

CLASSIFICATION:		UNCLASSIFIED						
EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION						DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4		R-1 ITEM NOMENCLATURE 0603506N/SURFACE SHIP TORPEDO DEFENSE						
COST (In Millions)		FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Total PE Cost		49.063	27.451	49.171	24.739	23.915	30.545	29.159
0225 / Surface Ship Torpedo Defense (SSTD)		32.385	15.627	49.171	24.739	23.915	30.545	29.159
9999 / CONGRESSIONAL ADDS		16.678	11.824	0.000	0.000	0.000	0.000	0.000
<p>A. MISSION DESCRIPTION:</p> <p>Project 0225 utilizes previous development of components of the AN/WSQ-11 Torpedo Defense System and applies them to a Cruiser and Destroyer (CRUDES) based Anti-Torpedo Torpedo Defense System (ATTDS). This development approach espouses an Evolutionary Acquisition strategy of providing incremental surface ship torpedo defense capability to the fleet by implementing first on ships already equipped with sonar systems, fire control systems and launchers. Subsequent increments will install this capability on large deck ships such as Amphibs and Carriers. Results of FY06 and FY07 at-sea demonstrations of Torpedo Detection Classification & Localization (TDCL) systems as well as additional testing events planned for FY08 funded through FY07 and FY08 Congressional adds will lead to a CRUDES TDCL system specification development in FY09. At sea testing of the EDM-1 design of the Anti-Torpedo Torpedo (ATT) variant of the Common Very Lightweight Torpedo (CVLWT) in FY07 will be continued in FY08 and will facilitate design of the EDM-2 ATT which will be completed in FY10. In FY10, an EDM of the ship system for CRUDES application will be developed. This EDM will include the TDCL system, a command and control system with user interface, a modified Surface Vessel Torpedo Tube launcher, and a canistered Anti-Torpedo Torpedo. The TDCL system will utilize a sensor set added to the AN/SLQ-25A (NIXIE) System. The development of the ATT is the first derivative of the CVLWT as a funded acquisition program with planned IOC FY17. A common warhead design is being investigated that will allow for development of the CVLWT to accommodate multi-mission (offensive & defensive) applications. The planned CVLWT acquisition strategy will also accommodate subsequent development of the Compact Rapid Attack Weapon (CRAW) to be launched from the VTUAV airframe associated with the Littoral Combat Ship or other unmanned vehicles for ASW missions. The ATT and CRAW variants of the CVLWT as well as the TDCL development are closely linked with the ONR FNC programs (Sea Shield FNC's) which provide advance technology inserts at key transition points in support of the planned ATT, CRAW and TDCL schedules.</p> <p>(U) Project 9514C - FY07 Congressional Add: Continues upgrades to the AN/SLQ-25A torpedo countermeasure system as funded by congressional adds. Finalizes in FY07 the resolution of dual tow and mutual interference issues associated with the recent AN/SLQ-25A EEC 16 performance upgrade.</p> <p>(U) Project 9799C - FY07 Congressional Add: Evaluate feasibility of employing wireless technology to coordinate exchange of torpedo defense acoustic detection and tracking information.</p> <p>(U) Project 9968N - FY07 Congressional Add: Develop a sensor for evaluation as to suitability for surface ship torpedo defense.</p> <p>(U) Project 9969N - FY07 Congressional Add: Improve TDCL capability to provide a more robust TDCL system.</p> <p>(U) Project 9970N - FY07 Congressional Add: Continue development of TDCL technology and allow for the integration of the latest improvements into a DDG 51 ship SQQ-89 ASW combat system.</p>								

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EXHIBIT R-2, RDT&E BUDGET ITEM JUSTIFICATION (CONTINUATION) **DATE**
February 2008

APPROPRIATION/BUDGET ACTIVITY **R-1 ITEM NOMENCLATURE**
RD TEN/BA 4 **0603506N/SURFACE SHIP TORPEDO DEFENSE**

(U) Project 9999 - FY08 Congressional Add: Accelerates development of the Anti-Torpedo Torpedo EDM-2 design effort and conducts additional in-water test events on ATT EDM-1 units.

(U) Project 9999 - FY08 Congressional Add: Apply industry cost affordability manufacturability practices (DFA/DFM) to the ATT system design similar to previous successful efforts to reduce ATT subsystem component manufacturing costs.

(U) Project 9999 - FY08 Congressional Add: Continue development of TDCL technology and integrate on a DDG 51 ship to conduct an at sea evaluation. Facilitates deployment of the ATT from a DDG 51 ship.

B. PROGRAM CHANGE SUMMARY:

Funding:	FY 2007	FY 2008	FY 2009
FY 2008 President's Budget:	57.509	15.967	31.722
FY 2009 President's Budget:	49.063	27.451	49.171
Total Adjustments	(8.446)	11.484	17.449
Summary of Adjustments:			
Undistributed General Reductions/ Increases	(1.446)	(0.340)	(0.045)
Execution Realignments	(7.000)	0.000	17.494
Congressional Add	0.000	11.824	0.000
Subtotal	(8.446)	11.484	17.449

C. OTHER PROGRAM FUNDING SUMMARY:

Line Item No. and Name	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	To Complete	Total Cost
OPN BLI: 221300									
Surface Ship Torpedo Defense - SSTD	11.629	7.269	10.058					CONT.	CONT.
WPN BLI: 311300									
Surface Ship Torpedo Defense - SSTD	5.832	0.013	0.000					CONT.	CONT.

D. ACQUISITION STRATEGY:

The project develops Surface Ship Torpedo Defense (SSTD) capabilities using an evolutionary acquisition incremental development approach. OPN: In the FY07 - FY09 time frame, the OPN funding upgrades the existing AN/SLQ-25A NIXIE through ECP's performed by the Original Equipment Manufacture (OEM) and includes procurement and installation. The FY08 MS B approves the previous ATTDS 6 3/4 EDM-1 design as a Common Very Lightweight Torpedo (CVLWT) EDM-2 design to continue development as an Anti-Torpedo Torpedo which subsequently can also accommodate multi-missions. ATT development continues post MS C under ARL PSU as design agent with a competitive award to a single prime contractor to manufacture the ARL PSU design into CVLWT LRIP builds for ATT operational testing.

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EXHIBIT R-2a, RDT&E PROJECT JUSTIFICATION					DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4		PROGRAM ELEMENT NUMBER AND NAME 0603506N/SURFACE SHIP TORPEDO DEFENSE			PROJECT NUMBER AND NAME 0225/Surface Ship Torpedo Defense (SSTD)		
COST (In Millions)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Project Cost	32.385	15.627	49.171	24.739	23.915	30.545	29.159
RDT&E Articles Qty	0	0	0	0	0	0	0
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Project 0225 utilizes previous development of components of the AN/WSQ-11 Torpedo Defense System and applies them to a Cruiser and Destroyer (CRUDES) based Torpedo Defense System. This development approach espouses an Evolutionary Acquisition strategy of providing incremental surface ship torpedo defense capability to the fleet by implementing first on ships already equipped with sonar systems, fire control systems and launchers. Subsequent increments will install this capability on large deck ships such as Amphibs and Carriers.							

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APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4	PROGRAM ELEMENT NUMBER AND NAME 0603506N/SURFACE SHIP TORPEDO DEFENSE	PROJECT NUMBER AND NAME 0225/Surface Ship Torpedo Defense (SSTD)	
B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	32.285	15.627	40.171
RDT&E Articles Quantity	4	0	0
COMMON VERY LIGHTWEIGHT TORPEDO (CVLWT)/ANTI-TORPEDO TORPEDO (ATT)			
FY07 - Continued CVLWT warhead development. Built EDM-1 units (4). Conduct CT1-3 in-water trials. Initiated ATT Launcher development and conducted SVTT ATT launch demonstration.			
FY08- Initiate CVLWT ATT EDM-2 design. Conduct warhead testing CT1-4 in-water trials. Continue ATT Launcher development. Conduct MS B.			
FY09- Continue CVLWT ATT EDM-2 Design. Initiate warhead qualification. Complete ATT Launcher development.			
	FY 2007	FY 2008	FY 2009
Accomplishments/Effort/Subtotal Cost	0.100	0.000	9.000
RDT&E Articles Quantity	0	0	0
SHIP SYSTEMS			
FY07 -Completed ICD requirements.			
FY07 - Continue CDD requirements.			
FY09 - Initiate Ship Systems EDM Design. Generate TDCL Spec.			

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EXHIBIT R-3, RDT&E PROJECT COST ANALYSIS										DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4		PROGRAM ELEMENT NUMBER AND NAME 0603506N/SURFACE SHIP TORPEDO DEFENSE					PROJECT NUMBER AND NAME 0225/Surface Ship Torpedo Defense (SSTD)					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY Cost (\$000)	FY 2007 Cost (\$000)	FY 2007 Award Date	FY 2008 Cost (\$000)	FY 2008 Award Date	FY 2009 Cost (\$000)	FY 2009 Award Date	Cost to Complete (\$000)	Total Cost (\$000)	Target Value of Contract
Systems Engineering	WR	NUWC, Newport, RI	2.568	2.372	DEC-06	1.687	JAN-08	5.600	DEC-08	CONT	CONT	0.000
Systems Engineering ATT Dev.	CPFF	PSU/ARL, State College, PA	22.965	18.503	JAN-07	10.790	JAN-08	25.726	FEB-09	CONT	CONT	0.000
Systems Engineering	CPFF	JHU/APL, Baltimore, MD	0.420	0.350	DEC-06	0.250	JAN-08	0.300	FEB-09	CONT	CONT	0.000
Systems Engineering Warhead Dev.	WR	NSWC, Indian Head, MD	6.300	4.200	DEC-06	1.300	JAN-08	8.800	DEC-08	CONT	CONT	0.000
Systems Engineering	WR	NUWC, Keyport, WA	2.680	1.500	DEC-06	1.000	JAN-08	2.495	DEC-08	CONT	CONT	0.000
Systems Engineering TDCL	CPFF	Ultra, Braintree, MA	7.300	3.500	MAR-07	0.000		2.000	FEB-09	0.000	12.800	0.000
Systems Engineering ATT	WR	ONR	0.200	0.585	JUN-07	0.050	JAN-08	0.100	JAN-09	CONT	CONT	0.000
Systems Engineering	WR	NSWC, Dahlgren, MD	0.000	0.500	MAR-07	0.000		1.400	DEC-08	0.000	1.900	0.000
Systems Engineering TDCL	CPFF	AAC, Hauppauge, NY	0.000	0.000		0.000		2.000	FEB-09	0.000	2.000	0.000
Subtotal Product Development			42.433	31.510		15.077		48.421		0.000	CONT	0.000
Remarks:												
Program Management Support	CPFF	EG&G Gaithersburg, Md	1.246	0.800	NOV-06	0.500	JAN-08	0.700	JAN-09	0.000	3.246	0.000
Travel		PMS 415	0.070	0.075	OCT-06	0.050	NOV-07	0.050	NOV-08	0.000	0.245	0.000
Subtotal Management Services			1.316	0.875		0.550		0.750		0.000	3.491	0.000
Remarks:												
Total Cost			43.749	32.385		15.627		49.171		0.000	CONT	0.000

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EXHIBIT R-4a, SCHEDULE DETAIL						DATE February 2008		
APPROPRIATION/BUDGET ACTIVITY RD TEN/BA 4		PROGRAM ELEMENT NUMBER AND NAME 0603506N/SURFACE SHIP TORPEDO DEFENSE			PROJECT NUMBER AND NAME 0225/Surface Ship Torpedo Defense (SSTD)			
Schedule Profile		FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
CVLWT/ ANTI-TORPEDO TORPEDO (ATT)								
INITIAL CAPABILITIES DOCUMENT (ICD)		Q3						
CAPABILITIES DEVELOPMENT DOCUMENT (CDD)			Q3					
BUILD EDM-1 UNITS		Q1-Q4						
MILESTONE B			Q3					
EDM-2 DESIGN			Q1-Q4	Q1-Q4	Q1			
CDR					Q1			
BUILD EDM-2 UNITS							Q3	Q3
MILESTONE C								Q3
IN-WATER TRIALS (CT)		Q1-Q3	Q2				Q2,Q4	Q2,Q4
COMPACT RAPID ATTACK WEAPON (CRAW)								
SUB SYSTEM TESTING						Q2		Q2
SHIP SYSTEMS								
DCL DEMOS		Q1-Q4	Q1-Q4					
TDCL SPEC				Q3				
DDG DEMO			Q4					
EDM DESIGN				Q1-Q4	Q1-Q2			
EDM BUILD					Q3-Q4	Q1-Q4	Q1-Q4	
SYSTEM LEVEL TESTS								Q1,Q2

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B. ACCOMPLISHMENTS/PLANNED PROGRAM:			
	FY 2007	FY 2008	FY 2009
9514C/SLQ-25A Torpedo Countermeasure Improvement Program	2.820	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY07 - Congressional Plus-Up completes the SLQ-25A roadmap project to integrate the AN/SLQ-25A system under the Open Architect concept within Surface Ship Torpedo Defense Detection Classification Localization subsystem.			
	FY 2007	FY 2008	FY 2009
9799N/9799C Integrated Multi-Platform Sonar System	4.430	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY07 - Congressional Plus-Up to conduct feasibility demonstration to employ wireless technology to coordinate exchange of torpedo defense acoustic detection and tracking information.			
	FY 2007	FY 2008	FY 2009
9969N/ Torpedo Detection Classification Localization Demo	0.971	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY07 - Congressional Plus-Up Add to conduct an at-sea demonstration to refine the Torpedo Detection Classification Localization capability to improve ship maneuvers and false alarm reduction.			
	FY 2007	FY 2008	FY 2009
9968N/ Affordable ASW Response Weapon	1.414	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY07 - Congressional Plus-Up Add to continue development of a towed sensor for evaluation as to suitability for Surface Ship Torpedo Defense.			
	FY 2007	FY 2008	FY 2009
9970N/ TDCL Commonality-Shipboard DCL Tech Demo	7.043	0.000	0.000
RDT&E Articles Quantity	0	0	0
FY07 - Congressional Plus-Up Add to continue development of Torpedo Detection Classification Localization technology and allow for the integration of the latest improvement into a DDG 51 class ship to enhance deployment of the CVLWT (ATT).			
	FY 2007	FY 2008	FY 2009
9999/Anti-Torpedo Torpedo (ATT)	0.000	2.385	0.000
RDT&E Articles Quantity	0	0	0
Accelerates development of the Anti-Torpedo Torpedo EDM-2 design effort and conducts additional in-water test events on ATT EDM-1 units.			

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		FY 2007	FY 2008	FY 2009
9999/Anti-Submarine Warfare (ASW) Enhancements		0.000	7.949	0.000
RDT&E Articles Quantity		0	0	0
Apply industry cost affordability manufacturability practices (DFA/DFM) to the ATT system design similar to previous successful efforts to reduce ATT subsystem component manufacturing costs.				
		FY 2007	FY 2008	FY 2009
9999/ Sensor Arrays for Multiple Applications		0.000	1.490	0.000
RDT&E Articles Quantity		0	0	0
Continue development of TDCL technology and integrate on a DDG 51 ship to conduct an at sea evaluation. Facilitates deployment of the ATT from a DDG 51 ship.				