Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy												Date: March 2019
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604218N *I Air/Ocean Equipment Engineering*							
COST ($ in Millions)	**Prior Years**	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
Total Program Element	64.609	5.583	15.582	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	85.774
2343: *Tactical METOC Applications*	0.000	0.000	9.268	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	9.268
2345: *Fleet METOC Equipment*	64.609	0.755	0.672	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	66.036
2363: *Remote Sensing Capability Development*	0.000	0.000	5.642	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.642
9999: *Congressional Adds*	0.000	4.828	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.828

Note

FY19 funding control for Tactical METOC Applications (2343) and Remote Sensing Capability Development (2363) was moved from Program Element (PE) 0603207N AIR/OCEAN TACTICAL APPLICATIONS to PE 0604218N AIR/OCEAN EQUIPMENT ENGINEERING as a result of a Budget Activity (BA) reclassification.

FY20 and out funding control for the following projects has been realigned out of PE 0604218N into PE 0604231N as part of Program Element Consolidation: Project 2343 Tactical METOC Applications, Project 2345 Fleet METOC Equipment, and Project 2363 Remote Sensing Capability Development.

A. Mission Description and Budget Item Justification

The Air/Ocean Equipment Engineering (AOEE) Program Element provides new capabilities to support naval combat forces. This program engineers and developmentally tests organic and remote sensors, communication interfaces, and processing and display devices. This equipment is engineered to measure, ingest, store, process, distribute and display conditions of the physical environment that are essential to the optimum employment and performance of naval warfare systems. AOEE also engineers capabilities for shipboard and shore-based tactical systems. A major area of focus for the AOEE program is to provide the engineering development of specialized equipment and measurement capabilities that are intended to monitor specific conditions of the physical environment in hostile and remote areas in response to fleet demand signals for increased sensing capability and capacity to support battlespace collections and prediction on short to intermediate time scales. With such capabilities, the war fighters' situational awareness of the operational effects of the physical environment are made more certain. Efforts include investigation of emerging technologies through study, development, and associated testing for feasibility of program insertion.

Major emphasis areas include the Naval Integrated Tactical Environmental System Next Generation (NITES-Next)program, the Remote Sensing Capability Development (RSCD) project and Littoral Battlespace Sensors - Unmanned Undersea Vehicles (LBS-UUV).

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy	Date: March 2019
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0604218N *I Air/Ocean Equipment Engineering*

B. Program Change Summary ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	0.782	17.368	22.433	-	22.433
Current President's Budget	5.583	15.582	0.000	-	0.000
Total Adjustments	4.801	-1.786	-22.433	-	-22.433
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-1.786			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.199	0.000			
• Program Adjustments	0.000	0.000	-21.563	-	-21.563
• Rate/Misc Adjustments	0.000	0.000	-0.870	-	-0.870
• Congressional Add Adjustments	5.000	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2018	FY 2019
Project: 9999: *Congressional Adds*		
Congressional Add: *Unmanned Systems in Maritime Environment*	4.828	0.000
Congressional Add Subtotals for Project: 9999	4.828	0.000
Congressional Add Totals for all Projects	4.828	0.000

Change Summary Explanation

FY19 to FY20 Change summaries are available under PE 0604231N for Projects 2343 Tactical METOC Applications, 2345 Fleet METOC Equipment and 2363 Remote Sensing Capability Development.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604218N / *Air/Ocean Equipment Engineering*	Project (Number/Name) 2343 / *Tactical METOC Applications*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
2343: *Tactical METOC Applications*	0.000	0.000	9.268	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	9.268
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

FY19 funding control for Fleet Meteorology & Oceanography (METOC) Equipment (2343) was moved from Program Element (PE) 0603207N AIR/OCEAN TACTICAL APPLICATIONS to PE 0604218N AIR/OCEAN EQUIPMENT ENGINEERING as a result of a Budget Activity (BA) reclassification.

FY20 funding control and beyond has been realigned out of PE 0604218N Project 2343, into PE 0604231N Project 2343 as part of RDTEN PE Consolidation.

A. Mission Description and Budget Item Justification

The Tactical Meteorology and Oceanography (METOC) Applications Project provides cyber secure operational effects decision aid capabilities for Navy and Marine Corps warfighters in the context of Joint Operations in a net-centric environment. This project funds the agile software development of the Naval Integrated Tactical Environmental System Next Generation (NITES-Next) program of record. NITES-Next program identifies and transitions state-of-the-art decision support software technologies from the government and commercial industry's technology base, and then demonstrates and validates these capabilities before fielding. These software decision support tools provide platform, sensor, communications, and weapon systems performance assessments for warfighters in terms of their littoral and deep-strike battlespace environments. These assessments allow mission planners and warfighters, from Unit to Theater level, to optimize their sensor employment on airborne, surface, and subsurface platforms in support of Naval Composite Warfare mission areas including Undersea Warfare (USW), Anti-Submarine Warfare (ASW), Mine Warfare (MIW), Amphibious Warfare (AMW), Anti-Surface Warfare (ASUW), Anti-Air Warfare (AAW), Strike Warfare (STW), Expeditionary Warfare (EXW), Electronic Warfare (EW), Information Operations (IO), Intelligence Operations (INT), Non-Combat Operations (NCO), Command, Control, Communication (CCC), and Naval Special Warfare (NSW). Performance assessments leading to improvements in operational and tactical control are conducted through a two-tiered approach: 1) Meteorological and Oceanographic (METOC) Decision Aids and, 2) Operational Effects Decision Aids (OEDAs). METOC Decision Aides consist of a series of analysis tools which characterize the physical environment conditions of the battlespace based on the best set of physical environment data available at the time (i.e., some combination of historical and/or real-time (or near real-time) in-situ, and numerically modeled forecast data). OEDAs use the METOC Decision Aide information by fusing it with relevant, often-classified, sensor and target data to predict how weapons and sensor systems will perform. Performance results are displayed in tabular and graphic formats integrated into net-centric visualization tools for use by mission planners, and combat/weapon system operators to develop localization plans, USW/AAW/ASUW screens, STW profiles, and AMW ingress and egress points. METOC Decision Aides and OEDAs use data obtained through direct interfaces to Navy combat systems. Cyber secure capabilities are a current emphasis required to characterize and/or predict sensor and weapons system performance in the highly complex littoral environments in support of regional conflict scenarios. It addresses multi-warfare areas, particularly shallow water ASW, NSW, and missile and air defense/strike capabilities.

Funding supports development and integration efforts for Meteorological and Oceanographic (METOC) systems to generate and collect METOC data and fuse multiple intelligence inputs to more robustly characterize and predict tactical atmospheric and oceanographic conditions. This integrated METOC picture will support real-time

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2343 / *Tactical METOC Applications*

battlespace awareness of propagation conditions affecting signals across the electromagnetic spectrum. METOC data will be fused with other intelligence data and automatically provided to shipboard combat systems to inform kinetic and non-kinetic fires.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Naval Integrated Tactical Environmental System Next Generation (NITES-Next)	0.000	9.268	0.000	0.000	0.000
Articles:	-	-	-	-	-

FY 2019 Plans:
Naval Integrated Tactical Environmental System Next Generation (NITES-Next) will complete software development activities on the Fleet Capability Release (FCR)-2 (v2.0.2.0) and continue FCR-3 Task Orders in support of deployments. NITES-Next will complete initial software development of FCR 3 mobile variant which integrates new mobile requirements with the previous afloat version of FCR 2.x. The new mobile variant will modernize the current NITES-Fielded suite of systems. In addition to replacing end of life hardware, NITES-Next will continue to develop software to replace aging software that has been determined to have cyber vulnerabilities. The program will also upgrade all Force-level ships (20+) and mobile variant platforms (450+) available. The NITES-Next program will continue to conduct Systems Integration Test (SIT) and System Qualification Testing (SQT) activities in support of the planned Consolidated Afloat Network and Enterprise Services (CANES) Application Integration (AI)/SIT and Developmental Test and Evaluation (DT&E) events. The program will mature its Risk Management Framework (RMF) Bridge Conversion (RBC) Authority to Operate (ATO) for Fleet Capability Release (FCR)-2.x and FCR-3 software. Additionally, FCR-3 will include the development of an Electromagnetic (EM) Prediction capability to be delivered in FY20. The program will prepare for Field Technical Review (FTR), FCR-3 Fielding Decision (FD) and FCR-4 Build Decision (BD) in FY20. The program will continue planning for the FCR-4 development and contracting activities (including updating all required documentation, Requirements Development Package (RDP), Cost Analysis Requirements Document (CARD), Program Life Cycle Cost Estimate (PLCCE), Technology Readiness Assessment (TRA) Letter, Build Technical Review (BTR) and Authority to Operate (ATO). The program will begin planning for FCR-5 development and contracting activities.

FY 2020 Base Plans:
FY20 funding has been realigned to PE 0604231N Project 2343 as part of PE Consolidation.

FY 2020 OCO Plans:
N/A

FY 2019 to FY 2020 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2343 / *Tactical METOC Applications*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Program decrease is due to realigning funds as part of PE Consolidation. FY20 justification and change explanation is provided under PE 0604231N Project 2343.					
Accomplishments/Planned Programs Subtotals	0.000	9.268	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• OPN/4226: *Meteorological Equipment*	21.000	21.072	14.687	-	14.687	14.876	13.366	13.814	13.357	Continuing	Continuing
• RDTEN/0603207N/2343: *Tactical METOC Applications*	11.448	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	175.172
• RDTEN/0604231N/2343: *Tactical METOC Applications*	0.000	0.000	12.198	-	12.198	12.052	12.644	13.913	14.196	Continuing	Continuing

Remarks

D. Acquisition Strategy

The NITES-Next program acquisition, management and contracting strategies are to support the Tactical Meteorology & Oceanography (METOC) Applications project to continue the development of state-of-the-art software capabilities that provide sensor, communication, and weapon system performance assessment capabilities for open ocean and littoral operating environments. The Department of the Navy (DoN) maintains management oversight of the NITES-Next program's acquisition and contracting strategies. The Department of the Navy (DoN) requirements for the NITES-Next program's acquisition and contracting strategies are based on approved Joint Capabilities Integration and Development System (JCIDS) documentation.

E. Performance Metrics

Goal: Field software decision aid capabilities for Navy and Marine Corps war fighters in order to facilitate the characterization and prediction of the physical environment in the battlespace.

Metric: Meet the performance metrics identified in approved Naval Integrated Tactical Environmental Next Generation (NITES-Next) Program's requirements documents (e.g., Concept Definition Document (CDD) and individual Requirements Definition Packages (RDPs)).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604218N / *Air/Ocean Equipment Engineering*	Project (Number/Name) 2343 / *Tactical METOC Applications*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NITES-Next	WR	SSC Pacific : San Diego, CA	0.000	0.000		2.259	Nov 2018	0.000		-		0.000	0.000	2.259	-
NITES-Next	C/FP	SAIC : Virginia	0.000	0.000		1.798	Dec 2018	0.000		-		0.000	0.000	1.798	-
NITES-Next	WR	SSC Atlantic : South Carolina	0.000	0.000		0.080	Oct 2018	0.000		-		0.000	0.000	0.080	-
NITES-Next / Engineering	C/IDIQ	Various : Various	0.000	0.000		3.396	May 2019	0.000		-		0.000	0.000	3.396	-
Product Development Prior Year	Various	Various : Various	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
		Subtotal	0.000	0.000		7.533		0.000		-		0.000	0.000	7.533	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Prior Year	Various	Various : Various	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
NITES-Next	C/FP	SAIC : Virginia	0.000	0.000		1.054	Dec 2018	0.000		-		0.000	0.000	1.054	-
		Subtotal	0.000	0.000		1.054		0.000		-		0.000	0.000	1.054	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services Prior Year	Various	Various : Various	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
NITES-Next	WR	SSC Pacific : San Diego, CA	0.000	0.000		0.259	Nov 2018	0.000		-		0.000	0.000	0.259	-
NITES-Next	C/FP	BAH : San Diego, CA	0.000	0.000		0.422	Dec 2018	0.000		-		0.000	0.000	0.422	-
		Subtotal	0.000	0.000		0.681		0.000		-		0.000	0.000	0.681	N/A

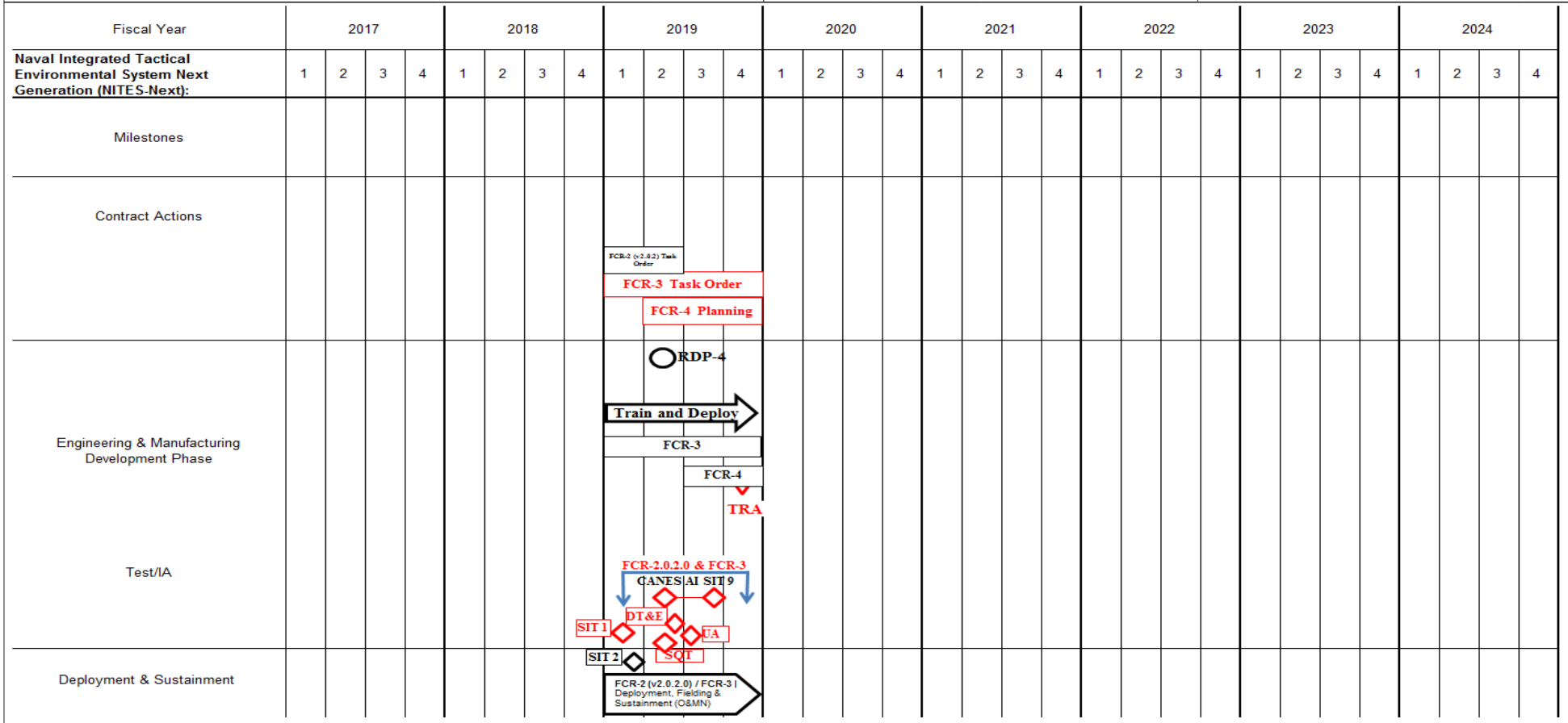
Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604218N / *Air/Ocean Equipment Engineering*	Project (Number/Name) 2343 / *Tactical METOC Applications*	

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		9.268		0.000		-		0.000	0.000	9.268	N/A

Remarks

FY20 cost data is provided under PE 0604231N Project 2343. Prior year costs are reflected in PE 0603207N Project 2343, where they were executed before the FY19 Budget Activity reclassification.

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2343 / *Tactical METOC Applications*



NOTE: Efforts in FY20 and out are funded under PE 0604231N Proj 2343

Acronyms: OTRR = Opertional Test Readiness Review. RDP = Requirements Definition Package. FCR = Fleet Capability Release. TRA = Technology Readiness Assessment. BD = Build Decision. FD = Fielding Decision. Limited Fielding Decision = LFD. IOC= Initial Operational Capability. IATO = Interim Authority to Operate. ATO = Authority to Operate. UA = User Assessment. BTR = Build Technical Review. Field Technical Reivew = FTR. SIT = System Integration Test. RALOT = Risk Assessment Level of Testing. DT&E = Developmental Test & Evaluation. ADM - Acquisition Decision Memorandum. SOVT = System Verification Operational Test. CANES = Consolidated Afloat Networks and Enterprise Services. AI = Application Integration.

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2343 / *Tactical METOC Applications*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Naval Integrated Tactical Environmental System Next Generation (NITES-Next)				
Contract Actions: FCR-2 Task Order (v2.0.2)	1	2019	2	2019
Contract Actions: FCR-3 Task Order	1	2019	4	2019
Contract Actions: FCR-4 Planning	2	2019	4	2019
Engineering & Manufacturing Development Phase: Fleet Capability Release - 2 / Train Deploy	1	2019	4	2019
Engineering & Manufacturing Development Phase: Fleet Capability Release - 3	1	2019	4	2019
Engineering & Manufacturing Development Phase: Fleet Capability Release - 4	3	2019	4	2019
Engineering & Manufacturing Development Phase: Requirements Definition Package - 4	2	2019	2	2019
Engineering & Manufacturing Development Phase: Technology Readiness Assessment - 4	4	2019	4	2019
Test/IA: Fleet Capability Release V 2.0.2.0	1	2019	4	2019
Test/IA: Fleet Capability Release - 3	1	2019	4	2019
Test/IA: System Integration Test - 1 (FCR-3)	1	2019	1	2019
Test/IA: System Integration Test - 2 (FCR-3)	1	2019	1	2019
Test/IA: System Qualification Test FCR-3	2	2019	2	2019
Test/IA: Developmental Test Fleet Capability Release - FCR V2.0.2.0	2	2019	2	2019
Test/IA: User Assessment FCR-3	3	2019	3	2019
Test/IA: CANES AI SIT FCR-3	2	2019	3	2019
Deployment and Sustainment: Deployment, fielding and Sustainment (OMN)	1	2019	4	2019

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604218N / *Air/Ocean Equipment Engineering*	Project (Number/Name) 2345 / *Fleet METOC Equipment*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
2345: *Fleet METOC Equipment*	64.609	0.755	0.672	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	66.036
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funding has been realigned out of PE 0604218N Project 2345, into PE 0604231N Project 2345 as part of RDTEN PE Consolidation starting in FY20.

A. Mission Description and Budget Item Justification

This project provides for the engineering and manufacturing development of sensors, communication interfaces, processing and display meteorological and oceanographic (METOC) equipment. This equipment is designed to provide future mission capabilities for war fighters to measure, ingest, store, process, distribute and display METOC parameters and derived products.

This project also exploits new government off-the-shelf/commercial off-the-shelf technologies, tactical sensors and web enablement for the Navy's computer-based tactical shipboard and shore capability used to predict and assess the operational effects of the physical environment on the performance of platforms, weapons and sensor systems. This project includes development of warfare specific mission planning modules to support unmanned systems with integration of data from environmental and tactical sensor systems, model forecast information and Geospatial Information & Services Databases. This project also supports development of autonomous environmental sensing systems for situational awareness and tactical decision aid/mission planner support, as well as iridium and advanced satellite communication integration in METOC sensor, vehicle control and mission planning systems that will be required to achieve Chief of Naval Operation objectives for information dominance and decision superiority.

Major emphasis areas include the Meteorological and Oceanographic Future Mission Capabilities (METOC FMC) project, Littoral Battlespace Sensors - Unmanned Undersea Vehicles (LBS-UUV) and the Environmental Satellite Receiver Processor (ESRP) program (comprised of AN/SMQ-11 (sea and shore configuration) and AN/FMQ-17 (shore configuration) systems).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Littoral Battlespace Sensors - Unmanned Undersea Vehicle (LBS-UUV)	0.445	0.358	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2019 Plans: Continue to conduct LBS-G, LBS-AUV, and LBS-AUV(S) (Razorback) engineering design studies. Continue developing system upgrades via Engineering Change Proposals (ECP's) and correct any identified software and/or hardware deficiencies. Continue investigating next generation propulsion technologies such as Hybrid Thruster, battery chemistry, thermal engines, and universal buoyancy engines for potential system upgrades.					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2345 / *Fleet METOC Equipment*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Also, investigating battery technology, bio-fouling solutions, afterbody solutions, and open architecture approaches. ***FY 2020 Base Plans:*** FY20 funding has been realigned to PE 0604231N Project 2345 as part of PE Consolidation. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Program decrease is due to realigning funds as part of PE Consolidation. FY20 Justification and change explanation is provided under PE 0604231N Project 2345.					
Title: Environmental Satellite Receiver Processor (ESRP)	0.310	0.314	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2019 Plans: Continue to develop and test annual hardware and software upgrades to integrate new meteorological and oceanographic (METOC) Satellite Sensors available in the Geostationary Operational Environmental Satellites (GOES) and the Polar Orbiting Environmental Satellites (POES). Continue integration of Environmental Satellite Receiver Processor (ESRP) systems in support of Weather Satellite Follow-On (WSF-M), Operational Response Space (ORS)-8, GOES-16, GOES-17 and Europe Meteorology Satellites (EUMETSAT) satellites. Overall program efforts include investigation of emerging technologies through study, development and associated testing for feasibility of program insertion. ***FY 2020 Base Plans:*** FY20 funding has been realigned to PE 0604231N Project 2345 as part of PE Consolidation. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Program decrease is due to realigning funds as part of PE Consolidation. FY20 justification and change explanation is provided under PE 0604231N Project 2345.					
Accomplishments/Planned Programs Subtotals	0.755	0.672	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2345 / *Fleet METOC Equipment*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• OPN/4226: *Meteorological Equipment*	21.000	21.072	14.687	-	14.687	14.876	13.366	13.814	13.357	Continuing	Continuing
• RDTEN/0603207N/2341: *METOC Data Acquisition*	5.276	3.471	4.662	2.400	7.062	6.089	6.181	7.858	8.016	Continuing	Continuing
• RDTEN/0603207N/2342: *METOC Data Assimilation and MOD*	20.959	17.441	21.168	-	21.168	22.355	22.382	22.004	22.438	Continuing	Continuing
• RDTEN/0604231N/2345: *Fleet METOC Equipment*	0.000	0.000	0.220	-	0.220	0.620	0.577	0.487	0.496	Continuing	Continuing

Remarks

D. Acquisition Strategy

Acquisition, management and contracting strategies are to support engineering and manufacturing development by providing funds to Hydroid, Teledyne Brown and Naval Research Laboratory.

E. Performance Metrics

Goal: Develop and engineer equipment to acquire Meteorological and Oceanographic (METOC) data in order to improve the accuracy of global and regional scale METOC forecast models.

Metric: Tasks will address no less than 75% of applicable capability gaps and requirements, as identified by Resource and Requirements Sponsor(s). As tasks relate to exploitation of fleet sensors for METOC data (Through-the-Sensor), no less than 80% of approved initiatives will maintain cost, schedule, performance and transition risk analysis certification that will have been completed within the past 12 months.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2345 / *Fleet METOC Equipment*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prioir Year METOC Requirements	Various	Various : Various	56.530	0.000		0.000		0.000		-		0.000	0.000	56.530	-
Littoral Battlespace Sensing - Gliders	C/CPIF	Teledyne Brown Engineering : Alabama	1.606	0.000		0.132	Mar 2019	0.000		-		0.000	0.000	1.738	Continuing
Littoral Battlespace Sensing - Autonomous Undersea Vehicle	C/FP	Hydroid : Pocasset, MA	1.703	0.266	Jan 2018	0.226	Mar 2019	0.000		-		0.000	0.000	2.195	Continuing
Littoral Battlespace Sensing - Autonomous Undersea Vehicle (Submarine)/Razorback	C/CPFF	NRL : Monterey, CA	0.000	0.179	May 2018	0.000		0.000		-		0.000	0.000	0.179	-
METOC ESRP	SS/CPFF	RAYTHEON : Indianapolis	1.627	0.310	Feb 2018	0.314	Feb 2019	0.000		-		0.000	0.000	2.251	Continuing
		Subtotal	61.466	0.755		0.672		0.000		-		0.000	0.000	62.893	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
METOC Future Mission Capabilities	C/CPFF	SSA/CSC : MISC	1.312	0.000		0.000		0.000		-		0.000	0.000	1.312	-
Littoral Battlespace Sensing - Autonomous Undersea Vehicle	Various	Various : Various	0.767	0.000		0.000		0.000		-		0.000	0.000	0.767	-
		Subtotal	2.079	0.000		0.000		0.000		-		0.000	0.000	2.079	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604218N / *Air/Ocean Equipment Engineering*	Project (Number/Name) 2345 / *Fleet METOC Equipment*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation	WR	OPTEVFOR : Virginia	0.424	0.000		0.000		0.000		-		0.000	0.000	0.424	-
Littoral Battlespace Sensing - Unmanned Undersea Vehicle	WR	NSWC Carderock : Maryland	0.150	0.000		0.000		0.000		-		0.000	0.000	0.150	-
METMF R NEXGEN	C/FP	Smiths Detection : Rhode Island	0.090	0.000		0.000		0.000		-		0.000	0.000	0.090	-
		Subtotal	0.664	0.000		0.000		0.000		-		0.000	0.000	0.664	N/A

Management Services ($ in Millions)

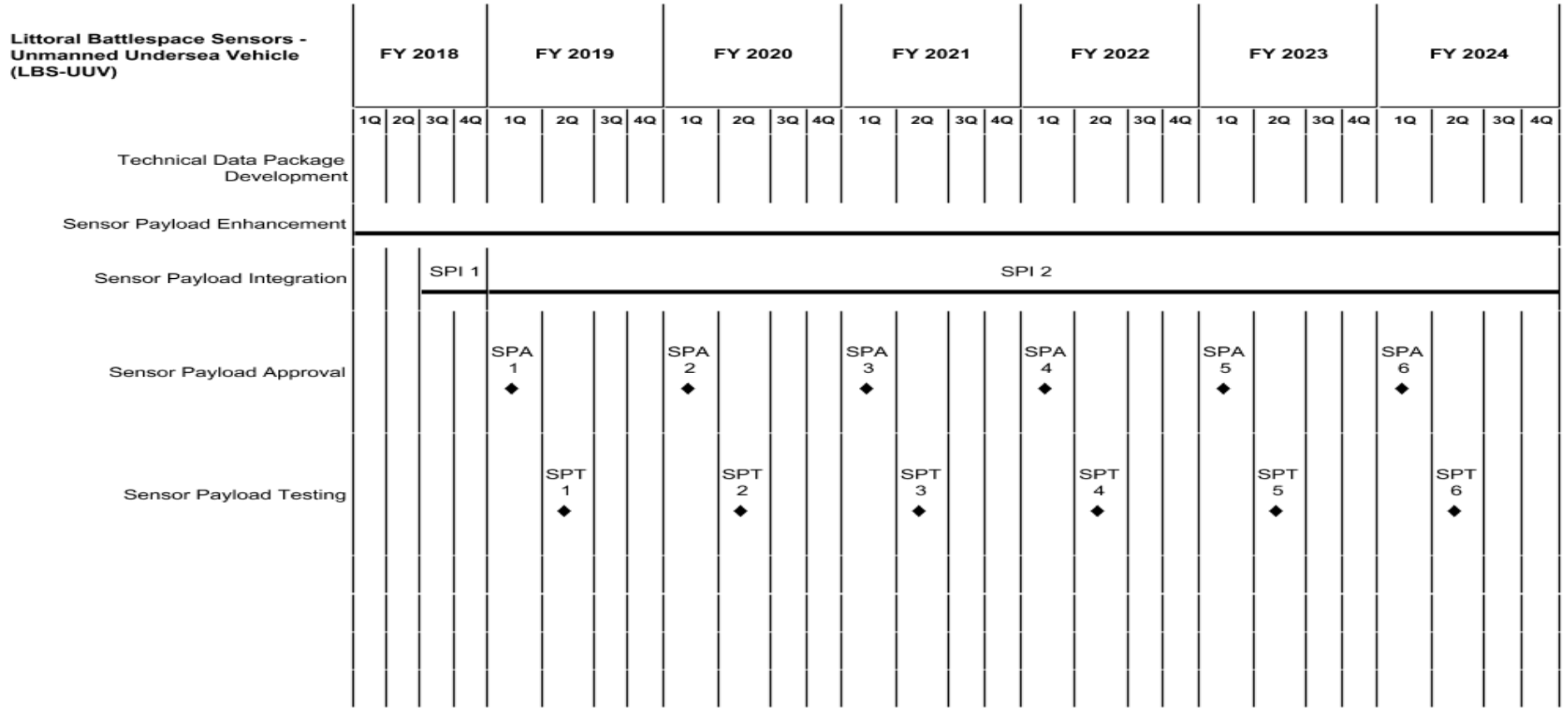
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Management Services	C/CPFF	SAIC : Virginia	0.400	0.000		0.000		0.000		-		0.000	0.000	0.400	-
		Subtotal	0.400	0.000		0.000		0.000		-		0.000	0.000	0.400	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	64.609	0.755		0.672		0.000		-		0.000	0.000	66.036	N/A

Remarks

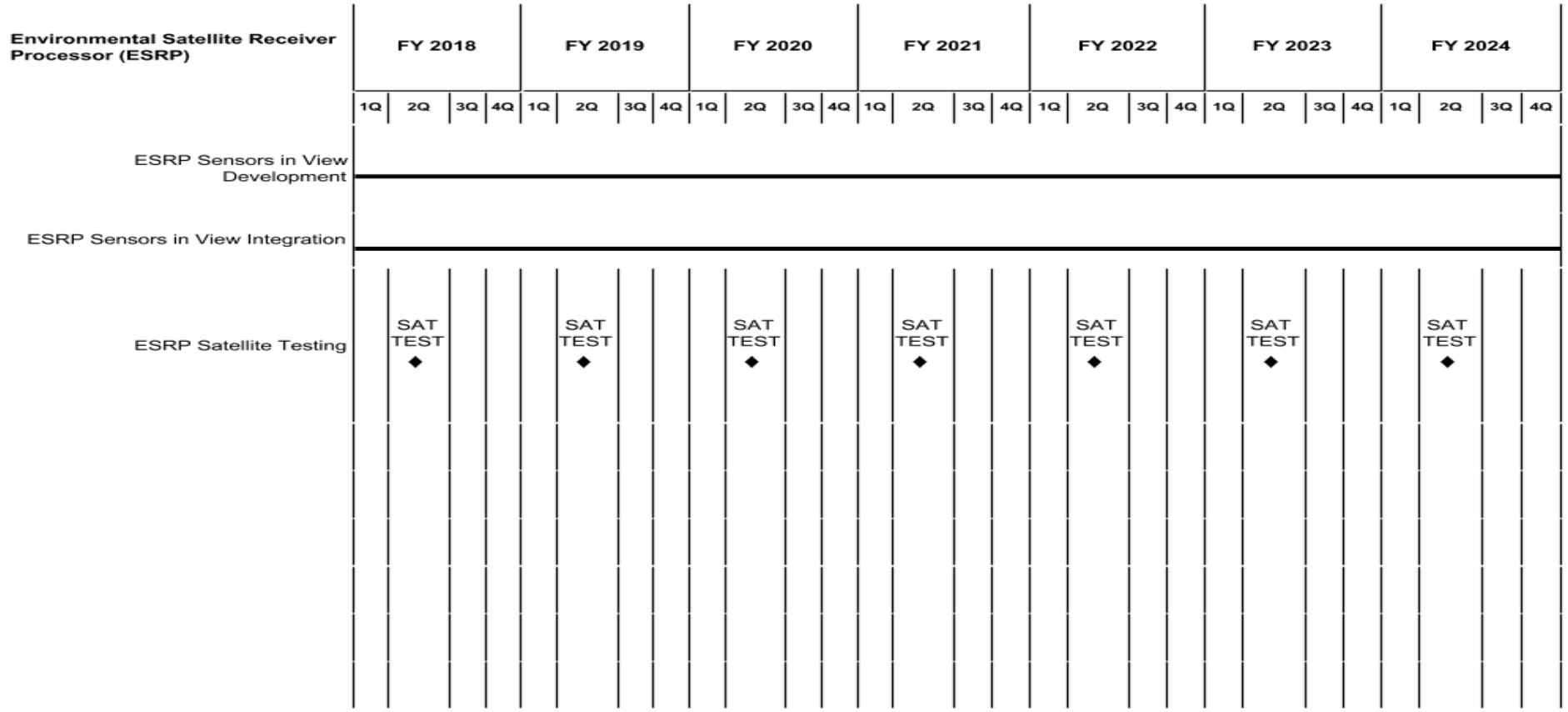
FY20 cost data is provided under PE 0604231N Project 2345.

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2345 / *Fleet METOC Equipment*



2020PB - 0604218N - 2345

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2345 / *Fleet METOC Equipment*



2020PB - 0604218N - 2345

Efforts in FY20 and out are funded under PE 0604231N Proj 2345.

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2345 / *Fleet METOC Equipment*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Littoral Battlespace Sensors - Unmanned Undersea Vehicle (LBS-UUV)				
Sensor Payload Enhancement:	1	2018	4	2024
Sensor Payload Integration: Sensor Payload Integration1	3	2018	4	2018
Sensor Payload Integration: Sensor Payload Integration 2	1	2019	4	2024
Sensor Payload Approval: Sensor Payload Approval 1	1	2019	1	2019
Sensor Payload Approval: Sensor Payload Approval 2	1	2020	1	2020
Sensor Payload Approval: Sensor Payload Approval 3	1	2021	1	2021
Sensor Payload Approval: Sensor Payload Approval 4	1	2022	1	2022
Sensor Payload Approval: Sensor Payload Approval 5	1	2023	1	2023
Sensor Payload Approval: Sensor Payload Approval 6	1	2024	1	2024
Sensor Payload Testing: Sensor Payload Testing 1	2	2019	2	2019
Sensor Payload Testing: Sensor Payload Testing 2	2	2020	2	2020
Sensor Payload Testing: Sensor Payload Testing 3	2	2021	2	2021
Sensor Payload Testing: Sensor Payload Testing 4	2	2022	2	2022
Sensor Payload Testing: Sensor Payload Testing 5	2	2023	2	2023
Sensor Payload Testing: Sensor Payload Testing 6	2	2024	2	2024
Environmental Satellite Receiver Processor (ESRP)				
ESRP Sensors in View Development: ESRP Sensors in View Development	1	2018	4	2024
ESRP Sensors in View Integration: ESRP Sensors in View Integration	1	2018	4	2024
ESRP Satellite Testing: ESRP Satellite Testing (FY18)	2	2018	2	2018
ESRP Satellite Testing: ESRP Satellite Testing (FY19)	2	2019	2	2019
ESRP Satellite Testing: ESRP Satellite Testing (FY20)	2	2020	2	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2345 / *Fleet METOC Equipment*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ESRP Satellite Testing: ESRP Satellite Testing (FY21)	2	2021	2	2021
ESRP Satellite Testing: ESRP Satellite Testing (FY22)	2	2022	2	2022
ESRP Satellite Testing: ESRP Satellite Testing (FY23)	2	2023	2	2023
ESRP Satellite Testing: ESRP Satellite Testing (FY24)	2	2024	2	2024

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604218N / *Air/Ocean Equipment Engineering*	Project (Number/Name) 2363 / *Remote Sensing Capability Development*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
2363: *Remote Sensing Capability Development*	0.000	0.000	5.642	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.642
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

FY19 funding control for Remote Sensing Capability Development RSCD (x2363) was moved from Program Element (PE) 0603207N AIR/OCEAN TACTICAL APPLICATIONS to PE 0604218N AIR/OCEAN EQUIPMENT ENGINEERING as a result of a Budget Activity (BA) reclassification.

FY20 funding control and beyond has been realigned out of PE 0604218N Project 2363, into PE 0604231N Project 2363 as part of RDTEN PE Consolidation.

A. Mission Description and Budget Item Justification

RSCD characterizes the ocean environment using a variety of remote sensing techniques that provide that capability to discriminate atypical oceanographic phenomena from the natural environment that will greatly improve undersea dominance capabilities. The Naval Oceanographic Office will employ oceanographic data to refine and extend environmental characterization of the phenomena and disseminate data to the Fleet. Efforts include investigation of emerging technologies through study, development, and associated testing for feasibility of program insertion.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Remote Sensing Capability Development	0.000	5.642	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2019 Plans: Continue data collection in various weather and sea states to broaden the range of environmental conditions and reduce uncertainty in environmental prediction. Continue software algorithm performance analysis. Continue software algorithm enhancements to automatically detect oceanographic phenomena. Continue software algorithm enhancements and modifications to support transition to a new architecture. Continue to implement the algorithm performance assessment strategy as well as the test and evaluation plans. Document software algorithm test reports. Continue to integrate algorithms for access over the network. Continue development of training to provide the user community education on using the different tools and applications. Coordinate Task, Collect, Process, Exploit, Disseminate (TCPED) process amongst inter-agencies to support Navy Missions. Based on emerging threats, expand scope of the Seahorse project to include new surface detection algorithms. Continue to develop, enhance, and integrate, surface detection algorithm capabilities, and provide input to Fleet					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2363 / *Remote Sensing Capability Development*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
training and Concept of Operations (CONOPS) development. Effort introduces rigor and standardization of target detection capabilities in support of CLUTCHSHOT. ***FY 2020 Base Plans:*** FY20 funding has been realigned to PE 0604231N Project 2363 as part of PE Consolidation. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Program decrease is due to realigning funds as part of PE Consolidation. FY20 justification and change explanation is provided under PE 0604231N Project 2363.					
Accomplishments/Planned Programs Subtotals	0.000	5.642	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• RDTEN/0603207N/2363: *Remote Sensing Capability Development*	3.816	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	13.116
• RDTEN/0604231N/2363: *Remote Sensing Capability Development*	0.000	0.000	5.651	-	5.651	7.448	4.862	4.740	4.838	Continuing	Continuing

Remarks

D. Acquisition Strategy

Remote Sensing Capability Development (RSCD) is being managed as a Program Executive Office (PEO) Project, via a Project Definition Document (PDD) construct for acquisition rigor and oversight.

E. Performance Metrics

Available in the Project's Requirements Definition Package (RDP).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604218N / *Air/Ocean Equipment Engineering*	Project (Number/Name) 2363 / *Remote Sensing Capability Development*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Remote Sensing Capability Development Data Collection	C/FFP	SAIC : Virginia	0.000	0.000		0.816	Feb 2019	0.000		-		0.000	0.000	0.816	-
Remote Sensing Capability Development Data Collection	WR	NRL : Washington, DC	0.000	0.000		1.269	Nov 2018	0.000		-		0.000	0.000	1.269	-
Remote Sensing Capability Development Data Collection	C/FFP	Cubic : San Diego, CA	0.000	0.000		1.410	Apr 2019	0.000		-		0.000	0.000	1.410	-
		Subtotal	0.000	0.000		3.495		0.000		-		0.000	0.000	3.495	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Remote Sensing Capability Development Data Collection	WR	SSC PAC : San Diego, CA	0.000	0.000		0.888	Mar 2019	0.000		-		0.000	0.000	0.888	-
		Subtotal	0.000	0.000		0.888		0.000		-		0.000	0.000	0.888	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Remote Sensing Capability Development Data Collection	WR	SSC PAC : San Diego, CA	0.000	0.000		1.259	Mar 2019	0.000		-		0.000	0.000	1.259	-
		Subtotal	0.000	0.000		1.259		0.000		-		0.000	0.000	1.259	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2363 / *Remote Sensing Capability Development*

Management Services ($ in Millions)

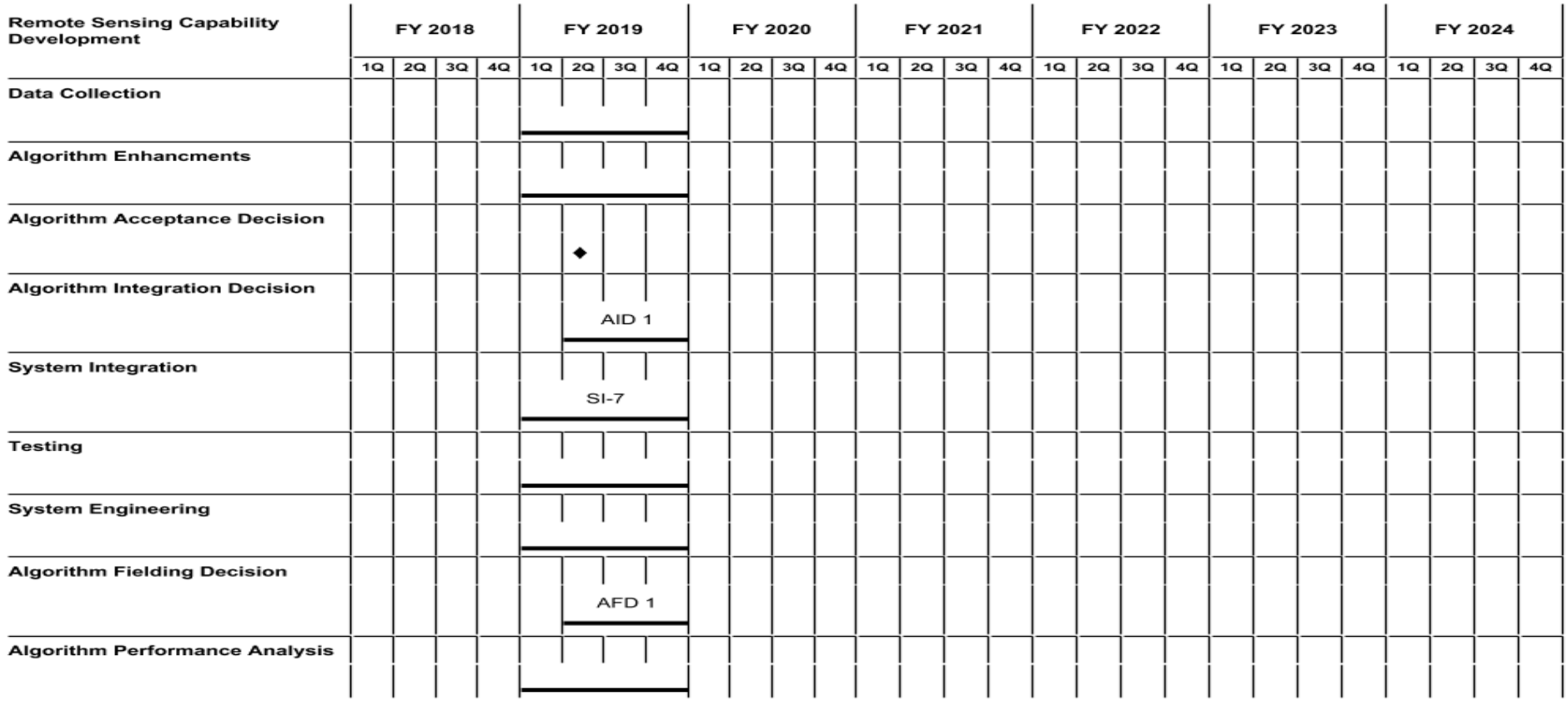
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Remote Sensing Capability Development Data Collection	C/FP	BAH : Virginia	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	-
		Subtotal	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		5.642		0.000		-		0.000	0.000	5.642	N/A

Remarks

FY20 cost data is provided under PE 0604231N Project 2363. Prior year costs are reflected in PE 0603207N Project 2363.L39, where they were executed before the FY19 Budget Activity reclassification.

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2363 / *Remote Sensing Capability Development*



2020PB - 0604218N - 2363

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 2363 / *Remote Sensing Capability Development*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Remote Sensing Capability Development				
Data Collection:	1	2019	4	2019
Algorithm Enhancments:	1	2019	4	2019
Algorithm Acceptance Decision:	2	2019	2	2019
Algorithm Integration Decision: Algorithm Integration Decision 1	2	2019	4	2019
System Integration: System Integration 7	1	2019	4	2019
Testing:	1	2019	4	2019
System Engineering:	1	2019	4	2019
Algorithm Fielding Decision: Algorithm Fielding Decision 1	2	2019	4	2019
Algorithm Performance Analysis:	1	2019	4	2019

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604218N / *Air/Ocean Equipment Engineering*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	4.828	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.828
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Congressional Add provides funds to develop a system to support research and evaluation of Unmanned Maritime Systems and Sensors. The goal for this program is to develop and test long-term monitoring Gulf of Mexico water space using a variety of utilize unmanned maritime systems and to conduct an evaluation of readiness capabilities for new ocean prediction systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019
Congressional Add: Unmanned Systems in Maritime Environment	4.828	0.000
FY 2018 Accomplishments: Evaluate unmanned maritime sensors and systems with respect to operation of high-resolution ocean prediction systems focused on the Gulf of Mexico water space.		
FY 2019 Plans: N/A		
Congressional Adds Subtotals	4.828	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

The performance goal is met if successful development test and evaluation is achieved.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 9999 / *Congressional Adds*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Unmanned Maritime Systems	TBD	TBD : TBD	0.000	2.000	Aug 2018	0.000		0.000		-		0.000	0.000	2.000	-
Ocean Prediction Systems	TBD	TBD : TBD	0.000	2.828	Aug 2018	0.000		0.000		-		0.000	0.000	2.828	-
		Subtotal	0.000	4.828		0.000		0.000		-		0.000	0.000	4.828	N/A

	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	4.828		0.000		0.000		-		0.000	0.000	4.828	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 9999 / *Congressional Adds*

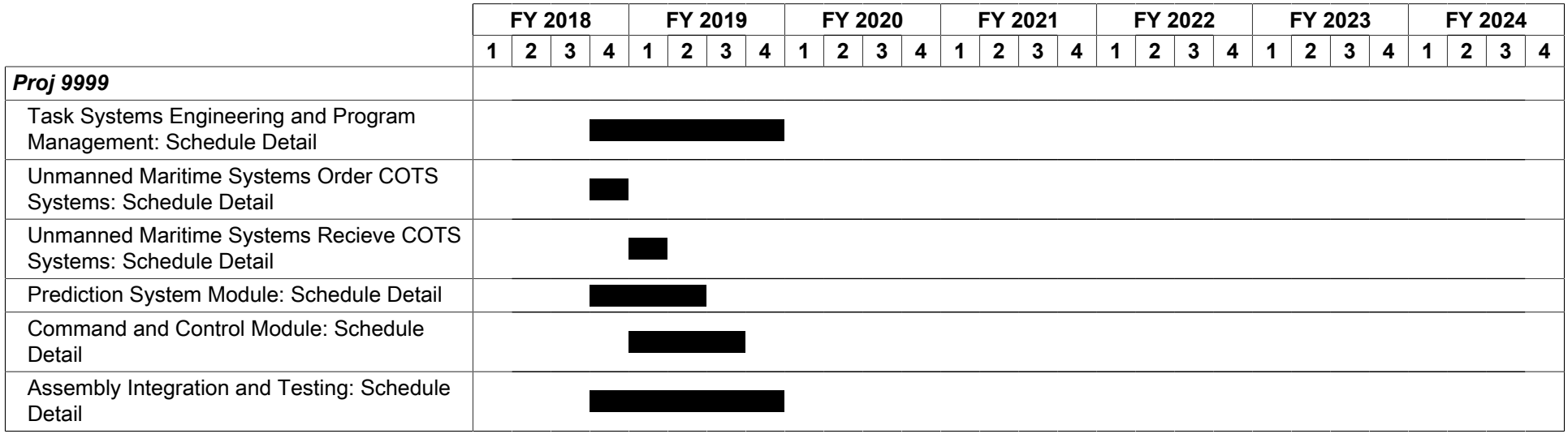


Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604218N / *Air/Ocean Equipment Engineering*	**Project (Number/Name)** 9999 / *Congressional Adds*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9999				
Task Systems Engineering and Program Management: Schedule Detail	4	2018	4	2019
Unmanned Maritime Systems Order COTS Systems: Schedule Detail	4	2018	4	2018
Unmanned Maritime Systems Recieve COTS Systems: Schedule Detail	1	2019	1	2019
Prediction System Module: Schedule Detail	4	2018	2	2019
Command and Control Module: Schedule Detail	1	2019	3	2019
Assembly Integration and Testing: Schedule Detail	4	2018	4	2019