Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy										DATE: February 2012	
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 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**Cost To Complete**	**Total Cost**
Total Program Element	68.575	88.873	105.892	-	105.892	123.984	133.862	132.333	134.612	Continuing	Continuing
0004: *TRIDENT Submarine System Improvement*	0.426	-	-	-	-	-	-	-	-	0.000	0.426
0951: *Joint Warhead Fuze Sustainment Program*	21.722	42.171	61.576	-	61.576	95.474	106.412	104.391	106.189	Continuing	Continuing
2228: *Technical Applications Programs*	42.114	42.097	39.719	-	39.719	23.909	22.846	23.256	23.656	Continuing	Continuing
3158: *Integrated Nuclear Weapons Security Sys Dev*	4.313	4.605	4.597	-	4.597	4.601	4.604	4.686	4.767	Continuing	Continuing

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 2013 Navy	DATE: February 2012
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.

B. Program Change Summary ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	81.184	88.873	111.007	-	111.007
Current President's Budget	68.575	88.873	105.892	-	105.892
Total Adjustments	-12.609	-	-5.115	-	-5.115
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.247	-			
• Program Adjustments	-	-	-5.000	-	-5.000
• Rate/Misc Adjustments	-	-	-0.115	-	-0.115
• Congressional General Reductions Adjustments	-0.362	-	-	-	-
• Congressional Directed Reductions Adjustments	-10.000	-	-	-	-

Change Summary Explanation

Funding reduced in FY 2013 for the phased cancellation of Guidance Applications Programs (GAP) in FY 2014.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
0004: *TRIDENT Submarine System Improvement*	0.426	-	-	-	-	-	-	-	-	0.000	0.426
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 2011	FY 2012	FY 2013
Title: TRIDENT Submarine System Improvement	0.426	-	-
Articles:	0		
FY 2011 Accomplishments: 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 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	0.426	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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*

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 2013 Navy			DATE: February 2012
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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
0951: *Joint Warhead Fuze Sustainment Program*	21.722	42.171	61.576	-	61.576	95.474	106.412	104.391	106.189	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.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2011	FY 2012	FY 2013
Title: TRIDENT II	21.722	42.171	61.576
Articles:	0	0	0

Description: Identify, prioritize, develop, proof, and demonstrate advanced technologies that will be leveraged and incorporated into future AF&Fs.

FY 2011 Accomplishments:
FY 2011 efforts include:
($21.722) Joint Warhead Fuze Sustainment Program
Develop, proof, and demonstrate identified advanced technologies for future AF&Fs
Support USN, USAF, and UK engineer working groups.
Perform component level testing of potential arming/fuzing devices and technologies.
Begin development of advanced AF&F safety and surety architecture solution.
Document enveloping requirements to support Navy, Air Force, and UK applications.

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 groups.
Conduct AF&F sub-assembly design demonstrations
Continue development of advanced safety and surety architecture solutions.
Complete Conceptual Design Review.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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 2011	FY 2012	FY 2013
Commence detailed design. ***FY 2013 Plans:*** FY2013 efforts include: ($61.576) 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 groups. Continue AF&F sub-assembly design demonstrations Continue development of advanced safety and surety architecture solutions. Continue detailed design Conduct Performance Assessment of tested designs Conduct Production Engineering			
Accomplishments/Planned Programs Subtotals	21.722	42.171	61.576

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 2013 Navy		DATE: February 2012
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 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Joint Warhead Fuze Sustainment DOE	MIPR	DOE:NM	32.392	39.284	Dec 2011	54.943	Oct 2012	-		54.943	Continuing	Continuing	Continuing
Joint Warhead Fuze Sustainment ITT	SS/CPFF	ITT:VA	1.800	1.887	Dec 2011	2.000	Oct 2012	-		2.000	Continuing	Continuing	Continuing
Joint Warhead Fuze Sustainment LMMS	SS/CPFF	LMMS:CA	1.500	1.000	Feb 2012	4.000	Oct 2012	-		4.000	Continuing	Continuing	Continuing
Joint Warhead Fuze Sustainment	WR	NSWC Carderock:MD	-	-		0.633	Oct 2012	-		0.633	Continuing	Continuing	Continuing
		Subtotal	35.692	42.171		61.576		-		61.576			

	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	35.692	42.171		61.576		-		61.576			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
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 2013 Navy		DATE: February 2012
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				
Define Technical Requirements	1	2011	3	2011
Technology Development Strategies	1	2011	3	2011
Capabilities Assessment	1	2011	3	2011
Technology Maturation	1	2011	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	1	2011	4	2016
General Acquisition Planning Support	1	2011	4	2016

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
2228: *Technical Applications Programs*	42.114	42.097	39.719	-	39.719	23.909	22.846	23.256	23.656	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 2011	FY 2012	FY 2013
Title: Technical Applications Program	42.114	42.097	39.719
Articles:	0	0	0
FY 2011 Accomplishments: FY 2011 efforts include:			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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 2011	FY 2012	FY 2013
($21.892) Continue Reentry System Applications Program (RSAP). 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. Flight Test the advanced radiation tolerant GPS receiver Ground test advanced reentry material systems and advanced instrumentation components. Continue design development evaluation of Avionics Batteries and Avionics Computer s. ($20.222) 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.			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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 2011	FY 2012	FY 2013
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. Continue design development evaluation of Avionics Batteries and Avionics Computer s. ($20.895) 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.			
FY 2013 Plans: FY 2013 efforts include: ($24.566) 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. Continue design development evaluation of Avionics Batteries and Avionics Computers. ($15.153) Continue Strategic Guidance Applications Programs (GAP).			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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 2011	FY 2012	FY 2013
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 Complete to the maxium extent possible all GAP development effort. Commence the orderly phase out and termination of the GAP program. Program ends in FY 2014.			
Accomplishments/Planned Programs Subtotals	42.114	42.097	39.719

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 2013 Navy		DATE: February 2012
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 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Applications LMSS	SS/CPFF	LMSS:CA	149.795	9.530	Dec 2011	10.000	Oct 2012	-		10.000	Continuing	Continuing	Continuing
Technology Applications NSWC	WR	NSWC:VA	83.710	6.825	Oct 2011	7.225	Oct 2012	-		7.225	Continuing	Continuing	Continuing
Technology Applications DOE	MIPR	DOE:NM	30.558	1.406	Oct 2011	1.663	Oct 2012	-		1.663	Continuing	Continuing	Continuing
Technology Applications ITT	SS/CPFF	ITT:CO	10.799	-	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
Technology Applications CSDL	SS/CPFF	CSDL:MA	280.731	23.106	Nov 2011	19.370	Oct 2012	-		19.370	Continuing	Continuing	Continuing
Technology Applications AERO	SS/CPFF	AERO:CA	1.134	1.137	Jul 2012	1.461	Oct 2012	-		1.461	Continuing	Continuing	Continuing
Technology Applications VAR	Various	Various:Various	18.224	0.093	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
		Subtotal	574.951	42.097		39.719		-		39.719			

	Total Prior Years Cost	FY 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	574.951	42.097		39.719		-		39.719			

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
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 2013 Navy		DATE: February 2012
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	2011	1	2016
RSAP Design Development Evaluation Alternative Heat Shield	1	2011	4	2016
RSAP Design Development Evaluation Avionics Battery	1	2011	4	2016
RSAP Design Development Evaluation Avionics Computers	1	2011	4	2016
RSAP System Test	1	2011	4	2016
GAP Contract Award	1	2011	1	2013
GAP Virtual Systems modeling and simulation trade studies for advanced system concepts	1	2011	4	2013
GAP Complete investigation concepts for enchanced systems test & analysis	1	2011	4	2013
GAP Evaluation of emerging alternate accelerometer technologies	1	2011	4	2013
GAP Evaluation of emerging alternate gyro technologies	1	2011	4	2013
GAP Assess feasibility, design, and demonstration of advanced strategic stellar sensor technologies	1	2011	4	2013

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy			DATE: February 2012
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 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
3158: *Integrated Nuclear Weapons Security Sys Dev*	4.313	4.605	4.597	-	4.597	4.601	4.604	4.686	4.767	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 2011	FY 2012	FY 2013
Title: NWSPE Development	4.313	4.605	4.597
Articles:	0	0	0
FY 2011 Accomplishments: FY 2011 efforts include: ($4.313) 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.			
FY 2012 Plans: FY 2013 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.			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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 2011	FY 2012	FY 2013
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 2013 Plans: FY 2012 efforts include: ($4.597) 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	4.313	4.605	4.597

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• MCN/Various-1: *MILCON (CNI) (Nuclear Weapons Security)*	101.387	43.842	54.910	0.000	54.910	0.000	0.000	0.000	24.730	Continuing	Continuing
• OPN/Various-2: *OPN (Nuclear Weapons Security)*	47.556	56.481	59.907	0.000	59.907	50.529	47.961	66.649	67.822	Continuing	Continuing
• OMN/11D2D-3: *Fleet Ballistic Missile (Nuclear Weapons Security)*	75.196	77.002	79.760	0.000	79.760	85.191	88.739	90.280	91.815	Continuing	Continuing
• OMN/11D2D-5: *Fleet Ballistic Missile (Transit/Escort)*	133.378	130.290	93.256	0.000	93.256	83.834	86.965	88.658	90.684	Continuing	Continuing
• OPN/Various-7: *OPN (Transit/ Escort)*	2.000	2.037	2.074	0.000	2.074	2.103	2.137	2.178	2.216	Continuing	Continuing

Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy		DATE: February 2012
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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 2013 Navy			DATE: February 2012
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 2012 Cost	FY 2012 Award Date	FY 2013 Base Cost	FY 2013 Base Award Date	FY 2013 OCO Cost	FY 2013 OCO Award Date	FY 2013 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Nuclear Weapons Security Sys Dev	WR	NFESC:CA	1.355	0.410	Nov 2011	0.500	Oct 2012	-		0.500	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	CNWS:CA	0.404	-	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	JHU APL:MD	1.819	1.043	Oct 2011	0.492	Oct 2012	-		0.492	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	SNSW:CA	2.194	1.532	Dec 2011	0.550	Oct 2012	-		0.550	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NSWC:VA	2.017	0.500	Oct 2011	0.300	Oct 2012	-		0.300	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	JRC:VA	0.501	0.250	Oct 2011	0.816	Oct 2012	-		0.816	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NUWC:RI	0.450	0.345	Nov 2011	0.093	Oct 2012	-		0.093	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NEDU:FL	0.383	-	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	LMMS:CA	0.506	0.200	Feb 2012	0.456	Oct 2012	-		0.456	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	MIPR	DOEI:ID	0.180	-	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	MIPR	DOE:NM	0.300	0.125	Oct 2011	-	Oct 2012	-		-	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	SS/CPFF	ARL:TX	-	0.200	Oct 2011	0.768	Oct 2012	-		0.768	Continuing	Continuing	Continuing
Integrated Nuclear Weapons Security Sys Dev	WR	NUWD:WA	-	-	Oct 2011	0.622	Oct 2012	-		0.622	0.000	0.622	
		Subtotal	10.109	4.605		4.597		-		4.597			

	Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	10.109	4.605		4.597		-		4.597			

Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy			DATE: February 2012
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*	

	Total Prior Years Cost	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
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 2013 Navy		DATE: February 2012
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	2011	4	2016
NWS Technology Development Strategies	1	2011	4	2016
NWS Capabilities Assessment	1	2011	4	2016
NWS Technology Maturation	1	2011	4	2016
NWS System Development & Demonstration Phase	1	2011	4	2016