Exhibit R-2, RDT&E Budget Item Justification	Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support

cost ($ in Millions)	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Total PE Cost	35.6	56.5	45.9	45.3	47.0	40.7	42.3	49.3	CONT.	CONT.
J0951 TRIDENT II	8.9	10.0	9.1	9.6	9.8	1.6	1.7	1.8	CONT	CONT
S0004 TRIDENT Submarine System Improvement	4.5	7.4	2.2	0	.6	1.5	1.9	7.9	CONT	CONT
J2228 Technology Applications Program	22.2	39.1	34.6	35.7	36.6	37.6	38.7	39.6	CONT	CONT
RDT&E Articles Qty										

A. (U) Mission Description and Budget Item Justification:
The TRIDENT II (D5) Submarine Launched Ballistic Missile (SLBM) 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 PE supports continued evaluation of the system's long range performance and capabilities as well as investigations into new technologies which would help mitigate the program impact due to component obsolescence and a rapidly decreasing manufacturing support base. Efforts also include Reentry System and Guidance System Applications efforts. 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.

(U) JUSTIFICATION FOR BUDGET ACTIVITY:
This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it encompasses engineering and manufacturing development for upgrade of existing, operational systems.

Exhibit R-2, RDT&E Budget Item Justification	Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support

B. (U) Program Change Summary:

	FY 1998	FY1999	FY 2000	
FY 1999 President's Budget	39.1	56.6	49.5	
Appropriated Value	39.1	56.6	49.5	
Adjustments to FY 1998 Appropriated/FY 1999 President's Budget	-3.5	- 0.1	-3.6	-
FY 2000/2001 President's Budget Submit	35.6	56.5	45.9	

Explanation: For all projects in FY 1998 there are SBIR assessments of -$0.7 and various taxes of –$0.5. For project J0951, $1.7 was transferred out to finance closed account billings and for Project J2228 $.6 was similarly transferred out. In FY 1999, Project J2228 was assessed a revised economic assumption of -$.1. Project J0951 increases by $0.1 for NWCF rate adjustments in FY 2000 . Project J2228 reflects affordability reductions of $3.2M in FY 2000 for the Technology Applications programs. Additionally, Projects J2228 and J0951 were assessed inflation adjustments of -$.5 in FY 2000. .

C. (U) Other Program Funding Summary: See enclosed R-2a for each individual project data.

D. (U) Acquisition Strategy: See enclosed R-2a for each individual project data.

E. (U) Schedule Profile: Not Applicable.

Exhibit R-2a, RDT&E Project Justification		Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. TRIDENT II – J0951

Cost ($ in Millions)	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost J0951 TRIDENT II	8.9	10.0	9.1	9.6	9.8	1.6	1.7	1.8	CONT.	CONT.
RDT&E Articles Qty										

A. (U) Mission Description and Budget Item Justification:

The TRIDENT II (D5) Submarine Launched Ballistic Missile (SLBM) 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 by providing a survivable sea-based system capable of engaging the full spectrum of potential targets with fewer submarines. This project supports continued evaluation of the system's long range performance and capabilities as well as investigations into new technologies which would help mitigate the program impact due to component obsolescence and a rapidly decreasing manufacturing support base.

Exhibit R-2a, RDT&E Project Justification		Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. TRIDENT II – J0951

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:
   - (U) ($8.9) SRS: Effort continued in support of phase three development of the SLBM Retargeting System. This effort is fully obligated.

2. (U) FY 1999 PLAN:
   - (U) ($9.2) SRS: Effort continues in support of phase three development of the SLBM Retargeting System. Full obligation is projected by 3rd quarter of the 1st year.
   - (U) ($ .8) This represents funding utilized to finance closed account billings. Full obligation is projected by the end of the fiscal year.

3. (U) FY 2000 PLAN:
   - (U) ($8.2) SRS:. Effort continues in support of phase three development of the SLBM Retargeting System. Full obligation is projected by 3rd quarter of the 1st year.
   - (U) ($0.9) This represents funding utilized to finance closed account billings. Full obligation is projected by the end of the fiscal year.

Exhibit R-2a, RDT&E Project Justification		Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. TRIDENT II – J0951

B. (U) Other Program Funding Summary: (Dollars in Thousands)

FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Programt
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

(U) Related RDT&E: N/A

C. (U) 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/C4 Strategic Weapons Systems on the basis of Other Than Full and Open Competition pursuant to the authority of 10 U.S.C. 2304 ©(1) and (3) implemented by FAR 6.302.-1, 3 4.

D. (U) Schedule Profile: Not Applicable.

Exhibit R-3, Cost Analysis		Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. TRIDENT II – J0951

Cost Categories Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY99 Cost	FY99 Award Date	FY00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Ancillary Hardware Development	SS / CPFF	LMDS/CA.	25.4	3.8	10/98	2.7	10/99			Cont.	Cont.	Cont.
Ancillary Hardware Development	WR	NSWC/VA.	39.5	5.4	10/98	5.5	10/99			Cont.	Cont.	Cont.
Primary Hardware Development	PD	SPBH/D.C.	N/A	.8	10/98	0.9	10/99			Cont.	Cont.	Cont.
Subtotal Product Development			64.9	10.0		9.1						
Remarks:												
Total Cost			64.9	10.0		9.2		9.6		CONT.	CONT.	CONT.
Remarks:												

Exhibit R-3, Cost Analysis			Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. Technology Applications – J2228	

Cost ($ in Millions)	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost J2228 Technology Applications Program	22.2	39.1	34.6	35.7	36.6	37.6	38.7	39.6	CONT.	CONT.
RDT&E Articles Qty										

A. (U) Mission Description and Budget Item Justification:

This supports implementation of a coordinated Air Force/Navy Reentry System Applications Program as well as the implementation of a Strategic Guidance Applications Program. Reentry Vehicle and Guidance Technology is rapidly eroding beyond the point of being capable to respond to increasing aging phenomena and future requirements. The Nuclear Posture Review examined the infrastructure which supports the nuclear force structure. It concluded that special actions were required to correct the rapidly eroding capability to maintain confidence in the existing weapon systems, and recommended that the reentry vehicle and guidance technology bases should be preserved. That recommendation resulted in the Presidential Decision Directive-30, which directed that programs be established for the reentry vehicle and guidance technology application.

- Through sustainment of the Reentry Vehicle Technology Base, confidence in the dependability and reliability of Strategic SLBM and ICBM weapon systems will be maintained 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 will be defined and maintained to insure a functioning readiness application technical capability in reentry is preserved. Working closely with the Air Force, Navy requirements will be integrated with the Air Force requirements into a comprehensive program. The Program will maintain close coordination with the DOD Science and Technology (S&T) Community through the Reliance process 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.

- This Program provides a minimum Strategic Guidance core technology development capability consistent with the Strategic Advisory Group (SAG) recommendations to CINCSTRAT. In the SAG recommendations SSP is to 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 shall be integrated and needs prioritized. Efforts shall be focused on alternatives to currently utilized technologies identified as system "weak links". Current 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. This technology development activity will support the D-5 missile life extension efforts that are required to ensure that TRIDENT II weapon system life matches the recent hull life extension on the TRIDENT submarine.

Exhibit R-3, Cost Analysis			Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. Technology Applications – J2228	

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 Accomplishments

- (U) ($11.9) Continued Reentry System Applications Program. Full obligation was completed by the 4th quarter of the 1st year. FY 1998 efforts included:
  - (U) Continued Ground Testing of reentry vehicle candidate materials including those available from Science & Technology (S&T).
  - (U) Focused efforts on development and ground testing of low-cost replacement materials.
  - (U) Developed program plan for testing and evaluation of reentry components exposed to operational environments beyond their design life.
  - (U) Maintained program technical plan, conduct system assessments and demonstrate replacement hardware suitability.
  - (U) Continued development of instrumentation for flight test applications.
  - (U) Focused efforts on Nosetip Recession Sensor (NRS) and Arming Fuzing & Firing (AF&F) instrumentation for flight-test applications.

- (U) ($10.3) Continued Strategic Guidance Applications Program. Full obligation was completed by 4th quarter of the 1st year. FY 1998 efforts included:
  - (U) Continued development of the current Guidance Modeling and Simulation (Integrated Engineering Environment-IEE) towards full system functionally. Primary effort in FY 1998 is the attitude gimbal control design.
  - (U) Continued the prototype/design tradeoff effort for the next generation PIGA. Continue the review of alternate accelerometer efforts/technologies. The completion of radiation testing of IFOG technology occurred in early FY 1998. Evaluation of English Electric Valve (EEV) stellar sensors for SIGHTS (Strategic Inertial Guidance Hardware Technology Synthesizer)continues. SIGHTS will be used as a proof of concept and initial hardware correlation of IEE. Initiation evaluation of design alternatives for future microprocessor functionality such as ASIC/gate array technology.

Exhibit R-3, Cost Analysis			Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. Technology Applications – J2228	

2. (U) FY 1999 Plan

- (U) ($21.6) Continue Reentry System Applications Program. Full obligation is projected by the 3rd quarter of the 1st year. FY 1999 efforts include:
  - (U) Conduct ground testing of reentry vehicle candidate materials including those available from Science & Technology (S&T).
  - (U) Initiate down-select process of low-cost candidate replacement materials.
  - (U) Initiate procurement and testing of reentry hardware components exposed to operational environments beyond their design life.
  - (U) Maintain RSAP technical program plan, conduct system assessments and identify tools to conduct Vulnerability & Hardening certification in absence of Nuclear Underground Testing (UGT) facilities.
  - (U) Continue development of instrumentation for flight test applications.
  - (U) Demonstrate developed Arming, Fuzing & Firing (AF&F) instrumentation.
  - (U) Initiate feasibility of low-cost replacement candidate for aging Mk4 AF&F.

- (U) ($17.5) Continue Strategic Guidance Applications Program. Full obligation is projected by the 3rd quarter of the 1st year. FY 1999 efforts include:
  - (U) Structural (mechanical and thermal) and system performance will be added to IEE system functionality along with improved fidelity towards a "virtual" system capability in FY 2001. Continue expanding the hardware design support of SIGHTS into other subsystems such as attitude and stellar and their associated hardware correlation. One of the evaluation tools initiated in FY 1997 under SIGHTS was a set of "probes" for better diagnostic evaluation of the TRIDENT D-5 guidance system. Delivery and utilization of these probes will begin. SIGHTS will support initial full systems capability.

Exhibit R-3, Cost Analysis			Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. Technology Applications – J2228	

(U) Complete the prototype alternate PIGA design studies and test towards a Critical Design Review. Initiate evaluation of IFOG architecture solutions to radiation issues found in component testing (approximately two-year effort). Procure alternate stellar sensors to TRIDENT II format. Continue the microprocessor effort. Develop attitude and stellar modules.

3. (U) FY 2000 Plan

- (U) ($19.2) Continue Reentry System Applications Program. Full obligation is projected by the 3rd quarter of the 1st year. FY 2000 efforts include:
  - (U) Continue ground testing of reentry vehicle candidate materials including those available from Science & Technology (S&T).
  - (U) Continue down-select process of low-cost candidate replacement materials.
  - (U) Initiate planning and procurement of required hardware and instrumentation for demonstration of low-cost replacement heatshield.
  - (U) Initiate build-up of heavily instrumented flight unit for aged hardware evaluation.
  - (U) Continue ground testing of reentry components exposed to operational environments beyond their design life.
  - (U) Maintain RSAP technical program plan, conduct system assessments and initiate Vulnerability & Hardening certification process in absence of Nuclear Under Ground Testing (UGT) facilities.
  - (U) Evaluate Arming, Fuzing & Firing (AF&F) flight data.

- (U) ($15.4) Continue Strategic Guidance Applications Programs (GAP). Full obligation is projected by the 3rd quarter of the 1st year. FY 2000 efforts include:
  (U) Complete and more fully utilize the IEE virtual system capability. Continue with IEE/SIGHTS towards a "real time" hardware-in-loop simulation capability targeted for completion in late FY 2001. Begin to utilize the IEE/SIGHTS capability to perform system architecture/design tradeoffs. Initiate prototype alternate PIGA fabrication and subassembly testing.

Exhibit R-3, Cost Analysis			Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. Technology Applications – J2228	

(U) Continue IFOG work started in FY 1999. Initiate stellar subsystem prototype using EEV or alternate sensor technology. If schedule allows, integrate EEV or alternate stellar sensor and alternate microprocessor technology into SIGHTS. Initiate circumvention design development using available rad-hard microprocessor technology.

B. (U) Other Program Funding Summary: (Dollars in Thousands)

FY 1998 ESTIMATE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	To COMPLETE	TOTAL PROGRAM
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

(U) Related RDT&E: N/A

C. (U) 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/C4 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.

D (U) Schedule Profile: Not Applicable

Exhibit R-3, Cost Analysis			Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. Technology Applications – J2228	

Cost Categories SUPPORT AND MANAGEMENT	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY99 Cost	FY99 Award Date	FY00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
TECHNOLOGY APPLICATIONS	SS – CPFF	LMMS/CAL	16.4	11.0	10/98	9.7	10/99			CONT.	CONT.	CONT.
TECHNOLOGY APPLICATIONS	WR	NSWC/VA	12.2	2.5	10/98	1.8	10/99			CONT.	CONT.	CONT.
TECHNOLOGY APPLICATIONS	SS – CPFF	HITCO/CAL	.0	2.2	10/98	2.1	10/99			CONT.	CONT.	CONT.
TECHNOLOGY APPLICATIONS	SS – CPFF	INTERMAT/MAINE	.0	1.6	10/98	1.6	10/99			CONT.	CONT.	CONT.
TECHNOLOGY APPLICATIONS	SS – CPFF	SORI/ALA	.0	.8	10/98	0.9	10/99			CONT.	CONT.	CONT.
TECHNOLOGY APPLICATIONS	WR	SNL/NM	2.1	1.8	10/98	1.0	10/99			CONT.	CONT.	CONT.
TECHNOLOGY APPLICATIONS	SS – CPFF	CSDL/MA	0.2	1.2	10/98	1.5	10/99			CONT.	CONT.	CONT.
TECHNOLOGY APPLICATIONS	SS – CPFF	KAMAN/CO	1.6	0.5	10/98	0.6	10/99			CONT.	CONT.	CONT.
TECHNOLOGY APPLICATIONS	SS – CPFF	CSDL/MA	30.1	17.5	10/98	15.4	10/99			CONT.	CONT.	CONT.
Subtotal Support			62.0	39.1		34.6						

Remarks:

Exhibit R-2a, RDT&E Project Justification		Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. TRIDENT Submarine System Improvement – S0004

Cost ($ in Millions)	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost S0004 TRIDENT Submarine System Improvement	4.5	7.4	2.2	0.0	.6	1.5	1.9	8.0	CONT.	CONT.
RDT&E Articles Qty										

a. (U) Mission Description and Budget Item Justification:

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

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:
   - (U) ($2.6) Initiated development of TRIDENT CCS MK2 Block 1C Defensive Weapons System (DWS) Program.
   - (U) ($.6) Initiated development of AN/BQQ-6 Sonar to AN/BQQ-5E sonar Translator.
   - (U) ($.8) Continued development of Acoustic Rapid Commercial-off-the-Shelf (COTS) Insertion (ARCI) Phase I/II Multipurpose Processor (MPP) Program.
   - (U) ($.5) Initiated Architecture Model Maintenance and COTS Technical Refresher.

. (U) FY 1999 PLAN
   - (U) ($3.4) Complete development of TRIDENT CCS MK2 Block 1C DWS Program.
   - (U) ($2.7) Continue development of ARCI Phase I/II MPP Program.
   - (U) ($1.1) Continue Architecture Model Maintenance and COTS Technical Refresher.

   O (U) ($0.2) Portion of extramural program is reserved for Small Business Innovation Research assessment in accordance with 15 USC 638

Exhibit R-2a, RDT&E Project Justification		Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. TRIDENT Submarine System Improvement – S0004

3. (U) FY 2000 PLAN:
   - (U) ($.5) Complete development of ARCI Phase I/II MPP Program.
   - (U) ($1.7) Continue Architecture Model Maintenance and COTS Technical Refresher.

4. (U) FY 2001 PLAN: Not applicable.

B. (U) Program Change Summary:

	FY 1998	FY 1999	FY 2000
(U) FY 1999 President's Budget:	4.6	7.4	2.2
(U) Appropriated Value:	4.7		
(U) Adjustment to FY 1998 Appropriated Value/FY 1999 President's Budget:			
a. Small Business Innovative Research (SBIR):	-.1		
b. Minor Pricing Adjustments:	-.1		
(U) FY 2000/01 PRES Budget Submit:	4.5	7.4	2.2

(U) Funding: The total decrease of $.2M in FY98 consists of a $.1M reduction for SBIR and a $.1M reduction for minor pricing adjustments.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

Exhibit R-2a, RDT&E Project Justification		Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. TRIDENT Submarine System Improvement – S0004

C. (U) Other Program Funding Summary:

	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost
267600/267606 (BA-2) Strategic Platform Support Equipment										
	7.2	12.4	22.2	15.9	11.7	20.8	25.7	13.0	CONT.	CONT.
535500/535506 (BA-4) Strategic Platform Support Equipment										
	2.2	2.9	9.5	4.7	10.6	8.7	2.3	4.8	CONT.	CONT.

(U) Related RDT&E: These PEs develop submarine software and hardware that are directly related to efforts conducted by the program element.

(U) PE 0101224N (SSBN Security Survivability Program)
(U) PE 0101402N (Navy Strategic Communications)
(U) PE 0604562N (Submarine Tactical Warfare System)
(U) PE 0604503N (Submarine System Equipment Development)

D. (U) Acquisition Strategy:
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 Force 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 OER possibilities and potential improvements.

Exhibit R-2a, RDT&E Project Justification		Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	Program Element Name & No. PE 0101221N, Strategic Sub & Weapons System Support	Project Name and Number. TRIDENT Submarine System Improvement – S0004

E. (U) Schedule Profile:

Successful program development will lead to the submission and approval of system and subsystem Engineering Changes for installation during SSBN 726 class submarine backfits. Specific deliverable dates for the RDT&E,N and OP,N programs are:

ARCI Phase I/II - FY97 (2nd Qtr) – Program Inception
FY00 (4th Qtr) – Install and Test Prototype
FY02 (1st Qtr) – ARCI Certification/IOC

CCS MK2 Block 1C - FY98 (2nd Qtr) – Program Inception
FY00 (4th Qtr) – Install and Test Prototype
FY02 (1st Qtr) – Certification/IOC

Architecture Model Maint. & FY98 (2nd Qtr) – Program Inception
COTS Technology Refresh - FY00 – CONT. – COTS Supportability, Architecture Maintenance and COTS Management Processes

Q6 to Q5 Translator - FY98 (2nd Qtr) – Program Inception; Installation and Test; Certification/IOC

Exhibit R-3 Cost Analysis		Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	PROGRAM ELEMENT NAME AND NUMBER Strategic Submarine & Weapons System Support, PE 0101221N	PROJECT NAME AND NUMBER TRIDENT Submarine System Improvement, S0004

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY99 Cost	FY99 Award Date	FY00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Design/Development Engineering	SS - CPIF	Raytheon, Portsmouth RI	2.6	3.4	12/98	0	N/A		N/A	0	6.0	6.0
Software Development	WR	NUWC, Newport RI	.6	0	N/A	0	N/A		N/A	0	.6	.6
Design/Development Engineering	SS - CPFF	Lockheed Martin, Manassas VA	2.3	2.7	12/98	.5	12/99		N/A	0	5.3	5.3
Design/Development Engineering	Various	Various	11.7	0	N/A	0	N/A		N/A	0	11.7	11.7
Subtotal Product Development			17.2	6.1		.5				0	23.6	23.6
Remarks:												
Support and Management	Various	Various	.02	0	N/A	0	N/A	0	N/A	0	.02	.02
Subtotal Support			.02	0		0		0		0	.02	.02
Remarks:												

Exhibit R-3 Cost Analysis		Date: FEB 1999
APPROPRIATION/BUDGET ACTIVITY RDT&E,N – BA7	PROGRAM ELEMENT NAME AND NUMBER Strategic Submarine & Weapons System Support, PE 0101221N	PROJECT NAME AND NUMBER TRIDENT Submarine System Improvement, S0004

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY99 Cost	FY99 Award Date	Fy00 Cost	FY00 Award Date	FY01 Cost	FY01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Test and Certification	WR	NUWC, Newport RI	.3	1.5	10/98	1.7	10-99	0	N/A	CONT.	CONT.	CONT.
Test and Certification	Various	Various	.7	0	N/A	0	N/A	0	N/A	0	.7	.7
Subtotal T&E			1.1	1.5		1.7		0		CONT.	CONT.	CONT.
Remarks: After transition to Commercial Off-The-Shelf (COTS) based systems, obsolescence becomes a major issue. To keep current, it is necessary to support the development and maintenance of a RDT&E process to maintain TRIDENT subsystems using commercial technology and parts. This model will continue the evaluation and implementation of COTS Technology.												
Subtotal Management			0	0	N/A	0	N/A	0	N/A	0	0	0
Remarks: Government Furnished Property – not applicable.												
Total Cost			18.3	7.4		2.2		0		CONT.	CONT.	CONT.
Remarks:												