Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy											Date: March 2014	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604580N *I (U)Virginia Payload Module (VPM*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	-	59.120	132.602	-	132.602	167.719	193.904	159.499	27.915	Continuing	Continuing
4500: *VIRGINIA Payload Module*	0.000	-	59.120	132.602	-	132.602	167.719	193.904	159.499	27.915	Continuing	Continuing
MDAP/MAIS Code: 516												

The FY 2015 OCO Request will be submitted at a later date.

Note

Beginning in FY2014, there is an administrative change that will shift efforts funded from PE 0604558N (New Design SSN) / Project 4500 to PE 0604580N (VIRIGNIA Payload Module) / Project 4500. This shift is consistent with Congressional intent identified in the FY14 Appropriations Act Committee Report.

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 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 Payload Module (VPM). VPM mitigates and will recapitalize the conventional TOMAHAWK Land Attack Missile (TLAM) gap created by the retirement of SSGNs in the late 2020s while maintaining current platform requirements. 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.

B. Program Change Summary ($ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	59.120	132.602	-	132.602
Total Adjustments	-	59.120	132.602	-	132.602
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	59.120			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	-	-	132.602	-	132.602

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604580N / *(U)Virginia Payload Module (VPM*	Project (Number/Name) 4500 / *VIRGINIA Payload Module*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
4500: *VIRGINIA Payload Module*	-	-	59.120	132.602	-	132.602	167.719	193.904	159.499	27.915	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 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 2013	FY 2014	FY 2015
Title: Non-Propulsion Electronics System (NPES) Engineering	-	15.250	19.810
Articles:	-	-	-
FY 2013 Accomplishments: 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. Specify and develop interfaces including software for VPM systems and existing C3I systems.			
FY 2015 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. Continue development of interfaces including software for VPM systems and existing C3I systems.			
Title: Hull, Mechanical, and Electrical (HM&E) Systems Engineering	-	43.870	112.792
Articles:	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604580N / *(U)Virginia Payload Module (VPM*	**Project (Number/Name)** 4500 / *VIRGINIA Payload Module*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments: Concept 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 concept arrangements. ***FY 2014 Plans:*** 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. Develop Integrated Master Schedule (IMS) and Manufacturing Plans. 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 2015 Plans:*** 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. Update Integrated Master Schedule (IMS) and Manufacturing Plans. 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	-	59.120	132.602

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• SCN//2013: *VIRGINIA Class Submarine*	4,636.630	6,462.316	5,883.579	-	5,883.579	5,450.298	5,223.103	5,481.305	5,884.914	-	83,123.088
• OPN/0942: *VA CL Support Equipment*	70.995	69.241	74.129	-	74.129	56.775	46.593	65.738	79.903	Continuing	Continuing
• O&MN/0204283N: *Sub Ops & Safety*	32.433	38.919	33.938	-	33.938	32.471	28.746	29.971	30.894	Continuing	Continuing
• RDT&E/0604558N: *New Design SSN**	81.161	121.566	72.695	-	72.695	92.810	100.404	111.578	86.275	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604580N / *(U)Virginia Payload Module (VPM*	**Project (Number/Name)** 4500 / *VIRGINIA Payload Module*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost

Remarks

*Note: RDT&E PE 0604558N contains project 3062: Submarine Multi-Mission Team Trainer which is not funding directly related to the VIRGINIA Class Program.

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 last Block II ship, SSN 783, was delivered in June 2013. All Block III ships are awarded and under construction. The Block IV MYP is in progress with second quarter FY14 planned award date. Developmental efforts began 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 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604580N / *(U)Virginia Payload Module (VPM*	Project (Number/Name) 4500 / *VIRGINIA Payload Module*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Component Development	WR	NSWC : Carderock, MD	0.000	-		12.500	Mar 2014	21.539	Nov 2014	-		21.539	Continuing	Continuing	Continuing
Component Development	WR	NUWC : Newport, RI	0.000	-		11.250	Mar 2014	16.290	Nov 2014	-		16.290	Continuing	Continuing	Continuing
Component Development	C/CPFF	Electric Boat : Groton, CT	0.000	-		35.120	Mar 2014	94.523	Nov 2014	-		94.523	Continuing	Continuing	Continuing
		Subtotal	0.000	-		58.870		132.352		-		132.352	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2013 Cost	FY 2013 Award Date	FY 2014 Cost	FY 2014 Award Date	FY 2015 Base Cost	FY 2015 Base Award Date	FY 2015 OCO Cost	FY 2015 OCO Award Date	FY 2015 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPAF	URS : Rockville, MD	0.000	-		0.250	Mar 2014	0.250	Nov 2014	-		0.250	Continuing	Continuing	Continuing
		Subtotal	0.000	-		0.250		0.250		-		0.250	-	-	-

	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		59.120		132.602		-		132.602	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604580N / *(U)Virginia Payload Module (VPM*	**Project (Number/Name)** 4500 / *VIRGINIA Payload Module*

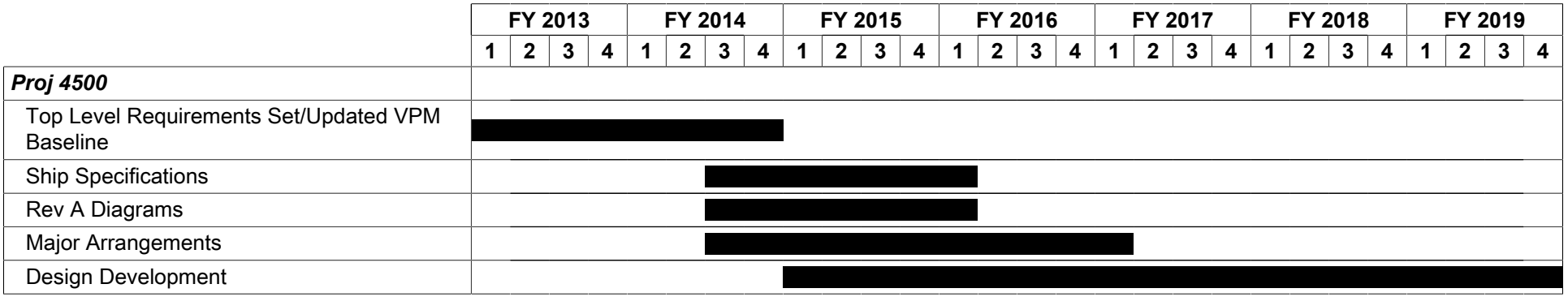

Exhibit R-4A, RDT&E Schedule Details: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604580N / *(U)Virginia Payload Module (VPM*	**Project (Number/Name)** 4500 / *VIRGINIA Payload Module*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 4500				
Top Level Requirements Set/Updated VPM Baseline	1	2013	4	2014
Ship Specifications	3	2014	1	2016
Rev A Diagrams	3	2014	1	2016
Major Arrangements	3	2014	1	2017
Design Development	1	2015	4	2019