Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy											Date: March 2023	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*					R-1 Program Element (Number/Name) PE 0204571N *I Consolidated Trng Sys Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
Total Program Element	806.888	53.099	100.339	115.894	-	115.894	130.620	103.044	71.378	71.918	Continuing	Continuing
0604: *Training Range & Instr Dev*	163.098	2.418	3.380	4.300	-	4.300	4.259	4.116	4.191	4.276	Continuing	Continuing
1427: *Surface Tactical Team Trainer (STTT)*	278.719	30.322	13.721	33.057	-	33.057	56.108	43.786	25.779	24.878	Continuing	Continuing
1982: *Adversary Mission Systems*	0.000	0.000	0.000	5.140	-	5.140	5.290	5.948	4.000	4.600	Continuing	Continuing
2124: *Air Warfare Training*	55.262	1.591	1.754	1.734	-	1.734	1.764	1.795	1.823	1.860	Continuing	Continuing
3093: *TACTS/LATR Replacement*	274.446	17.179	51.287	68.632	-	68.632	63.148	47.340	35.532	36.248	Continuing	Continuing
3356: *High Fidelity Surface Trainers*	35.363	1.589	0.197	3.031	-	3.031	0.051	0.059	0.053	0.056	Continuing	Continuing
9999: *Congressional Adds*	0.000	0.000	30.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.000

A. Mission Description and Budget Item Justification

0604 - Training Range and Instrumentation Development (TRID) projects develop specialized instrumentations for fleet readiness training while minimizing life cycle costs. Projects are development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

1427 - Surface Tactical Team Trainer (STTT) develops modifications during sustainment of Battle Force Tactical Training (BFTT) system and modernization into the Advanced Training Domain (ATD). Both BFTT and ATD are the core systems that are used to integrate the weapon system elements, and combat system components to create the Total Ship Training Capability (TSTC). BFTT and ATD continue to integrate and update, as new tactical capabilities are being introduced, to enable crew operator proficiency training for basic and through sustainment level phase training events, through and distributed strike group certification Fleet Synthetic Training (FST) events and including COMPTUEX FST at Sea integration into Live, Virtual and Constructive (LVC) environment. Development of the next generation of ATD will align with combat systems virtualization efforts, and focus on increased fidelity to represent contested environments by leveraging the simulations used in the Combined Integrated Air and Missile Defense (IAMD) and Anti-Submarine Warfare (ASW) Trainer (CIAT), also known as CIAT to Sea. Continued Development is required to integrate new capabilities and interfaces to provide training for AEGIS and SSDS combat system capability upgrades, and to address the Fleet's Live, Virtual and Constructive (LVC) Fleet Training Wholeness (FTW) initiative. Additionally, modernization is needed to support the DoD Training Transformation Plan, the Chief of Naval Operations Fleet Response Plan (OFRP).

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy	Date: March 2023
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204571N *I Consolidated Trng Sys Dev*

1982 - Airborne Adversary Mission Systems builds upon existing RedNet architecture to allow classified software development and classified hardware integration with Tactical Combat Training System (TCTS) Increment II. This project will enable the aircrew to accurately emulate peer threat capabilities and provides a standalone Adversary 'Operational Flight Program (OFP)', that can be deployed on any aircraft with RedNet Multi-Layered Obstructed Brokered Hub (MOBHub) avionics architecture and TCTS Increment II pod. Primary platforms for development include the F-5, F-16 and F-18 within existing Naval Adversary Squadrons. These systems combined with a classified electronic kneeboard, allows for the development, integration and deployment of adversary mission hardware and software systems without modification of aircraft's existing OFP. This effort will provide for the future ability to participate fully in the LVC environment as well as provide physics and effects-based threat replications for the mission essential training of deploying Fleet aircrews.

2124 - Air Warfare Training Development (AWTD) provides for advanced technology maturation, risk mitigation, study and demonstration in support of naval aviation manned and unmanned platforms, operational flight trainers, maintenance trainers, training networks, distributed mission training, and Live Virtual Constructive (LVC) training applications. Supports the Navy Aviation Simulation Master Plan (NASMP) upgrade efforts and Type/Model/Series programs with advanced visual system display configurations requirements. Provides for Open Architecture (OA), and common systems interface applications. Assesses trainee cognitive requirements and the development and incorporation of next generation LVC, UAS constructive and associated visualization component technologies. Additionally, AWTD provides for advanced virtual component fidelity improvements for LVC capability which includes the "Mobility" Part-Task Trainers and the Multiplex Data Bus Controller Translator Transmitter enabling technologies. LVC technologies will facilitate advanced, cost effective weapons and tactics training and emerging capability requirements in the Air-Sea Battle Space and Naval Integrated Fire Control-Counter Air capabilities development. AWTD investigates training applications of emerging technologies such as Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR) Head Mounted Displays (HMD), haptic feedback devices, and cross domain solutions/ cybersecurity solutions (e.g., Blockchain technology).

3093 - The Tactical Combat Training System (TCTS) Increment II will provide an improved environment for air combat training utilizing a secure air-to-air and air-to-ground data link, and will provide rangeless operation capability to Forward Deployed Naval Forces (FDNF). TCTS Increment II will provide encryption and an enhanced threat environment, as well as airborne participant instrumentation for multiple fixed and rotary wing platforms. Engineering Development Model (EDM) units in multiple form factors are being developed in FY19 through FY26 and will support Engineering and Developmental Testing events through FY27. The EDMs will be specifically utilized for testing in the following areas: Environmental Qualification, Software, High Accelerated Lifecycle, Ground System Integration, Airborne Subsystem Air Worthiness and Performance, Shipboard Ground Station, Internal Mount and Rack Mounted Subsystem (Internal Mount) Airworthiness and Performance and JSF Airworthiness and Performance. TCTS Increment II provides the foundational encrypted airborne network for implementation of Aviation Live Virtual Constructive capabilities.

3093 (cont) Aviation Live Virtual Constructive (LVC) Live Aircraft Integration Phase 1 funds the integration of Live aircraft into the Live, Virtual, Constructive, blended training environment to close the Great Powers Competition training capability gap for mission rehearsal for the high end fight. Aviation LVC will establish an integrated System of Systems (SoS) training environment bringing already-developed capabilities together with new developmental efforts to form a cohesive architecture that accurately emulates the high end fight for warfighter training. LVC takes a hybrid approach to aviation and Fleet-wide training where the training audience in the form of Live personnel operating Live equipment (to include aircraft and surface vessels) on a Tactical Training Range (TTR) will be teamed with Live aircrew operating simulators to provide a Virtual complement in the "Blue Air" picture. The "Red" adversary for this training is made up of Live people operating Live aircraft complemented by computer generated "Red" Constructive Air and Surface threats that stimulate the "Blue" Air displays and sensors as if a "Red" Live adversary were present. Range

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy	Date: March 2023
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204571N *I Consolidated Trng Sys Dev*

Training Officers (RTO) operating at the TTR Operations Center monitor and oversee the overall mission picture while directing Live participants and controlling Constructive threats.

3356 - Funds high fidelity Aegis Integrated Air and Missile Defense (IAMD) individual, instructor, strike group and team trainers for all Advanced Capability Build (ACB) and below Aegis baselines. This line provides funds for development of a High Fidelity Aegis Combined Integrated Air and Missile Defense (IAMD) and Anti-Submarine Warfare (ASW) Trainer (CIAT). Additionally, this line funds the development of the Surface Training and Readiness Management System (STRMS). This line supports Surface Training Advanced Virtual Environment (STAVE) methodology by researching and developing trainers that will create an immersive and interactive learning environment and support both Chief of Naval Operations (CNO) High Velocity Learning and Ready Relevant Learning intent and developing advanced technology for collecting Sailor performance data to determine measured benefit of delivered training. NOTE: In FY18, Mine Warfare Synthetic Training requirements previously captured within PE 0204571N / Project 3356 [(High Fidelity Surface Trainer)] were realigned to PE 0603502N / Project 1235 [(Mine Warfare Planning and Analysis)].

JUSTIFICATON FOR BUDGET ACTIVITY:
This program is funded under Operational Systems Development because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Previous President's Budget	52.741	70.339	93.326	-	93.326
Current President's Budget	53.099	100.339	115.894	-	115.894
Total Adjustments	0.358	30.000	22.568	-	22.568
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	30.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.400	0.000			
• SBIR/STTR Transfer	-1.042	0.000			
• Program Adjustments	0.000	0.000	21.904	-	21.904
• Rate/Misc Adjustments	0.000	0.000	0.664	-	0.664

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Project: 9999: *Congressional Adds*		
Congressional Add: *Secure LVC advanced training environment*	0.000	20.000
Congressional Add: *Test capabilities acceleration - Barking Sands Undersea Range Extension*	0.000	10.000
Congressional Add Subtotals for Project: 9999	0.000	30.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2024 Navy	Date: March 2023
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 7: *Operational Systems Development*	**R-1 Program Element (Number/Name)** PE 0204571N *I Consolidated Trng Sys Dev*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2022	FY 2023
Congressional Add Totals for all Projects	0.000	30.000

Change Summary Explanation

0604: FY 2024 funding increase ($0.920M) supports program office restructure for improved program execution resulted in three new designations aligning the current programs as follows: Ocean Systems (OS), Air Combat Maneuvering Instrumentation (ACMI) formerly identified as TTR, and Range Equipment and Modernization (RE&M) formerly identified as LATR.

1427: FY 2024 funding increase ($19.336M) supports Fleet Training Wholeness (FTW) development and integration to allow shore operator training systems to be updated at the same time new shipboard combat system baselines are delivered, enabling school houses to begin training classes soon after a build is released, vice 6-12 months after. To integrate Synthetic Training Advanced Virtual Environment (STAVE) fidelity capabilities into the Total Ship Training Capability (TSTC) Advanced Training Domain (ATD)/Internal Training Domain (ITD) LVC Training Capability as part of the shipboard IaaS computing, networking and displays to enhance realistic training within a contested environment.

1982: FY 2024 funding increase ($5.140M) supports a new start for Adversary Mission Systems.

2124: FY 2024 funding decrease ($0.020M) due contract software development efforts and shifted requirements.

3093: FY 2024 funding increase ($17.345M) supports system testing and LVC integration.

3356: FY 2024 funding increase ($2.834M) supports Phase II of Surface Training Readiness Management System (STRMS) development.

Schedule Changes:
2124: AWTD tasks extended due to Adding/Capabilities for NGTS Analysis and Report as well as Fleet Adaptive Multi-Level Measurement for LVC. Flight Deck Trainer Expansion Pack now expected to end in 2025 as transition to new capability begins. TH-57 Evaluation Completion shifted to 2023 due to slowdown in data collection.

3093: Schedule updates are based on re-submittal of POM-25 Issue sheet for F-35 IM development and to alignment of Engineering & Development phased with IOC. Additionally, POM-23 funds for the development of Phase III, allowed testing to begin in 2023.

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7				R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*			Project (Number/Name) 0604 / *Training Range & Instr Dev*					
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
0604: *Training Range & Instr Dev*	163.098	2.418	3.380	4.300	-	4.300	4.259	4.116	4.191	4.276	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Training Range and Instrumentation Development projects develop specialized instrumentations for fleet readiness training while minimizing life cycle costs. Projects are development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Range Equipment & Modernization (RE&M)	1.029	0.099	0.124	0.000	0.124
Articles:	-	-	-	-	-
Description: Range Equipment & Modernization (RE&M) IPT. Consists of: Joint Advanced Weapons Scoring System (JAWSS) - comprised of: Weapons Impact Scoring Set (WISS) and Laser Training Systems (LTS). ***FY 2023 Plans:*** Two projects: Project 1: HSLESM - Design, fabricate, integrate, and test a prototype module to equip HSLESM with a visual indicator to enhance system feedback during laser targeting missions. Project 2: WISS - Design, integrate and test WISS v5 Controller software to take advantage of new software technologies and provide upgrades for existing WISS v5 implementations. Implement migration strategies from WISS v5 Controller 2.2 to WISS Controller 3 in order to maximize existing hardware while taking advantage of new technologies. ***FY 2024 Base Plans:*** Continue to develop RE&M specialized instrumentation and upgrade fielded systems of WISS and LTS. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 $0.025M increase supports prioritization of projects for RE&M efforts.					
Title: Air Combat Maneuvering Instrumentation (ACMI)	0.828	2.318	3.213	0.000	3.213

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Articles:	-	-	-	-	-
Description: Air Combat Maneuvering Instrumentation (ACMI) IPT. Consists of: Large Area Tracking Range (LATR), Tactical Air Range Integration Facility (TARIF), and Tactical Combat Training Systems (TCTS) I. ***FY 2023 Plans:*** Four projects: Project 1: TCTS I/II - Develop and test upgrades to the Link-16 Interface, Joint Display Subsystem (JDS), Radar Acquisition Display Subsystem (RADS), Test and Training Enabling Architecture (TENA), Electronic Warfare (EW) server and Increment II new interface requirements. Project 2: LATR TENA - Continued LATR Ground System (LGS) software and Multi-Source System (MSS) software NIS (NCTE Interoperability Standard) TENA integration (Phase II/III), including LATR system health and status information. Project 3: LATR P-8A - Investigate feasibility of LATR tracking improvements on P-8A, including improving LSRTU tracking improvement, integrating the LATR AIP-FW or LATR AIP-FWI. Project 4: LITL - Design, integrate and test the LITL system to be further integrated into the live ranges' TCTS display and debrief systems to support a more complete LVC solution. Designing and improving the MIDS interface with LITL. ***FY 2024 Base Plans:*** Develop ACMI specialized instrumentation and upgrade fielded systems of TCTS I, LATR, TARIF, to include hardware upgrades at TARIF to meet software demands. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 $0.895M increase supports prioritization of projects including TARIF computer upgrades in ACMI Efforts.					
Title: Ocean Systems (OS)	0.561	0.963	0.963	0.000	0.963
Articles:	-	-	-	-	-
Description: Ocean Systems (OS) IPT: research, develop, and test technology improvements for fixed and portable Anti-Submarine Warfare (ASW) training ranges.					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY 2023 Plans: Two projects: Project 1: Single Ping - This capability will reduce weapon interference from standard tracking pingers on all Navy undersea Training, Test and Evaluation (TT&E) ranges (portable and fixed), improve training realism and track fidelity. Project 2: PROTF II - labor for IPT Lead to determine feasibility of improving underwater communications and increasing overall Portable Range tracking area. ***FY 2024 Base Plans:*** Continue to develop OS specialized instrumentation and upgrade fielded systems of USWTR and PUTR. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** No change in funding.					
Accomplishments/Planned Programs Subtotals	2.418	3.380	4.300	0.000	4.300

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/4204: *Weapons Range Support Equipment (WRSE)/ LSRTU/Ocean Systems*	87.748	106.209	147.556	-	147.556	143.807	162.621	162.970	166.339	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Training Range and Instrumentation Development (TRID) program is a non-ACAT program. The integrated product teams that develop new TRID capabilities include government and contractor engineering personnel.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 0604 / *Training Range & Instr Dev*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPFF	JACOBS ENG : RIDGECREST, CA	13.889	0.000		0.000		0.000		-		0.000	0.000	13.889	13.889
Hardware Development	WR	NSWC : CORONA, CA	0.617	0.100	Nov 2021	0.107	Nov 2022	0.000		-		0.000	Continuing	Continuing	Continuing
Hardware Development	C/CPFF	ATI : Summerville, SC	0.150	0.000		0.000		0.000		-		0.000	0.000	0.150	0.150
Software Development	WR	NUWC : NEWPORT, RI	2.267	0.584	Nov 2021	0.963	Nov 2022	0.963	Nov 2023	-		0.963	Continuing	Continuing	Continuing
Software Development	C/CPFF	JACOBS ENG : RIDGECREST, CA	5.932	0.200	Nov 2021	1.071	Nov 2022	0.000		-		0.000	0.000	7.203	7.203
Software Development	WR	NAWC-AD : PAX RIVER, MD	11.696	0.500	Nov 2021	0.391	Nov 2022	0.820	Nov 2023	-		0.820	Continuing	Continuing	Continuing
Software Development	WR	NSWC : CORONA, CA	0.458	0.000		0.000		0.754	Nov 2023	-		0.754	0.000	1.212	-
Software Development	WR	NAWC-WD : POINT MUGU, CA	0.375	0.000		0.000		0.000		-		0.000	0.000	0.375	-
Prior Year Prod Dev No Longer Funded in the FYDP	Various	Various : Various	100.705	0.000		0.000		0.000		-		0.000	0.000	100.705	100.705
		Subtotal	136.089	1.384		2.532		2.537		-		2.537	Continuing	Continuing	N/A

Remarks

Increasing support at NAWCAD PAX and NSWC Corona for new software prototype projects.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-AD : PAX RIVER, MD	2.439	0.262	Nov 2021	0.136	Nov 2022	0.750	Nov 2023	-		0.750	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWC-WD : CHINA LAKE, CA	3.251	0.772	Nov 2021	0.712	Nov 2022	1.013	Nov 2023	-		1.013	0.000	5.748	5.748

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 0604 / *Training Range & Instr Dev*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NSWC : CORONA, CA	1.231	0.000		0.000		0.000		-		0.000	0.000	1.231	1.231
Systems Engineering	WR	GSA : Washington, DC	0.124	0.000		0.000		0.000		-		0.000	0.000	0.124	0.124
Prior Year Support No Longer Funded in the FYDP	Various	Various : Various	10.926	0.000		0.000		0.000		-		0.000	0.000	10.926	10.926
		Subtotal	17.971	1.034		0.848		1.763		-		1.763	Continuing	Continuing	N/A

Remarks

FY24 increased engineering support at NAWCAD PAX and NAWCAD CLK for Fleet emergent projects.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	5.299	0.000		0.000		0.000		-		0.000	0.000	5.299	5.299
		Subtotal	5.299	0.000		0.000		0.000		-		0.000	0.000	5.299	N/A

Management Services ($ in Millions)

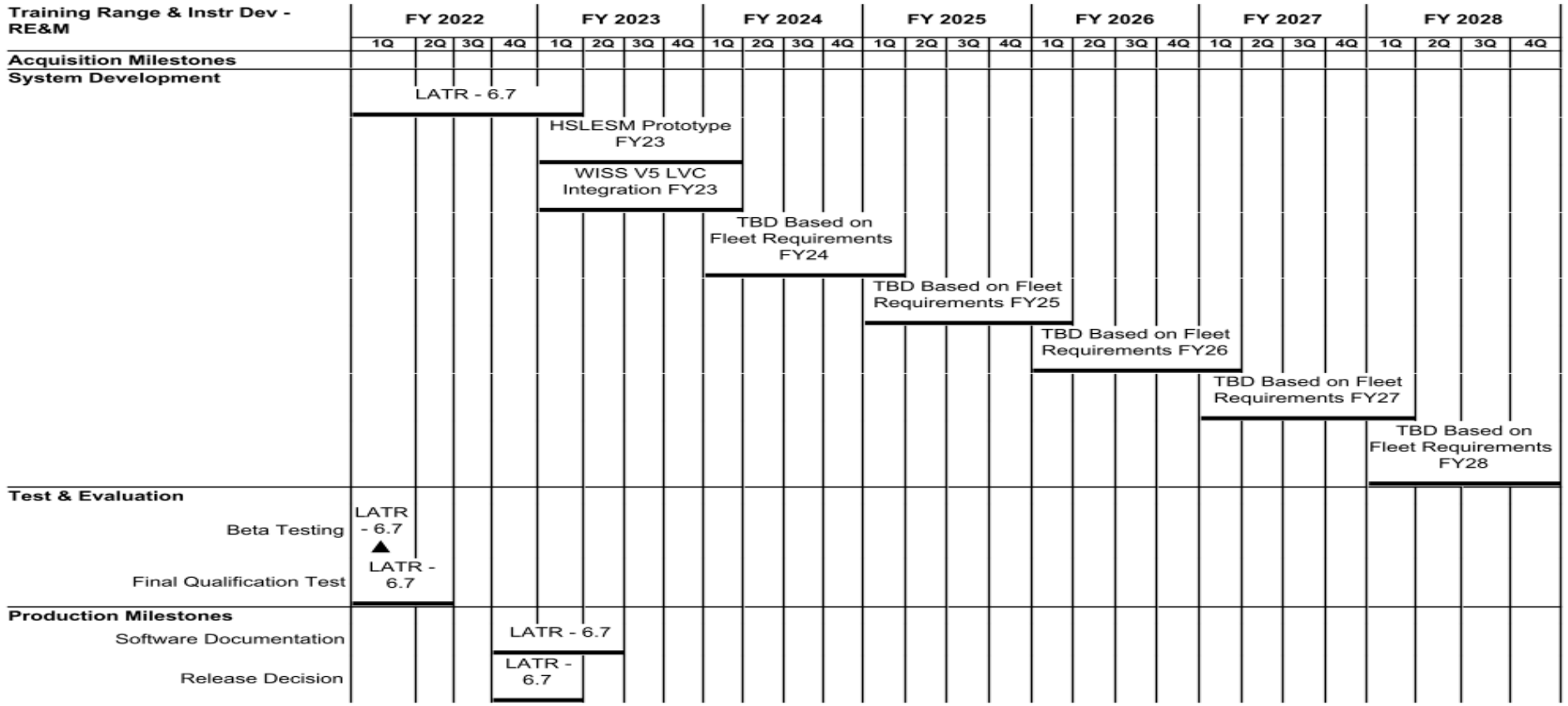
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year Support No Longer Funded in the FYDP	Various	Various : Various	3.739	0.000		0.000		0.000		-		0.000	0.000	3.739	3.739
		Subtotal	3.739	0.000		0.000		0.000		-		0.000	0.000	3.739	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 0604 / *Training Range & Instr Dev*	

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	163.098	2.418		3.380		4.300		-		4.300	Continuing	Continuing	N/A

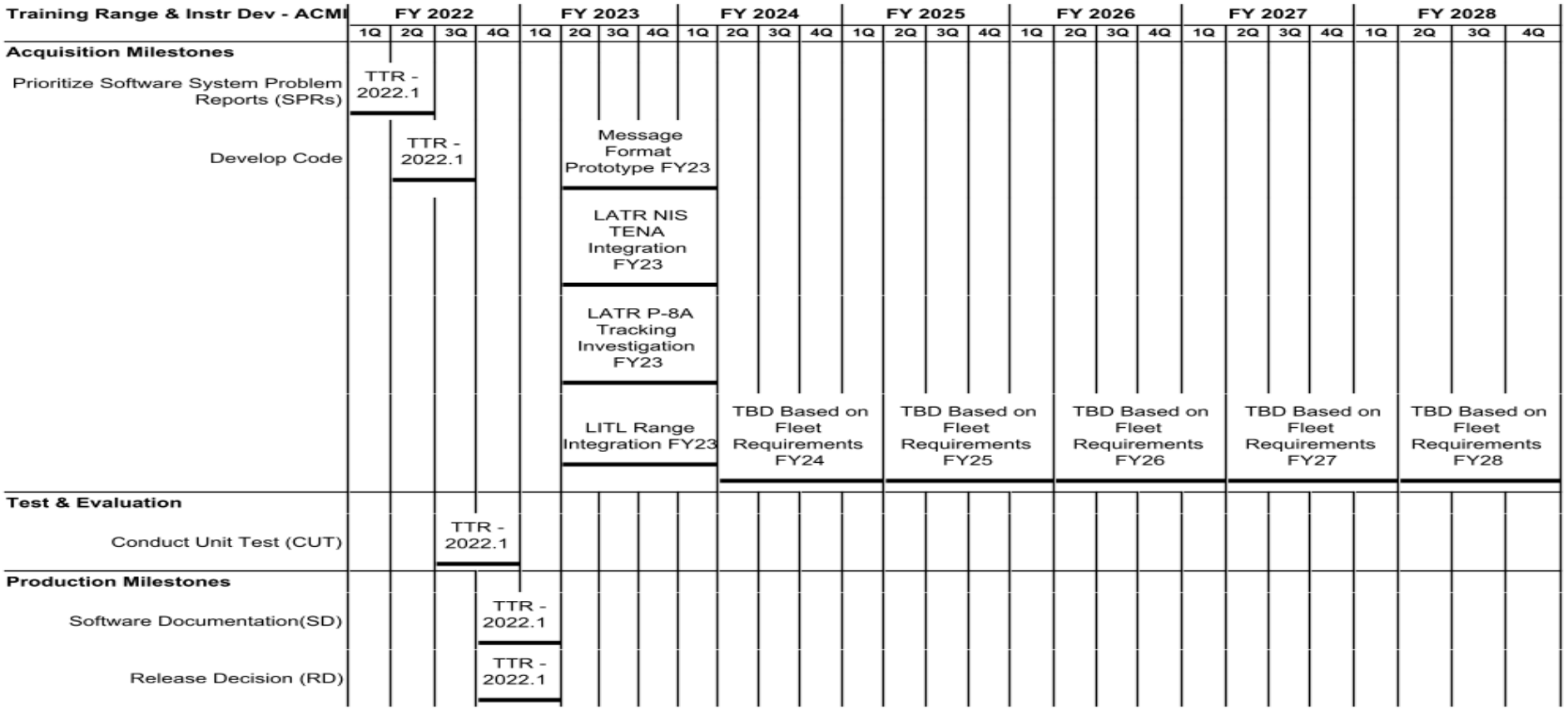
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*



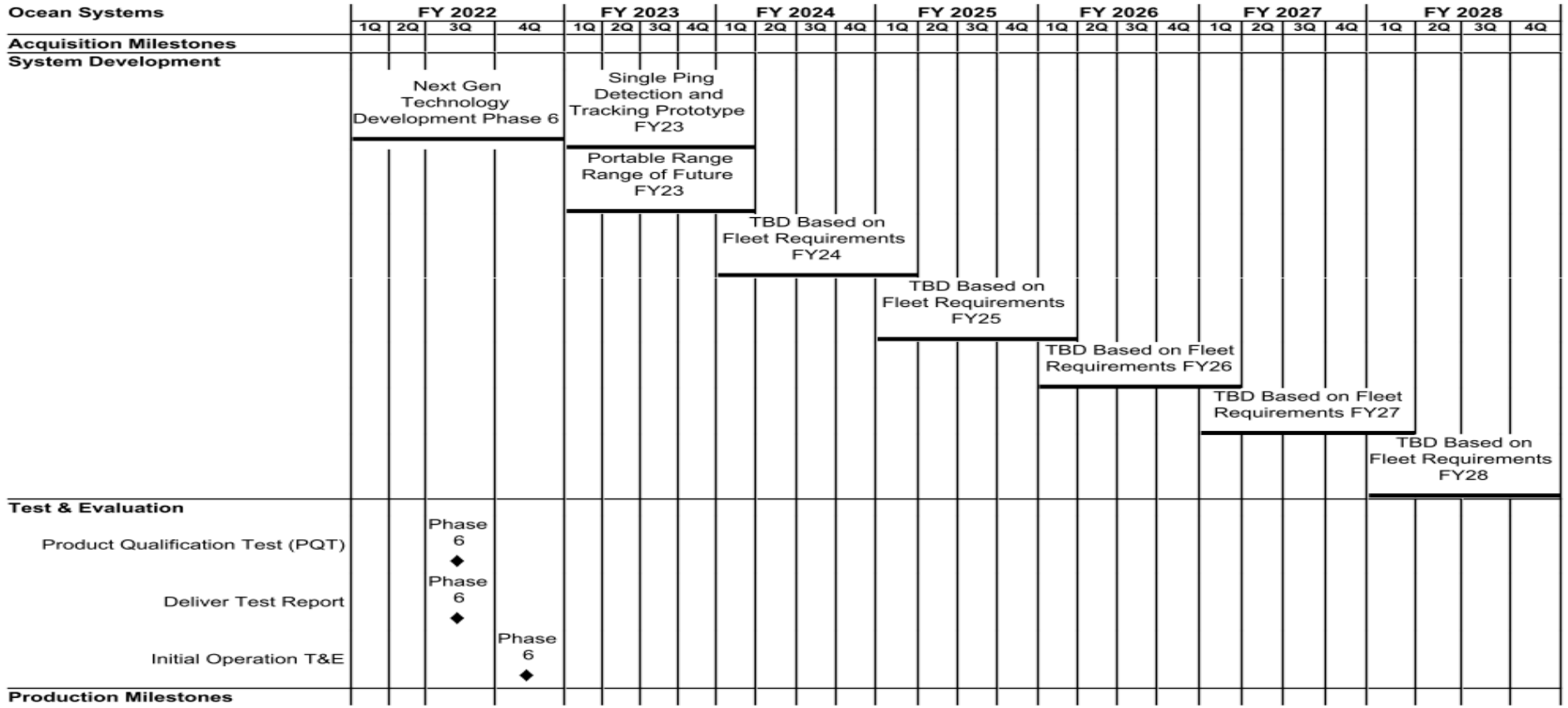
2024DON - 0204571N - 0604

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*



2024DON - 0204571N - 0604

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*



2024DON - 0204571N - 0604

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Training Range & Instr Dev - RE&M				
System Development: LATR - 6.7 Software Engineering Development	1	2022	1	2023
System Development: RE&M - HSLESM Prototype FY23	1	2023	1	2024
System Development: RE&M - WISS V5 LVC Integration FY23	1	2023	1	2024
System Development: RE&M - TBD Based on Fleet Requirements FY24	1	2024	1	2025
System Development: RE&M - TBD Based on Fleet Requirements FY25	1	2025	1	2026
System Development: RE&M - TBD Based on Fleet Requirements FY26	1	2026	1	2027
System Development: RE&M - TBD Based on Fleet Requirements FY27	1	2027	1	2028
System Development: RE&M - TBD Based on Fleet Requirements FY28	1	2028	4	2028
Test & Evaluation: Beta Testing: LATR - 6.7	1	2022	1	2022
Test & Evaluation: Final Qualification Test: LATR - 6.7 Final Qualification Test	1	2022	2	2022
Production Milestones: Software Documentation: LATR - 6.7	4	2022	2	2023
Production Milestones: Release Decision: LATR - 6.7	4	2022	1	2023
Training Range & Instr Dev - ACMI				
Acquisition Milestones: Prioritize Software System Problem Reports (SPRs): TTR - 2022.1	1	2022	2	2022
Acquisition Milestones: Develop Code: TTR - 2022.1	2	2022	3	2022
Acquisition Milestones: Develop Code: ACMI - LATR NIS TENA Integration FY23	2	2023	1	2024
Acquisition Milestones: Develop Code: ACMI - LATR P-8A Tracking Investigation FY23	2	2023	1	2024
Acquisition Milestones: Develop Code: ACMI - LITL Range Integration FY23	2	2023	1	2024
Acquisition Milestones: Develop Code: ACMI - TBD Based on Fleet Requirements FY24	2	2024	1	2025
Acquisition Milestones: Develop Code: ACMI - TBD Based on Fleet Requirements FY25	2	2025	1	2026

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 0604 / *Training Range & Instr Dev*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Acquisition Milestones: Develop Code: ACMI - TBD Based on Fleet Requirements FY26	2	2026	1	2027
Acquisition Milestones: Develop Code: ACMI - TBD Based on Fleet Requirements FY27	2	2027	1	2028
Acquisition Milestones: Develop Code: ACMI - TBD Based on Fleet Requirements FY28	2	2028	4	2028
Test & Evaluation: Conduct Unit Test (CUT): TTR - 2022.1	3	2022	4	2022
Production Milestones: Software Documentation(SD): TTR - 2022.1	4	2022	1	2023
Production Milestones: Release Decision (RD): TTR - 2022.1	4	2022	1	2023
Ocean Systems				
System Development: Next Gen Technology Development Phase 6	1	2022	4	2022
System Development: Single Ping Detection and Tracking Prototype FY23	1	2023	1	2024
System Development: Portable Range Range of Future FY23	1	2023	1	2024
System Development: OS - TBD Based on Fleet Requirements FY24	1	2024	1	2025
System Development: OS - TBD Based on Fleet Requirements FY25	1	2025	1	2026
System Development: OS - TBD Based on Fleet Requirements FY26	1	2026	1	2027
System Development: OS - TBD Based on Fleet Requirements FY27	1	2027	1	2028
System Development: OS - TBD Based on Fleet Requirements FY28	1	2028	4	2028
Test & Evaluation: Product Qualification Test (PQT): Phase 6	3	2022	3	2022
Test & Evaluation: Deliver Test Report: Phase 6	3	2022	3	2022
Test & Evaluation: Initial Operation T&E: Phase 6	4	2022	4	2022

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*				Project (Number/Name) 1427 / *Surface Tactical Team Trainer (STTT)*			
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
1427: *Surface Tactical Team Trainer (STTT)*	278.719	30.322	13.721	33.057	-	33.057	56.108	43.786	25.779	24.878	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Department's submission reflects the results of a deep dive into Fleet Training Wholeness (FTW) and how to provide a means for Strike Group Training in a contested environment, in accordance with Chief of Naval Operations guidance and Fleet Training Wholeness 2025 objectives. The analysis determined the most cost effective means to provide this training is via a combination of Live Virtual Constructive (LVC) capabilities. The department of the Navy has identified 21 LVC Capabilities that began in FY19 leveraging combat system product line architecture components, contract vehicles, warfare center subject matter experts, and engineering practices for iterative development. The deep dive identified that there is no other cost effective way to train in a contested environment. The foundation for LVC has already been established and will continue to execute the investment strategy to provide initial underway LVC capability to train Strike Group(s) in an environment that they expect to fight in. The development, integration and testing of LVC's, along with ensuring interoperability with surface and air communities, will be accomplished across Integrated Warfare Systems (IWS), Navy Continuous Training Environment (NCTE), and the Navy's Tactical Training Network.

Surface Tactical Team Trainer (STTT) develops modifications during sustainment of Battle Force Tactical Training (BFTT) system and modernization into the Advanced Training Domain (ATD). Both BFTT and ATD are the core system that is used to integrate the weapon system elements, and combat system components to create the Total Ship Training Capability (TSTC). BFTT and ATD continue to integrate and update, as new tactical capabilities are being introduced, to enable crew operator proficiency training for basic and sustainment level training events, through distributed strike group certification fleet synthetic training (FST) events and including Composite Training Unit Exercise (COMPTUEX) FST underway LVC events. Continued Development is required to integrate new capabilities and interfaces to provide training for AEGIS and Ships Self Defense System (SSDS) combat system capability upgrades, and to address the Fleet's LVC FTW initiative. Additionally, modernization is needed to support the Department of Defense (DoD) Training Transformation Plan, the Chief of Naval Operations Fleet Response Plan and Commander United States Fleet Forces Command Fleet Readiness Training Plan.

The Advanced Training Domain (ATD) is being developed to combine BFTT and the AEGIS Combat Training System (ACTS) into a common system that integrates with AEGIS Base Line (BL) 9.2.2 And Follow (AF), and Ships Self Defense System (SSDS) BL 12.xAF. ATD is being hosted along with the AEGIS and SSDS combat system on Technical Insertion TI-12H & TI-16 common processing and display hardware. ATD is being designed to be the core of the Total Ship Training Capability, and is projected to be more reliable, simpler to use, and architecturally extensible to meet interoperability and capability enhancement challenges in the future.

The ATD is undergoing transformation to align with various virtualization and modernization efforts being accomplished within the surface combat systems. ATD is being augmented through the development and adaptation of high fidelity simulations used in the Combined Integrated Air and Missile Defense (IAMD) Anti-Submarine Warfare (ASW) Trainer (CIAT), for the purposes of providing high fidelity, LVC training capability that represents the high end fight in a contested environment. These enhancements will align to the combat systems Infrastructure as a Service (IaaS) virtualization efforts to provide the required training capability to the ships. This effort has been referred to as CIAT to SEA/Internal Training Domain (ITD).

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
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The BFTT and ATD are being updated to maintain integration and capability enhancements developed for the Cooperative Engagement Capability (CEC), Surface Electronic Warfare Improvement Program (SEWIP), Carrier Tactical Support Center (CV-TSC), and SSDS Fire Control Loop Improvement Program.

TSTC provides realistic joint warfare training across the spectrum of armed conflict, realistic unit level team training in all warfare areas (e.g. Naval Integrated Fire Control - Counter Air (NIFC-CA) and Ballistic Missile Defense (BMD) missions to support IAMD). TSTC provides ships' Commanding Officers and Battle Group/Battle Force Commanders with the ability to conduct coordinated realistic, high stress, combat system level team training as an integral part of the Afloat Training Organization, the Tactical Training Groups and C2F/C3F FST/LVC events.

Continue development and integration of MH-60R simulator to enable single ship basic and sustainment training, and distributed multi-ship pier-side Fleet Synthetic Training (FST) events. Changes align to tactical updates.

Continue development and integration of Cooperative Engagement Capability (CEC) Enhanced Training (CET) to enable single ship basic and sustainment training, and distributed multi-ship pier-side FST events. CET is an enabler for proficiency training of NIFC-CA capability. Changes align to tactical updates.

Complete development and integration of upgrades to Battleforce Electronic Warfare Trainer (BEWT) to support soft kill training with NULKA Decoys capability upgrades to AN/SLQ-32 Electronic Warfare System, in the areas of Softkill and Electronic Attack.

Complete development of Identification Friend or Foe (IFF) simulator to enable training of Modes 1, 2, 3A, 4, C, 5 and S on both AEGIS and SSDS ships. Capability will enable training of AEGIS and SSDS IFF MODE 5/S and address Mode 4 Inoculation.

Continue development to integrate commensurate training improvements to Ships Self Defense System in support of Enhanced Sea Sparrow Missile (ESSM) and Electronic Warfare (EW) tactical improvements.

Continue development and integration of Navy Continuous Training Environment (NCTE) networking and cyber security upgrades.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Surface Tactical Team Trainer (STTT)	11.926	9.056	9.600	0.000	9.600
Articles:	-	-	-	-	-
FY 2023 Plans: Complete Integration and Delivery of ATD with SSDS BL CP 1 and SSDS BL CP 2. Continue development, integration and testing ATD with AEGIS BL 10. Continue development and integration of ATD to incorporate training capabilities to support AEGIS and SSDS tactical capability updates.					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1427 / *Surface Tactical Team Trainer (STTT)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Continue developing and delivering threat data base updates to enable ships crews to train to relevant near-peer threats. ***FY 2024 Base Plans:*** Complete Integration and Delivery of ATD with SSDS BL CP 3. Continue development, integration and testing ATD with AEGIS BL 10. Continue development and integration of ATD to incorporate training capabilities to support AEGIS and SSDS tactical capability updates. Continue developing and delivering threat data base updates to enable ships crews to train to relevant near-peer threats. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 $0.544M increase due to inflation and work continuation.					
Title: Fleet Training Wholeness	14.396	4.665	13.932	0.000	13.932
Articles:	-	-	-	-	-
FY 2023 Plans: Continue development of integrated combat system data collection and after-action review products that will provide an effective means for instructors to assess crew performance. Complete Integration and testing of Strike Group CEC Underway Training Capability on AEGIS and SSDS ships. Fleet introduction of this capability begins in FY23. Complete Integration and testing of VTBeSR on AEGIS and SSDS ships. Complete Integration and testing of Simulation over Live capabilities implemented into shipboards sensor systems. ***FY 2024 Base Plans:*** Continue development of integrated combat system data collection and after-action review products that will provide an effective means for instructors to assess crew performance. Begin development of common ship/shore virtualized computing, networking and display infrastructure to allow shore operator training systems to be updated at the same time new combat system baselines are delivered. Begin updates to Cooperative Engagement Capability (CEC) Training capability updates to align with CEC Block II redesign.					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1427 / *Surface Tactical Team Trainer (STTT)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Begin updates to shipboard integrated training After-Action Review and Debrief capability. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 $9.267M increase provided to develop and field an AEGIS and SSDS integrated ship and shore LVC test and training architecture supporting all phases of training to enable Unit and Strike Group, in-port and at-sea high-end fight combat systems tactical training and debrief for 133 Aegis and SSDS FFG, DDG, CG, Amphibs and Carriers. Increase is to facilitate development of common computing infrastructure, software virtualization to allow shore operator training systems to be updated at the same time new combat system baselines are delivered. Additionally, to provide for CEC Training Capability redesign in support of CEC Block II development to enable ships to train remote engagements as done tactically. Finally, to update and integrate of After-Action Review and Debrief capability into shipboard combat systems to reinforce learning conducted during shipboard basic through strike group training and certification events.					
Title: ITD/Integrated Training Architecture	4.000	0.000	9.525	0.000	9.525
Articles:	-	-	-	-	-
FY 2023 Plans: N/A ***FY 2024 Base Plans:*** Conduct systems engineering and development activities to integrate Surface Training Advanced Virtual Environment (STAVE) high fidelity simulations and the Advanced Training Domain (ATD)/Internal Training Domain (ITD) Live, Virtual and Constructive (LVC) Training Capability within the Integrated Combat System (ICS) Infrastructure as a Service (IaaS) computing, networking and displays to enable realistic training within a contested environment, leveraging concepts and lessons learned from LVC integration efforts conducted in fleet training wholeness. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 $9.525M increase provided to integrate Surface Training Advanced Virtual Environment (STAVE) fidelity capabilities into the Total Ship Training Capability (TSTC) Advanced Training Domain (ATD)/Internal Training					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1427 / *Surface Tactical Team Trainer (STTT)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Domain (ITD) LVC Training Capability as part of the shipboard IaaS computing, networking and displays to enhance realistic training within a contested environment.					
Accomplishments/Planned Programs Subtotals	30.322	13.721	33.057	0.000	33.057

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• RDTE/0604307N/3357: *Aegis Training Improvement Program*	6.932	6.379	8.187	-	8.187	11.105	10.009	7.688	7.484	Continuing	Continuing
• RDTE/0604755N/3358: *SSDS Training Improvement Program*	11.983	9.732	8.147	-	8.147	13.639	11.939	9.755	9.536	Continuing	Continuing
• OPN/5664/MB040/MB5IN: *Other Training Equipment (Surface BFTT/ TSTC portion only) New BLI FY17*	30.283	34.069	57.921	-	57.921	61.884	51.905	43.046	44.012	Continuing	Continuing

Remarks

D. Acquisition Strategy

The BFTT acquisition strategy for system development utilizes the Advanced Capability Build (ACB) development model, as mandated by the Office of the Chief of Naval Operations (OPNAV). Incremental acquisition and fielding, utilizing commercial off-the-shelf technology to the extent possible, is in accordance with OPNAV LTR Ser N86/9U179029 dtd 31 Jul 09.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 1427 / *Surface Tactical Team Trainer (STTT)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	C/FFP	GTS : Virginia Beach, VA	17.828	0.610	Dec 2021	0.620	Dec 2022	2.948	Dec 2023	-		2.948	Continuing	Continuing	Continuing
Systems Engineering	WR	SEA02/NSWC Dam Neck/NSWC Dahlgren : NAVSEA/ Dam Neck/NSWC Dahlgren	96.451	14.600	Dec 2021	6.516	Dec 2022	12.085	Dec 2023	-		12.085	Continuing	Continuing	Continuing
Software Development	WR	NSWC Dam Neck/ SEA 02 : WR/REQN	114.642	11.261	Dec 2021	4.585	Dec 2022	15.079	Dec 2023	-		15.079	0.000	145.567	-
		Subtotal	228.921	26.471		11.721		30.112		-		30.112	Continuing	Continuing	N/A

Remarks

Software development moved into Product Development section.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation (OT&E)	WR	NSWC Dam Neck/ SEA 02 : WR/REQN	31.511	2.651	Dec 2021	1.000	Dec 2022	1.552	Dec 2023	-		1.552	Continuing	Continuing	Continuing
		Subtotal	31.511	2.651		1.000		1.552		-		1.552	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NSWC Dam Neck/ SEA02 : WR/REQN	18.287	1.200	Dec 2021	1.000	Dec 2022	1.393	Dec 2023	-		1.393	Continuing	Continuing	Continuing
		Subtotal	18.287	1.200		1.000		1.393		-		1.393	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 1427 / *Surface Tactical Team Trainer (STTT)*	

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	278.719	30.322		13.721		33.057		-		33.057	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1427 / *Surface Tactical Team Trainer (STTT)*

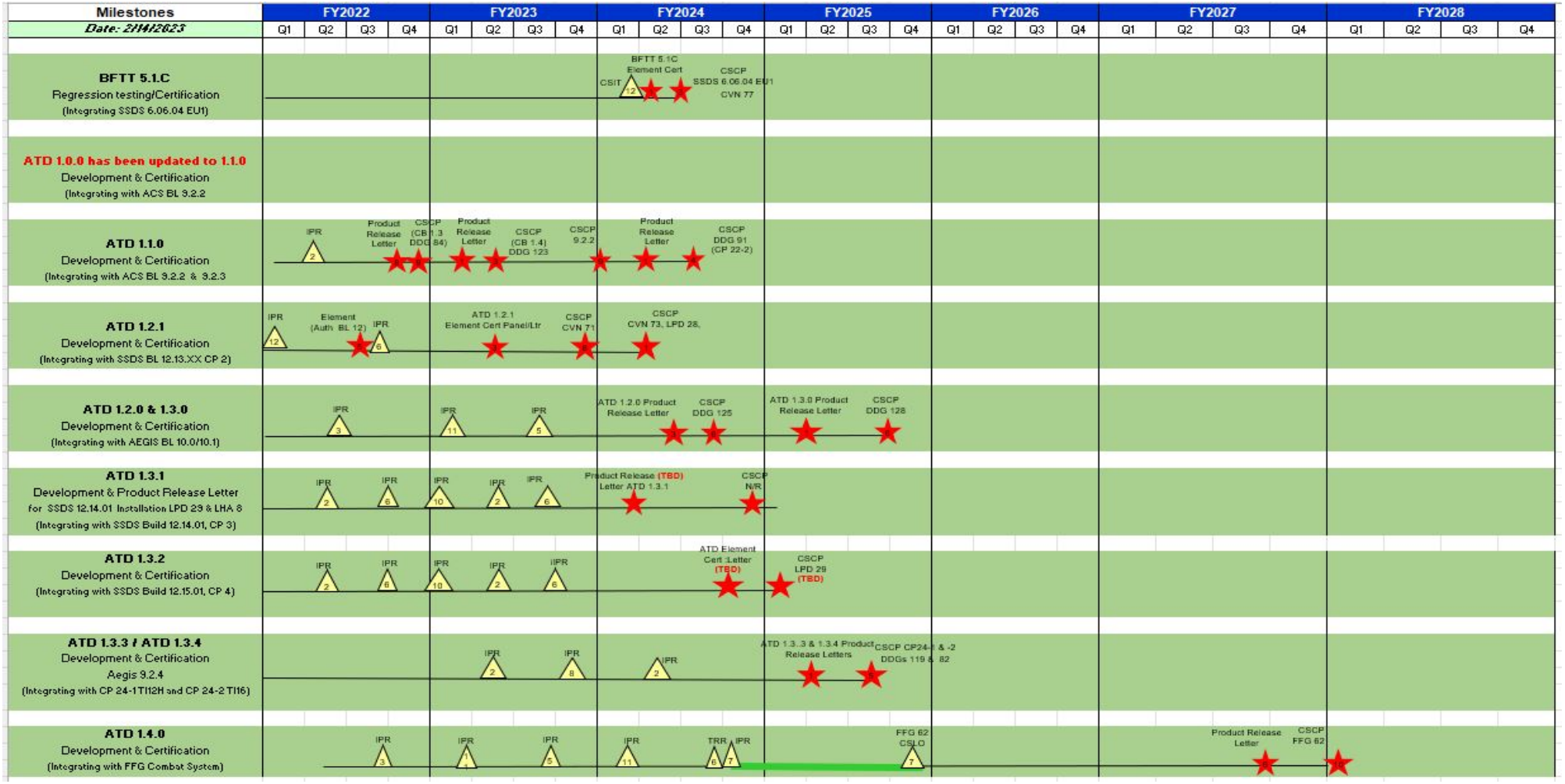


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1427 / *Surface Tactical Team Trainer (STTT)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1427				
ITD CB-1 IPR #1	2	2022	2	2022
ITD CB-1 IPR #2	3	2022	3	2022
ITD CB-1 IPR #3	4	2022	4	2022
ITD CB-1 CSCP DDG 123	1	2023	1	2023
ITD CB-1 IPR #4	1	2023	1	2023
ATD 1.1.0 CSCP #1	4	2022	4	2022
ATD 1.1.0 CSCP #2	1	2023	1	2023
ATD 1.2.1 CSIT	2	2022	2	2022
ATD 1.2.1 TRR CSIT	3	2022	3	2022
ATD 1.2.1 Element Cert Authorization	3	2022	3	2022
ATD 1.2.1 Element Cert for SSDS	1	2023	1	2023
ATD 1.2.1 CSCP for SSDS (CVN 73 LPD 28)	3	2023	3	2023
ATD 1.2.1 IPR	3	2022	3	2022
ATD 1.3.0 IPR for AWS BL10 #1	3	2022	3	2022
ATD 1.3.0 IPR for AWS BL10 #2	1	2023	1	2023
ATD 1.3.0 Element Release Ltr	4	2023	4	2023
ATD 1.3.0 CSCP for AWS BL10	4	2024	4	2024
ATD 1.3.x / 1.3.x CSIT	2	2022	2	2022
ATD 1.3.x /1.3.x IPR #1	3	2022	3	2022
ATD 1.3.x / 1.3.x CSIT/TRR	3	2022	3	2022
ATD 1.3.x /1.3.x IPR #2	1	2023	1	2023
ATD 1.3.x/ 1.3.x TRR	3	2023	3	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1427 / *Surface Tactical Team Trainer (STTT)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ATD 1.3.x/ 1.3.x Product Release Letter for AEGIS #1	4	2023	4	2023
ATD 1.3.x CSCP for DDG 113	1	2024	1	2024
ATD 1.3.x/ 1.3.x Product Release Letter for AEGIS #2	3	2024	3	2024
ATD 1.3.x CSCP for DDG 87	1	2024	1	2024
ATD 1.3.1 /1.3.2 IPR #1	3	2022	3	2022
ATD 1.3.1 /1.3.2 IPR #2	1	2023	1	2023
ATD 1.3.1 / 1.3.2 CSIT/TRR	1	2024	1	2024
ATD 1.3.1 / 1.3.2 CSIT	3	2024	3	2024
ATD 1.3.1 / 1.3.2 Element Cert for SSDS	3	2024	3	2024
ATD 1.3.1 /1.3.2 CSCP for SSDS CP 3/4	1	2025	1	2025
ATD 1.4.0 CSIT #1	2	2022	2	2022
ATD 1.4.0 CSIT #2	3	2022	3	2022
ATD 1.4.0 IPR #1	3	2022	3	2022
ATD 1.4.0 IPR #2	1	2023	1	2023
ATD 1.4.0 IPR #3	1	2024	1	2024
ATD 1.4.0 TRR	3	2024	3	2024
ATD 1.4.0 Product Release Letter	2	2027	2	2027
ATD 1.4.0 CSCP for FFG(X)	1	2028	1	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 1982 / *Adversary Mission Systems*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
1982: *Adversary Mission Systems*	0.000	0.000	0.000	5.140	-	5.140	5.290	5.948	4.000	4.600	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project is a New Start in FY 2024. Airborne Adversary Mission Systems builds upon existing RedNet architecture to allow classified software development and classified hardware integration with Tactical Combat Training System (TCTS) Increment II. This project will enable the aircrew to accurately emulate peer threat capabilities and provides a standalone Adversary 'Operational Flight Program (OFP)', that can be deployed on any aircraft with RedNet Multi-Layered Obstructed Brokered Hub (MOBHub) avionics architecture and TCTS Increment II pod. Primary platforms for development include the F-5, F-16 and F-18 within existing Naval Adversary Squadrons. These systems combined with a classified electronic kneeboard, allows for the development, integration and deployment of adversary mission hardware and software systems without modification of aircraft's existing OFP. This effort will provide for the future ability to participate fully in the LVC environment as well as provide physics and effects-based threat replications for the mission essential training of deploying Fleet aircrews.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Title: Airborne Adversary Mission Systems	0.000	0.000	5.140	0.000	5.140
Articles:	-	-	-	-	-
FY 2023 Plans: N/A					
FY 2024 Base Plans: Commence program initiation activities and conduct Systems Requirements and Systems Functional Reviews (SRR/SFR) for Nonembedded Aircraft Processing Systems. Commence hardware and software development activities.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: This Project is a New Start in FY 2024. FY 2024 efforts include program initiation and documentation, awarding of supporting contracts to stand up Software Integration Lab (SIL) enabling classified application development and hardware integration.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	5.140	0.000	5.140

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1982 / *Adversary Mission Systems*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Airborne Adversary Mission Systems acquisition strategy for system development utilizes the Agile/Scrum development model. Incremental development, acquisition and fielding, will build on existing RedNet architecture and government off-the-shelf technology to the maximum extent possible. In order to keep pace with the rapidly evolving threat and peer adversary airborne capabilities, these efforts will incorporate incremental software and/or hardware improvements to future Airborne Adversary Mission System sensor capabilities, communications systems, electronic warfare, and weapons emulations capabilities built on RedNet and TCTS II infrastructure. FY 2024 contracting utilizes existing classified Multi-Award Contract (MAC) vehicle to support establishment of Software Integration Lab (SIL).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 1982 / *Adversary Mission Systems*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/CPFF	TBD : TBD	0.000	0.000		0.000		1.254	Dec 2023	-		1.254	Continuing	Continuing	Continuing
Software Development	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		0.375	Dec 2023	-		0.375	Continuing	Continuing	Continuing
Software Development	WR	FRCE : Cherry Point, NC	0.000	0.000		0.000		1.250	Nov 2023	-		1.250	Continuing	Continuing	Continuing
Hardware Development	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		0.105	Dec 2023	-		0.105	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		2.984		-		2.984	Continuing	Continuing	N/A

Remarks

FY 2024 Product Development funding for development of the components of the Airborne Adversary Mission Systems. $1.25M software development cost element will be applied to an existing classified contract to support Software Integration Lab (SIL) establishment. Funding provided to NAWCWD will support the development and integration of classified hardware and software elements.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		1.406	Nov 2023	-		1.406	Continuing	Continuing	Continuing
Program Management Support	WR	FRCE : Cherry Point, NC	0.000	0.000		0.000		0.750	Nov 2023	-		0.750	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.000		2.156		-		2.156	Continuing	Continuing	N/A

Remarks

FY 2024 Program Management Support provides required program establishment including personnel, facilities, development laboratories, cyber, and security environments. Funding also provides for technical design reviews and required efforts to establish and compete contracts to award in FY 2025 in support of Adversary Emulation system development efforts (e.g. Electronic Attack).

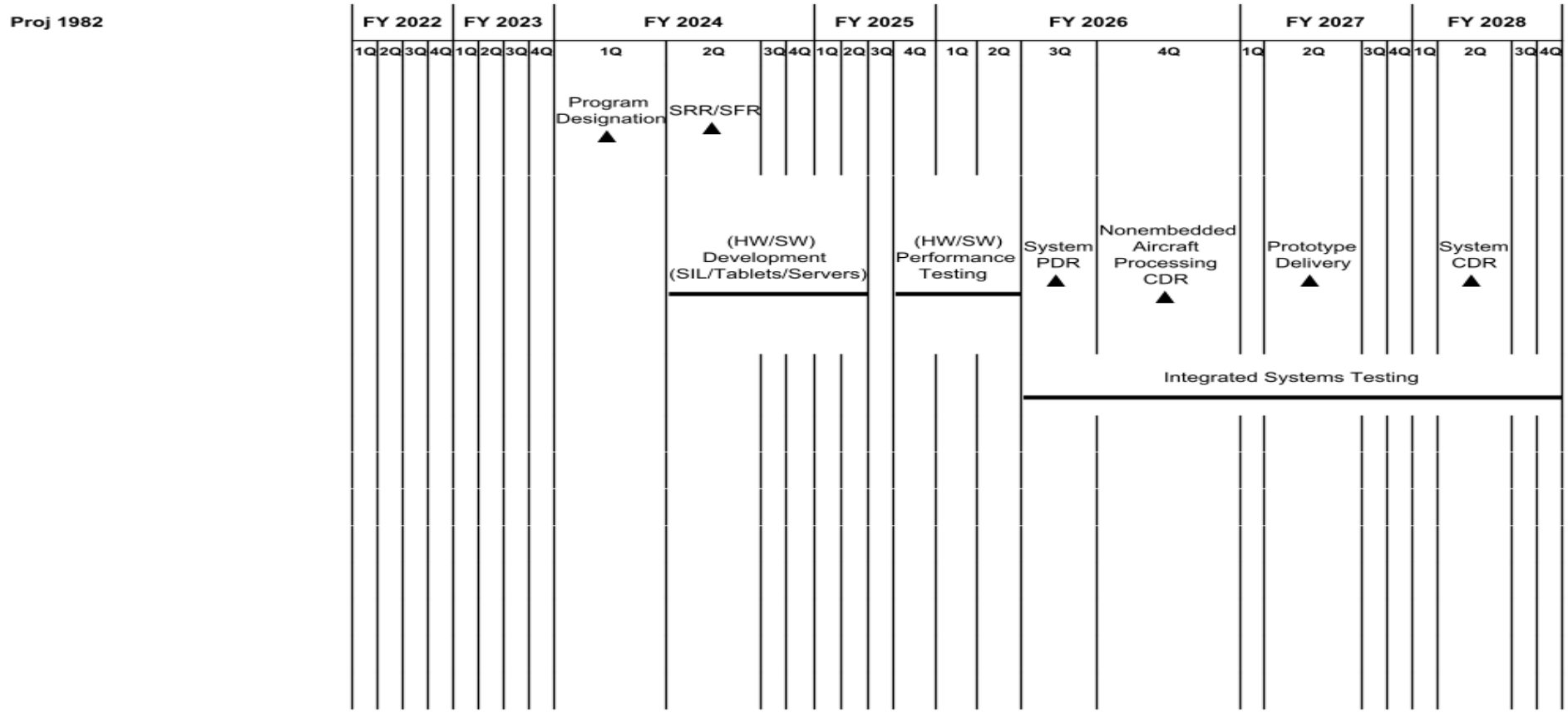
	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		5.140		-		5.140	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 1982 / *Adversary Mission Systems*	

	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1982 / *Adversary Mission Systems*



2024OSD - 0204571N - 1982

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1982 / *Adversary Mission Systems*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1982				
System Requirements Review (SRR)/System Functional Review (SFR)	2	2024	2	2024
Program Designation	1	2024	1	2024
Nonembedded Aircraft Processing (HW/SW) Development (SIL/Tablets/Servers)	2	2024	2	2025
Nonembedded Aircraft Processing (HW/SW) Performance Testing	4	2025	2	2026
System Preliminary Design Review (PDR)	3	2026	3	2026
Nonembedded Aircraft Processing Critical Design Review (CDR)	4	2026	4	2026
Nonembedded Aircraft Processing Prototype Delivery	2	2027	2	2027
Systems Critical Design Review (CDR)	2	2028	2	2028
Integrated Systems Testing	3	2026	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy											Date: March 2023	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*				Project (Number/Name) 2124 / *Air Warfare Training*			
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
2124: *Air Warfare Training*	55.262	1.591	1.754	1.734	-	1.734	1.764	1.795	1.823	1.860	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project transitions new training and range system technologies for use in Naval Aviation training. Products from this effort are directly tied to the Navy Aviation Simulation Master Plan (NASMP), MH-60R/S master plan, Unmanned Aerial Systems (UAS) master plan, the PMA-205 Strategic Plan, the Live Virtual Constructive (LVC) program, component technologies, including the Multiplex Data Bus Controller Translator Transmitter, F/A-18C-F Requirements Procurement Plan (RPP), open architecture implementation, multiple technology refresh efforts and the Multi-Mission Maritime Aircraft/P-8 programs. These efforts will support training optimization of future naval aviation training/preview/mission rehearsal systems (fixed, deployed, and unmanned). Tasks include: specification development to provide for common, modular, High Level Architecture compliant, high fidelity Distributed Mission Training and mission rehearsal capabilities ashore and afloat. Technologies to be developed and integrated include: intelligent semi-automated forces (SAF) technologies, automated performance measurement technology, advanced net-ready weapons simulation, Air to Air/Air to Ground, visual/sensor enhancement, common post mission assessment technologies, tablet mission preview technology, advanced visual-sensor technology, high resolution helmet mounted, and/or flat panel displays, 20-20 visual acuity image generation, Augmented Reality (AR), Virtual Reality (VR) and Mixed Reality (MR) technology, NAVAIR Portable Source Initiative improvements, common correlated data set technologies and heterogeneous data fusion, common link, common software/database reuse technologies, advanced environmental effects modeling, fused radar/infra-red/electro-optic and acoustic sensor simulations, aerodynamic modeling, physics-based infra-red simulations, spatial disorientation and simulator sickness research, communications degradation modeling, and final Test and Evaluation (T&E) within the Aviation Training Technology Integration Facility (ATTIF), Naval Air Warfare Center-Aircraft Division. This Manned-Flight Simulator (MFS) ATTIF capability provides a window to fleet aviators for critical comment, evaluation and fine tuning of new, interoperable, and innovative technologies such as LVC before final transition to the fleet. Naval Aviation Distributed Training Center, debrief/After Action Review (AAR), and intelligent training tools for the virtual environment are focused on human performance and trend analysis enhancements for fleet readiness and distributed mission training at all levels.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**
Title: AIR WARFARE TRAINING DEVELOPMENT	1.591	1.754	1.734	0.000	1.734
Articles:	-	-	-	-	-
Description: Provide risk mitigation, test and evaluation, and prototype development for stand-alone, manned, un-manned, distributed, open systems and deployed training systems focused on addressing highest priority PMA-205 and Director, Air Warfare, Office of the Chief of Naval Operations (OPNAV N98) needs in the area of operational systems development. Develop advanced training and emerging technology prototypes for Navy and Marine Corps Training Systems that address the four key PMA-205 focus areas: Fidelity and scalability, Readiness, Analytics, and Live, Virtual, Constructive (LVC), to transition advanced component technologies to the Fleet. Develop and integrate emerging technologies, such as Extended Reality (XR) to improve training fidelity, reduce training costs, or increase access to training at the point of need. Develop and integrate emerging					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
technologies and methods to enhance warfighter readiness and performance to reduce time to train, lower training costs, and reduce the number of human factors related hazreps and mishaps. Develop data analytic improvements to the way the Navy captures data, measures performance, performs after action review, and conducts assessment. Develop LVC technologies to support integrated mission training to support the high-end fight. ***FY 2023 Plans:*** Complete Fleet Adaptive Multi-Level Measurement for LVC. Continue development of heterogenous data fusion capability to support intelligent, semi-automated performance measurement and debrief capability in support of Live, Virtual and Constructive (LVC) training environments. Continue to conduct evaluation of T-6, TH-57, T-45 Virtual Reality display technologies. Continue evaluations of Naval Aviation Training Next (NATN) syllabi. Continue development and evaluation of virtual adaptive instruction effects on training outcomes. Continue analytical and developmental support for emergent programs of record in Live, Virtual and Constructive (LVC), cross domain solution, integrated warfare, acoustic simulation environments, warfighter performance assessment and training analytics, threat system enhancements, and sensor/ visualization modeling. Continue to integrate expandable flight deck crew trainer with Virtual Wingman capability based on Commercial off the Shelf (COTS) virtual and augmented reality technology. Transition helicopter operations team trainer with expandable flight deck crew capability and compatibility. Continue development of tests and metrics to evaluate performance and utility of Mixed Reality training devices (i.e., HMD that integrates virtual world with real world). Complete Aviation Scheduling Optimization Tool (AESOP), which utilizes machine learning analytics to provide daily flight schedules optimized to reduce time to train. ***FY 2024 Base Plans:*** Continue development of data collection and fusion capability to support intelligent, semi-automated performance measurement and debrief capability in support of Live, Virtual and Constructive (LVC) training environments. Continue to conduct evaluation of T-6/TH-57/T-45 Virtual / Augmented /Mixed Reality display technologies. Continue analytical and developmental support for emergent programs of record in Live, Virtual and Constructive (LVC), cross domain solution, integrated warfare, acoustic simulation environments, warfighter performance assessment and training analytics, threat system enhancements, and sensor/ visualization modeling. Continue development of artificial intelligence training systems to augment aviation training pipelines and accelerate training pipeline throughput. Transition expandable flight deck crew trainer. ***FY 2024 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 $0.020M reduction reflects decreased contract software development efforts and deferral of fidelity improvements until FY25.					
Accomplishments/Planned Programs Subtotals	1.591	1.754	1.734	0.000	1.734

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• APN/0705: *COMMON GROUND EQUIPMENT - TRAINING*	232.085	286.439	304.568	-	304.568	317.574	337.042	346.652	343.430	Continuing	Continuing

Remarks

Includes APN BLI 0705 PE 0804731N General Skills Training and PE 0804743N Other Flight Training

D. Acquisition Strategy

Air Warfare Training Development (AWTD) is a BA 07 RDT&E joint technology transition program tied to the PMA-205 Strategic Plan, Navy Aviation Simulation Master Plan (NASMP), United States Marine Corps upgrades and the various platform simulation master plans with the purpose of transitioning advanced training and mission preview/rehearsal technologies. AWTD provides risk mitigation, test and evaluation, and prototype development for stand-alone, manned, un-manned, distributed, open systems and deployed training systems for the warfighter utilizing an Integrated Product Team approach and a combination of reimbursable and direct cite/cost-plus time and material (T&M) contracts.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 2124 / *Air Warfare Training*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/CPFF	Bohemia Interactive : ORLANDO, FL	0.832	0.000		0.000		0.000		-		0.000	0.000	0.832	0.832
Software Development	C/CPFF	Aptima : WOBURN, MA	0.424	0.000		0.000		0.000		-		0.000	0.000	0.424	0.424
Software Development	C/CPFF	SOAR Tech : ORLANDO, FL	0.195	0.050	Mar 2022	0.101	Mar 2023	0.103	Mar 2024	-		0.103	0.000	0.449	0.449
Software Development	WR	NAWCTSD : ORLANDO, FL	27.182	0.351	Nov 2021	0.408	Nov 2022	0.488	Nov 2023	-		0.488	Continuing	Continuing	Continuing
Software Development	WR	NAMRU : Dayton, OH	0.045	0.000		0.000		0.030	Nov 2023	-		0.030	0.000	0.075	0.075
Software Development	C/CPFF	ACC : ROCK ISLAND, IL	0.388	0.000		0.000		0.000		-		0.000	0.000	0.388	0.388
Prior Year Prod Dev No Longer Funded in the Budget or Out Years	Various	Various : Various	10.692	0.000		0.000		0.000		-		0.000	0.000	10.692	-
		Subtotal	39.758	0.401		0.509		0.621		-		0.621	Continuing	Continuing	N/A

Remarks

FY24 $112K increase for software development support.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWCTSD : ORLANDO, FL	0.186	0.776	Nov 2021	0.798	Nov 2022	0.798	Nov 2023	-		0.798	Continuing	Continuing	Continuing
Prior Year Support No Longer Funded in the Budget or Out Years	Various	Various : Various	4.145	0.000		0.000		0.000		-		0.000	0.000	4.145	-
		Subtotal	4.331	0.776		0.798		0.798		-		0.798	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 2124 / *Air Warfare Training*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWC AD : PAX RIVER, MD	7.648	0.124	Nov 2021	0.145	Nov 2022	0.060	Nov 2023	-		0.060	Continuing	Continuing	Continuing
		Subtotal	7.648	0.124		0.145		0.060		-		0.060	Continuing	Continuing	N/A

Remarks

FY24 decreased based on adjusted requirements in FY24.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	Precise : LEXINGTON PARK, MD	1.058	0.145	Mar 2022	0.151	Mar 2023	0.075	Mar 2024	-		0.075	Continuing	Continuing	Continuing
Program Management Support	WR	NAWCTSD : ORLANDO, FL	0.351	0.130	Nov 2021	0.136	Nov 2022	0.172	Nov 2023	-		0.172	Continuing	Continuing	Continuing
Travel	Allot	NAVAIR : PAX RIVER, MD	0.572	0.015	Nov 2021	0.015	Nov 2022	0.008	Nov 2023	-		0.008	Continuing	Continuing	Continuing
Prior year Mgmt Sup no longer funded in the FYDP	Various	Various : Various	1.544	0.000		0.000		0.000		-		0.000	0.000	1.544	-
		Subtotal	3.525	0.290		0.302		0.255		-		0.255	Continuing	Continuing	N/A

Remarks

Reduced requirement for contract support and less travel in FY24.

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	55.262	1.591		1.754		1.734		-		1.734	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*

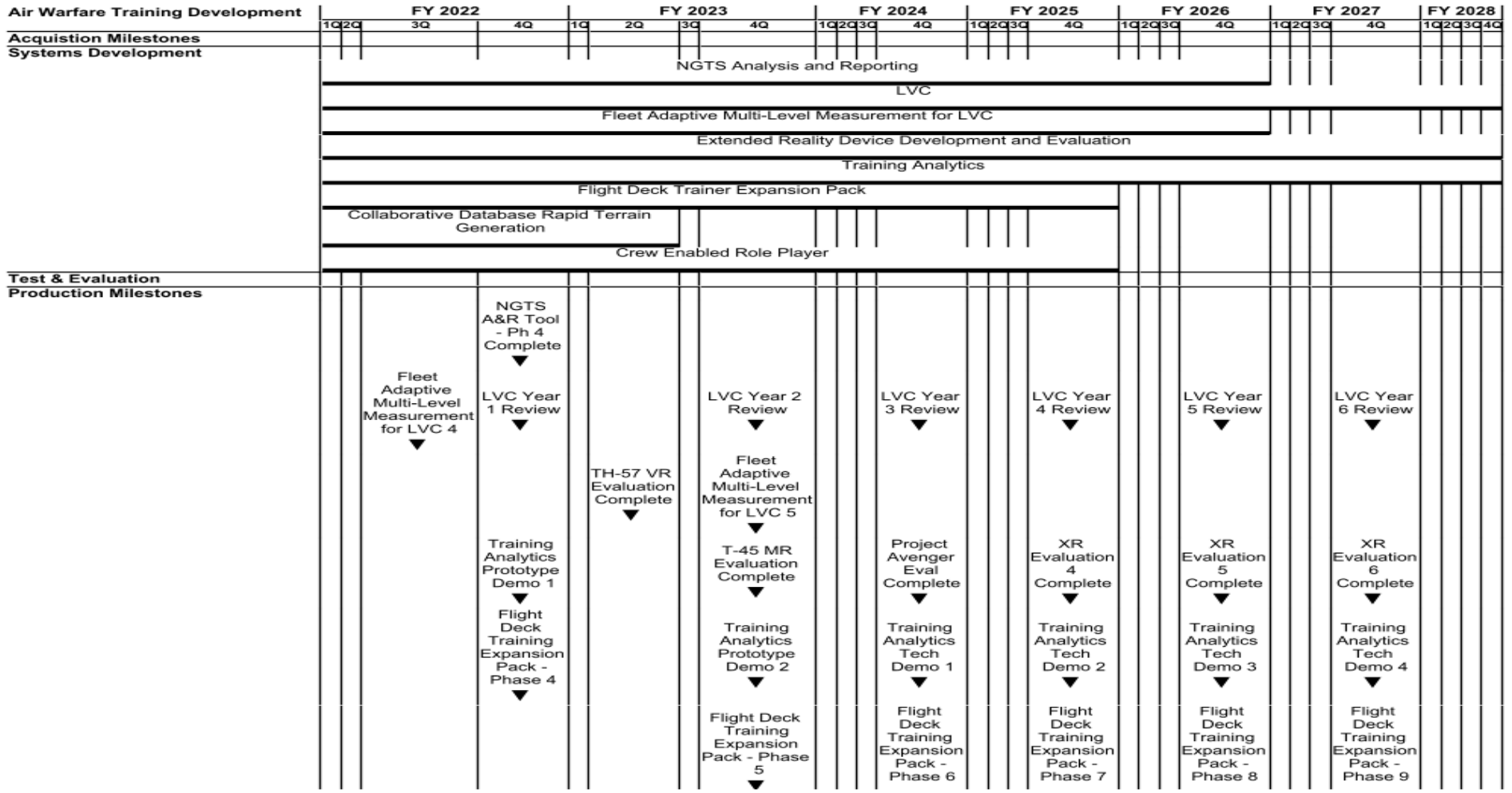
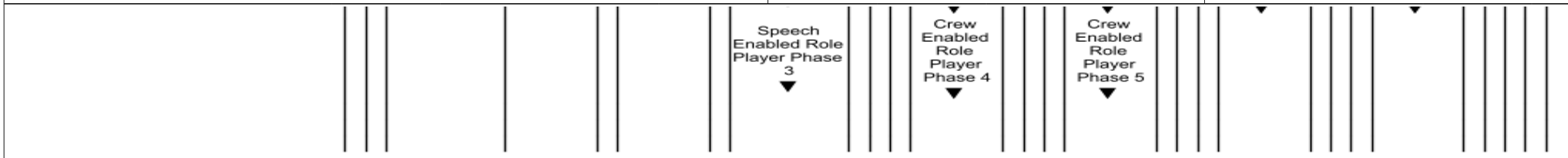


Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*



2024OSD - 0204571N - 2124

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Air Warfare Training Development				
Systems Development: NGTS Analysis and Reporting	1	2022	4	2026
Systems Development: LVC	1	2022	4	2028
Systems Development: Fleet Adaptive Multi-Level Measurement for LVC	1	2022	4	2026
Systems Development: Extended Reality Device Development and Evaluation	1	2022	4	2028
Systems Development: Training Analytics	1	2022	4	2028
Systems Development: Flight Deck Trainer Expansion Pack	1	2022	4	2025
Systems Development: Helicopter Operations Trainer	1	2022	2	2023
Systems Development: Crew Enabled Role Player	1	2022	4	2025
Production Milestones: NGTS Analysis and Reporting - Phase 4	4	2022	4	2022
Production Milestones: NGTS Analysis and Reporting - Phase 5	4	2023	4	2023
Production Milestones: NGTS Analysis and Reporting - Phase 6	4	2024	4	2024
Production Milestones: NGTS Analysis and Reporting - Phase 7	4	2025	4	2025
Production Milestones: NGTS Analysis and Reporting - Phase 8	4	2026	4	2026
Production Milestones: NGTS Analysis and Reporting - Phase 9	4	2027	4	2027
Production Milestones: NGTS Analysis and Reporting - Phase 10	4	2028	4	2028
Production Milestones: LVC Year 1 Review	4	2022	4	2022
Production Milestones: LVC Year 2 Review	4	2023	4	2023
Production Milestones: LVC Year 3 Review	4	2024	4	2024
Production Milestones: LVC Year 4 Review	4	2025	4	2025
Production Milestones: LVC Year 5 Review	4	2026	4	2026
Production Milestones: LVC Year 6 Review	4	2027	4	2027
Production Milestones: LVC Year 7 Review	4	2028	4	2028

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestones: Fleet Adaptive Multi-Level Measurement for LVC 4	3	2022	3	2022
Production Milestones: Fleet Adaptive Multi-Level Measurement for LVC 5	4	2023	4	2023
Production Milestones: Fleet Adaptive Multi-Level Measurement for LVC 6	4	2024	4	2024
Production Milestones: TH-57 VR Evaluation Complete	2	2023	2	2023
Production Milestones: T-45 MR Evaluation Complete	4	2023	4	2023
Production Milestones: Project Avenger Eval Complete	4	2024	4	2024
Production Milestones: Project Corsair Eval Complete	4	2025	4	2025
Production Milestones: XR Evaluation 4 Complete	4	2025	4	2025
Production Milestones: XR Evaluation 5 Complete	4	2026	4	2026
Production Milestones: XR Evaluation 6 Complete	4	2027	4	2027
Production Milestones: XR Evaluation 7 Complete	4	2028	4	2028
Production Milestones: Training Analytics Prototype Demo 1	4	2022	4	2022
Production Milestones: Training Analytics Prototype Demo 2	4	2023	4	2023
Production Milestones: Training Analytics Tech Demo 1	4	2024	4	2024
Production Milestones: Training Analytics Tech Demo 2	4	2025	4	2025
Production Milestones: Training Analytics Tech Demo 3	4	2026	4	2026
Production Milestones: Training Analytics Tech Demo 4	4	2027	4	2027
Production Milestones: Training Analytics Eval 1	4	2024	4	2024
Production Milestones: Training Analytics Eval 2	4	2025	4	2025
Production Milestones: Training Analytics Eval 3	4	2026	4	2026
Production Milestones: Flight Deck Training Expansion Pack - Phase 4	4	2022	4	2022
Production Milestones: Flight Deck Training Expansion Pack - Phase 5	4	2023	4	2023
Production Milestones: Flight Deck Training Expansion Pack - Phase 6	4	2024	4	2024
Production Milestones: Flight Deck Training Expansion Pack - Phase 7	4	2025	4	2025
Production Milestones: Flight Deck Training Expansion Pack - Phase 8	4	2026	4	2026
Production Milestones: Flight Deck Training Expansion Pack - Phase 9	4	2027	4	2027

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Production Milestones: Speech Enabled Role Player Phase 3	4	2023	4	2023
Production Milestones: Crew Enabled Role Player Phase 4	4	2024	4	2024
Production Milestones: Crew Enabled Role Player Phase 5	4	2025	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy											Date: March 2023	
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*				Project (Number/Name) 3093 / *TACTS/LATR Replacement*			
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
3093: *TACTS/LATR Replacement*	274.446	17.179	51.287	68.632	-	68.632	63.148	47.340	35.532	36.248	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Tactical Combat Training System (TCTS) Increment II will provide an improved environment for air combat training utilizing a secure air-to-air and air-to-ground data link, and will provide rangeless operation capability to Forward Deployed Naval Forces (FDNF). TCTS Increment II will provide encryption and an enhanced threat environment, as well as airborne participant instrumentation for multiple fixed and rotary wing platforms. Engineering Development Model (EDM) units in multiple form factors are being developed in FY19 through FY26 and will support Engineering and Developmental Testing events through FY27. The EDMs will be specifically utilized for testing in the following areas: Environmental Qualification, Software, High Accelerated Lifecycle, Ground System Integration, Airborne Subsystem Air Worthiness and Performance, Shipboard Ground Station, Internal Mount and Rack Mounted Subsystem (Internal Mount) Airworthiness and Performance and JSF Airworthiness and Performance. TCTS Increment II provides the foundational encrypted airborne network for implementation of Aviation Live Virtual Constructive (LVC) capabilities.

Aviation LVC Live Aircraft Integration (ALLAI) Phase 1 funds the integration of Live aircraft into the Live, Virtual, Constructive, blended training environment to close the Great Powers Competition training capability gap for mission rehearsal for the high end fight. Aviation LVC will establish an integrated System of Systems (SoS) training environment bringing already-developed capabilities together with new developmental efforts to form a cohesive architecture that accurately emulates the high end fight for warfighter training. LVC takes a hybrid approach to aviation and Fleet-wide training where the training audience in the form of Live personnel operating Live equipment (to include aircraft and surface vessels) on a Tactical Training Range (TTR) will be teamed with Live aircrew operating simulators to provide a Virtual complement in the "Blue Air" picture. The "Red" adversary for this training is made up of Live people operating Live aircraft complemented by computer generated "Red" Constructive Air and Surface threats that stimulate the "Blue" Air displays and sensors as if a "Red" Live adversary were present. Range Training Officers (RTO) operating at the TTR Operations Center monitor and oversee the overall mission picture while directing Live participants and controlling Constructive threats.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**
Title: TACTS/LATR REPLACEMENT	17.179	10.933	11.491	0.000	11.491
Articles:	-	7	-	-	-
Description: Qualify and complete the On-Range and Rangeless Pod system fielding for all USN Tactical Training Ranges and Carrier Air Wing Five (CVW-5) CVN installation, including the complete Integrated Logistics products and training. Define Test & Training Enabling Architecture (TENA) compliant interface between TCTS and an Advanced Display System (ADS). Develop system form factor variations for use on different fixed wing and rotary wing aircraft as well as surface vessels. Continue development of the encrypted data link. Develop related training range integration.					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3093 / *TACTS/LATR Replacement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY 2023 Plans: Achieve IOC for Phase 1 for Participant Airborne Subsystems. System Authority to Operate (ATO) for the Participant Airborne Subsystems will be achieved. Development for Phase 3, which includes hardware and software development activities unique to implementing TCTS II capabilities into the Internal Mount (IM) form factor, rotary wing, and maritime aircraft (including LATR capability). Continue software development and integration into training and range networks. ***FY 2024 Base Plans:*** TCTS II Phase 3 will continue development which includes hardware and software development activities unique to implementing TCTS II capabilities in the Internal Mount (IM) form factor, rotary wing, and maritime aircraft (including LATR capability). Continue software development and integration into training and range networks. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 $0.558M increase for the support of the hardware and software development for the implementation of TCTS II.					
Title: Aviation LVC Live Aircraft Integration - Phase 1	0.000	40.354	57.141	0.000	57.141
Articles:	-	-	-	-	-
Description: Develop a System of Systems architecture to simultaneously host developed and developing capabilities in Live aircraft, simulators, and semi-automated forces (SAF) into a blended training environment focusing on Carrier Air Wing F/A-18, EA-18G, and E-2D platforms with flexibility to incorporate additional platforms. Integrate capability enhancements into the TCTS II, NGTS, NCTE and host platform systems to expand high end training capability and integrate system architectures. Mature and expand advanced SAF generation capabilities and integrate host systems to process SAF information to emulate actual threats. Implement system security for System of Systems environment. ***FY 2023 Plans:*** Commence integration of Live, Virtual, and Constructive (LVC) capability to the Tactical Combat Training System Increment II (TCTS II), including Internal Mount enhancement, interoperability with virtual entities, spectral efficiency, system security modifications, and advanced integration with constructive inject systems, Navy Continuous Training Environment (NCTE), and host platforms. Additional capability development will include					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3093 / *TACTS/LATR Replacement*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
Next Generation Threat System (NGTS) development, range live event display and debrief system updates, and development of an embeddable LVC software architecture. ***FY 2024 Base Plans:*** TCTS II will continue integration and start Developmental Test (DT) of LVC software capabilities (Synthetic Inject to Live) on the F/A-18, to include updated Next Generation Threat Simulator (NGTS) simulation capabilities and waveform optimization. Cross Domain Solutions (CDS) design updates are validation are required for the additional NGTS simulation capabilities. TCTS II will perform integration of TCTS II into the Navy Continuous Training Environment (NCTE) in FY24. Continue development of the TCTS II LVC Internal Mount (IM) capabilities. Sos Platform/Simulator Integration continues in FY24. NCTE/Next Generation Threat System LVC testing will begin in FY24. LVC integration with F-18 continues in FY24 and E-2D LVC integration starts in FY24. ***FY 2024 OCO Plans:*** N/A ***FY 2023 to FY 2024 Increase/Decrease Statement:*** FY24 $16.787M increase supports the start of NCTE/Next Generation Threat System testing and E-2D LVC integration along with the continued development/integration/testing of current LVC capabilities.					
Accomplishments/Planned Programs Subtotals	17.179	51.287	68.632	0.000	68.632

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
• OPN/4204: *Weapons Range Support Equipment (WRSE)*	87.748	106.209	147.556	-	147.556	143.807	162.621	162.970	166.339	Continuing	Continuing
• APN/0725: *Other Production Charges/Tactical Combat Training System (TCTS)*	21.374	46.403	49.907	-	49.907	65.637	65.760	66.166	67.649	Continuing	Continuing

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3093 / *TACTS/LATR Replacement*

D. Acquisition Strategy

Tactical Combat Training System will employ an evolutionary incremental acquisition strategy. This strategy will provide for the development of a system that meets the Operational Requirements Document. Government purchase and validation of the TCTS tech data package in 2023 (APN BLI 0725) will allow for competition of production contracts in 2025 and beyond.

Aviation LVC will employ a phased evolutionary acquisition strategy. This strategy will integrate existing systems while enhancing the capabilities of those systems before incorporating new developmental items into the blended architecture to satisfy the LVC Capabilities Requirements Document.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 3093 / *TACTS/LATR Replacement*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPIF	COLLINS AEROSPACE : CEDAR RAPIDS, IA	170.897	14.225	Oct 2021	10.450	Oct 2022	19.934	Oct 2023	-		19.934	0.000	215.506	215.506
Software Development	C/CPIF	COLLINS AEROSPACE : CEDAR RAPIDS, IA	0.000	0.000		7.500	Jan 2023	25.349	Jan 2024	-		25.349	0.000	32.849	32.849
Software Development	WR	NSWC Corona : Corona, CA	0.000	0.000		3.500	Nov 2022	2.000	Nov 2023	-		2.000	Continuing	Continuing	Continuing
Software Development	WR	NAWCAD : Patuxent River, MD	0.000	0.000		3.500	Nov 2022	5.000	Nov 2023	-		5.000	Continuing	Continuing	Continuing
Hardware Development	TBD	AFLCMC/HBZ : Hill AFB	0.000	0.000		7.500	Jan 2023	0.000		-		0.000	0.000	7.500	7.500
Software Development	TBD	TBD : TBD	0.000	0.000		7.500	Mar 2023	0.000		-		0.000	0.000	7.500	-
Prior Year Prod Dev No Longer Funded in the Budget or Out Years	Various	Various : Various	10.901	0.000		0.000		0.000		-		0.000	0.000	10.901	-
		Subtotal	181.798	14.225		39.950		52.283		-		52.283	Continuing	Continuing	N/A

Remarks

1 - Increase in Hardware Development to Collins in FY24 by $9.4M for continued of IRSS and additional support of F-18 IM with continued expected development. FY22 increase of $1.4M from BTR received from PMA-234 for additional Collins support.

2 - Collins SW development increase of $17.641M in FY24 is for the core LVC software development to the TCTS II system.

4 - NAWCAD PAX SW development increase of $1.5M in FY24 is for the core LVC software development to the TCTS II system.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-AD : PAX RIVER, MD	18.358	1.010	Nov 2021	4.000	Nov 2022	4.163	Nov 2023	-		4.163	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 3093 / *TACTS/LATR Replacement*	

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPFF	Precise : LEXINGTON PARK, MD	0.615	0.000		0.000		0.000		-		0.000	0.000	0.615	-
Systems Engineering	WR	NAWC-WD : China Lake, CA	0.891	0.000		0.000		1.347	Nov 2023	-		1.347	Continuing	Continuing	Continuing
Systems Engineering	WR	Various : Various	0.755	0.000		0.000		0.000		-		0.000	0.000	0.755	-
Logistics	WR	NAWC-AD : PAX RIVER, MD	3.573	0.500	Nov 2021	0.000		0.000		-		0.000	0.000	4.073	-
Logistics	WR	FRC SW : San Diego, CA	0.344	0.100	Nov 2021	0.000		0.000		-		0.000	0.000	0.444	-
Logistics	C/CPFF	Synectic Solutions, Inc. : LEXINGTON PARK, MD	0.683	0.000		0.000		0.000		-		0.000	0.000	0.683	-
Systems Engineering	FFRDC	Mitre : Various	0.000	0.000		2.114	Oct 2022	2.156	Oct 2023	-		2.156	0.000	4.270	4.270
Systems Engineering	SS/CPFF	ASEC : Patuxent River, MD	0.000	0.000		0.600	Apr 2023	0.612	Apr 2024	-		0.612	Continuing	Continuing	Continuing
Prior Year Support No Longer Funded in the Budget or Out Years	Various	Various : Various	29.989	0.000		0.000		0.000		-		0.000	0.000	29.989	-
		Subtotal	55.208	1.610		6.714		8.278		-		8.278	Continuing	Continuing	N/A

Remarks

Additional support from China Lake TARIF SSA needed to support ALLAI requirements.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	WR	NAWC-AD : PAX RIVER, MD	5.575	0.197	Nov 2021	2.000	Nov 2022	4.640	Nov 2023	-		4.640	Continuing	Continuing	Continuing
Developmental Test & Evaluation (DT&E)	WR	NAWC-WD : China Lake, MD	0.351	0.000		0.000		0.000		-		0.000	0.000	0.351	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 3093 / *TACTS/LATR Replacement*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation (DT&E)	C/CPFF	BAH : McLean, VA	0.000	0.381	Feb 2022	0.000		0.000		-		0.000	0.000	0.381	0.381
Developmental Test & Evaluation (DT&E)	WR	Various : Various	1.407	0.369	Nov 2021	0.000		0.000		-		0.000	0.000	1.776	-
Prior Year Developmental Test & Evaluation Not Funded FYDP (PYDT&E)	Various	Various : Various	3.425	0.000		0.000		0.000		-		0.000	0.000	3.425	-
		Subtotal	10.758	0.947		2.000		4.640		-		4.640	Continuing	Continuing	N/A

Remarks

T&E NAWCAD PAX - $2.64M increase to continue testing ALLAI capabilities that were developed in FY23.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prog Mgnt Sup	WR	NAWC-AD : PAX RIVER, MD	9.248	0.381	Nov 2021	1.500	Nov 2022	2.659	Nov 2023	-		2.659	Continuing	Continuing	Continuing
Travel	Allot	NAVAIR : PAX RIVER, MD	0.170	0.016	Oct 2021	0.200	Oct 2022	0.250	Oct 2023	-		0.250	Continuing	Continuing	Continuing
Prog Mgnt Sup	C/CPFF	Precise : LEXINGTON PARK, MD	0.955	0.000		0.000		0.000		-		0.000	0.000	0.955	0.955
Prog Mgnt Sup	WR	Various : Various	0.250	0.000		0.000		0.000		-		0.000	0.000	0.250	-
Prog Mgnt Sup	WR	NAWCTSD : Orlando, FL	0.000	0.000		0.500	Nov 2022	0.522	Nov 2023	-		0.522	Continuing	Continuing	Continuing
Prog Mgnt Sup	TBD	TBD : TBD	0.000	0.000		0.423	Nov 2022	0.000		-		0.000	0.000	0.423	-
Prior Year Mgmt No Longer Funded in the Budget or Out Years	Various	Various : Various	16.059	0.000		0.000		0.000		-		0.000	0.000	16.059	-
		Subtotal	26.682	0.397		2.623		3.431		-		3.431	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 3093 / *TACTS/LATR Replacement*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Prog Mgnt Sup increase $0.793M for anticipated team growth to support oversight of development and testing of ALLAI program.

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	274.446	17.179		51.287		68.632		-		68.632	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3093 / *TACTS/LATR Replacement*

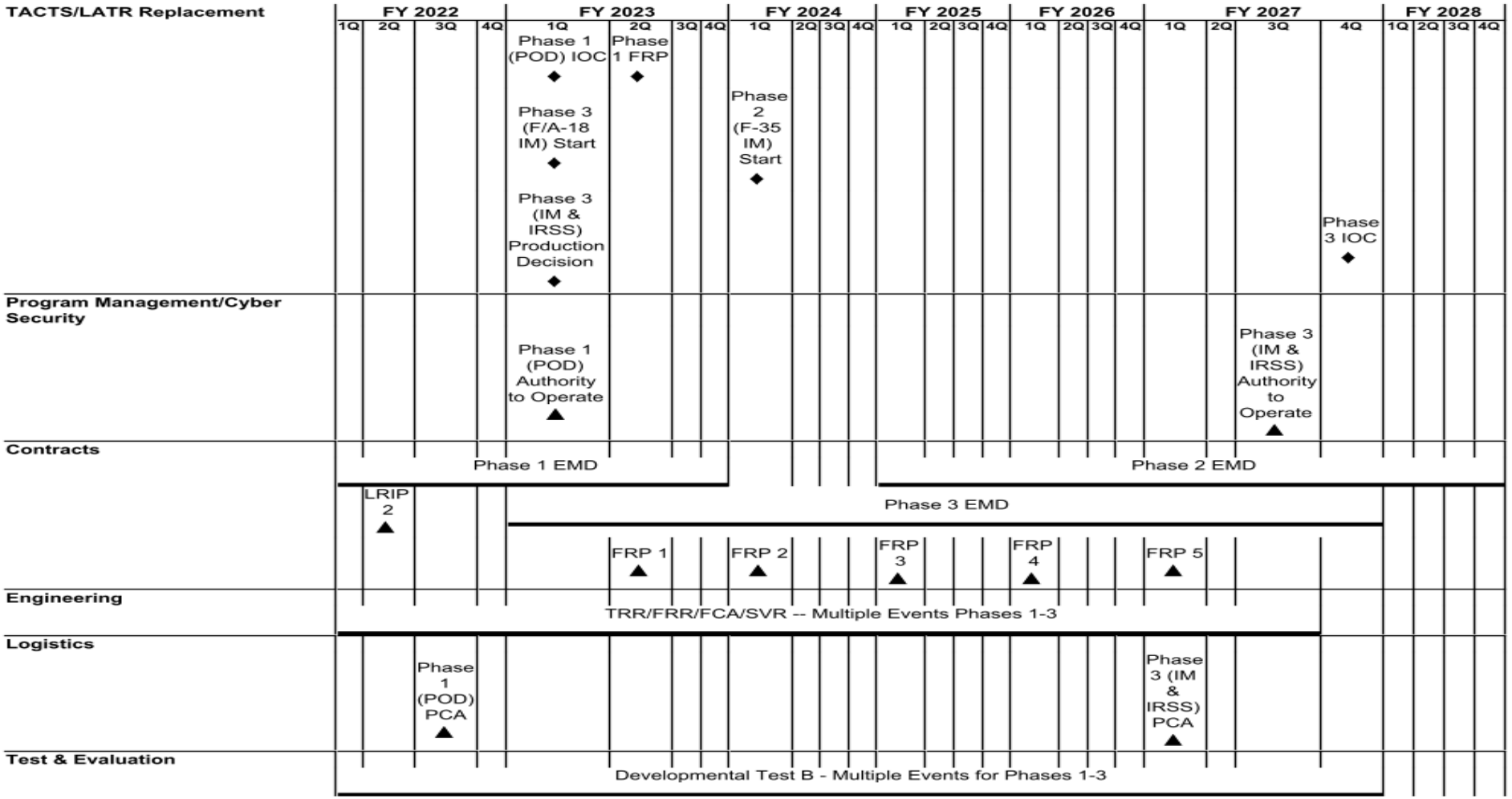


Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3093 / *TACTS/LATR Replacement*

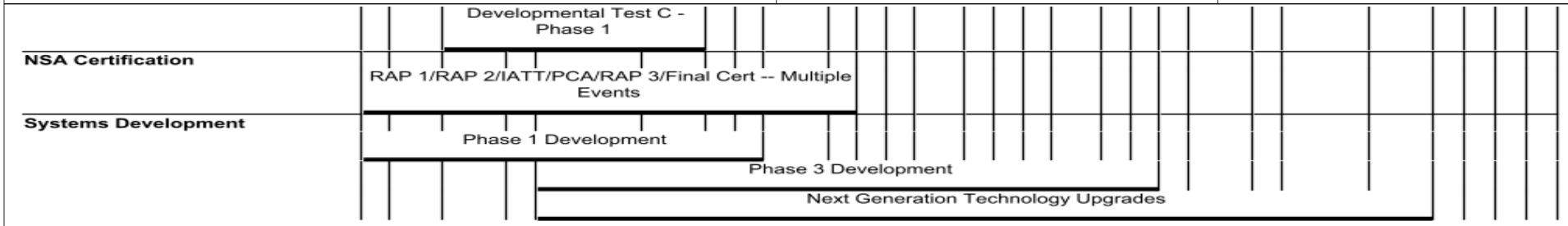


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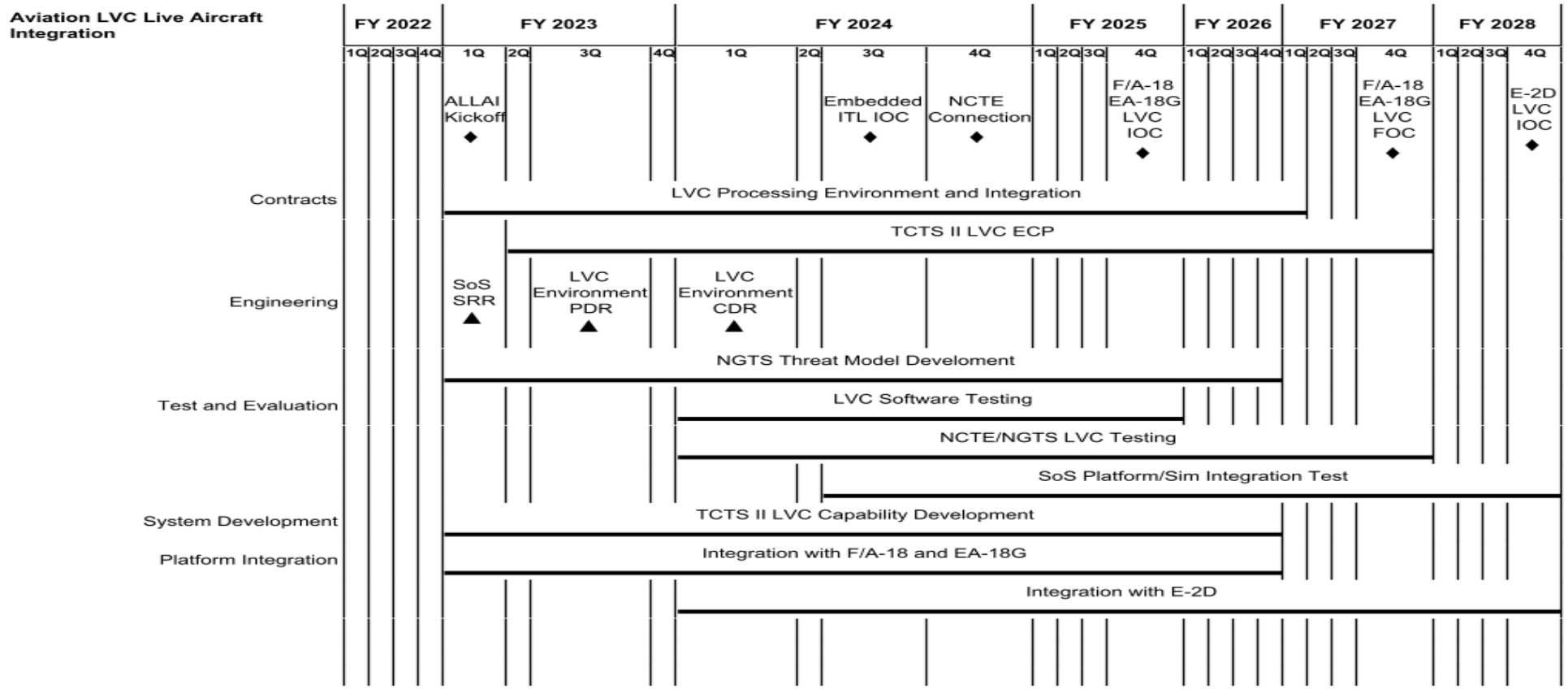
Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3093 / *TACTS/LATR Replacement*



2024DON - 0204571N - 3093

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3093 / *TACTS/LATR Replacement*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
TACTS/LATR Replacement				
Phase 1 (POD) IOC	1	2023	1	2023
Phase 1 FRP	2	2023	2	2023
Phase 3 (IM) Start	2	2023	2	2023
Phase 2 (F-35 IM) Start	1	2025	1	2025
Phase 3 (IM) Production Decision	4	2025	4	2025
Phase 3 IOC	4	2027	4	2027
Program Management/Cyber Security: Phase 1 (POD) Authority to Operate	1	2023	1	2023
Program Management/Cyber Security: Phase 3 (IM & IRSS) Authority to Operate	3	2027	3	2027
Contracts: Phase 1 LRIP 2	2	2022	2	2022
Contracts: Phase 1 Full Rate Production 1	2	2023	2	2023
Contracts: Phase 1Full Rate Production 2	1	2024	1	2024
Contracts: Phase 1 Full Rate Production 3	1	2025	1	2025
Contracts: Phase 1 Full Rate Production 4	1	2026	1	2026
Contracts: Phase 1 Full Rate Production 5	1	2027	1	2027
Engineering: Test Readiness Review / Flight Readiness Review / Functional Configuration Audit / System Verification Review	1	2022	3	2027
Logistics: Phase 1 (POD) Physical Configuration Audit	3	2022	3	2022
Logistics: Phase 3 (IM & IRSS) Physical Configuration Audit	1	2027	1	2027
Test & Evaluation: Developmental Test B - Multiple Events for Phases 1-3	1	2022	4	2027
Test & Evaluation: Developmental Test C - Phase 1	3	2022	1	2023
Test & Evaluation: Developmental Test C - Phase 3	1	2027	3	2027
NSA Certification: RAP 1/RAP 2/IATT/PCA/RAP 3/Final Cert	1	2022	2	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3093 / *TACTS/LATR Replacement*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Systems Development: Phase 1 Development	1	2022	4	2023
Systems Development: LATR Capability Gap Development (Phase 3)	1	2023	3	2026
Systems Development: Next Generation Technology Upgrades	1	2023	4	2027
Aviation LVC Live Aircraft Integration				
Aviation LVC Live Aircraft Integration Kickoff	1	2023	1	2023
NCTE Connection	4	2024	4	2024
F/A-18 EA-18G LVC IOC	4	2025	4	2025
F/A-18 EA-18G LVC FOC	4	2027	4	2027
E-2D LVC IOC	4	2028	4	2028
Contracts: LVC Processing Environment and Integration	1	2023	1	2027
Contracts: TCTS II LVC ECP	2	2023	4	2027
Engineering: System of Systems SRR	3	2023	3	2023
Engineering: LVC Environment PDR	1	2024	1	2024
Engineering: LVC Environment CDR	4	2024	4	2024
Engineering: Threat Model Develoment	1	2023	4	2026
Test and Evaluation: LVC Software Testing	1	2024	4	2025
Test and Evaluation: NCTE/NGTS LVC Testing	1	2024	4	2027
Test and Evaluation: System of Systems Platform and Simulator Integration Testing	3	2024	4	2028
System Development: TCTS II LVC Capability Development	1	2023	4	2026
Platform Integration: Integration with F/A-18 and EA-18G	1	2023	4	2026
Platform Integration: Integration with E-2D	1	2024	4	2028

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy										Date: March 2023		
Appropriation/Budget Activity 1319 / 7					R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*				Project (Number/Name) 3356 / *High Fidelity Surface Trainers*			
COST ($ in Millions)	**Prior Years**	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**	**FY 2025**	**FY 2026**	**FY 2027**	**FY 2028**	**Cost To Complete**	**Total Cost**
3356: *High Fidelity Surface Trainers*	35.363	1.589	0.197	3.031	-	3.031	0.051	0.059	0.053	0.056	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This line funds high fidelity Aegis Integrated Air and Missile Defense (IAMD) individual, instructor, strike group and team trainers to support all Advanced Capability Build (ACB) and below Aegis baselines. This line provides funds for development of a High Fidelity Aegis Combined Integrated Air and Missile Defense (IAMD) and Anti-Submarine Warfare (ASW)
Trainer (CIAT) to enable tactics, techniques, and procedure development and allow advanced warfare training (AWT) Phase II and Surface Warfare Advanced Tactical training objectives to be accomplished ashore and to support Active and Passive Sonar Operations, Target Motion Analysis, Sonobuoy Localization, Command and Control, and execution of ASW Kill chain. Funds are provided for advanced component technology development, prototype evaluation, and technology readiness level assessment. Development of these trainers is in response to CNO Wholeness Review and Department of the Navy requirements. This line supports Surface Training Advanced Virtual Environment (STAVE) methodology by researching and developing trainers that will create an immersive and interactive learning environment and support both CNO High Velocity Learning and Ready Relevant Learning intent. It includes development of the Surface Training and Readiness Management System (STRMS) required for the identification of quantifiable operator and maintainer competencies for each mission area and associated tracking system development and testing. Funds provide for alignment with DON Chief Information Officer (CIO) Cyber requirements.

NOTE: In FY18, Mine Warfare Synthetic Training requirements previously captured within PE 0204571N / Proj 3356 (High Fidelity Surface Trainer) were realigned to PE 0603502N Surface & Shallow Water MCM / Proj 1235 (Mine Warfare Planning and Analysis).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2022**	**FY 2023**	**FY 2024 Base**	**FY 2024 OCO**	**FY 2024 Total**
Title: Combined IAMD ASW Trainer (CIAT)	0.210	0.197	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2023 Plans: Continuing research and development of the Combat System Simulator/Stimulator (CS3) and Joint Advanced Warfare Scenarios (JAWS) in to future CIAT Software versions.					
FY 2024 Base Plans: N/A					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3356 / *High Fidelity Surface Trainers*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total
FY24 decrease associated with the completion of the development phase of the Joint Advanced Warfare Scenarios (JAWS) in to future CIAT Software versions.					
Title: Surface Training Readiness Management System (STRMS)	1.379	0.000	3.031	0.000	3.031
Articles:	-	-	-	-	-
FY 2023 Plans: N/A					
FY 2024 Base Plans: Research and develop advanced technologies that will enable development of capability to identify quantifiable operator and maintainer competencies for each mission area and an associated shipboard training management and tracking system for the purpose of determining training effectiveness ashore and at sea. Refine Phase II design and continue Phase II capability development. Communicate and collaborate in development of IT architecture and data integration supportive of Surface Training Advanced Virtual Environment (STAVE), STRMS and My Navy Learning (MNL) requirements.					
FY 2024 OCO Plans: N/A					
FY 2023 to FY 2024 Increase/Decrease Statement: FY24 $3.031M increase covers Phase II of STRMS development, which will support Shore Side IT architecture development and Advance User Case development.					
Accomplishments/Planned Programs Subtotals	1.589	0.197	3.031	0.000	3.031

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The software development and advanced technology upgrades for High Fidelity Surface Trainers are accounted for in this RDT&E line. These upgrades will provide an enabling technology to an existing training system.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 3356 / *High Fidelity Surface Trainers*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SYSTEMS ENG	WR	NSWC DAHLGREN : DAHLGREN,VA	20.989	1.206	Dec 2021	0.000		0.300	Nov 2023	-		0.300	Continuing	Continuing	Continuing
SYSTEMS ENG	WR	NSWC CARDEROCK : CARDEROCK, MD	6.320	0.000		0.000		0.000		-		0.000	0.000	6.320	-
SYSTEMS ENG	WR	NUWC NEWPORT : NEWPORT, RI	2.076	0.000		0.000		0.000		-		0.000	0.000	2.076	-
SYSTEMS ENG	MIPR	U.S. ARMY SMDC : HUNTSVILLE, AL	0.147	0.000		0.000		0.000		-		0.000	0.000	0.147	-
SYSTEMS ENG	WR	NAWCTSD : ORLANDO, FL	1.698	0.000		0.000		2.481	Nov 2023	-		2.481	0.000	4.179	-
SYSTEMS ENG	TBD	LOCKHEED MARTIN : TBD	3.416	0.000		0.000		0.000		-		0.000	0.000	3.416	-
SYSTEMS ENG	WR	NSWC, Corona : CORONA, CA	0.717	0.223	Oct 2021	0.000		0.250	Nov 2023	-		0.250	0.000	1.190	-
SYSTEMS ENG	TBD	Innovative Defense Technologies : ARLINGTON, VA	0.000	0.110	May 2022	0.176	Nov 2022	0.000		-		0.000	0.000	0.286	-
SYSTEMS ENG	TBD	Applied Physics Laboratory / Johns Hopkins Univers : BALTIMORE, MD	0.000	0.050	Jun 2022	0.021	Nov 2022	0.000		-		0.000	0.000	0.071	-
		Subtotal	35.363	1.589		0.197		3.031		-		3.031	Continuing	Continuing	N/A

Remarks

FY24 Program changes associated with the following:
1) Support of Phase II of STRMS development, which will support Shore Side IT architecture development and Advance User Case development.
2) Completion of the development phase of the Joint Advanced Warfare Scenarios (JAWS) in to future CIAT Software versions.

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	35.363	1.589		0.197		3.031		-		3.031	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3356 / *High Fidelity Surface Trainers*

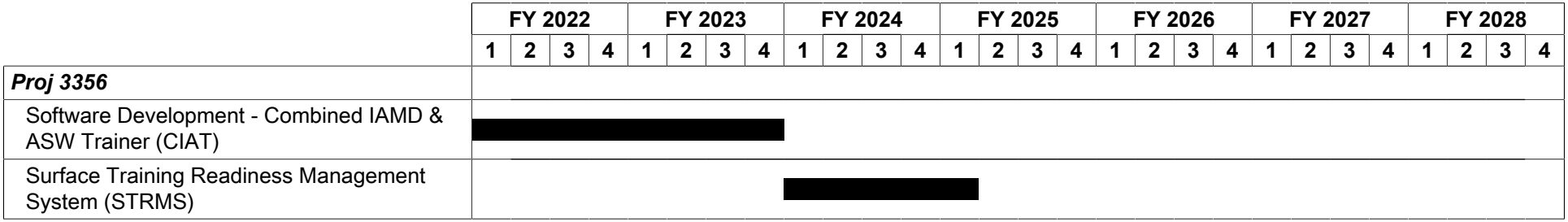


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3356 / *High Fidelity Surface Trainers*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3356				
Software Development - Combined IAMD & ASW Trainer (CIAT)	1	2022	4	2023
Surface Training Readiness Management System (STRMS)	1	2024	1	2025

Exhibit R-2A, RDT&E Project Justification: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2022	FY 2023	FY 2024 Base	FY 2024 OCO	FY 2024 Total	FY 2025	FY 2026	FY 2027	FY 2028	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	0.000	30.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.000
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

C913: Advance the development of Live Virtual Constructive (LVC) capabilities to the Fallon Training Range Complex to provide aircrews the capability to train combined Carrier Air Wing (CVW) tactics against near-peer advisories. Implement Synthetic Inject to Live (SITL) capability to enable training with realistic threat presentations. Continue development of 5th generation aircraft capability to conduct fighter integration training between F-35 and Department of Defense (DoD) 4th generation platforms.

C917: Procurement of cable and associated support for Barking Sands Undersea Range Extension cable for accelerated test and evaluation capabilities.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2022	FY 2023
Congressional Add: Secure LVC advanced training environment ***FY 2022 Accomplishments:*** N/A ***FY 2023 Plans:*** Continue development of 5th generation capability to conduct fighter integration training between F-22, F-35 and Department of Defense (DoD) 4th generation platforms.	0.000	20.000
Congressional Add: Test capabilities acceleration - Barking Sands Undersea Range Extension ***FY 2022 Accomplishments:*** N/A ***FY 2023 Plans:*** Purchase Barking Sands Undersea Range Extension cables and installation at the range.	0.000	10.000
Congressional Adds Subtotals	0.000	30.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2024 Navy			Date: March 2023
Appropriation/Budget Activity 1319 / 7	R-1 Program Element (Number/Name) PE 0204571N / *Consolidated Trng Sys Dev*	Project (Number/Name) 9999 / *Congressional Adds*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2022 Cost	FY 2022 Award Date	FY 2023 Cost	FY 2023 Award Date	FY 2024 Base Cost	FY 2024 Base Award Date	FY 2024 OCO Cost	FY 2024 OCO Award Date	FY 2024 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	C/FFP	L3Harris : Goleta, CA	0.000	0.000		10.000	Jun 2023	0.000		-		0.000	0.000	10.000	-
Software Development	TBD	ACC FEDLAB : Beale AFB, CA	0.000	0.000		4.000	Jun 2023	0.000		-		0.000	0.000	4.000	-
Hardware Development	Various	TBD : TBD	0.000	0.000		16.000	Aug 2023	0.000		-		0.000	0.000	16.000	-
		Subtotal	0.000	0.000		30.000		0.000		-		0.000	0.000	30.000	N/A

	Prior Years	FY 2022		FY 2023		FY 2024 Base		FY 2024 OCO		FY 2024 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		30.000		0.000		-		0.000	0.000	30.000	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 9999 / *Congressional Adds*

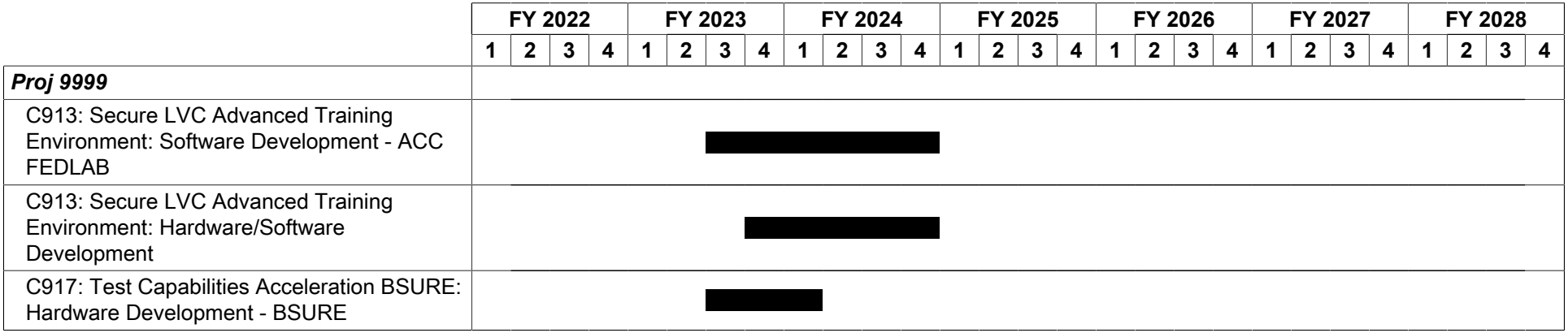


Exhibit R-4A, RDT&E Schedule Details: PB 2024 Navy		Date: March 2023
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9999				
C913: Secure LVC Advanced Training Environment: Software Development - ACC FEDLAB	3	2023	4	2024
C913: Secure LVC Advanced Training Environment: Hardware/Software Development	4	2023	4	2024
C917: Test Capabilities Acceleration BSURE: Hardware Development - BSURE	3	2023	1	2024