Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy											Date: February 2018	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0604231N *I Tactical Command System*							
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
Total Program Element	510.073	36.190	55.695	57.688	-	57.688	58.544	49.683	32.230	25.480	Continuing	Continuing
0486: *Tactical Support Center*	129.472	5.158	5.665	4.645	-	4.645	6.112	6.024	5.751	5.873	Continuing	Continuing
3032: *NTCSS (Naval Tactical Command Spt Sys)*	84.713	13.192	4.044	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	101.949
3260: *Naval Operations Business Logistics Enterprise (NOBLE)*	0.000	0.000	19.102	37.792	-	37.792	40.653	31.817	14.126	6.940	Continuing	Continuing
3323: *Maritime Tactical Command & Control (MTC2)*	45.833	14.023	17.487	12.038	-	12.038	8.888	9.099	9.335	9.588	Continuing	Continuing
3324: *Navy Air Operations Command and Control (NAOC2)*	13.081	0.963	1.048	1.004	-	1.004	0.710	0.518	0.747	0.763	Continuing	Continuing
3425: *Digital Warfare*	0.000	0.000	5.950	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.950
9123: *FORCEnet*	236.974	2.854	2.399	2.209	-	2.209	2.181	2.225	2.271	2.316	Continuing	Continuing

Note

The FY 2019 funding request was reduced by $2.000 million to account for the availability of prior year execution balances

A. Mission Description and Budget Item Justification

The Tactical Command System upgrades the Navy's Command, Control, Communications, Computer and Intelligence (C4I) systems and processes C4I information for all warfare mission areas including planning, direction and reconstruction of missions for peacetime, wartime and times of crises.

Tactical Support Center: The Tactical Mobile program provides agile evolutionary systems and equipment upgrades to support the Maritime Patrol and Reconnaissance Force Commanders with the capability to plan, direct and control the tactical operations of Maritime Patrol and Reconnaissance Aircraft and other assigned units within their respective area of responsibility. Looking ahead, TacMobile provides critical mission planning and reach-back capabilities between the Maritime Patrol and Reconnaissance Aircraft, primarily the P-8A/Poseidon, and MQ-4C/Triton, and the Maritime Intelligence Surveillance and Reconnaissance Enterprise. These operations include littoral, open ocean, and over land long-dwell surveillance, anti-surface warfare, over-the-horizon targeting, counter-drug operations, power projection, antisubmarine warfare, mining, search and rescue, indications and warning, realtime full motion video collection and streaming/dissemination, and special operations. The missions are supported by Tactical Operations Centers, Mobile Tactical Operations Centers, and Fly Away Kits.

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy	Date: February 2018
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Naval Tactical Command Support System (NTCSS): The NTCSS is a multi-function program designed to provide standard tactical support information systems to various afloat and associated shore-based fleet activities. The mission is to provide the Navy and Marine Corps with an integrated, scalable system that supports the management of logistical information, personnel, material and funds required to maintain and operate ships, submarines, and aircraft.

The Naval Operational Business Logistics Enterprise (NOBLE) family of programs will provide direct support to warfighter readiness with maintenance, supply, and personnel administration capabilities using an open architecture framework that incorporates business process re-engineering (BPR) allowing for the consolidation of over 23 standalone application systems. These capabilities include enhanced situational awareness, planning, execution, personnel administration, and management of maintenance and supply logistics and business functions to ships/submarines, aviation squadrons, shore operational sites, and expeditionary units with a total user base exceeding 150,000. NOBLE will meet current and emerging demands for cyber, Financial Improvement and Audit Readiness (FIAR), Navy logistics and maritime maintenance mission requirements, and eliminate over 700 application/database servers. NOBLE will deploy to Navy Enterprise Data Centers (NEDC) ashore, the Consolidated Afloat Networks and Enterprise Services (CANES) afloat, and Department of the Navy (DON) commercial cloud computing environments.

Maritime Tactical Command and Control (MTC2) is the next generation Command and Control (C2) solution that will deliver Battle Management Aids (BMA) and Maritime Planning Tools (MPT) to dynamically plan, direct, monitor, and assess maritime operations in support of Joint, Multi-Service, Coalition Forces planning. MTC2 will leverage a System of Services (SoServ) to deliver capabilities improving decision speed and dynamic synchronization of forces. BMAs / MPTs are small, capability-focused deliveries that can be rapidly developed, tested, and fielded. MTC2 will engage with the Office of the Chief of Naval Operations (OPNAV)-led Requirements Governance Board to define and prioritize the BMAs and MPTs that MTC2 will deliver and align to the Program Executive Office (PEO) Command, Control, Communications, and Intelligence (C4I) enterprise architecture (Consolidated Afloat Network Enterprise Service (CANES), Agile Core Services (ACS)) for fielding to all echelons of command (Afloat and Ashore) within the Navy. The program's objective is to provide a suite of maritime applications (BMAs / MPTs) that enable planning, execution, monitoring, and assessment in support of operational and tactical level of war requirements. MTC2 will field BMAs / MPTs designed to provide automated and structured support for tactical and operational planning, decision-making, and execution. MTC2 will incorporate distributed data transfer capability for enhanced operational data exchange between command and control systems, combat systems, logistics, and intelligence systems for timely threat identification, location, and status alongside blue force data. MTC2 will fulfill a portion of the Navy's Global Force Management - Data Initiative (GFM-DI) requirements. GFM-DI is the Department-wide enterprise solution that enables visibility/accessibility/sharing of data applicable to the entire Department of Defense (DoD) force structure.

Navy Air Operations Command and Control (NAOC2): NAOC2 integrates and tests Air Force program of record systems that provide an integrated and scalable planning system for standardized, secure, and automated decision support for Air Force, Joint, and Allied commanders worldwide. These programs provide automated air operations planning, execution management and intelligence capabilities at the Force level to include fleet commanders, numbered fleet commanders, Commander Carrier Strike Groups, Commander Expeditionary Strike Groups, Commander Landing Forces, and Joint Task Force Commanders. NAOC2 includes Theater Battle Management Core System (TBMCS) and Command and Control Air Operations Suite - Command and Control Information Services (C2AOS-C2IS). C2AOS-C2IS is comprised of multiple projects incorporated into three Capability Packages and will deploy to a Service Oriented Architecture (SOA) enterprise environment that aligns with the Joint C2 Reference Architecture (JC2RA) such as Consolidated Afloat Networks and Enterprise Services (CANES). C2AOS-C2IS is not natively compatible with Navy Information Technology (IT) infrastructure, such as CANES, and requires a significant level of system integration. Continuation of Navy integration and test efforts will significantly enhance the ability of the Joint Force Air Component Commander and Combined Air Operations Center personnel to plan daily air operations including

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy	Date: February 2018
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strike, airlift, offensive/defensive air, missile defense, and refueling missions in support of combat operations. C2AOS-C2IS addresses the requirement of war fighter distributed planning and execution processes along with significantly improving Joint interoperability. TBMCS continues a hardware transition to CANES. Currently, TBMCS is the key system that is used to conduct real world air planning in the Joint and Navy environments. C2AOS-C2IS will replace TBMCS while bringing more flexibility to the war fighter.

Digital Warfare (DW): Supports system of systems requirements modeling and allocation, development of data technical baselines, digital architectures and data models, and provides data science for enterprise and warfare pilots in support of a composeable, modular Navy.

Funding for the Digital Warfare (DW) requirements has been realigned to PE 0604027N beginning in FY19.

FORCEnet: The mission of this effort is to deliver Information Dominance by (a) accelerating the transformation to a Distributed, Networked force; (b) achieve interoperability based on Architectures and Standards; and (c) Experiment with, evaluate and employ the enabling technologies. Effort is a non-acquisition program that is the operational instantiation of FORCEnet. The end-state is a distributed network of weapons, sensors, Command and Control (C2), platforms and warriors.

B. Program Change Summary ($ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	40.323	55.695	71.345	-	71.345
Current President's Budget	36.190	55.695	57.688	-	57.688
Total Adjustments	-4.133	0.000	-13.657	-	-13.657
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.750	0.000			
• SBIR/STTR Transfer	-0.863	0.000			
• Program Adjustments	-4.000	0.000	-12.760	-	-12.760
• Rate/Misc Adjustments	0.000	0.000	-0.897	-	-0.897
• Congressional General Reductions Adjustments	-0.020	-	-	-	-

Change Summary Explanation

Technical: Not applicable.

Schedule:

Tactical Support Center (Project 0486):

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FY2019 funding provides critical funds for Systems Engineering and Primary Hardware Development as TacMobile approaches Critical Design Review (CDR) for Increment 3, to support ACAT I P-8A Increment 3 Developmental and Integrated Test events beginning in FY19. Specific efforts include developing TacMobile capabilities for P-8A Applications Based Architecture (ABA) and building a TacMobile Engineering Development Model with appropriate P-8A interfaces to enable and test net-ready applications, mission planning and post-flight test threads; Development of a TacMobile interface for P-8A Anti-Submarine Warfare (ASW) Signals Intelligence (SIGINT); Engineering, development and integration of Multiple Security Level enclaves, and a common solution to remain interoperable with P-8A security interfaces. NAVAIR has assumed the lead systems integrator role for design and development of P-8A Increment 3 and therefore there will be heavy reliance upon TacMobile to align to and be an integral part of Developmental and Integrated test events for P-8A to meet critical aircraft integration and testing milestones.

Navy Air Operations Command and Control (NAOC2)(Project 3324):
To more accurately reflect the correlation between the USAF and United States Navy (USN) schedules, the schedule has also been revised to better capture the joint USAF/USN events, to include replacement of the Navy Operational Test (OT) events with Multi-Service Operational Test & Evaluation (MOT&E) events. The previous Navy integration and testing efforts are now captured through Navy's participation in Joint (USAF/USN) Test and Integration activities. Schedule has also been updated to reflect removal of Capability Package (CP) 4 and C2AOS-C2IS Modernization (formerly CP5).

A proposed targeted baseline of IT Components which was referred to as the Navy's Agile Core Services (ACS) has been replaced by the Air Force's Command & Control Software Baseline (C2SB). C2AOS-C2IS does not seamlessly integrate into Navy IT infrastructures and additional integration and test efforts, to include participation in Consolidated Afloat Networks and Enterprise Services (CANES) System Integration Test (SIT) events, are required to ensure C2AOS-C2IS configuration/compatibility with C2SB. With USAF replacement of ACS with C2SB, Navy has added additional test and integration efforts to transition C2AOS-C2IS back into ACS post-delivery of the USAF C2AOS-C2IS product.

Funding:

Naval Tactical Command Support System (NTCSS) (Project 3032):
Funding in Project 3032 ceases in FY2019 as NTCSS transitioned development of tactical support information systems to the Naval Operational Business Logistics Enterprise (NOBLE).

Naval Operational Business Logistics Enterprise (NOBLE) (Project 3260):

FY2019 funding increase supports:
Naval Operational Supply System (NOSS): Increase to full software development capacity for eleven months until completion of software development efforts and delivery of Software Build 1 (BLD 1). Commence Developmental Test and Evaluation (DT&E) efforts for BLD 1.

Naval Aviation Maintenance System (NAMS): Conduct NAMS Milestone B/C review. Award NAMS BLD 1 contract. Initialize software development efforts and increase to full software development capacity for eleven months in support of BLD 1.

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Navy	Date: February 2018
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Naval Operational Maintenance Enterprise (NOME): Conduct Milestone B/C review. Award NOME BLD 1 contract. Initialize software development efforts for two months in support of BLD 1.

Naval Administration and Personnel System (NAPS): FY2018 funding planned to commence pre-acquisition efforts in support of Analysis of Alternatives (AoA) study. Upon completion, additional funding and efforts will be on hold pending the identification of functional manager to validate program requirements.

Maritime Tactical Command and Control (MTC2) (Project 3323):
FY2018 to FY2019 funding for MTC2 decreases due to direction to align to the new program scope per the Strategic Shift Memo from the Office of the Chief of Naval Operations (OPNAV) dated 28 NOV 2016. In order to meet OPNAV's redirection, the program was required to re-baseline in order to focus on delivery of Battle Management Aids (BMA) / Maritime Planning Tools (MPT).

Digital Warfare (Project 3425)
Funding decrease due to realignment of FY19 funds to the DW PE (0604027N) beginning in FY19.

FORCEnet (Project 9123)
From FY18 to FY19 funding decreases due to the completion of Navy Cybersecurity Situational Awareness (NCSA) analytical support.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy									Date: February 2018			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*				Project (Number/Name) 0486 / *Tactical Support Center*			
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
0486: *Tactical Support Center*	129.472	5.158	5.665	4.645	-	4.645	6.112	6.024	5.751	5.873	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

TacMobile brings Enterprise Command, Control, Communications, Computers and Intelligence, Surveillance and Reconnaissance (C4ISR) to the Maritime Patrol and Reconnaissance Force (MPRF) community.

TacMobile is a long-running, multi-year acquisition program which provides Command, Control, Communications, Computers, and Intelligence (C4I) for Navy's Maritime Patrol and Reconnaissance Force (MPRF). From within Tactical Operations Centers (TOC) at well-supported airfields, TacMobile provides theater Anti-Submarine Warfare (ASW) and Intelligence Surveillance Reconnaissance (ISR) commanders a common tactical picture while providing pre-flight and post-flight support to manned and unmanned MPRF aircraft. From within Mobile Tactical Operations Centers (MTOC), TacMobile supports manned MPRF aircraft at the tactical edge of operations. TacMobile Fly-Away Kits (FAK) support manned MPRF aircraft in short-duration expeditionary settings.

Services provided include analysis and correlation of diverse sensor information; data management support; command decision aids; rapid data communication; mission planning, evaluation and reach-back dissemination of surveillance data and threat alerts to operational users ashore and afloat, and to the Maritime Intelligence Surveillance and Reconnaissance Environment.

TOCs provide Command, Control, Communications, Computers and Intelligence (C4I) capability, air-ground, satellite and point-to-point communications systems; sensor analysis capabilities; avionics and weapons system interfaces and facilities equipment. MTOCs are scalable, mobile versions for operations from remote forward operating airfields. FAKs provide additional agility for expeditionary short-term duration aircraft detachments. This program assures that existing TOCs and MTOCs are interoperable to fulfill their operational requirements. TOC/MTOC will continue to provide the ground Command and Control missions, reach-back and C4I interfaces for the MPRF Family of Systems (FOS) aircraft and systems evolution including P-8A Multi-mission Maritime Aircraft (MMA) baseline and Increment 2, and the development of future C4I support capabilities for the P-8A Poseidon Increment 3, Advanced Airborne Sensor (AAS), and the MQ-4C TRITON Unmanned Aerial System.

The TacMobile program follows an evolutionary acquisition approach for adding capabilities that maintain and support MPRF weapons systems. Current requirements for TacMobile are to adapt to a smaller lightweight scalable Network-centric Services Oriented Architecture (SOA) configuration. Additional TacMobile requirements are to simplify and streamline the Pre-Flight Insertion Data (PID) process for mission aircraft, and to satisfy the need for sensor data sharing between aircraft and the Maritime Intelligence Surveillance and Reconnaissance Enterprise.

FY19: Funding supports core TacMobile systems engineering, development and testing of Increment 3, and Technical Refresh to Increment 2.1, to maintain interoperability with P-8A Poseidon and the MQ-4C Triton. Specifically this development is aligned to support P-8A Inc 3 Block 2 Integrated Testing beginning in FY19, increase modularity, establish additional security enclaves and reduce footprint to offset the size/weight/power/cooling (SWaP-C) of additional required aircraft interfaces developed to support P-8A Increment 3, Advanced Airborne Sensor (AAS) and emerging Maritime Patrol and Reconnaissance Aircraft operations. Network-centric Services Oriented Architecture (SOA) and airborne C4I integration efforts continue to ensure interoperability with emerging MPRF Aircraft and Sensors, streamline Pre-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
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Flight Insertion Data (PID), facilitate the MPRF ISR and ASW data processing - Exploitation - Dissemination (PED) process, and reduce TacMobile footprint, enhancing mobility capabilities.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Net Ready	0.938	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: Cost has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0." ***FY 2019 Base Plans:*** Cost has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0." ***FY 2019 OCO Plans:*** N/A					
Title: Tactical Mobile Acoustic Support System (TACMASS)	0.736	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: "Cost" has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0". ***FY 2019 Base Plans:*** "Cost" has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0". ***FY 2019 OCO Plans:*** N/A					
Title: Aircraft Interfaces	0.883	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: "Cost" has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0". ***FY 2019 Base Plans:*** "Cost" has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0". ***FY 2019 OCO Plans:*** N/A					
Title: Tactical Data Links	0.160	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
FY 2018 Plans: "Cost" has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0". ***FY 2019 Base Plans:*** "Cost" has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0". ***FY 2019 OCO Plans:*** N/A					
Title: Enterprise Solutions	0.880	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: "Cost" has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0". ***FY 2019 Base Plans:*** "Cost" has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0". ***FY 2019 OCO Plans:*** N/A					
Title: Command and Control (C2)	0.607	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: "Cost" has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0". ***FY 2019 Base Plans:*** "Cost" has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0". ***FY 2019 OCO Plans:*** N/A					
Title: Maritime Patrol and Reconnaissance Force (MPRF) Interoperability/TacMobile Footprint Reduction	0.954	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans: "Cost" has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0". ***FY 2019 Base Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
"Cost" has been consolidated under "TacMobile Increment 2.1" and "TacMobile Inc 3.0". ***FY 2019 OCO Plans:*** N/A					
Title: TacMobile Increment 2.1 ***Articles:*** ***FY 2018 Plans:*** - Effort previously funded under "Net Ready", "Tactical Mobile Acoustic Support System (TACMASS)", "Aircraft Interfaces", "Tactical Data Links", "Enterprise Solutions", and "MPRF Interoperability/TacMobile Footprint Reduction". Begin phased design and engineering of Technical refresh 2.1.2, including P-8A/Poseidon and MQ-4C/Triton interoperability related communications upgrades (Global broadcast System (GBS), Super High Frequency (SHF) and Tactical Data Links (TADIL); Command, Control, Communications and Intelligence (C4I) enhancements (Common Operational Picture (COP) and Integrated Broadcast Service (IBS)), and appropriate subsystem refreshes based on P-8A and MQ-4 collaborative efforts. These efforts include: INTEROPERABILITY: Continue Automated Digital Network System (ADNS) and Full Motion Video implementations following external stakeholder transition to ADNS Inc 3 infrastructure - (TR 2.1.1/2.1.2). SYSTEM UPGRADES: Continue design model development of automated TacMobile system functionality to reduce operator workload, and offset increasing Maritime Patrol and Reconnaissance Force Intelligence Surveillance and Reconnaissance Mission/Function/Task - (TR 2.1.1); Implement fleet change requests into TR 2.1.2 - (TR 2.1.2); Complete design and integration for selected Joint Tactical Radio System (BU-2) - (TR 2.1.2). MODERNIZATION: Complete integration of follow on Ultra High Frequency (UHF) /Very High Frequency (VHF) Satellite Communications (SATCOM) sub system - (TR 2.1.1); Evaluate options for Global Broadcast System subsystem modernization - (TR 2.1.2); Evaluate options for SHF subsystem modernization - (TR 2.1.2); Evaluate options for Tactical Data Links modernization - (TR 2.1.2); Complete requirements analysis, assess options, and begin integration of solutions to modernize or replace current generation Global Command and Control System Maritime - (TR 2.1.2). ***FY 2019 Base Plans:*** Complete phased design and engineering of Technical refresh 2.1.2, including P-8A/Poseidon and MQ-4C/ Triton interoperability related communications upgrades (Global Broadcast System (GBS), Super High Frequency (SHF) and Tactical Data Links (TADIL); Command, Control, Communications and Intelligence (C4I) enhancements (Common Operational Picture (COP) and Integrated Broadcast Service (IBS)), and appropriate subsystem refreshes based on P-8A and MQ-4C collaborative efforts. These efforts include: INTEROPERABILITY: Complete Automated Digital Network System (ADNS) and Full Motion Video	0.000 -	2.181 -	0.991 -	0.000 -	0.991 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
implementations following external stakeholder transition to ADNS Inc 3 infrastructure - (TR 2.1.1/2.1.2). SYSTEM UPGRADES: Continue design model development of automated TacMobile system functionality to reduce operator workload, increase agility with Size / Weight /Power/Cooling (SWaP-C) reductions, and offset increasing Maritime Patrol and Reconnaissance Force Intelligence Surveillance and Reconnaissance Mission/Function/Task - (TR 2.1.2); Implement fleet change requests into Technical Refresh 2.1.2 - (TR 2.1.2). MODERNIZATION: Integrate selected option for Global Broadcast System subsystem modernization - (TR 2.1.2); Integrate selected option for SHF subsystem modernization - (TR 2.1.2); Complete communications upgrade design/integration/development for P-8A interoperability and optimization: Common Data Link Upgrades, Broadcast Intelligence Analysis, Joint Range Extension, Third Party Targeting, High Frequency Internet Protocol, Link 16 updates, and Wideband SatCom design/technology implementation - (TR 2.1.2); Complete integration of selected solution to modernize or replace current generation Global Command and Control System Maritime - (TR 2.1.2); Integrate next generation Mass Storage solution - (TR 2.1.2). ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** FY19 funding decrease for TacMobile Increment 2.1 development is due to reduced effort associated with ramp down of TR 2.1.1 development, integration and test, and transition to TR 2.1.2 development, integration and test.					
Title: TacMobile Increment 3.0 ***Articles:*** ***FY 2018 Plans:*** Effort previously funded under "Net Ready", "Tactical Mobile Acoustic Support System (TACMASS)", "Aircraft Interfaces", "Tactical Data Links", "Enterprise Solutions", and "MPRF Interoperability/TacMobile Footprint Reduction". Complete updates to Increment 3 Capabilities Production Document (CPD) based upon Joint Requirements Oversight Council (JROC) and Fleet review. These efforts include: INTEROPERABILITY: Design and develop TacMobile architecture for P-8A Applications Based Architecture (ABA) interface. Build Engineering Development Model (EDM) with appropriate P-8A ABA interface to enable net ready application - (Inc 3.0); Complete TacMobile Data Strategy and Information Support Plan for Increment 3.0, supporting P-8A Poseidon Inc 3 - (Inc 3.0); Design and develop TM architecture/interface for P-8A Anti -Submarine Warfare (ASW) Signals Intelligence (SIGINT) and track management requirements in support of P-8A mission systems - (Inc 3.0); Mature requirements development for Multistatic Active Coherent (MAC) Enhancements (MAC-E) and commence design for MAC-E integration - (Inc 3.0); Continue communications upgrade design/ integration/development for P-8A interoperability and optimization: Common Data Link Upgrades, Broadcast	0.000 -	3.484 -	3.654 -	0.000 -	3.654 -

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Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 0486 / *Tactical Support Center*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Intelligence Analysis, Joint Range Extension, Third Party Targeting, High Frequency Internet Protocol, Link 16 updates, and Wideband SatCom design/technology implementation - (Inc 3.0); Further mature architecture, development and integration of Multiple Security Level enclaves or common solution to remain interoperable with P-8A security interfaces - (Inc 3.0); Interface with Intelligence community to define Processing, Exploitation, and Dissemination CONOPS and reach-back support requirements for integrating the wide range of P-8A missions and Anti-Submarine Warfare and Intelligence Surveillance and Reconnaissance data elements with the Maritime Intelligence Surveillance and Reconnaissance Environment. Implement data strategy with automation, Services Oriented Architecture (SOA), and other schemas for increased interoperability and efficiency - (Inc 3.0); Develop TacMobile environment to align with Family of Systems Community of Interest data management model schema - (Inc 3.0); Finalize Tactical Operations Center (TOC)/Mobile Tactical Operations Center (MTOC) Operational view and System view Department of Defense Architecture Framework (DoDAF) products and align with the Maritime Patrol and Reconnaissance Force /Air Anti-Submarine Warfare Community of Interest Family of Systems Department of Defense Architecture Framework products - (Inc 3); Continue integration of Navy enterprise solutions for Common Operational Picture (COP) management (in synch with Distributed Common Ground System Navy (DCGS-N), Undersea Warfare-Decision Support System (USW-DSS)) - (Inc 3.0). SYSTEM UPGRADES: Continue building Engineering Development Model with interfaces to P-8A system upgrades and TacMobile Multiple Independent Levels of Security - (Inc 3.0); Implement fleet and engineering change requests into Inc 3 design - (Inc 3.0). MODERNIZATION: Continue integration of next generation Mass Storage solution - (Inc 3.0); Continue integration of enterprise solutions for Multiple Security Level networks - (Inc 3.0); Complete Services Oriented Architecture (SOA) requirements analysis. Begin TM modernization development efforts to integrate SOA architecture - (Inc 3.0); Continue stakeholder Size Weight Power and Cooling (SWaP-C) design analysis and integrate SWaP-C reductions into TOC/MTOC design - (Inc 3.0).					
FY 2019 Base Plans: INTEROPERABILITY: Finalize Engineering Development Model (EDM) design to include appropriate interfaces for P-8A - (Inc 3.0); Finalize design for Multiple Security Level enclaves and joint system security architecture for P-8A interoperability - (Inc 3.0); Finalize EDM architecture to support Navy Tasking, Collection, Processing, Exploitation, and Dissemination CONOPS and data reach-back requirements for integrating the wide range of P-8A missions and Anti-Submarine Warfare and Intelligence Surveillance and Reconnaissance data elements with the Maritime Intelligence Surveillance and Reconnaissance Environment - (Inc 3.0); Finalize EDM design and data strategy to maximize automation, Services Oriented Architecture (SOA), virtualization for increased interoperability and efficiency - (Inc 3.0); Finalize TacMobile design and implementation of metadata tagging and content management to align with Family of Systems Community of Interest data management model schema - (Inc 3.0); Continue maturing requirements development for Multistatic Active Coherent (MAC)					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 0486 / *Tactical Support Center*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Enhancements (MAC-E). Commence design and development of EDM upgrade for MAC-E integration. Integrate enhanced TacMobile data analysis tools and applications to support P-8A MAC-E interoperability - (Inc 3.0); Complete TacMobile Increment 3.0 Data Strategy and Information Support Plan to support Navy Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) and Net-Centric strategies as well as to support P-8A Poseidon Inc 3, MQ-4C Triton Multi-INT, and Advanced Airborne Sensor (AAS) operations - (Inc 3.0); Finalize integration of Navy enterprise solutions for network services and Common Operational Picture (COP) management (in synch with Distributed Common Ground System Navy (DCGS-N), Undersea Warfare-Decision Support System (USW-DSS)) - (Inc 3.0); Finalize s/w development for sortie management and data services to interface with P-8A media build - (Inc 3.0); Conduct developmental testing to evaluate design and P-8A interfaces interoperability - (Inc 3.0); Conduct testing to achieve system Cybersecurity certifications and accreditations - (Inc 3.0). SYSTEM UPGRADES: Implement fleet and engineering change requests into Inc 3 design - (Inc 3.0); Implement hardware upgrades to address obsolescence and technological changes that do not impact system capability - (Inc 3.0). MODERNIZATION: Implement Size Weight Power and Cooling (SWaP-C) reductions into final EDM design and proposed TOC/MTOC design - Inc 3.0). ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** FY19 funding slight increase for TacMobile Increment 3.0 development is due to transition from Requirements definition, analysis, and Joint Capabilities Integration and Development System (JCIDS) document development, to Systems Engineering Development.					
Accomplishments/Planned Programs Subtotals	5.158	5.665	4.645	0.000	4.645

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• OPN/2906: *TacMobile*	23.908	40.325	42.010	-	42.010	28.020	29.660	29.952	30.555	Continuing	Continuing

Remarks

Maritime Patrol & Reconnaissance Force (MPRF) Mission Support Systems

D. Acquisition Strategy

Evolutionary Acquisition - Increment 2.0 provided enhanced Beyond Line of Sight (BLOS) Global Information Grid (GIG) reach back capability, and supports Maritime Situational Awareness connectivity enhancements for data exchange with Maritime Patrol and Reconnaissance Force (MPRF) aircraft and with Coalition data networks.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 0486 / *Tactical Support Center*

It incorporated Anti-Submarine Warfare (ASW) acoustical analysis improvements and new P-3C aircraft ASW interfaces. Increment 2.1 supported migration to follow on Global Command and Control System - Maritime (GCCS-M) version 4.0.3 and introduction of the P-8A Poseidon. Tech Refresh 2.1.1 supports technical engineering changes associated with the introduction of P-8A Poseidon Increment 2, MQ-4C Triton, Advanced Airborne Sensor (AAS), migration to GCCS-M 4.1 Group Level, and transition to WIN10 baselines. Increment 3 will incorporate support for other Maritime Patrol and Reconnaissance Force (MPRF) Family of Systems (FOS) Aircraft Systems, as they transition to a Services Oriented Architecture (SOA).

E. Performance Metrics

The primary metrics utilized by the TacMobile program development process include achieving/maintaining all required Interface Exchange Requirements (IER's) and successful achievement of 100% of Key Performance Parameters for incremental upgrade threshold capabilities, as observed by Commander Operational Test Force representatives during Operational Evaluation. TacMobile Inc 2.1 development supported increased IER requirements of 486% from 112 to 544. Development to support these new IER's tapered off in FY-12 as the Increment entered the Operational Evaluation Phase. Development focus then shifted to efforts required to retain fielded IER's and update IER's to comply with emerging and evolving standards associated with P-8A Poseidon Increment 2, and the MQ-4C Triton Unmanned Aerial System (UAS), other Maritime Patrol and Reconnaissance Force (MPRF) Family of Systems (FOS) Aircraft and Systems, and evolving operational employment concepts. Increment 3 development will increase IER's by extending the TacMobile core to extend integrated capabilities into Higher Than SECRET enclaves and Services Oriented Architecture (SOA). The quantification of the increase in IER's will be dependent upon final requirements which are still being defined.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 0486 / *Tactical Support Center*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	C/CPFF	SSC LANT; TAPESTRY; CENTURUM : Charleston; SC; Pax River, MD	10.301	1.344	Dec 2016	1.878	Dec 2017	1.457	Dec 2018	-		1.457	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	SSC LANT; TAPESTRY; CENTURM, BAH, Sentek : Charleston, SC; Pax River, MD; San Diego, CA	33.429	1.265	Dec 2016	1.830	Dec 2017	1.378	Dec 2018	-		1.378	Continuing	Continuing	Continuing
Training Development	C/CPFF	SSC LANT; TAPESTRY; CENTURUM, Sentek : Charleston, SC; Pax River, MD; San Diego, CA	3.161	0.300	Dec 2016	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Software Development	C/CPFF	SSC LANT, TAPESTRY, CENTURUM, BAH, Sentek : Charleston, SC; Pax River, MD; San Diego, CA	47.906	0.602	Dec 2016	0.900	Dec 2017	0.700	Dec 2018	-		0.700	Continuing	Continuing	Continuing
Integrated Logistics Support	C/CPFF	SSC LANT, TAPESTRY; CENTURUM : Charleston, SC; Pax River, MD	1.700	0.225	Dec 2016	0.035	Dec 2017	0.035	Dec 2018	-		0.035	Continuing	Continuing	Continuing
Configuration Management	C/CPFF	SSC LANT, TAPESTRY; CENTURUM : Charleston, SC; Pax River, MD	1.325	0.175	Dec 2016	0.046	Dec 2017	0.023	Dec 2018	-		0.023	Continuing	Continuing	Continuing
Technical Data	C/CPFF	SSC LANT, TAPESTRY; CENTURUM :	1.700	0.220	Dec 2016	0.251	Dec 2017	0.251	Dec 2018	-		0.251	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 0486 / *Tactical Support Center*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
		Charleston, SC; Pax River, MD													
Studies & Analyses	C/CPFF	SSC LANT, TAPESTRY, CENTURUM, Sentek : Pax River, MD; San Diego CA	1.025	0.100	Dec 2016	0.015	Dec 2017	0.015	Dec 2018	-		0.015	Continuing	Continuing	Continuing
		Subtotal	100.547	4.231		4.955		3.859		-		3.859	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	C/CPIF	SSC LANT; TAPESTRY; CENTURUM : Charleston, SC; Pax River, MD	3.116	0.340	Dec 2016	0.336	Dec 2017	0.436	Dec 2018	-		0.436	Continuing	Continuing	Continuing
Operational Test & Evaluation	MIPR	OPTEVFOR; SSC LANT; TAPESTRY; CENTURUM : Jacksonville, FL	6.020	0.157	Dec 2016	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	9.136	0.497		0.336		0.436		-		0.436	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPIF	TAPESTRY; CENTURUM; BAH; Sentek : Pax River, MD; Charleston, SC; San Diego, CA	3.205	0.215	Dec 2016	0.195	Dec 2017	0.195	Dec 2018	-		0.195	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 0486 / *Tactical Support Center*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	SSC LANT : Charleston, SC	2.193	0.134	Dec 2016	0.107	Dec 2017	0.107	Dec 2018	-		0.107	Continuing	Continuing	Continuing
Program Management Support	C/CPIF	SSC LANT; PMW 750; BAH; TAPESTRY; CENTURUM; Sentek : Charleston, SC; San Diego, CA	14.127	0.063	Dec 2016	0.047	Dec 2017	0.023	Dec 2018	-		0.023	Continuing	Continuing	Continuing
Travel	WR	PMW750 : San Diego, CA	0.264	0.018	Dec 2016	0.025	Dec 2017	0.025	Dec 2018	-		0.025	Continuing	Continuing	Continuing
		Subtotal	19.789	0.430		0.374		0.350		-		0.350	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	129.472	5.158		5.665		4.645		-		4.645	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 0486 / *Tactical Support Center*

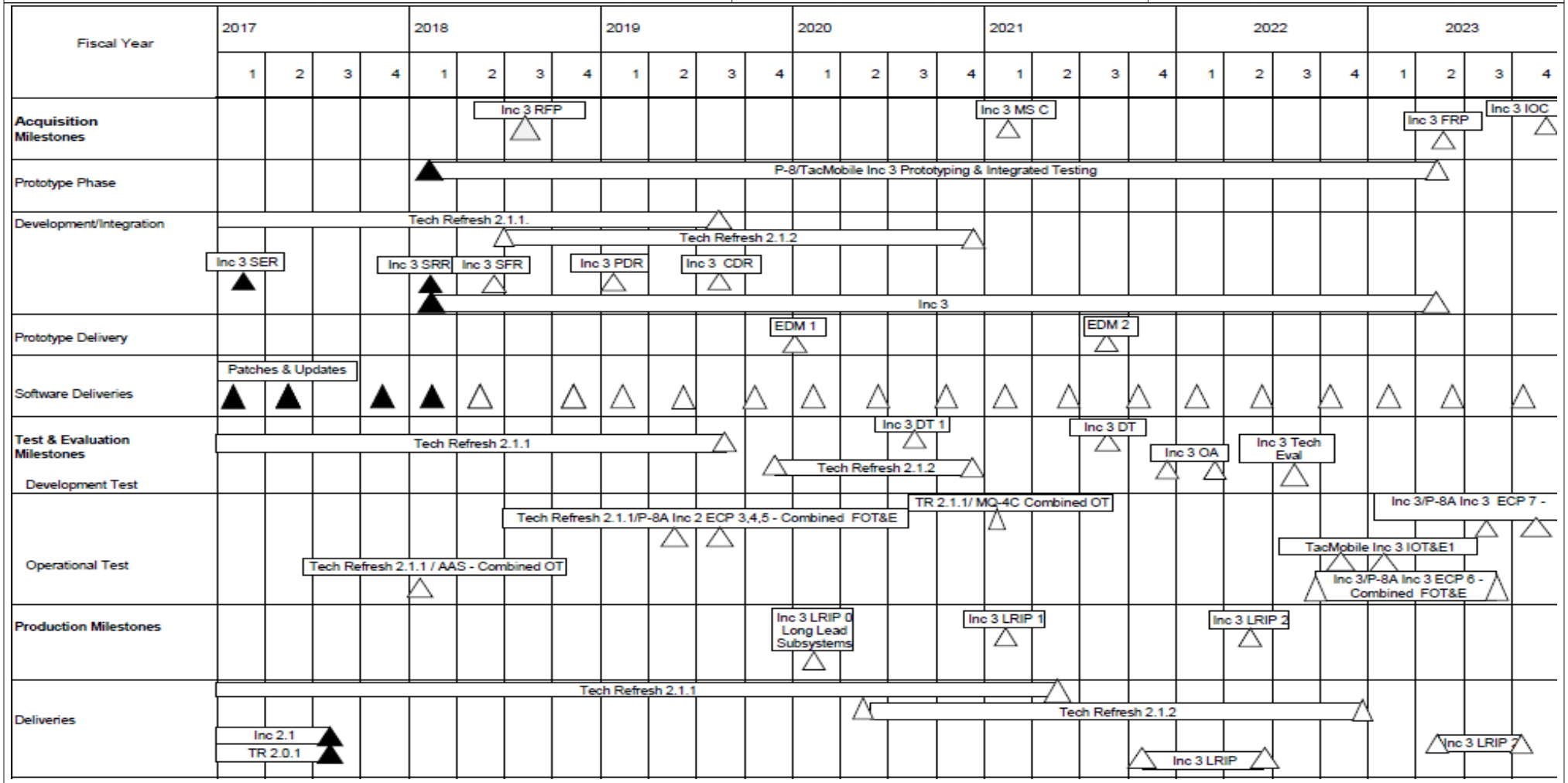


Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 0486 / *Tactical Support Center*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 0486				
Software Delivery (Quarterly)	1	2017	4	2023
Tech Refresh Delivery (TR 2.1.1)	1	2017	2	2021
Tech Refresh Delivery (TR 2.1.2)	2	2020	4	2022
Combined Operational Test (Tech Refresh 2.1.1)	1	2018	1	2021
Development (TR 2.1.1)	1	2017	3	2019
Development (TR 2.1.2)	3	2018	4	2020
Developmental Test (Tech Refresh 2.1.1)	1	2017	3	2019
Developmental Test (Tech Refresh 2.1.2)	4	2019	4	2020
Prototyping & Integrated Testing (P-8/TacMobile) (Increment 3)	1	2018	2	2023
System Engineering Review (Increment 3)	1	2017	1	2017
System Requirements Review (Increment 3)	1	2018	1	2018
System Functional Review (Increment 3)	2	2018	2	2018
Request for Proposal release (Increment 3)	3	2018	3	2018
Preliminary Design Review (Increment 3)	1	2019	1	2019
Critical Design Review (Increment 3)	3	2019	3	2019
Development (Increment 3)	1	2018	2	2023
Developmental Test (Increment 3)	3	2020	3	2021
Operational Assessment (Increment 3)	4	2021	1	2022
Full Rate Production (Increment 3)	2	2023	2	2023
Milestone C (Increment 3)	1	2021	1	2021
Low Rate Initial Production (Increment 3)	1	2020	1	2020
Low Rate Initial Production (Increment 3) 1	1	2021	1	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 0486 / *Tactical Support Center*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Low Rate Initial Production (Increment 3) 2	2	2022	2	2022
Developmental Test (Increment 3 Tech Eval)	3	2022	3	2022
Operational Test (Increment 3)	4	2022	1	2023
Increment 3 EDM Delivery	1	2020	3	2021
Increment 3 LRIP Delivery	4	2021	4	2023
Combined Operational Tests/Follow On Tests	1	2018	4	2023
Increment 3 IOC	4	2023	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 3032 / *NTCSS (Naval Tactical Command Spt Sys)*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3032: *NTCSS (Naval Tactical Command Spt Sys)*	84.713	13.192	4.044	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	101.949
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Naval Tactical Command Support System (NTCSS) is a multi-function program designed to provide standard tactical support information systems to various afloat and associated shore-based fleet activities. The mission is to provide the Navy and Marine Corps with an integrated, scalable system that supports the management of logistical information, personnel, material, and funds required to maintain and operate ships, submarines, and aircraft.

Funding provides for the design, development, and testing of NTCSS Open Architecture (OA) development efforts to include: Global Individual Component Repair List (G-ICRL); Beyond Capability of Maintenance Interdiction (BCM-I); Operational Supply (O-Supply), which includes Table of Allowance & Personal Gear Issue (TOA/PGI) and Total Material Visibility & Requisition Management (TMV/RM).

Funding also supports the transition of the current client-server architecture to a service-oriented architecture (SOA) and web-based services (NTCSS OA). This will align with the initiative to bring Navy systems into a common computing environment afloat, interface with Navy Enterprise Resource Planning (ERP) ashore, and provide a more flexible system platform with greater responsiveness to security, information assurance, functional, and system requirements and with greater speed to capability.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: NTCSS (Naval Tactical Command Spt Sys)	13.192	4.044	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Maintenance and Supply Management Capability					
FY 2018 Plans: Conduct DT and Operational Testing (OT) for O-Supply to include TOA/PGI.					
FY 2019 Base Plans: Acquisition activities continue under project 3620.					
FY 2019 OCO Plans: N/A					
FY 2018 to FY 2019 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3032 / *NTCSS (Naval Tactical Command Spt Sys)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Funding in Project 3032 ceases in FY2019 as NTCSS transitioned development of tactical support information systems to the Naval Operational Business Logistics Enterprise (NOBLE).					
Accomplishments/Planned Programs Subtotals	13.192	4.044	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• OPN/2611: *Naval Tactical Command Support System*	12.336	10.741	10.991	-	10.991	14.571	14.779	16.317	17.896	Continuing	Continuing

Remarks

D. Acquisition Strategy

NTCSS Open Architecture (OA), Global Individual Component Repair List (G-ICRL) and Beyond Capability of Maintenance Interdiction (BCM-I), and O-Supply serve as the initial steps toward achieving the NTCSS OA "End-State" by introducing web-enabled technology, promoting data sharing with operational fleet forces, and utilization of Navy Data Centers to expose data and move workload ashore. This strategy provides the foundation for NTCSS to migrate to a full service-oriented architecture-based enterprise system.

E. Performance Metrics

NTCSS Open Architecture (OA), G-ICRL and BCM-I, eliminate documentation inefficiencies at the Fleet Readiness Centers (FRCs). O-Supply (Table of Allowance & Personal Gear Issue (TOA/PGI) and Total Material Visibility & Requisition Management (TMV/RM) provide centralized and standardized management of PGI and TOA material through the utilization of Navy Data Centers. O-Supply prevents millions of dollars in operational forces obligation losses through improved requisition management. SOA lowers system maintenance costs when compared to maintaining the current, client-server architecture.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3032 / *NTCSS (Naval Tactical Command Spt Sys)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	SSC : North Charleston, SC	0.668	0.000		0.000		0.000		-		0.000	0.000	0.668	0.668
Systems Engineering	C/CPFF	SeaPort : San Diego, CA	3.318	0.430	Nov 2016	0.200	Nov 2017	0.000		-		0.000	0.000	3.948	Continuing
Systems Engineering	WR	SSC : San Diego, CA	0.892	0.000		0.000		0.000		-		0.000	0.000	0.892	-
Licenses	Various	SSC : San Diego, CA	0.700	0.000		0.100	Nov 2017	0.000		-		0.000	0.000	0.800	0.700
Software Development	C/CPFF	SSC : SSC: Norfolk, VA	64.800	4.100	Feb 2017	1.040	Nov 2017	0.000		-		0.000	0.000	69.940	Continuing
Software Development	C/CPFF	Various : San Diego, CA	0.000	7.812	Feb 2017	0.000		0.000		-		0.000	0.000	7.812	Continuing
Software Development	C/CPFF	DTIC : Fort Belvoir, VA	1.592	0.000		0.000		0.000		-		0.000	0.000	1.592	-
Software Development	C/CPFF	GTRI : Atlanta, GA	2.083	0.000		0.000		0.000		-		0.000	0.000	2.083	-
Analysis of Alternatives	Various	SSC : San Diego, CA	2.055	0.000		0.830	Oct 2017	0.000		-		0.000	0.000	2.885	-
Detailed Business Process Re-engineering	Various	NAVAIR : Pax River, CA	0.862	0.000		0.924	Oct 2017	0.000		-		0.000	0.000	1.786	-
Integrated Logistics Support	C/CPFF	SeaPort : San Diego, CA	1.355	0.000		0.400	Nov 2017	0.000		-		0.000	0.000	1.755	Continuing
Configuration Management	WR	SSC : San Diego, CA	0.460	0.000		0.050	Nov 2017	0.000		-		0.000	0.000	0.510	0.460
Technical Data	WR	SSC : San Diego, CA	0.200	0.000		0.050	Nov 2017	0.000		-		0.000	0.000	0.250	0.200
		Subtotal	78.985	12.342		3.594		0.000		-		0.000	0.000	94.921	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	WR	NAWC : Patuxent River, MD	1.254	0.120	Nov 2016	0.000		0.000		-		0.000	0.000	1.374	Continuing
Developmental Test & Evaluation	WR	SPAWAR FRD : San Diego, CA	0.000	0.420	Nov 2016	0.000		0.000		-		0.000	0.000	0.420	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3032 / *NTCSS (Naval Tactical Command Spt Sys)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation Cyber	WR	SSC : San Diego, CA	1.316	0.110	Nov 2016	0.200	Nov 2017	0.000		-		0.000	0.000	1.626	Continuing
Developmental Test & Evaluation	WR	NAVSUP : Mechanicsburg, PA	0.000	0.000		0.050	Nov 2017	0.000		-		0.000	0.000	0.050	-
		Subtotal	2.570	0.650		0.250		0.000		-		0.000	0.000	3.470	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	SeaPort : San Diego, CA	0.896	0.000		0.000		0.000		-		0.000	0.000	0.896	0.896
Government Engineering Support	WR	SSC : San Diego, CA	0.279	0.000		0.000		0.000		-		0.000	0.000	0.279	0.279
Program Management Support	C/CPFF	SeaPort : San Diego, CA	1.983	0.200	Nov 2016	0.200	Nov 2017	0.000		-		0.000	0.000	2.383	Continuing
		Subtotal	3.158	0.200		0.200		0.000		-		0.000	0.000	3.558	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	84.713	13.192		4.044		0.000		-		0.000	0.000	101.949	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy			**Date:** February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3032 / *NTCSS (Naval Tactical Command Spt Sys)*	

Fiscal Year	2017				2018				2019				2020				2021				2022				2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones NTCSS Open Architecture (OA)			Rel 1/2 FD △				Rel 3 FD △																					
Engineering Milestones NTCSS OA Release 1 BCM-Interdiction																												
NTCSS OA Release 2 Global ICRL																												
NTCSS OA Release 3 Operational Supply (TOA/PGI)					TRR/ RRR △																							
NTCSS Web-Enabled (RSUP/OIMA/OOMA)				RSUP RRR △																								
Test & Evaluation Milestones NTCSS OA		Rel 1/2 DT △				Rel 3 DT/OT △																						
Software Deliveries NTCSS OA			Rel 1/2 △				Rel 3 △																					
NTCSS Web-Enabled					RSUP △																							

Release Readiness Review;
DT Developmental Test; OT Operational Test

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3032 / *NTCSS (Naval Tactical Command Spt Sys)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3032				
NTCSS OA Build 1 - Development Test (DT)	2	2017	2	2017
NTCSS OA Build 1 - Software Delivery	3	2017	3	2017
NTCSS OA Build 2 - Development Test (DT)	2	2017	2	2017
NTCSS OA Build 2 - Software Delivery	3	2017	3	2017
NTCSS OA Build 3 - Test Readiness Review (TRR)	1	2018	1	2018
NTCSS OA Build 3 - Release Readiness Review (RRR)	1	2018	1	2018
NTCSS OA Build 3 - Development Test (DT) / Operational Test (OT)	2	2018	2	2018
NTCSS OA Build 3 - Software Delivery	3	2018	3	2018
NTCSS Web-Enabled RSUP - Release Readiness Review (RRR)	4	2017	4	2017
NTCSS Web-Enabled RSUP - Software Delivery	1	2018	1	2018

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 3260 / *Naval Operations Business Logistics Enterprise (NOBLE)*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3260: *Naval Operations Business Logistics Enterprise (NOBLE)*	0.000	0.000	19.102	37.792	-	37.792	40.653	31.817	14.126	6.940	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project develops and improves the Navy's tactical support information systems. It includes Naval Operational Supply System (NOSS), Naval Aviation Maintenance System (NAMS), Naval Operational Maintenance Enterprise (NOME), and Naval Administration and Personnel System (NAPS).

NOSS will provide enterprise-wide automation of supply, inventory, and financial functions to the Naval supply system. NOSS incorporates commercial best practices (e.g., Amazon, Wal-Mart, UPS, FedEx, etc.); NOSS will aggregate and analyze logistics data using business intelligence technologies, provide for total asset visibility, optimize business processes at the tactical echelon (field-level) and enterprise support activities, accelerate the ordering/re-ordering process, and permit monitoring of shipments. NOSS will maintain compliance with statutory, regulatory, and policy mandates of Financial Improvement Audit Requirements (FIAR). NOSS will aggregate and analyze operational data in a Business Intelligence (BI) framework to enable historical and predictive common operating pictures for logistics and readiness performance and requirements. FY2019 funding provides for the continuation and completion of software development efforts, the delivery of Software Build 1 (BLD 1) and commencement of Developmental Test and Evaluation (DT&E) efforts for BLD 1.

NAMS will provide an enterprise-wide aviation maintenance support capability that services all levels of aviation maintenance (organizational, intermediate, and depot) for over 2,100 Navy and Marine Corps aircraft. NAMS will identify and assign aviation artisans, and track all levels of aviation maintenance to completion. Aircraft availability and mission-capable rates will increase with the elimination of current inefficiencies; there will be a reduction in total ownership costs. FY2019 funding provides for the completion of software conversion/modernization efforts for Naval Aviation Logistics Command Management Information System (NALCOMIS) applications, conduction of Milestone B/C review, award of the NAMS BLD 1 contract and commencement of software development efforts for BLD 1.

NOME will provide standardized operational business processes for afloat maritime maintenance activities to all naval ships. NOME will provide end-to-end component tracking, reduce administration time by identifying and assigning artisans to repair shipboard equipment, support moving major repair work ashore, and enable exploitation of embedded sensors in weapon systems that will trigger repair action notification. FY2019 funding provides for the conduction of Milestone B/C review, award of the NOME BLD 1 contract and commencement of software development efforts for BLD 1.

NAPS will provide Navy-wide personnel and administration data sharing across shipboard and shore-based information systems. This will eliminate redundant personnel data entry, reduce total ownership costs, and standardize the way personnel and administration data are shared across the Navy. NAPS provides for the efficient use of maintenance personnel with better job/task and personnel skill matching.

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3260 / *Naval Operations Business Logistics Enterprise (NOBLE)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Naval Operational Supply System (NOSS)	0.000	14.202	24.113	0.000	24.113
Articles:	-	-	-	-	-
FY 2018 Plans: Develop acquisition documentation in support of a Naval Operational Supply System (NOSS) Milestone B/C decision leading to a Build Decision 1 (BD 1). Perform systems engineering analysis, system design efforts, and software development for NOSS Software Build 1 (BLD 1). ***FY 2019 Base Plans:*** Continue systems engineering analysis, system design efforts, and software development for BLD 1. Commence agile software development to include configuration and modeling and associated System Engineering Technical Reviews (SETR) to satisfy NOSS requirements identified for BLD 1. Commence Functional Manager certification and Developmental Test and Evaluation (DT&E) efforts for BLD 1. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase in funding for NOSS due to the transition from conducting an AoA and preparing documentation in FY18 to software development in FY19 to include, integration, data migration, hosting, and Commercial Off The Shelf (COTS) license costs.					
Title: Naval Aviation Maintenance System (NAMS)	0.000	2.400	9.900	0.000	9.900
Articles:	-	-	-	-	-
FY 2018 Plans: Continue software conversion/modernization efforts for Optimized Intermediate Maintenance Activity (OIMA) and Optimized Organizational Maintenance Activity (OOMA) Naval Aviation Logistics Command Management Information System (NALCOMIS) applications (previously funded under Naval Tactical Command Support System (NTCSS) 3032). Prepare/develop acquisition documentation in support of a NAMS Milestone B/C decision leading to a NAMS Build Decision 1 (BD1). ***FY 2019 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3260 / *Naval Operations Business Logistics Enterprise (NOBLE)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Complete software conversion/modernization efforts for NALCOMIS applications. Conduct NAMS Milestone B/C review. Award NAMS Software Build 1 (BLD 1) contract. Commence systems engineering analysis, system design efforts, and software development for BLD 1. Commence agile software development to include configuration and modeling and associated System Engineering Technical Reviews (SETR) to satisfy NAMS requirements identified for BLD 1. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase in funding for NAMS due to the transition from conducting an AoA and preparing documentation in FY18 to software development in FY19 to include, integration, data migration, hosting, and Commercial Off The Shelf (COTS) license costs.					
Title: Naval Operational Maintenance Enterprise (NOME) ***Articles:*** ***FY 2018 Plans:*** Conduct Analysis of Alternatives (AoA) for Naval Operational Maintenance Enterprise (NOME). Prepare/develop acquisition documentation in support of NOME Milestone B/C decision leading to a Build Decision 1 (BD 1). ***FY 2019 Base Plans:*** Continue to prepare/develop acquisition documentation in support of a Request For Proposal (RFP) and Milestone B/C decision leading to a BD 1. Conduct Milestone B/C review. Award NOME Software Build 1 (BLD 1) contract. Commence systems engineering analysis, system design efforts, and software development for BLD 1. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Increase in funding for NOME due to the transition from conducting an AoA and preparing documentation in FY18 to software development in FY19 to include, integration, data migration, hosting, and Commercial Off The Shelf (COTS) license costs.	0.000 -	1.500 -	3.779 -	0.000 -	3.779 -
Title: Naval Administration and Personnel System (NAPS) ***Articles:***	0.000 -	1.000 -	0.000 -	0.000 -	0.000 -

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3260 / *Naval Operations Business Logistics Enterprise (NOBLE)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
FY 2018 Plans: Conduct Analysis of Alternatives (AoA) for NAPS. Prepare/develop acquisition documentation in support of a NAPS Milestone B/C decision leading to a Build Decision 1 (BD1). ***FY 2019 Base Plans:*** N/A ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** N/A					
Accomplishments/Planned Programs Subtotals	0.000	19.102	37.792	0.000	37.792

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

NOBLE will employ an evolutionary acquisition strategy. Software development will be comprised of multiple builds, each with increasing net-centric services capability. NOBLE is planned as a software-only program, dependent on the Navy Common Computing Environment (CCE). Hardware infrastructure will be provided by CANES, Integrated Shipboard Network System (ISNS), Navy Marine Corps Intranet (NMCI), Next Generation Enterprise Network (NGEN), OneNET (the OCONUS (outside of continental United States) network), and the Department of Navy commercial cloud computing environments. NOBLE's primary contracting method for software development will be competitive award.

E. Performance Metrics

Successfully achieve Milestone B/C decisions for NOSS, NAMS, NOME, and NAPS.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3260 / *Naval Operations Business Logistics Enterprise (NOBLE)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NOME Software Development	TBD	TBD : TBD	0.000	0.000		0.000		2.500	Aug 2019	-		2.500	0.000	2.500	-
NAMS Software Development	TBD	TBD : TBD	0.000	0.000		0.000		7.000	Nov 2018	-		7.000	0.000	7.000	-
NOSS Software Development	TBD	TBD : TBD	0.000	0.000		12.077	Jul 2018	20.363	Oct 2018	-		20.363	Continuing	Continuing	Continuing
NOME System Engineering	WR	SPAWARSYSCEN LANT : Norfolk, VA	0.000	0.000		0.000		0.479	Oct 2018	-		0.479	0.000	0.479	-
NOSS System Engineering	WR	SPAWARSYSCEN LANT : Norfolk, VA	0.000	0.000		0.375	Oct 2017	0.750	Oct 2018	-		0.750	Continuing	Continuing	Continuing
NOSS System Engineering	WR	USFFC : Norfolk, VA	0.000	0.000		0.000		1.000	Dec 2018	-		1.000	0.000	1.000	-
NAMS System Engineering	WR	SPAWARSYSCEN LANT : Norfolk, VA	0.000	0.000		0.750	Oct 2017	0.750	Oct 2018	-		0.750	Continuing	Continuing	Continuing
NOME Analyis of Alternatives (AoA)	TBD	TBD : TBD	0.000	0.000		1.500	Mar 2018	0.000		-		0.000	Continuing	Continuing	Continuing
NAPS Analyis of Alternatives (AoA)	TBD	TBD : TBD	0.000	0.000		1.000	Mar 2018	0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		15.702		32.842		-		32.842	Continuing	Continuing	N/A

Remarks

FY19 product development increase is due to increased software development and engineering efforts across the NOBLE portfolio.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NOME Developmental Test & Evaluation	WR	NAVSEA : Washington, D.C.	0.000	0.000		0.000		0.200	Oct 2018	-		0.200	0.000	0.200	-
NOME Operational Test & Evaluation	WR	COTF : Norfolk, VA	0.000	0.000		0.000		0.200	Oct 2018	-		0.200	0.000	0.200	-
NAMS Developmental Test & Evaluation	WR	NAVAIR : Patuxent River, MD	0.000	0.000		0.000		0.250	Oct 2018	-		0.250	0.000	0.250	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 3260 / *Naval Operations Business Logistics Enterprise (NOBLE)*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NAMS Operational Test & Evaluation	WR	COTF : Norfolk, VA	0.000	0.000		0.000		0.250	Oct 2018	-		0.250	0.000	0.250	-
NOSS Developmental Test & Evaluation (Documentation)	WR	NAVSUP : Mechanicsburg, PA	0.000	0.000		0.250	Oct 2017	0.250	Oct 2018	-		0.250	Continuing	Continuing	Continuing
NOSS Operational Test & Evaluation (Documentation)	WR	COTF : Norfolk, VA	0.000	0.000		0.250	Oct 2017	0.250	Oct 2018	-		0.250	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.500		1.400		-		1.400	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NOME System Engineering Support	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	0.000		0.000		0.200	Oct 2018	-		0.200	0.000	0.200	-
NOSS System Engineering Support	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	0.000		0.250	Oct 2017	0.750	Oct 2018	-		0.750	Continuing	Continuing	Continuing
NAMS System Engineering Support	WR	SPAWARSYSCEN PAC : San Diego, CA	0.000	0.000		0.250	Oct 2017	0.825	Oct 2018	-		0.825	Continuing	Continuing	Continuing
NOME Program Management Support	C/CPFF	SeaPort : San Diego, CA	0.000	0.000		0.000		0.200	Oct 2018	-		0.200	0.000	0.200	-
NOSS Program Management Support	C/CPFF	SeaPort : San Diego, CA	0.000	0.000		1.000	Nov 2017	0.750	Oct 2018	-		0.750	Continuing	Continuing	Continuing
NAMS Program Management Support	C/CPFF	SeaPort : San Diego, CA	0.000	0.000		1.400	Nov 2017	0.825	Oct 2018	-		0.825	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		2.900		3.550		-		3.550	Continuing	Continuing	N/A

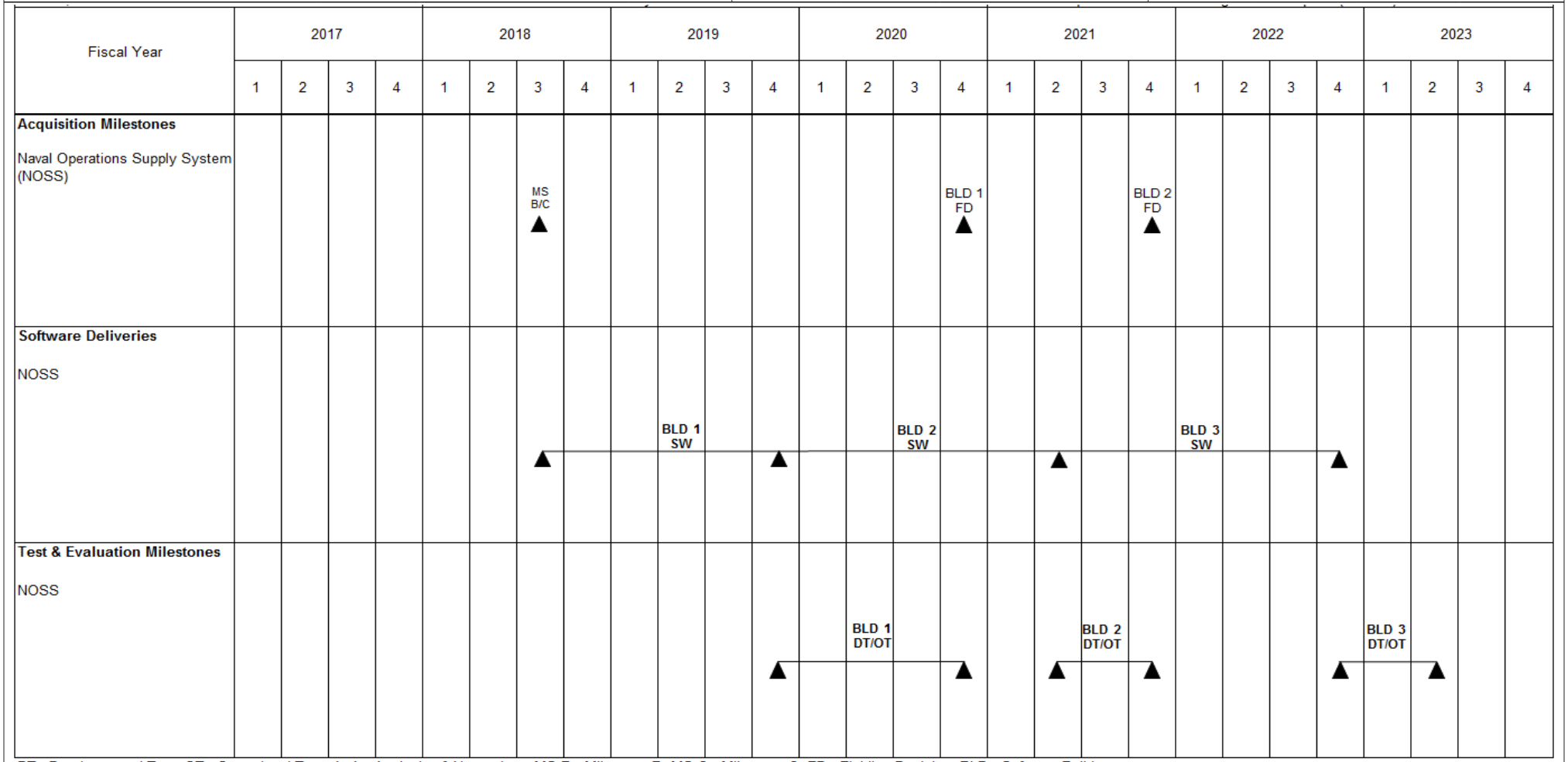
	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		19.102		37.792		-		37.792	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 3260 / *Naval Operations Business Logistics Enterprise (NOBLE)*	

	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract

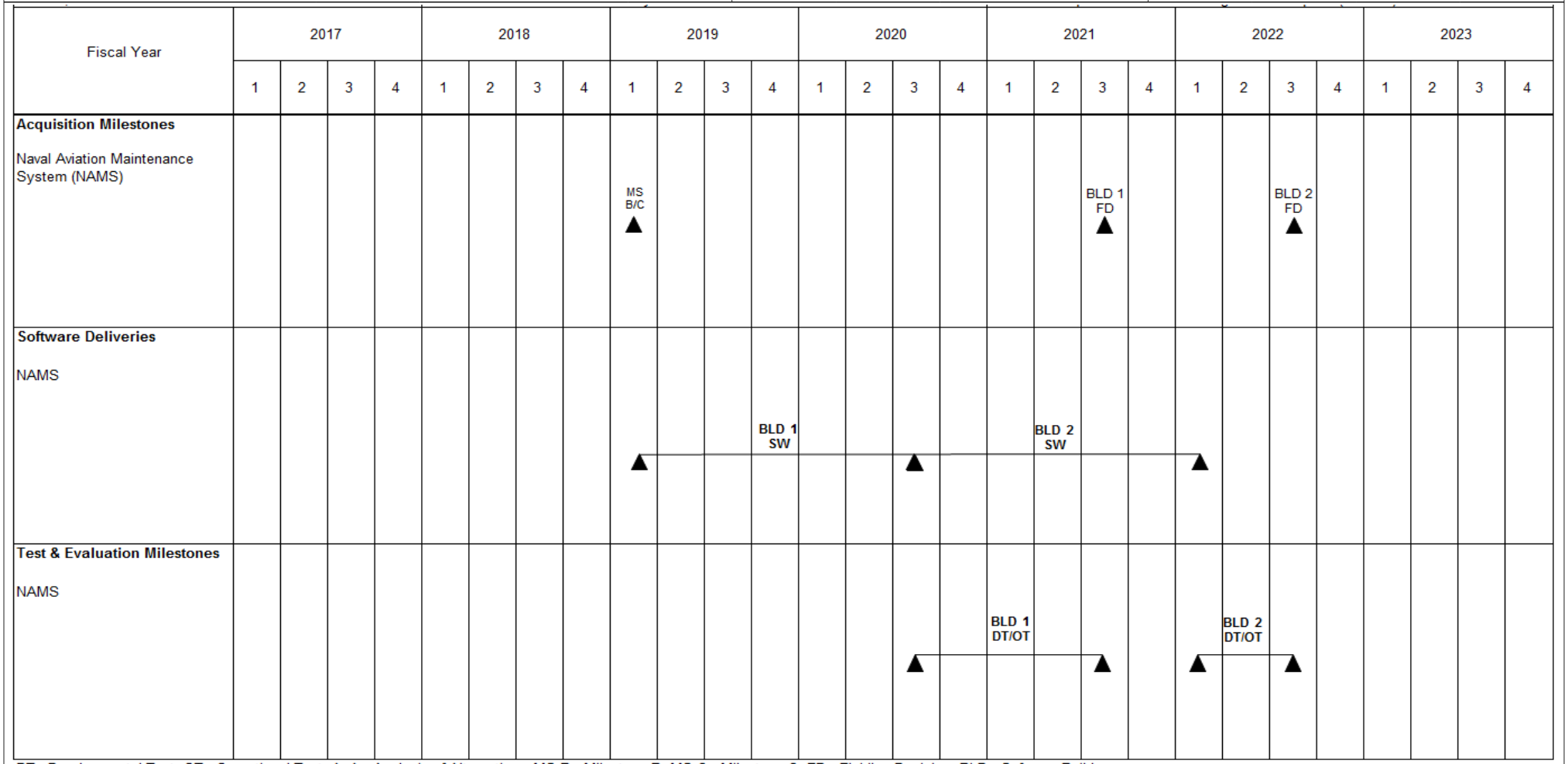
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3260 / *Naval Operations Business Logistics Enterprise (NOBLE)*



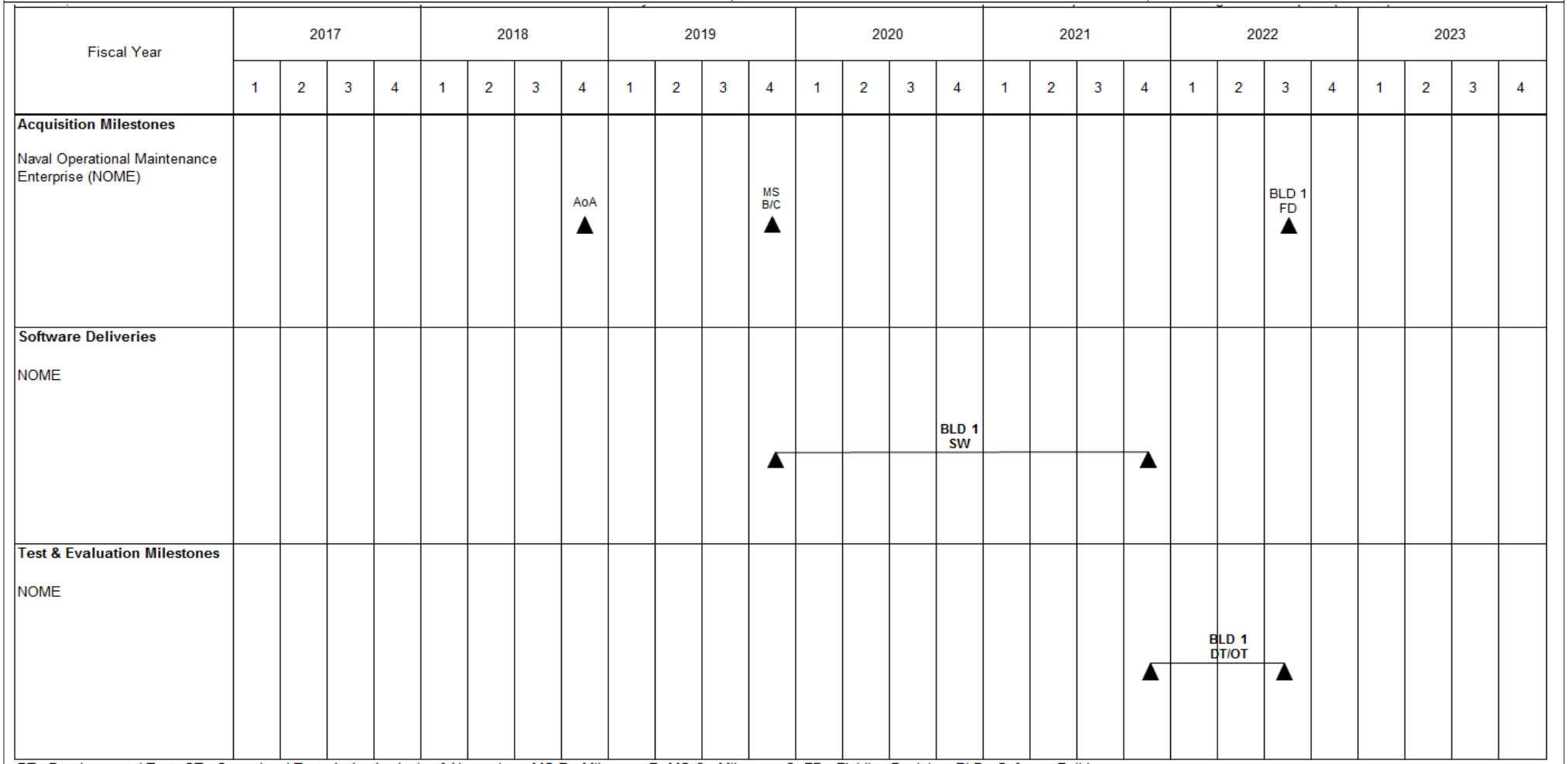
DT - Developmental Test; OT - Operational Test; AoA - Analysis of Alternatives; MS B - Milestone B; MS C - Milestone C; FD - Fielding Decision; BLD - Software Build

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3260 / *Naval Operations Business Logistics Enterprise (NOBLE)*



DT - Developmental Test; OT - Operational Test; AoA - Analysis of Alternatives; MS B - Milestone B; MS C - Milestone C; FD - Fielding Decision; BLD - Software Build

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3260 / *Naval Operations Business Logistics Enterprise (NOBLE)*



DT - Developmental Test; OT - Operational Test; AoA - Analysis of Alternatives; MS B - Milestone B; MS C - Milestone C; FD - Fielding Decision; BLD - Software Build

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		**Date:** February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3260 / *Naval Operations Business Logistics Enterprise (NOBLE)*

Fiscal Year	2017				2018				2019				2020				2021				2022				2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones Naval Administration and Personnel System (NAPS)							AoA ▲				MS B/C ▲												BLD 1 FD ▲						
Software Deliveries NAPS																			BLD 1 SW ▲									
Test & Evaluation Milestones NAPS																							BLD 1 DT/OT ▲					

DT - Developmental Test; OT - Operational Test; AoA - Analysis of Alternatives; MS B - Milestone B; MS C - Milestone C; FD - Fielding Decision; BLD - Software Build

Note: Schedule is notional; funding and activity will be on hold pending the identification of functional manager to validate program requirements.

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3260 / *Naval Operations Business Logistics Enterprise (NOBLE)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3260				
Naval Administration and Personnel System (NAPS) Analysis of Alternatives (AoA)	3	2018	3	2018
Naval Operational Supply System (NOSS) Milestone B/C	3	2018	3	2018
Naval Operational Maintenance Enterprise (NOME) Analysis of Alternatives (AoA)	4	2018	4	2018
Naval Aviation Maintenance System (NAMS) Milestone B/C	1	2019	1	2019
NAPS Milestone B/C	3	2019	3	2019
NOME Milestone B/C	4	2019	4	2019
NOSS Build 1 Release	3	2018	4	2019
NAMS Build 1 Release	1	2019	3	2020
NOSS Build 1 Developmental/Operational Test (DT/OT)	4	2019	4	2020
NOSS Build 1 Fielding Decision (FD)	4	2020	4	2020
NOSS Build 2 Release	4	2019	2	2021
NAMS Build 1 Developmental/Operational Test (DT/OT)	3	2020	3	2021
NAPS Build 1 Release	3	2021	3	2021
NAMS Build 1 Fielding Decision (FD)	3	2021	3	2021
NOME Build 1 Release	4	2019	4	2021
NOSS Build 2 FD	4	2021	4	2021
NOSS Build 2 DT/OT	2	2021	4	2021
NAMS Build 2 Release	3	2020	1	2022
NAPS Build 1 Developmental/Operational Test (DT/OT)	3	2022	3	2022
NOME Build 1 Developmental/Operational Test (DT/OT)	4	2021	3	2022
NAMS Build 2 DT/OT	1	2022	3	2022

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3260 / *Naval Operations Business Logistics Enterprise (NOBLE)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
NOME Build 1 Fielding Decision (FD)	3	2022	3	2022
NAPS Build 1 Fielding Decision (FD)	3	2022	3	2022
NAMS Build 2 FD	3	2022	3	2022
NOSS Build 3 Release	3	2021	4	2022
NOSS Build 3 DT/OT	4	2022	2	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 3323 / *Maritime Tactical Command & Control (MTC2)*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3323: *Maritime Tactical Command & Control (MTC2)*	45.833	14.023	17.487	12.038	-	12.038	8.888	9.099	9.335	9.588	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Maritime Tactical Command and Control (MTC2) is the next generation Command and Control (C2) software program that will deliver Battle Management Aids (BMA) and Maritime Planning Tools (MPT) to dynamically plan, direct, monitor, and assess maritime operations in support of Joint, Multi-Service, Coalition Forces planning. MTC2 will leverage a System of Services (SoServ) to deliver capabilities improving decision speed and dynamic synchronization of forces. BMAs / MPTs are small, capability-focused deliveries that can be rapidly developed, tested, and fielded. MTC2 will leverage Science and Technology (S&T) investments and will engage with the Navy Requirements Governance Board to define and prioritize the BMAs and MPTs that MTC2 will deliver and align to the Program Executive Office (PEO) Command, Control, Communications, and Intelligence (C4I) enterprise architecture (Consolidated Afloat Network Enterprise Service (CANES), Agile Core Services (ACS)) for fielding to all echelons of command (Afloat and Ashore) within the Navy. The program's objective is to provide a suite of maritime applications (BMAs / MPTs) that enable planning, execution, monitoring, and assessment in support of operational and tactical level of war requirements. MTC2 will field BMAs / MPTs designed to provide automated and structured support for tactical and operational planning, decision-making, and execution. As a software-only program that leverages enterprise infrastructure, MTC2 will provide new and improved capabilities to include an Operational Planning Tool (OPT), an improved browser enabled map visualization that will enable the warfighter to associate tracks to relevant data, past and predicted movements, ingest Meteorology and Oceanography information, and operational overlays. MTC2's updated architecture will enable future composable C2 capabilities to respond to a more rapid pace in changes in threats and technology. MTC2 is the Navy's solution to Global Force Management - Data Initiative (GFM-DI) which is Department of Defense (DoD) -wide enterprise solution that enables visibility/accessibility/ sharing of data applicable to the entire DoD force structure. MTC2 will incorporate distributed data transfer capability for enhanced operational data exchange between command and control systems, combat systems, logistics, and intelligence systems for timely threat identification, location, and status alongside blue force data.

FY 2019 funding will provide prototype development, integration, and testing for additional BMAs / MPTs and the Navy's allocation requirement to support DoD Joint GFM effort on the MTC2 Secure Internet Protocol Router Network (SIPRNET) Development Environment. OPT will provide capability for a Carrier Strike Group (CSG and be extended to include Maritime Operations Center (MOC) scheduling, to create cohesive operations plans/schedules. The Navy Wave BMA will provide collaborative service that allows users to see other distributed planners' edits in real-time, and works in disconnected, intermittent, and limited (DIL) environments. The MTC2 SIPRNET Development Environment will be available to the fleet to enable rapid feedback on improvements to BMAs / MPTs. MTC2 project prototype baseline comprised of OPT, Navy Wave BMAs / MPTs will be demonstrated at Trident Warrior (TW) 19. In FY 2019, MTC2 will continue transitioning prototype capabilities to a program of record and initiating program of record development, integration and test activities.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Maritime Tactical Command and Control (MTC2)	12.590	17.487	12.038	0.000	12.038
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3323 / *Maritime Tactical Command & Control (MTC2)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
FY 2018 Plans: Provide prototype development, integration, and testing for Battle Management Aids (BMA) / Maritime Planning Tools (MPT): Operational Planning Tool (OPT), Navy Wave, and Distributed Data Transfer Service (DDTS) on the MTC2 Secure Internet Protocol Router Network (SIPRNET) Development Environment. Enable Fleet feedback for BMA / MPT improvement leveraging the MTC2 SIPRNET Development Environment. Field initial MTC2 project prototype baseline including OPT and Navy Wave BMAs / MPTs. Demonstrate MTC2 project prototype baseline including OPT and Navy Wave BMAs / MPTs at TW 18. Continue development to align to Program Executive Office (PEO) Command, Control, Communications, and Intelligence (C4I) enterprise architecture (Consolidated Afloat Networks and Enterprise Services (CANES) / Agile Core Services (ACS)). Conduct pre-Milestone B/Build Decision program and acquisition activities including all statutory and regulatory documentation to meet Milestone B/Build Decision requirements. Hold a Milestone B/Build Decision and become a program of record. Continue integration and testing of designated Global Force Management - Data Initiative (GFM-DI) capabilities for translation into the MTC2 prototype software baseline and begin integration and testing for fielding. Initiate transitioning prototype capabilities to a program of record and initiate program of record development, integration and test activities.					
FY 2019 Base Plans: MTC2 will deliver Ashore/Afloat prototype of program of record capability to a Carrier Strike Group (CSG) and/or Maritime Operations Center (MOC); continue development to align to PEO C4I enterprise architecture (CANES / ACS). MTC2 will continue development, integration, and testing for additional BMAs / MPTs to include the Maintain Naval Force Status capability. MTC2 will develop, test, and integrate interfaces to summarize unit network and communication status, unit readiness, and unit equipment status. Data that is integrated into MTC2 will be displayed simultaneously in a capabilities and characteristics status display known as the "Baseball Card", which will require Human Factors Engineering (HFE) in addition to development, integration, and test. MTC2 will incorporate HFE updates for BMA / MPT improvements leveraging the MTC2 SIPRNET Development Environment. MTC2 will demonstrate capabilities at TW 19. MTC2 will continue integration and testing of Global Force Management - Data Initiative (GFM-DI) capabilities for translation into the MTC2 prototype software baseline for fielding.					
FY 2019 OCO Plans: N/A					
FY 2018 to FY 2019 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3323 / *Maritime Tactical Command & Control (MTC2)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
FY2018 to FY2019 funding for MTC2 decreases due to direction to align to the new program scope per the Strategic Shift Memo from the Office of the Chief of Naval Operations (OPNAV) dated 28 NOV 2016. In order to meet OPNAV's redirection, the program was required to re-baseline in order to focus on delivery of Battle Management Aids (BMA) / Maritime Planning Tools (MPT).					
Title: Global Force Management - Data Intiative (GFM-DI) ***Articles:*** ***FY 2018 Plans:*** Beginning in FY18, GFM-DI plans and accomplishments will be moving under the MTC2 Project and Program of Record. ***FY 2019 Base Plans:*** N/A ***FY 2019 OCO Plans:*** N/A	1.433 -	0.000 -	0.000 -	0.000 -	0.000 -
Accomplishments/Planned Programs Subtotals	14.023	17.487	12.038	0.000	12.038

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

MTC2 acquisition strategy will align to DoDI 5000.02 Model 3 Incrementally Deployed Software Intensive Program. MTC2 will execute a rapid software development acquisition strategy that is responsive to the fleet needs. Instead of a single Milestone C, software development will be comprised of multiple software releases defined by Capability Drops (CDs) of increasing levels of net-centric services capability, with separate Annual Build Decisions. MTC2 will remain in the Risk Reduction prototype phase until Milestone B scheduled in FY 2018. MTC2 will be software only requiring the information technology infrastructure network and hardware provided by other network centric programs. MTC2's primary contracting method for software development will utilize Space and Naval Warfare (SPAWAR) Systems Command contracts. SPAWAR Systems Center - Pacific (SSC-PAC), San Diego, CA will be the designated Software Support Activity (SSA).

E. Performance Metrics

MTC2 performance metrics will be defined and approved during Milestone B projected for FY 2018.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3323 / *Maritime Tactical Command & Control (MTC2)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	SSC : San Diego, CA	6.692	3.125	Dec 2016	4.095	Dec 2017	2.909	Dec 2018	-		2.909	Continuing	Continuing	Continuing
Training Development	WR	SSC : San Diego, CA	1.795	0.145	Dec 2016	0.177	Dec 2017	0.078	Dec 2018	-		0.078	Continuing	Continuing	Continuing
Integration, Assembly & Test	WR	SSC : San Diego, CA	21.075	5.574	Dec 2016	0.000		3.096	Dec 2018	-		3.096	0.000	29.745	23.363
Studies & Design	MIPR	Various : Various	1.764	0.000		0.000		0.000		-		0.000	0.000	1.764	1.764
Systems Engineering	C/CPFF	Various : Various	9.543	2.744	Dec 2016	3.440	Dec 2017	1.855	Dec 2018	-		1.855	Continuing	Continuing	Continuing
Software Development	WR	SSC : San Diego, CA	0.000	1.384	Dec 2016	8.543	Dec 2017	3.139	Dec 2018	-		3.139	Continuing	Continuing	Continuing
		Subtotal	40.869	12.972		16.255		11.077		-		11.077	Continuing	Continuing	N/A

Remarks

The increase in Integration, Assembly, and Test costs in FY19 are due to integration and testing requirements leading up to Test Event 1 and the initial delivery of the Ashore/ Afloat prototype.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	WR	SSC : Norfolk, VA/ San Diego, CA	0.047	0.088	Dec 2016	0.107	Dec 2017	0.078	Dec 2018	-		0.078	Continuing	Continuing	Continuing
Integrated Logistics Support	C/CPFF	SeaPort : San Diego, CA	0.000	0.061	Dec 2016	0.000		0.148	Dec 2018	-		0.148	Continuing	Continuing	Continuing
		Subtotal	0.047	0.149		0.107		0.226		-		0.226	Continuing	Continuing	N/A

Remarks

The FY19 increase in Integrated Logistics Support are a result of the initial development of training curriculum and vital acquisition documents to include the Users Logistics Support Summary (ULSS).

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3323 / *Maritime Tactical Command & Control (MTC2)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	SSC : San Diego, CA	0.974	0.000		0.000		0.000		-		0.000	0.000	0.974	0.974
Contractor Engineering Support	C/CPFF	SeaPort : San Diego, CA	0.476	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	SeaPort : San Diego, CA	3.429	0.902	Dec 2016	0.890	Dec 2017	0.735	Dec 2018	-		0.735	Continuing	Continuing	Continuing
Program Management Support	WR	SSC : San Diego, CA	0.000	0.000	Dec 2016	0.235	Dec 2017	0.000		-		0.000	Continuing	Continuing	Continuing
Management Services	Various	Various : Various	0.038	0.000		0.000		0.000		-		0.000	0.000	0.038	-
		Subtotal	4.917	0.902		1.125		0.735		-		0.735	Continuing	Continuing	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	45.833	14.023		17.487		12.038		-		12.038	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3323 / *Maritime Tactical Command & Control (MTC2)*

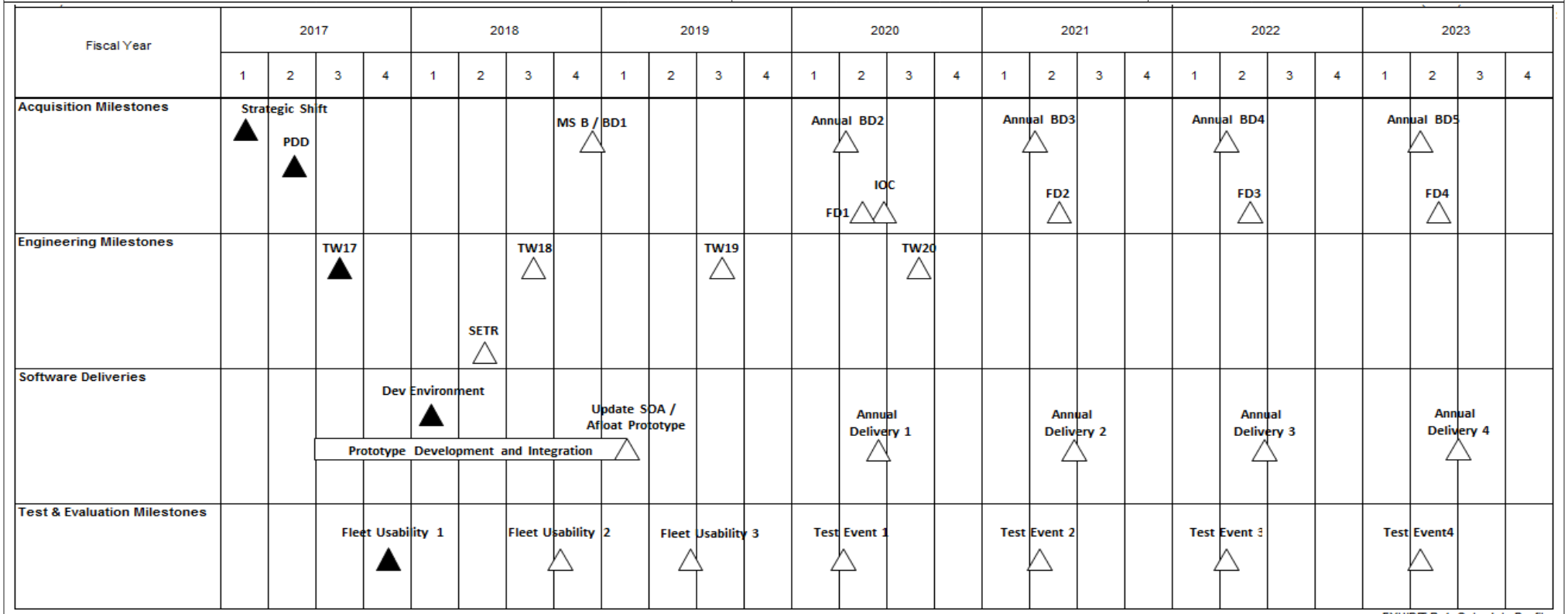


EXHIBIT R-4, Schedule Profile

Legend:

BD - Build Decision
Dev - Development
FD - Field Decision
IOC - Initial Operational Capability
MS - Milestone
PDD - Project Definition Document
SETR - Systems Engineering Technical Review
SOA - Service Oriented Architecture
TW - Trident Warrior

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3323 / *Maritime Tactical Command & Control (MTC2)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3323				
Program Strategic Shift Direction	1	2017	1	2017
Project Description Document (PDD)	2	2017	2	2017
Trident Warrior Fiscal Year 2017 (TW)	3	2017	3	2017
Prototype Development and Integration	3	2017	4	2018
Fleet Usability 1	4	2017	4	2017
Development Environment	1	2018	1	2018
System Engineering Technical Review (SETR)	2	2018	2	2018
Trident Warrior Fiscal Year 2018 (TW)	3	2018	3	2018
Fleet Usability 2	4	2018	4	2018
Milestone B / Build Decision (BD) 1	4	2018	4	2018
Update Service Oriented Architecture (SOA) / Afloat Prototype	1	2019	1	2019
Fleet Usability 3	2	2019	2	2019
Trident Warrior Fiscal Year 2019 (TW)	3	2019	3	2019
Test Event 1	2	2020	2	2020
Fielding Decision (FD) 1	2	2020	2	2020
Annual Delivery 1	2	2020	2	2020
Initial Operational Capability (IOC)	2	2020	2	2020
Annual Build Decision (BD) 2	2	2020	2	2020
Trident Warrior Fiscal Year 2020 (TW)	3	2020	3	2020
Test Event 2	2	2021	2	2021
Fielding Decision (FD) 2	2	2021	2	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3323 / *Maritime Tactical Command & Control (MTC2)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Annual Delivery 2	2	2021	2	2021
Annual Build Decision 3	2	2021	2	2021
Test Event 3	2	2022	2	2022
Fielding Decision (FD) 3	2	2022	2	2022
Annual Delivery 3	2	2022	2	2022
Annual Build Decision 4	2	2022	2	2022
Test Event 4	2	2023	2	2023
Fielding Decision (FD) 4	2	2023	2	2023
Annual Delivery 4	2	2023	2	2023
Annual Build Decision (BD) 5	2	2023	2	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 3324 / *Navy Air Operations Command and Control (NAOC2)*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
3324: *Navy Air Operations Command and Control (NAOC2)*	13.081	0.963	1.048	1.004	-	1.004	0.710	0.518	0.747	0.763	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Navy Air Operations Command and Control (NAOC2): NAOC2 integrates and tests Air Force program of record systems that provide an integrated and scalable planning system for standardized, secure, and automated decision support for Air Force, Joint, and Allied commanders worldwide. These programs provide automated air operations planning, execution management and intelligence capabilities at the Force level to include fleet commanders, numbered fleet commanders, Commander Carrier Strike Groups, Commander Expeditionary Strike Groups, Commander Landing Forces, and Joint Task Force Commanders. NAOC2 includes Theater Battle Management Core System (TBMCS) and Command and Control Air Operations Suite - Command and Control Information Services (C2AOS-C2IS). C2AOS-C2IS is comprised of multiple projects incorporated into three Capability Packages (CPs) and will deploy to a Service Oriented Architecture (SOA) enterprise environment that aligns with the Joint C2 Reference Architecture (JC2RA) such as Consolidated Afloat Networks and Enterprise Services (CANES). C2AOS-C2IS is not natively compatible with Navy Information Technology (IT) infrastructure, such as CANES, and requires a significant level of system integration. Continuation of Navy integration and test efforts will significantly enhance the ability of the Joint Force Air Component Commander and Combined Air Operations Center personnel to plan daily air operations including strike, airlift, offensive/defensive air, missile defense, and refueling missions in support of combat operations. C2AOS-C2IS addresses the requirement of war fighter distributed planning and execution processes along with significantly improving Joint interoperability. TBMCS continues a hardware transition to CANES. Currently, TBMCS is the key system that is used to conduct real world air planning in the Joint and Navy environments. C2AOS-C2IS will replace TBMCS while bringing more flexibility to the war fighter. In FY 2019, the program will continue Navy CANES integration/testing for Air Force developed C2AOS-C2IS CPs and Command and Control Software Baseline (C2SB), and support Navy operational test agency execution during multi-service test events.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Command and Control Air and Space Operations Suite - Command and Control Information Services (C2AOS-C2IS) Integration and Testing	0.963	1.048	1.004	0.000	1.004
Articles:	-	-	-	-	-
FY 2018 Plans: Conduct integration and validation of a combined Capability Package 1 (CP1)/CP2/CP3 capability set and Command and Control Software Baseline (C2SB) in support of a Command and Control Air and Space Operations Suite - Command and Control Information Services (C2AOS-C2IS) Risk Reduction Integration Event (RRIE) and a combined DT event. Conduct a Consolidated Afloat Networks and Enterprise Services (CANES) System Integration Test (SIT) event to ensure a combined CP1/CP2/CP3 capability set and C2SB is operable on CANES. Confirm full functionality on Navy infrastructure to include CANES, ensuring increased					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3324 / *Navy Air Operations Command and Control (NAOC2)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Joint interoperability and enhanced capability including theater level air planning with distributed re-planning and execution processes. Participate in Joint United States Air Force (USAF)/United States Navy (USN) DT events leading up to FY 2019 Multi-Service Operational Test and Evaluation (MOT&E) events. Work with Operational Test agency to leverage DT events to extract relevant operational test threads and limit scope for MOT&E Afloat and Ashore sites. ***FY 2019 Base Plans:*** Conduct application integration, produce installation documentation, and execute testing of C2AOS-C2IS CPs and C2SB within a CANES System Integration Test (SIT) event, to ensure product compatibility with Navy infrastructure and allow execution of Multi-Service Operational Test and Evaluation (MOT&E). Support operational test agency execution of MOT&E. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** FY2018 to FY2019 funding for NAOC2 decreases due to reduced testing efforts in FY2019 resulting from Navy's leveraging of Joint (USAF/USN) testing and integration activities.					
Accomplishments/Planned Programs Subtotals	0.963	1.048	1.004	0.000	1.004

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Theater Battle Management Core System (TBMCS) and Command and Control Air Operations Suite - Command and Control Information Services (C2AOS-C2IS) are designed, developed, and delivered by the Air Force and will be integrated for a Navy Common Computing Environment (CCE) such as Consolidated Afloat Network and Enterprise Services (CANES). As a Joint interest program, this approach satisfies the current validated requirements, supports the accelerated retirement of legacy hardware, and reduces overall risk to the program.

E. Performance Metrics

Theater Battle Management Core System (TBMCS) and Command and Control Air Operations Suite - Command and Control Information Services (C2AOS-C2IS) are designed, developed, and delivered by the Air Force. This leverage reduces integration and testing costs associated with each capability

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3324 / *Navy Air Operations Command and Control (NAOC2)*

module. The solutions will reside on Navy Common Computing Environment (CCE)/Consolidated Afloat Network and Enterprise Services (CANES) architecture. These software-only solutions eliminate hardware procurement, installation, and reduce sustainment costs.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 3324 / *Navy Air Operations Command and Control (NAOC2)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering/ Training DevelopmentText/ Configuration Management	WR	SSC Pacific : San Diego, CA	3.766	0.000		0.000		0.053	Nov 2018	-		0.053	0.000	3.819	3.819
Integration and Testing	WR	SSC Pacific : San Diego, CA	0.000	0.782	Jan 2017	0.878	Nov 2017	0.858	Nov 2018	-		0.858	Continuing	Continuing	Continuing
NAOC2 Product Development	Various	VARIOUS : VARIOUS	2.512	0.000		0.000		0.000		-		0.000	0.000	2.512	2.512
		Subtotal	6.278	0.782		0.878		0.911		-		0.911	Continuing	Continuing	N/A

Remarks

GFE supports integration efforts, not for fielding.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development/ILS Support	WR	VARIOUS : VARIOUS	0.538	0.000		0.000		0.000		-		0.000	0.000	0.538	0.180
		Subtotal	0.538	0.000		0.000		0.000		-		0.000	0.000	0.538	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Operational Test & Evaluation	MIPR	COMOPTEVFOR : Norfolk, VA	0.369	0.018	Dec 2016	0.080	Nov 2017	0.044	Nov 2018	-		0.044	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	SSC Pacific : San Diego, CA	2.651	0.000		0.090	Oct 2017	0.000		-		0.000	0.000	2.741	2.741
Integration and Testing	WR	VARIOUS : VARIOUS	2.340	0.000		0.000		0.000		-		0.000	0.000	2.340	2.340
		Subtotal	5.360	0.018		0.170		0.044		-		0.044	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3324 / *Navy Air Operations Command and Control (NAOC2)*

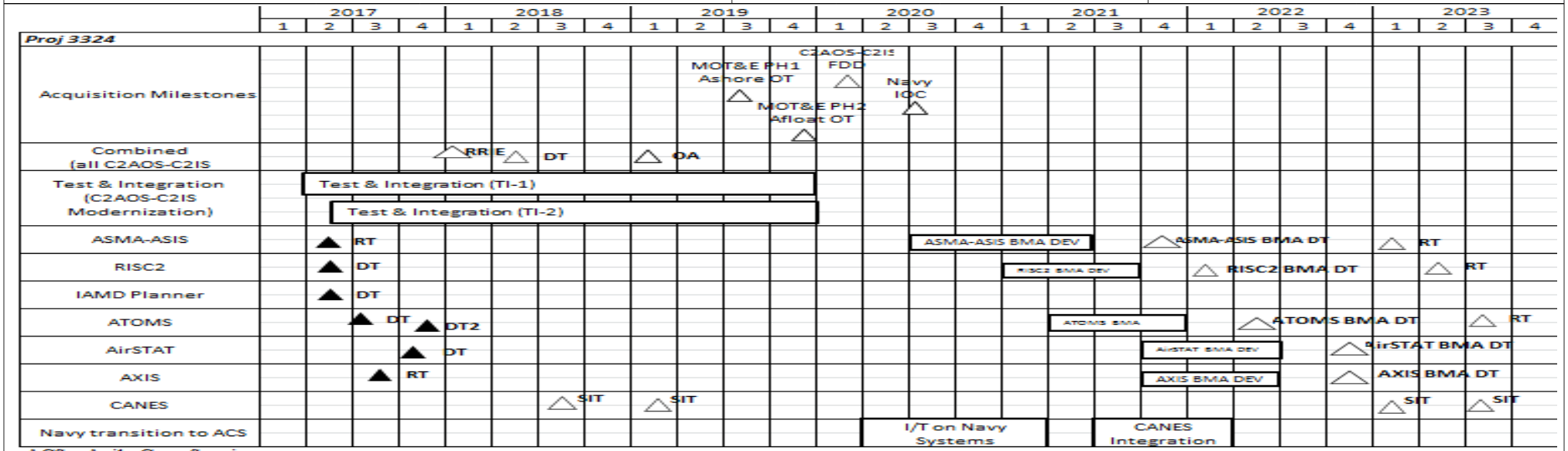
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	C/CPFF	Sentek : San Diego, CA	0.651	0.148	Jan 2017	0.000		0.000		-		0.000	0.000	0.799	0.799
Program Management Support	C/CPFF	Booz Allen : San Diego, CA	0.254	0.015	Jul 2017	0.000		0.049	Nov 2018	-		0.049	0.000	0.318	0.318
		Subtotal	0.905	0.163		0.000		0.049		-		0.049	0.000	1.117	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.081	0.963		1.048		1.004		-		1.004	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3324 / *Navy Air Operations Command and Control (NAOC2)*



ACS - Agile Core Services
AirSTAT - Air Status *[CP-1 project]*
ASMA-ASIS - Airspace Management Application/Airspace Information service *[CP-2 project]*
ATOMS - Air Tasking Order Management System *[CP-1 project]*
AXIS - Air Execution Information System *[CP-3 project]*
BMA - Battle Management Aid
C2AOS-C2IS - Command and Control Air Operations Suite - Command and Control Information Services
CANES - Consolidated Afloat Network and Enterprise Services
CP - Capability Package
DEV - Development
DT - Developmental Test
FDD - Full Deployment Decision
IOC - Initial Operational Capability
I/T - Integration and Testing
IAMD - Integrated Air and Missile Defense *[CP-2 project]*
MOT&E - Multi-Service Operational Test & Evaluation
OA - Operational Assessment
OT - Operational Test
PH - Phase
RISC2 - Request Information Services for Command and Control *[CP-1 project]*
RRIE - Risk Reduction Integration Event
RT - Regression Test
SIT - System Integration Test
TI - Test and Integration

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3324 / *Navy Air Operations Command and Control (NAOC2)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3324				
C2AOS-C2IS Modernization Test & Integration (TI-1)	1	2017	4	2019
Airspace Management Application/Airspace Information service (ASMA-ASIS) Regression Test (RT)	2	2017	2	2017
Request Information Services for Command and Control (RISC2) Developmental Test (DT)	2	2017	2	2017
Integrated Air and Missile Defense (IAMD) Planner DT	2	2017	2	2017
C2AOS-C2IS Modernization Test & Integration (TI-2)	2	2017	4	2019
Air Tasking Order Management System (ATOMS) DT	3	2017	3	2017
Air Execution Information System (AXIS) RT	3	2017	3	2017
Air Status (AirSTAT) DT	4	2017	4	2017
ATOMS DT2	4	2017	4	2017
Combined Command and Control Air Operations Suite - Command and Control Information Services (C2AOS-C2IS) Risk Reduction Integration Event (RRIE)	1	2018	1	2018
Combined C2AOS-C2IS DT	2	2018	2	2018
Consolidated Afloat Network and Enterprise Services (CANES) System Integration Test (SIT) FY 2018	3	2018	3	2018
CANES SIT FY 2019	1	2019	1	2019
Operational Assessment	1	2019	1	2019
Multi-Service Operational Test & Evaluation (MOT&E) (OT Phase 1)	3	2019	3	2019
MOT&E (OT Phase 2)	4	2019	4	2019
C2AOS-C2IS Full Deployment Decision (FDD)	1	2020	1	2020
Navy Initial Operational Capability (IOC)	3	2020	3	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3324 / *Navy Air Operations Command and Control (NAOC2)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Integration and Testing (I/T) on Navy Systems	2	2020	1	2021
ASMA-ASIS Battle Management Aid (BMA) Development (Dev)	3	2020	2	2021
RISC2 BMA Dev	1	2021	3	2021
ATOMS BMA Dev	2	2021	4	2021
CANES Integration	3	2021	1	2022
ASMA-ASIS BMA DT	4	2021	4	2021
AirSTAT BMA Dev	4	2021	2	2022
AXIS BMA Dev	4	2021	2	2022
RISC2 BMA DT	1	2022	1	2022
ATOMS BMA DT	2	2022	2	2022
AirSTAT BMA DT	4	2022	4	2022
AXIS BMA DT	4	2022	4	2022
ASMA-ASIS RT	1	2023	1	2023
CANES SIT FY 2023 1	1	2023	1	2023
RISC2 RT	2	2023	2	2023
ATOMS RT	3	2023	3	2023
CANES SIT FY2023 2	3	2023	3	2023

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy										Date: February 2018		
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*				Project (Number/Name) 3425 / *Digital Warfare*			
COST ($ in Millions)	**Prior Years**	**FY 2017**	**FY 2018**	**FY 2019 Base**	**FY 2019 OCO**	**FY 2019 Total**	**FY 2020**	**FY 2021**	**FY 2022**	**FY 2023**	**Cost To Complete**	**Total Cost**
3425: *Digital Warfare*	0.000	0.000	5.950	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.950
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funding decrease due to realignment of FY19 funds to the DW PE (0604027N) beginning in FY19.

A. Mission Description and Budget Item Justification

The DW technical initiatives directly support the Chief of Naval Operations (CNO) vision of inherent interoperability across the Navy enabling faster deployment of capabilities to the warfighter.

DW funding supports development of requirements modeling and data science experimentation environment, mission area model-based engineering (MBE) teams, development of digital technical baselines, development of digital architectures, and the development of workforce training in model-based systems engineering.

Naval Air Systems Command (NAVAIR), Naval Sea Systems Command (NAVSEA), Space and Naval Warfare Command (SPAWAR), associated Program Executive Offices (PEOs), warfare and system centers and University Affiliated Research Centers (UARCs)/Federally Funded Research and Development Centers (FFRDCs) will support the Model Based Systems Engineering (MBSE), Technical Design, and Requirements branches in the new DW under Office of the Chief of Naval Operations (OPNAV) N2N6. In order to develop capability from the top down, the DW will develop requirements for the System of Systems (SoS) to include all of the associated interoperability requirements. Due to the complexity of this work, the DW will evolve the traditional requirements development methodology to a MBSE environment that will include associated model extensions, reports, views, configuration management, help desk support, and documentation. This work will be completed by a series of teams, each focused on a separate threat domain, and made up of system modelers, fleet representatives, Program of Record (PoR) representatives, architecture, and interoperability experts. The products generated by these teams will include data technical baselines for domain areas with individual profiles for each program of record, coordinated requirements recommendations, and potential areas for Science and Technology (S&T) and experimentation to fill gaps. The DW will include emerging digital technologies including human/machine teaming.

Each Systems Command (SYSCOM) will be involved in creating Data Technical Baseline (DTB) profiles specific for each PoR. DTBs will consist of interfaces, protocols, content, information quality, architectural aspects, and knowledge base frameworks. SYSCOMs will exercise technical authority to assess PoR compliance to DTBs and Key Performance Parameters (KPPs) in support of gate reviews and system engineering technical reviews.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: Digital Warfare (DW) Model Based Systems Engineering (MBSE)	0.000	5.950	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2018 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3425 / *Digital Warfare*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
-Provide Subject Matter Expert (SME) support for the domain functional decomposition based on prioritized mission areas to include Anti-Submarine Warfare and Surface Warfare. -Perform Model Based Systems Engineering (MBSE) assessments on Programs of Record (PoRs) and develop models of the relevant Data Technical Baselines (DTBs). -Establish and implement required extensions to model requirements trace and reports that will be used in the Joint Capabilities Integration and Development System (JCIDS) process. -Validate current standards across the Systems Commands (SYSCOMs) to form the overarching Navy DTB in order to facilitate tailoring of each standard for the PoR DTB. -Verify and validate different SYSCOM architectures and guidance to produce a Navy-wide high level architectural framework. -Develop functional baseline architecture of Navy capabilities that maps back to mission threads. -Configure the distributed MBSE and data science environment for remote accessibility over a given network enclave, including but not limited to Non-Secure Internet Protocol Router (NIPR), Secure Internet Protocol Router (SIPR), and JointWorldwide Intelligence Communications System (JWICS). -Integrate cyber requirements across all Digital Warfare (DW) architecture and standard efforts and verify cyber requirements are captured as part of the modeling process. -Provide subject matter expert support for data science teams in the exploration of data analysis, information and knowledge extraction techniques and application to mission area requirements. -Participate in the definition of MBSE tool functionality and views based on Echelon I stakeholder requirements. -Collaboratively develop tool extensions to complement JCIDS and Program Objective Memorandum (POM) processes. ***FY 2019 Base Plans:*** N/A ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** Funding decrease due to realignment of FY19 funds to the DW PE (0604027N) beginning in FY19.					
Accomplishments/Planned Programs Subtotals	0.000	5.950	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3425 / *Digital Warfare*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

DW is a non-acquisition effort that informs and matures Navy decisions, which in turn impacts acquisition programs.

E. Performance Metrics

Digital Warfare (DW) Performance Metrics: Goal: Chief of Naval Operations (CNO) to set requirement, to prioritize resources, and lead efforts on information interoperability and human/machine testing. Metric: Echelon I development of requirements associated with modeling, data science experimentation environment, and digital architectures.

The DW will set requirements, prioritize resources, and lead efforts on information interoperability and human/machine teaming. This will result in a workforce that is trained in new systems engineering and modeling concepts and tools. It will also result in development of a requirements modeling environment to include associated model extensions, reports, views, and configuration management and in the development of digital technical baselines for programs to use to ensure cross-domain interoperability.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 3425 / *Digital Warfare*	

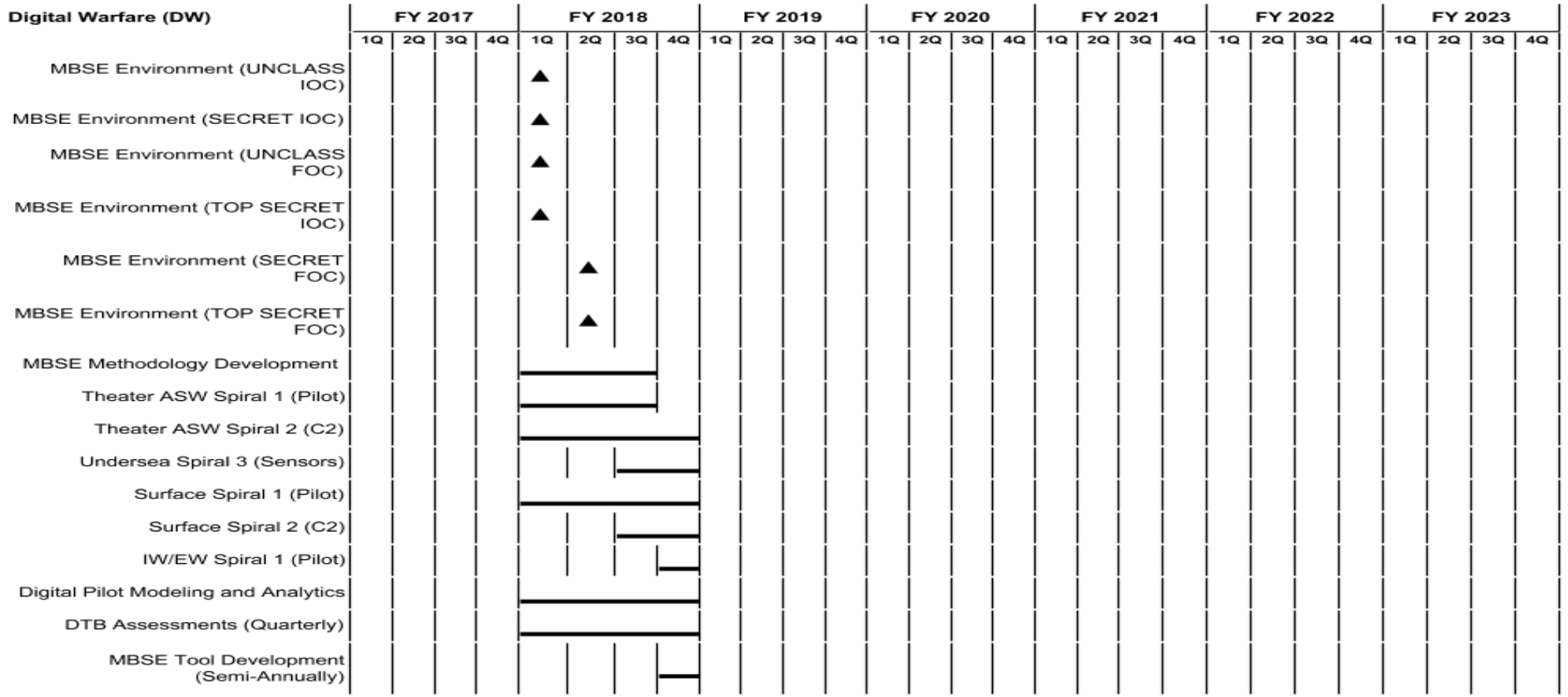
Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Digital Warfare (DW)	WR	SSC PAC : San Diego, CA	0.000	0.000		0.600	Dec 2017	0.000		-		0.000	0.000	0.600	-
Digital Warfare (DW)	WR	SSC LANT : Charleston, SC	0.000	0.000		0.700	Dec 2017	0.000		-		0.000	0.000	0.700	-
Digital Warfare (DW)	FFRDC	MITRE : McLean, VA	0.000	0.000		0.350	Nov 2017	0.000		-		0.000	0.000	0.350	-
Digital Warfare (DW)	C/CPFF	VENCORE : Chantilly, VA	0.000	0.000		2.350	Dec 2017	0.000		-		0.000	0.000	2.350	-
Digital Warfare (DW)	C/CPFF	SAIC : McLean, VA	0.000	0.000		1.950	Jan 2018	0.000		-		0.000	0.000	1.950	-
		Subtotal	0.000	0.000		5.950		0.000		-		0.000	0.000	5.950	N/A

	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		5.950		0.000		-		0.000	0.000	5.950	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3425 / *Digital Warfare*



2019PB - 0604231N - 3425

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 3425 / *Digital Warfare*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Digital Warfare (DW)				
MBSE Environment (UNCLASS IOC): MBSE Environment (UNCLASS IOC)	1	2018	1	2018
MBSE Environment (SECRET IOC): MBSE Environment (SECRET IOC)	1	2018	1	2018
MBSE Environment (UNCLASS FOC): MBSE Environment (UNCLASS FOC)	1	2018	1	2018
MBSE Environment (TOP SECRET IOC): MBSE Environment (TOP SECRET IOC)	1	2018	1	2018
MBSE Environment (SECRET FOC): MBSE Environment (SECRET FOC)	2	2018	2	2018
MBSE Environment (TOP SECRET FOC): MBSE Environment (TOP SECRET FOC)	2	2018	2	2018
MBSE Methodology Development: MBSE Methodology Development	1	2018	3	2018
Theater ASW Spiral 1 (Pilot): Theater ASW Spiral 1 (Pilot)	1	2018	3	2018
Theater ASW Spiral 2 (C2): Theater ASW Spiral 2 (C2)	1	2018	4	2018
Undersea Spiral 3 (Sensors): Undersea Spiral 3 (Sensors)	3	2018	4	2018
Surface Spiral 1 (Pilot): Surface Spiral 1 (Pilot)	1	2018	4	2018
Surface Spiral 2 (C2): Surface Spiral 2 (C2)	3	2018	4	2018
IW/EW Spiral 1 (Pilot): IW/EW Spiral 1 (Pilot)	4	2018	4	2018
Digital Pilot Modeling and Analytics: Digital Pilot Modeling and Analytics	1	2018	4	2018
DTB Assessments (Quarterly): DTB Assessments (Quarterly)	1	2018	4	2018
MBSE Tool Development (Semi-Annually): MBSE Tool Development (Semi-Annually)	4	2018	4	2018

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 9123 / *FORCEnet*	

COST ($ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
9123: *FORCEnet*	236.974	2.854	2.399	2.209	-	2.209	2.181	2.225	2.271	2.316	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

FORCEnet is the Navy and Marine Corps initiative to deliver Information Warfare (IW) and achieve Department of the Navy (DoN)/Department of Defense (DoD) Transformation, Joint/Allied/Coalition Interoperability, implementing Maritime Domain Awareness (MDA), and Net-Centric Operations/Warfare (NCO/W). Chief of Naval Operations (CNO) IW effort focuses prioritization and organizational responsibility for IW, cyber, intelligence and sensors resulting in increased scope of systems, platforms and mission areas. FORCEnet is a foundation of Sea Power 21, Naval Power 21, which is the Naval Operating Concept (NOC) for Joint Operations, and the DoN's Naval Transformation Roadmap.

Funding supports IW Portfolio Health Assessments (PHAs) of Navy mission areas and identifies gaps in IW capabilities in the context of assessed mission areas. Funds support vignettes, technical baselines, architecture products, and briefings developed to support sponsor decision making processes.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Title: FORCEnet	2.854	2.399	2.209	0.000	2.209
Articles:	-	-	-	-	-
FY 2018 Plans: -Expand upon System of Systems (SoS) mission engineering analyses and ongoing experimentation to iteratively mature the findings and outcomes, while increasing the support to a development of a Limited Operational Capability. -Continue to provide analytical support to ensure that cybersecurity risk assessments and engineering activities are informed by Navy Cybersecurity Situational Awareness (NCSA) capabilities as addressed by the PHA. -Continue to utilize and study Navy mission areas in support of SoS engineering assessments identifying integration and interoperability gaps, trades, and solutions for sponsor related equities. -Continue to identify Navy mission area gaps in IW capabilities to Science and Technology (S&T) efforts for future budget decisions. Continue to identify critical architectural dependencies that enable mission situational awareness, which is a key component of the PHAs. -Continue to assess tradespace and solutions, ensuring Force level SoS integration and interoperability in studied mission areas. -Continue to package assessments to support sponsor decision-making processes.					
FY 2019 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 9123 / *FORCEnet*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
-Expand upon SoS mission engineering analyses and ongoing experimentation to iteratively mature the findings and outcomes, while increasing the support to a development of a Limited Operational Capability. -Continue to utilize and study Navy mission areas in support of System of Systems (SoS) engineering assessments identifying integration and interoperability gaps, trades, and solutions for sponsor related equities. -Continue to identify Navy mission area gaps in Information Warfare (IW) capabilities to prioritize Science and Technology (S&T) efforts for future budget decisions. Continue to identify critical architectural dependencies that enable mission situational awareness, which is a key component of the Portfolio Health Assessments (PHAs). -Continue to assess tradespace and solutions, ensuring Force level capability and SoS integration and interoperability in studied mission areas. -Continue to package assessments to support sponsor decision-making processes. ***FY 2019 OCO Plans:*** N/A ***FY 2018 to FY 2019 Increase/Decrease Statement:*** The $190K decrease to FORCEnet between FY18 to FY19 is attributed to the completion of Navy Cybersecurity Situational Awareness (NCSA) analytical support as addressed by the PHA, and therefore, the program will no longer receive funding for NCSA in FY19 and out.					
Accomplishments/Planned Programs Subtotals	2.854	2.399	2.209	0.000	2.209

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

FORCEnet is a non-acquisition effort that informs and matures Navy decisions, which in turn impacts acquisition programs. Activities include acquiring intellectual capital in emerging technical areas through contracts providing technical engineering expertise and surge capacity for emerging tasks.

E. Performance Metrics

Goal: Chief of Naval Operations (CNO) strategic planning and supporting acquisition of classified efforts.
Metric: Echelon I response to emergent strategic needs and classified warfighting capability.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 9123 / *FORCEnet*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Hardware Development and Systems Engineering	Various	Various : Various	4.331	0.000		0.000		0.000		-		0.000	0.000	4.331	-
		Subtotal	4.331	0.000		0.000		0.000		-		0.000	0.000	4.331	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development and Logistics Support	Various	Various : Various	136.842	0.000		0.000		0.000		-		0.000	0.000	136.842	-
Information Warfare Roadmaps and Analysis	C/CPFF	SAIC : McLean, VA	8.524	2.171	Mar 2017	1.824	Mar 2018	1.712	Mar 2019	-		1.712	Continuing	Continuing	Continuing
Information Warfare Roadmaps and Analysis	WR	SSC LANT : Charleston, NC	2.118	0.427	Mar 2017	0.359	Mar 2018	0.497	Mar 2019	-		0.497	Continuing	Continuing	Continuing
Information Warfare Roadmaps and Analysis	C/CPFF	BAH : McLean, VA	0.206	0.256	Mar 2017	0.216	Mar 2018	0.000		-		0.000	0.000	0.678	-
		Subtotal	147.690	2.854		2.399		2.209		-		2.209	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Accelerating Joint Warfighting Capability	Various	Various : Various	77.271	0.000		0.000		0.000		-		0.000	0.000	77.271	-
		Subtotal	77.271	0.000		0.000		0.000		-		0.000	0.000	77.271	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Technical Support	Various	Various : Various	7.682	0.000		0.000		0.000		-		0.000	0.000	7.682	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Navy			Date: February 2018
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0604231N / *Tactical Command System*	Project (Number/Name) 9123 / *FORCEnet*	

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2017 Cost	FY 2017 Award Date	FY 2018 Cost	FY 2018 Award Date	FY 2019 Base Cost	FY 2019 Base Award Date	FY 2019 OCO Cost	FY 2019 OCO Award Date	FY 2019 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			7.682	0.000		0.000		0.000		-		0.000	0.000	7.682	N/A

	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	236.974	2.854		2.399		2.209		-		2.209	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 9123 / *FORCEnet*

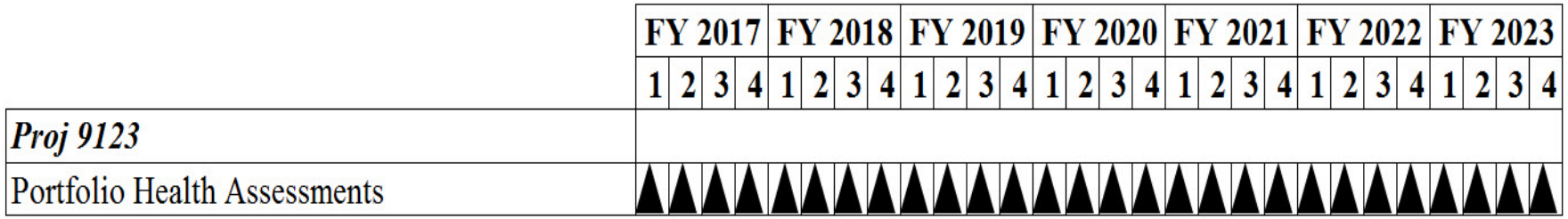


Exhibit R-4A, RDT&E Schedule Details: PB 2019 Navy		Date: February 2018
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0604231N / *Tactical Command System*	**Project (Number/Name)** 9123 / *FORCEnet*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 9123				
Naval Information Warfare Enterprise	1	2017	4	2023