Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy											Date: February 2016	
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 2015**	**FY 2016**	**FY 2017 Base**	**FY 2017 OCO**	**FY 2017 Total**	**FY 2018**	**FY 2019**	**FY 2020**	**FY 2021**	**Cost To Complete**	**Total Cost**
Total Program Element	334.556	38.360	34.325	38.593	-	38.593	41.924	39.079	19.652	19.562	Continuing	Continuing
0604: *Training Range & Instr Dev*	141.886	3.199	3.502	3.310	-	3.310	3.604	3.676	3.725	3.640	Continuing	Continuing
1427: *Surface Tactical Team Trainer (STTT)*	80.857	16.366	9.954	12.289	-	12.289	10.647	9.543	9.796	10.034	Continuing	Continuing
2124: *Air Warfare Training*	39.658	6.194	1.611	1.462	-	1.462	1.670	1.707	1.729	1.679	Continuing	Continuing
3093: *TACTS/LATR Replacement*	62.663	5.787	14.490	14.962	-	14.962	24.421	24.153	4.402	4.209	Continuing	Continuing
3356: *High Fidelity Surface Trainers*	9.492	6.814	4.768	6.570	-	6.570	1.582	0.000	0.000	0.000	0.000	29.226
Program MDAP/MAIS Code: 223												

A. Mission Description and Budget Item Justification

0604 - Training Range and Instrumentation Development project develops specialized instrumentations for fleet readiness training while minimizing life cycle costs. Tasks include development of the following: Large Area Tracking Range improvements, technology improvements for fixed and portable Anti-Submarine Warfare training ranges, and Tactical Training Range (TTR) infrastructure improvements to include: the Joint Display Subsystem, Radar Acquisition Display Subsystem, Electronic Warfare server, Link 16 interface, TTR rotary platform technology improvements and the Radiant Mercury Cross Domain Solution.

1427 - Surface Tactical Team Trainer (STTT) develops modifications during sustainment of Battle Force Tactical Training (BFTT) system. This is required to maintain capabilities and interfaces to provide realistic combat system coordinated team, unit and Fleet Synthetic Training (FST) collective Group/Force level training events. In addition, BFTT supports the embedded trainer "family of systems" approach for the development of a Total Ship Training Capability (TSTC). Specific improvements include improved integration with the Navy Continuous Training Environment (NCTE) and development of a High Level Architecture (HLA) capable, integrated shipboard network to meet increasing Commander Naval Surface Forces (CNSF) and United States Fleet Forces Command (USFFC) FST requirements. The need for transforming training is documented within the DoD Training Transformation Plan, the Chief of Naval Operations Fleet Response Plan and Commander United States Fleet Forces Command Fleet Readiness Training Plan.

2124 - Air Warfare Training Development (AWTD) provides for risk mitigation and next generation platform, Unmanned Aerial Systems (UAS), Live Virtual Constructive (LVC) and associated visualization component development for distributed mission training, and for stand-alone and small footprint deployable devices. Support the Navy Aviation Simulation Master Plan (NASMP) upgrade efforts and Type/Model/Series programs with advanced visual system display configurations requirements. Provide for Open Architecture (OA), and common systems interface applications. Assess 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.

3093 - The Tactical Combat Training System (TCTS) will provide the Navy a replacement for the Tactical Aircrew Combat Training System (TACTS) and Large Area Tracking Range systems. TCTS will also provide fleet deployable training for at-sea training and tactics development. By providing a rangeless capability, the system will greatly increase the area where live instrumented training can be conducted. Fielding of a pod system is complete at TACTS sites. The program incorporates an evolutionary development (incremental) towards an encrypted system capable of supporting a broad spectrum of naval platforms through weapons simulations, participant sensor stimulation, open architecture and an encrypted/long range secure data link.

3356- Funds FCA, high fidelity Aegis Integrated Air and Missile Defense (IAMD) individual and team trainers for all Advanced Capability Build (ACB) and below Aegis baselines. This line also provides funds for development of a CIWS 1B Baseline 2 Trainer upgrade as well as the research and development of advanced technologies to support BMD 5.1 and Command, Control, Communication, Computer, and Intelligence (C4I) Maintenance advanced technology upgrades to Aegis BMD Ashore Team Trainer at CSCS Unit Dam Neck.

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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Previous President's Budget	37.922	39.087	41.952	-	41.952
Current President's Budget	38.360	34.325	38.593	-	38.593
Total Adjustments	0.438	-4.762	-3.359	-	-3.359
• Congressional General Reductions	-	-0.004			
• Congressional Directed Reductions	-	-4.758			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.070	0.000			
• SBIR/STTR Transfer	-0.632	0.000			
• Program Adjustments	0.000	0.000	-0.600	-	-0.600
• Rate/Misc Adjustments	0.000	0.000	-2.759	-	-2.759

Change Summary Explanation

2124: R-4/R-4A reflects the following program changes: Due to a change in fleet priorities the following has been updated.

Exhibit R-2, RDT&E Budget Item Justification: PB 2017 Navy	Date: February 2016
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*

Human/Instructional Systems:
Production Milestone, Human INSTR. Systems NADTC Prototype added to 4th QTR 2015.

Live Virtual Constructive (LVC) and Visuals:
Production Milestone, LVC Instructional Sys. Technologies NADTC Prototype added to 4th QTR 2015.

3093: R-4/R-4A reflects the following program changes: Due to Air Force divestiture from what was previously a collaborative program between services, the program schedule shifted to restructure TCTS Increment II to include only Navy requirements: Acquisition Milestones: Encryption MS B from 2nd Quarter 2016 to 1st Quarter 2017, Acquisition Milestones: Encryption MS C from 3rd Quarter 2019 to 4th Quarter 2020, Systems Development: Increment 2 Encrypted Datalink Capability from 3rd Quarter 2019 to 1st Quarter 20201, and Production Milestones: Increment 2 Encrypted Datalink Capability from 4th Quarter 2020 to 4th Quarter 2021.

FY 2017 decrease in Consolidated Training Systems Development RDTEN by $1.623M as required for the Department of the Navy to comply with the Bipartisan Budget Act of 2015.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
0604: *Training Range & Instr Dev*	141.886	3.199	3.502	3.310	-	3.310	3.604	3.676	3.725	3.640	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops specialized instrumentations for fleet readiness training while minimizing life cycle costs. Tasks include development of the following: Large Area Tracking Range (LATR) improvements, technology improvements for fixed and portable Anti-Submarine Warfare (ASW) training ranges, and Tactical Training Range (TTR) infrastructure improvements to include: the Joint Display Subsystem (JDS), Radar Acquisition Display Subsystem (RADS), Electronic Warfare (EW) server, Link 16 interface, TTR rotary platform technology improvements and the Cross Domain Solutions (CDS).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: LATR	2.547	1.250	2.515	0.000	2.515
Articles:	-	-	-	-	-

Description: Design, integrate and test modules to eliminate obsolete components in the LATR Pod. Design, integrate and test LATR software baseline upgrades. Design, integrate and test Participant Instrumentation Packages (PIP) modules to address obsolescence, high failure components and to improve operability and performance. Conduct and complete installation of the Ground System Rehosts. Conduct and complete security testing and assessment for LATR system certification and accreditation for Ground System Rehosts. Develop, test and integrate software and hardware modifications to system test sets. Develop, test and integrate LATR data translators. Conduct studies to identify sub-projects required through FY22. Complete ground system and PIP refresh sub-projects, in conjuction with, semi-annual system block upgrades. Conduct LATR Operational Security (OPSEC) Posture Improvements Sub-Project and Shipboard and Rotary Wing Technology Wing Upgrade (LSRTU).

FY 2015 Accomplishments:
Developed and tested LATR ground software version 5.9.0. Continue to develop LATR Shipboard and LSRTU.

FY 2016 Plans:
Develop and test LATR ground software version 6.0.0. Continue to develop LATR Shipboard and Rotary Wing Technology Upgrade (LSRTU).

FY 2017 Base Plans:
Develop and test LATR ground Software version 6.1.0. Continue to develop operational system improvements and solutions to eliminate LATR obsolescence issues. Increase engineering, logistics, and test efforts to finalize

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
LATR Shipboard Rotary Technology Upgrade (LSRTU) development, including Physical Configuration Audit, System Verification Review, Production Readiness Review, and Developmental Test events in advance of Milestone C. ***FY 2017 OCO Plans:*** N/A					
Title: TTR ***Articles:*** ***Description:*** Develop and test upgrades to the Joint Display Subsystem (JDS), Radar Acquisition Display Subsystem (RADS), and Electronic Warfare (EW) server. Develop and test upgrades to the Link-16 Interface, JDS, RADS, and EW server. ***FY 2015 Accomplishments:*** Developed and tested 2015.1 & 2015.2 upgrades to the JDS, RADS & EW Server. ***FY 2016 Plans:*** Develop and test 2016.1 & 2016.2 upgrades to the JDS, RADS & EW Server. With the exception of FY 15, TTR fields two software block upgrades per year to allow the JDS, EW Server, and RADS to remain in concert with evolving threat and tactical training requirements. ***FY 2017 Base Plans:*** Develop and test 2017.1 & 2017.2 upgrades to the JDS, RADS & EW Server to remain in concert with evolving threat and tactical training requirements. Develop operational systems improvements to the Rotary Wing Tracking System. ***FY 2017 OCO Plans:*** N/A	0.652 -	2.002 -	0.554 -	0.000 -	0.554 -
Title: Ocean Systems ***Articles:*** ***Description:*** Research, develop, and test technology improvements for fixed and portable Anti-Submarine Warfare (ASW) training ranges. ***FY 2015 Accomplishments:***	0.000 -	0.250 -	0.241 -	0.000 -	0.241 -

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A ***FY 2016 Plans:*** Conduct analysis of advanced technical solutions for ASW range capability at Pacific Missle Range Facility (PMRF), Barking Sands, Hawaii and future ocean range locations. ***FY 2017 Base Plans:*** Conduct Analysis of advanced technical solutions for ASW range capability at Pacific Missile Range Facility (PMRF), Barking Sands, Hawaii and future ocean range locations. Research and investigate environmental parameters to support future project planning, and design fixed/portable range Concept of Operations (CONOPs). ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	3.199	3.502	3.310	0.000	3.310

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OPN/4204: *Weapons Range Support Equipment (WRSE)/ LSRTU/Ocean Systems*	0.000	3.112	0.863	-	0.863	0.000	0.000	0.000	0.000	0.000	3.975

Remarks

Includes funding for Large Area Tracking Range Shipboard and Rotary Wing Technology Upgrade (LSRTU) and Ocean Systems. FY17 .364 for LSRTU and .500 for Ocean Systems.

D. Acquisition Strategy

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

E. Performance Metrics

Metric/Description:
Naval Air Warfare Center-Aircraft Division (NAWC-AD): # of Large Area Tracking Range (LATR) system product improvements and new capabilities. Successful application of system engineering processes. Design and development of improvements. Site acceptance of product improvements with no Priority 1 or 2 problem reports. Completion of 1 upgrade per year.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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*

Jacobs Eng: # of LATR system product improvements and new capabilities. Successful design, development and testing of product improvements and new capabilities. Site acceptance of product improvements with no Priority 1 or 2 problem reports.

NAWC-Weapons Division (WD): # of Tactical Training range (TTR) upgrades per year. Successful application of system engineering processes. Design and development of improvements. Site acceptance of product improvements with no Priority 1 or 2 problem reports. Completion of 2 upgrade per year.

Jacobs Eng: # of TTR system product improvements and new capabilities. Successful design, development, and testing of product improvements and new capabilities. Site acceptance of product improvements with no Priority 1 or 2 problem reports.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPFF	JACOBS ENG : RIDGECREST, CA	10.161	1.216	Nov 2014	1.238	Jan 2016	1.525	Nov 2016	-		1.525	0.000	14.140	14.140
Hardware Development	WR	NSWC : CORONA, CA	0.000	0.350	Nov 2014	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Hardware Development	WR	NUWC : NEWPORT, RI	0.000	0.000		0.250	Nov 2015	0.229	Nov 2016	-		0.229	Continuing	Continuing	Continuing
Software Development	C/CPFF	JACOBS ENG : RIDGECREST, CA	4.645	0.000		0.375	Jan 2016	0.130	Nov 2016	-		0.130	0.000	5.150	5.150
Software Development	WR	NAWC-AD : PAX RIVER, MD	7.059	0.631	Nov 2014	0.739	Nov 2015	0.589	Nov 2016	-		0.589	Continuing	Continuing	Continuing
Software Development	WR	NAWC-WD : POINT MUGU, CA	5.710	0.000		0.050	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Software Development	WR	NRL : WASHINGTON, DC	0.200	0.125	Nov 2014	0.100	Jan 2016	0.136	Nov 2016	-		0.136	Continuing	Continuing	Continuing
Prior Year Prod Dev No Longer Funded in the FYDP	Various	Various : Various	93.905	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	121.680	2.322		2.752		2.609		-		2.609	-	-	-

Remarks

Jacobs Engineering formerly Tybrin Corporation.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-AD : PAX RIVER, MD	0.463	0.325	Nov 2014	0.300	Nov 2015	0.312	Nov 2016	-		0.312	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWC-WD : CHINA LAKE, CA	0.185	0.052	Nov 2014	0.100	Nov 2015	0.022	Nov 2016	-		0.022	Continuing	Continuing	Continuing
Systems Engineering	WR	NSWC : CORONA, CA	0.420	0.275	Nov 2014	0.100	Nov 2015	0.118	Nov 2016	-		0.118	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NAWC-WD : POINT MUGU, CA	0.000	0.025	Nov 2014	0.000		0.024	Nov 2016	-		0.024	0.000	0.049	0.049
Prior Year Support No Longer Funded in the FYDP	Various	Various : Various	10.576	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	11.644	0.677		0.500		0.476		-		0.476	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior Year T&E No Longer Funded in the FYDP	Various	Various : Various	5.299	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	5.299	0.000		0.000		0.000		-		0.000	-	-	-

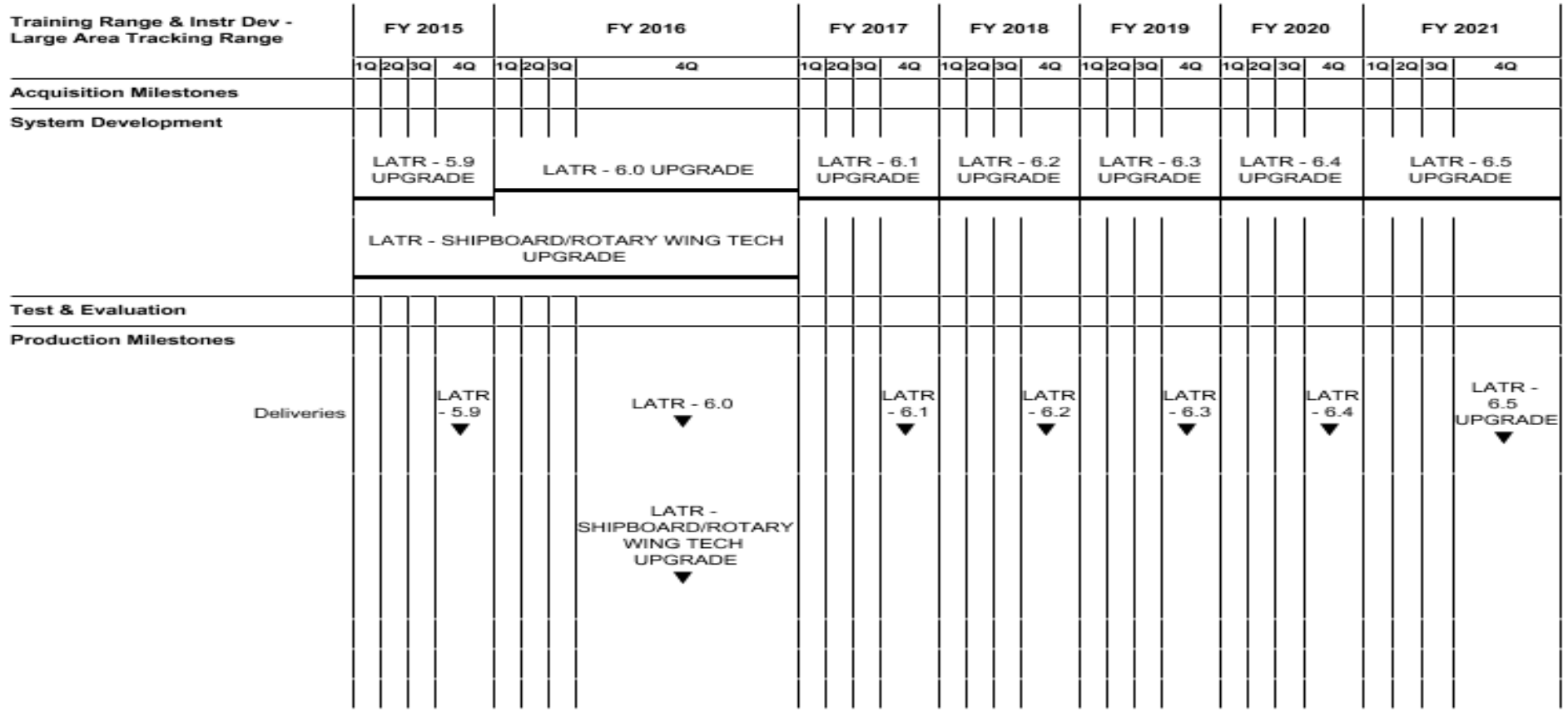
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prog Mngt Sup	WR	NAWC-TSD : ORLANDO, FL	3.263	0.200	Nov 2014	0.250	Nov 2015	0.225	Nov 2016	-		0.225	Continuing	Continuing	Continuing
		Subtotal	3.263	0.200		0.250		0.225		-		0.225	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	141.886	3.199		3.502		3.310		-		3.310	-	-	-

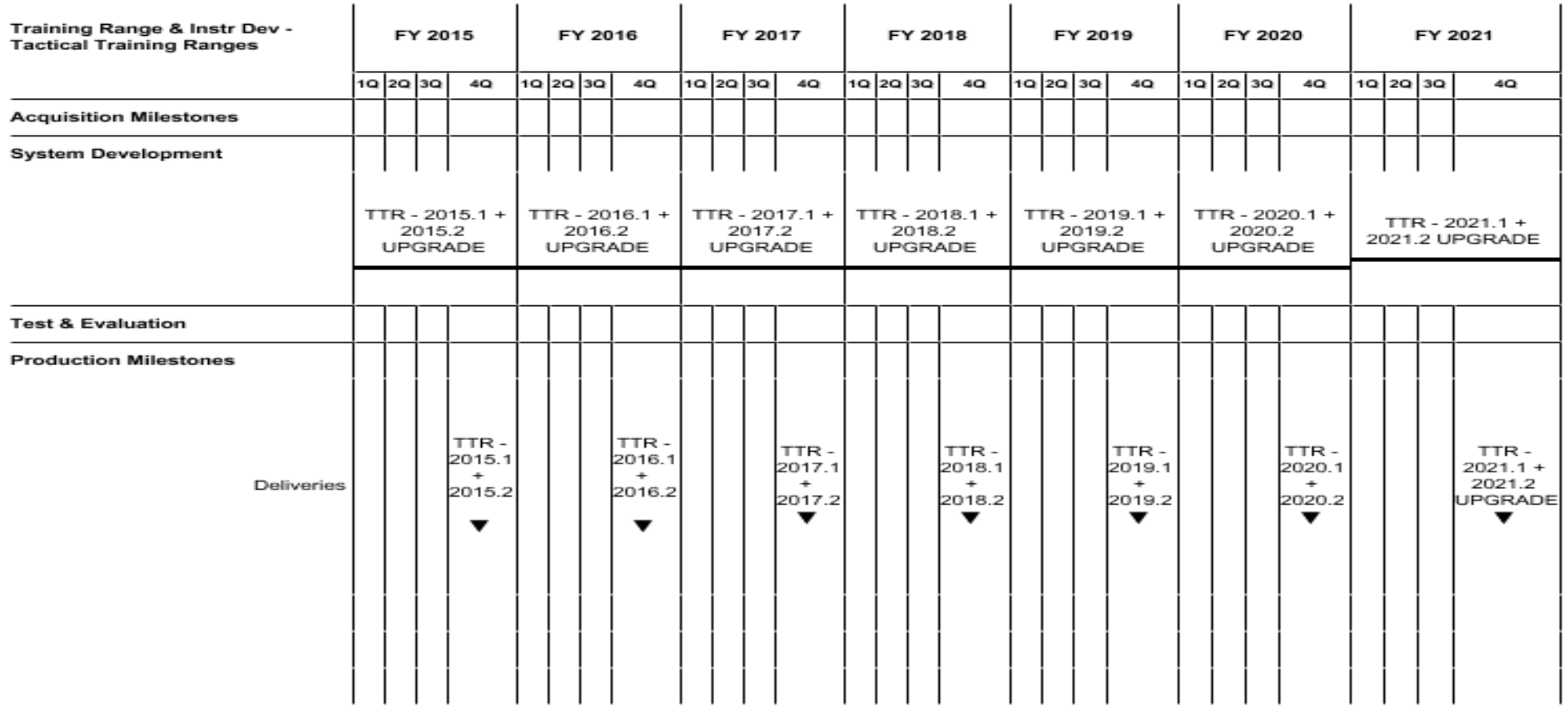
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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*



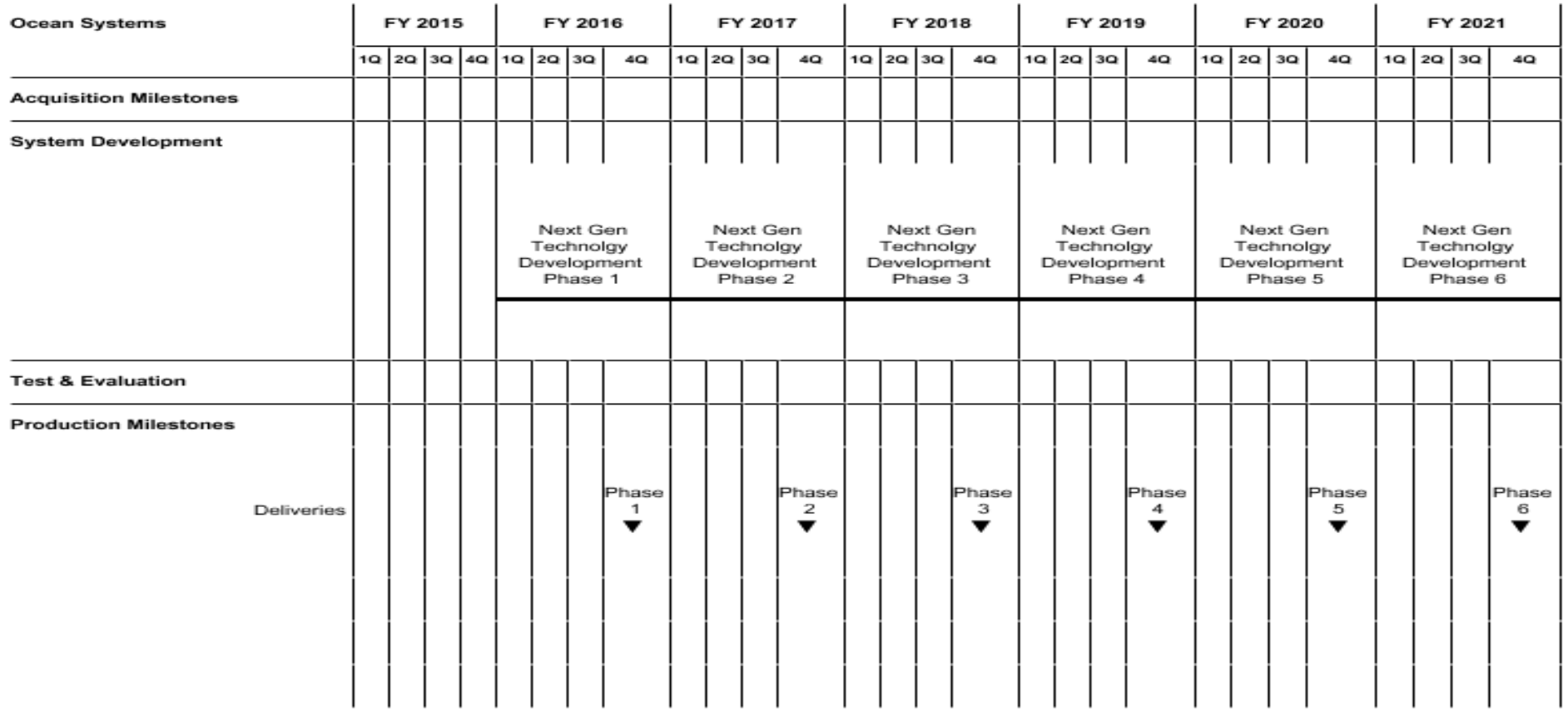
2017DON - 0204571N - 0604

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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*



2017DON - 0204571N - 0604

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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*



2017DON - 0204571N - 0604

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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 - Large Area Tracking Range				
System Development: LATR - 5.9 UPGRADE	1	2015	4	2015
System Development: LATR - 6.0 UPGRADE	1	2016	4	2016
System Development: LATR - 6.1 UPGRADE	1	2017	4	2017
System Development: LATR - 6.2 UPGRADE	1	2018	4	2018
System Development: LATR - 6.3 UPGRADE	1	2019	4	2019
System Development: LATR - 6.4 UPGRADE	1	2020	4	2020
System Development: LATR - 6.5 UPGRADE	1	2021	4	2021
System Development: LATR - SHIPBOARD/ROTARY WING TECH UPGRADE	1	2015	4	2016
Production Milestones: Deliveries: LATR - 5.9 UPGRADE	4	2015	4	2015
Production Milestones: Deliveries: LATR - 6.0 UPGRADE	4	2016	4	2016
Production Milestones: Deliveries: LATR - 6.1 UPGRADE	4	2017	4	2017
Production Milestones: Deliveries: LATR - 6.2 UPGRADE	4	2018	4	2018
Production Milestones: Deliveries: LATR - 6.3 UPGRADE	4	2019	4	2019
Production Milestones: Deliveries: LATR - 6.4 UPGRADE	4	2020	4	2020
Production Milestones: Deliveries: LATR - 6.5 UPGRADE	4	2021	4	2021
Production Milestones: Deliveries: LATR - SHIPBOARD/ROTARY WING TECH UPGRADE	4	2016	4	2016
Training Range & Instr Dev - Tactical Training Ranges				
System Development: TTR - 2015.1 + 2015.2 UPGRADE	1	2015	4	2015
System Development: TTR - 2016.1 + 2016.2 UPGRADE	1	2016	4	2016
System Development: TTR - 2017.1 + 2017.2 UPGRADE	1	2017	4	2017
System Development: TTR - 2018.1 + 2018.2 UPGRADE	1	2018	4	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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**
System Development: TTR - 2019.1 + 2019.2 UPGRADE	1	2019	4	2019
System Development: TTR - 2020.1 + 2020.2 UPGRADE	1	2020	4	2020
System Development: TTR - 2021.1 + 2021.2 UPGRADE	1	2021	4	2021
Production Milestones: Deliveries: TTR - 2015.1 + 2015.2 UPGRADE	4	2015	4	2015
Production Milestones: Deliveries: TTR - 2016.1 + 2016.2 UPGRADE	4	2016	4	2016
Production Milestones: Deliveries: TTR - 2017.1 + 2017.2 UPGRADE	4	2017	4	2017
Production Milestones: Deliveries: TTR - 2018.1 + 2018.2 UPGRADE	4	2018	4	2018
Production Milestones: Deliveries: TTR - 2019.1 + 2019.2 UPGRADE	4	2019	4	2019
Production Milestones: Deliveries: TTR - 2020.1 + 2020.2 UPGRADE	4	2020	4	2020
Production Milestones: Deliveries: TTR - 2021.1 + 2021.2 UPGRADE	4	2021	4	2021
Ocean Systems				
System Development: Next Gen Technolgy Development Phase 1	1	2016	4	2016
System Development: Next Gen Technolgy Development Phase 2	1	2017	4	2017
System Development: Next Gen Technolgy Development Phase 3	1	2018	4	2018
System Development: Next Gen Technolgy Development Phase 4	1	2019	4	2019
System Development: Next Gen Technolgy Development Phase 5	1	2020	4	2020
System Development: Next Gen Technolgy Development Phase 6	1	2021	4	2021
Production Milestones: Deliveries: Phase 1	4	2016	4	2016
Production Milestones: Deliveries: Phase 2	4	2017	4	2017
Production Milestones: Deliveries: Phase 3	4	2018	4	2018
Production Milestones: Deliveries: Phase 4	4	2019	4	2019
Production Milestones: Deliveries: Phase 5	4	2020	4	2020
Production Milestones: Deliveries: Phase 6	4	2021	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
1427: *Surface Tactical Team Trainer (STTT)*	80.857	16.366	9.954	12.289	-	12.289	10.647	9.543	9.796	10.034	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Surface Tactical Team Trainer project/BFTT Program provides enhancements and upgrades to the Total Ship Training Capability (TSTC) training components to support AEGIS and Ship Self Defense System (SSDS) needs for increased training capability and functionality during Fleet Synthetic Training (FST)/Live Virtual Constructive (LVC) events. The BFTT component develops new capabilities and integrates training capabilities developed by the AEGIS and SSDS TSTC into a consolidated integrated training system for use on AEGIS and SSDS ships. TSTC enhancements developed address current and future training requirements to align with the Combat System new and improved capabilities by implementing new functionality and by integrating capabilities being developed by both the AEGIS and SSDS Training Improvement Programs into a consolidated training system. TSTC developments and upgrades include the evolution to an open distributed architecture with maximum commonality across ship classes, integrating existing training systems, or leveraging capabilities developed by other programs.

TSTC provides realistic joint warfare training across the spectrum of armed conflict, realistic unit level team training in all warfare areas (e.g. NIFC-CA and 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.

TSTC integrated on SSDS provides the capability to complete system and operational level testing of the combat system.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Surface Tactical Team Trainer (STTT)	16.366	9.954	12.289	0.000	12.289
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Continued Build 5.0, 5.1 and BFTT Advanced Training Domain (ATD) 1.0 developments required for CVN78, AEGIS Baseline 9.C2, and AEGIS Baseline 9 & 7.2 backfit. Integrated CVN78 Dual Band Radar and Cooperative Engagement Capability (CEC) Enhanced Trainer (CET). Completed Build 5.0 Test Readiness Review (TRR) and commenced Build 5.0 Test and Evaluation. Completed Build 5.1 System Functional Review (SFR) and Preliminary Design Review (PDR) and associated systems engineering and development analysis. Supported AEGIS Baseline 9.C2 PDR and SSDS development effort. Initiated Critical Design Review (CDR) development and systems engineering efforts to support FY17 AEGIS Baseline 9.C2 CDR. Initiated Interface Control Documents (ICD) development for hardware and software integration into 9C.2.					
FY 2016 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Continue and complete Build 5.0 testing and Combat System Certification to support SLQ-32 (V)6 SEWIP BLK II integration in AEGIS Baseline 9A.0/9.C1 and legacy AWS Baseline ships. Continue Build 5.1, TSTC and BFTT Advanced Training Domain (ATD) 1.0 development required to support CVN78 and AEGIS Baseline 9.C2 training capability. Complete Build 5.1 CDR and Test Readiness Review (TRR). Support CVN78 SSDS MK2 Mod 6C engineering tests at Wallops Island for BFTT Build 5.1 Integration and Combat System light off. Continue Combat Systems level Integration engineering for CVN78 Dual Band Radar and Cooperative Engagement Capability (CEC) Enhanced Trainer (CET) training capabilities. Complete ATD 1.0 CDR. Complete Build 5.0 Certification to support Baseline 9. Initiate software development for ATD 1.0 and necessary integration engineering to support Aegis Baseline 9.C2 TSTC development. Initiate development of requirements to support TSTC capability improvements to support tactical training requirements of AEGIS and SSDS ACB 20, to include training system modifications to support integration of the Air and Missile Defense Radar (AMDR) stimulation capability. Initiate study to determine method of simulating and integrating real world environments within shipboard sensors for Anti-Area / Area Denial (A2AD) training. Continue to modify TSTC training capability, as components are modernized or new components developed, into a common core system to eliminate redundancies between the AEGIS and SSDS. ***FY 2017 Base Plans:*** Continue TSTC, BFTT Build 5.1 and BFTT ATD 1.0 development required to support CVN78 and AEGIS Baseline 9.C2 training capability. Complete Build 5.1 testing and Certification for CVN 78 and AEGIS Baselines 9.A0/9.C1/9.C2. Complete ATD 1.0 CDR. Initiate software development for ATD 1.0 and necessary integration engineering to support Aegis Baseline 9.C2 TSTC development. Initiate development of requirements to support TSTC capability improvements to support tactical training requirements of AEGIS and SSDS ACB 20, to include training system modifications to support integration of the Air and Missile Defense Radar (AMDR) stimulation capability. Develop LVC methods of simulating and integrating real world environments within shipboard sensors for Anti-Area / Area Denial (A2AD) training. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	16.366	9.954	12.289	0.000	12.289

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OPN 2762: *Other Training Equipment (Surface BFTT/TSTC portion only)*	37.816	27.816	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	192.763
• 0604307N/3357: *Aegis Training Improvement Program*	8.766	14.677	10.843	-	10.843	7.838	6.582	5.082	5.184	0.000	62.705
• 0604755N/3358: *SSDS Training Improvement Program*	1.100	3.117	2.981	-	2.981	7.639	7.557	7.578	8.953	0.000	39.985
• OPN 5664: *Other Training Equipment (Surface BFTT/TSTC portion only) New BLI FY17*	0.000	0.000	27.351	-	27.351	30.556	28.344	28.807	29.385	0.000	144.443

Remarks

D. Acquisition Strategy

The BFTT acquisition strategy for system development utilizes the Advanced Capability Build (ACB) development model, as mandated by 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.

E. Performance Metrics

TSTC BFTT Core component will be developed to meet the following developmental milestones. These milestones are in close alignment with AEGIS BL9.C2 development milestones and also will support SSDS MK 2 development and integration events. (see R-4)

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	WR	NSWC Dam Neck : Dam Neck	14.300	0.292	Dec 2014	0.368	Dec 2015	0.497	Dec 2016	-		0.497	Continuing	Continuing	Continuing
Systems Engineering	WR	SEA02/NSWC Dam Neck/NSWC Dahlgren : NAVSEA/ Dam Neck/NSWC Dahlgren	15.682	6.601	Dec 2014	3.938	Dec 2015	3.799	Dec 2016	-		3.799	0.000	30.020	-
		Subtotal	29.982	6.893		4.306		4.296		-		4.296	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	WR	NSWC Dam Neck/ SEA 02 : WR/REQN	33.843	5.834	Dec 2014	2.416	Dec 2015	4.803	Dec 2016	-		4.803	0.000	46.896	-
		Subtotal	33.843	5.834		2.416		4.803		-		4.803	0.000	46.896	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NSWC Dam Neck/ SEA 02 : WR/REQN	9.506	1.725	Dec 2014	2.429	Dec 2015	1.957	Dec 2016	-		1.957	0.000	15.617	-
		Subtotal	9.506	1.725		2.429		1.957		-		1.957	0.000	15.617	-

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	NSWC Dam Neck/ SEA02 : WR/REQN	7.526	1.914	Dec 2014	0.803	Dec 2015	1.233	Dec 2016	-		1.233	0.000	11.476	-
		Subtotal	7.526	1.914		0.803		1.233		-		1.233	0.000	11.476	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	80.857	16.366		9.954		12.289		-		12.289	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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)*

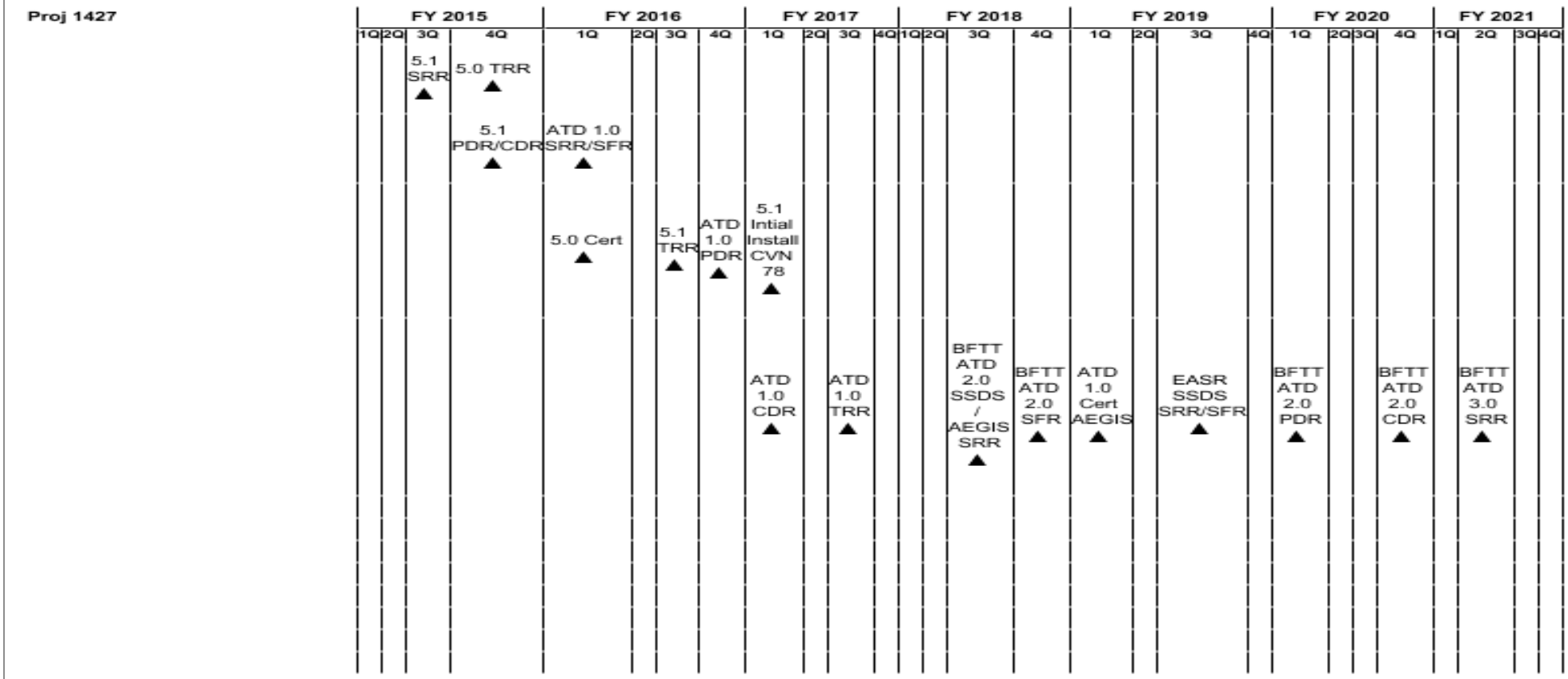


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Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 1427 / *Surface Tactical Team Trainer (STTT)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 1427				
BFTT 5.1 SRR	3	2015	3	2015
BFTT 5.0 TRR	4	2015	4	2015
BFTT 5.1 PDR/CDR	4	2015	4	2015
BFTT ATD 1.0 SRR/SFR	1	2016	1	2016
BFTT 5.0 Certification	1	2016	1	2016
BFTT 5.1 TRR	3	2016	3	2016
BFTT ATD 1.0 PDR	4	2016	4	2016
BFTT 5.1 Certification Intial Install CVN 78	1	2017	1	2017
BFTT ATD 1.0 CDR	1	2017	1	2017
BFTT ATD 1.0 TRR	3	2017	3	2017
BFTT ATD 2.0 for SSDS AND AEGIS SRR	3	2018	3	2018
BFTT ATD 2.0 SFR	4	2018	4	2018
BFTT ATD 1.0 Certification for AEGIS	1	2019	1	2019
EASR SSDS SRR/SFR	3	2019	3	2019
BFTT ATD 2.0 PDR	1	2020	1	2020
BFTT ATD 2.0 CDR	4	2020	4	2020
BFTT ATD 3.0 SRR	2	2021	2	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
2124: *Air Warfare Training*	39.658	6.194	1.611	1.462	-	1.462	1.670	1.707	1.729	1.679	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 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 capabilites 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, sensor/weather server, 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, NAVAIR Portable Source Initiative improvements, common correlated data set technologies, 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 research, comms 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.

Metrics: These technology transitions seek to lower Total Ownership Costs of the training systems and life cycle costs, including: increasing software re-use, reduced instructor manning profiles, software-based fidelity enhancements and increased fleet readiness by enhancing overall system fidelity to the projected operating environments. NASMP readiness improvements are conservatively forecasted at 12-35% Training and Readiness improvement via synthetic environment upgrades and associated technology upgrades to stand-alone and networked simulators. Individual technology transition investments have routinely exceeded 300+% financial Return On Investment. Technology Readiness Levels, Training and Readiness, fleet readiness, and financial metrics are used.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: HUMAN/INSTRUCTIONAL SYSTEMS INTEGRATION	1.949	0.770	0.670	0.000	0.670
Articles:	-	-	-	-	-
Description: Develop common AAR and platform-unique post mission assessment, Intelligent Tactical SAF, and high fidelity simulator component technologies. AAR, and high fidelity components such as Intelligent SAF designs lower NASMP upgrade and simulator life-cycle costs. Integrate Voice-Capable SAF component					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
technologies, improve open common instructor interface effectiveness and provide for multi-SAF exercise utilization. Analyze, develop, and integrate common architecture components for F/A-18C-F, EA-18G, MH-60R/S, Unmanned Aerial Systems (UAS) platforms, E-2C/D & USMC mission areas, intelligent instructor operator components, automated performance measurement technologies, Tactical Aircraft/ Multi-Mission Maritime Aircraft/ Reduced Oxygen Breathing Device-Spatial Disorientation technologies/devices common graphic user interface initiatives, common threat system formats, Next Generation Threat System (NGTS) technology transitions, Joint SAF compatibility, cross platform post mission performance measurement, Multi-purpose Reconfigurable Maintenance Training Systems, (MRTS) and after action review/debrief innovations, thereby maximizing return on investment for instructional systems technology investments. ***FY 2015 Accomplishments:*** Provided continued development and support for Instructional Systesm based brief/preview, debrief, and tactical assessment technologies for all Naval Aviation platforms, to include data and trend analysis. Provided technology in support of common, and open-architecture simulation product lines, UAS training, UAS common control station, and debrief visualizations. ***FY 2016 Plans:*** Provide continued support to the NAMRU research team to complete both Reduced Oxygen Breathing Device/ Hypoxia system configuration, test and evaluation, and final prototyping development/support for the Spatial Disorientation family of systems to meet new curricula and requirements. Provide training station/instructional systems support for standard post-mission assessment software, tactical trend analysis and Common Simulation Product development. ***FY 2017 Base Plans:*** Continue planned fidelity improvements to Programs of Record such as Next Generation Threat System (NGTS), tactical behaviors, and rapid scenario development using both actual operational behaviors and simulated recordings for "Patterns-of-life" white shipping, and other large entity sets with realistic behaviors - develop for Maritime and TACAIR platforms. Continue development of Post Mission Assessment for Tactical Training (PMATT), Maritime, fixed and rotary wing, and investigate similar applications for Naval Aviation Distributed Training Center applications (NADTC). Perform Advanced Development Simulation (ADS) component enhancements, and Technology Readiness Assessments (TRA) in relevant environments. ***FY 2017 OCO Plans:*** N/A					
Title: SENSORS AND ENVIRONMENT	1.943	0.640	0.487	0.000	0.487

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Articles:	-	-	-	-	-

Description: Develop common and platform unique sensor, visual, and environmental simulation (atmospherics or acoustics) into fidelity upgrades with Commercial Off The Shelf and/or Government Off the Shelf (GOTS) Software. Perform risk reduction, advanced displays innovation, test and evaluation, integration, and production of Common Sensor Model, High Fidelity Active-Acoustics Sensor Operator Training, 3D Ocean effects, Anti-Submarine Warfare (ASW) acoustic fidelity assessments, 3D weather effects, 3D Ocean acoustic modeling, new Reduced Oxygen Breathing Device (ROBD)& Spatial Disorientation (SD), and legacy device technologies. Demonstrate GOTS capability for cost-effective database materialization, Material Properties Reference Dataset library, associated NAVAIR Portable Source Initiative specifications and processes for implementation on Distributed Mission Training, deployed trainers, legacy, and new visual system upgrade programs. In support of Navy Aviation Simulation Master Plan (NASMP) upgrade efforts, develop texture storage, sensor-environmental effects, NAVAIR Portable Source Initiative material reference processes/standards, automated technology applications for real time publishing, shadows, cultural lighting, combat, and weather effects and very high resolution visualization technologies, to include tablet-based mission preview for tactical aircrew.

FY 2015 Accomplishments:
Developed, tested, and demonstrated new platform and composite/MEU squadron mission preview, sensor prediction, CQ part-task training, and AAR technologies that improve individual, squadron, and wing readiness metrics. Provided GOTS/or COTS applications for platform unique, or common visual-sensor technology challenges for all phases of training or mission preview. Performed new sensor-fusion and synthetic vision technology development to meet fleet requirements, and emerging UAS CCS, or UAS-platform unique requirements.

FY 2016 Plans:
Support final acquisition plan documentation, specifications, and testing for the CQ mobility part task trainer prototypes, and for all after action/post-mission assessment technologies. Using sensor fusion, and simulation-based displacement mapping, provide enhanced technology development for low-level flight operations training over water environments, and Terrain-Following, flight training in all weather, sensor environments. Provide enhanced threat presentations with improved tactical behaviors for Next-Generation Threat System application.

FY 2017 Base Plans:
Complete PMATT increment I rollout for P-3C. Provide sensor and environmental fidelity improvements for both Anti-Submarine Warfare (ASW) missions areas, acoustic training, and General Training mission areas such as Spatial Disorientation (SD), and mixed gas hypoxia training in mission-specific crew stations, and scenarios.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Complete analytical ocean improvement analyses, and associated roadmaps. Investigate Virtual Reality (VR) improvements and interface with fleet critical sensor and display systems. ***FY 2017 OCO Plans:*** N/A					
Title: LIVE VIRTUAL CONSTRUCTIVE (LVC), AND VISUALS	2.302	0.201	0.305	0.000	0.305
Articles:	-	-	-	-	-
Description: Air Warfare Training Development provides for risk mitigation and next generation platform, Unmanned Aerial Systems, Live Virtual Constructive (LVC) and associated visualization component development for Navy aviation distributed mission training, and distributed training centers (NADTC), as well as for stand-alone and small footprint deployable devices. Provided integrated capability assessment for Ranges, Experimentation products, and Training. (Atlantic Test Range, NAWCAD 5.4, Training Systems Division, and PMA205) Support the NASMP upgrade efforts and Type/Model/Series programs with advanced visual system display configurations requirements. Assess trainee cognitive requirements and the development and incorporation of next generation Live Virtual Constructive (LVC), Unmanned Aerial Systems (UAS) constructive and associated debrief/After Action Review (AAR) visualization component technologies. Additionally, Anti-Warfare Training Development (AWTD) provides for advanced virtual component fidelity improvements for Live Virtual Constructive capability (such as "Mobility" Part-Task Trainers and the Multiplex Data Bus Controller Translator Transmitter (MDBCTT)). LVC technologies will facilitate advanced, cost effective weapons and tactics training and emerging capability requirements in the Air-Sea battlespace and Naval Integrated Fire Control-Counter Air (NIFC-CA) capabilities development. ***FY 2015 Accomplishments:*** Provided support to incremental LVC component technology development, to enhance visual, sensor, environmental, motion, aerodynamics, and ocean fidelity for required training and readiness improvements. Provided man-in-the-loop Technology Readiness Level (TRL) assessment at Manned Flight Simulator (MFS), and assessed Distributed Mission Readiness Trainer-class systems, and other mobility focused training devices for improved fleet training, T&D metrics, and life-cycle cost reductions. ***FY 2016 Plans:*** Provide continued development and prototype Spatial Disorientation training system syllabus, visual system enhancements, and SD research. Provide Office of Naval Research LVC enhancements. Complete Multiplex					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Data Bus Controller Translator Transmitter initial integration/ demonstrations for F/A-18E/F embedded training capability. ***FY 2017 Base Plans:*** Provide analytical and developmental support for emergent programs of record in LVC, acoustic simulation environments, Warfighter performance assessment, threat system enhancements, Virtual Reality (VR), and sensor/visualization modeling. Provide man-in-the-loop /Technology Readiness Level (TRL) assessments at Manned Flight Simulator (MFS), and assess Distributed Mission Readiness Trainer (DMRT) family of systems, and other mobility-focused training devices for improved fleet training, Training and Readiness (T&R) metrics, and life-cycle cost reductions. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	6.194	1.611	1.462	0.000	1.462

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• APN/0705: *COMMON GROUND EQUIPMENT - TRAINING*	157.522	184.385	184.083	-	184.083	202.112	197.896	196.999	186.083	Continuing	Continuing

Remarks

D. Acquisition Strategy

Air Warfare Training Development (AWTD) is a 6.7 RDT&E joint technology transition program tied to Navy Aviation Simulation Master Plan (NASMP), USMC 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.

E. Performance Metrics

Naval Air Warfare Center-Training Systems Division (NAWC-TSD): # of transitions to Fleet Platforms. For each transition, successful Technical Readiness Level (TRL) testing and device Ready for Training (RFT) to Fleet platforms. Seminal transition events are either RFT or tech-refresh Authority to Operate.
NAWC-Aircraft Division (AD): Complete TRL & compliance testing for NASMP and Information Assurance directives.

RSC, Inc.: Government acceptance of evaluation of Small Business Innovation Research (SBIR) device testing.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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Aptima, Inc.: Government acceptance of evaluation of SBIR device testing.

CTSI, Inc.: Government acceptance of evaluation of SBIR device testing and Multiplex Data Buse Controller Translator Transmitter warfare testing.

AEGIS TECHNOLOGIES, Inc.: Government acceptance of BAA research of ocean modeling improvements in 3D layered propogation loss, and reverberation.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	C/CPFF	RSC INC. : ORLANDO, FL	0.000	0.078	Mar 2015	0.000		0.000		-		0.000	0.000	0.078	0.078
Software Development	C/CPFF	RSC INC. : ORLANDO, FL	0.469	0.098	Jun 2015	0.300	Mar 2016	0.210	Mar 2017	-		0.210	0.000	1.077	1.077
Software Development	WR	NAWC-AD : PAX RIVER, MD	1.176	0.773	Nov 2014	0.200	Nov 2015	0.205	Nov 2016	-		0.205	Continuing	Continuing	Continuing
Software Development	WR	NAWC-TSD : ORLANDO, FL	19.367	2.883	Nov 2014	0.416	Nov 2015	0.426	Nov 2016	-		0.426	Continuing	Continuing	Continuing
Software Development	WR	NAMRU : DAYTON, OH	0.420	0.100	Feb 2015	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Prior Year Prod Dev No Longer Funded in the Budget or Out Years	Various	Various : Various	7.346	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	28.778	3.932		0.916		0.841		-		0.841	-	-	-

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPFF	ENGILITY INC. : LEXINGTON PARK, MD	0.343	1.707	Mar 2015	0.243	Mar 2016	0.216	Nov 2016	-		0.216	0.000	2.509	2.509
Prior Year Support No Longer Funded in the Budget or Out Years	Various	Various : Various	1.753	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	2.096	1.707		0.243		0.216		-		0.216	-	-	-

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC AD : PAX RIVER, MD	7.004	0.380	Dec 2014	0.235	Nov 2015	0.205	Nov 2016	-		0.205	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy		Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Subtotal	7.004	0.380		0.235		0.205		-		0.205	-	-	-

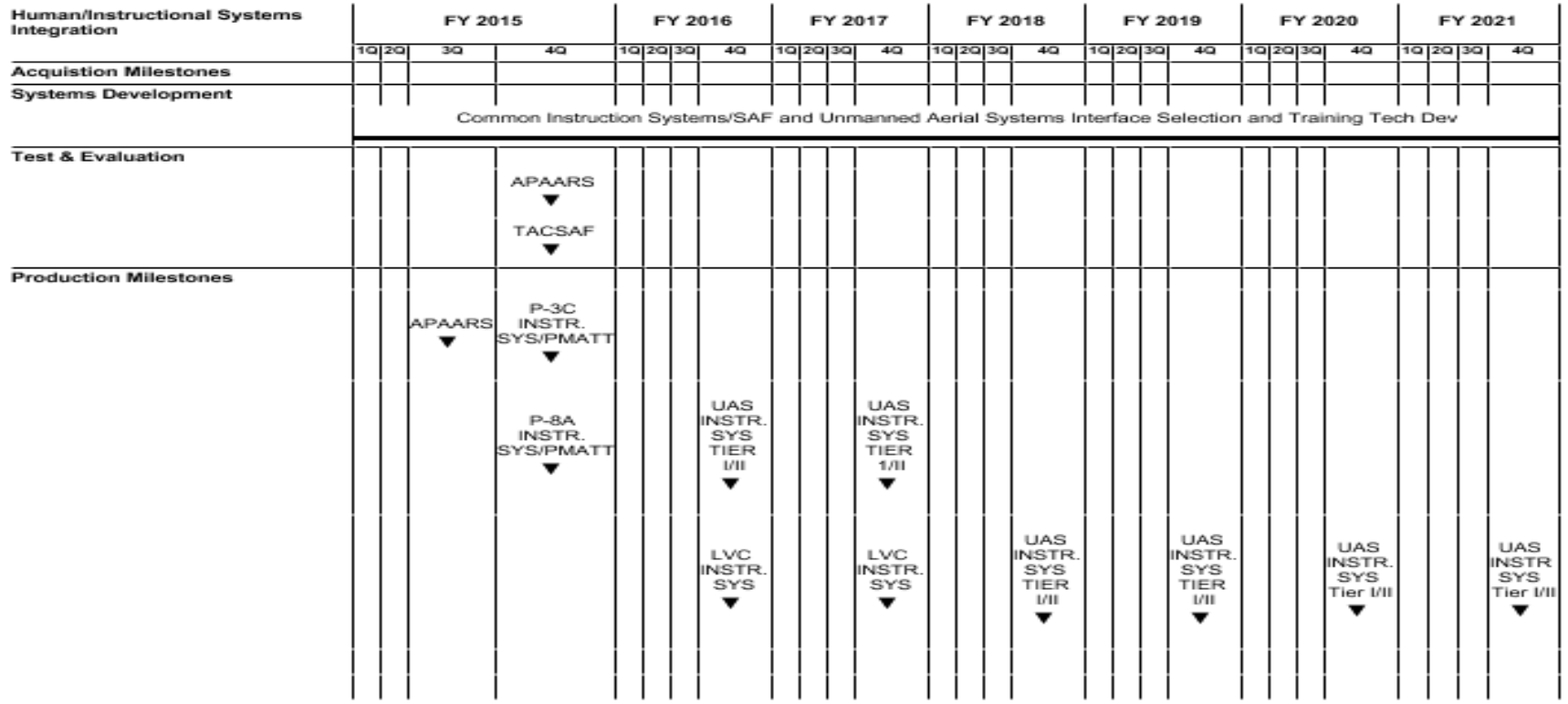
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	METI CORP : PAX RIVER, MD	1.041	0.171	Nov 2014	0.210	Nov 2015	0.200	Nov 2016	-		0.200	0.000	1.622	1.622
Travel	Allot	NAVAIR : PAX RIVER, MD	0.527	0.004	Nov 2014	0.007	Nov 2015	0.000		-		0.000	Continuing	Continuing	Continuing
Prior year Mgmt Sup no longer funded in the FYDP	Various	Various : Various	0.212	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	1.780	0.175		0.217		0.200		-		0.200	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	39.658	6.194		1.611		1.462		-		1.462	-	-	-

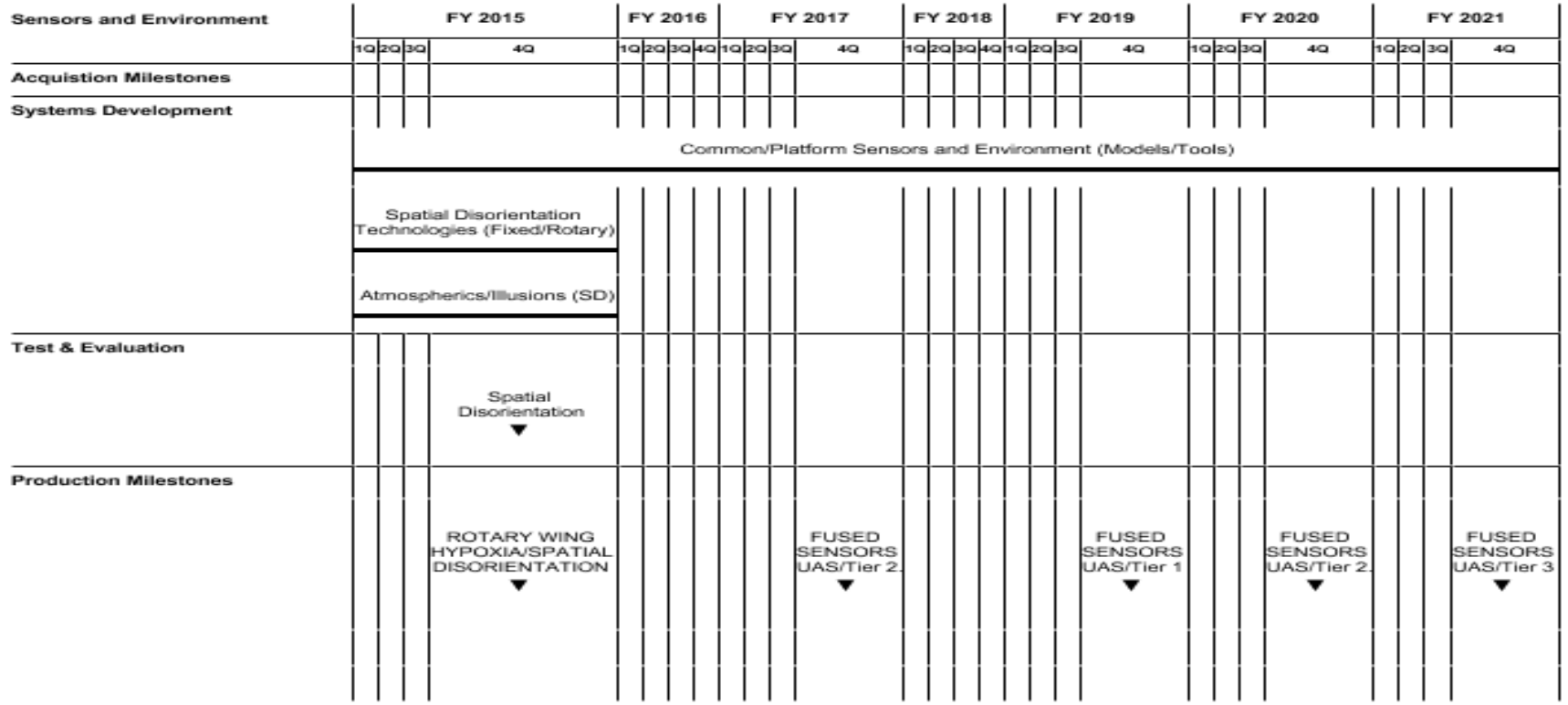
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*



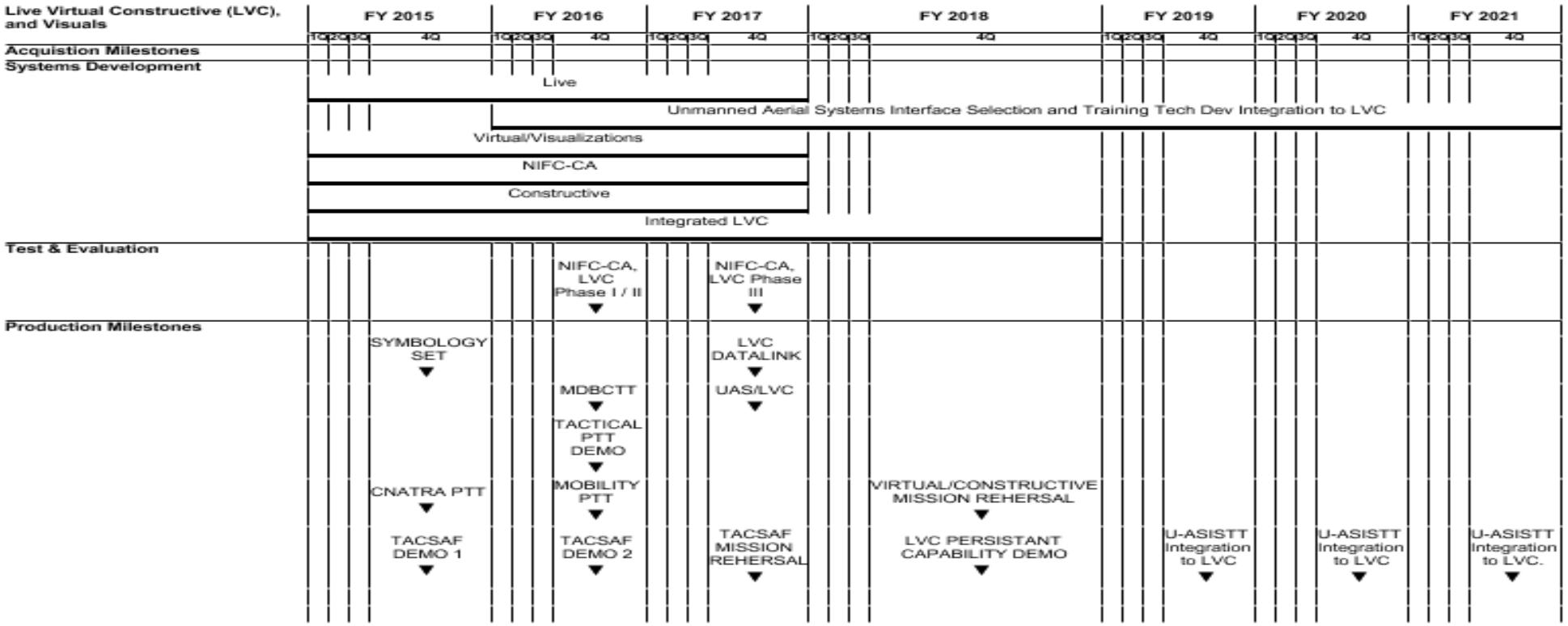
2017DON - 0204571N - 2124

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*



2017DON - 0204571N - 2124

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 2124 / *Air Warfare Training*



2017DON - 0204571N - 2124

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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**
Human/Instructional Systems Integration				
Systems Development: Common Instruction Systems/SAF and Unmanned Aerial Systems Interface Selection and Training Tech Dev	1	2015	4	2021
Test & Evaluation: APAARS	4	2015	4	2015
Test & Evaluation: TACSAF	4	2015	4	2015
Production Milestones: APAARS, 1ST ARTICLE	3	2015	3	2015
Production Milestones: P-3C INSTR. SYS PMATT, Increment I	4	2015	4	2015
Production Milestones: P-8A INSTR. SYS PMATT, Increment II	4	2015	4	2015
Production Milestones: UAS INSTR. SYS Tier I	4	2016	4	2016
Production Milestones: UAS INSTR. SYS Tier I/11	4	2017	4	2017
Production Milestones: LVC INSTR. SYS Component Technologies	4	2016	4	2016
Production Milestones: LVC INSTR SYS Component Technologies	4	2017	4	2017
Production Milestones: UAS INSTR. SYS Tier 1/II	4	2018	4	2018
Production Milestones: UAS INSTR SYS. Tier I/II	4	2019	4	2019
Production Milestones: UAS INSTR. SYS Tier 1/II (DYA DYM)	4	2020	4	2020
Production Milestones: UAS INSTR SYS Tier I/II	4	2021	4	2021
Sensors and Environment				
Systems Development: Common/Platform Sensors and Environment (Models/Tools)	1	2015	4	2021
Systems Development: Spatial Disorientation Technologies (Fixed/Rotary)	1	2015	4	2015
Systems Development: Atmospherics/Illusions Spatial Disorientation	1	2015	4	2015
Test & Evaluation: Spatial Disorientation Visual Systems Upgrade	4	2015	4	2015
Production Milestones: ROTARY WING HYPOXIA/SPATIAL DISORIENTATION (SD)	4	2015	4	2015
Production Milestones: FUSED SENSORS UAS/Tier 2	4	2017	4	2017

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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: FUSED SENSORS UAS/Tier 1	4	2019	4	2019
Production Milestones: FUSED SENSORS UAS/Tier 2.	4	2020	4	2020
Production Milestones: FUSED SENSORS UAS/Tier 3	4	2021	4	2021
Live Virtual Constructive (LVC), and Visuals				
Systems Development: Live	1	2015	4	2017
Systems Development: Unmanned Aerial Systems Interface Selection and Training Tech Dev Integration to LVC	1	2016	4	2021
Systems Development: Virtual/SAF Visualizations	1	2015	4	2017
Systems Development: NIFC-CA FEA	1	2015	4	2017
Systems Development: Constructive	1	2015	4	2017
Systems Development: Integrated LVC Components	1	2015	4	2018
Test & Evaluation: NIFC-CA, LVC, Fallon, Phase I / II	4	2016	4	2016
Test & Evaluation: NIFC-CA, LVC, Fallon, Phase III	4	2017	4	2017
Production Milestones: SYMBOLOGY SET	4	2015	4	2015
Production Milestones: LVC DATALINK	4	2017	4	2017
Production Milestones: UAS/LVC Component Technologies	4	2017	4	2017
Production Milestones: MDBCTT Capability Demo	4	2016	4	2016
Production Milestones: TACTICAL PTT DEMO	4	2016	4	2016
Production Milestones: MOBILITY PTT (DMRT)	4	2016	4	2016
Production Milestones: MH-60R PTT	4	2015	4	2015
Production Milestones: VIRTUAL/CONSTRUCTIVE MISSION REHERSAL	4	2018	4	2018
Production Milestones: TACSAF DEMO 1	4	2015	4	2015
Production Milestones: TACSAF DEMO 2	4	2016	4	2016
Production Milestones: TACSAF MISSION REHERSAL	4	2017	4	2017
Production Milestones: LVC PERSISTANT CAPABILITY DEMO	4	2018	4	2018
Production Milestones: U-ASISTT Integration to LVC..	4	2019	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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: U-ASISTT Integration to LVC	4	2020	4	2020
Production Milestones: U-ASISTT Integration to LVC.	4	2021	4	2021
Production Milestones: LVC NADTC Prototype	2	2015	2	2015
Production Milestones: LVC NADTC Prototype 2	2	2015	2	2015

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
3093: *TACTS/LATR Replacement*	62.663	5.787	14.490	14.962	-	14.962	24.421	24.153	4.402	4.209	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Tactical Combat Training System (TCTS) will provide the Navy a replacement for the Tactical Aircrew Combat Training System (TACTS) and Large Area Tracking Range (LATR) systems. TCTS will also provide fleet deployable training for at-sea training and tactics development. By providing a rangeless capability, the system will greatly increase the area where live instrumented training can be conducted. Fielding of a pod system is complete at TACTS sites. The program incorporates an evolutionary development (incremental) towards an encrypted system capable of supporting a broad spectrum of naval platforms through weapons simulations, participant sensor stimulation, open architecture and an encrypted/long range secure data link.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: TACTS/LATR REPLACEMENT	5.787	14.490	14.962	0.000	14.962
Articles:	-	-	-	-	-
Description: TCTS: Qualify and complete the Rangeless Pod system fielding for CVW-5 CVN installation, including the complete Integrated Logistics products and training. Define Test & Training Enabling Achitecture (TENA) compliant interface between TCTS and an Advance Display System (ADS). Develop a Rack-Mounted subsystem for use on rotary wing and transport aircraft. Continue development of the encrypted data link. Develop related training range integration.					
FY 2015 Accomplishments: Completed RFP development, Acquisition Strategy, Acquisition Plan and brief MDA on status. Conducted Industry one-on-ones and released Draft RFP for Industry review.					
FY 2016 Plans: Conduct Source Selection on responses to the Request For Proposal. Conduct performance, cost, and technical readiness assessment on the proposals.					
FY 2017 Base Plans: Conduct MS B and Contract Award, Conduct Integrated Baseline Review to establish a Performance Measurement Baseline with the contractor. Program and engineering events will include a Systems Engineering					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Technical Review (SETR), Systems Requirements Review II (SRR II), Systems Functional Review (SFR), Integrated Baseline Review (IBR) and a Preliminary Design Review (PDR). ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	5.787	14.490	14.962	0.000	14.962

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
• OPN/4204: *Weapons Range Support Equipment (WRSE)/TCTS*	3.817	0.000	4.032	-	4.032	3.792	3.877	3.986	4.079	Continuing	Continuing
• APN/0725: *Other Production Charges/Tactical Combat Training System (TCTS)*	5.630	2.455	0.860	-	0.860	1.458	1.468	21.796	22.066	Continuing	Continuing

Remarks

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.

E. Performance Metrics

Contractor (TBD): National Security Agency (NSA) approved encrypted Data Link Transceiver (DLT). Successful Engineering Development Model testing of encrypted DLT requirements with NSA.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development	TBD	TBD : TBD	0.000	0.000		0.000		9.872	Dec 2016	-		9.872	0.000	9.872	9.872
Software Development	C/CPFF	JACOBS ENGINEERING : RIDGECREST, CA	0.000	0.000		0.000		0.460	Dec 2016	-		0.460	0.000	0.460	0.460
Software Development	TBD	TBD : TBD	0.000	0.000		9.219	Dec 2016	0.000		-		0.000	0.000	9.219	9.219
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	Continuing	Continuing	Continuing
		Subtotal	10.901	0.000		9.219		10.332		-		10.332	-	-	-

Remarks

The change in contract award has been made to reflect a change in contracting strategy to competitive from the previous plan to award sole source to the vendor that developed and produced the unencrypted TCTS. Delay in contract award allows time for Government to conduct the competition.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	C/CPFF	JACOBS ENGINEERING : RIDGECREST, CA	2.718	1.253	Nov 2014	0.970	Nov 2015	0.970	Nov 2016	-		0.970	0.000	5.911	5.911
Systems Engineering	C/CPFF	MITRE CORP : MCLEAN, VA	0.000	0.198	Apr 2015	0.000		0.000		-		0.000	0.000	0.198	0.198
Systems Engineering	WR	NAWC-WD : CHINA LAKE, CA	0.454	0.229	Nov 2014	0.114	Nov 2015	0.097	Nov 2016	-		0.097	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWC-AD : PAX RIVER, MD	3.584	3.442	Nov 2014	3.507	Nov 2015	2.920	Nov 2016	-		2.920	Continuing	Continuing	Continuing
Prior Year Support No Longer Funded in the Budget or Out Years	Various	Various : Various	23.946	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	30.702	5.122		4.591		3.987		-		3.987	-	-	-

Remarks

Jacobs Engineering formerly Tybrin Corporation.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC-AD : PAX RIVER, MD	1.128	0.209	Nov 2014	0.265	Nov 2015	0.229	Nov 2016	-		0.229	Continuing	Continuing	Continuing
Prior Year T&E No Longer Funded in the Budget or Out Years	Various	Various : Various	3.425	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	4.553	0.209		0.265		0.229		-		0.229	-	-	-

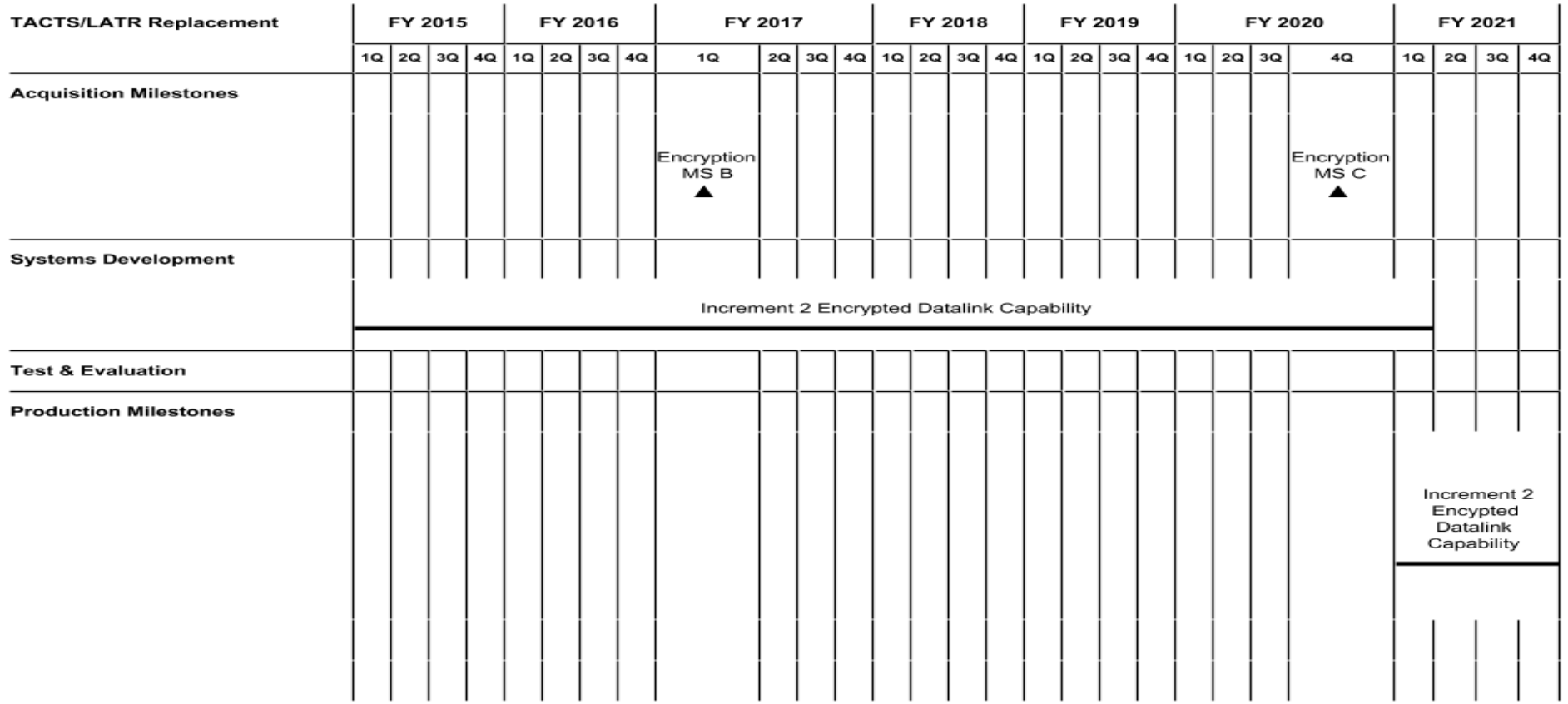
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prog Mgnt Sup	WR	NAWC-AD : PAX RIVER, MD	0.381	0.430	Nov 2014	0.388	Nov 2015	0.388	Nov 2016	-		0.388	Continuing	Continuing	Continuing
Travel	Allot	NAVAIR : PAX RIVER, MD	0.067	0.026	Nov 2014	0.027	Nov 2015	0.026	Nov 2016	-		0.026	Continuing	Continuing	Continuing
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	Continuing	Continuing	Continuing
		Subtotal	16.507	0.456		0.415		0.414		-		0.414	-	-	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	62.663	5.787		14.490		14.962		-		14.962	-	-	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3093 / *TACTS/LATR Replacement*



2017PB - 0204571N - 3093

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
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				
Acquisition Milestones: Encryption MS B	1	2017	1	2017
Acquisition Milestones: Encryption MS C	4	2020	4	2020
Systems Development: Increment 2 Encrypted Datalink Capability	1	2015	1	2021
Production Milestones: Increment 2 Encypted Datalink Capability	1	2021	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy			Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total	FY 2018	FY 2019	FY 2020	FY 2021	Cost To Complete	Total Cost
3356: *High Fidelity Surface Trainers*	9.492	6.814	4.768	6.570	-	6.570	1.582	0.000	0.000	0.000	0.000	29.226
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This line provides SEA 21 (PMS 339) funds for development of a High Fidelity Aegis Combined Integrated Air and Missile Defense (IAMD) and Anti-Submarine Warfare (ASW) Trainer (CIAT) to enable advanced warfare training (AWT) Phase II 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 COMNAVSURFOR requirements. This line also funds the research and development of advanced technologies to allow Close-In Weapon System (CIWS) 1B Baseline 2 integration at CSCS Dam Neck and Detachment West. This line also funds the research and development of advanced technologies to support BMD 5.1 and Command, Control, Communication, Computer, and Intelligence (C4I) Maintenance advanced technology upgrades to Aegis BMD Ashore Team Trainer at CSCS Unit Dam Neck.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
Title: Combined IAMD ASW Trainer (CIAT)	5.404	4.768	4.500	0.000	4.500
Articles:	-	-	-	-	-
FY 2015 Accomplishments: Developed a high fidelity Combined IAMD and ASW Shore Based Trainer (SBT), research and develop advanced technologies necessary to introduce a SBT that will support scenario driven watch team practice of Standard Operating Procedures (SOPs), Tactics Techniques and Procedures (TTPs) and Pre-Planned Response (PPRs) against advanced threats in a realistic environment. Researched and developed technologies and interfaces which will enable Surface Anti-Submarine Warfare Synthetic Trainer (SAST) to be integrated with the shore based trainer. Researched and defined hardware that maximizes the benefits of COTS equipment and reuse of tactical software components. Researched and developed integration of models to allow for Navy Integrated Fire Control - Counter Air (NIFC-CA) trainer.					
FY 2016 Plans: Develop simulations and system architecture for the High Fidelity Combined IAMD & ASW Trainer (CIAT). Research and Develop Advanced technologies necessary to stimulate and emulate the AEGIS B/L 9 tactical system. Research and Develop a solution to virtualize AEGIS legacy tactical code to be able to re-host the tactical software on COTS hardware. These solutions will support scenario driven watch team practice of standard operating procedures (SOPs), Tactical Techniques and Procedures (TTPs) and Pre-Planned Response (PPRs) against advanced threats in a realistic environment. Research and Develop technologies and interfaces					

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
which will enable ASW trainers to be integrated with IAMD training system for integrated training events. Research and Develop models to allow for Navy Integrated Fire Control-Counter Air (NIFC-CA) training. ***FY 2017 Base Plans:*** Complete development of simulations and system architecture for the High Fidelity Combined IAMD & ASW Trainer (CIAT). Research and Develop Advanced technologies necessary to stimulate and emulate the AEGIS B/L 9 tactical system. Research and Develop a solution to virtualize AEGIS legacy tactical code to be able to re-host the tactical software on COTS hardware. These solutions will support scenario driven watch team practice of standard operating procedures (SOPs), Tactical Techniques and Procedures (TTPs) and Pre-Planned Response (PPRs) against advanced threats in a realistic environment. Research and Develop technologies and interfaces which will enable ASW trainers to be integrated with IAMD training system for integrated training events. Research and Develop models to allow for Navy Integrated Fire Control-Counter Air (NIFC-CA) training. ***FY 2017 OCO Plans:*** N/A					
Title: CIWS 1B Baseline 2 Schoolhouse Integration ***Articles:*** ***FY 2015 Accomplishments:*** Researched and developed advanced technologies to allow CIWS 1B Baseline 2 integration at CSCS Dam Neck and Det West to enable accurate training. This project introduced an upgrade to a training system which was insufficient for accurate training on the fleet configuration. Funds were provided for development of the technologies and test and evaluation of the integrated components. ***FY 2016 Plans:*** N/A ***FY 2017 Base Plans:*** N/A ***FY 2017 OCO Plans:*** N/A	1.410 -	0.000 -	0.000 -	0.000 -	0.000 -
Title: Aegis BMD Ashore and Aegis BMD Ship Training ***Articles:*** ***FY 2015 Accomplishments:***	0.000 -	0.000 -	2.070 -	0.000 -	2.070 -

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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 2015	FY 2016	FY 2017 Base	FY 2017 OCO	FY 2017 Total
N/A ***FY 2016 Plans:*** N/A ***FY 2017 Base Plans:*** Research and develop advance technologies to allow BMD 5.1 and C4I maintenance advanced technology upgrades to Aegis BMD Ashore Team Trainer at CSCS Unit Dam Neck. Upgrade serves as an enabling technology for the execution of training directed in CNSF 8820 series BMD Qualification instruction which requires watch teams to certify on the same BMD baseline as the BMD platform they are assigned. ***FY 2017 OCO Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	6.814	4.768	6.570	0.000	6.570

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The software development for High Fidelity Surface Trainers is accounted for in this RDT&E line. All production kits are procured in OPN PE 0804731N BLI 5662. The software development and introduction for the CIWS 1B Baseline 2 Schoolhouse Integration is accounted for in this RDT&E line. This upgrade will provide an enabling technology to an existing training system. The software development and introduction for the BMD 5.1 and C4I maintenance advanced technology upgrades to Aegis BMD Ashore Team Trainer is accounted for in this RDT&E line. These upgrades will provide an enabling technology to an existing training system.

E. Performance Metrics

NSWC Dahlgren: Approved Combined IAMD and ASW Trainer (CIAT). Successful engineering development model (EDM) introducing advanced technologies necessary to simulate/stimulate the AEGIS Combat System elements required for operators stated in AEGIS Ashore Baseline 9 Weapons Specification (WS) 21200 series.

NSWC Dahlgren: Approved CIWS 1B Baseline 2 Schoolhouse Integration. 1) Accurate replication of CIWS 1B Baseline 2 configuration and functionality. 2) Successful introduction and test and evaluation to integrate and simulate the performance of Close In Weapons System (CIWS) 1B Baseline 2.

NAWCTSD: Approved BMD 5.1 and C4I maintenance advanced technology upgrades to the Aegis BMD Ashore Team Trainer.

Exhibit R-2A, RDT&E Project Justification: PB 2017 Navy		Date: February 2016
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NSWC Carderock: Approved Combined IAMD & ASW Trainer (CIAT). Successful engineering development model introducing advanced technologies necessary to 1) simulate performance of AN/SQQ-89A(V)15 sonar system in alignment with fielding plan for initial Sonar software versions with capability to receive AN/SQQ-89A(V)15 coordinated routine modernizations and 2) replicate Combat Information Center (CIC) configuration and functionalities representative of AEGIS Baseline 9.

NUWC Newport: Approved Combined IAMD & ASW Trainer (CIAT). Develop ASW components to be integrated in the CIAT system for Technology Requirements Model (TRM) simulation of own ship and threat torpedoes, and emulations of sonar devices.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2017 Navy			Date: February 2016
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 2015 Cost	FY 2015 Award Date	FY 2016 Cost	FY 2016 Award Date	FY 2017 Base Cost	FY 2017 Base Award Date	FY 2017 OCO Cost	FY 2017 OCO Award Date	FY 2017 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
SYSTEMS ENG	WR	NSWC DAHLGREN : DAHLGREN,VA	6.432	3.940	Nov 2014	3.762	Mar 2016	3.551	Nov 2016	-		3.551	0.000	17.685	-
SYSTEMS ENG	WR	NSWC CARDEROCK : CARDEROCK, MD	2.170	2.388	Nov 2014	1.006	Mar 2016	0.949	Nov 2016	-		0.949	0.000	6.513	-
SYSTEMS ENG	WR	NUWC NEWPORT : NEWPORT, RI	0.890	0.486	Nov 2014	0.000		0.000		-		0.000	0.000	1.376	-
SYSTEMS ENG	WR	NAWCTSD : ORLANDO, FL	0.000	0.000		0.000		2.070	Nov 2016	-		2.070	0.000	2.070	-
		Subtotal	9.492	6.814		4.768		6.570		-		6.570	0.000	27.644	-

	Prior Years	FY 2015		FY 2016		FY 2017 Base		FY 2017 OCO		FY 2017 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.492	6.814		4.768		6.570		-		6.570	0.000	27.644	-

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2017 Navy		Date: February 2016
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*

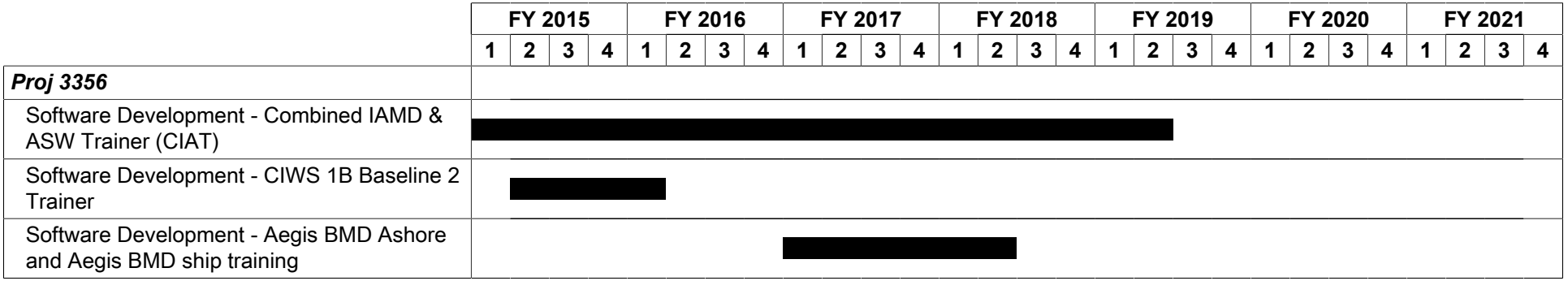

Exhibit R-4A, RDT&E Schedule Details: PB 2017 Navy		Date: February 2016
Appropriation/Budget Activity 1319 / 7	**R-1 Program Element (Number/Name)** PE 0204571N / *Consolidated Trng Sys Dev*	**Project (Number/Name)** 3356 / *High Fidelity Surface Trainers*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3356				
Software Development - Combined IAMD & ASW Trainer (CIAT)	1	2015	2	2019
Software Development - CIWS 1B Baseline 2 Trainer	2	2015	1	2016
Software Development - Aegis BMD Ashore and Aegis BMD ship training	1	2017	2	2018