Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy										DATE: February 2011	
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*							
COST ($ in Millions)	**FY 2010**	**FY 2011**	**FY 2012 Base**	**FY 2012 OCO**	**FY 2012 Total**	**FY 2013**	**FY 2014**	**FY 2015**	**FY 2016**	**Cost To Complete**	**Total Cost**
Total Program Element	67.980	81.184	88.873	-	88.873	111.007	145.959	134.101	132.609	Continuing	Continuing
0004: *TRIDENT Submarine System Improvement*	0.371	0.431	-	-	-	-	-	-	-	0.000	0.802
0951: *Joint Warhead Fuze Sustainment Program*	13.970	33.100	42.171	-	42.171	61.643	95.633	106.627	104.633	Continuing	Continuing
2228: *Technical Applications Programs*	44.123	43.015	42.097	-	42.097	44.762	45.717	22.861	23.279	Continuing	Continuing
3158: *Integrated Nuclear Weapons Security Sys Dev*	5.772	4.638	4.605	-	4.605	4.602	4.609	4.613	4.697	Continuing	Continuing
9999: *Congressional Adds*	3.744	-	-	-	-	-	-	-	-	0.000	3.744

A. Mission Description and Budget Item Justification

The TRIDENT Submarine System Improvement Program (0004) develops and integrates command and control improvements needed to maintain TRIDENT Submarine operational capability through the life cycle of this vital strategic asset. The program conducts efforts needed to maintain strategic connectivity, ensure platform invulnerability, and reduce lifecycle costs through Obsolete Equipment Replacement (OER) and commonality.

The Joint Warhead Fuze Sustainment Program (0951) is an effort to develop advanced components to improve the reliability, safety, and security of Arming, Fuzing and Firing (AF&F) systems for nuclear reentry systems. The current effort is focused on supporting the Alteration of the AF&F system for the MK5/W88 system which will be five years beyond its design life at the scheduled deployment of the AF&F Alteration. This effort also supports future utilization of the developed components by the US Air Force and United Kingdom.

The Technology Applications Program (2228) supports the TRIDENT II (D5) Submarine Launched Ballistic Missile (SLBM) that provides the U.S. a weapon system with greater accuracy and payload capability as compared to the TRIDENT I (C4) system. TRIDENT II enhances U.S. strategic deterrence providing a survivable, sea-based system capable of engaging the full spectrum of potential targets with fewer submarines. This Program Element supports investigations into new technologies which would help mitigate the program impact due to component obsolescence and a rapidly decreasing manufacturing support base. These efforts include Reentry System Applications and Guidance System Applications.

The Integrated Nuclear Weapons Security System (INWSS) (3158) efforts support the Nuclear Weapons Security program and SSBN Escort mission. The policies and requirements regarding the safeguard of nuclear weapons within the Department of Defense is established by DoD S5210.41M. Within the Department of the Navy, nuclear weapons are limited to TRIDENT Fleet Ballistic Missiles (FBM), either deployed aboard TRIDENT submarines or located landside at Naval Submarine Base, Kings Bay, or Naval Submarine Base, Bangor where missiles are first assembled as well as repaired. The Chief of Naval Operations (CNO) has assigned the Strategic Systems Programs, the FBM program manager, with mission responsibility for the safeguard of FBM nuclear technologies. This budget supports efforts directed at

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101221N: *Strategic Sub & Wpns Sys Supt*

improving the current technological baseline through a series of studies focusing on land and waterside requirements, including both surface and underwater. These efforts will improve countermeasure technologies to address detection, delay and denial.

The Advanced LINAC Facility Program seeks to develop and complete the design for an advanced Linear Accelerator Facility to perform radiation simulation of transient dose rate events. This facility will perform with advanced capabilities to overcome limitations of existing facilities, allowing greater efficiency in testing and reducing costs.

The Adelos National Security Sensor System effort develops an advanced fiber optic sensor system for counterterrorism and antiterrorism operations to meet rigorous performance metrics necessary for nuclear facility, material, and weapons protection. The Adelos component will evaluate the use of advanced classification algorithms for reduction of false positive detections of objects in proximity to fiber optic sensing elements. Adelos program also seeks to expand the application of a unique fiber optic sensor system designed to provide covert surveillance and intelligence gathering of potential threats to our nation's nuclear activity.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	69.385	81.184	83.089	-	83.089
Current President's Budget	67.980	81.184	88.873	-	88.873
Total Adjustments	-1.405	-	5.784	-	5.784
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.271	-			
• Program Adjustments	-	-	6.359	-	6.359
• Section 219 Reprogramming	-0.122	-	-	-	-
• Rate/Misc Adjustments	-	-	-0.575	-	-0.575
• Congressional General Reductions Adjustments	-0.012	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2010	FY 2011
Project: 9999: *Congressional Adds*		
Congressional Add: *Advanced Linear Accelerator (LINAC) Facility*	0.956	-
Congressional Add: *Adelos National Security Sensor System*	2.788	-
Congressional Add Subtotals for Project: 9999	3.744	-
Congressional Add Totals for all Projects	3.744	-

Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Navy	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101221N: *Strategic Sub & Wpns Sys Supt*

Change Summary Explanation

Technical: Not applicable.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 0004: *TRIDENT Submarine System Improvement*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0004: *TRIDENT Submarine System Improvement*	0.371	0.431	-	-	-	-	-	-	-	0.000	0.802
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The TRIDENT operational systems development program results in improvements to the baseline TRIDENT Combat System. Current TRIDENT Combat Systems were first developed in the early 1970s and are becoming increasingly difficult to maintain and offer comparatively less performance than more recently designed systems. Previous efforts to upgrade portions of the TRIDENT Combat System include improvements via sonar and combat control hardware and software (e.g., QE2 programs), feasibility of increased countermeasure capability and a concept evaluation of an Submarine Fleet Mission Program Library (SFMPL) interface. Due to the sensitivity of TRIDENT programs it is assessed that international technology will not have a major impact or be a recipient of the benefits derived from this effort. Development strategies will significantly enhance the sustainability and operability of the sonar, communications and Combat Control Systems on TRIDENTs by evaluating both Obsolete Equipment Replacement (OER) possibilities and potential improvements.

The TRIDENT Submarine System Improvement Program develops and integrates command and control improvements needed to maintain TRIDENT Submarine operational capability through the life cycle of this vital strategic asset. The program conducts efforts needed to maintain strategic connectivity, ensure platform invulnerability, and reduce lifecycle costs through Obsolete Equipment Replacement (OER) and commonality.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: TRIDENT Submarine System Improvement	0.371	0.431	-
Articles:	0	0	
FY 2010 Accomplishments: Conducted Commercial Off The Shelf (COTS)/emergent technology and Command Control System (CCS) performance requirements evaluations supporting Trident modernization program/plans. Researched and evaluated effectiveness of proposed new technology over the ships' life cycle. Analyzed impacts on platform performance with proposed new technology changes using architecture models and tests. Studied and identified options in selecting and installing new technology improvements. Evaluated Navigation data interface requirements to meet Electronic Chart Display and Information System Navy (ECDIS-N) compliance on Trident hulls. Provided arrangement layouts Government Furnished Information (GFI) to Electric Boat (EB) Ship Design Agent (SDA).			
FY 2011 Plans: Conduct Commercial Off The Shelf (COTS)/emergent technology and Command Control System (CCS) performance requirements evaluations supporting Trident modernization program/plans. Research and evaluate effectiveness of proposed			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 0004: *TRIDENT Submarine System Improvement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
new technology over the ships' life cycle. Analyze impacts on platform performance with proposed new technology changes using architecture models and tests. Study and identify options in selecting and installing new technology improvements. Evaluate Navigation data interface requirements to meet Electronic Chart Display and Information System Navy (ECDIS-N) compliance on Trident hulls. Provide arrangement layouts Government Furnished Information (GFI) to Electric Boat (EB) Ship Design Agent (SDA).			
Accomplishments/Planned Programs Subtotals	0.371	0.431	-

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

Efforts conducted by U.S. Navy laboratories.

E. Performance Metrics

Not applicable

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 0951: *Joint Warhead Fuze Sustainment Program*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
0951: *Joint Warhead Fuze Sustainment Program*	13.970	33.100	42.171	-	42.171	61.643	95.633	106.627	104.633	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Joint Warhead Fuze Sustainment Program is an effort to develop advanced components to improve the reliability, safety, and security of Arming, Fuzing and Firing (AF&F) systems for nuclear reentry systems. The current effort is focused on supporting the Alteration of the AF&F system for the MK5/W88 system which will be five years beyond its design life at the scheduled deployment of the AF&F Alteration. This effort also supports future utilization of the developed components by the US Air Force and United Kingdom.

A study on SSBN based Conventional Prompt Global Strike (CPGS) options will be completed to address safety, security, and surety issues, along with ambiguity issues as they relate to various sea-based designs. Begin trade analysis for cost performance and schedule for those designs; information that is required to better understand the capabilities that could be delivered from naval platforms.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: TRIDENT II	13.970	33.100	42.171
Articles:	0	0	0
Description: Identify, prioritize, develop, proof, and demonstrate advanced technologies that will be leveraged and incorporated into future AF&Fs.			
FY 2010 Accomplishments: FY 2010 efforts included: ($13.970) Joint Warhead Fuze Sustainment Program Supported USN, USAF, and UK engineer working group. Began component level testing of potential arming/fuzing devices and technologies. Developed approach to address radiation hardening issues in electronic AF&F components.			
FY 2011 Plans: FY 2011 efforts include: ($23.100) Joint Warhead Fuze Sustainment Program Develop, proof, and demonstrate identified advanced technologies for future AF&Fs Support USN, USAF, and UK engineer working group. Perform component level testing of potential arming/fuzing devices and technologies.			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 0951: *Joint Warhead Fuze Sustainment Program*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Begin development of advanced AF&F safety and surety architecture solution. Document enveloping requirements to support Navy, Air Force, and UK applications. ($10.0M) Global Strike Conduct a study that addresses safety and surety issues, along with ambiguity issues as they relate to various sea-based designs. Begin trade analysis for cost performance & schedule for those designs; information that is required to better understand the capabilities that could be delivered from naval platforms. ***FY 2012 Plans:*** FY2012 efforts include: ($42.171) Joint Warhead Fuze Sustainment Program Continue development, proofing, demonstration, and technology maturation of identified advanced technologies for future AF&Fs Support USN, USAF, and UK engineer working group. Conduct AF&F sub-assembly design demonstrations Continue development of advanced safety and surety architecture solutions. Complete Conceptual Design Review. Commence detailed design.			
Accomplishments/Planned Programs Subtotals	13.970	33.100	42.171

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

Contracts will continue to be awarded to those sources who were engaged in the Mk4LE Reentry Body development program and are currently engaged in the production and/or operational support of the deployed Mk4LE Reentry Body on the basis of Other Than Full and Open Competition pursuant to the authority of 10 U.S.C. 2304 (c) (1) and (3) implemented by FAR 6.302.-1, 3, 4

E. Performance Metrics

Not applicable

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 0951: *Joint Warhead Fuze Sustainment Program*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Warhead Fuze Sustainment DOE	MIPR	DOE:NM	13.170	20.600	Oct 2010	39.284	Oct 2011	-		39.284	Continuing	Continuing	Continuing
Joint Warhead Fuze Sustainment ITT	SS/CPFF	ITT:VA	0.300	1.500	Oct 2010	1.887	Oct 2011	-		1.887	Continuing	Continuing	Continuing
Joint Warhead Fuze Sustainment LMMS	SS/CPFF	LMMS:CA	0.500	1.000	Oct 2010	1.000	Oct 2011	-		1.000	Continuing	Continuing	Continuing
Global Strike Study	MIPR	DOE:NM	-	3.000	Oct 2010	-	Oct 2011	-		-	0.000	3.000	6.000
Global Strike Study	SS/CPFF	LMMS:CA	-	7.000	Oct 2010	-	Oct 2011	-		-	0.000	7.000	14.000
		Subtotal	13.970	33.100		42.171		-		42.171			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.970	33.100		42.171		-		42.171			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101221N: *Strategic Sub & Wpns Sys Supt*	**PROJECT** 0951: *Joint Warhead Fuze Sustainment Program*

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101221N: *Strategic Sub & Wpns Sys Supt*	**PROJECT** 0951: *Joint Warhead Fuze Sustainment Program*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0951				
Contract Go-ahead and Milestones	2	2010	2	2010
Define Technical Requirements	2	2010	3	2011
Technology Development Strategies	2	2010	3	2011
Capabilities Assessment	4	2010	3	2011
Technology Maturation	2	2010	4	2013
Design Demonstration	1	2012	4	2014
Assembly Level Testing	3	2012	4	2016
Performance Assessment of Tested Designs	1	2013	4	2016
Development Tests	3	2014	4	2016
Production Engineering	1	2013	4	2016
General JCIDS Support	2	2010	4	2016
General Acquisition Planning Support	2	2010	4	2016
Global Strike Payload Ambiguity Studies	1	2011	4	2011
Global Strike Surety Studies	1	2011	4	2011

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 2228: *Technical Applications Programs*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
2228: *Technical Applications Programs*	44.123	43.015	42.097	-	42.097	44.762	45.717	22.861	23.279	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This project supports implementation of a coordinated Navy/Air Force Reentry System Applications Program (RSAP), and a coordinated Navy/Air Force Strategic Guidance Applications Program (GAP). Reentry vehicle and guidance technology had been rapidly eroding beyond the point of being capable to respond to increasing aging phenomena and future requirements. The December 2001 DOD Nuclear Posture Review determined that infrastructure is a critical part of the new triad and these efforts form part of the infrastructure that supports the nuclear force structure.

The RSAP program, through sustainment of the reentry vehicle technology base, will maintain confidence in the dependability and reliability of strategic SLBM and ICBM weapon systems over the long term when no new systems will be in development. Critical and unique attributes necessary for the design, development and in-service support of current and modernized SLBM reentry systems have been defined and will be maintained to ensure a functioning readiness application technical capability in reentry is preserved. Working closely with the Air Force, Navy and Air Force requirements have been integrated into a comprehensive program. The program maintains close coordination with the DOD Science and Technology (S&T) community in order to: leverage S&T programs, ensure system driven technology base requirements are considered in contract awards, eliminate duplication of effort and provide an opportunity to demonstrate appropriate emerging technologies through a reentry flight test evaluation process.

The GAP program provides a minimum strategic guidance core technology development capability consistent with the Strategic Advisory Group (SAG) recommendations to COMSTRATCOM. The SAG recommended that SSP establish a program which preserves this critical design and development core. It is a basic bridge program which develops critical guidance technology applicable to any of the existing Air Force/Navy strategic missiles. The objective is to transition from current capability to a long term readiness status required to support deployed systems. Air Force and Navy guidance technology requirements are integrated and needs to be prioritized. Efforts are focused on alternatives to technologies identified as system "weak links." Currently system accuracy and functionality depends upon key technologies which provide radiation hardened velocity, attitude and stellar sensing capabilities. As the underlying technologies that currently provide these capabilities age and are no longer technically supportable, modern alternatives must be made available in order to allow for orderly replacement. There is no commercial market for these technologies and their viability depends on the strategic community.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: Technical Applications Program	44.123	43.015	42.097
Articles:	0	0	0
FY 2010 Accomplishments: FY 2010 efforts included:			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 2228: *Technical Applications Programs*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
($22.663) Continued Reentry System Applications Program. Continued to maintain the current capability and support the planned service life extension of Navy reentry systems. Continued development and ground testing of reentry vehicle candidate heat shield and nose tip materials including those available from Science & Technology (S&T). Continued testing alternative low-cost heat shield and replacement nose tip material. Continued testing operationally aged heat shields to support aging trends and replacement materials assessments. Maintained RSAP technical program plan, conducted system assessments and continued Vulnerability & Hardening certification process development in absence of Nuclear Under Ground Testing (UGT) facilities. Continued Reentry Body material development and advanced flight test instrumentation activities. Continued development of advanced GPS receiver. Ground tested advanced reentry material systems and advanced instrumentation components. Developed test instrumentation to demonstrate D5LE missile reentry body interface compatibility. ($21.460) Continued Strategic Guidance Applications Programs (GAP). Developed new architectures using telecom-based optical components for high-precision strategic gyro. Continued to evaluate emergent alternate sensor technologies, (accelerometer, gyro, and stellar) with an emphasis on providing existing performance in a significantly reduced form factor. Assessed feasibility of advanced stellar sensor technologies for use in strategic applications; specifically, active pixel and camera-on-a-chip architectures will be evaluated. Utilized the capabilities of the Virtual System Simulation (VSSim) to conduct system trade studies that support precision guidance application for boost phase and boost-thru-reentry scenarios. Conducted investigations to improve circumvention and recovery performance. ***FY 2011 Plans:*** FY 2011 efforts include: ($22.574) Continue Reentry System Applications Program. Maintain the current capability and support the planned service life extension of Navy reentry systems. Continue development and ground testing of reentry vehicle candidate heat shield and nose tip materials including those available from Science & Technology (S&T) Continue testing of alternative low-cost heat shield and replacement nose tip material. Analyze advanced aging material to determine its effectiveness. Continue testing of operationally aged heat shields to support aging trends and replacement materials assessments.			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 2228: *Technical Applications Programs*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Maintain RSAP technical program plan, conduct system assessments and continue Vulnerability & Hardening certification process development in absence of Nuclear Under Ground Testing (UGT) facilities. Continue Reentry Body material development and advanced flight test instrumentation activities. Flight Test the advanced radiation tolerant GPS receiver Ground test advanced reentry material systems and advanced instrumentation components. ($20.441) Continue Strategic Guidance Applications Programs (GAP). Continue to develop new architectures using telecom-based optical components for high-precision strategic gyro. Continue to evaluate emergent alternate sensor technologies, (accelerometer, gyro, and stellar) with an emphasis on providing existing performance in a significantly reduced form factor. Assess feasibility of advanced stellar sensor technologies for use in strategic applications; specifically, active pixel and camera-on-a-chip architectures will be evaluated. Utilize the capabilities of the Virtual System Simulation (VSSim) to conduct system trade studies that support precision guidance application for boost phase and boost-thru-reentry scenarios. Investigate concepts for enhanced system test and analysis Conduct investigations to improve circumvention and recovery performance. Investigate concepts for enchanced systems test and analysis			
FY 2012 Plans: FY 2012 efforts include: ($21.202) Continue Reentry System Applications Program. Maintain the current capability and support the planned service life extension of Navy reentry systems. Continue development and ground testing of reentry vehicle candidate heat shield and nose tip materials including those available from Science & Technology (S&T) Continue testing of alternative low-cost heat shield and replacement nose tip material. Analyze advanced aging material to determine its effectiveness. Continue testing of operationally aged heat shields to support aging trends and replacement materials assessments. Maintain RSAP technical program plan, conduct system assessments and continue Vulnerability & Hardening certification process development in absence of Nuclear Under Ground Testing (UGT) facilities. Continue Reentry Body material development and advanced flight test instrumentation activities. Ground test advanced reentry material systems and advanced instrumentation components. ($20.895) Continue Strategic Guidance Applications Programs (GAP).			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101221N: *Strategic Sub & Wpns Sys Supt*	**PROJECT** 2228: *Technical Applications Programs*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue to develop new architectures using telecom-based optical components for high-precision strategic gyro. Continue to evaluate emergent alternate sensor technologies, (accelerometer, gyro, and stellar) with an emphasis on providing existing performance in a significantly reduced form factor. Assess feasibility of advanced stellar sensor technologies for use in strategic applications; specifically, active pixel and camera-on-a-chip architectures will be evaluated. Utilize the capabilities of the Virtual System Simulation (VSSim) to conduct system trade studies that support precision guidance application for boost phase and boost-thru-reentry scenarios. Investigate concepts for enhanced system test and analysis Conduct investigations to improve circumvention and recovery performance.			
Accomplishments/Planned Programs Subtotals	44.123	43.015	42.097

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

Contracts will continue to be awarded to those sources who were engaged in the TRIDENT II (D5) development program and are currently engaged in the production and/or operational support of the deployed D5 Strategic Weapons Systems on the basis of Other Than Full and Open Competition pursuant to the authority of 10 U.S.C. 2304 (c) (1) and (3) implemented by FAR 6.302.-1, 3, 4

E. Performance Metrics

Not applicable

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 2228: *Technical Applications Programs*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Applications LMSS	SS/CPFF	LMSS:CA	140.354	10.342	Oct 2010	9.530	Oct 2011	-		9.530	Continuing	Continuing	Continuing
Technology Applications NSWC	WR	NSWC:VA	79.059	4.651	Oct 2010	6.825	Oct 2011	-		6.825	Continuing	Continuing	Continuing
Technology Applications DOE	MIPR	DOE:NM	29.091	1.467	Oct 2010	1.406	Oct 2011	-		1.406	Continuing	Continuing	Continuing
Technology Applications ITT	SS/CPFF	ITT:CO	9.188	1.611	Oct 2010	-	Oct 2011	-		-	Continuing	Continuing	Continuing
Technology Applications CSDL	SS/CPFF	CSDL:MA	256.921	23.810	Oct 2010	23.106	Oct 2011	-		23.106	Continuing	Continuing	Continuing
Technology Applications AERO	SS/CPFF	AERO:CA	-	1.134	Oct 2010	1.137	Oct 2011	-		1.137	Continuing	Continuing	Continuing
Technology Applications VAR	Various	Various:Various	18.224	-	Oct 2010	0.093	Oct 2011	-		0.093	Continuing	Continuing	Continuing
		Subtotal	532.837	43.015		42.097		-		42.097			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	532.837	43.015		42.097		-		42.097			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 2228: *Technical Applications Programs*

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101221N: *Strategic Sub & Wpns Sys Supt*	**PROJECT** 2228: *Technical Applications Programs*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2228				
RSAP Contract Go-ahead and Milestones	1	2010	1	2016
RSAP Design Development Evaluation Alternative Heat Shield	1	2010	4	2016
RSAP Design Development Evaluation Avionics Battery	1	2010	4	2016
RSAP Design Development Evaluation Avionics Computers	1	2010	4	2016
RSAP System Test	4	2010	4	2016
GAP Contract Award	1	2010	1	2014
GAP Virtual Systems modeling and simulation trade studies for advanced system concepts	1	2010	4	2014
GAP Circumvention and Recovery investigations	1	2010	4	2013
GAP Complete investigation concepts for enchanced systems test & analysis	1	2011	4	2014
GAP design and development of high precision strategic gyro	1	2010	4	2014
GAP Evaluation of emerging alternate accelerometer technologies	1	2010	4	2014
GAP Evaluation of emerging alternate gyro technologies	1	2010	4	2014
GAP Assess feasibility, design, and demonstration of advanced strategic stellar sensor technologies	1	2010	4	2014

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 3158: *Integrated Nuclear Weapons Security Sys Dev*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
3158: *Integrated Nuclear Weapons Security Sys Dev*	5.772	4.638	4.605	-	4.605	4.602	4.609	4.613	4.697	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Enhanced Special Weapons effort supports the Nuclear Weapons Security program and SSBN Escort mission. The policies and requirements regarding the safeguard of nuclear weapons within the Department of Defense is established by DoD S5210.41M. Within the Department of the Navy, nuclear weapons are limited to TRIDENT Fleet Ballistic Missiles (FBM), either deployed aboard TRIDENT submarines or located landside at Naval Submarine Base, Kings Bay or Naval Submarine Base, Bangor where missiles are first assembled as well as repaired. The Chief of Naval Operations (CNO) has assigned the Strategic Systems Programs, the FBM program manager, with mission responsibility for the safeguard of FBM nuclear assets. More specifically, the mission includes landside and pier operations as well as transits to and from the dive point, each of which present challenges to personnel as well as existing technologies. This budget supports efforts directed at improving the current technological baseline through a series of studies focusing on land, waterside, and in transit requirements, including both surface and underwater. Collectively, these efforts will improve countermeasure technologies addressing detection, delay and denial.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Title: NWSPE Development	5.772	4.638	4.605
Articles:	0	0	0
FY 2010 Accomplishments: FY 2010 efforts included: ($5.772) Enhanced Special Weapons/Nuclear Weapons Security program. Continued efforts focused on developing an advanced underwater vehicle and diver detection and deterrence system, and enhanced underwater and surface barriers. Developed advanced technologies for Site-Wide Nuclear Weapons Security Systems including a secure wireless command network and enhanced automated security systems. Developed advanced technologies for Limited Area/Convoy Route Nuclear Weapons Security Systems including extended perimeter detection, vehicle barrier systems at entry control points, and enhanced tracking capabilities. Conducted technology Reviews: The systems will undergo further testing prior to production decisions.			
FY 2011 Plans: FY 2011 efforts include: ($4.638) Enhanced Special Weapons/Nuclear Weapons Security program. Continue efforts focused on developing an advanced underwater vehicle and diver detection and deterrence system, and enhanced underwater and surface barriers.			

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101221N: *Strategic Sub & Wpns Sys Supt*	**PROJECT** 3158: *Integrated Nuclear Weapons Security Sys Dev*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2010	FY 2011	FY 2012
Continue development of advanced technologies for Site-Wide Nuclear Weapons Security Systems including a secure wireless command network and enhanced automated security systems. Continue development of advanced technologies for Limited Area/Convoy Route Nuclear Weapons Security Systems including extended perimeter detection, vehicle barrier systems at entry control points, and enhanced tracking capabilities. Technology Reviews: The systems will undergo further testing prior to production decisions. ***FY 2012 Plans:*** FY 2012 efforts include: ($4.605) Enhanced Special Weapons/Nuclear Weapons Security program. Continue efforts focused on developing an advanced underwater vehicle and diver detection and deterrence system, and enhanced underwater and surface barriers. Continue development of advanced technologies for Site-Wide Nuclear Weapons Security Systems including a secure wireless command network and enhanced automated security systems. Continue development of advanced technologies for Limited Area/Convoy Route Nuclear Weapons Security Systems including extended perimeter detection, vehicle barrier systems at entry control points, and enhanced tracking capabilities. Technology Reviews: The systems will undergo further testing prior to production decisions.			
Accomplishments/Planned Programs Subtotals	5.772	4.638	4.605

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• MCN/Various-1: *MILCON (CNI) (Nuclear Weapons Security)*	154.711	120.503	129.905	0.000	129.905	50.955	0.000	0.000	0.000	Continuing	Continuing
• OPN/Various-2: *OPN (Nuclear Weapons Security)*	40.401	47.815	56.481	0.000	56.481	60.022	50.716	48.195	66.917	Continuing	Continuing
• OMN/11D2D-3: *Fleet Ballistic Missile (Nuclear Weapons Security)*	73.426	76.097	77.002	0.000	77.002	79.760	85.191	88.739	90.280	Continuing	Continuing
• MCN/Various-4: *MILCON (CNI) (Transit/Escort)*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
• OMN/11D2D-5: *Fleet Ballistic Missile (Transit/Escort)*	129.480	134.876	130.290	0.000	130.290	128.717	114.351	117.485	119.174	Continuing	Continuing
	11.972	2.011	2.037	0.000	2.037	2.078	2.112	2.149	2.187	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 3158: *Integrated Nuclear Weapons Security Sys Dev*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
• OPN/Various-7: *OPN (Transit/ Escort)*											
• WPN/44217-6: *Gun Mount Mods*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

Procurements are being executed through a combination of private contractors (large and small business), government Centers of Excellence (COEs), other government agencies and the Naval Submarine Bases, Kitsap and Kings Bay. Contract awards are based upon "best value" determinations, and where practical will be performance based or include incentive provisions.

E. Performance Metrics

Not applicable

Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 3158: *Integrated Nuclear Weapons Security Sys Dev*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	FY 2011 Cost	FY 2011 Award Date	FY 2012 Base Cost	FY 2012 Base Award Date	FY 2012 OCO Cost	FY 2012 OCO Award Date	FY 2012 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Nuclear Weapons Security Sys Dev	WR	NFESC:CA	0.890	0.465	Oct 2010	0.410	Oct 2011	-		0.410	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	CNWS:CA	0.404	-	Oct 2010	-	Oct 2011	-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	JHU APL:MD	0.944	0.875	Oct 2010	1.043	Oct 2011	-		1.043	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	SNSW:CA	1.842	0.653	Oct 2010	1.532	Oct 2011	-		1.532	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NSWC:VA	0.677	1.340	Oct 2010	0.500	Oct 2011	-		0.500	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	JRC:VA	0.251	0.250	Oct 2010	0.250	Oct 2011	-		0.250	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NUWC:RI	0.075	0.375	Oct 2010	0.345	Oct 2011	-		0.345	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NEDU:FL	0.383	-	Oct 2010	-	Oct 2011	-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	LMMS:CA	0.306	0.200	Oct 2010	0.200	Oct 2011	-		0.200	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	MIPR	DOEI:ID	-	0.180	Oct 2010	-	Oct 2011	-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	MIPR	DOE:NM	-	0.300	Oct 2010	0.125	Oct 2011	-		0.125	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	ARL:TX	-	-	Oct 2010	0.200	Oct 2011	-		0.200	Continuing	Continuing	Continuing
		Subtotal	5.772	4.638		4.605		-		4.605			

	Total Prior Years Cost	FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	5.772	4.638		4.605		-		4.605			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 3158: *Integrated Nuclear Weapons Security Sys Dev*

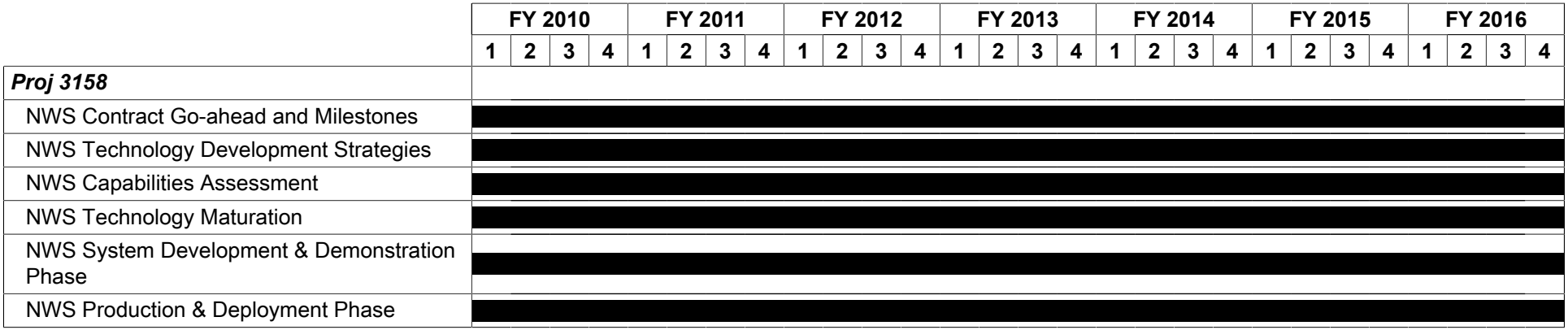

Exhibit R-4A, RDT&E Schedule Details: PB 2012 Navy		DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0101221N: *Strategic Sub & Wpns Sys Supt*	**PROJECT** 3158: *Integrated Nuclear Weapons Security Sys Dev*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3158				
NWS Contract Go-ahead and Milestones	1	2010	4	2016
NWS Technology Development Strategies	1	2010	4	2016
NWS Capabilities Assessment	1	2010	4	2016
NWS Technology Maturation	1	2010	4	2016
NWS System Development & Demonstration Phase	1	2010	4	2016
NWS Production & Deployment Phase	1	2010	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2012 Navy			DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 1319: *Research, Development, Test & Evaluation, Navy* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0101221N: *Strategic Sub & Wpns Sys Supt*	PROJECT 9999: *Congressional Adds*	

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
9999: *Congressional Adds*	3.744	-	-	-	-	-	-	-	-	0.000	3.744
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Congressional adds

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011
Congressional Add: Advanced Linear Accelerator (LINAC) Facility ***FY 2010 Accomplishments:*** (U) Completed all construction, testing and characterization activities necessary for a fully functional and operational dose rate test facility.	0.956	-
Congressional Add: Adelos National Security Sensor System ***FY 2010 Accomplishments:*** Extended the technology of Adelos to incorporate its application in a saltwater littoral environment and define appropriate signatures and signature correlation algorithms development for the Nuclear Weapons Security Program. Determined response times to detect, classify and localize and capacity. This efforts includes conducting technology tests and demonstrations in the use environment and a report of results.	2.788	-
Congressional Adds Subtotals	3.744	-

C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

Contracts were awarded to a combination of private contractors (large and small business) and other government agencies as required to complete the objectives of each congressional add.

E. Performance Metrics

Not applicable