Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy											DATE: April 2013	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*					R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*							
COST ($ in Millions)	**All Prior Years**	**FY 2012**	**FY 2013#**	**FY 2014 Base**	**FY 2014 OCO ##**	**FY 2014 Total**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**Cost To Complete**	**Total Cost**
Total Program Element	2,090.950	109.117	165.230	121.566	-	121.566	252.117	278.712	270.864	143.683	Continuing	Continuing
1947: *New Design SSN HM&E*	1,330.856	58.364	33.568	29.781	-	29.781	62.060	38.027	28.376	29.056	Continuing	Continuing
1950: *New Design SSN Combat Sys Dev*	738.538	32.821	29.065	29.876	-	29.876	37.442	38.217	39.841	36.725	Continuing	Continuing
3062: *Submarine Multi-Mission Team Trainer*	21.556	2.932	2.729	2.789	-	2.789	2.857	2.906	2.955	3.010	Continuing	Continuing
4500: *VIRGINIA Payload Module*	0.000	0.000	99.868	59.120	-	59.120	149.758	199.562	199.692	74.892	Continuing	Continuing
9999: *Congressional Adds*	0.000	15.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	15.000
MDAP/MAIS Code(s): 516												

FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

The FY 2014 OCO Request will be submitted at a later date

A. 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 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.

Project 9999: FY11 Congressional Add includes funding for Small Business Technology Insertion.

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy	DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*

B. Program Change Summary ($ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	112.158	165.230	268.535	-	268.535
Current President's Budget	109.117	165.230	121.566	-	121.566
Total Adjustments	-3.041	0.000	-146.969	-	-146.969
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.750	0.000			
• SBIR/STTR Transfer	-2.291	0.000			
• Program Adjustments	0.000	0.000	-55.931	-	-55.931
• Rate/Misc Adjustments	0.000	0.000	-91.038	-	-91.038

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2012	FY 2013
Project: 9999: *Congressional Adds*		
Congressional Add: *New Design SSN SBIR (Cong)*	15.000	-
Congressional Add Subtotals for Project: 9999	15.000	0.000
Congressional Add Totals for all Projects	15.000	0.000

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1947: *New Design SSN HM&E*	

COST ($ in Millions)	All Prior Years	FY 2012	FY 2013#	FY 2014 Base	FY 2014 OCO ##	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
1947: *New Design SSN HM&E*	1,330.856	58.364	33.568	29.781	-	29.781	62.060	38.027	28.376	29.056	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0		0	0	0	0	0		

FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

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 systems. Technology development implementation and logistics for developmental items, and VIRGINIA Class test & evaluation are included. This project is essential for pursuit of high priority Design For Affordability (DFA) and Reduced Total Ownership Cost (RTOC) initiatives while achieving platform requirements and providing mission capability and flexibility. 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. Technologies developed in this program will be considered for applicability to the Ohio Replacement Program (ORP) for commonality opportunities. 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 and Office of Naval Research (ONR) Future Naval Capabilities Program.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Title: New Design SSN HM&E	52.213	28.116	10.814
Articles:	0	0	0

FY 2012 Accomplishments:

Continue block upgrades of Ship Control Algorithms and software. Continue software development for Advanced Electromagnetic Silencing capability. Complete design and development of Block III Cost Reduction components and technologies including, for example, Large Area Bow Array, payload tubes, hatches, reverse osmosis units, low cost sound isolation coupling, and Integrated Low Pressure Electrolyzer. Continue transition of products from the Office of Naval Research Manufacturing Technology Program (MANTECH). Continue development of concepts and technologies for Block IV Reduced Total Ownership Cost (RTOC). Address emergent reliability issues associated with HM&E components. Initiate Obsolescence Redesign for Block IV.

FY 2013 Plans:

Continue block upgrades of Ship Control Algorithms and software. Complete software development for Advanced Electromagnetic Silencing capability. Continue transition of products from the Office of Naval Research Manufacturing Technology Program (MANTECH). Continue development of concepts and technologies for Block IV Reduced Total Ownership Cost (RTOC) and

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1947: *New Design SSN HM&E*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
finalize Block IV technical baseline. Address emergent reliability issues associated with HM&E components. Initiate Obsolescence Redesign for Block IV. ***FY 2014 Plans:*** Continue block upgrades of Ship Control Algorithms and software. Continue transition of products from the Office of Naval Research Manufacturing Technology Program (MANTECH). Continue development of concepts and technologies for Block IV Reduced Total Ownership Cost (RTOC) and Block IV technical baseline. Address emergent reliability issues associated with HM&E components. Initiate Obsolescence Redesign for Block IV.			
Title: TEST AND EVALUATION	6.151	5.452	18.967
Articles:	0	0	0
FY 2012 Accomplishments: Continue responding to SSN774 OPEVAL, Arctic, and TI-08/APB-09 deficiencies identified by COTF and support OPNAV in adjudication of DOT&E recommendations, as well as prepare for future FOT&E events. Develop detailed test plans/procedures in preparation for DDS FDT&E and FOT&E in FY13. ***FY 2013 Plans:*** Continue responding to SSN774 OPEVAL, Arctic, and TI-08/APB-09 deficiencies identified by COTF and support OPNAV in adjudication of DOT&E recommendations, as well as prepare for future FOT&E events. Conduct DDS FDT&E/FOT&E, and post-test analysis and reporting. Initiate developmental test plans/procedures to test the first Block III bow re-design. ***FY 2014 Plans:*** Continue responding to SSN774 OPEVAL, Arctic, and TI-08/APB-09 deficiencies identified by COTF and support OPNAV in adjudication of DOT&E recommendations, as well as prepare for future FOT&E events. Finalize detailed plan to test a VIRGINIA Class in a Low Frequency Active (LFA) environment and execute LFA FOT&E. Finalize detailed developmental test plans/ procedures to test the first Block III bow re-design. Develop a detailed plan and conduct an operational assessment of VIRGINIA Class during CCSM Off-Hull Assembly & Test Site (COATS). Initiate plans for test plan/procedures development for Block III FOT&E to occur in FY2015.			
Accomplishments/Planned Programs Subtotals	58.364	33.568	29.781

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• SCN/2013: *VA CL*	4,682.675	4,092.479	5,285.316		5,285.316	6,958.557	5,541.991	5,370.920	5,662.694	4,452.206	81,603.657

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1947: *New Design SSN HM&E*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• O&M,N/0204283N: *Sub Ops & Safety*	54.412	45.260	43.253		43.253	41.474	39.611	35.365	36.098	Continuing	Continuing
• OPN/0942: *VA CL Support Equipment*	93.487	79.870	74.209		74.209	62.552	46.597	47.199	44.429	Continuing	Continuing

Remarks

D. 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 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), now Huntington Ingalls Industries (HII), 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 HII became a part of the IPPD process. The Program Office is managing two Multi-Year Procurement (MYP) contracts the first is for the FY04-08 ships and the second was awarded in December 2008 for the FY09-13 ships. The PB13 Budget submit includes a request for a third MYP contract with an estimated RFP release in the fall of 2012 and contract award first quarter FY14.

E. Performance Metrics

Successful completion of Milestone III Review. Successful completion of Final Operational Test and Evaluation (FOT&E) for Technology Insertion (TI)-08 and Block III.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1947: *New Design SSN HM&E*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Component Development	WR	NSWC:Carderock, MD	216.910	15.329	Feb 2012	9.592	Nov 2012	3.669	Nov 2013	-		3.669	Continuing	Continuing	Continuing
Component Development	WR	NUWC:Newport, RI	105.875	0.492	Mar 2012	0.435	Nov 2012	0.220	Nov 2013	-		0.220	Continuing	Continuing	Continuing
Component Development	WR	NRL:Washington, DC	4.918	0.300	Dec 2011	0.250	Nov 2012	0.110	Nov 2013	-		0.110	Continuing	Continuing	Continuing
Component Development	C/CPFF	Electric Boat:Groton, CT	572.554	17.325	Mar 2012	8.074	Nov 2012	3.238	Nov 2013	-		3.238	Continuing	Continuing	Continuing
Component Development	C/CPFF	Electric Boat:Groton, CT	22.964	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Component Development	C/CPFF	Electric Boat:Groton, CT	34.245	5.574	Dec 2011	3.950	Dec 2012	1.539	Dec 2013	-		1.539	Continuing	Continuing	Continuing
Component Development	PO	SUPSHIP:Groton, CT	53.747	11.183	Mar 2012	4.721	Mar 2013	1.869	Mar 2014	-		1.869	Continuing	Continuing	Continuing
Component Development	SS/CPFF	Lockheed Martin:Not Specified	15.703	0.821	Dec 2011	0.000	Dec 2012	0.000		-		0.000	Continuing	Continuing	Continuing
Component Development	SS/CPFF	Lockheed Martin:Not Specified	2.070	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Component Development	SS/CPFF	Applied Research Laboratory:Penn State University	21.906	0.115	Dec 2011	0.000	Dec 2012	0.000		-		0.000	Continuing	Continuing	Continuing
Component Development	SS/FP	National Shipbuilding Research Program:Not Specified	2.454	0.574	Mar 2012	0.594	Mar 2013	0.219	Mar 2014	-		0.219	Continuing	Continuing	Continuing
Component Development	Various	Micellaneous:Not Specified	14.671	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	1,068.017	51.713		27.616		10.864		0.000		10.864			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1947: *New Design SSN HM&E*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation - DT&E	WR	NSWC:Carderock, MD	89.433	0.810	Feb 2012	0.800	Nov 2012	2.774	Nov 2013	-		2.774	Continuing	Continuing	Continuing
Test and Evaluation - LFT&E	WR	NSWC:Carderock, MD	0.650	0.420	Dec 2011	0.415	Nov 2012	1.479	Nov 2013	-		1.479	Continuing	Continuing	Continuing
Test and Evaluation - DT&E	WR	NSWC:Dahlgren, VA	0.315	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Test and Evaluation - DT&E	WR	NUWC:Newport, RI	102.175	2.304	Feb 2012	1.695	Nov 2012	5.707	Nov 2013	-		5.707	Continuing	Continuing	Continuing
Test and Evaluation - OT&E	PO	COMOPTEVFOR:Norfolk, VA	13.428	1.000	Mar 2012	1.000	Nov 2012	3.329	Nov 2013	-		3.329	Continuing	Continuing	Continuing
Test and Evaluation - LFT&E	C/CPFF	Electric Boat:Groton, CT	1.088	0.202	Dec 2011	0.100	Dec 2012	0.369	Dec 2013	-		0.369	Continuing	Continuing	Continuing
Test and Evaluation - DT&E	C/CPAF	SEAPORT:Rockville, MD	18.907	0.500	Nov 2011	0.500	Nov 2012	1.665	Nov 2013	-		1.665	Continuing	Continuing	Continuing
Test and Evaluation - DT&E	C/CPFF	Progeny:Manassas, VA	3.460	0.915	Dec 2011	0.942	Dec 2012	3.144	Dec 2013	-		3.144	Continuing	Continuing	Continuing
Test and Evaluation - DT&E	Various	Micellaneous:Not Specified	11.842	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	241.298	6.151		5.452		18.467		0.000		18.467			

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPAF	SEAPORT:Rockville, MD	19.025	0.500	Nov 2011	0.500	Nov 2012	0.450	Nov 2013	-		0.450	Continuing	Continuing	Continuing
Travel	PO	Not Specified:Not Specified	1.919	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
DAWDF	Various	Not Specified:Not Specified	0.597	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	21.541	0.500		0.500		0.450		0.000		0.450			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1947: *New Design SSN HM&E*	

	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,330.856	58.364		33.568		29.781		0.000		29.781			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1947: *New Design SSN HM&E*

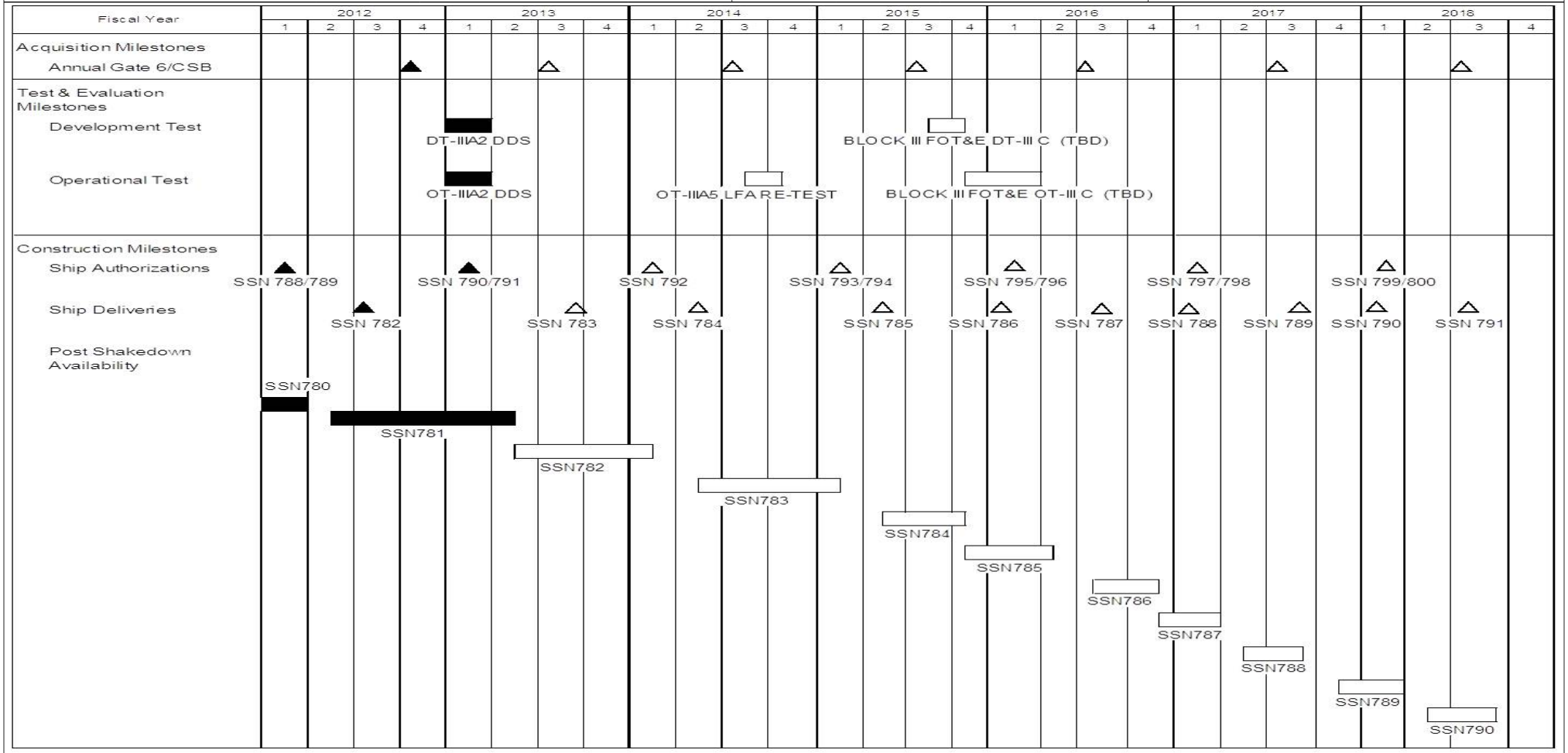

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1947: *New Design SSN HM&E*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1947				
Post Shakedown Availability/Modernization (PSA SSN 781)	2	2012	2	2013
Ship Delivery (SSN 782)	3	2012	3	2012
FY12 Annual Gate 6/CSB	4	2012	4	2012
Ship Authorization (790/791)	1	2013	1	2013
DT-IIIA2 (DDS)	1	2013	1	2013
OT-IIIA2 (DDS)	1	2013	1	2013
Post Shakedown Availability/Modernization (PSA SSN 782)	2	2013	1	2014
Ship Delivery (SSN 783)	3	2013	3	2013
FY13 Annual Gate 6/CSB	3	2013	3	2013
Ship Authorization (792)	1	2014	1	2014
Post Shakedown Availability/Modernization (PSA SSN 783)	2	2014	1	2015
Ship Delivery (SSN 784)	2	2014	2	2014
FY14 Annual Gate 6/CSB	3	2014	3	2014
LFA Re-Test (TBD)	3	2014	4	2014
Post Shakedown Availability/Modernization (PSA SSN 784)	1	2015	2	2015
Block III FOT&E DT-III C (TBD)	4	2015	1	2016
Ship Authorization (793/794)	1	2015	1	2015
Ship Delivery (SSN 785)	2	2015	2	2015
Block III FOT&E OT-III C (TBD)	3	2015	4	2015
FY15 Annual Gate 6/CSB	3	2015	3	2015
Post Shakedown Availability/Modernization (PSA SSN 785)	4	2015	2	2016

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1947: *New Design SSN HM&E*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Ship Delivery (SSN 786)	1	2016	1	2016
Ship Authorization (795/796)	1	2016	1	2016
Post Shakedown Availability/Modernization (SSN 786)	3	2016	4	2016
FY16 Annual Gate 6/CSB	3	2016	3	2016
Ship Delivery (SSN 787)	3	2016	3	2016
Post Shakedown Availability/Modernization (PSA SSN 787)	4	2016	1	2017
Ship Delivery (SSN 788)	1	2017	1	2017
Ship Authorization (SSNs 797/798)	1	2017	1	2017
Post Shakedown Availability/Modernization (PSA SSN 788)	2	2017	3	2017
Ship Delivery (SSN 789)	3	2017	3	2017
Ship Delivery (SSN 790)	1	2018	1	2018
FY17 Annual Gate 6/CSB	3	2017	3	2017
Post Shakedown Availability/Modernization (PSA SSN 789)	4	2017	1	2018
Ship Authorization (SSN 799/800)	1	2018	1	2018
Post Shakedown Availability/Modernization (SSN 790)	2	2018	3	2018
FY18 Annual Gate 6/CSB	3	2018	3	2018
Ship Delivery (SSN 791)	3	2018	3	2018

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1950: *New Design SSN Combat Sys Dev*	

COST ($ in Millions)	All Prior Years	FY 2012	FY 2013#	FY 2014 Base	FY 2014 OCO ##	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
1950: *New Design SSN Combat Sys Dev*	738.538	32.821	29.065	29.876	-	29.876	37.442	38.217	39.841	36.725	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0		0	0	0	0	0		

FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

This project encompasses the top level systems development, test and integration into the ship of the VIRGINIA Class Submarine C3I System, which includes multiple subsystems. The scope of the system is expanded from Sonar and Combat Control subsystems to include AN/BLQ-10 Electronic Support 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.

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.

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.

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1950: *New Design SSN Combat Sys Dev*

The F1950 project mission includes 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 FY09 and out funding identified is for those efforts.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Title: C3I Systems Engineering	15.548	13.713	13.994
Articles:	0	0	0
FY 2012 Accomplishments: Continue the development of System Level and other subsystem Improvements to maintain VIRGINIA Class Commonality to backfit fleet. ***FY 2013 Plans:*** Continue the development of System Level and other subsystem Improvements to maintain VIRGINIA Class Commonality to backfit fleet. ***FY 2014 Plans:*** Continue the development of System Level and other subsystem Improvements to maintain VIRGINIA Class Commonality to backfit fleet.			
Title: Sonar Combat Control and Architecture Subsystems	17.273	15.352	15.882
Articles:	0	0	0
Description: The Sonar Combat Control and Architecture (S/CC/A) Subsystems funding provides for the VIRGINIA unique efforts performed by the S/CC/A PARMs (PMS401 and PMS435 respectively). These funds also provide for the integration and test of subsystems at the VIRGINIA Class system level. This is a constant and consistent effort ongoing throughout the life of the system to maintain subsystem commonality with the submarine in-service community. ***FY 2012 Accomplishments:*** Continue the development of S/CC/A System Improvements to maintain VIRGINIA Class Commonality to backfit fleet. ***FY 2013 Plans:*** Continue the development of S/CC/A System Improvements to maintain VIRGINIA Class Commonality to backfit fleet. ***FY 2014 Plans:*** Continue the development of S/CC/A System Improvements to maintain VIRGINIA Class Commonality to backfit fleet.			
Accomplishments/Planned Programs Subtotals	32.821	29.065	29.876

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1950: *New Design SSN Combat Sys Dev*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• SCN/2013: *VA CL*	4,682.675	4,092.479	5,285.316		5,285.316	6,958.557	5,541.991	5,370.920	5,662.694	4,452.206	81,603.657
• O&M,N/0204283N: *Sub Ops & Safety*	54.412	45.260	43.253		43.253	41.474	39.611	35.365	36.098	Continuing	Continuing
• OPN/0942: *VA CL Support Equipment*	93.487	79.870	74.209		74.209	62.552	46.597	47.199	44.429	Continuing	Continuing

Remarks

D. 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 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), now Huntington Ingalls Industries (HII), 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 HII became a part of the IPPD process. The Program Office is managing two Multi-Year Procurement (MYP) contracts the first is for the FY04-08 ships and the second was awarded in December 2008 for the FY09-13 ships. The PB13 Budget submit includes a request for a third MYP contract with an estimated RFP release in the fall of 2012 and contract award first quarter FY14.

E. Performance Metrics

Successful completion of Milestone III Review. Successful completion of Final Operational Test and Evaluation (FOT&E) for Technology Insertion (TI)-08 and Block III. Successful implementation of Reduced Total Ownership Costs (RTOC) initiatives.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1950: *New Design SSN Combat Sys Dev*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PTR Corrections	Various	Various:TBD	30.088	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Unique Virginia Class Improvements	Various	Various:TBD	34.299	10.317	Mar 2012	7.587	Nov 2012	8.297	Nov 2013	-		8.297	Continuing	Continuing	Continuing
Advanced Display Sys (AN/UYQ-70)	SS/CPIF	Lockheed Martin:St. Paul, MN	32.143	1.059	Dec 2011	1.085	Nov 2012	1.123	Nov 2013	-		1.123	Continuing	Continuing	Continuing
Photonics	C/CPIF	Kollmorgen:Northampton, MA	52.793	1.530	May 2012	1.569	May 2013	1.624	May 2014	-		1.624	Continuing	Continuing	Continuing
Electronic Support Measures	C/FFP	Lockheed Martin:Syracuse, NY	38.067	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Platform Integration	SS/CPFF	Electric Boat:Groton, CT	45.576	1.224	Dec 2011	1.255	Nov 2012	1.299	Nov 2013	-		1.299	Continuing	Continuing	Continuing
Technology Refreshment	Various	Various:TBD	20.355	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Technical Direction Agent	WR	NUWC:Newport, RI	273.505	8.160	Feb 2012	7.066	Jan 2013	6.659	Jan 2014	-		6.659	Continuing	Continuing	Continuing
Technology Refreshment/ Info. Assurance	C/CPFF	Progeny Systems:Manassas, VA	31.686	1.530	Dec 2011	1.568	Nov 2012	1.623	Nov 2013	-		1.623	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC:Carderock, MD	9.443	0.816	Dec 2011	0.837	Nov 2012	0.866	Nov 2013	-		0.866	Continuing	Continuing	Continuing
Systems Engineering	WR	SSC:Charleston, SC	6.046	0.510	Jan 2012	0.522	Nov 2012	0.540	Nov 2013	-		0.540	Continuing	Continuing	Continuing
Systems Engineering	WR	NUWC:Keyport, WA	10.478	0.230	Mar 2012	0.236	Nov 2012	0.244	Nov 2013	-		0.244	Continuing	Continuing	Continuing
Miscellaneous	Various	Various:TBD	125.881	4.795	Feb 2012	4.625	Nov 2012	5.104	Nov 2013	-		5.104	Continuing	Continuing	Continuing
		Subtotal	710.360	30.171		26.350		27.379		0.000		27.379			

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Various	Various	Various:TBD	6.212	0.000		0.000		0.000		-		0.000	0.000	6.212	
		Subtotal	6.212	0.000		0.000		0.000		0.000		0.000	0.000	6.212	

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1950: *New Design SSN Combat Sys Dev*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Support Services/ETS	C/CPAF	URS:Rockville, MD	21.771	2.650	Dec 2011	2.715	Dec 2012	2.497	Dec 2013	-		2.497	Continuing	Continuing	Continuing
DAWDF	Various	Various:Various	0.195	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	21.966	2.650		2.715		2.497		0.000		2.497			

	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	738.538	32.821		29.065		29.876		0.000		29.876			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1950: *New Design SSN Combat Sys Dev*

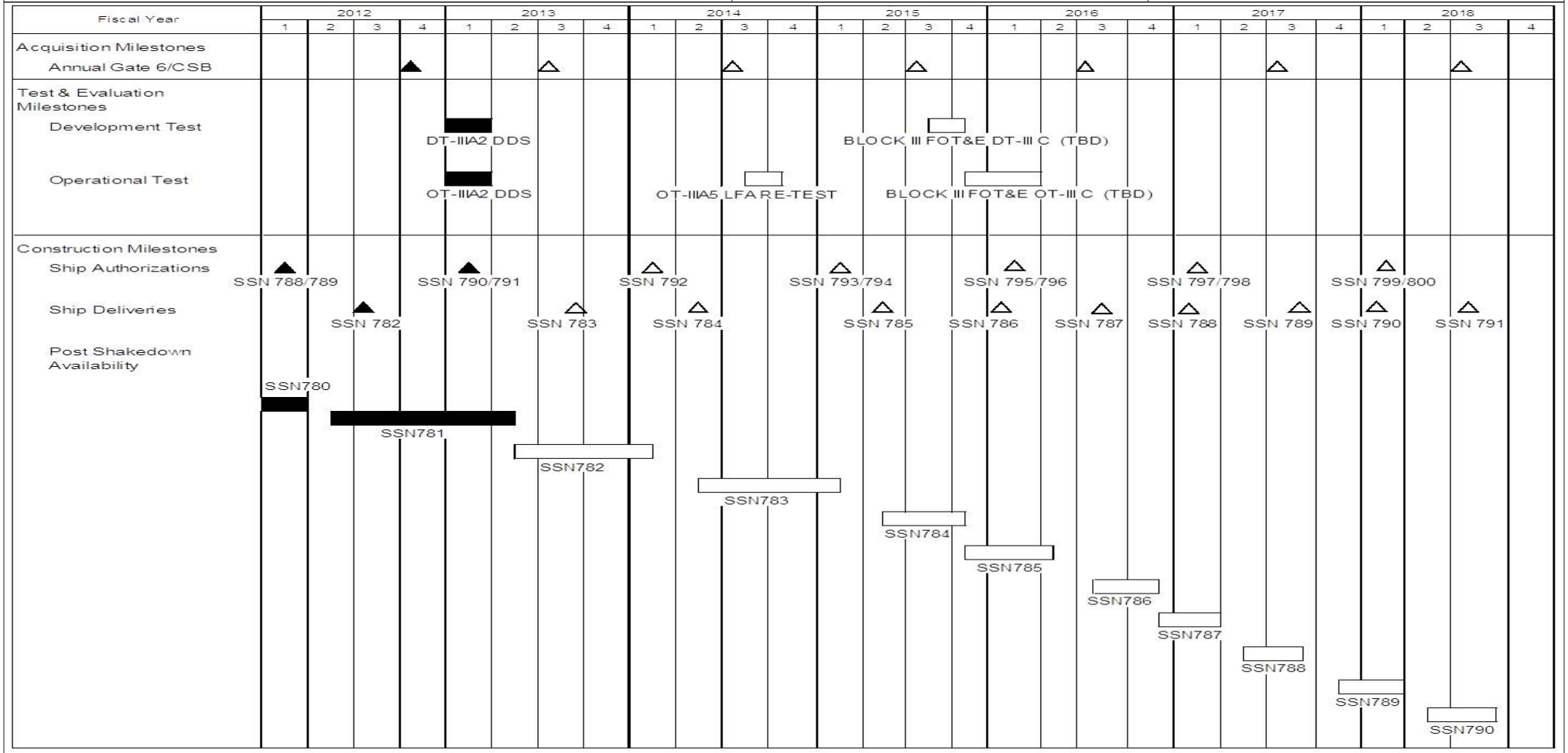

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1950: *New Design SSN Combat Sys Dev*

Schedule Details

	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Proj 1950				
Post Shakedown Availability/Modernization (PSA SSN 780)	1	2012	2	2012
Ship Authorization (SSN 788/789)	1	2012	1	2012
Post Shakedown Availability/Modernization (PSA SSN 781)	1	2013	2	2013
Ship Delivery (SSN 782)	3	2012	3	2012
FY12 Annual Gate 6/CSB	4	2012	4	2012
Ship Authorization (SSN 790/791)	1	2013	1	2013
DT-IIIA2 (DDS)	1	2013	1	2013
OT-IIIA2 (DDS)	1	2013	1	2013
Post Shakedown Availability/Modernization (PSA SSN 782)	2	2013	1	2014
Ship Delivery (SSN 783)	3	2013	3	2013
FY13 Annual Gate 6/CSB	3	2013	3	2013
Ship Authorization (SSN 792)	1	2014	1	2014
Post Shakedown Availability/Modernization (PSA SSN 783)	2	2014	4	2014
Ship Delivery (SSN 784)	2	2014	2	2014
FY14 Annual Gate 6/CSB	3	2014	3	2014
LFA Re-Test (TBD)	3	2014	4	2014
Post Shakedown Availability/Modernization (PSA SSN 784)	1	2015	2	2015
Block III FOT&E DT-III C (TBD)	4	2015	1	2016
Ship Authorization (SSN 793/794)	1	2015	1	2015
Ship Delivery (SSN 785)	2	2015	2	2015
Block III FOT&E OT-III C (TBD)	3	2015	4	2015

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 1950: *New Design SSN Combat Sys Dev*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
FY15 Annual Gate 6/CSB	3	2015	3	2015
Post Shakedown Availability/Modernization (PSA SSN 785)	1	2016	2	2016
Ship Delivery (SSN 786)	1	2016	1	2016
Ship Authorization (SSN 795/796)	1	2016	1	2016
Post Shakedown Availability/Modernization (SSN 786)	3	2016	4	2016
FY16 Annual Gate 6/CSB	3	2016	3	2016
Ship Delivery (SSN 787)	3	2016	3	2016
Post Shakedown Availability/Modernization (SSN 787)	4	2016	1	2017
Ship Delivery (SSN 788)	1	2017	1	2017
Ship Authorization (SSNs 797/798)	1	2017	1	2017
Post Shakedown Availability/Modernization (SSN 788)	2	2017	3	2017
Ship Delivery (SSN 789)	3	2017	3	2017
Ship Delivery (SSN 790)	3	2017	3	2017
FY17 Annual Gate 6/CSB	1	2018	1	2018
Post Shakedown Availability/Modernization (SSN 789)	4	2017	1	2018
Ship Authorization (SSNs 799/800)	1	2018	1	2018
Post Shakedown Availability/Modernization (SSN 790)	2	2018	3	2018
FY18 Annual Gate 6/CSB	3	2018	3	2018
Ship Delivery (SSN 791)	3	2018	3	2018

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 3062: *Submarine Multi-Mission Team Trainer*	

COST ($ in Millions)	All Prior Years	FY 2012	FY 2013#	FY 2014 Base	FY 2014 OCO ##	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
3062: *Submarine Multi-Mission Team Trainer*	21.556	2.932	2.729	2.789	-	2.789	2.857	2.906	2.955	3.010	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0		0	0	0	0	0		

FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

To achieve desired submarine force readiness levels, it is necessary to construct highly sophisticated shore based 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) MK1, CCS MK2, and AN/BYG-1, along with sonar systems AN/BSY-1, AN/BQQ-5, and AN/BQQ-10 are installed on SSN and SSGN Class submarines. These tactical systems are planned for future upgrades with the next hardware and software revisions which will provide enhanced war fighter capabilities. The Tactical Acoustic Rapid COTS (commercial-off-the-shelf) Insertion (ARCI) Phased upgrades are also being installed with future revisions. The Advanced Processing Builds (APB) and Technical Insertion (TI) sensors, which feed technology insertion into the CCS/Acoustic development, directly 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 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.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Title: Submarine Multi-Mission Team Trainer	2.932	2.729	2.789
Articles:	0	0	0
Description: To achieve desired submarine force readiness levels, it is necessary to construct highly sophisticated shore based Combat System Team Trainers capable of training personnel in all aspects of submarine approach, attack and surveillance operations in a controlled, simulated environment.			
FY 2012 Accomplishments: FY12 Develops implementation of latest Advanced Processor Build (APB), Technical Insertion (TI) and associated training displays. This effort includes new sensor developments and simulations to match advancements in tactical systems supported by SMMTT. This effort also develops the APB and starts the new Low Cost Conformal Array (LCCA) sensor development.			
FY 2013 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 3062: *Submarine Multi-Mission Team Trainer*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
FY13 Develops implementation of latest Advanced Processor Build (APB), Technical Insertion (TI) and associated training displays. This effort includes new sensor developments and simulations to match advancements in tactical systems supported by SMMTT. This effort also integrates the APB into the SMMTT baseline along with completing and integrating the LCCA sensor. ***FY 2014 Plans:*** N/A			
Accomplishments/Planned Programs Subtotals	2.932	2.729	2.789

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• OPN/5661: *Submarine Training Device Mods*	30.286	16.440	20.001		20.001	16.728	17.042	17.498	17.623	Continuing	Continuing

Remarks

D. Acquisition Strategy

The SMMTT program software development is accounted for in this RDT&E line. All production kits are procured in OPN PE 0804731N BLI 566100, cost code TD009.

E. Performance Metrics

Within 90 days of introduction to the Fleet, this RDTEN project shall develop required changes to the Control's & Display's Documentation and Interface Description Language (IDL) Interfaces for the initial development for new sensors that are required to simulate/stimulate that TI/APB for the AN/BQQ-5 and AN/BYG-1 in the Submarine Multi-Mission Team Trainer.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 3062: *Submarine Multi-Mission Team Trainer*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Component Development	Reqn	NSWC/ CD:Bethesda, MD	20.001	1.532	Dec 2011	2.373	Dec 2012	1.479	Dec 2013	-		1.479	Continuing	Continuing	Continuing
Component Development	C/CPFF	ARL:UT Austin	1.555	0.400	Jan 2012	0.356	Jan 2013	0.310	Jan 2014	-		0.310	Continuing	Continuing	Continuing
Component Development	Reqn	NSWC/ NPT:Newport, RI	0.000	1.000	Dec 2011	0.000	Dec 2012	1.000	Dec 2013	-		1.000	0.000	2.000	
		Subtotal	21.556	2.932		2.729		2.789		0.000		2.789			

	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	21.556	2.932		2.729		2.789		0.000		2.789			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 3062: *Submarine Multi-Mission Team Trainer*

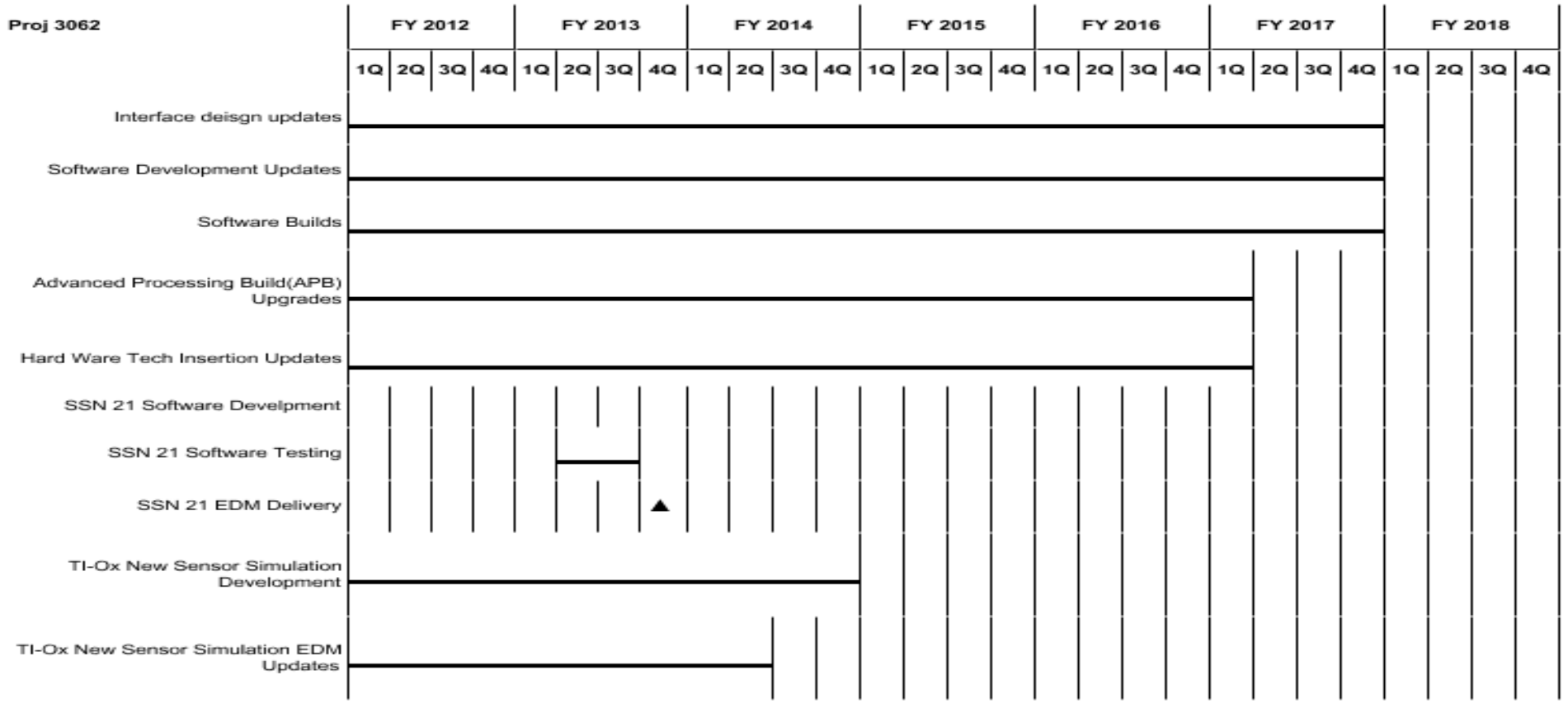

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 3062: *Submarine Multi-Mission Team Trainer*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3062				
Interface deisgn updates: Interface Design Updates	1	2012	4	2017
Software Development Updates: Software Development Updates (SIM/STIM)	1	2012	4	2017
Software Builds: Software Builds	1	2012	4	2017
Advanced Processing Build(APB) Upgrades: Advanced Processing Build (APB) Upgrades	1	2012	1	2017
Hard Ware Tech Insertion Updates: Hard Ware Tech Insertion Updates	1	2012	1	2017
SSN 21 Software Develpment: SSN 21 Software Development	1	2012	1	2013
SSN 21 Software Testing: SSN 21 Software Testing	2	2013	3	2013
SSN 21 EDM Delivery: SSN 21 EDM Delivery	4	2013	4	2013
TI-Ox New Sensor Simulation Development: TI-0x New Sensor Simulation Development	1	2012	4	2014
TI-Ox New Sensor Simulation EDM Updates: TI-0x New Sensor Simulation EDM Updates	1	2012	2	2014

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 4500: *VIRGINIA Payload Module*	

COST ($ in Millions)	All Prior Years	FY 2012	FY 2013#	FY 2014 Base	FY 2014 OCO ##	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
4500: *VIRGINIA Payload Module*	0.000	0.000	99.868	59.120	-	59.120	149.758	199.562	199.692	74.892	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0		0	0	0	0	0		

FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

This project encompasses Navy RDT&E efforts required to incorporate a modular design for future VIRGINIA Class Submarines (VCS) which integrates strike payload capacity for Tomahawk Land Attack and follow on missiles. The design is targeted for VCS Block V (FY19-23 ships).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Title: Non-Propulsion Electronics System (NPES) Engineering	0.000	49.934	29.560
Articles:		0	0
FY 2013 Plans: Develop requirements for VPM system launch control and evaluate candidate configurations for integration with existing VIRGINIA Class combat systems. Integrate and automate launch processes to enable efficient launch of payloads. Assess launcher electronics and software design to support rapid, low cost integration and testing of payloads. Reduce overall launch electronics weight and footprint, and provide increased unit space for future payload electronics.			
FY 2014 Plans: Continue development of VPM system launch control and integration with existing VIRGINIA Class combat systems. Integrate and automate launch processes to enable efficient launch of payloads. Assess launcher electronics and software design to support rapid, low cost integration and testing of payloads. Reduce overall launch electronics weight and footprint, and provide increased unit space for future payload electronics.			
Title: Hull, Mechanical, and Electrical (HM&E) Systems Engineering	0.000	49.934	29.560
Articles:		0	0
FY 2013 Plans: Design integration of the VPM including insertion of payload tube module to existing hull structure, hydrodynamic assessments, hydraulic system design, tube control interface, and internal arrangements to accommodate hardware, electronics and personnel. Design studies to assess all ship characteristics including maneuvering, signature levels, shock survivability, operational impacts and life cycle support. Products include specifications, system diagrams and arrangements.			
FY 2014 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 4500: *VIRGINIA Payload Module*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Continue design efforts for the VPM including integration to existing hull structure, hydrodynamic assessments, hydraulic system design, tube control interface, and internal arrangements to accommodate hardware, electronics and personnel. Design studies to assess all ship characteristics including maneuvering, signature levels, shock survivability, operational impacts and life cycle support. Products include specifications, system diagrams and arrangements.			
Accomplishments/Planned Programs Subtotals	0.000	99.868	59.120

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• SCN 2013: *VA CL*	4,682.675	4,092.479	5,285.316		5,285.316	6,958.557	5,541.991	5,370.920	5,662.694	4,452.206	81,603.657
• O&M,N/0204283N: *Sub Ops & Safety*	54.412	45.260	43.253		43.253	41.474	39.611	35.365	36.098	Continuing	Continuing
• OPN/0942: *VA CL Support Equipment*	93.487	79.870	74.209		74.209	62.552	46.597	47.199	44.429	Continuing	Continuing

Remarks

D. 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 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), now Huntington Ingalls Industries (HII), 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 HII became a part of the IPPD process. The Program Office is managing two Multi-Year Procurement (MYP) contracts the first is for the FY04-08 ships and the second was awarded in December 2008 for the FY09-13 ships. The PB13 Budget submit includes a request for a third MYP contract with an estimated RFP release in the fall of 2012 and contract award first quarter FY14. Developmental efforts will begin in FY13 and will be executed via current Lead Design Yard Agent contract with Electric Boat.

E. Performance Metrics

Preliminary Design Review
Critical Design Review

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 4500: *VIRGINIA Payload Module*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Component Development	WR	NSWC:Carderock, MD	0.000	0.000		9.862	Apr 2013	5.787	Nov 2013	-		5.787	Continuing	Continuing	Continuing
Component Development	WR	NUWC:Newport, RI	0.000	0.000		9.862	Apr 2013	5.787	Nov 2013	-		5.787	Continuing	Continuing	Continuing
Component Development	C/CPFF	Electric Boat:Groton, CT	0.000	0.000		79.894	Apr 2013	47.296	Nov 2013	-		47.296	Continuing	Continuing	Continuing
Component Development	Various	Various:Various	0.000	0.000		0.000	Apr 2013	0.000	Nov 2013	-		0.000	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		99.618		58.870		0.000		58.870			

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPAF	URS:Rockville, MD	0.000	0.000		0.250	Apr 2013	0.250	Nov 2013	-		0.250	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.250		0.250		0.000		0.250			

	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		99.868		59.120		0.000		59.120			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 4500: *VIRGINIA Payload Module*

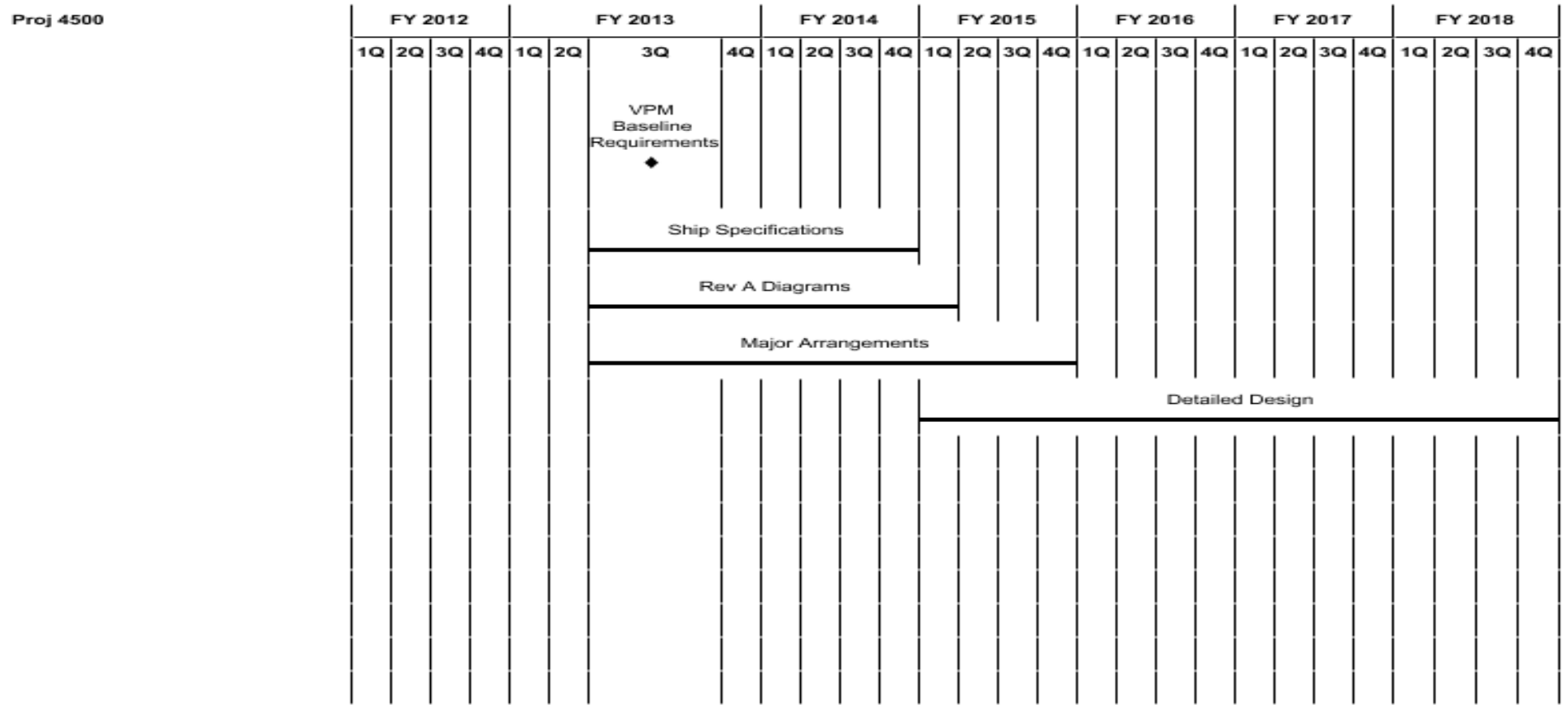

Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 4500: *VIRGINIA Payload Module*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4500				
Top Level Requirements Set/Updated VPM Baseline	3	2013	3	2013
Ship Specifications	3	2013	4	2014
Rev A Diagrams	3	2013	1	2015
Major Arrangements	3	2013	4	2015
Design Development	1	2015	4	2018

Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 9999: *Congressional Adds*	

COST ($ in Millions)	All Prior Years	FY 2012	FY 2013#	FY 2014 Base	FY 2014 OCO ##	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	15.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	15.000
Quantity of RDT&E Articles	0	0	0	0		0	0	0	0	0		

FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

Congressional Adds.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2012	FY 2013
Congressional Add: New Design SSN SBIR (Cong)	15.000	-
FY 2012 Accomplishments: N/A		
Congressional Adds Subtotals	15.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Congressional Adds.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 5: *System Development & Demonstration (SDD)*	R-1 ITEM NOMENCLATURE PE 0604558N: *New Design SSN*	PROJECT 9999: *Congressional Adds*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	FY 2012 Cost	FY 2012 Award Date	FY 2013 Cost	FY 2013 Award Date	FY 2014 Base Cost	FY 2014 Base Award Date	FY 2014 OCO Cost	FY 2014 OCO Award Date	FY 2014 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Rapid COTS Development	C/CPFF	Progeny Systems:Manassas, VA	0.000	15.000	May 2012	0.000		0.000		-		0.000	0.000	15.000	
		Subtotal	0.000	15.000		0.000		0.000		0.000		0.000	0.000	15.000	

Remarks

Funding used to support a number of efforts that have high potential for increasing performance and/or reducing cost and risk for future VIRGINIA Class submarines:
Leveraging previous development of the Common Weapon Launcher (CWL), efforts will include:
Development of future technology insertion strategies and plans and critical item testing of components
Development of CONOPs, architectures, OMI concepts and prototype displays for future payloads associated with VIRGINIA Blocks IV/V
Addressing the cost and performance issues associated with current design, a new low cost replacement EDM will be developed as a potential alternative for the Light Weight Wide Aperture Array (LWWAA) electro-optic receiver cabinet
In response to operational fleet concerns regarding combat system reliability and data collection, a NPES wide reliability data collection, monitoring, analysis and performance prediction system will be matured for potential introduction during a future Advanced Processing Build (APB)
In order to support Imaging subsystem processing, a number of new technologies will be matured and introduced in future APBs to improve photonics performance to rapidly detect and classify contacts of interest in challenging environments
Development of vector sensors for next generation fat-line towed array to increase array acoustic performance and to support target bearing ambiguity
Development, prototype and maturation of wireless component sensing and network technology that will facilitate low power, non-intrusive automatic integrated monitoring of critical ship systems, in support of reduced manning initiatives.

	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	15.000		0.000		0.000		0.000		0.000	0.000	15.000	

Remarks