Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy											Date: March 2014	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0603506N *I Surface Ship Torpedo Defense*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	385.984	83.711	85.649	52.781	-	52.781	30.063	31.854	30.971	30.620	Continuing	Continuing
0225: *Surface Ship Torpedo Defense (SSTD)*	385.984	83.711	85.649	52.781	-	52.781	30.063	31.854	30.971	30.620	Continuing	Continuing

The FY 2015 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 layered torpedo defense capability. It is comprised of four major efforts, the AN/SLQ-25 (NIXIE) system, Torpedo Warning System (TWS), the Countermeasure Anti-Torpedo (CAT) and Acoustic Device Countermeasure (ADC MK2 Mod4). There are two development programs, the CAT program develops a canisterized Anti-Torpedo Torpedo (ATT) as an ACAT II program. The TWS develops the required torpedo detection, classification and localization (TDCL) ship systems as an ACAT III program. The AN/SLQ-25X solicitation was cancelled due to a more cost effective technical solution of interfacing the TWS to NIXIE system.

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 hard-kill torpedo defense on HVUs 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. The program delivered one hybrid prototype system in FY13 on USS GHW BUSH. The next prototype is expected to deliver in FY14; This system will be delivered in a roll-on/roll-off (RO-RO) configuration and installed on USS Roosevelt. The program will build and deliver one additional RO-RO and one EDM in FY15 and 2 EDMs in FY16.

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

Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Navy					Date: March 2014
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*			R-1 Program Element (Number/Name) PE 0603506N *I Surface Ship Torpedo Defense*		
B. Program Change Summary ($ in Millions)	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO**	**FY 2015 Total**
Previous President's Budget	93.346	88.649	31.602	-	31.602
Current President's Budget	83.711	85.649	52.781	-	52.781
Total Adjustments	-9.635	-3.000	21.179	-	21.179
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.843	-			
• Program Adjustments	-	-	25.900	-	25.900
• Rate/Misc Adjustments	-	-	-4.721	-	-4.721
• Congressional General Reductions Adjustments	-7.792	-	-	-	-

Change Summary Explanation

Financial: FY 2013 reductions include sequestration and general reductions. FY 2015 includes increases for the SSTD Rapid Fielding Plan, speed-to-fleet technologies. FY 2015 also includes decrease due to the Department's decision to reduce contracted services and other rate/miscellaneous adjustments.

Technical and Schedule: FY13 reductions and adjustments eliminated 1 of the 2 RO-ROs and delayed the remaining unit to the end of FY14. IOC is FY19. PB14 changed the requirement to deliver 2 EDMs in FY15 to 1 RO-RO and 1 EDM.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy			Date: March 2014
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0603506N / *Surface Ship Torpedo Defense*	Project (Number/Name) 0225 / *Surface Ship Torpedo Defense (SSTD)*	

COST ($ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
0225: *Surface Ship Torpedo Defense (SSTD)*	385.984	83.711	85.649	52.781	-	52.781	30.063	31.854	30.971	30.620	Continuing	Continuing
Quantity of RDT&E Articles	0.000	-	-	-	-	-	-	-	-	-		

The FY 2015 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 layered torpedo defense capability with four efforts; two of which are currently in development. 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 TDCL systems as an ACAT III program.

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 USS GHW BUSH.

SSTD system will be installed on one CVN and one Combat Logistics Force (CLF) ship (both HVUs) with IOC defined as FY19.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Title: Countermeasure Anti-Torpedo (CAT)	45.228	40.530	26.845
Articles:	10.000	10.000	16.000
FY 2013 Accomplishments: Continued work on the ATT subsystem technical data packages. Completed land based testing of EDM-2 ATT and started ATT in-water testing of both the electric and thermal engine variant. Conducted initial ATT subsystem integration testing. Procured materials for hybrid prototype delivery to include AURE and warhead. Completed shipyard and Alteration Installation Team (AIT) installation of Hybrid Prototype System on CVN77. Completed fabrication of subsystems for EDM-2 CATs in support of EDM prototype delivery in FY14. Conducted QRA on CVN-77.			
FY 2014 Plans: Complete shipyard and AIT installation of one RO-RO EDM system on CVN-71. Continue land based and in water testing of EDM-2 ATT thermal engine variant. Build CATs for FY15 EDM systems. Conduct software development and testing for ATT 2v2 capability.			
FY 2015 Plans:			

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603506N / *Surface Ship Torpedo Defense*	**Project (Number/Name)** 0225 / *Surface Ship Torpedo Defense (SSTD)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Continue land based and in-water testing of EDM-2 ATT thermal engine variant. Build CATs for FY15 EDM systems. Conduct follow-on software development and testing for ATT 2v2 capability.			
Title: Torpedo Warning System (TWS)	38.483	45.119	25.936
Articles:	1.000	2.000	2.000
FY 2013 Accomplishments: Completed fire control and CAT ready-stowage racks EDM design and testing. Conducted sea test on sensors and algorithms developed in FY11 and FY12. Completed installation of hybrid prototype system on CVN-77. Conducted first end-to-end integration test of TWS/CAT.			
FY 2014 Plans: Conduct Land-Based Integration of TWS prototype EDM system fabricated in FY13. Install one RO-RO EDM system on CVN-71 and commence fabrication of one RO-RO and one EDM system for install in FY15. Develop TWS active source software and hardware. Conduct initial active source testing.			
FY 2015 Plans: Buy 2 EDM systems to install in FY16 and install 2 systems from FY14. Continue land based and in-water integration testing of TWS and CAT. Follow-on TWS active source software and hardware development and testing. Conduct software development for TWS 2v2 capability.			
Accomplishments/Planned Programs Subtotals	83.711	85.649	52.781

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• OPN/221300: *SSTD*	9.870	-	12.051	-	12.051	22.163	24.622	33.153	44.916	Continuing	Continuing
• WPN/311300: *SSTD*	2.479	3.978	6.562	-	6.562	22.767	24.524	26.729	36.506	Continuing	Continuing

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 40 total EDM-2 CATS in support of the prototype fielding. Integration testing began in FY13 and will continue through delivery of the prototype CATs. A complete Technical Data Package (TDP) will be prepared. Program will enter Milestone C decision in late FY16 and 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.

Exhibit R-2A, RDT&E Project Justification: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603506N / *Surface Ship Torpedo Defense*	**Project (Number/Name)** 0225 / *Surface Ship Torpedo Defense (SSTD)*

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 were 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 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

Exhibit R-4, RDT&E Schedule Profile: PB 2015 Navy		Date: March 2014
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0603506N / *Surface Ship Torpedo Defense*	**Project (Number/Name)** 0225 / *Surface Ship Torpedo Defense (SSTD)*

Surface Ship Torpedo Defense
Planning Schedule