Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0605863N / *RDT&E Ship & Aircraft Support*							
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	0.000	169.283	203.447	152.176	-	152.176	149.995	166.552	152.851	156.003	Continuing	Continuing
0568: *RDT&E Acft Flt Hours*	0.000	39.471	42.580	43.019	-	43.019	43.389	44.465	45.246	46.194	Continuing	Continuing
0569: *RDT&E Acft Supt*	0.000	50.247	51.214	52.148	-	52.148	53.196	54.207	55.297	56.469	Continuing	Continuing
2924: *SDTS*	0.000	22.751	52.003	15.390	-	15.390	15.478	15.701	15.983	16.309	Continuing	Continuing
3206: *T&E Enterprise*	0.000	39.937	42.420	20.949	-	20.949	17.960	32.943	16.743	17.068	Continuing	Continuing
3238: *Threat Engineering*	0.000	16.877	15.230	20.670	-	20.670	19.972	19.236	19.582	19.963	Continuing	Continuing

A. Mission Description and Budget Item Justification

This continuing program provides support for the Self Defense Test Ship and developmental test squadron aircraft required to support Research, Development, Test and Evaluation (RDT&E) of new systems. The RDT&E ship and aircraft inventory is required to adequately test modifications and improvements to fielded weapon systems and sensors and new weapon systems and sensors and evaluate modifications to address new threat capabilities to increase the warfighting capability of the fleet. The program provides integrated logistics support for aircraft at selected field activities, provides depot-level maintenance of aircraft, engines and components for the Navy's inventory of RDT&E aircraft; and provides support for DON aircraft in the custody of contractors in support of RDT&E. The Self Defense Test Ship is a remotely operated platform that supports the test and evaluation of surface ship sensors, combat systems and weapons within the close-in self defense zone. Cost covered under this element include test execution for the Air Warfare Ship Self-Defense Enterprise, aircrew training and proficiency, fuel, supplies, equipment, repair and Aviation Depot Level Repairables, as well as organizational, intermediate and depot maintenance of aircraft in the Navy RDTE inventory and the Self Defense Test Ship. Threat engineering provides test and evaluation (T&E) modeling and simulation (M&S) products and informs targets, simulators, and stimulator designs and development. This project satisfies Surface Navy advanced missile system threat characterization and verification, validation, & accreditation (VV&A) requirements for testing

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RESEARCH, DEVELOPMENT, TEST and EVALUATION MANAGEMENT SUPPORT because it supports efforts directed toward sustaining or modernizing installations or operations required for general research, development, test and evaluation.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Navy					Date: March 2024
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 6: *RDT&E Management Support*		R-1 Program Element (Number/Name) PE 0605863N / *RDT&E Ship & Aircraft Support*			
B. Program Change Summary ($ in Millions)	**FY 2023**	**FY 2024**	**FY 2025 Base**	**FY 2025 OCO**	**FY 2025 Total**
Previous President's Budget	173.352	203.447	154.849	-	154.849
Current President's Budget	169.283	203.447	152.176	-	152.176
Total Adjustments	-4.069	0.000	-2.673	-	-2.673
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.741	0.000			
• SBIR/STTR Transfer	-2.328	0.000			
• Program Adjustments	0.000	0.000	-3.393	-	-3.393
• Rate/Misc Adjustments	0.000	0.000	0.720	-	0.720

Change Summary Explanation

Schedule: Not applicable.

Technical: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605863N / *RDT&E Ship & Aircraft Support*	Project (Number/Name) 0568 / *RDT&E Acft Flt Hours*	

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
0568: *RDT&E Acft Flt Hours*	0.000	39.471	42.580	43.019	-	43.019	43.389	44.465	45.246	46.194	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Research, Development, Test and Evaluation (RDT&E) Aircraft Flight Hours. This non-acquisition project supports direct flight hour costs, which include aviation fuel, and a portion of the costs of Aviation Depot Level Repairables (AVDLR) associated with NAVAIR test pilot proficiency flights, including organizational and intermediate maintenance, associated consumables, including petroleum, oil, lubricants and spare and replacement parts for components that fail. Annual test pilot flight hours, as delineated in OPNAVINST 3710.7 are satisfied through a combination of program funded test flights, which vary year to year based on program schedules; and flights funded through this project unit to ensure a baseline level of pilot readiness. These flight hours ensure test pilots remain proficient in assigned type / model / series aircraft in which they are qualified (approximately 3 hours per month) during lulls in program test schedules to ensure proficient test pilots are available to safely support aviation program testing. Readiness hours are designed to provide aircrew with a minimum of 11 flight hours per month, for a total of 133 hours annually. Flight hours support ferry flights to Fleet Readiness Centers for planned depot maintenance, post maintenance, acceptance test flights, aircrew training and test pilot proficiency when test program demand is low, in direct support of Research and Development Programs at Naval Air Systems Command, and Office of Naval Research flight activities.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RESEARCH, DEVELOPMENT, TEST and EVALUATION MANAGEMENT SUPPORT because it supports efforts directed toward maintaining test pilot readiness in direct support of general research, development, test and evaluation.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: AVDLR, Consumable POL & Maintenance	39.471	18.644	21.143	0.000	21.143
Articles:	-	-	-	-	-
FY 2024 Plans: Provide support for direct flight hour costs, a portion of the costs of Aviation Depot Level Repairables (AVDLR) associated with NAVAIR test pilot proficiency flights, including organizational and intermediate-level maintenance, supply and petroleum, oil, lubricants and spare and replacement parts for components that fail in support of test pilot proficiency flights. Fund readiness to 60% of the requirement based on assessment of FY24 program workload to ensure test pilots remain proficient and to meet OPNAVINST 3710.7 requirements, to ensure flight safety and to reduce the risk of aviation mishaps.					
FY 2025 Base Plans: Provide support for the cost of Aviation Depot Level Repairables (AVDLR), lubricants and consumable and replacement parts in support of test pilot proficiency hours, along with organizational and intermediate-level					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0605863N / *RDT&E Ship & Aircraft Support*	**Project (Number/Name)** 0568 / *RDT&E Acft Flt Hours*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
maintenance, associated with the projected direct readiness flight hour costs in support of NAVAIR test pilot proficiency and functional check flights. Fund readiness to 60% of the requirement based on assessment of FY25 program workload to ensure test pilots remain proficient and to meet OPNAVINST 3710.7 requirements, to ensure flight safety and to reduce the risk of aviation mishaps. Remaining 40% of the requirement is covered under program funded flight test. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Changed title of Accomplishment/Planned Program from "RDTE Aircraft Flight Hours" to "AVDLR, Consumable POL & Maintenance" to better characterize the planned activity the funding request supports. The $2.499M increase from FY24 to FY25 is due to increased cost of AVDLR and maintenance support due to inflation costs associated with replacement parts and contract labor.					
Title: Readiness Fuel ***Articles:*** ***FY 2024 Plans:*** Provide fuel in support of readiness flight hour costs. In PB24, the Project Unit was restructured in order to break out fuel into its own accomplishment to provide increased transparency of fuel costs. Provide fuel in support RDTE Test Pilot readiness for over 200 test pilots and associated aircrew assigned to Naval Test Wing Atlantic and Naval Test Wing Pacific developmental test squadrons (VX-20, HX-21, VX-23, UX-24, and VX-31), the S&T squadron (VXS-1), and the range support and test squadron (VX-30). Fuel is funded to 60% of the requirement based on assessment of FY24 program workload to ensure test pilots remain proficient and to meet OPNAVINST 3710.7 requirements, to ensure flight safety and to reduce the risk of aviation mishaps. Remaining 40% of the requirement is covered under program funded flight test. ***FY 2025 Base Plans:*** Provide fuel in support RDTE Test Pilot readiness for over 200 test pilots and associated aircrew assigned to Naval Test Wing Atlantic and Naval Test Wing Pacific developmental test squadrons (VX-20, HX-21, VX-23, UX-24, and VX-31), the S&T squadron (VXS-1), and the range support and test squadron (VX-30). Fuel is funded to 60% of the requirement based on assessment of FY25 program workload to ensure test pilots remain	0.000 -	23.936 -	21.876 -	0.000 -	21.876 -

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0605863N / *RDT&E Ship & Aircraft Support*	**Project (Number/Name)** 0568 / *RDT&E Acft Flt Hours*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
proficient and to meet OPNAVINST 3710.7 requirements, to ensure flight safety and to reduce the risk of aviation mishaps. Remaining 40% of the requirement is covered under program funded flight test. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** The $2.06M reduction from FY2024 to FY25 is based on a reduction in DLA forecasted fuel costs and increased costs associated with AVDLR and maintenance support.					
Accomplishments/Planned Programs Subtotals	39.471	42.580	43.019	0.000	43.019

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not Applicable

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605863N / *RDT&E Ship & Aircraft Support*	Project (Number/Name) 0569 / *RDT&E Acft Supt*	

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
0569: *RDT&E Acft Supt*	0.000	50.247	51.214	52.148	-	52.148	53.196	54.207	55.297	56.469	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Research, Development, Test and Evaluation (RDT&E) Aircraft Support. This continuing project funds costs associated with the preventive and corrective maintenance of fixed and rotary wing aircraft which directly support test and evaluation of aircraft and associated weapon systems and sensors. Testing aboard dedicated RDT&E aircraft reduces the number of fleet units required to support test and evaluation of aviation programs. This project unit funds airframe Standard Depot Level Maintenance (SDLM), the Integrated Maintenance Concept and Planned Depot Maintenance, major in-service repairs, emergent repairs and aircraft engine periodic maintenance and overhauls and aircraft material condition and field inspections. Also included in this project unit, are the costs of Aviation Depot Level Repairables (AVDLR), which are spare and replacement parts for components that fail during the conduct of readiness flight operations, aircrew training and proficiency flight hours, and must be replaced to support follow-on flight operations. This project unit also funds Aircraft Structure Periodic Assessments (ASPA), Individual Material Readiness List (IMRL) tools and support equipment, Aviation Climate Assessment Survey System (ACASS) and other projects and peripheral equipment associated with the maintenance of flight readiness for RDT&E aircraft.

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RESEARCH, DEVELOPMENT, TEST and EVALUATION MANAGEMENT SUPPORT because it supports efforts directed toward sustaining or modernizing equipment required for general research, development, test and evaluation.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Aircraft/Engine Maintenance and AVDLR/IMRL Support	49.647	50.614	51.148	0.000	51.148
Articles:	-	-	-	-	-
FY 2024 Plans: Provide support of RDT&E Aircraft planned depot maintenance events while funding annual operating and sustainment costs associated with Aviation Depot Level Repairables (AVDLR) and Individual Material Readiness List (IMRL) items associated with test pilot proficiency flights, engine repairs and overhauls, and emergent repairs to RDT&E aircraft. The 2024 base plan supports operations and implementation of Naval Air Enterprise Naval Sustainment Systems in support of fleet aircraft readiness efforts. Major Depot events include one KC-130T, efforts to support an additional Planned Depot Maintenance activity for one P-3D aircraft, and Depot events for nine F-18 variant aircraft, one C-38A and three MH-60 helicopters.					
FY 2025 Base Plans: Provide support of RDT&E Aircraft planned depot maintenance events while funding annual operating and sustainment costs associated with Aviation Depot Level Repairables (AVDLR) and Individual Material Readiness					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0605863N / *RDT&E Ship & Aircraft Support*	**Project (Number/Name)** 0569 / *RDT&E Acft Supt*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
List (IMRL) items associated with test pilot proficiency flights, engine repairs and overhauls, and emergent repairs to RDT&E aircraft. The 2025 base plan supports operations and implementation of Naval Air Enterprise Naval Sustainment Systems in support of fleet aircraft readiness efforts. Major Depot events include one KC-130T, one P-8A, and Depot events for four F-18 variant aircraft, three E-2D, three MH-60 helicopters, one C-38 and one RC-12M aircraft. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Budget increase of $0.534M from FY 2024 to FY 2025 is in direct support of increases in depot and overhaul costs necessary to sustain aircraft assigned to developmental test squadrons. Additional funding was also provided to address increases in the costs associated with aviation depot level repairable parts associated with readiness flights, and cost growth associated with Planned Depot Maintenance events of existing RDT&E inventory of aircraft and engines, to include funding of following major depot events: 1 KC-130T; 1 P-8A; 4 FA-18s; 3 E-2D; 3 MH-60 helicopters; 1 C-38; and 1 RC-12M.					
Title: In-Service Repairs	0.600	0.600	1.000	0.000	1.000
Articles:	-	-	-	-	-
FY 2024 Plans: Provide planned In-Service Repair funds for emergent repair requirements to aircraft performing mission critical test and evaluation projects. ***FY 2025 Base Plans:*** Provide planned In-Service Repair funds for emergent repair requirements to aircraft performing mission critical test and evaluation projects. ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** Increase of $0.4M from FY24 to FY25 is due to increased cost of parts and labor in support of In-Service Repairs.					
Accomplishments/Planned Programs Subtotals	50.247	51.214	52.148	0.000	52.148

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0605863N / *RDT&E Ship & Aircraft Support*	**Project (Number/Name)** 0569 / *RDT&E Acft Supt*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy			Date: March 2024
Appropriation/Budget Activity 1319 / 6	R-1 Program Element (Number/Name) PE 0605863N / *RDT&E Ship & Aircraft Support*	Project (Number/Name) 2924 / *SDTS*	

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
2924: *SDTS*	0.000	22.751	52.003	15.390	-	15.390	15.478	15.701	15.983	16.309	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project provides for the preventive and corrective maintenance of mission critical Hull Mechanical and Electrical (HM&E) and remote control system maintenance aboard the Self-Defense Test Ship (SDTS) in support of the Navy RDT&E of ship self-defense systems. Testing aboard this ship provides the capability to safely test self-defense weapon systems within their minimum range and reduces the number of fleet units required to support RDT&E efforts.

Funds are used to purchase consumable supplies and repair parts, conduct routine preventive and emergent corrective maintenance and engineering support services.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: SDTS	22.751	52.003	15.390	0.000	15.390
Articles:	-	-	-	-	-
FY 2024 Plans: Commence and complete a 7 month Selected Restricted Availability (SRA) depot level maintenance on the Self Defense Test Ship (SDTS). Specific activities include contract award and execution of SRA. Scope of the SRA includes repair/replacement/preservation of critical Hull, Mechanical and Electrical (HM&E) systems such as safety systems, electrical systems, main engine and electrical generation, fuel oil storage and service systems, firemain and seawater support systems and various tank inspections, necessary to clear outstanding Departures from Specification. Funding pays for shipyard labor and materials, not procured in FY23, to accomplish all elements of the work package and address as found material and preservation conditions as systems are opened for inspection and repair. Completion of the SRA in FY24 will extend the life of the SDTS through FY29 to support execution of the CVN 79, LPD Flight II and LHA 8 test programs. NSWC PHD will continue to conduct management, operation, and organizational level maintenance and repair/ upgrade of critical ship HM&E systems to ensure safe operation of the Self Defense Test Ship (SDTS).					
FY 2025 Base Plans: NSWC PHD continues to conduct management, operation, maintenance and repair/upgrade of critical ship HM&E systems to ensure safe operation of the Self Defense Test Ship (SDTS). Maintain, operate, configure and upgrade the Test Ship Remote Control System (TSRCS) and associated infrastructure in support of T&E requirements onboard the SDTS to support the Air Warfare Ship Self Defense Enterprise test requirements as					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0605863N / *RDT&E Ship & Aircraft Support*	**Project (Number/Name)** 2924 / *SDTS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
well as surface ship combat system developmental test programs. Continue to work outstanding maintenance and repair efforts and complete necessary repairs to clear any outstanding Departures from Specification (DFS). ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY24 to FY25 program decrease of $36.613M reflects a return to baseline operations and sustainment funding for the Self Defense Test Ship following completion of the FY24 Selected Restricted Availability.					
Accomplishments/Planned Programs Subtotals	22.751	52.003	15.390	0.000	15.390

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This line of accounting is for recurring HM&E and ship maintenance.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy										Date: March 2024		
Appropriation/Budget Activity 1319 / 6					R-1 Program Element (Number/Name) PE 0605863N / *RDT&E Ship & Aircraft Support*				Project (Number/Name) 3206 / *T&E Enterprise*			
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**
3206: *T&E Enterprise*	0.000	39.937	42.420	20.949	-	20.949	17.960	32.943	16.743	17.068	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Currently finishing Air Warfare Ship Self Defense (AW SSD) testing on legacy SSDS Baseline 10 class ship, CVN 78 (TEMP 1714), and starting testing on follow on SSDS Baseline 12 ship classes, CVN 79, LHA 8, and LPD Flt II (TEMP 1910). This approach merges common ship, element, and system requirements into common infrastructure for combined Developmental and Operational Testing (DT/OT) of the Surface Navy antiship cruise missile (ASCM) defense requirement, expressed as a Probability of Raid Annihilation (PRA). Enterprise Testing characterizes system performance with live fire events and through Modeling & Simulation (M&S) assessments informed by live-fire demonstrations.

Enterprise Cost elements:

a) Enterprise Testing and Planning. SDTS and Lead Ship tracking and firing exercises are conducted against single- and dual-, subsonic and supersonic ASCM threat surrogates. Includes the contractor and government costs to administer the Enterprise, collect and distribute data from live events, maintain Cybersecurity certifications, and financial management.

b) Self-Defense Test Ship (SDTS) Combat Systems. Includes procurement, installation, check-out, stage testing, routine preventive maintenance, and repairs of major combat system elements.

c) Enterprise Testbed (ETB). Includes all M&S costs required to create OT-quality digital representations of shipboard combat system performance including infrastructure, distributed secure network, and common environmental services for DT/OT. SDTS testing requirements outlined in AW SSD Enterprise TEMP 1714 and lead/operational ship testing requirements for Evolved Sea Sparrow Missile (ESSM) TEMP 1471, Rolling
Airframe Missile (RAM) Blk 2 TEMP 286-2, DDG 1000 TEMP 1560, CVN 78 TEMP 1610, Cooperative Engagement Capability (CEC) TEMP 1415, SSDS TEMP 1400, LHA 6 TEMP 1697, AN/SPQ-9B TEMP 1463, Surface Electronic Warfare Improvement Program (SEWIP) TEMP 1658 (Block 1A), and LCS TEMP 1695.

The Testing &Evaluation Enterprise merges common ship, element, and system requirements into the fewest number of test events while leveraging planned Combat System Ship Qualification Trials (CSSQT) to accomplish Developmental Testing (DT) and Operational Testing (OT) requirements. All tests on the SDTS require the sharing of infrastructure, missile range allocations, execution time, and underway time to eliminate duplicative testing. T&E Enterprise provides end-to-end mission Operational Testing in a realistic operational environment, capitalizing on Probability of Raid Annihilation Modeling and Simulation (M&S) data validated with results of Operational and Live Fire Testing, and ensuring a consistent approach across ship classes. Applicability of all test events is beneficial across multiple ship classes with the same variation under test.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0605863N / *RDT&E Ship & Aircraft Support*	**Project (Number/Name)** 3206 / *T&E Enterprise*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: T&E Enterprise	39.937	42.420	20.949	0.000	20.949
Articles:	-	-	-	-	-
FY 2024 Plans: 1) Enterprise Testing and Planning: a)Execution of Enterprise Lead Ship test (ET 10) on CVN 78. Test will provide the live data necessary to validate the model for Dual Band Radar supporting the ETB runs for record. Without the completion of ET 10, the model will not be completed. b) Continue to provide overall technical management and financial execution support for the T&E Enterprise. Provide aircraft services coordination, technical documentation support, and meeting coordination. 2) Self-Defense Test Ship (SDTS) Combat Systems. a)Coordination and execution of installation and checkout (INCO) of combat system and weapon elements on SDTS required for AW SSD testing for CVN 79, LHA 8, and LPD Flight II. INCO of equipment procured in FY 23 will start on the SDTS in FY 24 and will continue until completed in FY 25. INCO includes Ship Self Defense System (SSDS), Cooperative Engagement Capability (CEC), GPNTS system, and AN/ SPY-6(V) (EASR). b)Continue routine combat systems maintenance and IA/Cybersecurity Certification and Accreditation on combat system elements and the remote control system on the SDTS. If repair parts are required to support T&E event(s), the impacted T&E User may be required to fund replacement parts. 3) Enterprise Testbed (ETB). a)Continue Phase 2 model (high fidelity) development of Dual Band Radar (DBR) for CVN 78 ETB. M&S OT efforts include installation of virtual range environmental modeling in DBR simulation. Test DBR simulation with ESSM simulation in AW engagements to verify Interrupted Continuous Wave Illumination (ICWI) functions. Begin integration testing of ESSM, RAM, and CIWS kill chains for CVN 78. b)Continue ETB virtual range development, documentation of the ETB, and coordination of a multi-organizational team to perform overarching enterprise systems engineering. Management, computing hardware, and infrastructure to support co-located and geographically distributed Testbed baselines. c)Continue to facilitate the integration of systems into the PEO IWS M&S Shared Technical Framework (STF) to allow the most efficient use of the Enterprise Test Bed (ETB). ***FY 2025 Base Plans:*** 1) Enterprise Testing and Planning:					

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0605863N / *RDT&E Ship & Aircraft Support*	**Project (Number/Name)** 3206 / *T&E Enterprise*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
a) Test planning necessary to conduct testing of the SSDS BL 12 CS variants in support of TEMP 1910 planned events. b) Continue to provide overall technical management and financial execution support for the T&E Enterprise. Provide aircraft services coordination, technical documentation support, and meeting coordination. 2) Self-Defense Test Ship (SDTS) Combat Systems. a) Completion of installation and checkout (INCO) of combat system and weapon elements on SDTS required for AW SSD testing for CVN 79, LHA 8, and LPD Flight II. INCO includes Ship Self Defense System (SSDS), Cooperative Engagement Capability (CEC), GPNTS system, and AN/ SPY-6(V) (EASR). b) Continue routine combat systems maintenance and IA/Cybersecurity Certification and Accreditation on combat system elements and the remote control system on the SDTS. If repair parts are required to support T&E event(s), the impacted T&E User may be required to fund replacement parts. 3) Enterprise Testbed (ETB). a) Complete Phase 2 model (high fidelity) development of Dual Band Radar (DBR) for CVN 78 ETB. M&S OT efforts include installation of virtual range environmental modeling in DBR simulation. Test DBR simulation with ESSM simulation in AW engagements to verify Interrupted Continuous Wave Illumination (ICWI) functions. Begin integration testing of ESSM, RAM, and CIWS kill chains for CVN 78. b)Continue ETB virtual range development, documentation of the ETB, and coordination of a multi-organizational team to perform overarching enterprise systems engineering. Management, computing hardware, and infrastructure to support collocated and geographically distributed Testbed baselines. c)Continue to facilitate the integration of systems into the PEO IWS M&S Shared Technical Framework (STF) to allow the most efficient use of the Enterprise Test Bed (ETB). ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY24 to FY25 program decrease is due to the completion of Enterprise Lead Ship Test (ET10) on CVN78.					
Accomplishments/Planned Programs Subtotals	39.937	42.420	20.949	0.000	20.949

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy		Date: March 2024
Appropriation/Budget Activity 1319 / 6	**R-1 Program Element (Number/Name)** PE 0605863N / *RDT&E Ship & Aircraft Support*	**Project (Number/Name)** 3206 / *T&E Enterprise*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2025 Navy											Date: March 2024	
Appropriation/Budget Activity 1319 / 6					R-1 Program Element (Number/Name) PE 0605863N / *RDT&E Ship & Aircraft Support*				Project (Number/Name) 3238 / *Threat Engineering*			
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**
3238: *Threat Engineering*	0.000	16.877	15.230	20.670	-	20.670	19.972	19.236	19.582	19.963	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Threat Engineering program assesses the current and future threat environment and works in coordination with the Office of Naval Intelligence (ONI) to develop, produce, and evolve digital threat engineering models in support of test and evaluation (T&E) requirements. NAVSEA requires comprehensive, validated threat modeling and simulation (M&S) products to dynamically and responsively interact with surface ship air defense systems and subsystems to allow for a performance evaluation in an operationally realistic environment. These threat M&S products, called Acquisition Threat Engineering Products (ATEP), must contain the details, features, and components necessary to react with the Blue air defense systems as the actual threats will with, deployed air defense systems to provide a comprehensive, high-confidence evaluation of Blue system capabilities. The successful and rigorous end-to-end evaluation of surface ship combat systems, to include the component systems, are required before capability and ship baselines can be delivered to the warfighter.

ATEPs are valid T&E assets that satisfy Director of Operational Test and Evaluation (DOT&E) and Operational Test & Evaluation Force (OPTEVFOR) requirements in both Modeling and Simulation (M&S) testbed and at-sea configurations. ATEPs satisfy OPTEVFOR's threat model requirement for fidelity commensurate with the blue-force system representations and contain intel-derived lethality/vulnerability data, physics-based six degrees-of-freedom models, reactive seekers and guidance, and other engineering data. ATEPs are necessary to evaluate mandatory ship Key Performance Parameters (KPP), including operational effectiveness and suitability. ATEPs are also used to evaluate a system's lethality and survivability, and its ability to achieve its performance requirements within operation and sustainment costs. In many cases, ATEP models are the only way in which the Navy can accurately emulate threat ASCM performance. ATEPs reduce Navy operational testing (OT) costs by enabling portions of OT to be conducted via M&S, increasing requirements coverage and avoiding the costs of targets and weapons that would ordinarily be required to conduct OT solely via live fire events.

Threat Engineering products inform investment strategies, validate the effectiveness of capabilities provided to the Fleet, and augment live-fire T&E to obtain affordable, statistical confidence in measured performance. Threat Engineering work is prioritized to avoid technical surprise, avoid point solutions, and ensure Fleet capability against specific threats (most stressing, unique, or widely deployed and exported).

Each threat system poses unique challenges to the various combat system elements and each threat system affects Blue system effectiveness in different ways, therefore each combat system configuration must undergo rigorous testing against multiple threats. T&E using M&S is essential to fill gaps and to offer realistic operational scenarios that cannot be tested via live-fire events (due to safety, numbers of targets, limitations on the characteristics of the targets, cost to develop a realistic threat, etc.). OPTEVFOR has listed a number of threat representations in ATEPs as their number one and number two priorities for the past five years because they are appropriately built to represent the salient features of the threat as an Intelligence Community-Validated and sufficient product qualified to be used in Operational T&E (OT&E).

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As each threat system is unique, the ATEP representation of each must include the features of specific threats, such as electronic countermeasures (ECM), active countermeasures, communications links, electronic counter-countermeasures (ECCM). Furthermore, the ATEP products must capture any engineering or manufacturing uncertainties as well as intelligence uncertainties so that our Blue Systems, once deployed to the Fleet, operate in the face of these threats as they were/are designed. Finally, these ATEP products must integrate with the PEO IWS testbeds to be used in Developmental and Operational T&E. In short, each validated threat product must contain the features, components, and details necessary to evaluate the specific combat system or ship baseline.

The Threat Engineering group develops specific requirements from threat foundational information (i.e., intelligence data), and systems under test. The requirements are used to guide design, development, and integration of each ATEP product. Blue Systems face severe limitations to test, and risk delayed deployment to the warfighter without required ATEP products. ATEP products need to be developed and integrated IAW Blue System needs and schedules in order to clearly evaluate performance and enable all capabilities to be delivered to the Fleet expeditiously. Additionally, until analysis is performed using the ATEP products, it is often unclear or unknown what the impacts are due to various features and techniques found to be on threat systems. The focus is to meet combat/weapon system Systems Engineering and T&E requirements for in-service and new construction surface platforms to include:
-DDG 51 FLT III
-CVN 78
-CVN 79
-LHD 8
-LPD FLT II
-FFG 62 and others

ATEPs cost approximately $5-30M per product, require a minimum of 18 months to build, and include all features and capabilities, unlimited number of runs, and may be used for live, virtual, constructive (LVC) testing. Notably, the advanced seeker discrimination, target selection, and salvo operations and decisions are difficult to characterize until the second or third versions of the ATEP products.

It is important to note that the development and integration of each ATEP is a function of the threat system and its complexities, the available foundational intelligence data, and the Blue Systems requirements to include the schedules for T&E; therefore, the cost to develop and integrate each ATEP is not consistent. Moreover, the threat products must be sustained; there are many reasons that ATEP products require additional development and enhancements to evolve to the next version.
-Our adversaries are continually developing new threats and upgrading and improving existing threat systems additionally our understanding of the threat foundation data may change and evolve.
-Our Blue Systems and their operational characteristics change (e.g., a new Radar may operate in a new RF Band, with different channels/bandwidth, and/or other signature requirements).
-Our operating T&E or operational environments may change.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Title: Threat Engineering	16.877	15.230	20.670	0.000	20.670

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Articles:	-	-	-	-	-
FY 2024 Plans: Sustainment: -Continue Support and Sustainment (S&S) of 6 Threat Models that remain in continued use. Periodic refinement and update of models are required due to continued evolving threats. Development and Integration: -Continue to provide support for the integration and use of threat products (ATEP) in various combat system testbeds for use in Developmental and Operational Testing (DT/OT). Supported ship classes include: (but not limited to) CVN 78, DDG FLT IIA/III, and preparation for SSDS Build 12 Ships (CVN 79, LPD FLT II, LHA 8). -Continue Development and Integration of 9 Threat Models to support DT and OT events. -Continue integrating new and updated threat products (ATEPs) into M&S Testbeds to support DT and OT. Supported ship classes include but are not limited to: CVN 78, DDG FLT IIA/III, and preparation for SSDS Build 12 Ships (CVN 79, LPD FLT II, LHA 8). -DDG FLT III: Test Period II & III, Continue developing 4 threat products (ATEPs, New Versions) and updating 6 existing threat products (ATEPs, via S&S). -CVN 78: Continue developing 4 threat products (ATEPs) and sustaining 7 existing threat products (ATEPs). -SEWIP (EWTB): Continue developing 1 threat products (ATEPs) and sustaining 3 existing threat products (ATEPs). T&E Support: -Provide required support for CVN 78 M&S Testbed DT. -Provide required support for AEGIS Baseline 10.0/FLTIII and SLQ-32 V (7) (SEWIP Blk 3) M&S Testbed DT. -Provide continued support and preparation for SSDS Build 12 Ships (CVN 79, LPD FLT II, LHA 8).					
FY 2025 Base Plans: Sustainment:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
-Continue Support and Sustainment (S&S) of 5 Threat Models that remain in continued use. Periodic refinement and update of models are required due to continued evolving threats. Number of threats smaller than FY24 due to models updating to next major version of capability instead of support and sustainment of current capability. Development and Integration: -Continue to provide support for the integration and use of threat products (ATEP) in various combat system testbeds for use in Developmental and Operational Testing (DT/OT). Supported ship classes include: (but not limited to) CVN 78, DDG FLT IIA/III, and preparation for SSDS Build 12 Ships (CVN 79, LPD FLT II, LHA 8). -Continue Development and Integration of 10 Threat Models to support DT and OT events. -Continue integrating new and updated threat products (ATEPs) into M&S Testbeds to support DT and OT. Supported ship classes include but are not limited to: CVN 78, DDG FLT IIA/III, and preparation for SSDS Build 12 Ships (CVN 79, LPD FLT II, LHA 8). -DDG FLT III: Test Period II & III, Continue developing 4 threat products (ATEPs, New Versions) and updating 6 existing threat products (ATEPs, via S&S). -CVN 78: Continue developing 4 threat products (ATEPs) and sustaining 7 existing threat products (ATEPs). -SEWIP (EWTB): Continue developing 1 threat products (ATEPs) and sustaining 3 existing threat products (ATEPs). T&E Support: -Provide required support for CVN 78 M&S Testbed DT. -Provide required support for AEGIS Baseline 10.0/FLTIII and SLQ-32 V (7) (SEWIP Blk 3) M&S Testbed DT. -Provide continued support and preparation for SSDS Build 12 Ships (CVN 79, LPD FLT II, LHA 8). ***FY 2025 OCO Plans:*** N/A ***FY 2024 to FY 2025 Increase/Decrease Statement:*** FY24 to FY25 program increase by $5.44M is due to an increase in the number of threat models under the Development and integration support for DT and OT events. The program will increase from 9 Threat Models (FY24) to 10 Threat Models (FY25) to support Developmental test (DT) and Operational test (OT) supporting CVN-79, LPD 20/30, DDG FLT III and LHA-8 Testing.					
Accomplishments/Planned Programs Subtotals	16.877	15.230	20.670	0.000	20.670

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C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

This program is in direct support to an Enterprise Test & Evaluation strategy that includes live fire test events ISO Modeling & Simulation efforts for both Developmental and Operational Testing.