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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603506N: <i>Surface Ship Torpedo Defense</i>							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	263.673	122.311	93.346	88.649	-	88.649	31.602	33.400	23.689	23.930	Continuing	Continuing
0225: <i>Surface Ship Torpedo Defense (SSTD)</i>	263.673	122.311	93.346	85.649	-	85.649	31.602	33.400	23.689	23.930	Continuing	Continuing
4050: <i>Compact Rapid Attack Weapon (CRAW)</i>	0.000	0.000	0.000	3.000	-	3.000	0.000	0.000	0.000	0.000	0.000	3.000

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

A. Mission Description and Budget Item Justification

The Surface Ship Torpedo Defense (SSTD) program provides a detect-to-engage hard-kill torpedo defense capability through two development programs. The Countermeasure Anti- Torpedo (CAT) program develops a canisterized Anti-Torpedo Torpedo (ATT) as an ACAT II program. The Torpedo Warning System (TWS) develops the required ship systems as an ACAT III program. The AN/SLQ-25X solicitation has been cancelled due to a more cost effective technical solution of interfacing the TWS to NIXIE system.

The program will focus on first providing torpedo defense capability to High Value Units (HVV). The Initial Operational Capability (IOC) system will be installed on one CVN and one Combat Logistics Force (CLF) ship (both HVVs) with IOC in FY19.

Additionally, the program will develop and field six Surface Ship Torpedo Defense prototype (TWS/CAT) Engineering Design Model (EDM) systems on CVNs. Each prototype consists of one TWS and eight CATs. The six systems were accelerated due to the lack of torpedo defense on HVVs which has been exacerbated by recent real-world events and evolving threats. The systems provide a hard-kill torpedo defense capability in advance of the IOC as part of the program of record. To accomplish this effort, the department reprogrammed \$9.9 million of FY10 funds, \$6.1 million of FY11 funds and \$6.4 million of FY12 funds. Furthermore the department received a prior approval reprogramming for an additional \$7.9 million of FY10 funds. The first two prototypes are expected to deliver in FY14; these two systems will be delivered in a roll-on/roll-off (RO-RO) configuration and delivered to the theater commander. Following delivery of the RO-RO capability, the program will build and deliver the final four EDM systems for installation on two carriers each year in FY15 and FY16.

Additionally, the program will deliver one hybrid prototype system in FY13. This is in addition to the six prototype EDM systems discussed above. The system will deliver some capability to a forward deployed CVN asset before the first prototype EDM system is available.

Compact Rapid Attack Weapon (CRAW) - At about one-third the weight of the current lightweight ASW weapon, CRAW is projected to cost less while performing at least as well. The successful performance testing of CRAW against submarine targets will validate and increase readiness CRAW as a candidate for weaponizing multiple platforms.

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APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603506N: <i>Surface Ship Torpedo Defense</i>
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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	118.764	93.346	81.156	-	81.156
Current President's Budget	122.311	93.346	88.649	-	88.649
Total Adjustments	3.547	0.000	7.493	-	7.493
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	6.364	0.000			
• SBIR/STTR Transfer	-2.817	0.000			
• Program Adjustments	0.000	0.000	8.575	-	8.575
• Rate/Misc Adjustments	0.000	0.000	-1.082	-	-1.082

Change Summary Explanation

Technical and Schedule: PB14 changed two EDMs to a RO/RO capability due to acceleration of CVN deployments and increased presence requirements. Additionally, program shifted IOC to FY19. FY14 funds reduced \$10M due to CVN 77 install in FY13; \$530K reduction of Advisory and Assistance Services and other contracts and \$18.023M for rate/misc adjustments which includes: an increase of \$15.6M for SSTD RO/RO capability, a net reduction of \$304K for Working Capital rate adjustments; a decrease of \$25K for Standard Procurement System Replacement Strategy; a decrease of \$248K for Naval Innovative Science and Engineering (Section 219) Program Funding Mechanism; and an increase of \$3M for CRAW in support of Speed to Fleet.

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 ITEM NOMENCLATURE PE 0603506N: Surface Ship Torpedo Defense				PROJECT 0225: Surface Ship Torpedo Defense (SSTD)			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
0225: Surface Ship Torpedo Defense (SSTD)	263.673	122.311	93.346	85.649	-	85.649	31.602	33.400	23.689	23.930	Continuing	Continuing
Quantity of RDT&E Articles	0	23	10	10		10	16	0	0	0		
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
The Surface Ship Torpedo Defense (SSTD) program provides a detect-to-engage hard-kill torpedo defense capability through two development programs. The Countermeasure Anti- Torpedo (CAT) program develops a canisterized Anti-Torpedo Torpedo (ATT) as an ACAT II program. The Torpedo Warning System (TWS) develops the required ship systems as an ACAT III program.												
SSTD system will be installed on one CVN and one Combat Logistics Force (CLF) ship (both HVUs) with IOC defined as FY19.												
Additionally, the program will develop and field six Surface Ship Torpedo Defense prototype EDM systems on CVNs, two of which will be delivered in a RO-RO configuration and one hybrid prototype system on a forward deployed CVN.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2012	FY 2013	FY 2014
Title: Countermeasure Anti-Torpedo (CAT)										75.975	49.894	40.530
										Articles: 23	10	10
FY 2012 Accomplishments:												
EDM-2 fabricated in support of subsystem builds and land-based testing. Testing supported delivery of first subsystem technical data packages and Baseline EDM-2 Design. Continued Insensitive Munitions testing, firing module Qualification Testing and mechanical Integration Testing. Continued conducting Weapons System Explosive Safety Review Board (WSESRB) review of the CAT program. Completed AURE design and started ATT subsystem testing to include thermal engine testing.												
FY 2013 Plans:												
Continue work on the ATT subsystem technical data packages. Complete land based testing of EDM-2 ATT and start ATT in-water testing of both the electric and thermal engine variant. Conduct initial ATT subsystem integration testing. Procure materials for hybrid prototype delivery to include AURE and warhead. Complete shipyard and Alteration Installation Team (AIT) installation of Hybrid Prototype System on CVN77. Complete fabrication of subsystems for EDM-2 CATs in support of EDM prototype delivery in FY14.												
FY 2014 Plans:												

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APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603506N: Surface Ship Torpedo Defense				PROJECT 0225: Surface Ship Torpedo Defense (SSTD)			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2012	FY 2013	FY 2014
Complete shipyard and AIT installation of two prototype, RO-RO EDM systems. Continue land based and in water testing of EDM-2 ATT thermal engine variant.											
Title: Torpedo Warning System (TWS) Articles: FY 2012 Accomplishments: Conducted lake testing for prototype TWS array. Continued development of Torpedo Detection Classification and Localization (TDCL) algorithms. Conducted at sea test of TWS array for algorithm performance. Commenced design of fire control and CAT ready-stowage racks for the HVU application. Commenced design and testing of hybrid prototype system for FY13 install. Commenced shipyard and AIT installation of hybrid prototype system. FY 2013 Plans: Continue fire control and CAT ready-stowage racks EDM design and testing. Conduct sea test on sensors and algorithms developed in FY11 and FY12. Complete installation of hybrid prototype system. Conduct first end-to-end integration test of TWS/CAT. Perform quick reaction assessment of CVN77 hybrid prototype. The increased presence requirements produced a capability gap on deploying carriers in 2QFY14. To close this capability gap, the Navy decided to accelerate the delivery of the second Roll-on Roll-off system from 4QFY14 to 1QFY14. Funding from SLQ-25X RDT&E solicitation cancellation was used to close this capability gap. FY 2014 Plans: Conduct Land-Based Integration of TWS prototype EDM system fabricated in FY13. Install two RO-RO prototype EDM systems on CVNs and commence fabrication of two protype EDM systems for install in FY15.									45.836 3	43.452 1	45.119 2
Title: AN/SLQ-25X Articles: FY 2012 Accomplishments: An AN/SLQ-25X solicitation has been cancelled due to a more cost effective technical solution of interfacing the TWS to the NIXIE system.									0.500 0	0.000	0.000
Accomplishments/Planned Programs Subtotals									122.311	93.346	85.649
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• OPN/221300: SSTD	1.257	10.716	11.925		11.925	18.263	17.135	28.615	29.062	Continuing	Continuing
• WPN/311300: SSTD	0.000	2.700	3.978		3.978	23.644	24.763	28.387	30.629	Continuing	Continuing

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C. Other Program Funding Summary (\$ in Millions)											
			FY 2014	FY 2014	FY 2014					Cost To	
Line Item	FY 2012	FY 2013	Base	OCO	Total	FY 2015	FY 2016	FY 2017	FY 2018	Complete	Total Cost
Remarks											
D. Acquisition Strategy											
CAT Program: In FY09 and FY10, the CAT project completed a Systems Requirements Review (SRR) and Preliminary Design Review (PDR) on the second Engineering Development Model (EDM-2) design. Applied Research Lab (ARL) will complete the EDM-2 design and hold a Critical Design Review (CDR) in FY15. ARL will fabricate test articles and 56 total EDM-2 CATS in support of the prototype fielding. Integration testing will begin in FY13 and continue through delivery of the prototype CATs. A complete Technical Data Package (TDP) will be prepared. With the shift in IOC to FY19, program will enter Milestone C decision in late FY16 (as a result of CAT IOC shift to FY19, acquisition strategy changed to enter acquisition process at Milestone C). Additionally, in FY16 a competitive fixed price contract will be awarded to build low rate initial production (LRIP) units. These units will support operational testing beginning in FY18 with an FY19 IOC.											
TWS Program: In FY09 and FY10, a towed sensor system specification was developed and 2 sea tests were conducted on Navy destroyers that demonstrated the ability of three different passive sonar ranging techniques and demonstrated the benefit of new torpedo detection sonar waveforms. Data from these tests is being applied to the HVU application, and the sensor specification is being modified to meet the increased capability required for HVU ships. Development and production of the new sensors is being conducted by 3Phoenix. A complete sensor set was delivered in 2nd QTR FY12 to support an at sea test in the 3rd QTR FY12. At the same time, a ready-stowage rack, and fire control systems are being developed by Pacific Engineering Incorporated (PEI) and In-Depth Engineering, respectively. All of these components will be brought together for integration in FY13. This integration will support fabrication and fielding of the prototype systems. This testing will inform a Milestone C decision in late FY16. A single competitive contract will be awarded for TWS LRIP systems to support Operational Testing beginning in FY18, with an FY19 IOC.											
E. Performance Metrics											
Torpedo Effectiveness for the CAT Torpedo Detection Classification and Localization (TDCL) False Alert Rate TDCL probability of correct classification TWS System Availability											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>						R-1 ITEM NOMENCLATURE PE 0603506N: <i>Surface Ship Torpedo Defense</i>						PROJECT 0225: <i>Surface Ship Torpedo Defense (SSTD)</i>			
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NUWC:Newport, RI	27.304	5.680	Nov 2011	5.100	Nov 2012	4.501	Nov 2013	-		4.501	Continuing	Continuing	Continuing
Systems Engineering ATT Dev.	C/CPFF	PSU/ARL:State College, PA	128.499	48.452	Nov 2011	34.338	Dec 2012	28.000	Dec 2013	-		28.000	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	JHU/APL:Baltimore , MD	1.740	0.000	Feb 2012	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering Warhead Dev.	WR	NSWC:Indian Head, MD	34.841	11.514	Nov 2011	11.600	Nov 2012	8.700	Nov 2013	-		8.700	Continuing	Continuing	Continuing
Systems Engineering	WR	NUWC:Keyport, WA	14.775	10.157	Nov 2011	10.800	Nov 2012	6.100	Nov 2013	-		6.100	Continuing	Continuing	Continuing
Systems Engineering TDCL	C/CPFF	Ultra:Braintree, MA	11.640	0.000	Feb 2012	0.000		0.000		-		0.000	0.000	11.640	Continuing
Systems Engineering ATT	WR	ONR:Arlington, VA	1.680	0.000	Jan 2012	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering TDCL	C/CPFF	AAC:Hauppauge, NY	3.830	0.250	Mar 2012	0.200	Jan 2013	0.200	Feb 2014	-		0.200	0.000	4.480	Continuing
Systems Engineering	WR	OPTEVFOR:Norfolk, VA	0.743	0.370	Feb 2012	0.150	Feb 2013	0.100	Feb 2014	-		0.100	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	ArgonST:Manassas, VA	0.800	0.000		0.000		0.000		-		0.000	0.000	0.800	Continuing
Systems Engineering TDCL	WR	NSWC:Dahlgren, VA	5.247	2.000	Nov 2011	1.500	Nov 2012	1.500	Nov 2013	-		1.500	0.000	10.247	Continuing
Systems Engineering TDCL	WR	SPAWAR:San Diego, CA	1.320	3.167	Dec 2011	1.000	Dec 2012	1.700	Dec 2013	-		1.700	0.000	7.187	Continuing
Systems Engineering	C/CPFF	UT/ARL:Arlington, TX	0.600	0.000		0.000		0.000		-		0.000	0.000	0.600	Continuing
Systems Engineering	C/CPFF	Alion:Bridgeport, CT	2.526	3.815	Dec 2011	3.700	Dec 2012	3.400	Dec 2013	-		3.400	0.000	13.441	Continuing
Systems Engineering	WR	NUWC DET:Norfolk, VA	2.525	4.938	Nov 2011	6.800	Dec 2012	9.600	Dec 2013	-		9.600	0.000	23.863	
Systems Development	C/CPFF	3 Phoenix:Fairfax, VA	14.904	26.200	Dec 2011	14.665	Dec 2012	17.450	Dec 2013	-		17.450	0.000	73.219	Continuing
Integrated Logistic Spt	WR	NSWC Crane:Crane, IN	0.384	0.050	Dec 2011	0.350	Dec 2012	0.300	Dec 2013	-		0.300	0.000	1.084	Continuing
Systems Engineering	C/CPFF	PEI:Roca, NE	0.000	1.115	Jun 2012	0.386	Dec 2012	0.750	Dec 2013	-		0.750	0.000	2.251	

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APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 4: Advanced Component Development & Prototypes (ACD&P)						R-1 ITEM NOMENCLATURE PE 0603506N: Surface Ship Torpedo Defense						PROJECT 0225: Surface Ship Torpedo Defense (SSTD)			
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	CARDEROCK: Bethesda, MD	0.000	0.220	Jun 2012	0.357	Dec 2012	0.400	Dec 2013	-		0.400	0.000	0.977	
Systems Engineering	C/CPFF	CGI: Washington, DC	0.000	0.200	Jun 2012	0.000		0.000		-		0.000	0.000	0.200	
Systems Engineering	C/BA	Dam Neck: Virginia Beach, VA	0.000	0.022	Jun 2012	0.000		0.000		-		0.000	0.000	0.022	
Systems Engineering	C/BA	NSWC Panama City: Panama City, FL	0.000	0.255	Jun 2012	0.000		0.000		-		0.000	0.000	0.255	
Systems Engineering	C/BA	Devron 26: Not Specified	0.000	0.139	Jun 2012	0.000		0.000		-		0.000	0.000	0.139	
Subtotal			253.358	118.544		90.946		82.701		0.000		82.701			
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Earned Value Mgmt Spt	C/CPAF	Pioneer: Virginia	0.050	0.000		0.000		0.000		-		0.000	0.000	0.050	
Program Management Support	C/FFP	EG&G: Gaithersburg, Md.	2.846	0.000		0.000		0.000		-		0.000	0.000	2.846	Continuing
DAWDF	Various	Not Specified: Not Specified	0.237	0.000		0.000		0.000		-		0.000	0.000	0.237	Continuing
Program Management Support	C/CPAF	Tech-Marine: Washington, DC	6.393	3.537	Jan 2012	0.000		0.000		-		0.000	0.000	9.930	Continuing
Travel	Various	PMS 415: Not Specified	0.534	0.110	Nov 2011	0.100	Nov 2012	0.100	Nov 2013	-		0.100	0.000	0.844	Continuing
Program Management Support	C/CPFF	SPA: Alexandria, VA	0.255	0.120	Mar 2012	0.200	Jan 2013	0.200	Feb 2014	-		0.200	0.000	0.775	Continuing
Program Management Support	C/CPAF	Booz Allen: Washington, DC	0.000	0.000		2.100	Jan 2013	2.648	Feb 2014	-		2.648	0.000	4.748	
Subtotal			10.315	3.767		2.400		2.948		0.000		2.948	0.000	19.430	

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	All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals	263.673	122.311		93.346		85.649		0.000		85.649				

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

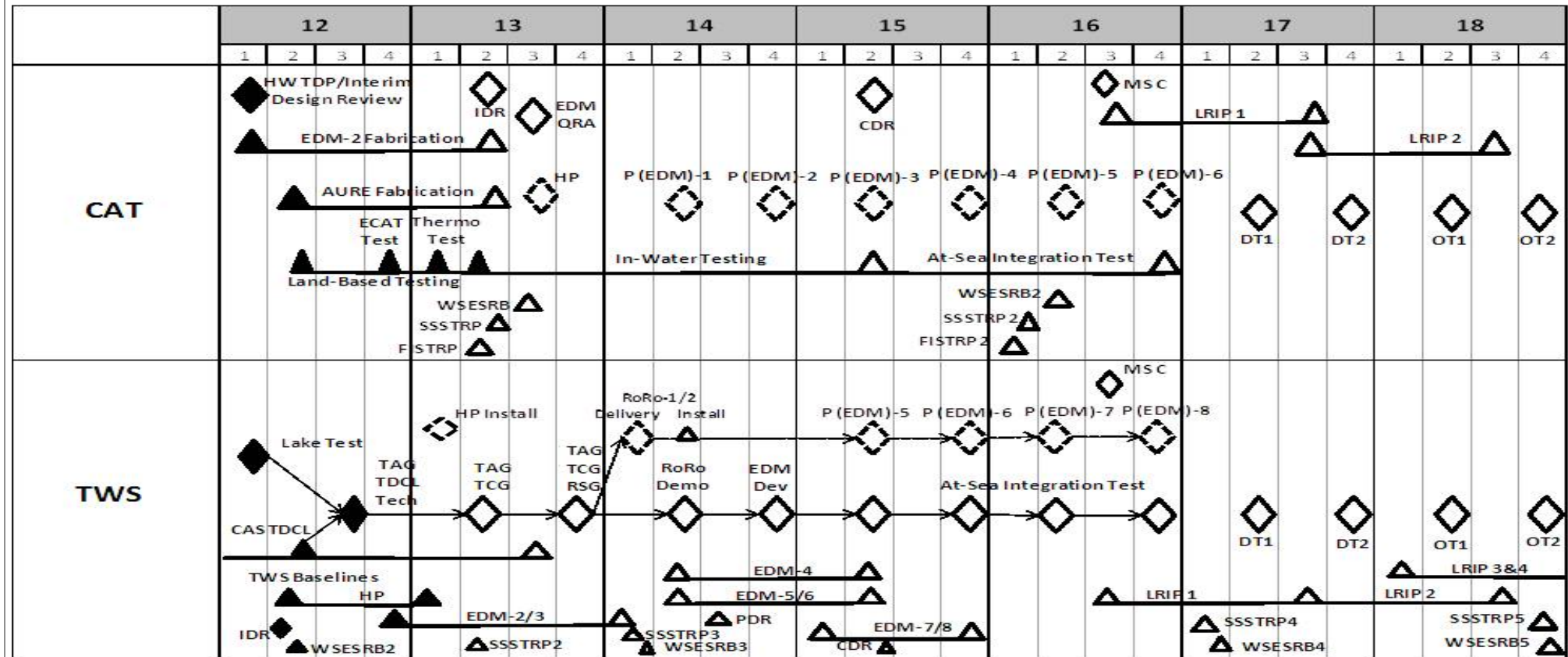
1319: Research, Development, Test & Evaluation, Navy
BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603506N: Surface Ship Torpedo Defense
Defense

PROJECT

0225: Surface Ship Torpedo Defense
(SSTD)



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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603506N: <i>Surface Ship Torpedo Defense</i>	PROJECT 0225: <i>Surface Ship Torpedo Defense (SSTD)</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0225				
CAT - Fabricate EDM 2 Hardware	1	2012	2	2013
CAT - HWTDP/IDR (Interim Design Review)	1	2012	1	2012
CAT- AURE Fabrication	2	2012	2	2013
CAT - Land Based System Test	2	2012	2	2013
CAT - IDR	2	2013	2	2013
CAT - Critical Design Review (CDR)	2	2015	2	2015
CAT - ECAT Test	4	2012	4	2012
CAT - In Water Test	2	2013	2	2015
CAT - Thermo Test	1	2013	1	2013
CAT - Hybrid Prototype (HP)	3	2013	3	2013
CAT - FISTRP	2	2013	2	2013
CAT - EDM QRA	3	2013	3	2013
CAT - SSSTRP	2	2013	2	2013
CAT - WSESRB	3	2013	3	2013
CAT - Prototype EDM 1	2	2014	2	2014
CAT - Prototype EDM 2	4	2014	4	2014
CAT - Milestone C	3	2016	3	2016
CAT - Prototype EDM 3	2	2015	2	2015
CAT - Prototype EDM 4	4	2015	4	2015
At-Sea Integration Test	2	2015	4	2016
CAT - Developmental Testing (DT1)	2	2017	2	2017

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		Start		End
Events by Sub Project		Quarter	Year	Quarter Year
CAT - DT2		4	2017	4 2017
CAT - Prototype EDM 5		2	2016	2 2016
CAT - FISTRP 2		1	2016	1 2016
CAT - Prototype EDM 6		4	2016	4 2016
CAT - SSSTRP 2		1	2016	1 2016
CAT - LRIP 1		3	2016	3 2017
CAT - WSESRB 2		2	2016	2 2016
CAT - LRIP 2		3	2017	3 2018
CAT - Operational Testing (OT)		2	2018	2 2018
CAT - OT2		4	2018	4 2018
TWS - TWS Baseline		2	2012	1 2013
TWS - Lake Test		1	2012	1 2012
TWS - Integrated Design Review (IDR)		2	2012	2 2012
TWS - WSESRB 2		2	2012	2 2012
TWS - Preliminary Design Review (PDR)		3	2014	3 2014
TWS - SSSTRP 2		2	2013	2 2013
TWS - Hybrid Prototype (HP) Install		1	2013	1 2013
TWS - CAS TDCL		2	2012	3 2013
TWS - EDM 2/3		4	2012	1 2014
TWS - Torpedo Acquisition Group (TAG) TDCL Tech		3	2012	3 2012
TWS - TAG TCG		2	2013	2 2013
TWS - TAG TCG Ready Stow Group (RSG)		4	2013	4 2013
TWS - EDM 4		2	2014	2 2015
TWS - Critical Design Review (CDR)		2	2015	2 2015
TWS - SSSTRP 3		1	2014	1 2014

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		Start		End
Events by Sub Project	Quarter	Year	Quarter	Year
TWS - WSESRB 3	1	2014	1	2014
TWS - RoRo 1/2 Install	2	2014	2	2014
TWS - RoRo Demo	2	2014	2	2014
TWS - RoRo 1/2 Delivery	1	2014	1	2014
TWS - EDM Dev	4	2014	4	2014
TWS - EDM 7/8	1	2015	4	2015
TWS - Milestone C	3	2016	3	2016
TWS - At Sea Integration Test	4	2015	4	2016
TWS - LRIP 1	3	2016	3	2017
TWS - SSSTRP 4	1	2017	1	2017
TWS - WSESRB 4	1	2017	1	2017
TWS - Operational Testing (OT1)	2	2018	2	2018
TWS - EDM 5/6	2	2014	2	2015
TWS - Prototype P (EDM) 5	2	2015	2	2015
TWS - Prototype P (EDM) 6	4	2015	4	2015
TWS - Prototype P (EDM) 7	2	2016	2	2016
TWS - Prototype P (EDM) 8	4	2016	4	2016
TWS - LRIP 2	3	2017	3	2018
TWS - LRIP 3/4	1	2018	4	2018
TWS - DT1	2	2017	2	2017
TWS - DT2	4	2017	4	2017
TWS - OT2	4	2018	4	2018
TWS - SSSTRP 5	4	2018	4	2018
TWS - WSESRB 5	4	2018	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Navy										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>					R-1 ITEM NOMENCLATURE PE 0603506N: <i>Surface Ship Torpedo Defense</i>				PROJECT 4050: <i>Compact Rapid Attack Weapon (CRAW)</i>			
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013[#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
4050: <i>Compact Rapid Attack Weapon (CRAW)</i>	0.000	0.000	0.000	3.000	-	3.000	0.000	0.000	0.000	0.000	0.000	3.000
Quantity of RDT&E Articles	0	0	0	0		0	0	0	0	0		
[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012 ^{##} The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
At about one-third the weight of the current lightweight ASW weapon, CRAW is projected to cost less while performing at least as well. The successful performance testing of CRAW against submarine targets will validate and increase readiness CRAW as a candidate for weaponizing multiple platforms.												
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)										FY 2012	FY 2013	FY 2014
Title: COMPACT RAPID ATTACK WEAPON (CRAW)										0.000	0.000	3.000
Articles:												0
FY 2014 Plans: Conduct performance testing against a variety of ASW targets in support of the CRAW Speed to Fleet initiative.												
Accomplishments/Planned Programs Subtotals										0.000	0.000	3.000
C. Other Program Funding Summary (\$ in Millions) N/A												
Remarks												
D. Acquisition Strategy None.												
E. Performance Metrics N/A												

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>						R-1 ITEM NOMENCLATURE PE 0603506N: <i>Surface Ship Torpedo Defense</i>				PROJECT 4050: <i>Compact Rapid Attack Weapon (CRAW)</i>					

Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total					
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPFF	Various:Various	0.000	0.000		0.000		3.000	Jan 2014	-		3.000		0.000	0.000	3.000	
Subtotal			0.000	0.000		0.000		3.000		0.000		3.000		0.000	0.000	3.000	

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	0.000	3.000	0.000	3.000	0.000	3.000	

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy

DATE: April 2013

APPROPRIATION/BUDGET ACTIVITY

1319: *Research, Development, Test & Evaluation, Navy*
BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE

PE 0603506N: *Surface Ship Torpedo Defense*

PROJECT

4050: *Compact Rapid Attack Weapon (CRAW)*

CRAW Speed to Fleet Milestones

Fiscal Year	FY12				FY14				FY15				FY16			
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
System Development Assumes Oct 11 Start																

1: Performance testing against a variety of ASW targets.

2: Performance testing against a variety of ASW targets.

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy			DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603506N: <i>Surface Ship Torpedo Defense</i>	PROJECT 4050: <i>Compact Rapid Attack Weapon (CRAW)</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 4050				
Performance testing against a variety of ASW targets.	2	2014	2	2014
- Performance testing against a variety of ASW targets.	3	2014	3	2014