship Authorization (SSN 783)							1Q	
Ship Delivery (SSN 777)							3Q	
Post Shakedown Availability (PSA SSN 777)								2Q-4Q
Ship Authorization (SSN 784)								1Q

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION: **UNCLASSIFIED**

EXHIBIT R-2a, RDT&E Project Justification							DATE: **February 2005**	
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA-5**	PROGRAM ELEMENT NUMBER AND NAME 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 3062/Submarine Multi-Mission Team Trainer			
COST ($ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Project Cost	5.755	3.704	2.614	2.674	2.749	2.831	2.889	2.947
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 (AN/BYG-1) and ARCI (AN/BQQ-10) 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.

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604558N/VIRGINIA Class Design Development	3062/Submarine Multi-Mission Team Trainer

B. Accomplishments/Planned Program

	FY 04	FY 05	FY 06	FY07
Accomplishments/Effort/Subtotal Cost	5.755	3.704	2.614	2.674
RDT&E Articles Quantity				

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).
FY06 Develop implementation of latest Advanced Processor Build (APB), Technical Insertion (TI) and associated training displays.
FY07 Develop implementation of latest Advanced Processor Build (APB), Technical Insertion (TI) and associated training displays.

	FY 04	FY 05	FY 06	FY07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

	FY 04	FY 05	FY 06	FY07
Accomplishments/Effort/Subtotal Cost	0.000	0.000	0.000	0.000
RDT&E Articles Quantity				

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604558N/VIRGINIA Class Design Development	3062/Submarine Multi-Mission TeamTrainer

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 2004	FY 2005	FY 2006	FY 2007
FY05 President's Budget:	6.000	3.746	2.665	2.723
FY06 President's Budget:	5.755	3.704	2.614	2.674
Total Adjustments	-0.245	-0.042	-0.051	-0.049
Summary of Adjustments				
Programmatic adjustments		-0.042	-0.051	-0.049
Misc Adjustments				
Execution Realign	-0.230			
Cancelled accounts	-0.015			
Subtotal	-0.245	-0.042	-0.051	-0.049

Schedule:

"Not Applicable."

Technical:

"Not Applicable."

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification		DATE: **February 2005**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604558N/VIRGINIA Class Design Development	3062/Submarine Multi-Mission Team Trainer

D. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. & Name	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
566100, Submarine Training Device Modification	9.9	29.8	24.8	13.7	12.6	12.9	13.3	13.7	0.0	130.7

E. ACQUISITION STRATEGY: *

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

F. MAJOR PERFORMERS: **

NSWCCD

R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 1)								DATE: **February-2005**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5**		PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 3062/Submarine Multi-Mission Team Trainer						
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
											0.000	
											0.000	
Component Development	WX	NSWCCD, Bethesda, MD	21.087	3.209	various	2.214	various	2.274	various	9.816	38.600	N/A
Component Development	FR	UT Austin ARL	0.668	0.495	12/04	0.400	various	0.400	various	1.600	3.563	3.563
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
											0.000	
Subtotal Product Development			21.755	3.704		2.614		2.674		11.416	42.163	

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. 113

CLASSIFICATION:

Exhibit R-3 Cost Analysis (page 2)								DATE: **February 2005**				
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /BA-5**		PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 3062/Submarine Multi-Mission Team Trainer						
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
											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			22.000	3.704		2.614		2.674		11.416	42.408	
Remarks:												

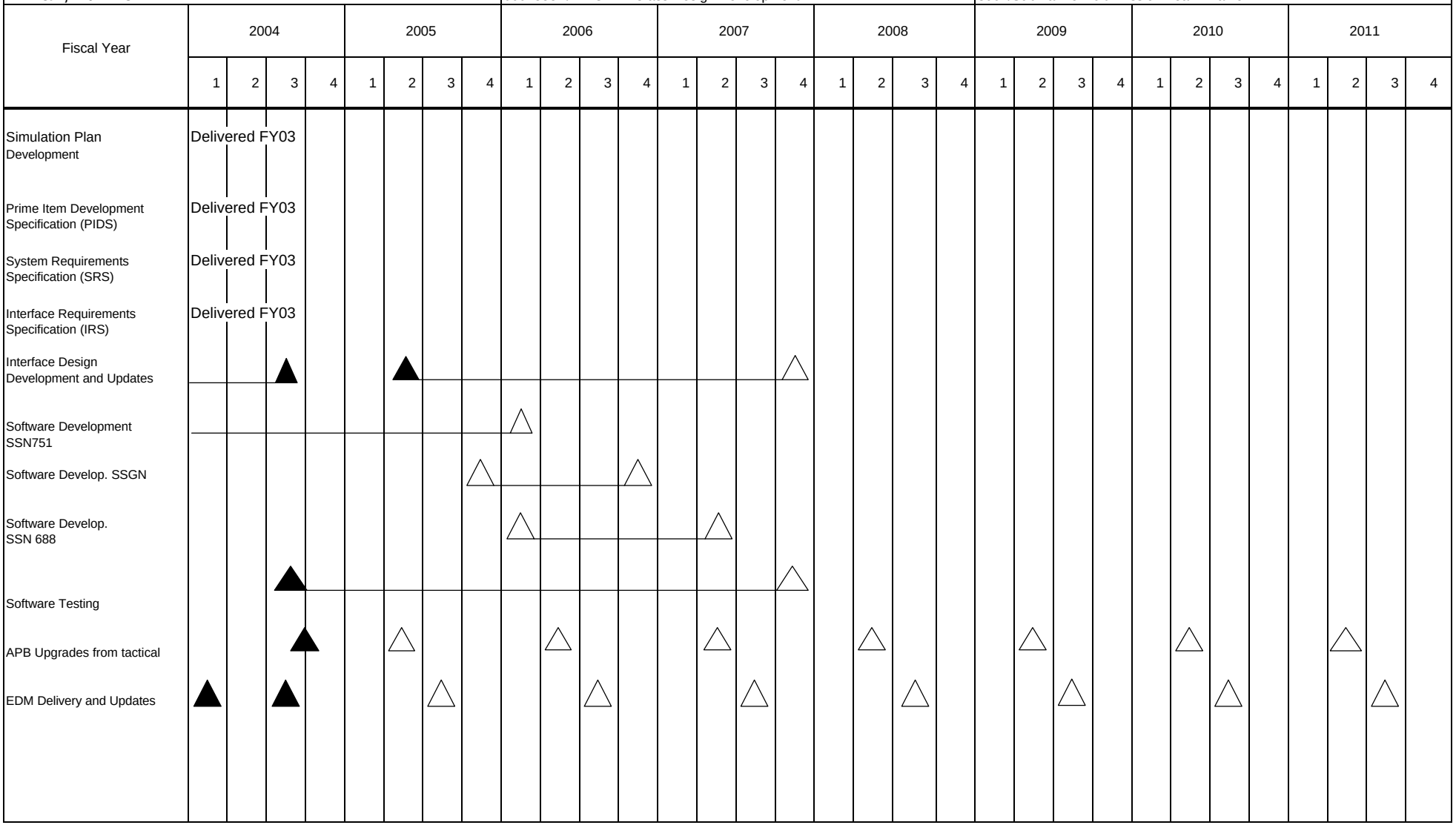
R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2005**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /BA-5	0604558N/VIRGINIA Class Design Development	3062/Submarine Multi-Mission Team Trainer



R-1 SHOPPING LIST - Item No. 113

CLASSIFICATION:

Exhibit R-4a, Schedule Detail						DATE: **February 2005**		
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N/BA-5**	PROGRAM ELEMENT 0604558N/VIRGINIA Class Design Development				PROJECT NUMBER AND NAME 3062/Submarine Multi-Mission Team Trainer			
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Simulation Plan Development	Delivered FY03							
PIDS	Delivered FY03							
SRS	Delivered FY03							
IRS	Delivered FY03							
Interface Design Development	1Q-3Q	2Q-4Q	1Q-4Q	1Q-4Q				
Software Development	1Q-4Q	1Q-4Q	1Q-4Q	1Q-2Q				
Software Testing	3Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q				
APB/TI Upgrades from tactical	2Q	2Q	2Q	2Q	2Q	2Q	2Q	2Q
EDM Delivery	1Q, 3Q	3Q	3Q	3Q	3Q	3Q	3Q	3Q

R-1 SHOPPING LIST - Item No. 113