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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2025 Navy **Date:** March 2024

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603506N / <i>Surface Ship Torpedo Defense</i>
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COST (\$ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	757.278	0.455	0.730	4.790	-	4.790	6.449	0.489	0.000	0.000	0.000	770.191
0225: <i>Surface Ship Torpedo Defense (SSTD)</i>	757.278	0.455	0.730	4.790	-	4.790	6.449	0.489	0.000	0.000	0.000	770.191

**A. Mission Description and Budget Item Justification**

The Surface Ship Torpedo Defense (SSTD) program provides a detect-to-engage layered torpedo defense capability. The four (4) major efforts that comprise SSTD are the AN/SLQ-25 (NIXIE) system, Torpedo Warning System (TWS), the Countermeasure Anti-Torpedo (CAT), and Acoustic Device Countermeasure (Surface ADC MK2). The Anti-Torpedo Torpedo Defense System (ATTDS) is comprised of TWS and CAT.

The ATTDS provides a hard kill torpedo defensive capability on High Value Units (HVV's). The SSTD program developed and fielded five (5) ATTDS Engineering Design Models (EDMs) systems on CVNs. Each EDM system is one (1) TWS with a load out of a maximum of eight (8) CATs. In FY20, the ATTDS program commenced sundown efforts to return the five (5) CVNs to their original configuration. Two (2) system removals completed in FY22, with one (1) more completed in FY23. FY23 and FY24 funding will provide minimal support to the 2 remaining CVN installations with system preservation the primary focus. FY 24 funding will also support beginning Research, Development, Test & Evaluation (RDT&E) planning efforts to develop and incorporate TWS capabilities into the AN/SLQ-25 (Nixie) via Tech Insertions (TIs). FY25 funding is to complete removal of ATTDS and restore NIXIE on the final two CVNs with the system. The funding will also be used to begin development of Torpedo Detection, Classification and Localization (TDCL) capability in support of torpedo defense requirements. Minimal funds will be used to support the remaining ATTDS systems until removal.

Research and development of new technologies and capabilities for torpedo defense initiated under the Future Naval Capabilities (FNC), Small Business and Innovative Research (SBIR), and/or other Research, Development, Test & Evaluation (RDT&E) initiatives are evaluated to determine their effectiveness and impact on improving ship survivability. Evaluations of new and emerging torpedo defense hardware and software in representative acoustic environments, against projected threats using both digital and hardware-in-the-loop simulations will be performed. The potential hardware and software will be considered for integration into the modular and Commercial-Off-The-Shelf (COTS)-based design of AN/SLQ-25E, which allows for future capability growth to outpace the threat in torpedo defense. Two (2) FY22 Congressional adds support research and development of new torpedo defense capabilities for insertion into the 25E effort, as well as improve the safety and reliability of the 25E towed winch and reel system.

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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
Previous President's Budget	0.473	0.730	4.912	-	4.912
Current President's Budget	0.455	0.730	4.790	-	4.790
Total Adjustments	-0.018	0.000	-0.122	-	-0.122
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.007	0.000			
• SBIR/STTR Transfer	-0.012	0.000			
• Program Adjustments	0.000	0.000	-0.158	-	-0.158
• Rate/Misc Adjustments	0.001	0.000	0.036	-	0.036

**Change Summary Explanation**

FY2023 decrease from FY2024 position of -\$0.019 million due to SBIR reduction (\$0.012 million) and Cancelled Accounts reduction (\$0.007 million). FY2025 net decreased from FY2024 position by -\$0.122M, which includes: -\$0.158 million due to program adjustments and an increase in miscellaneous adjustments of + \$0.036 million.

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Navy										<b>Date:</b> March 2024		
<b>Appropriation/Budget Activity</b> 1319 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603506N / <i>Surface Ship Torpedo Defense</i>				<b>Project (Number/Name)</b> 0225 / <i>Surface Ship Torpedo Defense (SSTD)</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
0225: <i>Surface Ship Torpedo Defense (SSTD)</i>	757.278	0.455	0.730	4.790	-	4.790	6.449	0.489	0.000	0.000	0.000	770.191
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**A. Mission Description and Budget Item Justification**

ATTDS is a system of systems, comprised of the Torpedo Warning System (TWS) and the Countermeasure Anti-Torpedo Torpedo (CAT). The CAT program developed a canisterized Anti-Torpedo Torpedo (ATT) that provides hard kill torpedo defensive capability for High Value Units (HVUs). The TWS program developed active and passive towed arrays, and electronics processing cabinets to provide Torpedo Detection, Classification, and Localization (TDCL). The SSTD program has developed and fielded five (5) ATTDS Engineering Design Models (EDMs) across five (5) CVNs. Each EDM system is one (1) TWS with a load out of a maximum of eight (8) CATs. In FY20, the ATTDS Program commenced sundown efforts to return the five (5) CVNs to their original configuration. Two (2) system removals completed in FY22, with one (1) more completed in FY23. FY22 funds also supported the demilitarization and transfer of sixteen (16) CATs, and FY23 funding supported the demilitarization and transfer of the remaining eight (8) CATs. FY24 funding will sustain the remaining TWS systems as well as begin Research, Development, Test & Evaluation (RDT&E) planning efforts to develop and incorporate TWS capabilities into the AN/SLQ-25 (Nixie) via Tech Insertions (TIs). FY25 funding is to complete removal of ATTDS and restore NIXIE on the final two CVNs with the system. The funds will also be used to begin development of TDCL capability in support of torpedo defense requirements. Minimal funds will be used to support the remaining ATTDS systems until removal is complete.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
<b>Title:</b> Countermeasure Anti-Torpedo (CAT)	0.108	0.000	0.000	0.000	0.000
<b>Articles:</b>	-	-	-	-	-
<b>FY 2024 Plans:</b> N/A.					
<b>FY 2025 Base Plans:</b> N/A.					
<b>FY 2025 OCO Plans:</b> N/A.					
<b>Title:</b> Torpedo Warning System (TWS)	0.347	0.730	4.790	0.000	4.790
<b>Articles:</b>	-	-	-	-	-
<b>FY 2024 Plans:</b> - TWS system preservation on two (2) CVNs as needed by fleet request.					

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2025 Navy		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603506N / <i>Surface Ship Torpedo Defense</i>	<b>Project (Number/Name)</b> 0225 / <i>Surface Ship Torpedo Defense (SSTD)</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>
- Begin SCD documentation according to ship availability maintenance schedule to process SCD 25298 for the two (2) remaining CVNs.					
<b><i>FY 2025 Base Plans:</i></b> - Execute SCD 25298 for one (1) of the remaining TWS installations. - TWS system sustainment on one (1) CVN as needed for Fleet operations - RDT&E efforts to develop and incorporate TDCL capabilities into AN/SLQ-25 (NIXIE).					
<b><i>FY 2025 OCO Plans:</i></b> N/A					
<b><i>FY 2024 to FY 2025 Increase/Decrease Statement:</i></b> FY 2024 to FY 2025 increased by \$4.06 million due to TDCL capability requirements for AN/SLQ-25 (NIXIE).					
<b>Accomplishments/Planned Programs Subtotals</b>	0.455	0.730	4.790	0.000	4.790

<b>C. Other Program Funding Summary (\$ in Millions)</b>											
<b>Line Item</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025 Base</b>	<b>FY 2025 OCO</b>	<b>FY 2025 Total</b>	<b>FY 2026</b>	<b>FY 2027</b>	<b>FY 2028</b>	<b>FY 2029</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• OPN/2213: <i>Surface Ship Torpedo Def (SSTD)</i>	14.325	14.560	9.647	-	9.647	2.835	2.862	2.931	2.991	Continuing	Continuing
• WPN/3113: <i>Surface Ship Torpedo Def (SSTD)</i>	3.789	4.830	4.317	-	4.317	5.245	5.342	5.448	5.557	Continuing	Continuing

**Remarks**  
 OPN/2213 funds the AN/SLQ-25 System. No ATTDS OPN funding in FY20 and out.  
 WPN/3113 funds the Surface Acoustic Device Countermeasure, ADC MK2 Mod 6 and Surface ADC Ready Stowage Lockers. No WPN ATTDS funding in FY20 and out.

**D. Acquisition Strategy**  
 CAT Program: The Program completed a Systems Requirements Review (SRR) and Preliminary Design Review (PDR) on the Engineering Development Model (EDM) design. ARL Penn State (ARL/PSU) has completed a Technical Data Package (TDP) to support the future system builds. CAT system SALVO Software was operational prior to ATTDS system preservation and is currently in fleet use.  
  
 TWS Program: ULTRA developed and produced five complete sensor sets. Pacific Engineering Incorporated (PEI) and In-Depth Engineering INC. developed the stowage racks and fire control systems respectively. System integration supported fabrication and fielding of the five complete systems. Testing of TWS SALVO software was complete and is currently in Fleet use. ULTRA continues to provide Fleet support for the system.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Navy** **Date:** March 2024

<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603506N / Surface Ship Torpedo Defense	<b>Project (Number/Name)</b> 0225 / Surface Ship Torpedo Defense (SSTD)
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<b>Product Development (\$ in Millions)</b>				FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering	WR	NUWC : Newport, RI	59.371	0.100	Nov 2022	0.270	Nov 2023	4.337	Nov 2024	-		4.337	0.000	64.078	Continuing
Systems Engineering ATT Dev.	C/CPFF	PSU/ARL : State College, PA	307.214	0.030	Nov 2022	0.000		0.000		-		0.000	0.000	307.244	-
Systems Engineering Warhead Dev.	WR	NSWC : Indian Head, MD	83.264	0.000		0.042	Nov 2023	0.000		-		0.000	0.000	83.306	-
Systems Engineering	WR	NUWC : Keyport, WA	64.812	0.080	Nov 2022	0.288	Nov 2023	0.300	Nov 2024	-		0.300	0.000	65.480	-
Systems Engineering TDCL	C/CPFF	Ultra : Braintree, MA	11.640	0.000		0.000		0.000		-		0.000	0.000	11.640	Continuing
Systems Engineering TDCL	C/CPFF	AAC : Hauppauge, NY	4.480	0.000		0.000		0.000		-		0.000	0.000	4.480	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	10.032	0.000		0.000		0.000		-		0.000	0.000	10.032	Continuing
Systems Engineering TDCL	WR	SPAWAR : San Diego, CA	11.118	0.000		0.000		0.000		-		0.000	0.000	11.118	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	14.858	0.000		0.000		0.000		-		0.000	0.000	14.858	Continuing
Systems Engineering	WR	NUWC DET : Norfolk, VA	41.881	0.000		0.000		0.000		-		0.000	0.000	41.881	-
Systems Development	C/CPFF	Ultra : Braintree, MA	131.745	0.207	Dec 2022	0.100	Dec 2023	0.100	Dec 2024	-		0.100	0.000	132.152	Continuing
<b>Subtotal</b>			741.815	0.417		0.700		4.737		-		4.737	0.000	747.669	N/A

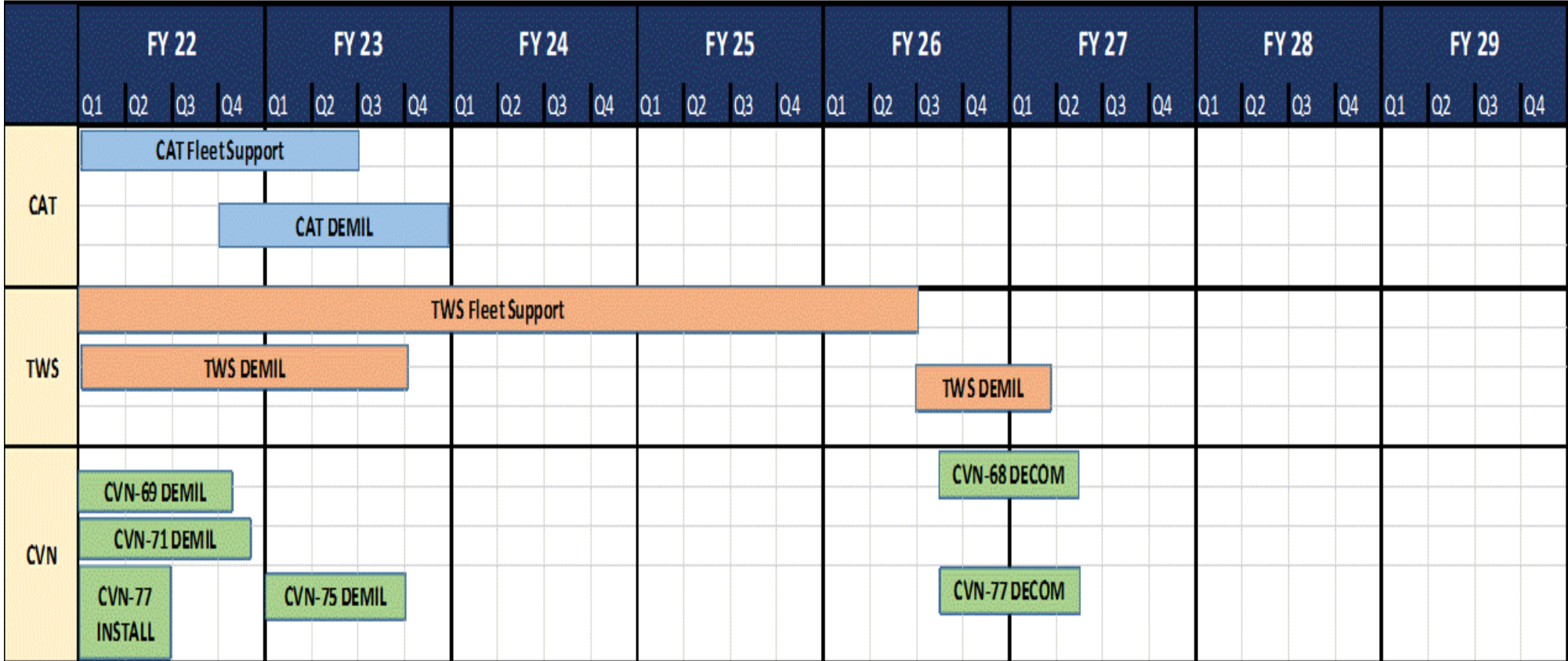
**Remarks**  
FY 2024 to FY 2025 increased due to TDCL capability requirements for AN/SLQ-25 (NIXIE).



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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2025 Navy</b>		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603506N / Surface Ship Torpedo Defense	<b>Project (Number/Name)</b> 0225 / Surface Ship Torpedo Defense (SSTD)

**ANTI-TORPEDO TORPEDO DEFENSE SYSTEM (ATTDS)**



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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2025 Navy		<b>Date:</b> March 2024
<b>Appropriation/Budget Activity</b> 1319 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603506N / <i>Surface Ship Torpedo Defense</i>	<b>Project (Number/Name)</b> 0225 / <i>Surface Ship Torpedo Defense (SSTD)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>Proj 0225</b>				
CAT - Preservation	1	2023	4	2023
TWS - Preservation	1	2023	2	2027