

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2002			
APPROPRIATION/BUDGET ACTIVITY RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					R-1 ITEM NOMENCLATURE Submarine Tactical Warfare System / 0604562N					
COST (\$ in Millions)		FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	Cost to Complete	Total Cost
Total PE Cost		25.435	38.884	13.975	21.326	42.904	44.792	45.674	CONT.	CONT.
SSN CCS (IMP) (ENG)		25.435	38.884	13.975	21.326	42.904	44.792	45.674	CONT.	CONT.
Quantity of RDT&E Articles										
<p>A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program develops software upgrades to integrate improved weapons capabilities within submarine Combat Control System (CCS) MK1, MK2, and AN/BSY-1 (Combat Control) and, as a part of Obsolete Equipment Replacement (OER), the program develops improvements to hardware which has become increasingly difficult and not economical to maintain. The thrust of the CCS Improvement program is the fleet introduction of CCS MK2 Program D0 and the development of CCS MK2 Program D0 Blocks 1 and 2. CCS MK2 converged multiple submarine combat system developments into a single effort to minimize submarine life cycle costs, across SSN 688, SSN 688I and SSBN 726 Classes. CCS MK2 Program D0 provides a modular software architecture, introduces Tomahawk Block 3 and Harpoon Block 1C capabilities, introduces Advanced Capability (ADCAP) on TRIDENT, and replaces additional obsolete equipment. CCS MK2 Program D0 Block 1 integrates CCS MK2 into AN/BSY-1 systems, replaces additional obsolete equipment, incorporates a direct interface to the Global Positioning System, incorporates Global Command Control System-Maritime (GCCS-M) (formerly known as Joint Maritime Command Information System (JMCIS)) into CCS MK2, and implements Advanced Tomahawk Weapon Control System (ATWCS), ADCAP torpedo improvements and several other miscellaneous enhancements. CCS MK2 Program D0 Block 2 incorporates into submarine CCS anticipated upgrades to ADCAP, and Tomahawk and implements additional OER. AN/BSG-1 (formerly known as Tomahawk Land Attack Missile – Nuclear (TLAM-N) Portable Launching System (PLS)) provides SSN submarines with a stand-alone TLAM-N missile launching capability.</p> <p>(U) PROGRAM ACCOMPLISHMENTS AND PLANS:</p> <p>1. (U) FY 2001 PLAN:</p> <ul style="list-style-type: none"> (U) (\$11.346) Continue to develop engineering change to CCS MK2 Program D0 Block 1C to incorporate Tactical Tomahawk capabilities and upgrade for commonality with VIRGINIA Class. (U) (\$3.161) Complete post-OPEVAL development effort to CCS MK2 Block 1C. (U) (\$4.565) Continue development of AN/BSG-1 and conduct developmental and operational testing. (U) (\$6.000) Integration of Advanced Tactical Software, Commercial Off-the-Shelf Technology and Government Off-the-Shelf Technology Products into Backfit Submarine Combat Control Programs. (U) (\$0.363) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. 										

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Submarine Tactical Warfare System / 0604562N

2. (U) FY 2002 PLAN:

- (U) (\$21.717) Continue to develop engineering change to CCS MK2 Program D0 Block 1C to incorporate Tactical Tomahawk capabilities and upgrade for commonality with VIRGINIA Class.
- (U) (\$10.000) Mitigate combat systems obsolescence, improve life-cycle cost, increase commonality and provide advanced war fighting capability to the submarine fleet based on the CCS MK 2 combat system.
- (U) (\$5.606) Continue development of AN/BSG-1 and mission distribution system upgrades.
- (U) (\$1.561) Integration of Advanced Tactical Software, Commercial Off-the-Shelf Technology and Government Off-the-Shelf Technology Products into Backfit Submarine Combat Control Programs.

3. (U) FY 2003 PLAN:

- (U) (\$8.523) Continue to develop engineering change to CCS MK2 Program D0 Block 1C to incorporate Tactical Tomahawk capabilities and upgrade for commonality with VIRGINIA Class.
- (U) (\$2.277) Develop changes to combat control weapons simulation and equipment to enhance TOMAHAWK system reliability.
- (U) (\$2.000) Complete development of AN/BSG-1 and mission distribution system upgrades.
- (U) (\$1.175) Integration of Advanced Tactical Software, Commercial Off-The-Shelf Technology and Government Off-The-Shelf Technology Products into Backfit Submarine Combat Control Programs.

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Submarine Tactical Warfare System / 0604562N

B. (U) PROGRAM CHANGE SUMMARY:

	FY 2001	FY 2002	FY 2003
FY 2002 President's Budget:	26.249	29.246	
Appropriated Value	26.492	38.884	
Adjustments to FY2001/2002 Appropriated Value/ FY 2002 President's Budget:	-1.057	9.638	13.975
FY 2003 President's Budget Submit:	25.435	38.884	13.975

(U) CHANGE SUMMARY EXPLANATION:

(U) **Funding:** FY01 reduction of (-\$1.057) due to 7% Pro-Rat (-\$0.185), Government - Wide Rescission, June 2001 BTRs (-\$0.400), FY01 SBIR (-\$0.363) and 01 Actuals (-\$0.051).

FY02 increase of (\$9.638) reflects (\$10.000) for Submarine Combat System Modernization Program to mitigate combat systems obsolescence, improve life-cycle cost, increase commonality and provide advanced war fighting capability to the submarine fleet based on the CCS MK2 combat system, (-\$0.346) for Management Reform Int. (-\$0.016) for FFRDC.

FY03 reduction of (-\$0.101) reflects (-\$0.080) for Nonpay Inflation, (-\$0.070) for Carryover and (\$0.049) for NWCF Rates.

	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	To Complete	Total Cost
OPN/BA-4 54200	19.3	40.3	46.3	59.8	72.0	66.8	84.1	CONT.	CONT.

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(U) Related RDT&E:

(U) PE 0204229N (Tomahawk & Tomahawk Missile Planning Center)

(U) PE 0205632N (MK 48 ADCAP)

(U) PE 0603504N (Advanced Submarine Combat Systems Dev.)

(U) PE 0604503N (Submarine System Equipment Dev.)

(U) PE 0604707N (Submarine Electronic Warfare Architecture/Eng. Support)

D. (U) ACQUISITION STRATEGY:

CCS MK2 Block 1C:

- CCS MK2 Block 1C utilizes an open architecture in support of new and upgraded Government and Commercial Off-The-Shelf products and insertion of new weapons capabilities.
- Release-to-Fleet of MK2 Block 1C baseline in Dec 2000.
- Award of contract to Raytheon in Dec 2000 for changes to the MK2 Block 1C for incorporation of Tactical Tomahawk and commonality with VIRGINIA.
- Preliminary Design Review for MK2 Block 1C in Feb 2001.
- Program Review and Milestone Decision Authority conducted Sep 2001.
- Critical Design Review is Feb 2002.
- Release-to-Fleet is Mar 2003.
- Further CCS MK2 Block 1C development upgrades (ECP 004 & beyond) will be competed commencing with contract award 2nd QTR 2003.
- APB(T) products associated with CCS MK2 Block 1C Release-to-Fleet Jul 2002, Sep 2003, Sep 2004.

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Submarine Tactical Warfare System / 0604562N

Combat Control Development Schedule

E. Schedule Profile:

		FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07
		O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S	O N D J F M A M J J A S
CCS MK2 PROGRAM D0 BLOCK 1C	MOD 2	SDCT 2 Phase I 11 2 6 DT OT	10 MS III						
	MOD 0/1	10 2 SDCT 2 5 DT/OT	10 MS III						
	MOD 3	11 2 SDCT		6 FOT&E					
	TACTICAL TOMAHAWK ECP		12 AWARD	PHASE 1 8 11 1 DT/OT RTF	PHASE 2 4 7 9 DT/OT RTF				
	MK2 BLK2 WEAPONS LAUNCH H/W IMPROVEMENTS						8 DT/OT	3 5 RTF	
	APB(T)			7 RTF		9	9	9	
	WC/TC Segregation			4		9			
AN/BSG-1				8 SDCT	8 DT	10 1 OT MS III			

LEGEND: SCHEDULED COMPLETION COMPLETED

PE: 0604562N Proj: F0236

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R-3 Cost Analysis (page 1)							DATE: February 2002					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
RDT&E, N/BA-5			Submarine Tactical Warfare Sys/0604562N			SSN Combat Control System Improv (ENG) / F0236						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
AN/BSG-1 System Development	CPIF	Raytheon Portsmouth, RI	12.843	1.800		1.500				0.000	16.143	
Ancillary Hardware Dev (AN/BSG-1)	PD	PEO(W) Patuxent River,MD	7.503	0.500		1.000		0.000		0.000	9.003	
Government Engineering	WR	NUWC Newport, RI	36.836	7.157		9.005		3.185		CONT.	CONT.	
TOMAHAWK Reliability	SBIR	Progeny	0.074			1.561		1.200		CONT.	CONT.	
CSS MK2 Block 1C ECP	FFRDC	MITRE		0.378		0.380		0.400		CONT.	CONT.	
COTS Hardware & Software	CPFF	DDL Omni		6.000	03/01	1.000		1.175		CONT.	CONT.	
Subtotal Product Development			57.256	15.835		14.446		5.960		CONT.	CONT.	
Remarks:												
	Contract Block 1C AN/BSG-1	Award/Oblig Dec 00 Jun 97										
Development Support Equipment											0.000	
Software Development	CPFF	Raytheon Portsmouth, RI		8.500	12/00	21.138		6.000		CONT.	CONT.	
Training Development											0.000	
Integrated Logistics Support											0.000	
Configuration Management											0.000	
Technical Data											0.000	
GFE											0.000	
Subtotal Support			0.000	8.500		21.138		6.000		0.000	0.000	
Remarks:												

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RDT&E, N/BA-5			Submarine Tactical Warfare Sys/0604562N				SSN Combat Control System Improv (ENG) / F0236					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 01 Cost	FY 01 Award Date	FY 02 Cost	FY 02 Award Date	FY 03 Cost	FY 03 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	5.200	0.500		2.100		1.200		CONT.	CONT.	
Operational Test & Evaluation	Various	Various	5.569	0.500		1.100		0.500		CONT.	CONT.	
Test & Evaluation	Various	Various	1.295	0.000		0.000		0.000			1.295	
GFE												
Subtotal T&E			12.064	1.000		3.200		1.700		CONT.	CONT.	
Remarks:												
Contractor Engineering Support											0.000	
Government Engineering Support											0.000	
Program Management Support	CPFF	EG&G Arlington, VA	8.481	0.000		0.000		0.215		CONT.	CONT.	
Travel	PD	NAVSEA Arlington, VA	0.150	0.100		0.100		0.100		CONT.	CONT.	
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			8.631	0.100		0.100		0.315		CONT.	CONT.	
Remarks: Contract EG&G Award/Oblig Sep 94												
Total Cost			77.951	25.435		38.884		13.975		CONT.	CONT.	
Remarks:												

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