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COST ($ in Millions)	**Prior Years**	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
Total Program Element	425.786	120.387	242.110	384.162	-	384.162	416.246	283.523	169.069	173.067	Continuing	Continuing
2901: *AAUSN IT*	61.225	14.017	24.491	53.248	-	53.248	47.146	34.133	1.716	1.735	Continuing	Continuing
2903: *NAVAIR IT*	14.846	10.643	19.144	19.311	-	19.311	8.094	5.839	2.267	2.312	Continuing	Continuing
2904: *NAVSEA IT*	181.244	49.600	35.382	15.696	-	15.696	24.813	14.701	16.134	16.457	Continuing	Continuing
2905: *BUPERS IT*	82.761	24.995	89.306	167.765	-	167.765	167.918	83.365	64.424	65.712	Continuing	Continuing
3167: *Joint Technical Data Integration (JTDI)*	35.093	2.462	3.883	5.545	-	5.545	8.178	6.233	7.211	7.989	Continuing	Continuing
3185: *Joint Airlift Information System (JALIS)*	2.014	0.335	0.353	0.349	-	0.349	0.356	0.364	0.372	0.380	Continuing	Continuing
3432: *NMMES-TR*	0.000	0.000	33.049	77.351	-	77.351	119.323	122.603	54.100	55.182	Continuing	Continuing
3784: *Judge Advocate General (JAG) Enterprise System*	0.000	0.000	0.000	1.100	-	1.100	0.000	0.000	0.000	0.000	0.000	1.100
9406: *Maintenance Data Warehouse*	48.603	4.338	26.502	43.797	-	43.797	40.418	16.285	22.845	23.300	Continuing	Continuing
9999: *Congressional Adds*	0.000	13.997	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	23.997

A. Mission Description and Budget Item Justification

2901 AAUSN IT

The FY2020 funding request for RDTEN Project 2901 was reduced by $3.109 million to account for the availability of prior year execution.

FY20 funds transfer out from RDTEN, Information Technology Development (PE 0605013N)-$.685 million to BA04, Administration (4A1M) OMN to align funding for Information Technology (Baseline $0)

DEPARTMENT OF NAVY TASKING RECORDS AND CONSOLIDATED KNOWLEDGE ENTERPRISE REPOSITORY (DoN TRACKER)
Department of the Navy Tasking, Records and Consolidated Knowledge Enterprise Repository (DON TRACKER - formerly known as Enterprise Records and Task Management (ERTM)) is a single, auditable, compliant Records and Task Management process, implemented uniformly across all DON Divisions and Commands, and administered by DON/AA, to enable efficient and effective execution of Records Management (RM) and Task Management (TM) policy in compliance with statute. DoN Tracker deployed in FY18.

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NMCI ENTERPRISE SERVICE TOOLS (NEST)

The NMCI Enterprise Service Tools (NEST) is the NMCI IT service management system that supports the Navy IT service lifecycle business workflow. NEST includes, the NMCI Enterprise Tool (NET) and the Requirements to Award Process Tool (RAPT), which enables and manages the business workflow. NET is a custom NET application that has been built and maintained by the DON to support ordering of IT services. RAPT manages the requirements approval process and stores supporting documentation for previously un-priced line items. RAPT provides NET with relevant identification information for the new orderable solution, which supports the creation of orderable services. NEST serves as the single point of entry for lifecycle management of IT services on the NMCI network.

The $2.286M decrease from FY19 to FY20 is due to fewer developmental efforts. The FY20 RDTEN being requested, will be used to address minor development requirements after the NGEN-R award; and any changes in DOD/DON procurement policies and mandates.

ELECTRONIC PROCUREMENT SYSTEM (ePS)

ePS provides the Department of the Navy Solution for Electronic Contract Writing replacing the existing Standard Procurement System (SPS) and DoN Integrated Contracting Environment (DICE) capabilities and deficiencies. ePS aligns Contract Writing System (CWS) with Financial Improvement Audit Readiness requirements mandated by Congress and the Department of Navy's goal for an auditable link between financial management and contract writing system. It supports strategic sourcing and seamless exchange of data in addition to evolving to meet changing requirements. The improved capabilities will meet emerging data standards Procurement Data Standards/Procurement Request Data Standards (PDS/PRDS), in addition to complying with Office of the Secretary of Defense (OSD) Clause Logic Service. ePS meets the intent of the National Defense Authorization Act of 2013 by providing an electronic means to award contracts.

FY19 to FY20 funding increase of $31.8M is driven by a significant increase in the ePS user community via Limited Deployment (LD), Release 1 (R1), and Release 2 (R2) activities. LD, began in FY19 and only incorporated 1 full command and 3 small sites for a total of 310 users, with 3 financial interfaces. Release 1 will incorporate 7 full commands (including 42 sites) for a total of 3,644 users. R1 also begins to incorporate Navy specific requirements into the gap closure, software configuration, and testing activities, and includes the development and testing of 6 additional financial interfaces. FY20 includes LD, the majority of R1 activities, and initial data migration planning activities for R2, which is a significantly larger effort.

DONAA IT

The Modernization Initiative includes multiple projects with RDT&E requirements: Multiple Threat Alert Center (MTAC), Data Modernization & Analytical Tools, Knowledge Network (K-Net), Consolidated Law Enforcement Operations Center (CLEOC), and Data Modernization of the Secretariat Automated Resources Management Information System (SARMIS). RDTEN funding will optimize DONAA's capability to make necessary improvements to various Secretariat systems. This modernization will ensure compliance with continued financial emerging requirements. Enhancement of financial auditability will be in compliance with DOD security system requirements.

MULTIPLE THREAT ALERT CENTER (MTAC)

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The Post-Cole Secretary of the Navy Anti-terrorism/Force Protection Task Force identified the need for NCIS to enhance the Multiple Threat Alert Center (MTAC). The MTAC provides key anti-terrorism/force protection products in response to Fleet tasking and is critical to Fleet protection during current Overseas Contingency Operations (OCO). This project provides funding for the development of an IT system to track the movement of NCIS special agents deployed in advance of DoN in-transit units. The ability to track and communicate with these agents is necessary in order to forward threat data to those forward deployed agents and to task them to respond to emerging threats. Funding is required for equipment and contractor support to modify COTS software.

DATA MODERNIZATION & ANALYTICAL TOOLS
NCIS data collection, filtering, and analysis infrastructure is unable to handle the increased flow of terrorism investigative and threat reporting of the Post 9/11 era. NCIS must revitalize its infrastructure and its data and investigation management capabilities to effectively counter current terrorist threats. The three main components of this portfolio investment are data modernization, knowledge management, and investigation management.

KNOWLEDGE NETWORK (K-Net)
K-Net is a Data Modernization & analytical tool being developed and soon deployed that greatly enhances NCIS's technological arsenal. K-Net implements an integrated NCIS approach for identifying, capturing, evaluating, retrieving, and sharing all of NCIS's knowledge and expertise. To that end, K-Net is a knowledge management system that improves NCIS's ability to search, analyze, fuse, and distribute both national intelligence and law enforcement information. The envisioned end state for K-Net is a secure, intuitive, web environment that is the one stop shop where applications, data, and tools are easily accessible to all of NCIS users to effectively and securely fulfill their mission regardless of when and where they operate.

CONSOLIDATED LAW ENFORCEMENT OPERATIONS CENTER (CLEOC)
The Naval Criminal Investigative Service (NCIS) enhancement of CLEOC will enable meeting Law Enforcement (LE) reporting requirements, satisfy Congressional mandates for the Defense Incident-Based Reporting System (DIBRS) and improve functionality across the Naval criminal justice community.

DEPARTMENT OF THE NAVY CRIMINAL JUSTICE INFORMATION SYSTEM (DONCJIS)
The Naval Criminal Investigative Service (NCIS) is the Executive Agent (EA) for the Department of the Navy Criminal Justice Information System (DONCJIS). This system provides a cradle to grave criminal justice and law enforcement information system. The system enables multiple communities within the DON to share criminal justice and law enforcement information. Funding is required for contractor support to develop, test, train, deploy and implement this application.

2903 NAVAIR IT

FY2020 funding request for RDTEN Project 2903 was reduced by $0.525 million due to availability of prior year funds.

Configuration Management System (CMS) - This program was originally identified as Joint Configuration Management Information System (JCMIS) to reflect the main software tool used for component tracking and Aircraft Configuration Management. However, as the available data sources from the fleet have expanded, the new name of CMS was chosen to better acknowledge the variety of information sources which are received, integrated, and compiled to give the most accurate component record

data and aircraft configuration. CMS serves as the Program of Record (POR) to manage and control Navy and Marine Corps aviation component data reconstruction efforts. CMS compiles record data via fleet documentation of component updates and captures this information via a centrally managed database within the current software tool, Joint Configuration Management Information System (JCMIS). CMS efficiently manages product structure data, including complex interrelationships between assemblies and subassemblies, technical documentation and the parts that comprise the item. Accurate, complete and accessible configuration data is critical to the successful operations of DoD weapon systems or tracked assets. Mission readiness and operational capabilities are enhanced by CMS, as consistent integrated configuration data is readily available to operators, maintainers and logistics personnel. CMS provides users with a common database infrastructure to ensure compatibility, quality, and consistency of Configuration Management (CM) processes and provides configuration managers and analysts the validated CM information necessary for accurate maintenance, spare procurements, reliability and safety analysis, and mission readiness. Funding is budgeted to support the services of re-hosting and testing of Commercial off-the-shelf (COTS) upgrades to ensure objective performance of CMS is achieved.

Navy Cybersecurity - Cyber Warfare consists of many different aspects to include sabotage of our weapon systems, networks as well as enablement of missions. Nation and non-nation state actors are acquiring and employing more advanced cyber-attacks in order to exploit our networks and aviation systems challenging our technological edge. The threats and capabilities are real and range from exploiting capabilities, overloading weapons systems and logistics supply chains, to jamming signals or taking control of weapons systems. We must defend against adversarial cyber attacks while contributing to the exploitation of cyber warfare capabilities.

To meet these challenges and address the Chief of Naval Operations priorities and tasking, these R&D efforts are specifically focused on Naval Air Systems Command weapon or control systems and programs to ensure warfighting effectiveness as part of integrated / multi-platform kill chains. These research and development efforts will strengthen our cyber posture by developing research, development, test and evaluation capabilities and solutions to deter, detect, and mitigate cyber threats and safeguard classified naval aviation systems and platforms from "cradle to grave." These solutions will be integrated into the acquisition of weapons systems to enhance security, increase lethality, and improve resiliency in the expected operational environments. Our weapon or control systems are unique in the aforementioned environments and mission, but also in the presence of numerous non-traditional access points and trusted cyber relationships required for operational environments.

Digital Thread (DT) - capability provides digital process integration with complete, secure and authoritative data. DT integrates the product life cycle, and includes all the processes that are needed to design, develop, test, produce, and support a product. Connecting these processes using standardized digital tools and data accelerates the product development cycle and lowers costs for support and new capability integration. The Digital Thread capability includes development and demonstration of cyber security architectures for sustainment information systems, and development of a digital manufacturing data architecture and repository.

2904 NAVSEA IT

FY2020 funding request for RDTEN Project 2904 was reduced by $6.917 million due to availability of prior year funds.

This program includes the funding for Information Technology (IT) support at NAVSEA for the development, support, and sustainment of maritime shore maintenance and includes multiple modernization efforts to insure effectiveness of Fleet maintenance systems as part of the current Navy Maritime Maintenance Enterprise Solution (NMMES). These efforts include retirement and/or replacement of costly legacy systems, transition planning and systems engineering for integration with national and enterprise interim and future solutions. These efforts align with direction to insure that proposed interim solutions support a planned, single maintenance solution

end state, as well as direction to align with data center consolidation plans proposed across the FYDP. It includes the modernization of Naval Shipyard and Regional Maintenance Centers' Maintenance, Repair and Overhaul (MRO) production tools. This includes modifications/enhancements to Shipyard IT systems, such as Advanced Industrial Management (AIM); Project Scheduling and Sequencing (PSS); Workload and Performance Systems; the COST and MAT systems, and other solutions such as the Electronic Technical Working Document (eTWD) Initiative. The goal of PMO-IT is to provide modernization, migration and consolidation of obsolete legacy systems to the next generation of centrally hosted tools supporting Fleet Maintenance and national systems for the Navy.

2905 BUPERS IT

FY2020 funding request for RDTEN Project 2905 was reduced by $2.200 million due to availability of prior year funds.

Research and Development Funds for MPT&E Transformation under PE 0604703N have been consolidated within PE 0605013N PU 2905 starting in FY19.

This effort is the linchpin of the Navy's MPT&E (Manpower, Personnel, Training & Education) business IT Transformation strategy which stems from the decision to invest in programs that directly align with the Sailor 2025 vision. The current 70-year-old business processes and 40-year-old obsolete IT systems will not sustain Fleet anticipated growth and is not cost efficient nor effective. The Transformation strategy involves revolutionary change by rapid implementation of MPT&E business IT products using the Industry Best Practices Model (e.g., early investment for largest ROI, rapid prototyping, and vanilla COTS products usage.) Four projects are the cornerstones of the N1 Transformation strategy. The Navy Standard Integrated Personnel System (NSIPS) will become Navy Personnel and Pay (NP2) and includes personnel and pay modernization and the collapse of Legacy Manpower System functionality. Second, a Single Point of Entry (SPOE) for Sailor self-service is composed of My Navy Portal (MNP), Identity and Access Management (IdAM), a Customer Relations Management (CRM) solution, and a centralized and standardized customer service center (The My Navy Career Center (MNCC)). Third, MPT&E Core Learning Stack improves the accessibility, sophistication, and collaborative nature of educational outreach. Finally, the Authoritative Data Environment (ADE) will enable the collapse of 9 legacy data warehouses into a single, authoritative source of truth for Sailors and Navy decision makers. Additionally, ADE will enable modern data analytics and business intelligence capabilities, taking advantage of current state of practice cloud services, to be leveraged in addressing the Navy's current challenges.

In FY20, there is significant investment being made to increase the scope and scale of Single Point of Entry/My Navy Portal which will provide the Sailor with a self-service web environment. SPOE efforts in FY20 will include development of transactional mobile applications, Identity and Access Management (IdAM) solution, and MNP integration with My Navy Career Center (MNCC). In parallel, there is an increase scope for NP2 in the ramp up to a MPT&E Navy Personnel and Pay (NP2) system. Transformation field test activities which began in FY18 will continue to build out, as well as prototypes, testing, integration, and migration to the cloud environment.

NAVY PERSONNEL AND PAY (NP2) - The NP2 increase in FY20 supports the de-customization of the Navy Standard Integrated Personnel System (NSIPS) and integration of Direct to Treasury Pay Capability via Pay Modernization (Pay Mod). This combined effort (named NP2) will result in an integrated, vanilla Commercial Off the Shelf, cloud hosted, integrated personnel and pay solution that will provide the navy with an IT system that is modern, highly automated, auditable, and more efficient. FY20 efforts include:

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1. Complete end-to-end Application Functional Testing (AFT) for the NP2 Rapid Prototype Pilot (RPP).
2. Complete Compile to Combat engagement & experimentation activities for NP2 RPP.
3. Complete first capability drop for NP2 RPP (Street to Fleet functionality).
4. Begin Rapid Fielding Pilot (RFP) #1, the scope of which will include Personnel Administration, Benefits and Pay for "Fleet to Retirement/Separation", including afloat capability.
5. Complete Transition Plan for movement of NP2 to the commercial cloud environment.
6. Complete transition of NP2 from Government Cloud to the commercial cloud environment.
7. Complete Defense Joint Military System (DJMS) data cleansing in support of transition of Pay functionality to NP2.
8. Conduct deployment planning for NP2 RFP.
9. Conduct design and development sprints for NP2 RFP #1.
10. Conduct SRR/SFR, PDR, CDR, and iterative AFT/ASIT for NP2 RFP #1.
11. Begin planning activities for NP2 RFP #2, the scope of which will include Position Management, Task Analysis, and Manpower Requirements analysis.

A 2015 analysis of alternatives for integration of personnel and pay capabilities recommended the use of Oracle PeopleSoft 9.2 with Global Payroll for achieving the Navy's Personnel and Pay IT needs. Follow-on analysis conducted as part of the MPT&E transformation efforts in 2016 and 2017 indicated that the most cost effective approach to achieving the Transformation goals of modernizing HR Business System IT consistent with industry best practices was de-customization of the Navy Standard Integrated Personnel System (NSIPS) which uses Oracle PeopleSoft as its core technology, integration with Global Payroll, use of General Ledger to maximize auditability and accounting functions and hosting of the integrated solution. This combined effort (named NP2) will result in an integrated, vanilla Commercial Off the Shelf, cloud hosted, integrated personnel and pay solution that will provide the navy with an IT system that is modern, highly automated, auditable, and more efficient.

Implementation of NP2 will result in several key benefits:

1. Improved accuracy and auditability of personnel and pay transactions.
2. Treasury Direct Disbursing eliminating Navy reliance on the sunsetting DJMS system.
3. Improved permeability of Active and Reserve Components to improve accuracy and eliminate delays in pay processing when a member moves between components.
4. Increased automation of common personnel and pay transactions
5. Integration of functionality currently spread across 55 different adhoc and outdated HR Business Systems.

Efforts in FY20 are focused on system development, testing and delivery of core components associated with Military Pay, Personnel Transactions that effect Pay, Auditability, Accounting, and Treasury Direct Disbursement. Beyond F20, development will continue and will bring continued integration of legacy systems such as those used for detailing and distribution, management of Sailor performance, and talent management and matching.
Beginning in FY20 system requirements and functionality for NMRS/BBD/AoA will be subsumed under the auspices of NP2 as part of the N1 MPT&E Transformation and system consolidation. The descriptions for those systems are provided below.

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BILLET BASED DISTRIBUTION (BBD)
BBD is a Sailor 2025 initiative aimed at modernizing distribution and order writing systems. The effort begins functional work and follow-on development to collapse Navy Reserve Order Writing System (NROWS), Navy Marine Corps Mobilization Processing System (NMCMPS), Enlisted Assignment Information System (EAIS), and Officer Assignment Information System (OAIS) into a single distribution system. The objective of BBD is to increase personnel readiness, improve fit and provide clear visibility to the impact on mission readiness at the billet level. BBD will facilitate maximizing the contributions of every member of the Navy workforce by delivering competency-based career paths. As part of the Navy's transformation initiative, BBD will be consolidated into the MPT&E Personnel and Pay System technology component.

NAVY MANPOWER REQUIREMENTS SYSTEM (NMRS)
NMRS will modernize obsolete software and incorporate a wide array of enhancements (expanded capabilities based on sponsor's approved Functional Requirements Document) of new capabilities in support of Manpower Requirement efficiencies. NMRS is a key tool which Navy manpower managers rely on to set, implement, and execute manpower requirements. Recommendations for improving data bases and the Navy's mobilization capacity rely on NMRS to make strength determinations. The planned effort also includes technical evaluation and integration of products produced by the Simulation Toolset for Analysis of Mission, Personnel and Systems (STAMPS) program. As envisioned by the Navy's Transformation initiative, NMRS will eventually be consolidated into the MPT&E Personnel and Pay System technology component of the transformation.

ANALYSIS OF ALTERNATIVE/ECONOMIC ANALYSIS (AOA)
The Navy will conduct multiple AoAs and studies to analyze viable alternatives in order to determine the most efficient and effective solution to address the modernization of elements of the Navy's Manpower, Personnel, Training and Education (MPT&E) IT portfolio. AOA will assess operational effectiveness, suitability, and costs of non-tactical systems to meet emerging capability requirements.

LEARNING STACK (FORMERLY LEARNING MANAGEMENT SYSTEM - DISTANCE LEARNING (LMS-DL))
Beginning in FY20, LMS-DL is aligned with the Learning Stack (LS) technology component of the N1 Transformation initiative. LMS-DL supports ready relevant learning, with a focus to align Navy learning, create a career learning continuum, and leverage evolving technologies to expand learning solutions when and where the Sailor needs them. The collaborative learning environment (CLE) is a key component within the learning IT strategy that leverages Commercial-Off-the-Shelf products to integrate the CLE with intelligent tutors, a multi-purpose reconfigurable training system (MRTS), electronic classrooms (ECR), trainers and labs, interactive multimedia instruction (IMI), instructors, and a virtual environment.

As part of the Transformation holistic IT approach, ready & relevant learning requires the development of a Learning Management System that permits:
(1) Mobile & flexible delivery of modular training to the sailor
(2) Synchronization of work requirements with learning modules to ensure proper training is delivered at the right time

FY20 funding will develop and deploy new technologies for modularized training in fleet concentration areas to support the continuum of learning to include:
(1) Development, modification or replacement of the current LMS platform

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(2) Integration of Manpower, Personnel, Training and Education (MPTE) management tools to support end to end business processes (billet information, assignment, distribution, student management, learning management, personnel information, advancement) that will be impacted by changes to learning delivery and career profiles via Progressive NECs (e.g. Legacy systems: TFMMS,NSIPS, Learning Assessment System, Navy Training Management Planning System and future transformation systems: NP2 and ADE.)

The Learning Management tools and supporting IT infrastructure must also be modified to support management of training into the Delayed Entry Program, the growing use of demonstration videos, social media, student and learning management for MPTE mobility efforts, gaming and simulation technology as it is brought on-line. LMS-DL will also introduce the Learning Continuum Pilot, a risk reduction effort that develops proof of concept alignment of sailor training requirements with learning content delivery.

SINGLE POINT OF ENTRY (SPOE) (FORMERLY MY NAVY PORTAL (MNP))
MNP is aligned with the single point of entry (SPOE) technology component of the N1 Transformation initiative. MNP is an integrated web portal that consolidates the Navy's Human Resource portals, knowledge, and applications into a single and simplified user experience. Through the use of a multi-phased development approach, MNP will provide an intuitive self-service single point of entry (SPOE) for Sailors to view and manage their personnel and career information. MNP provides Active and Reserve Sailors with personalized interactive experiences and allows access to relevant information including learning content, human resource applications, and career business processes.
Beginning in FY20 system requirements and functionality for ARM will be subsumed under the auspices of SPOE as part of the N1 MPT&E Transformation and system consolidation. The descriptions for the system is provided below.

APPLICANT RELATIONSHIP MANAGEMENT (ARM)
ARM provides automated support of the management of recruiting information. ARM enables all levels of recruiting to have real-time access to timely and accurate information. ARM provides managers with decision-making support by consolidating Navy Recruiting Command (NRC) legacy application systems. The complete ARM Systems Dev/Mod effort will incorporate biometrics and paperless implementation across all lines of business systems to gain additional efficiencies. Included in the ARM program is the Self Service Accessions Application (SSAA). Phase II of this effort will build the SSAA application into the ARM system. SSAA is a mobile device-based software application. SSAA supports a change in the NRC business processes from a recruiter-driven business model to an applicant self-service business model. This "app" will be used by applicants to collaborate with recruiters anytime & anywhere to more efficiently and effectively navigate the recruiting process. As envisioned by the Navy's Transformation initiative, ARM will be consolidated into the SPOE Customer Relations Management (CRM) in FY20.

AUTHORITATIVE DATA ENVIRONMENT (ADE)
ADE is part of the Navy's MPT&E IT Transformation initiative aligned directly with the Authoritative Data Environment technology component of the transformation. ADE is aimed at transitioning the current project based ADE into a full enterprise solution that is based on modern IT service models and cloud hosting technology. This will advance data analytics and visualization capabilities, and add common platform services in a big data environment that is consistent with private industry. This acceleration toward a true Navy-wide personnel authoritative data environment is a transformational increase in capability for decision support and improving personnel readiness.

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As part of the Transformation strategy, the Chief of Naval Personnel has directed expansion and improvements of the ADE in making MPT&E data more available to commanders, sailors, business owners and fleet executive leadership. The ADE provides infrastructure, operations and sustainment of the Navy MPT&E Authoritative Data Warehouse(ADW), enterprise service bus, and web support services.
The capabilities delivered by this funding include:
(1) Completed "golden record" expansion increments
- Data quality
- Governance
- Security
- Data standardization

(2) Increased capabilities for MPT&E supply chain & business operations
- Data discovery
- Advanced visualization tools
- Predictive analytics

(3) Enhanced architecture to support unstructured data and "big data" analytics
(4) Improved support for future identity management & access for mobile device capability

RISK MANAGEMENT INFORMATION (RMI)
The RMI program is a consolidation of DON risk management requirements into a single Program of Record (POR) to provide modern safety reporting and management capabilities for both active and reserve Navy and Marine Corps commands. RMI enables agile responses to business rule changes, automation of routine actions, improved data integrity, and facilitates self-service for organizations and individuals.

RMI is being developed in three increments of capabilities: Streamlined Incident Reporting (SIR), Safety Program Management (SPM), and Analysis & Dissemination (A&D). A fourth requirement, Portal integration, will be accomplished as part of the development of the three RMI increments since each will be built on the same Commercial Off The Shelf (COTS) platform. Each of these capabilities will be acquired as individual Abbreviated Acquisition Programs using an incremental development approach for reengineered business processes, while consolidating five legacy systems Web-Enabled Safety System (WESS), Enterprise Safety Application Management Systems (ESAMS), Portsmouth Occupational Accident and Illness Reporting System (POAIRS), Medical Mishap and Compensation (MMAC), and Injury Tracker (INJTRK).

3167 JOINT TECHNICAL DATA INTEGRATION (JTDI)

JOINT TECHNICAL DATA INTEGRATION (JTDI)
Joint Technical Data Integration (JTDI) Program - JTDI funding supports the evaluation, testing and integration to develop a JTDI Government Off-The-Shelf (GOTS) solution for installation on Carrier and Amphibious Assault class ships and at other globally deployed Navy/Marine Corp aviation activities. JTDI is a digital technical data access, delivery and local Organizational & Intermediate level library management toolset. It improves accuracy and timeliness of technical manual and other

technical data delivery and minimizes the Fleet's library management burden. JTDI reduces maintenance work hours with a savings Return on Investment of 2.5:1. JTDI also provides deployed maintenance personnel with 24x7 collaborative reach-back/tele-maintenance capabilities so that Fleet Support Teams/Engineering Technical Services can remotely diagnose problems and assist with repairs, and provides for process efficiencies to support ongoing Aviation Fleet Technical Representative reductions.

MARINE AVIATION LOGISTICS ENTERPRISE INFORMATION TECHNOLOGY (MAL-EIT)
Increased funding to accelerate the deployment of MAL-EIT 3.0 to meet the new deadline of FOC in FY19 as well as begin development of MAL-EIT 3.1.
Funding supports the evaluation, development, testing and integration of software and hardware solutions across all US Marine Corps Aviation activities to be used in the planning and execution of geographically distributed, expeditionary Aviation Logistics (AVLOG) chains in support of deployed USMC Air Combat Element operations. The Marine Aviation Logistics Enterprise Information Technology (MAL-EIT) Program is one of four programs contained within the Marine Aviation Logistics Support Program (MALSP) modernization program known as MALSP II. Legacy MALSP is nearly 25 years old and grossly inadequate in IT capability to meet the informational, planning, and C2 needs of a dynamic, geographically distributed nodal AVLOG system. MAL-EIT is a Defense Business System Abbreviated Acquisition Program that will develop and deliver the required IT capability necessary to eliminate the IT related gaps existing in the legacy MALSP.

3185 JOINT AIR LOGISTIC INFORMATION SYSTEM (JALIS)

JALIS is an operational scheduling and aircraft management system that facilitates real-time data analysis. JALIS is a critical element in the management of DoD air logistics assets. JALIS allows:

(1) DoD Service Personnel to submit airlift requirements for DoD Personnel and cargo
(2) Air Logistics Flying Units to communicate their aircraft availability in a real-time graphic display
(3) Designated Scheduling Organizations to compare airlift requirements with available aircraft
(4) Designated Scheduling Organizations to create mission assignments

JALIS informs applicable users of mission details and modifications by using a combination of system displays and email updates. JALIS is geographically distributed and has a user base in excess of 4,000 members. JALIS facilitates the movement of thousands of DoD Personnel and tons of cargo annually in support of the following:

(1) Navy Unique Fleet Essential Airlift
(2) Army's Operational Support Airlift Agency (OSAA)
(3) United States Transportation Command (USTRANSCOM)
(4) United States Marine Corps (USMC)

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The NMMES-TR is an Information Technology (IT) acquisition program that will provide a sustainable enterprise IT solution leveraging Commercial, Off-The-Shelf (COTS) technology and business processes for shore maritime maintenance. Unlike the uniquely custom designed status quo toolset, the NMMES-TR solution will not implement extensive product customization to match the current maintenance business processes; but rather, maintenance business processes will be modified to match the software solution, thereby adopting industry best practices. Accordingly, the solution will be more flexible to the BPR process, and more agile to capitalize on efficiency improvement opportunities and innovations. This will facilitate alignment with the Optimized Fleet Response Plan (OFRP) by assisting the maintenance activities with accomplishing assigned tasks as planned in order that submarines, aircraft carriers, and surface ships can properly train and deploy on schedule. NMMES-TR will also provide a modern solution that will be more effective and efficient in combating cybersecurity threats, and capable of continuous monitoring.

The NMMES-TR initiative has been a pre-acquisition Defense Business System (DBS) effort for the past three years funded through Line Item 0605013N, Project Number 2904. In April 2017, the Department approved the NMMES-TR initiative to commence as an acquisition program, resulting in the establishment of a new Project Number 3432 beginning in FY19.

9406 MAINTENANCE DATA WAREHOUSE

FY2020 funding request for RDTEN Project 9406 was reduced by $0.398 million due to availability of prior year funds.

Maintenance Data Warehouse funds the Naval Aviation Enterprise (NAE) Sustainment Vision (SV) 2020 digital transformation which is a critical component of improving readiness. It will be executed in a fully agile manner providing continuous fleet readiness improvements across the FYDP. The initial SV 2020 configuration will be supported with an agile Minimal Viable Product (MVP) as the foundation for continuous capability introduction. The Aviation Logistics Environment (ALE) will provide the seamless environment to support the integration of the other capabilities developed in Maintenance Data Warehouse.

Aviation Data Warehouse/Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE) program is the next generation data warehouse containing over 30 years of aircraft maintenance, flight, components, and usage data. Through the use of web-based, commercial off the shelf software for data load, analysis, query, and reporting tools, the user has the capabilities to effectively obtain readiness data in a near real-time environment, as well as providing historical data for long range planning, trend and records analysis, records reconstruction, and compliance with technical directives. DECKPLATE supports the mission of the warfighter who requires a single source of near real-time aviation data in which to base critical readiness decisions. DECKPLATE collects data from authoritative sources, such as the fleet maintenance systems, into a data warehouse. Because the warfighter only needs to access one database, the time consuming task of collecting various pieces of data from various sources will be reduced and ultimately eliminated. This also accomplishes a reduction in legacy systems mandated by Office of the Chief of Naval Operations. DECKPLATE manages total inventory for two major categories of assets, Aircraft (General Equipment) and Engine/Propulsion Systems/Modules (EPSMs) (Operating Materials & Supply). DECKPLATE is comprised of the transactional Aircraft Inventory and Readiness Reporting (DECK-AIRRS) and the Engine Transaction Reporting (DECK-ETR) subsystems which provide the complete lifecycle for aircraft and Engine/ Propulsion System/Modules (EPSMs). DECKPLATE has been identified as a level 1 financial feeder system due to the value of the aircraft and EPSM's managed in the system, and continues to respond to audit compliance and Cyber Security mandates. DECKPLATE is a core feeder system to numerous NAVAIR efforts.

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Condition Based Maintenance Plus (CBM+) solution is an initiative which provides Naval Aviation Enterprise with common enabling capabilities which deliver timely data-driven, decisional information to optimize aircraft availability and materiel readiness by incorporating health and usage leading indicators into the failure mode mitigation process, enabling the Warfighter to more efficiently meet mission requirements through automated analysis and decision making processes. The CBM+ initiative increases readiness through streamlined maintenance processes which provide the sustainment base with timely, actionable logistics/engineering data and integrated analytics not previously available, enabling engineers and acquisition professionals to support system improvements based on CBM+ acquired data and analytic results. CBM+ provides the enabling infrastructure and storage solutions within an Enterprise common environment needed to store and analyze weapon system sensor data to extend the life of current and new acquisition aircraft, realizing savings from reductions in field (organizational and intermediate) maintenance actions, reduced functional check flight hours, mishap mitigation, and reduced parts usage.

The Aviation Logistics Environment (ALE) program is the Naval Aviation Information Technology (IT) solution to deliver full lifecycle weapon system logistics and maintenance capabilities to the functional Naval Aviation Support Process (NASP). ALE will provide a seamless digital environment that will improve readiness and provide for reduced system development, testing, deployment, and sustainment costs, as well as reduced cyber risk due to lower number of IT systems and ability to address capability gaps via an integrated technology schedule. It will deliver these capabilities via a net centric, shared data environment that supports shore based, afloat, and expeditionary operations. The ALE integrates IT services plane-side and interfaces with infrastructure systems where necessary. ALE is a global logistics enterprise solution and a part of the total enterprise solution architecture. ALE is designed to structure IT services with the ability to connect with other parts of the enterprise solution set, thus enabling an interoperable end-to-end business process. ALE consolidates Naval Aviation data into an integrated data environment for high level analysis. ALE will integrate, organize, and develop an underlying infrastructure and analytical capacity across the NASP in order to generate a holistic timely picture of readiness and condition for all T/M/S. ALE will be providing modern Product Lifecycle Management (PLM), Decision Support (Predictive Analytics), Planeside Interfacing, and the Enterprise Infrastructure to support the NAE. The ALE program is a "system of systems" that will provide a common, integrated data environment that will enable NAE Vision 2020 data transparency across the Naval Aviation Enterprise; end-to-end process view to enable both consuming and providing on-demand information to stakeholders; a capability to view "digital twins" of all T/M/S for both allowable and as- configured states; a consolidation of aging, near-end-of-life systems and applications to modern technology and cost efficient support infrastructures; consistent and accurate weapons systems technical and Computer Aided Design (CAD) engineering documentation to support additive manufacturing capabilities; standardized metrics, algorithms, and business analysis tools; an architecture that enables migration to the cloud; and alignment to Information Assurance (IA) and Cybersecurity standards, and Risk Management Framework (RMF) compliance.

Vector (formally Integrated Logistics Management System (ILSMS)) supports the development of a common logistics analytical application which uses a disciplined approach to Business Intelligence (BI) architecture by combining products, data, technology and methods aimed at key Naval Aviation Enterprise (NAE) business processes. Vector provides a single view of the data to focus on aircraft readiness, maintenance, supply, cost, and man-hours. Vector provides naval aviation with a common view of approved key performance metrics and the capability to perform multi-system analysis of Ready for Tasking (RFT)/Ready Basic Aircraft (RBA) Gap drivers, 'Top-Down' aircraft systems analysis down to the component level. Vector identifies system performance trends early to mitigate future readiness and cost impacts to the fleet.

- Dynamic Scheduling optimizes aircraft (BuNo specific), engine and component maintenance through task sequencing based on reliability and failure data, and asset utilization vice calendar directed maintenance. Dynamic Scheduling will have insight to demand across the NAE and can affect maintenance across all levels

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of maintenance. Dynamic Scheduling IT system capability will interface with authoritative source systems providing and consuming operational demand, man power, training, supply and others. Near term Dynamic Scheduling capability is planned for NALCOMIS OOMA and future state DS capability is planned for NAMS implementation. Both material and non-material changes implemented along with the DS IT system will provide capability that overcomes the challenges faced by the as-is state to include: Advanced scheduling capabilities interfaced with current future MRO system to enable system assisted scheduling, optimization and opportunistic maintenance.

- Insight and the ability to collaborate and affect schedules across all levels of maintenance and MRO systems.
- Capture and analysis of RCM mitigations strategies with the ability to quickly implement changes to maintenance tasks and periodicities.
- The ability to package Technical Manuals for serial number specific, scheduled event tasks at the point of maintenance.
- The ability to provide additional point of maintenance technical data and support to enable the maintainer of the future.

Optimized Scheduled Maintenance and Dynamic Scheduling IT system capabilities will contribute to the reduction of MMHs and increase in operational availability objectives by positively affecting the efficiency of maintenance at the O, I & D-Levels of maintenance across the NAE. Future state OSM IT system capability may be provided by the Aviation Logistics Environment (ALE)/Product Lifecycle Management (PLM) solutions. Dynamic Scheduling IT capability is schedule to be developed as an interface to NALCOMIS OOMA in FY 19 timeframe. Future state version of Dynamic Scheduling IT capability will interoperate with Naval Aviation Maintenance System (NAMS) and other future state system such as Naval Data Repository (NDR), ALE/PLM, and Navy Depot Management System (NDMS).

B. Program Change Summary ($ in Millions)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Previous President's Budget	152.977	268.567	375.700	-	375.700
Current President's Budget	120.387	242.110	384.162	-	384.162
Total Adjustments	-32.590	-26.457	8.462	-	8.462
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-36.457			
• Congressional Rescissions	-	-			
• Congressional Adds	-	10.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-4.321	0.000			
• Program Adjustments	0.000	0.000	8.538	-	8.538
• Rate/Misc Adjustments	0.002	0.000	-0.076	-	-0.076
• Congressional Directed Reductions Adjustments	-42.771	-	-	-	-
• Congressional Add Adjustments	14.500	-	-	-	-

Congressional Add Details ($ in Millions, and Includes General Reductions)

	FY 2018	FY 2019
Project: 9999: *Congressional Adds*		

Exhibit R-2, RDT&E Budget Item Justification: PB 2020 Navy	Date: March 2019
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Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2018	FY 2019
Congressional Add: *Enterprise Condition Based Maintenance*	4.346	0.000
Congressional Add: *Enterprise Product Lifecycle Management*	9.651	0.000
Congressional Add: *Advanced Radar Condition Based Maintenance*	0.000	10.000
Congressional Add Subtotals for Project: 9999	13.997	10.000
Congressional Add Totals for all Projects	13.997	10.000

Change Summary Explanation

The FY2020 funding request for PE0605013N / Information Technology Development was reduced by $13.149 million to account for the availability of prior year execution balances.

Technical: Not applicable.

Schedule:
Project 3167 - In order to comply with Federal and DoD data center consolidation and virtualization requirements, JTDI top-tier was transitioned from Army Redstone Arsenal (RSA) and is now hosted at Defense Information Systems Agency (DISA) Defense Enterprise Computing Center (DECC) in Mechanicsburg, PA. The annual release cycle typically used by the JTDI program was insufficient to deal with the technical and programmatic complexity required to move JTDI top-tier operations from RSA to DISA DECC. A transitional baseline release (JTDI Version 2.0.5.0) requiring a longer system development cycle was needed to integrate JTDI into the DISA computing environment, make adjustments to contracts, and negotiate service level agreement, terms and conditions, and pricing arrangements with DISA.

Project 3432 - The program office conducted a review of the schedule in response to the 19 month schedule risk identified by NCCA during the Gate 4 Cost Review Board (CRB) and formalized in the approved Component Cost Position (CCP) dated 12 Apr 2018. After careful review of the scheduled activities, the timeline for Increment 1 and the total program were increased by a combined total of 14 months to mitigate the stated risk.

Project 9406 - Due to a FY19 Congressional Mark VECTOR and Dynamic Scheduling schedules have been pushed 12 months.

Funding: Changes addressed within individual projects.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy											Date: March 2019	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / *Information Technology Development*				Project (Number/Name) 2901 / *AAUSN IT*			
COST ($ in Millions)	**Prior Years**	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
2901: *AAUSN IT*	61.225	14.017	24.491	53.248	-	53.248	47.146	34.133	1.716	1.735	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

DON/AA IT Modernization (formerly AA USN IT)

SYSTEM MODERNIZATION & ANALYTICAL TOOLS: The Secretariat Automated Resources Management Information System (SARMIS) is a financial tool used by the Secretariat to formulate, execute, and report changes to organizational resources. DON/AA employs this system to support financial and resource decisions for all Secretariat activities. SARMIS produces budget materials and analysis, as well as generating allocation data. In addition, SARMIS contains organizational manpower data that assists our leaders in making necessary personnel decisions for the Secretariat. The SARMIS application is currently operating on a severely outdated and underperforming platform. This results in additional administrative overhead, error corrections, and development fixes to maintain current operations. This RDTEN funding is used to upgrade this critical software capability to a new platform, comply with mandatory DOD cyber security requirements, and develop new reporting and integration capabilities.

ASN(M&RA) IT System Modernization for BCNR:
The CAPS-II, CRSC, and BCNR programs are used by the Navy Clemency and Parole Board (NCPB), the Combat Related Special Compensation Board (CRSC), and the Board of Corrections of Naval Records (BCNR) to process and adjudicate approximately 17,200 cases per year. The current system defects have resulted in additional man-hours and reduced reporting functionality. This has created a longer manual process and hinders adequate statistical data from being retrieved. As a result, congressional inquiries take longer to satisfy and accuracy cannot be guaranteed. RDTEN funding will be used to redevelop systems for the CAPS-II, CRSC, and BCNR in order to meet reporting requirements, enhance system capabilities, and gain compliance with current IT standards.
DON TRACKER

Department of the Navy Tasking, Records and Consolidated Knowledge Enterprise Repository (DON TRACKER - formerly known as Enterprise Records and Task Management (ERTM)) is a single, auditable, compliant Records and Task Management process, implemented uniformly across all DON Divisions and Commands, and administered by DON/AA, to enable efficient and effective execution of Records Management (RM) and Task Management (TM) policy in compliance with statute.

ELECTRONIC PROCUREMENT SYSTEM (ePS)

The increase from FY19 to FY20 supports completion of the Limited Deployment (LD) phase of the ePS program in addition to software hosting, gap closure and Release 1 deployment activities. Efforts associated with completion of LD include software configuration, software installation, and test and evaluation. Efforts associated with gap closure and Release 1 include software configuration, software installation, and data migration.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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The electronic Procurement System (ePS) is the Department of the Navy's (DON) End-to-End (E2E) Contract Writing System (CWS). It will provide the Navy and Marine Corps contracting community with a full contract writing management capability and facilitate integration with federally mandated systems, DON financial systems, and industry. The ePS will utilize Department of Defense (DoD) standards and support auditability. The ePS will address existing CWS challenges including outdated architecture, limited capabilities, scalability concerns, and existing legacy systems.

Full deployment of the ePS ensures compliance of the DON's contracting abilities with the following legislative mandates: the writing and management of all contracts must now occur in congressionally approved computer systems (Section 862 of the National Defense Authorization Act (NDAA) of 2013); the central management and oversight of all DoD business (10 U.S. Code (U.S.C.) Section 2222); and all contracting actions must be fully auditable and traceable (Section 1003 of the NDAA 2010 & Office of the Secretary of Defense (OSD) Financial Improvement and Audit Readiness (FIAR) Guidance).

The ePS will use DoD data exchange capabilities (e.g.; Procurement Data Standard (PDS) and Purchase Request Data Standard (PRDS)) in order to achieve standardized data interoperability with external systems. The Navy Enterprise Service Bus (NESB) serves as the hub to relay procurement data to various finance and other systems of record, such as Navy Enterprise Resource Planning (Navy ERP), Standard Accounting & Reporting System (STARS) and Standard Accounting Budgeting & Reporting System (SABRS).

The result of successful ePS implementation will be a contracting workforce that issues accurate and timely contracts in a standard format that comply with all DoD/ Federal laws, regulations, and policies.

NMCI ENTERPRISE SERVICE TOOLS(NEST)

The decrease of $2.286M from FY19 to FY20 is due to fewer developmental efforts. In FY20 the RDTEN funding will be used to address minor requirements after the NGEN-R award; and any changes in DOD/DON procurement policies and mandates.

The NMCI Enterprise Service Tools (NEST) is the NMCI IT service management system that supports the Navy IT service lifecycle business workflow. NEST includes, the NMCI Enterprise Tool (NET) and the Requirements to Award Process Tool (RAPT), which enables and manages the business workflow. NET is a custom NET application that has been built and maintained by the DON to support ordering of IT services. RAPT manages the requirements approval process and stores supporting documentation for previously un-priced line items. RAPT provides NET with relevant identification information for the new orderable solution, which supports the creation of orderable services. NEST serves as the single point of entry for lifecycle management of IT services on the NMCI network.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Modernization - Secretariat	0.676	0.400	0.350	0.000	0.350
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Description: The Secretariat has numerous requirements to modernize its financial management system and portal applications. SARMIS will be updated from older technologies to include new FIAR and web based requirements. These upgrades are necessary to continue functionality of the system and ensures timely, accurate and efficient operation of the Secretariat's mission. ***FY 2019 Plans:*** Complete modernization effort. ***FY 2020 Base Plans:*** Continue modernization effort. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The FY20 decrease is due to RDTEN funding realignment to OMN in order to support the sustainment efforts which will begin during FY 2020.					
Title: SECNAV Projects (BCNR, CORD, Other) IT System Moderization	0.000	1.058	0.350	0.000	0.350
Articles:	-	-	-	-	-
Description: CORB's eCase IT system replaces out-of-date systems and furthers CORB's digitization effort. The CAPS-II, CRSC, and BCNR programs are used by the Navy Clemency and Parole Board (NCPB), the Combat Related Special Compensation Board (CRSC), and the Board of Corrections of Naval Records (BCNR) to process and adjudicate approximately 17,200 cases per year. The current system defects have resulted in additional man-hours and reduced reporting functionality. This has created a longer manual process and hinders adequate statistical data from being retrieved. As a result, congressional inquiries take longer to satisfy and accuracy cannot be guaranteed. ***FY 2019 Plans:*** RDTEN funding will be used to redevelop systems for the CAPS-II, CRSC, and BCNR in order to meet reporting requirements, enhance system capabilities, and gain compliance with current IT standards. ***FY 2020 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
RDTEN funding will be used continue to redevelop systems for the CAPS-II, CRSC, and BCNR in order to meet reporting requirements, enhance system capabilities, and gain compliance with current IT standards. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The FY20 funding decrease is due to RDTEN funding being realigned to OMN in order to support the sustainment efforts which will begin during FY 2020.					
Title: Department of the Navy Tasking, Records and Consolidated Knowledge Enterprise Repository (DON TRACKER) ***Articles:*** ***Description:*** The DON TRACKER will streamline DON's electronic records and task management processes under a consolidated enterprise solution and will enable the DON to capture unstructured and structured electronic records, seamlessly manage tasking across and within all commands, ensure uniform metadata of content, provide workflow-enabled reporting, and aid in compliance with all applicable laws, policies, and regulations. In addition, this will eliminate duplicative capabilities and result in cost-saving opportunities and efficiencies. The DON TRACKER solution will be extended to all authorized, shore and afloat-based users across the DON enterprise, including the Continental United States (CONUS) and Outside the Continental United States (OCONUS) communities. ***FY 2019 Plans:*** N/A ***FY 2020 Base Plans:*** N/A ***FY 2020 OCO Plans:*** N/A	0.448 -	0.000 -	0.000 -	0.000 -	0.000 -
Title: Electronic Procurement System (ePS) ***Articles:*** ***Description:*** Funding required for the Electronic Procurement System (ePS) to provide support for source selection,	7.879 -	18.753 -	50.554 -	0.000 -	50.554 -

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
configuration, integration, testing, training, deployment and implementation of the system. ***FY 2019 Plans:*** - Award the contract to the vendor selected by the Source Selection Authority to begin Limited Deployment. Limited deployment will span across one full command and three small sites and will include 310 critical users (contracting and grants professionals) and 620 non-critical users (small business, financial, legal, etc.). (Non-critical users do not have full access to the system.) Limited deployment will encompass: o Data migration from four systems to one across five databases and five servers o Interface development and testing for four systems (PR Builder, Standard Accounting Budgeting System (SABRS), Navy ERP, and Integrated Management Processing System (IMPS)) o Systems configuration and gap closure to ensure all DON contracting requirements for ePS system are met and a commercially viable solution is provided o Systems engineering o Enterprise architecture support o Quality assurance o Development of training material o Over-the-shoulder support as part of implementation - Continue data cleansing and logistics analysis in preparation for data migration from legacy systems into the new ePS solution to reduce the risk of data migration errors. - Software/cloud hosting (Dev/Test environments) - Continue Project Management efforts including implementation preparation, scheduling, configuration management, data management, test and evaluation and updating required documentation for Authority to Proceed (ATP) decision. -Complete LD user migration of contract data from legacy SPS databases to ePS -Complete the Build Technical Review (BTR) for Limited Deployment -Complete Interim Authority to Test (IATT) of the CWS application within a level 5 cloud hosting environment. ***FY 2020 Base Plans:*** Complete Limited Deployment to 310 critical users and 620 non-critical users which will encompass: o Complete Mocks and Cutover for Navy-ERP, PR Builder, SABRS and IMPS o Complete cybersecurity testing to achieve authority to operate (ATO) o Complete integration testing, user acceptance test, operational assessment, operational test readiness review and Initial Operational Test and Evaluation (IOT&E)					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
o Complete production readiness review for limited deployment o Complete user training and begin over-the-shoulder support for limited deployment users o Complete functional configuration audit (FCA) Release 1 deployment and gap closure to 3644 critical users and 7658 non-critical users which will entail: o Complete data cleansing and begin data migration from NAVSEA, NAVAIR, SPAWAR, ONR, SSP, MSC and USMC Legacy SPS and Seaport databases o Initial gap closure focusing on HCA specific requirements needed for IT services, Grants, Shipbuilding, and SEAPORT. o Interface development and testing for seven systems (MSC-FMS, SYMIS MAT F, MAT MF COST, DIFMS, NEST, STARS-HCM, STARS-FL) o Complete Build Technical Review and Fielding Technical review in support of Release 1 o Begin integrated testing in support of release 1 o Begin Mock testing MSC-FMS, SYMIS MAT F, MAT MF COST, DIFMS, NEST, STARS-HCM, STARS-FL o Develop updated training based on initial user training o Begin user training for release 1 - Data Migration Preparation for Release 2 o Complete data profiling in preparation for data cleansing for NAVSUP and NAVFAC ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY19 to FY20 funding increase of $31.8M is driven by a significant increase in the ePS user community via Limited Deployment (LD), Release 1 (R1), and Release 2 (R2) activities. LD began in FY19 and only incorporated 1 full command and 3 small sites for a total of 310 critical users, with 3 financial interfaces. Release 1 will incorporate 7 full commands including 42 sites) for a total of 3,644 critical users. R1 also begins to incorporate Navy specific requirements into the gap closure, software configuration, and testing activities, and includes the development and testing of 6 additional financial interfaces. FY20 includes LD, the majority of R1 activities, and initial data migration planning activities for R2, which is a significantly larger effort.					
Title: NMCI Enterprise Service Tools (NEST)	5.014	4.280	1.994	0.000	1.994
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Description: The NMCI Enterprise Service Tools (NEST) is the NMCI IT service management system that supports the Navy IT service lifecycle business workflow. NEST includes, the NMCI Enterprise Tool (NET) and the Requirements to Award Process Tool (RAPT), which enables and manages the business workflow. NET is a custom NET application that has been built and maintained by the DON to support ordering of IT services. RAPT manages the requirements approval process and stores supporting documentation for previously un-priced line items. RAPT provides NET with relevant identification information for the new orderable solution, which supports the creation of orderable services. NEST serves as the single point of entry for lifecycle management of IT services on the NMCI network.					
FY 2019 Plans: - BFM 2.0 - Appian Conversion: Develop current BFM tool in COTS and develop enhancements to enable future enterprise level planning for PMW 205 - NEST Cloud Re-hosting: Continue and complete migration of NEST from current AHF hosting facility to AWS Cloud in support of NGEN-R Requirements - Initial Deployment of MuleSoft: Standardize NEST communication with vendors and external systems; enable enterprise use across program office applications -NET: Task Order Interface(s): Establish interface for transmission of NGEN-R task order data to government financial systems - NET: DODAAC/UIC Reconciliation: Redefine the UIC creation process to meet government requirements under NGEN-R - RAPT R4.0: Appian Conversion: Complete RAPT release to accommodate rapid workflow changes & enhance security through permission based access with a dynamic COTS solution - Complete NET Receiving Reports/NGEN Extension Impacts release: Enable users to review and dispute service billing data prior to the vendor submitting that data as an invoice and Prepare, plan, and integrate solutions to be compatible under new multi-vendor, multi-contract awards - Enterprise Reporting (ER) 2.0: Addition of new enterprise-level dashboards based on program office priorities - RAPT: NGEN-R CLIN Structure: Require a RAPT release once SMIT is finalized to update RAPT request categories and CLIN structure in accordance with finalized PWS language - Implementation of XML firewall security to support account creation in accordance with NETWARCOM guidance					
FY 2020 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
In FY20, tasks will be centered on Service Management, Integration and Transport (SMIT) integration, NEST Graphical User Interface (GUI) updates, address any additional requirements after the NGEN-R award, and any changes in DOD/DON procurement policies and mandates. Support will also include identifying and implementation of required interfaces for NGEN-R Federal Procurement Data System - Next Generation(FPDS-NG), ESLs, SMIT Vendor Tools, ERP, etc. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The decrease of $2.286M from FY19 to FY20 is due to fewer developmental efforts. All NGEN-R readiness developmental requirements will be met and the focus will be providing continuity of IT service lifecycle management processes during the transition from the NGEN contract to NGEN-R contract(s). In FY20 the RDTEN funding will be used to address required changes resulting from the NGEN-R award and any changes in DOD/DON procurement policies and mandates.					
Accomplishments/Planned Programs Subtotals	14.017	24.491	53.248	0.000	53.248

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• 8106: *Command Support Equipment*	3.658	2.701	6.323	-	6.323	6.733	1.617	2.283	2.082	Continuing	Continuing

Remarks

D. Acquisition Strategy

The NMCI Acquisition strategy aims to shift the DON to a multi-vendor, multi-contract environment that aims to provide government-owned IT service lifecycle management. The NEST tools are currently being updated to incorporate enhancements that will enable to new environment.
MODERNIZATION - Contract will be awarded under a competitive, all source, RFP. NO ACAT

The selected contractor must have knowledge of the existing information systems pertinent to the task. They must also have the corporate experience and a staff of knowledgeable personnel to provide the required services. The task will be monitored by the Contracting Officer Representative (COR), who reviews technical data submissions, system deliverables, and invoices to ensure acceptable contractor performance and scheduled deliveries.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

CORB IT System Modernization:

Contract will be awarded under a competitive, all source, RFP. NO ACAT

DON TRACKER
As a general rule, IT development programs use an agile software development methodology therefore milestones, tasks and phases are often conducted in parallel vice sequentially.

This planned acquisition will be a Cost-Plus-Fixed-Fee (CPFF) single award Indefinite Delivery Indefinite Quantity (IDIQ) contract to a selected Vendor in support of sustainment, software development, legacy data transfer, and additional fielding of the DON TRACKER application.

ELECTRONIC PROCUREMENT SYSTEM (ePS)
The ePS program intends to award a 10-year hybrid contract to a single System Integrator (SI). The SI (Prime) will provide required software licenses and required activities for program management, maintenance, systems engineering, design and interface development, testing, deployment, training, and support documentation. This includes all efforts through Full Deployment (FD) and continued sustainment support during the 10-year period of performance.

The ePS will leverage Commercial Off-the-Shelf (COTS) products and capabilities, and is anticipated to consist of three components to achieve full end-to-end capability: 1) a COTS Contract Writing System (CWS) solution; 2) a COTS middleware interfacing capability, known as an Enterprise Service Bus (ESB); and 3) Gap-closure methodologies (e.g.; Business Process Management (BPM) tools, Business Process Re-Engineering (BPR), COTS updates, or a secondary COTS solution).

E. Performance Metrics

Program cost, schedule and performance are measured using a systematic approach with approved programs and methods. The results of these measurements are presented to DON/AA management through a governance review board process on a regular basis to determine program effectiveness and to provide new direction as needed to ensure the efficient use of
resources. To monitor and manage the execution of projects in addition to other IT investments, management and governance boards review metrics and key performance indicators that are outlined in various plans. Some of the plans that expound on the data captured to attribute to performance measures include: Project Management Plan, Risk Mitigation Plan, Communication Plan, Procurement Plan, and a Certification & Accreditation Plan.
Other specific performance measurements include:
1. Actual versus planned project scope
2. Actual versus planned time schedule
3. Actual versus planned costs
4. Actual versus planned risks and the mitigation of those risks

BCNR IT System Modernization specific performance measurements include Navy Clemency and Parole Board (NCPB) and the Combat Related Special Compensation Board (CRSC) which process 17,200 cases per year.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

ELECTRONIC PROCUREMENT SYSTEM (ePS):
Reliability:
(Threshold) Mean Time Between Failure (MTBF) >= 720 Hours (Hrs)
(Objective) Mean Time Between Failure (MTBF) >= 1080 Hrs

Operational Availability:
(Threshold) = 96% Including Scheduled Downtime
(Objective) = 99.5% Discounting Scheduled Downtime

Maintainability:
(Threshold) Mean Time to Repair (MTTR) <= 6.7 Hrs
(Objective) Mean Time to Repair (MTTR) <= 2.7 Hrs

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development (Modernization)	C/FP	CACI : Chantilly, VA	4.555	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Contractor Engineering Support (DONCJIS)	SS/T&M	Interimage Inc. : Manassas, VA	1.272	0.000		0.000		0.000		-		0.000	0.000	1.272	-
Software Development	C/FP	Dell Marketing LP : Round Rock, TX	1.938	0.000		0.000		0.000		-		0.000	0.000	1.938	-
Software Development (CLEOC)	C/FP	NSA : Various	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
SYSTEM Moderization	WR	SPAWAYSYSCEN ATLANTIC : CHARLESTON, SC	2.950	0.676	Oct 2017	0.400	Oct 2018	0.350	Oct 2019	-		0.350	0.000	4.376	-
CORB SYSTEM Modernization	WR	SPAWASYSTEM : CHARLESTON, SC	1.000	0.000		1.058	Oct 2018	0.350	Oct 2019	-		0.350	0.000	2.408	-
DON TRACKER Engineering	C/CPFF	Progeny : Manassas, VA	5.749	0.448	Feb 2018	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
ePS Data Transition Strategy	Various	NAVSUP BSC : Mechanicsburg, PA	1.602	0.100	Nov 2017	0.000		0.000		-		0.000	0.000	1.702	-
ePS NESB Data Mapping	C/FP	BOOZ ALLEN : Tysons Corner, Va	6.700	0.450	Dec 2017	0.000		0.000		-		0.000	0.000	7.150	-
NESB Configuration and Validation	C/FP	SPAWAR : San Diego, CA	7.371	0.000		0.000		0.000		-		0.000	0.000	7.371	-
Contract Writing System (ePS)	C/FP	TBD : TBD	0.000	0.000		10.138	Feb 2019	41.567	Feb 2020	-		41.567	Continuing	Continuing	Continuing
NERP Interface Analysis (ePS)	Various	SPAWAR : San Diego, CA	1.409	1.000	Jun 2018	0.000		0.000		-		0.000	0.000	2.409	-
		Subtotal	35.046	2.674		11.596		42.267		-		42.267	Continuing	Continuing	N/A

Remarks

Increase from FY19 to FY20 supports the continuation of deployments from Limited Deployment (LD) to Release 1 (R1). This includes an increase in the critical user count from 310 users to 3,644 critical users, and an additional 7 interfaces. During FY20, the program will complete Limited Deployment activities such as user training and data migration, and will begin the majority of Release 1 activities including interface development, gap closure activities, integration, testing, data cleansing. Additional Release 2 (R2) data profiling activities will also begin in FY20. Moving from LD to R1 is a significant increase in effort.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Acquisition Documentation (ePS)	C/IDIQ	MAGA : Washington, DC	3.734	0.000		0.000		0.000		-		0.000	0.000	3.734	-
Cost Analysis (ePS)	C/CPFF	SPAWAR : San Diego, CA	1.045	0.000		0.180	Jun 2019	0.185	Jun 2020	-		0.185	0.000	1.410	-
Systems Engineering (ePS)	Various	SPAWAR : San Diego, CA/ Charleston, SC	13.098	1.468	Sep 2018	3.084	Sep 2019	3.114	Mar 2020	-		3.114	Continuing	Continuing	Continuing
Logistics Analysis (ePS)	Various	SSC LANT : Charleston, SC	1.431	1.205	Oct 2017	1.970	Oct 2018	0.438	Oct 2019	-		0.438	Continuing	Continuing	Continuing
Requirements Validation (ePS) - Small Business set aside	C/FFP	SPAWAR : San Diego, CA	1.500	0.000		0.000		0.000		-		0.000	0.000	1.500	-
Project Management/ Implementation (ePS)	Various	Enterprise Horizion : San Francisco, CA	1.756	1.780	Nov 2017	0.000		0.000		-		0.000	0.000	3.536	-
ePS Engineering Services - Small Business set aside	Various	Bowhead : Alexandria, VA	1.170	1.482	Jun 2018	0.268	Jul 2019	0.353	Jul 2020	-		0.353	0.000	3.273	-
ePS Testing and Validation/ Architecture Tool	Various	NSWC Dahlgren : Dahlgren, VA	0.050	0.050	Nov 2017	0.000		0.000		-		0.000	0.000	0.100	-
System Engineering Support (NEST)	C/CPFF	Deloitte : Rosslyn, VA	0.000	5.014	Nov 2017	4.280	Nov 2018	1.994	Nov 2019	-		1.994	Continuing	Continuing	Continuing
(ePS) Project Management/ Implementation	C/CPFF	Chenega : Chesapeake, VA	0.000	0.294	Sep 2018	0.310	Sep 2019	0.214	Sep 2020	-		0.214	0.000	0.818	-
Cloud Broker Services	TBD	NAVAIR : Patuxent River, MD	0.000	0.000		1.100	Mar 2019	2.900	Mar 2020	-		2.900	0.000	4.000	-
		Subtotal	23.784	11.293		11.192		9.198		-		9.198	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / *Information Technology Development*	Project (Number/Name) 2901 / *AAUSN IT*	

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing Preparations (ePS)	C/FFP	SSC LANT : Charleston, SC	0.800	0.000		0.000		0.000		-		0.000	0.000	0.800	-
Software Hosting (ePS)	C/FP	SPAWAR : San Diego, CA	0.815	0.000		0.000		0.000		-		0.000	0.000	0.815	-
Testing (ePS)	C/FP	OPTEVFOR : NORFOLK,VA	0.280	0.050	Jun 2018	0.635	Jun 2019	0.664	Jun 2020	-		0.664	Continuing	Continuing	Continuing
Testing (ePS)	TBD	JITC : Ft. Huachuca, AZ	0.000	0.000		0.416	Feb 2019	0.424	Feb 2020	-		0.424	0.000	0.840	-
Testing/Cyber	C/CPFF	Falconwood : Arlington, VA	0.000	0.000		0.652	May 2019	0.695	May 2020	-		0.695	0.000	1.347	-
		Subtotal	1.895	0.050		1.703		1.783		-		1.783	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
ePS Program Support	C/FFP	PEO EIS : Arlington, VA	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	-
		Subtotal	0.500	0.000		0.000		0.000		-		0.000	0.000	0.500	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	61.225	14.017		24.491		53.248		-		53.248	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

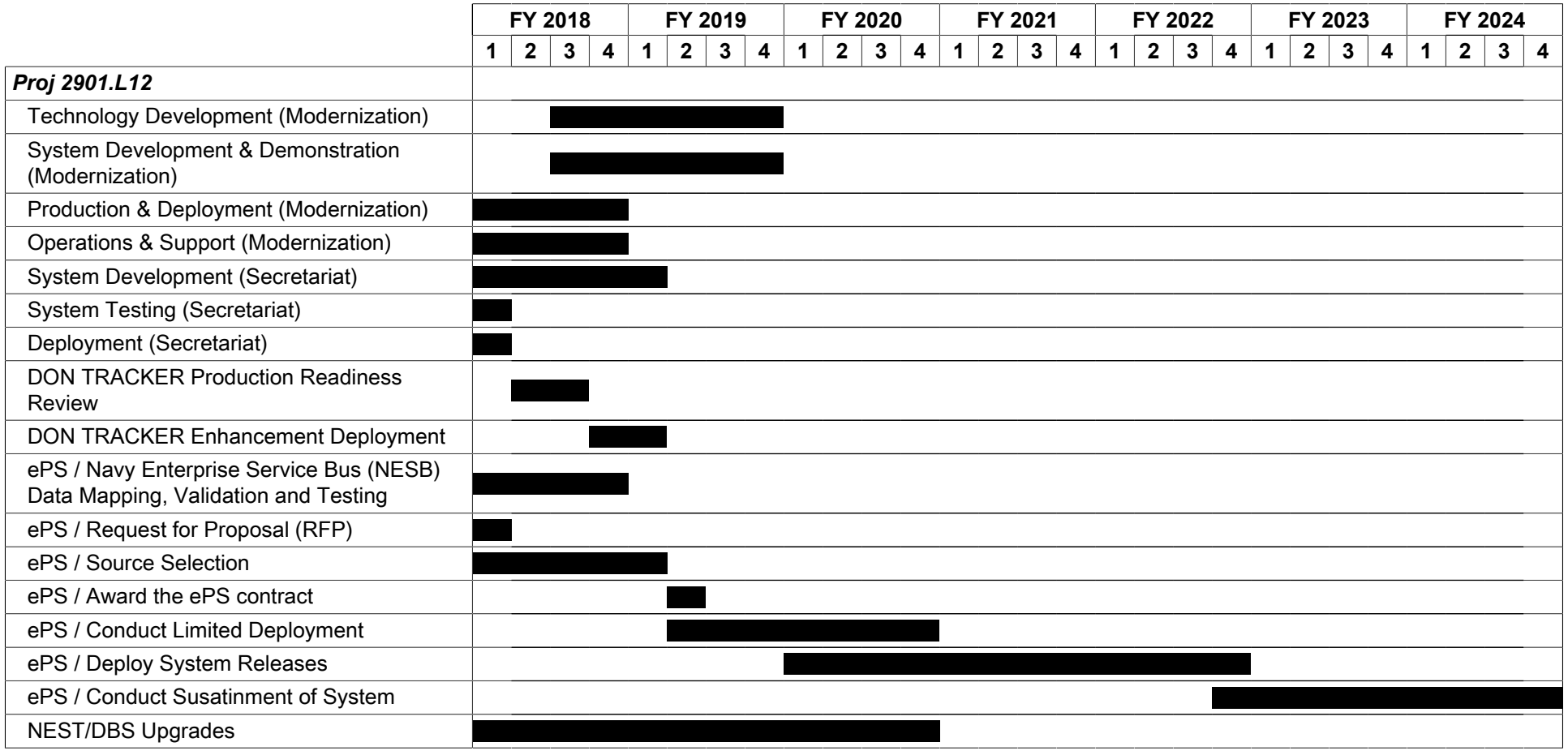

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2901.L12				
Technology Development (Modernization)	3	2018	4	2019
System Development & Demonstration (Modernization)	3	2018	4	2019
Production & Deployment (Modernization)	1	2018	4	2018
Operations & Support (Modernization)	1	2018	4	2018
System Development (Secretariat)	1	2018	1	2019
System Testing (Secretariat)	1	2018	1	2018
Deployment (Secretariat)	1	2018	1	2018
DON TRACKER Production Readiness Review	2	2018	3	2018
DON TRACKER Enhancement Deployment	4	2018	1	2019
ePS / Navy Enterprise Service Bus (NESB) Data Mapping, Validation and Testing	1	2018	4	2018
ePS / Request for Proposal (RFP)	1	2018	1	2018
ePS / Source Selection	1	2018	1	2019
ePS / Award the ePS contract	2	2019	2	2019
ePS / Conduct Limited Deployment	2	2019	4	2020
ePS / Deploy System Releases	1	2020	4	2022
ePS / Conduct Susatinment of System	4	2022	4	2024
NEST/DBS Upgrades	1	2018	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy											Date: March 2019	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / *Information Technology Development*				Project (Number/Name) 2903 / *NAVAIR IT*			
COST ($ in Millions)	**Prior Years**	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
2903: *NAVAIR IT*	14.846	10.643	19.144	19.311	-	19.311	8.094	5.839	2.267	2.312	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Configuration Management System (CMS) - This program was originally identified as Joint Configuration Management Information System (JCMIS) to reflect the main software tool used for component tracking and Aircraft Configuration Management. However, as the available data sources from the fleet have expanded, the new name of CMS was chosen to better acknowledge the variety of information sources which are received, integrated, and compiled to give the most accurate component record data and aircraft configuration. CMS serves as the Program of Record (POR) to manage and control Navy and Marine Corps aviation component data reconstruction efforts. CMS compiles record data via fleet documentation of component updates and captures this information via a centrally managed database within the current software tool, Joint Configuration Management Information System (JCMIS). CMS efficiently manages product structure data, including complex interrelationships between assemblies and subassemblies, technical documentation and the parts that comprise the item. Accurate, complete and accessible configuration data is critical to the successful operations of DoD weapon systems or tracked assets. Mission readiness and operational capabilities are enhanced by CMS, as consistent integrated configuration data is readily available to operators, maintainers and logistics personnel. CMS provides users with a common database infrastructure to ensure compatibility, quality, and consistency of Configuration Management (CM) processes and provides configuration managers and analysts the validated CM information necessary for accurate maintenance, spare procurements, reliability and safety analysis, and mission readiness. Funding is budgeted to support the services of re-hosting and testing of Commercial off-the-shelf (COTS) upgrades to ensure objective performance of CMS is achieved.

Navy Cybersecurity - Cyber Warfare consists of many different aspects to include sabotage of our weapon systems, networks as well as enablement of missions. Nation and non-nation state actors are acquiring and employing more advanced cyber-attacks in order to exploit our networks and aviation systems challenging our technological edge. The threats and capabilities are real and range from exploiting capabilities, overloading weapons systems and logistics supply chains, to jamming signals or taking control of weapons systems. We must defend against adversarial cyber attacks while contributing to the exploitation of cyber warfare capabilities.

To meet these challenges and address the Chief of Naval Operations priorities and tasking, these R&D efforts are specifically focused on Naval Air Systems Command weapon or control systems and programs to ensure warfighting effectiveness as part of integrated / multi-platform kill chains. These research and development efforts will strengthen our cyber posture by developing research, development, test and evaluation capabilities and solutions to deter, detect, and mitigate cyber threats and safeguard classified naval aviation systems and platforms from "cradle to grave." These solutions will be integrated into the acquisition of weapons systems to enhance security, increase lethality, and improve resiliency in the expected operational environments. Our weapon or control systems are unique in the aforementioned environments and mission, but also in the presence of numerous non-traditional access points and trusted cyber relationships required for operational environments.

Digital Thread (DT)- Capability provides digital process integration with complete, secure and authoritative data. DT integrates the product life cycle, and includes all the processes that are needed to design, develop, test, produce, and support a product. Connecting these processes using standardized digital tools and data accelerates the product development cycle and lowers costs for support and new capability integration. The Digital Thread capability includes development and demonstration of cyber security architectures for sustainment information systems, and development of a digital manufacturing data architecture and repository.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: CMIS Annual Software Release	0.624	0.674	0.639	0.000	0.639
Articles:	-	-	-	-	-
FY 2019 Plans: CMS will maintain the existing JCMIS software sustainment posture while leveraging best practices to maximize component data accuracy and integrity through interfaces with other available fleet data sources. Analyze and optimize system functionality, input and presentation capabilities in order to improve data reconstruction efforts for fleet requestors. Investigate use of existing capability improvements provided by technological advancements such as digital capture and upload of aircraft configuration data, exchange of data with other fleet systems of record, incorporation of new component data sets, improving fleet serial number tracking processes and other approaches to improve fleet readiness and safety postures. Continue to proactively respond to evolving threats, new vulnerabilities, and changing DON Cyber Security policy to ensure adequate continued system software and architecture security posture. Comply with applicable information assurance updates including information assurance vulnerability alerts, information assurance vulnerability bulletins, information assurance vulnerability technical, Microsoft, and all supporting software updates. Continue generation of solutions and mitigation plans for vulnerabilities identified during system assured compliance assessment solution scans. Continue monitoring for changes and compliance with applicable security technical implementation guided checklists and security content automation protocol results as required by security policies. Continue to monitor and ensure Section 508 compliance within system. Continue timely and efficient system and/or software solutions in response to customer/fleet requests that involve modification/update to system software/architecture. Continue necessary development efforts in response to COTS obsolescence scenarios and evolve an open standard interface to other systems as required. Mapping of JCMIS data with AutoLogSet (ALS) records is to be completed in order to map the fields found within JCMIS to their ALS equivalents. This will allow the collation of information between the data sources.					
FY 2020 Base Plans: CMS will maintain the existing JCMIS system refresh posture while leveraging best practices to maximize component data accuracy and integrity. Analyze and optimize system functionality, input and presentation capabilities in order to improve data reconstruction efforts for fleet requestors. Investigate capability improvements provided by technological advancements such as digital upload of information, exchange of data with other fleet systems of record, incorporation of other component data sets, improving fleet serial number tracking processes and other approaches to improve fleet readiness and safety postures. Continue to respond to evolving threats, new vulnerabilities, and changing DON Cyber Security policy to ensure adequate continued system software and architecture security. Continue generation of solutions and mitigation plans for					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
vulnerabilities identified during system assured compliance assessment solution scans. Continue monitoring for changes and compliance with new security technical implementation guided checklists and security content automation protocol results as required by security policies. Continue to monitor and ensure Section 508 compliance within system as new features are enabled or new compliance guidance is released. Continue timely and efficient system and/or software solutions in response to customer/fleet requests that involve modification/ updates to system software/architecture. Continue necessary development efforts in response to COTS obsolescence scenarios and evolve an open standard interface to other systems as required. Component data entry with ALS integration is to be developed to allow the direct entry of component related data into the system at the fleet level and the ability to present and query the integrate JCMIS/ALS data within the system. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The $0.035M decrease from FY 2019 to FY 2020 is due to decreased Program Management Oversight for the continuous development efforts in response to COTS obsolescence scenarios.					
Title: Navy Cybersecurity	10.019	5.372	4.639	0.000	4.639
Articles:	-	-	-	-	-
FY 2019 Plans: - Broad Agency Announcement (BAA) new awards / continuation of development, demonstration and transition of cyber security solutions across 8 identified technology areas. - Augmentation and maturation of lab capabilities across multiple NAVAIR sites to conduct Cyber security RDT&E for NAVAIR programs. - Continued development and maturation of new customized tools, methodologies, and procedures for RDT&E of control system interfaces and penetration testing that tie to identified risk assessment capability gaps and emergent threats. - Continued support of emergent FLTCYBERCOM TASKORDs requiring urgent development of customized control systems solutions for identified Fleet risks. - Increased FY19 Capability investment directly supports emergent intelligence, FCC TASKORDs, Blackbeard AAR, NDAA 1647, Aviation Resiliency and OSD DSB study. Without this capability investment the US Navy will continue to be vulnerable to attacks on its non-traditional systems (e.g., aircraft, weapons, radars, ALRE) and					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
will result in significant residual risk to aviation combat systems. Broad Agency Announcements are in place to execute FY18 funding increases. ***FY 2020 Base Plans:*** Broad Agency Announcement (BAA) new awards and continuation for the development, demonstration, and transition of cyber security solutions across identified critical technology areas. - Continue augmentation and maturation of laboratory capabilities, environments and customized toolsets across multiple NAVAIR sites and facilities to conduct cyber security Research, Development, Test and Evaluation (RDT&E) for NAVAIR programs. - Continued development aviation weapon systems customized tools, methodologies, and procedures identified from Cyber Risk Assessments, Cyber Table Tops, test and evaluation capability gaps and emergent threats. Increased program and Fleet support capability for penetration testing and engineering investigations. - Continued support of emergent Fleet Cyber Command/10th Fleet (FLTCYBERCOM/C10F) Tasking Orders (TASKORD) requiring urgent development of customized weapon and control systems solutions for identified Fleet risks. - Increased FY20 capability investment directly supports emergent intelligence, FLTCYBERCOM/C10F TASKORDs, Blackbeard After Action Report (AAR), National Defense Authorization Act (NDAA) 1647 Weapons Systems Evaluations, Aviation Resiliency, incident response investigations, and OSD Defense Science Board Task Force for Cyber Deterrence recommendations. Without this capability investment the US Navy will continue to be vulnerable to attacks on its non-traditional systems (e.g., Aircraft, Weapons, Radars, Aircraft Launch and Recovery Equipment (ALRE)) and will result in significant residual risk to aviation combat systems. Broad Agency Announcements are in place to execute FY20 funding increases. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The $0.733M decrease in NAWC Support in development aviation weapon systems customized tools, methodologies, and procedures. The FY 2020 funding request was reduced by $.525 million to account for the availability of prior year execution balances					
Title: Digital Thread	0.000	13.098	14.033	0.000	14.033
Articles:	-	-	-	-	-
FY 2019 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Establish a production capability to provide maintainers access to the correct digital Configuration Managed Information for faster and more accurate on site execution and to allow for an increase in Readiness managed within the Fleet Community. Utilize a combination of digital demonstration efforts that have been ongoing at Commander Fleet Readiness Centers and Naval Air Warfare Center Aircraft Division to extend those capabilities into a cohesive solution that has implications for I-Level maintainers and serves as a baseline for O-Level engagement. Develop cyber security/data architectures and repository for digital manufacturing data. ***FY 2020 Base Plans:*** Extend DT-IDRN capabilities to overall processes including digital engineering data, integrated quality management, digital manufacturing connectivity. Develop and implement digital workflows to accelerate processes and manage digital technical data. Develop and implement digital interfaces to Aviation Logistics Environment (ALE) logistics Information Technology (IT) systems including Joint Engineering Data Management Information & Control System (JEDMICS) and Joint Deficiency Reporting System (JDRS). Integrate Program Management Activity (PMA) Product Life Cycle (PLM) systems with IDRN to manage digital technical data for key platforms. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The $0.935M increase is due to the development and implementation of the digital interfaces to Aviation Logistics Environment (ALE) logistics Information Technology (IT) systems including Joint Engineering Data Management Information & Control System (JEDMICS) and Joint Deficiency Reporting System (JDRS).					
Accomplishments/Planned Programs Subtotals	10.643	19.144	19.311	0.000	19.311

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The Configuration Management System (CMS) Program used Joint Logistics Systems Center (JLSC) funds to evolve JCMIS to Software Release 5.0. In June 1998 JCMIS was transferred to the Navy as executive agent and NAVAIR as program manager. Program Budget Decision 401 transferred joint funding from JLSC to NAVAIR. The CMS Program Manager continues to evolve the program to keep pace with cost, changing business processes, data integration, and evolving commercial and military standards. Various contractors using competitively awarded contracts have supported the program.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

Navy Cybersecurity - The Navy Cybersecurity strategy is in 3 concurrent steps:
1. Broad Agency Announcements (BAA) for resilient cyber warfare capabilities and control system solutions for NAVAIR Weapon Systems. Draft BAA delineating Naval Research Areas of Interest; Specific Areas of Interest; Technologies Being Sought; Proposal Submission; Proposal Abstracts; Full Proposal; General Information, and Evaluation Criteria.
The objective of the BAA is principally to orchestrate germane research and development to fill the gaps in cyber warfare capabilities for Naval Air Systems Command (NAVAIR) weapon systems, i.e., secure weapon systems able to survive and exploit cyber warfare. Areas of interest include but not limited to:
1) SWaP sensitive cyber resiliency for RTOS and aviation warfare environment
2) Access point identification, prioritization and defense
3) Cyber-Electronic Warfare convergent capabilities
4) Full acquisition cycle cyber security measures
5) Cyber test, inspection, incident response and training tools
6) Cyber warning systems
7) Cyber fault, risk and threat assessment methodologies

2. Advanced Cyber Lab (ACL)
Achieve capability to respond to cyber incidents, conduct federated avionics penetration tests in support of cyber risk assessments and develop control system solutions for NAVAIR weapon systems and acquisition programs. Assessing BAA solutions for Naval Aviation. Acquire delineated specialized equipment, software tools, space, power, cooling, and security.
1) Secure Messaging - Cryptography, Steganography, etc.
2) Embedded Operating System Threat Assessment, Software Reverse Engineering, Federated Penetration Testing of Custom Control Systems
3) Advanced Anti-tamper, Digital Forensics
4) Microelectronics Reverse Engineering
5) Capabilities in response to Denial of Service, Precision Direct Attack/ Root Kits, Interdiction / Data in transit and Infrastructure / SCADA attacks.
6) Portable Assessment and Test

3. Organic Cyber Solutions for NAVAIR Customized Control Systems
Project investigation and development or tools and tailored solutions for our control systems and improve the cyber security at control system entry points will be completed. Areas discovered include but are not limited to:
1) Intrusion Detection / Prevention Systems (IDS/IPS) for Real Time systems
2) Live-CD boot
3) Out of Band Monitoring & Authentication
4) Weapon System of Systems Architecture tools
5) Avionics Fuzzing
6) Federated Penetration Testing Tool Set & Non-Destructive Inspection Tool

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

7) Dynamic Network Maneuvering
8) Weapon System Side Channel Analysis

Digital Thread - Digital Thread/Cyber Security Architecture and Strategy
1) Develop cyber security architecture standards for Naval Aviation Environment (NAE) Digital Thread.
2) Develop IT and data architecture for NAE Digital Thread to accelerate maintenance and sustainment and support digital manufacturing capabilities including design, manufacturing, and materials data.
3) Implement cyber security architecture for NAE Digital Thread including COMFRC, Logistics IT, PMAs.
4) Implement Phase 1 of NAE Digital Thread Integrated Digital Resource Network (DT-IDRN) at D-level locations.
5) Stand up developmental digital manufacturing data repository that includes digital design and digital material database.
6) Integrate digital manufacturing data repository into DT-IDRN.

E. Performance Metrics

Configuration Management System (CMS) - Milestone C Spiral Development:
1. During the life of the contract verify conformance with agency specific information processing standards and functional requirements.
2. Prior to delivery of enhanced software, demonstrate the operational capability of the system software.
3. Functionality of the software must meet required systems architecture and processing capabilities.
4. All requirements mandated by law or regulation must be 100% compliant.
5. Independent Verification and Validation will be used for testing new releases of software to determine that previous functionality is maintained.
6. Customer satisfaction will be measured through limited validated customer complaints, feedback, and surveys.

Navy Cybersecurity:
1. Establish Broad Agency Announcements (BAA) for Resilient Cyber Warfare Capabilities for Naval Air Systems Command Weapon Systems: Receive responses that address at key areas of interest.
2. Advanced Cyber Lab: Operating capability workstations and inter agency task team.
3. Organic Cyber Solutions for NAVAIR Control Systems: Complete all projects.

Digital Thread:
During execution of the funding the following will be used to validate the performance:
1. Contract performance to plan and on time delivery of all contract deliverables
2. Completion of cyber security, IT, and data architectures for NAE Digital Thread
3. Completion of developmental digital manufacturing data repository
4. Standup of Phase 1 DT IDRN at D-Level locations
5. Integration of digital manufacturing data repository into DT-IDRN

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Solutions for Cyber Warfare Capabilities for Navy Cybersecurity	Various	Various : Various	8.019	3.178	Oct 2017	2.147	Oct 2018	2.050	Oct 2019	-		2.050	Continuing	Continuing	Continuing
Solutions for Digital Thread	Various	Various : Various	0.614	0.000		9.500	Oct 2018	11.500	Oct 2019	-		11.500	Continuing	Continuing	Continuing
		Subtotal	8.633	3.178		11.647		13.550		-		13.550	Continuing	Continuing	N/A

Remarks

Digital Thread increase in FY20 due to the development and implementation of digital workflows to accelerate processes and manage digital technical data. Develop and implement digital interfaces to Aviation Logistics Environment (ALE) logistics Information Technology (IT) systems including Joint Engineering Data Management Information & Control System (JEDMICS) and Joint Deficiency Reporting System (JDRS).

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Support for Configuration Management Information System (JCMIS)	C/FFP	NAVSUP : Mechanicsburg, PA	1.869	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Software Support for Configuration Management Information System (JCMIS)	C/FFP	Wyle : Lexington Park, MD	0.862	0.477	Mar 2018	0.506	Mar 2019	0.000		-		0.000	Continuing	Continuing	Continuing
Software Support for Configuration Management Information System (JCMIS)	Various	Various : Various	0.000	0.000		0.000		0.501	Mar 2020	-		0.501	Continuing	Continuing	Continuing
		Subtotal	2.731	0.477		0.506		0.501		-		0.501	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support for Configuration Management Information System (JCMIS)	WR	NAWCAD : Patuxent River, MD	0.925	0.147	Dec 2017	0.168	Dec 2018	0.138	Dec 2019	-		0.138	Continuing	Continuing	Continuing
Systems Engineering Support for Navy Cybersecurity	WR	NAWCAD : Patuxent River, MD	2.270	6.324	Oct 2017	1.937	Oct 2018	1.800	Oct 2019	-		1.800	Continuing	Continuing	Continuing
Systems Engineering Support for Digital Thread	WR	NAWCAD : Patuxent River, MD	0.287	0.000		3.526	Oct 2018	2.533	Oct 2019	-		2.533	Continuing	Continuing	Continuing
Systems Engineering Support for Navy Cybersecurity	WR	NAWCWD : China Lake, CA	0.000	0.517	Oct 2017	1.360	Oct 2018	0.789	Oct 2019	-		0.789	Continuing	Continuing	Continuing
		Subtotal	3.482	6.988		6.991		5.260		-		5.260	Continuing	Continuing	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	14.846	10.643		19.144		19.311		-		19.311	Continuing	Continuing	N/A

Remarks

Footnotes:
Digital Thread increase in FY20 due to the development and implementation of digital workflows to accelerate processes and manage digital technical data. Develop and implement digital interfaces to Aviation Logistics Environment (ALE) logistics Information Technology (IT) systems including Joint Engineering Data Management Information & Control System (JEDMICS) and Joint Deficiency Reporting System (JDRS).

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

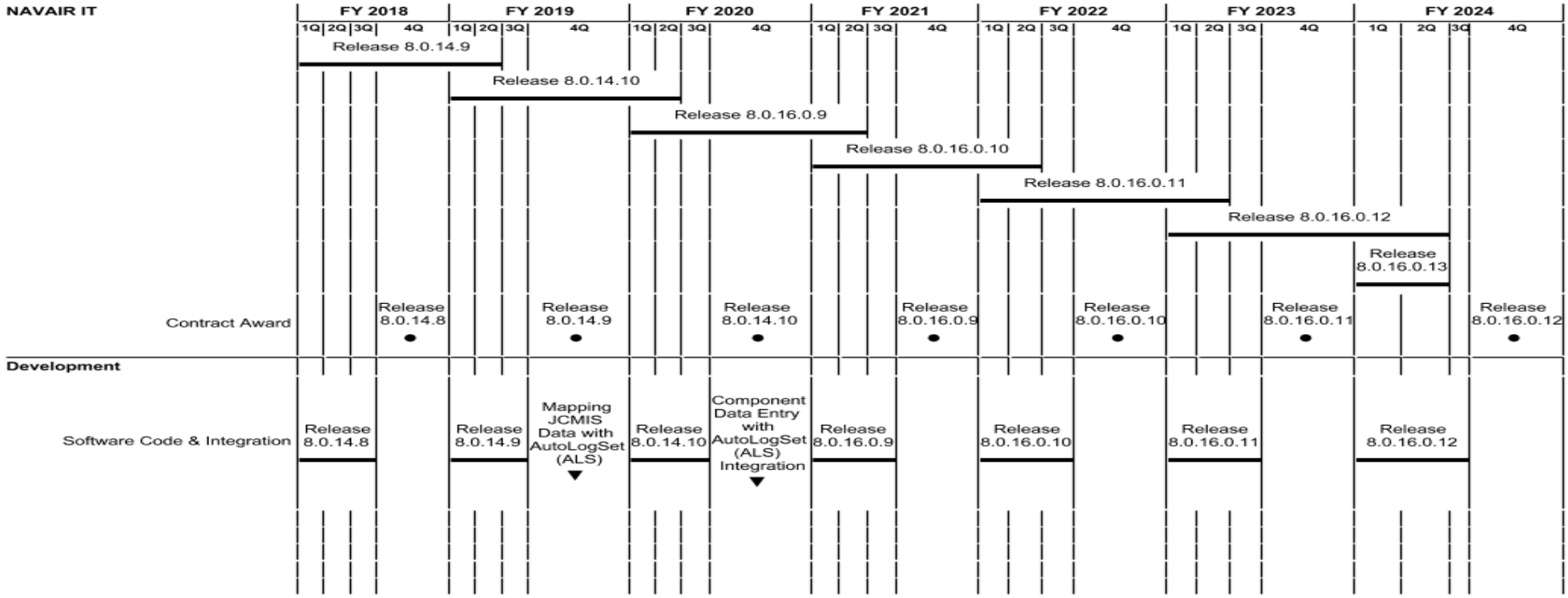

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

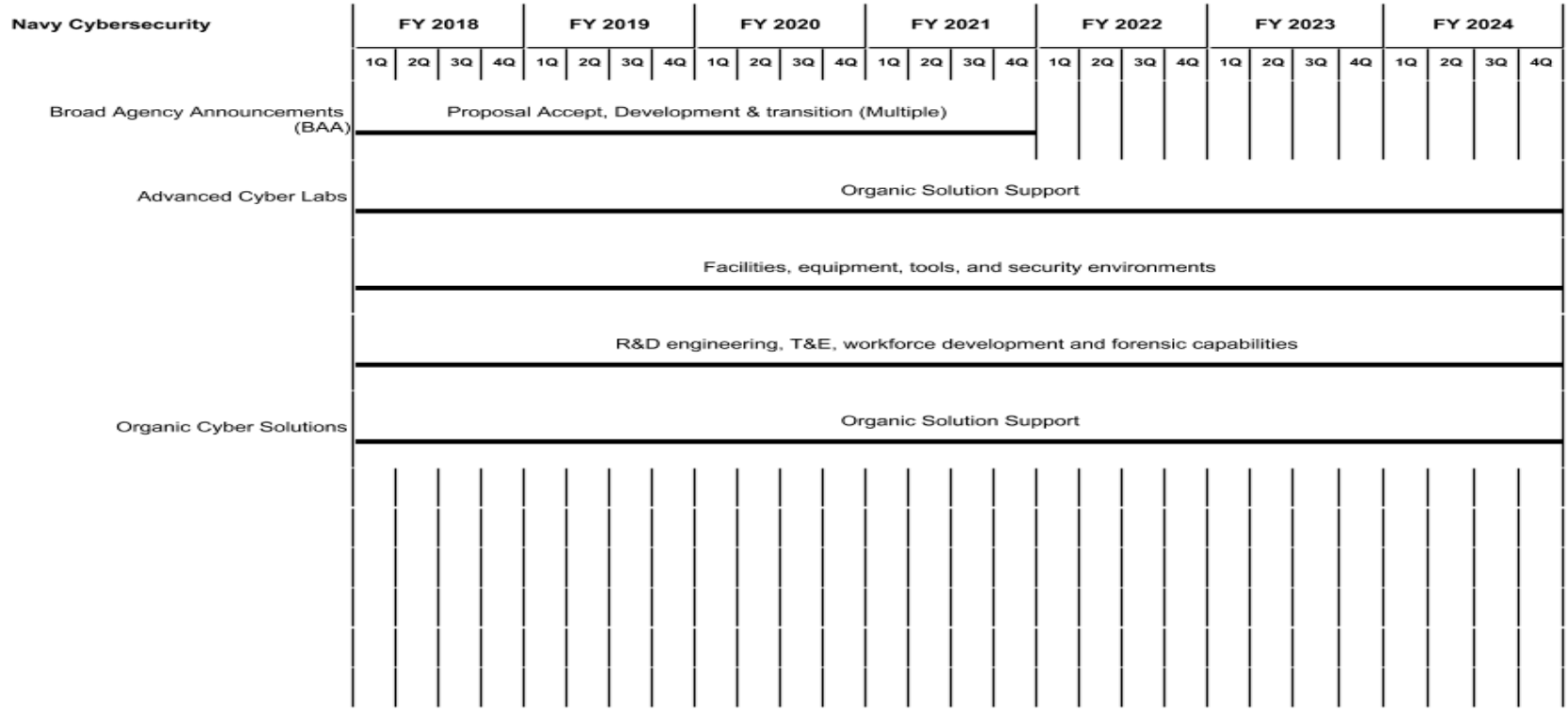

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

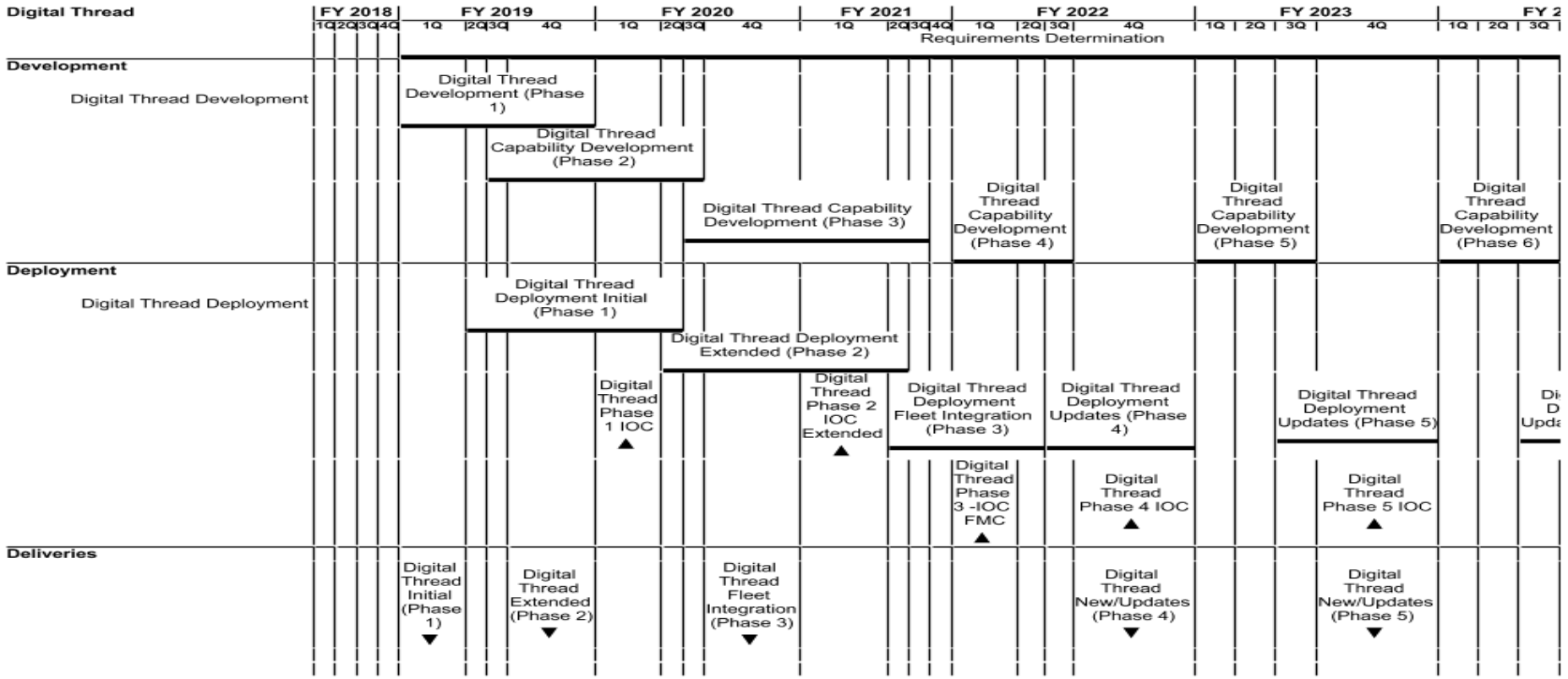

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
NAVAIR IT				
Requirements Determination: Release 8.0.14.9	1	2018	2	2019
Requirements Determination: Release 8.0.14.10	1	2019	2	2020
Requirements Determination: Release 8.0.16.0.9	1	2020	2	2021
Requirements Determination: Release 8.0.16.0.10	1	2021	2	2022
Requirements Determination: Release 8.0.16.0.11	1	2022	2	2023
Requirements Determination: Release 8.0.16.0.12	1	2023	2	2024
Requirements Determination: Release 8.0.16.0.13	1	2024	2	2024
Contract Award: Contract Award, Release 8.0.14.8	4	2018	4	2018
Contract Award: Contract Award, Release 8.0.14.9	4	2019	4	2019
Contract Award: Contract Award, Release 8.0.14.10	4	2020	4	2020
Contract Award: Contract Award, Release 8.0.16.0.9	4	2021	4	2021
Contract Award: Contract Award, Release 8.0.16.0.10	4	2022	4	2022
Contract Award: Contract Award, Release 8.0.16.0.11	4	2023	4	2023
Contract Award: Contract Award, Release 8.0.16.0.12	4	2024	4	2024
Development: Software Code & Integration: Release 8.0.14.8	1	2018	3	2018
Development: Software Code & Integration: Release 8.0.14.9	1	2019	3	2019
Development: Software Code & Integration: Release 8.0.14.10	1	2020	3	2020
Development: Software Code & Integration: Release 8.0.16.0.9	1	2021	3	2021
Development: Software Code & Integration: Release 8.0.16.0.10	1	2022	3	2022
Development: Software Code & Integration: Release 8.0.16.0.11	1	2023	3	2023
Development: Software Code & Integration: Release 8.0.16.0.12	1	2024	3	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Development: Software Code & Integration: Functionality Improvement: Mapping JCMIS Data with AutoLogSet (ALS)	4	2019	4	2019
Development: Software Code & Integration: Functionality Improvement: Component Data Entry with AutoLogSet (ALS) Integration	4	2020	4	2020
Navy Cybersecurity				
Broad Agency Announcements (BAA): Proposal Acceptance, Development & transition (Multiple)	1	2018	4	2021
Advanced Cyber Labs: Support Organic/BAA/industry solutions	1	2018	4	2024
Advanced Cyber Labs: Facilities, equipment, tools, and security environments	1	2018	4	2024
Advanced Cyber Labs: R&D engineering, T&E, workforce development and forensic capabilities	1	2018	4	2024
Organic Cyber Solutions: control systems solution development and evaluation	1	2018	4	2024
Digital Thread				
Requirements Determination	1	2019	4	2024
Development: Digital Thread Development: Digital Thread Capability Development Initial (Phase 1)	1	2019	4	2019
Development: Digital Thread Development: Digital Thread Capability Development Extended (Phase 2)	3	2019	3	2020
Development: Digital Thread Development: Digital Thread Capability Development Fleet Integration (Phase 3)	3	2020	3	2021
Development: Digital Thread Development: Digital Thread Capability Development New/Updates (Phase 4)	1	2022	3	2022
Development: Digital Thread Development: Digital Thread Capability Development New/Updates (Phase 5)	1	2023	3	2023
Development: Digital Thread Development: Digital Thread Capability Development New/Updates (Phase 6)	1	2024	3	2024
Deployment: Digital Thread Deployment: Digital Thread Deployment Initial (Phase 1)	2	2019	2	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Deployment: Digital Thread Deployment: Digital Thread Deployment Extended (Phase 2)	2	2020	2	2021
Deployment: Digital Thread Deployment: Digital Thread Deployment Fleet Integration (Phase 3)	2	2021	2	2022
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 4)	3	2022	4	2022
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 5)	3	2023	4	2023
Deployment: Digital Thread Deployment: Digital Thread Deployment New/Updates (Phase 6)	3	2024	4	2024
Deployment: Digital Thread Deployment: Digital Thread Phase 1 IOC	1	2020	1	2020
Deployment: Digital Thread Deployment: Digital Thread Phase 2 IOC Extended	1	2021	1	2021
Deployment: Digital Thread Deployment: Digital Thread Phase 3- IOC FMC	1	2022	1	2022
Deployment: Digital Thread Deployment: Digital Thread Phase 4 IOC	4	2022	4	2022
Deployment: Digital Thread Deployment: Digital Thread Phase 5 IOC	4	2023	4	2023
Deployment: Digital Thread Deployment: Digital Thread Phase 6 IOC	4	2024	4	2024
Deliveries: Digital Thread Initial (Phase 1)	1	2019	1	2019
Deliveries: Digital Thread Extended (Phase 2)	4	2019	4	2019
Deliveries: Digital Thread Fleet Integration (Phase 3)	4	2020	4	2020
Deliveries: Digital Thread New/Updates (Phase 4)	4	2022	4	2022
Deliveries: Digital Thread New/Updates (Phase 5)	4	2023	4	2023
Deliveries: Digital Thread New/Updates (Phase 6)	4	2024	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy											Date: March 2019	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / *Information Technology Development*				Project (Number/Name) 2904 / *NAVSEA IT*			
COST ($ in Millions)	**Prior Years**	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
2904: *NAVSEA IT*	181.244	49.600	35.382	15.696	-	15.696	24.813	14.701	16.134	16.457	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Navy Maritime Maintenance Enterprise Solution (NMMES) is the Information Technology (IT) toolset currently utilized to execute ship and submarine maintenance in the Naval Shipyards (NSY), Regional Maintenance Centers (RMC), Ship Repair Facility (SRF), Intermediate Maintenance Facilities (IMF), and commercial industrial sites worldwide. These maintenance activities support Fleet operations 24 hours per day, 7 days per week. The NMMES IT solution is used by over 40,000 civilians and military who conduct over $6.5B of ships maintenance and modernization on an annual basis. The NMMES program includes sustainment as well as multiple modernization efforts to insure the continued effectiveness of the Fleet maintenance IT toolset. These efforts consist of adding mandatory enhancements, such as Financial Improvement and Audit Readiness (FIAR) changes and aligning with the Standard Accounting Budget Reporting System (SABRS) system. The NMMES program provides for software changes, retiring and/or replacing of costly legacy systems, transition planning, and systems engineering for integration with existing and future solutions. These efforts align with direction to insure that proposed interim solutions support and facilitate the transition to the planned maintenance solution end state. This program will provide modernization, migration, testing, and consolidation of obsolete legacy systems to the next generation of centrally hosted tools supporting Fleet Maintenance systems for the Navy.

The NMMES-TR program and budget was moved to new PU 3432 within PE 0605013N starting in FY 2019 as a result of designation as a Business System Category 1 acquisition program.

Funding for NMMES PU 2904 addresses critical deficiencies and minimizes the inherent risks that a catastrophic systems failure would be to fleet readiness. The increase in funds is required to support the modernizations of products that are on outdated software and to enhance the existing applications to make them cloud capable. It also provides for software enhancements required to make applications Financial Improvement and Audit Readiness (FIAR) compliant and to enable system modifications of financial feeder applications to interface with a FIAR compliant system of record. The requirement to handle 3-D integrated product models being delivered with CVN-78, Virginia Class and Columbia Class are also driving the increase. NAVSEA plans to execute these funds primarily through a current sustainment contract and several separate contracts through existing delivery orders to gain the specialized resources and material necessary to sustain these vital systems until spiral deployment of the NMMES Technical Refresh (TR) solution. The Workforce Management and Financial Management systems were removed from the NMMES TR scope by the Analysis of Alternative (AoA) Preferred Alternative, and will continue operation and sustainment as part of the NMMES portfolio. There is an overlapping period of time where both solutions are operating and requiring sustainment, hence the increase in the requested amounts for current systems and subsequent replacement system(s). The NMMES-TR program and budget was moved to new PU 3432 starting in FY 2019 as a result of designation as a Business System Category 1 acquisition program.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Project Sequencing & Scheduling (PSS) Upgrade	2.500	1.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Articles:	-	-	-	-	-
Description: The PSS scheduling system provides the naval shipyards (Portsmouth Naval Shipyard, Puget Sound Naval Shipyard & IMF, Pearl Harbor Naval Shipyard & IMF, and Norfolk Naval Shipyard) with a customized, flexible scheduling tool for CNO availabilities and other maintenance, repair and overhaul work assigned to the activities. Key system objectives include: 1) Standardization of the scheduling processes and tools; 2) Creation of dates for use in the NMMES project management software; 3) Generation of user and management reports covering all aspects of scheduling of a ship or submarine availability. The current PSS application is based on a 1980s proprietary commercial product originally acquired over 25 years ago. The application is outdated and the vendor has informed the Navy that it will no longer be supported in the near future requiring Navy to pursue an immediate upgrade to a supportable product, while not interrupted maintenance availabilities. The product had already become increasingly difficult to maintain and with the pending loss of vendor support could lead to catastrophic system failure and loss of ability to maintain project schedules. The PSS Upgrade will convert the system from the Robbins-Gioia CAT proprietary solution to the Robbins-Gioia Jaguar 2020 (J2020) solution and improve the web-basing of the system. ***FY 2019 Plans:*** Complete GAT of the product and conduct implementation and training of the user community in the use of the PSS Upgrade. ***FY 2020 Base Plans:*** N/A. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding decrease of $1.0M aligns with project deployment and completion.					
Title: electronic Technical Work Document (eTWD)	7.316	7.842	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The eTWD Initiative is a NAVSEA Sponsored, CNO approved Reduction in Total Ownership Cost (RTOC) Initiative to establish interactive electronic Technical Work Document (eTWD) capability for use in the naval shipyards. An eTWD will be used to execute maintenance, repair, overhaul and modernization work packages on ships and submarines undergoing major availabilities in naval shipyards. This solution will provide					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
paperless work packages, pulling authoritative data from the existing NMMES Family of Systems supporting ship maintenance. The interactive electronic work instruction will be used at the jobsite replacing the current paper driven instructions. The overall goal for eTWD is twofold: 1) to reduce the resources and time preparing, executing and certifying work instructions; and 2) enable the non-stop execution of work by having online documents and accessible for problem resolution. The eTWD Initiative is in progress. ***FY 2019 Plans:*** Complete the pre-deployment planning and training necessary to begin implementation in a Naval shipyard. Following stabilization of eTWD operation of first naval shipyard deployment, continue implementation at the remaining naval shipyards. ***FY 2020 Base Plans:*** Sustainment of deployed eTWD toolset using Operations & Maintenance, Navy (O&M,N) funds. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY19 increased by $0.801M based on execution year testing and integration requirements. FY20 decrease of $7.031M represents completion of eTWD Increment 1A. Subsequent increments may be initiated depending on contract status and effectiveness of 1A capability.					
Title: Planned Maintenance System (PMS) Upgrade	3.128	1.495	1.195	0.000	1.195
Articles:	-	-	-	-	-
Description: The Planned Maintenance System Management Information System (PMSMIS) is a web solution that tracks the status of all Maintenance Index Pages (MIPs) and Maintenance Requirements Cards (MRCs) including new and revised documentation, allows for Technical Feedback Report (TFBR) generation and tracking from initial reporting to problem resolution, management of activity documentation distribution information, document development history including Reliability-Centered Maintenance (RCM) information and other data needed to support all forms of planned maintenance in the Fleet. The existing process requires excessive sailor and shore expert administrative burden, creates complex and ambiguous documents that can be difficult to follow, takes too long to implement changes, leads to equipment maintenance not being properly executed, and lacks tools for leadership to monitor program implementation and assure satisfactory performance. Furthermore, the existing process does not support distributed and optimally-manned ship concepts of operation, such as those now used by the Naval Expeditionary Combat Command and the Littoral					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Combat Ship. The future PMS Upgrade will also provide visibility to shore maintenance leaders to ensure equipment is consistently scheduled throughout the fleet and to identify execution issues. ***FY 2019 Plans:*** The software configuration, integration, standardization, and development efforts for PMSMIS and PMS Scheduling will begin. This will occur in line with the updates required to transition to the Risk Management Framework for cybersecurity. ***FY 2020 Base Plans:*** Complete development and testing on the PMSMIS and PMS Scheduling tools and begin preparation for the integration with the PMS maintenance and material management upgrade. The Ships 3-M development efforts will begin in FY21-22 and the complete end-to-end testing and deployment will complete prior to FY23. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY19 increased by $0.186M to reflect updated execution year plans. FY20 Project decreased by $0.144M: The FY 2020 funding request was reduced by $6.917 million to account for the availability of prior year execution balances. Funding was moved to FY21 & FY22. Testing completion well be delayed until FY21.					
Title: Strategic Planning &Forecasting (SPF) Upgrade	2.232	1.755	2.745	0.000	2.745
Articles:	-	-	-	-	-
Description: SPF is part of a suite of tools in the NMMES Family of Systems that are utilized to assist Navy industrial activities in resource planning and long term workload forecasting to meet CNO strategic maintenance requirements through the gathering and compiling of workforce data. Two additional systems; 1) Performance Measurement and Control (PMC) and Quality Performance System (QPS) are interfaced with SPF to produce the staffing, planning and performance measurement analysis necessary to successfully accomplish work in navy industrial activities. All three of these systems have known software deficiencies which limit productivity and require cumbersome manual workarounds. Historically to effectively operate and meet mission needs, the naval shipyards and RMCs have supplemented this suite with additional local spreadsheet and databases, adding to the complexity of replacing this aging solution. One goal of the SPF Upgrade is to eliminate these ad hoc databases and unify the solution to effectively operate in the targeted navy data center environment.					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
The SPF Upgrade is part of the Service Life Extension that will address the accumulation of significant problems with this system, update the software platform, provide integrated metrics capabilities across naval shipyards and include accessibility of data by planners at headquarters. The SPF Upgrade will modernize the database architecture to provide fully functioning data warehouse environment that will eliminate the weekend long running of PMC jobs that hinders efficiency and productivity. The Upgrade will eliminate the currently required manual interfaces with other NMMES systems to produce a seamless real-time environment that can accommodate all project management metrics, as well as all ship maintenance related metrics. Additionally, it will eliminate the manual data gathering and consolidation efforts required to produce Shipyard Interim Metrics; and eliminate the need for Headquarters and each shipyard to maintain their own unique respective standalone data files. ***FY 2019 Plans:*** Complete development and configuration of upgrade, and begin Government Acceptance Testing of SPF upgrade in preparation for FY19 deployment and implementation. Complete design for configuration on the QPS and PMC components. ***FY 2020 Base Plans:*** Begin configuration and integration of the QPS and PMC components. Initiate testing of the end-to-end business processes in the toolset. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Funding increase of $0.99M in FY 2020 reflects transition from software development to project configuration/ integration tasks. FY 2019 is focused on the SPF tool, FY 2020 will concentrate on incorporating the QPS and PMC components in the forecasting and earned value management tools in the public shipyards. Upgrading SPF as well as the QPS and PMC tools is required to eliminate proprietary, end-of-life software from the NMMES product line and continue compilation of metrics for dry-dock and maintenance production planning and forecasting.					
Title: NMMES Technical Refresh (NMMES-TR)	16.970	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Funding was moved to PU 3432 of PE 0605013N starting in FY19.					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
The current Navy Maritime Maintenance Enterprise Solution (NMMES) toolset enables the execution of submarine, aircraft carrier, and surface ship maintenance and repair for the Naval Shipyards (NSY), Intermediate Maintenance Facilities (IMF), Regional Maintenance Centers (RMC), and Ship Repair Facilities (SRF). It consists of a family of systems and applications that are at (or nearing) their end-of-life. These systems and applications support a workforce of over 51,000 worldwide and enable approximately $9.5B per year of maintenance and repair work. The Workforce Management and Financial Management systems were removed from the NMMES TR scope by the Analysis of Alternative (AoA) Preferred Alternative, and will continue operation and sustainment as part of the NMMES portfolio. The critical business processes to schedule, execute, monitor, certify work, and pay employees at each activity are codified within the Information Technology (IT) toolset; there is no manual alternative. Annual efforts to restore the NMMES budgets to meet requirements have only been partially successful and have required multiple annual supplemental actions to address deficiencies. The urgency to modernize these systems has grown every year as deferred upgrades and underfunded sustainment has led to the current state of the NMMES toolset. The NMMES-TR is a pre-Milestone A acquisition program that will provide a sustainable enterprise IT solution leveraging Commercial, Off-The-Shelf (COTS) technology and business processes for shore maritime maintenance, which also standardizes processes and tools. Unlike the uniquely custom designed status quo toolset, the NMMES-TR solution will not implement product customization to match the current maintenance business processes; but rather, maintenance business processes will be modified to match the solution, thereby adopting industry best practices. Accordingly, the solution will be more flexible to the BPR process, and more agile to capitalize on efficiency improvement opportunities and innovations. This will facilitate alignment with the Optimized Fleet Response Plan (OFRP) by assisting the maintenance activities with accomplishing assigned tasks as planned in order that submarines, aircraft carriers, and surface ships can properly train and deploy on schedule. NMMES-TR will also provide a modern solution that will be more effective and efficient in combating cybersecurity threats, and capable of continuous monitoring. The actual solution will be formed after the Analysis of Alternatives (AoA). ***FY 2019 Plans:*** Funding for this requirement has been realigned to PU 3432 beginning in FY 2019. ***FY 2020 Base Plans:*** N/A ***FY 2020 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
N/A					
Title: Financial Technical Upgrade	4.910	3.590	2.320	0.000	2.320
Articles:	-	-	-	-	-

Description: The NMMES Family of Systems has two primary systems that are financial feeders; 1) SYMIS Mission Funded COST (aka COST) system which processes cost related data for mission funded activities with the Standard Accounting & Reporting System - Field Level (STARS-FL); and 2) the SYMIS Pre & Post Payroll Processes system which manages the Time & Attendance data from the NMMES Family of Systems to the Defense Civilian Payroll System (DCPS). These systems are targeted for modernization to address the FOUR mandatory requirements: 1) meeting FISCAM and auditability requirements; 2) transitioning COST to interface with SABRS, vice STARS-FL no later than 30 September 2018; 3) both these systems are COBOL-based. COST utilizes a 1990s era Case tool (PACBASE) to generate COBOL-ready code. In 2015, vendor support for the PACBASE tool was transitioned to an IBM subsidiary in France (who in 2016 informed the Navy that support for the tool would end by 2018), hence without this tool the COST system cannot be updated and therefore must be refreshed in order to operate; and 4) the rapid increase in the cost of gaining sufficient COBOL licenses to operate these two systems in support of fleet maintenance has also created emerging execution year budget challenges for the Navy to such an extent that it is now more feasible to immediately transition these systems to a non-COBOL solution than to continue in the current licensing structure. The Financial Technical Upgrade addresses these four urgent needs in order to continue operation of the NMMES Family of Systems beyond 2018.

FY 2019 Plans:
Complete the software development for the modernized COST & PPPP systems, and begin planning for Government Acceptance Testing (GAT).

FY 2020 Base Plans:
Conduct Government Acceptance Testing (GAT) and complete software bug fixes and integration corrections for the Standard Accounting Budget and Reporting System (SABRS). Complete training and deployment.

FY 2020 OCO Plans:
N/A

FY 2019 to FY 2020 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY20 $1.270M budget decrease reflects the transition from testing and integration to the deployment phase at the end of the project.					
Title: Material Management Upgrade	5.250	4.750	2.773	0.000	2.773
Articles:	-	-	-	-	-
Description: The Material Access Technology-Mission Funded (MATmf) application is used by all Naval Shipyards to manage and provide logistical support for services and materials manufactured, purchased and utilized in the overhaul, repair, and maintenance of ships and submarines. MATmf provides quantitative, financial, and status information on industrial materials. It monitors the shop stores in the shipyard and assesses the direct material inventories. MATmf has reached end-of-life and is operating on software components that are considered obsolete. A Service Life Extension is required to support the future capabilities (i.e. eTWD requirements), to correct sustainability issues, and to improve the ability to support current and future ships maintenance. While the upcoming MSE releases will consolidate application databases (including MATmf into a data center environment); it does not include material integration across shipyards nor provide usable real time material information or metrics across the ship maintenance community. The MSE releases will also not convert the outdated development code, eliminate the time cumbersome manual batch processing, nor fix a host of long term shortcomings affecting the efficiency of MATmf (including long time printing limitations affecting Material Control Tags and waterfront performance). Over the past 5 years, NAVSEA 08 and the Corporate Material Process Action Team through multiple LEAN events has identified and documented many areas in MATmf that need enhancement to improve effectiveness. Some of these requirements include: 1) the ability to allow for Fiscal Year rollover of JMLs, 2) the ability to allow redistribution of bulk receipt inspected materials to other shipyards, 3) the ability to report transactions for BP28 assets, 4) improve the ability to create efficient processes for receipt of RFI tagged material into Shop Stores, 5) improve receipt of shipyard contracts into shipyard for receipt inspection, 6) allow DLR material in Shop Stores, 7) address transition to another handheld scanner as the current handhelds are no longer available for purchase. These deficiencies will be addressed in the Material Management Upgrade.					
FY 2019 Plans: Conduct software development efforts and begin Government Acceptance Testing (GAT) of the developed solution. Conduct Integration testing to insure the planned solution satisfactorily integrates with the NMMES Family of Systems.					
FY 2020 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Continue testing and integration of configuration changes with the other NMMES applications. Complete design and integration plans for interfaces with NAVSUP and Defense Logistics Agency material supply systems in preparation for final deployment and implementation in FY21. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY20 $1.977M budget decrease reflects transition of project from development to testing/deployment tasks.					
Title: NMMES -- Maritime Systems Environment (MSE) -- Database Optimization	2.432	3.205	1.980	0.000	1.980
Articles:	-	-	-	-	-
Description: The NMMES Family of Systems is presently undergoing a Service Life Extension (SLE) to address cyber security deficiencies, consolidate and align databases across multiple data instances, and to transition the solution into an approved Navy Enterprise Data Center. Once the transition to the NEDC is complete and has reached stability the Database will be optimized to gain throughput efficiencies, capitalize of economies of scale, rationalize data structures to streamline the use of authoritative data and to provide standardized access to data across the fleet maintenance enterprise. ***FY 2019 Plans:*** Complete database structuring and begin Government Acceptance Testing (GAT) and independent validation of database performance. ***FY 2020 Base Plans:*** Complete Government Acceptance Testing (GAT) and integration within toolset. Complete database validation efforts and deploy within the NMMES toolset. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY20 Project decreased by $1.225: The FY 2020 funding request was reduced by $6.917 million to account for the availability of prior year execution balances. Funding was moved to FY21 & FY22. Integration with the training and qualification management toolset will be delayed until FY21. Certification of training credentials for shipboard work will be executed manually until FY21.					
Title: SUPDESK - Timekeeping For All	2.700	0.000	1.100	0.000	1.100

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Articles:	-	-	-	-	-
Description: The current timekeeping system (SUPDESK) at the shipyards allows managers to input time for their employees. This is considered a financial compliance issue and requires the system be adjusted to allow all shipyard workers to input and certify their individual time. Will also add the capability to track and certify overtime approvals. Supports efforts to close a financial audit finding. ***FY 2019 Plans:*** N/A ***FY 2020 Base Plans:*** Continue integration, begin training and deployment and activities. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY20 Project increased by $1.0M: Supports software development and integration with NMMES; train users in preparation for deployment at the Naval Shipyards and Regional Maintenance Centers.					
Title: Local Application Rationalization	2.162	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Rationalize and down select to a subset of applications after assessing local applications in the shipyards and Regional Maintenance Centers (RMCs). Down-select to a common core set and standardize the functionality across the enterprise. There are numerous local applications at the shipyards that need to be rationalized into several "best of breed" as the Maritime Systems Environment (MSE) is deployed. This requires reviewing all local application functionality and determining which applications should be migrated. ***FY 2019 Plans:*** Tasks include; configuring and beginning Government Acceptance Testing (GAT) of integration of best of breed selections with NMMES/MSE, training users and deploying to at the Naval Shipyards and Regional Maintenance Centers (RMCs). Gain product stabilization by addressing user feedback and identifying software deficiencies. ***FY 2020 Base Plans:*** N/A ***FY 2020 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** N/A					
Title: MSE Waterfront Process Improvement ***Articles:*** ***Description:*** The Maritime Systems Environment (MSE) Waterfront Processes Improvement Upgrade is focused on accelerating LEAN process improvement recommendations from industrial Process Action Teams into the embedded processes contained in the MSE. This is a multi-year initiative to not only address the backlog of LEAN recommendations in the ship maintenance community, but to also provide the impetus to accelerate the development of additional process improvements to gain further economies in the maintenance community. ***FY 2019 Plans:*** Prioritize mature LEAN finding based on best return on investment and begin analysis for integration into MSE. Structure improvements into series of Releases aligned with the MSE regular update cycle in order to accelerate delivery of capability to users. ***FY 2020 Base Plans:*** N/A ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Project funding decreased by $1.00: FY19 process improvements will be implemented and the project will resume in FY21	0.000 -	1.000 -	0.000 -	0.000 -	0.000 -
Title: Enterprise Data Analytics ***Articles:*** ***Description:*** Establish capability to fully utilize navy authoritative maintenance data to develop predictive analysis and gain efficiencies in ship availabilities. ***FY 2019 Plans:***	0.000 -	2.714 -	1.113 -	0.000 -	1.113 -

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Finalize functional and business process analysis and market analysis of commercial products. Select commercial package(s) and begin configuration and integration planning. ***FY 2020 Base Plans:*** Continue integration and configuration of selected toolset(s). ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY20 Project decreased by $.0.887: Configuration activities will be reduced delaying implementation of the advanced information and reporting capabilities intended to assist the increase in the readiness generation.					
Title: Product Data Management Integration	0.000	7.167	2.470	0.000	2.470
Articles:	-	-	-	-	-
Description: Modify the NMMES solution to be able to utilize the 3-D Product model information being delivered to the Navy by the shipbuilders for the Ford and Columbia Classes. Both the Ford Class Carrier and Columbia Class Submarine Programs are being designed, built and delivered utilizing 3-D integrated product models. Configuration and technical information will be provided to the government in electronic format rather than via paper-based drawings. The current suite of Shore Maintenance Systems cannot accept the data delivered by either program, which will impact the ability of the shore Maintenance Community to maintain and modernize these platforms. This is required to support the USS FORD Planned Incremental Availability (PIA) at Norfolk Naval Shipyard as well as future maintenance availabilities on both classes. ***FY 2019 Plans:*** Begin analysis and integration planning of the selected tool with NAVSEA PEOs and shipbuilders. Configure the new tool and integrate with the NMMES product line. Perform software testing and train users at the Naval Shipyards. ***FY 2020 Base Plans:*** Continue configuration, integration, and testing activities. Correct deficiencies identified during the testing processes. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY19 increased by $0.757M as the maintenance community fine tuned requirements needed to support FORD and COLUMBIA Class work. This project decreases by $3.94M from FY 2019 to FY 2020. Initial project planned to start in FY 2019 based on program acquisition schedules of Ford Class Carrier and Columbia Class Submarine Programs. FY 2019 initiated procurement and configuration of the product as well as the changes required in the NMMES program to align with the Product Data Management toolset. This project will continue configuration and testing in preparation for initial deployment in FY 2020. This project will require multiple interfaces internal to the NMMES product line as well as to external sources for product model configuration and change management to align with ship baseline configuration.					
Title: Mobility Solutions ***Articles:*** ***Description:*** Establish a "go everywhere" capability for the NMMES system at the Regional Maintenance Centers and Naval Shipyards. Include the capability to retrieve authoritative information across multiple, secure devices, (i.e. tablets, digital readers, scanners, etc.) to continue to exploit a paperless arena. ***FY 2019 Plans:*** Begin analysis and planning, including security considerations. Begin device integration and capability demonstrations. ***FY 2020 Base Plans:*** N/A. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** FY19 increased by $0.059M based on refined workload planning. FY20 budget decrease of $0.805M is due to the scheduled ramp down in alignment with eTWD deployment plans.	0.000 -	0.864 -	0.000 -	0.000 -	0.000 -
Accomplishments/Planned Programs Subtotals	49.600	35.382	15.696	0.000	15.696

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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D. Acquisition Strategy

The backbone of the present solution is a set of dated information technology (IT) products that are approaching end-of-life. In order to ensure that the IT toolset would continue functioning as required the Fleet Maintenance Board of Directors approved the establishment of the NAVSEA PMO-IT to oversee the selected development and sustainment efforts of this solution; to acquire and manage the IT resources necessary to gain further efficiencies in the systems; and to transition this solution to a more modern and efficient end state. Selected systems modernizations are aligned with ongoing systems sustainment to provide an IT solution until a Commercial of the Shelf (COTS) based Technical Refresh of this solution can be completed and deployed. Existing IT contracts will be used for sustainment services and new contracts will be put in place to support NMMES TR services, utilizing existing delivery orders where feasible.

E. Performance Metrics

System performance is measured using the following:
A. Operational Availability (A_o): Percent of time systems are available for use.
(1) Mean Down Time (MDT) is the mean time the system will be down to start and complete maintenance and corrective task.
MDT = (Total Down Time)/(Total Number of Maintenance). Measure of Performance (MOP): Total Down Time : 87.6 Hrs/Year.
(2) Mean Time Between Maintenance (MTBM) is the mean time between maintenance, all corrective and preventive maintenance. MTBM = (Total Up Time)/(Total Number of Maintenance). MOP: A_o = MTBM / (MTBM+MDT) > 0.99.
B. Reliability: Ability of a system to perform its mission without failure or degradation under a prescribed set of operating conditions.
(1) Mean Time Between Failure (MTBF) is the mean time between unforeseen system failures which result in substantial loss in users' productivity, including being off-line unscheduled. MTBF = (Total Up Time)/(Total Number of Failures). MOP: MTBF > 3504 Hours
(2) Mean Time To Repair (MTTR) is the mean time to perform the corrective maintenance to repair the failure. MTTR = (Total Down Time for corrective maintenance)/(Total Number of Failures). MOP: MTTR less than or equal to 16 Hours.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/CPFF	NAVSEA : WNY, D.C.	136.270	32.630	Oct 2017	35.382	Oct 2018	15.696	Oct 2019	-		15.696	Continuing	Continuing	Continuing
Software Development	WR	NSLC : Mechanicsburg, PA	15.999	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Advance Planning Analysis	WR	SPAWAR : Arlington, VA	7.471	0.000		0.000		0.000		-		0.000	0.000	7.471	-
Advance Planning Analysis	TBD	NAVSEA : WNY, D.C.	16.504	16.970	Nov 2017	0.000		0.000		-		0.000	0.000	33.474	-
Advance Planning Analysis	TBD	NSWC PHD : Port Hueneme, CA	5.000	0.000		0.000		0.000		-		0.000	0.000	5.000	-
		Subtotal	181.244	49.600		35.382		15.696		-		15.696	Continuing	Continuing	N/A

Remarks

Program plans to execute all contract awards for software development of shipyard and national systems through the NAVSEA SEAPORT vehicle and other competitively awarded contracts.

	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	181.244	49.600		35.382		15.696		-		15.696	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
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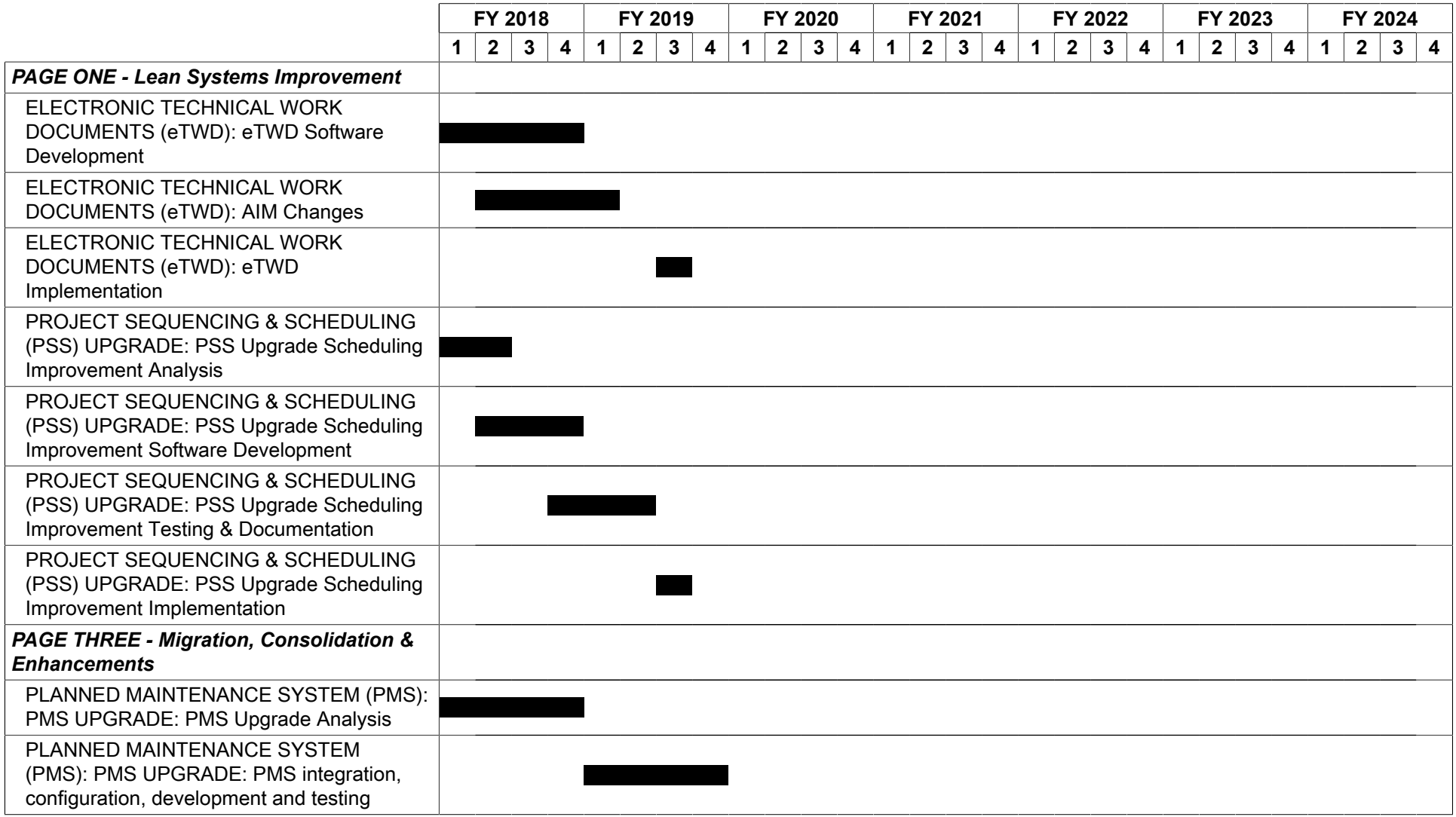

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

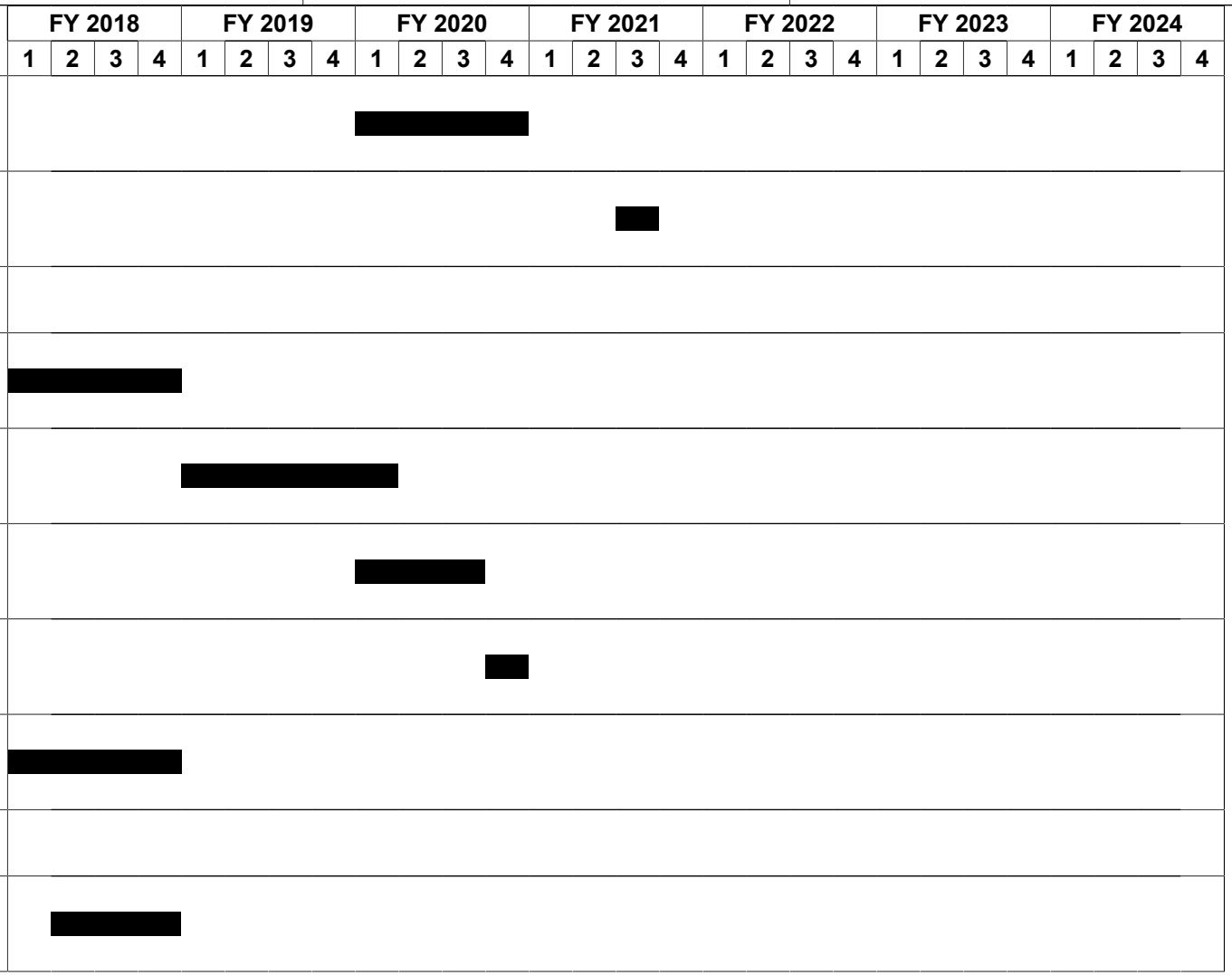

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

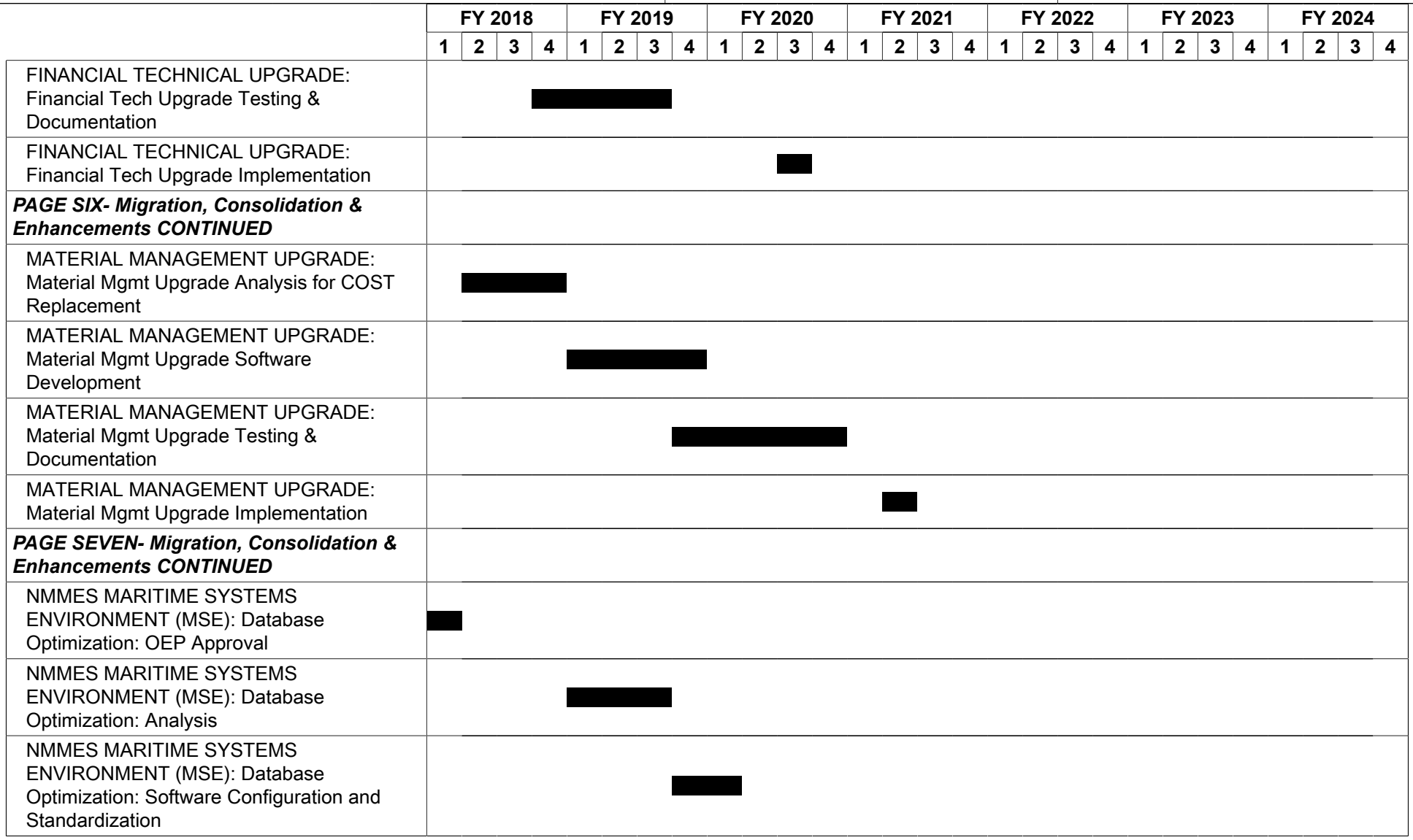

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

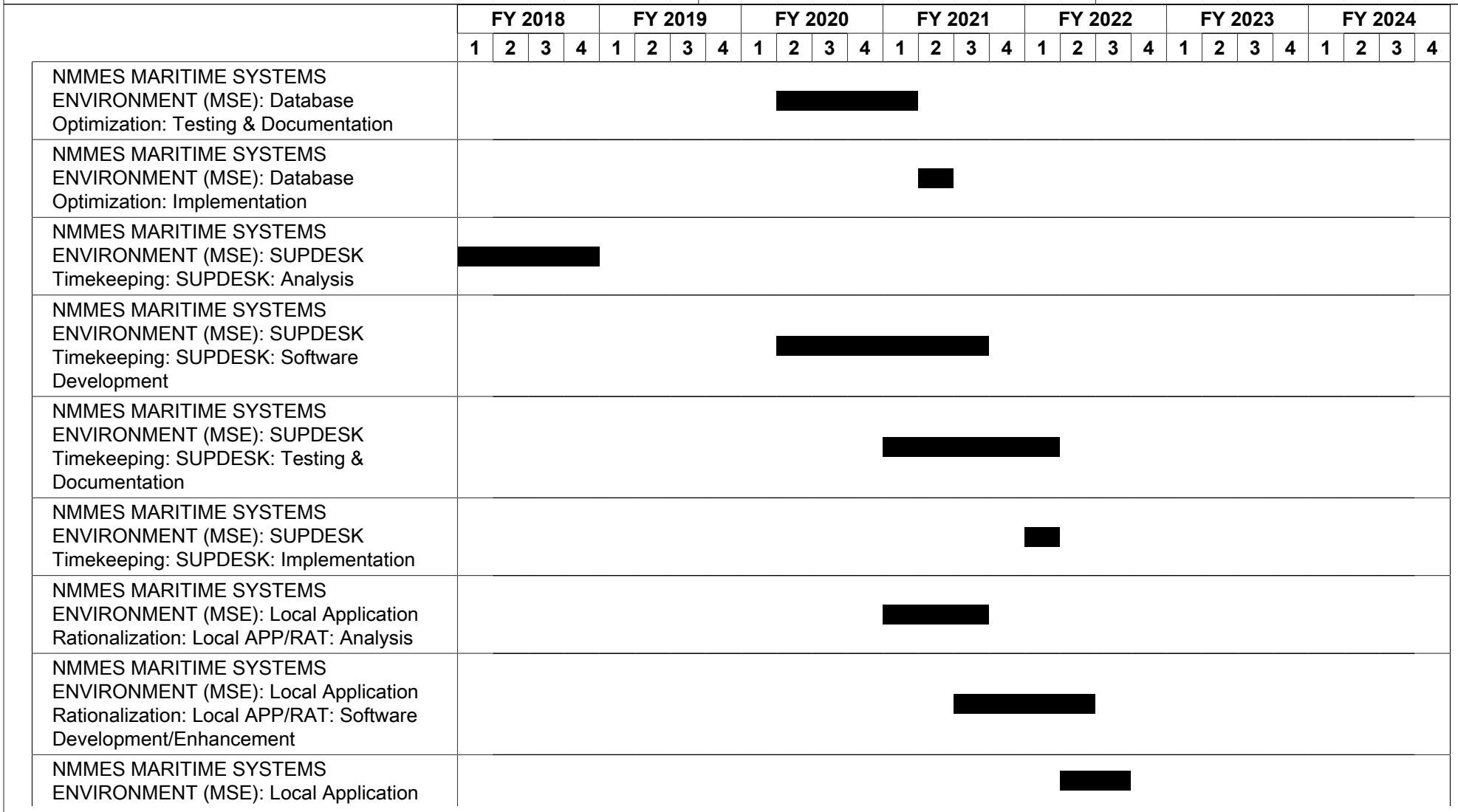

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

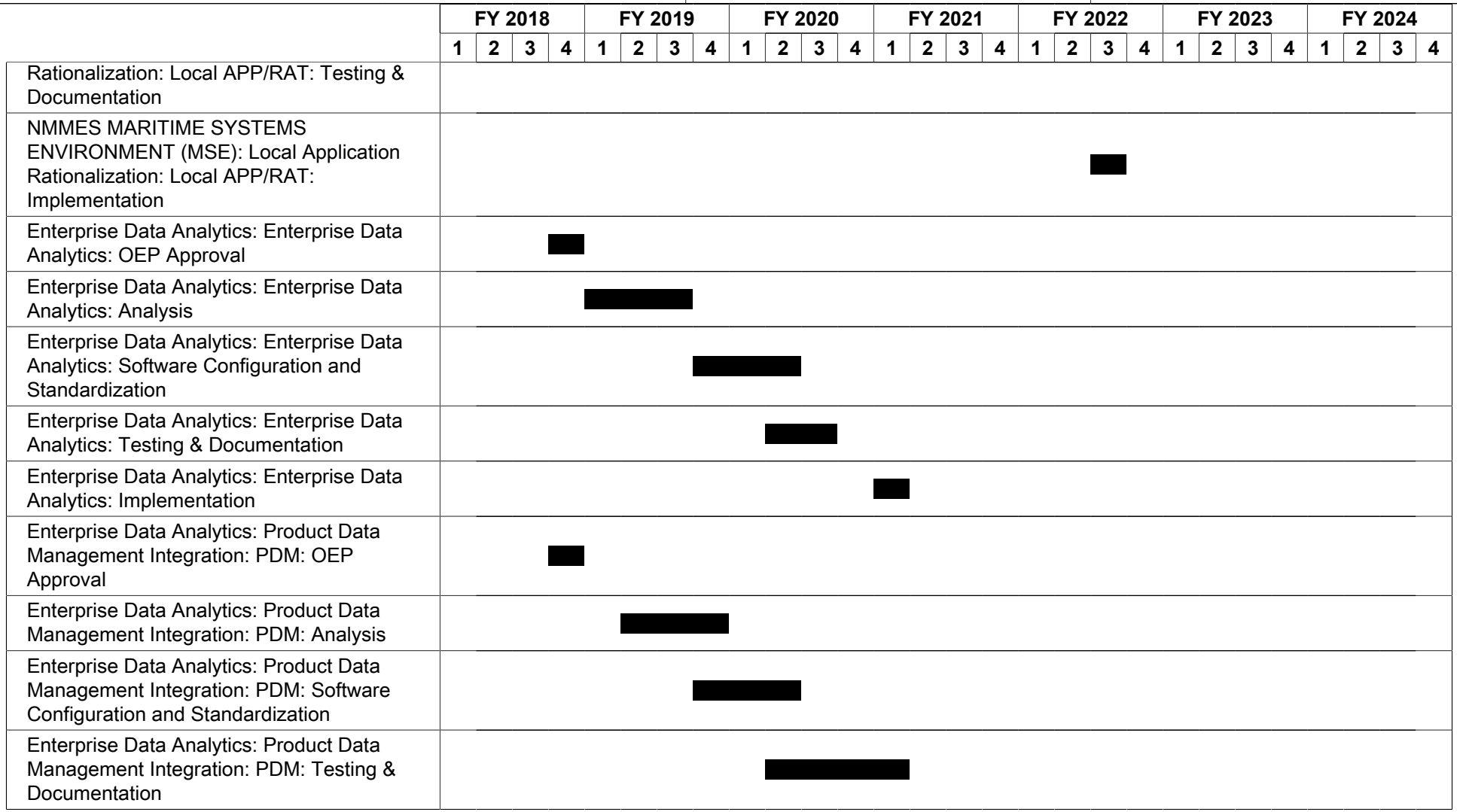

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

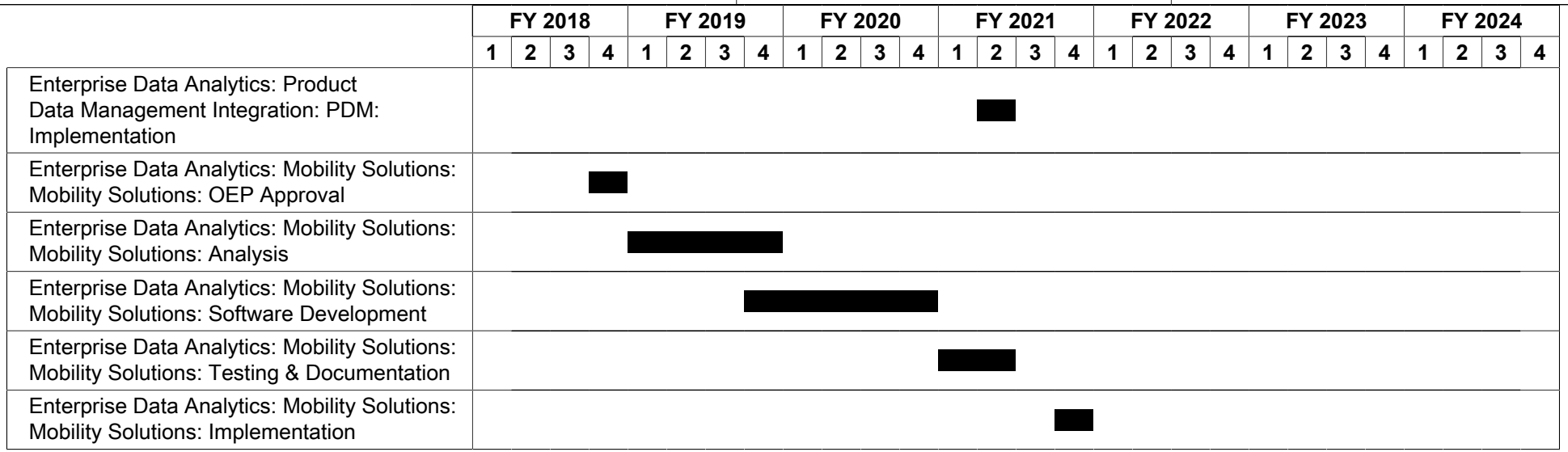

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
PAGE ONE - Lean Systems Improvement				
ELECTRONIC TECHNICAL WORK DOCUMENTS (eTWD): eTWD Software Development	1	2018	4	2018
ELECTRONIC TECHNICAL WORK DOCUMENTS (eTWD): AIM Changes	2	2018	1	2019
ELECTRONIC TECHNICAL WORK DOCUMENTS (eTWD): eTWD Implementation	3	2019	3	2019
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Upgrade Scheduling Improvement Analysis	1	2018	2	2018
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Upgrade Scheduling Improvement Software Development	2	2018	4	2018
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Upgrade Scheduling Improvement Testing & Documentation	4	2018	2	2019
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Upgrade Scheduling Improvement Implementation	3	2019	3	2019
PAGE THREE - Migration, Consolidation & Enhancements				
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS Upgrade Analysis	1	2018	4	2018
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS integration, configuration, development and testing	1	2019	4	2019
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS Upgrade Testing & Documentation	1	2020	4	2020
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS Upgrade Implementation	3	2021	3	2021
PAGE FOUR - Migration, Consolidation & Enhancements CONTINUED				
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Analysis	1	2018	4	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Software Development	1	2019	1	2020
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Testing & Documentation	1	2020	3	2020
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Implementation	4	2020	4	2020
NMMES Technical Refresh: NMMES Technical Refresh Acquisition Solution Analysis	1	2018	4	2018
PAGE FIVE- Migration, Consolidation & Enhancements CONTINUED				
FINANCIAL TECHNICAL UPGRADE: Financial Tech Upgrade Software Development	2	2018	4	2018
FINANCIAL TECHNICAL UPGRADE: Financial Tech Upgrade Testing & Documentation	4	2018	3	2019
FINANCIAL TECHNICAL UPGRADE: Financial Tech Upgrade Implementation	3	2020	3	2020
PAGE SIX- Migration, Consolidation & Enhancements CONTINUED				
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Analysis for COST Replacement	2	2018	4	2018
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Software Development	1	2019	4	2019
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Testing & Documentation	4	2019	4	2020
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Implementation	2	2021	2	2021
PAGE SEVEN- Migration, Consolidation & Enhancements CONTINUED				
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: OEP Approval	1	2018	1	2018
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Analysis	1	2019	3	2019
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Software Configuration and Standardization	4	2019	1	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Testing & Documentation	2	2020	1	2021
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Implementation	2	2021	2	2021
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Analysis	1	2018	4	2018
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Software Development	2	2020	3	2021
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Testing & Documentation	1	2021	1	2022
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Implementation	1	2022	1	2022
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Local Application Rationalization: Local APP/RAT: Analysis	1	2021	3	2021
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Local Application Rationalization: Local APP/RAT: Software Development/Enhancement	3	2021	2	2022
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Local Application Rationalization: Local APP/RAT: Testing & Documentation	2	2022	3	2022
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Local Application Rationalization: Local APP/RAT: Implementation	3	2022	3	2022
Enterprise Data Analytics: Enterprise Data Analytics: OEP Approval	4	2018	4	2018
Enterprise Data Analytics: Enterprise Data Analytics: Analysis	1	2019	3	2019
Enterprise Data Analytics: Enterprise Data Analytics: Software Configuration and Standardization	4	2019	2	2020
Enterprise Data Analytics: Enterprise Data Analytics: Testing & Documentation	2	2020	3	2020
Enterprise Data Analytics: Enterprise Data Analytics: Implementation	1	2021	1	2021
Enterprise Data Analytics: Product Data Management Integration: PDM: OEP Approval	4	2018	4	2018
Enterprise Data Analytics: Product Data Management Integration: PDM: Analysis	2	2019	4	2019

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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Enterprise Data Analytics: Product Data Management Integration: PDM: Software Configuration and Standardization	4	2019	2	2020
Enterprise Data Analytics: Product Data Management Integration: PDM: Testing & Documentation	2	2020	1	2021
Enterprise Data Analytics: Product Data Management Integration: PDM: Implementation	2	2021	2	2021
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: OEP Approval	4	2018	4	2018
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: Analysis	1	2019	4	2019
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: Software Development	4	2019	4	2020
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: Testing & Documentation	1	2021	2	2021
Enterprise Data Analytics: Mobility Solutions: Mobility Solutions: Implementation	4	2021	4	2021

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy											Date: March 2019	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / *Information Technology Development*				Project (Number/Name) 2905 / *BUPERS IT*			
COST ($ in Millions)	**Prior Years**	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
2905: *BUPERS IT*	82.761	24.995	89.306	167.765	-	167.765	167.918	83.365	64.424	65.712	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Research and Development Funds for MPT&E Transformation under PE 0604703N have been consolidated within PE 0605013N PU 2905 starting in FY19.

This effort is the linchpin of the Navy's MPT&E (Manpower, Personnel, Training & Education) Business IT Transformation strategy which stems from the decision to invest in programs that directly align with the Sailor 2025 vision. The current 70-year-old business processes and 40-year-old obsolete IT systems will not sustain Fleet anticipated growth and is not cost efficient nor effective. The Transformation strategy involves revolutionary change by rapid implementation of MPT&E Business IT products using the Industry Best Practices Model (e.g., early investment for largest ROI, rapid prototyping, and vanilla COTS products usage.) Four projects are the cornerstones of the N1 Transformation strategy. The Navy Standard Integrated Personnel System (NSIPS) will become Navy Personnel and Pay (NP2) and includes personnel and pay modernization, a Customer Relations Management (CRM) solution, and the collapse of Legacy Manpower System functionality. Second, a Single Point of Entry (SPOE) for Sailor self-service is composed of My Navy Portal (MNP); Mobile Applications and Services; and Identity and Access Management (IdAM). Third, MPT&E Core Learning Stack improves the accessibility, sophistication, and collaborative nature of educational outreach. Finally, the Authoritative Data Environment (ADE) will enable the collapse of 9 legacy data warehouses into a single, authoritative source of truth for Sailors and Navy decision makers. Additionally, ADE will enable modern data analytics and business intelligence capabilities, taking advantage of current state of practice cloud services, to be leveraged in addressing the Navy's current challenges.

NAVY PERSONNEL AND PAY (NP2)
A 2015 analysis of alternatives for integration of personnel and pay capabilities recommended the use of Oracle PeopleSoft 9.2 with Global Payroll for achieving the Navy's Personnel and Pay IT needs. Follow-on analysis conducted as part of the MPT&E transformation efforts in 2016 and 2017 indicated that the most cost effective approach to achieving the Transformation goals of modernizing HR Business System IT consistent with industry best practices was de-customization of the Navy Standard Integrated Personnel System (NSIPS) which uses Oracle PeopleSoft as its core technology, integration with Global Payroll, use of General Ledger to maximize auditability and accounting functions and hosting of the integrated solution. Navy Personnel and Pay (NP2) will sustain and develop the core system of systems architecture; executing pilot programs and iterative development of capabilities for Navy's MPT&E Transformation.
The NP2 increase in FY20 supports the de-customization of NSIPS and integration of Direct to Treasury Pay Capability via Pay Modernization (Pay Mod). This combined effort (named NP2) will result in a vanilla Commercial Off the Shelf, cloud hosted, integrated personnel and pay solution that will provide the Navy with an IT system that is modern, highly automated, auditable, and more efficient.
1. Complete end-to-end Application Functional Testing (AFT) for the NP2 Rapid Prototype Pilot (RPP).
2. Complete Compile to Combat engagement & experimentation activities for NP2 RPP.
3. Complete first capability drop for NP2 RPP (Street to Fleet functionality).
4. Begin Rapid Fielding Pilot (RFP) #1, the scope of which will include building out pay & personnel capability; interfaces and data exchanges needed for fielding; and operational testing and parallel operations, as well as training activities.

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5. Complete Transition Plan for movement of NP2 to the commercial cloud environment.
6. Complete transition of NP2 from Government Cloud to the commercial cloud environment.
7. Conduct Defense Joint Military System (DJMS) data cleansing in support of transition of Pay functionality to NP2.
8. Conduct deployment planning for NP2 RFP.
9. Conduct design and development sprints for NP2 RFP #1.
10. Conduct SRR/SFR, PDR, CDR, and iterative AFT/ASIT for NP2 RFP #1.
11. Begin planning activities for NP2 RFP #2, the scope of which will include Position Management, Task Analysis, and Manpower Requirements analysis.
12. Realignment of NMRS and BBD functionality/requirements to NP2 RPP.

Implementation of NP2 will result in several key benefits:
1. Improved accuracy and auditability of personnel and pay transactions.
2. Treasury Direct Disbursing eliminating Navy reliance on the sunsetting DJMS system.
3. Improved permeability of Active and Reserve Components to improve accuracy and eliminate delays in pay processing when a member moves between components.
4. Increased automation of common personnel and pay transactions
5. Integration of functionality currently spread across 55 different adhoc and outdated HR Business Systems.

Efforts in FY20 are focused on RPP that will support the remainder of Developmental Testing (including vendor support), Training and Development efforts, and Operational/Parallel Testing with select populations in the fleet. Simultaneously, the RFP Pilot will be occurring for the full FY20 in an Agile methodology covering requirements gathering, development, testing, and support for deployment by Jan 2021. Beginning in FY20 system requirements and functionality for NMRS/BBD/AoA/CRM/ARM will be subsumed under the auspices of NP2 as part of the N1 MPT&E Transformation Effort and system consolidation. The descriptions for those systems are provided below.

BILLET BASED DISTRIBUTION (BBD)
BBD is a Sailor 2025 initiative aimed at modernizing distribution and order writing systems. The effort begins functional work and follow-on development to collapse Navy Reserve Order Writing System (NROWS), Navy Marine Corps Mobilization Processing System (NMCMPS), Enlisted Assignment Information System (EAIS), and Officer Assignment Information System (OAIS) into a single distribution system. The objective of BBD is to increase personnel readiness, improve fit and provide clear visibility to the impact on mission readiness at the billet level. BBD will facilitate maximizing the contributions of every member of the Navy workforce by delivering competency-based career paths. As part of the Navy's transformation initiative, BBD will be consolidated into the MPT&E Navy Personnel and Pay (NP2) System technology component of the transformation effort.

NAVY MANPOWER REQUIREMENTS SYSTEM (NMRS)
NMRS will modernize obsolete software and incorporate a wide array of enhancements (expanded capabilities based on sponsor's approved Functional Requirements Document) of new capabilities in support of Manpower Requirement efficiencies.

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NMRS is a key tool which Navy manpower managers rely on to set, implement, and execute manpower requirements. Recommendations for improving data bases and the Navy's mobilization capacity rely on NMRS to make strength determinations. The planned effort also includes technical evaluation and integration of products produced by the Simulation Toolset for Analysis of Mission, Personnel and Systems (STAMPS) program. As envisioned by the Navy's Transformation initiative, NMRS will eventually be consolidated into the MPT&E Navy Personnel and Pay (NP2) System technology component of the transformation effort.

ANALYSIS OF ALTERNATIVE/ECONOMIC ANALYSIS (AOA)
The Navy will conduct multiple AoAs and studies to analyze viable alternatives in order to determine the most efficient and effective solution to address the modernization of elements of the Navy's Manpower, Personnel, Training and Education (MPT&E) IT portfolio. AOA will assess operational effectiveness, suitability, and costs of non-tactical systems to meet emerging capability requirements.

LEARNING STACK (FORMERLY LEARNING MANAGEMENT SYSTEM - DISTANCE LEARNING (LMS-DL))
Beginning in FY20, LMS-DL is aligned with the Learning Stack (LS) technology component of the N1 Transformation initiative. LMS-DL supports ready relevant learning, with a focus to align Navy learning, create a career learning continuum, and leverage evolving technologies to expand learning solutions when and where the Sailor needs them. This will modernize content that meets Fleet-validated learning needs, to improve Sailor performance and enhance mission readiness. The collaborative learning environment (CLE) is a key component within the learning IT strategy that leverages Commercial-Off-the-Shelf products to integrate the CLE with intelligent tutors, a multi-purpose reconfigurable training system (MRTS), electronic classrooms (ECR), trainers and labs, interactive multimedia instruction (IMI), instructors, and a virtual environment.
As part of the Transformation holistic IT approach, ready & relevant learning requires the development of a Learning Management System that permits:
(1) Mobile & flexible delivery of modular training to the sailor
(2) Synchronization of work requirements with learning modules to ensure proper training is delivered at the right time
FY20 funding will develop and deploy new technologies for modularized training in fleet concentration areas to support the continuum of learning to include:
(1) Development, modification or replacement of the current LMS platform
(2) Integration of Manpower, Personnel, Training and Education (MPT&E) management tools to support end to end business processes (billet information, assignment, distribution, student management, learning management, personnel information, advancement) that will be impacted by changes to learning delivery and career profiles via Progressive NECs (e.g. Legacy systems: TFMMS,NSIPS, Learning Assessment System, Navy Training Management Planning System and future transformation systems: NP2 and ADE.)
The Learning Management tools and supporting IT infrastructure must also be modified to support management of training into the Delayed Entry Program, the growing use of demonstration videos, social media, student and learning management for MPT&E mobility efforts, gaming and simulation technology as it is brought on-line. LMS-DL will also introduce the Learning Continuum Pilot, a risk reduction effort that develops proof of concept alignment of sailor training requirements with learning content delivery.

SINGLE POINT OF ENTRY (SPOE) (FORMERLY MY NAVY PORTAL (MNP))
SPOE is an integrated web portal that consolidates the Navy's Human Resource portals, knowledge, and applications into a single and simplified user experience. Through the use of a multi-phased development approach, SPOE will provide an intuitive self-service capability for Sailors to view and manage their personnel and

career information. SPOE provides Active and Reserve Sailors with personalized interactive experiences and allows access to relevant information including learning content, human resource applications, and career business processes.
FY20 will support the following new efforts:
1. New challenges within technical development including transactional mobile applications
2. Development and production of commercial cloud based Identity and Access Management (IdAM) services
3. More robust level-of-effort requirement for cybersecurity
4. System and services integration - integration with My Navy Career Center, CRM solution, IdAM, Mobile Apps, and legacy systems

APPLICANT RELATIONSHIP MANAGEMENT (ARM)
ARM provides automated support of the management of recruiting information. ARM enables all levels of recruiting to have real-time access to timely and accurate information. ARM provides managers with decision-making support by consolidating Navy Recruiting Command (NRC) legacy application systems. The complete ARM Systems Dev/Mod effort will incorporate biometrics and paperless implementation across all lines of business systems to gain additional efficiencies. Included in the ARM program is the Self Service Accessions Application (SSAA). Phase II of this effort will build the SSAA application into the ARM system. SSAA is a mobile device-based software application. SSAA supports a change in the NRC business processes from a recruiter-driven business model to an applicant self-service business model. This "app" will be used by applicants to collaborate with recruiters anytime & anywhere to more efficiently and effectively navigate the recruiting process. As envisioned by the Navy's Transformation initiative, ARM will be consolidated into the NP2 Customer Relations Management (CRM) in FY20.

AUTHORITATIVE DATA ENVIRONMENT (ADE)
ADE is part of the Navy's MPT&E IT Transformation initiative aligned directly with the Authoritative Data Environment technology component of the transformation effort. ADE is aimed at transitioning the current project based ADE into a full enterprise solution that is based on modern IT service models and cloud hosting technology. This will advance data analytics and visualization capabilities, and add common platform services in a big data environment that is consistent with private industry. This acceleration toward a true Navy-wide personnel authoritative data environment is a transformational increase in capability for decision support and improving personnel readiness.
As part of the Transformation strategy, the Chief of Naval Personnel has directed expansion and improvements of the ADE in making MPT&E data more available to commanders, sailors, business owners and fleet executive leadership. The ADE provides infrastructure, operations and sustainment of the Navy MPT&E Authoritative Data Warehouse(ADW), enterprise service bus, and web support services.
The capabilities delivered by this funding include:
(1) Completed "golden record" expansion increments
- Data quality
- Governance
- Security
- Data standardization
(2) Increased capabilities for MPT&E supply chain & business operations
- Data discovery
- Advanced visualization tools

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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- Predictive analytics
(3) Enhanced architecture to support unstructured data and "big data" analytics
(4) Improved support for future identity management & access for mobile device capability

RISK MANAGEMENT INFORMATION (RMI)
The RMI program is a consolidation of DON risk management requirements into a single Program of Record (POR) to provide modern safety reporting and management capabilities for both active and reserve Navy and Marine Corps commands. RMI enables agile responses to business rule changes, automation of routine actions, improved data integrity, and facilitates self-service for organizations and individuals.
RMI is being developed in three increments of capabilities: Streamlined Incident Reporting (SIR), Safety Program Management (SPM), and Analysis & Dissemination (A&D). A fourth requirement, Portal integration, will be accomplished as part of the development of the three RMI increments since each will be built on the same Commercial Off The Shelf (COTS) platform. Each of these capabilities will be acquired as individual Abbreviated Acquisition Programs using an incremental development approach for reengineered business processes, while consolidating five legacy systems Web-Enabled Safety System (WESS), Enterprise Safety Application Management Systems (ESAMS), Portsmouth Occupational Accident and Illness Reporting System (POAIRS), Medical Mishap and Compensation (MMAC), and Injury Tracker (INJTRK).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Billet Based Distribution (BBD) (Moving to NP2)	0.400	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2019 Plans: BBD functionality and requirements are being aligned under the Navy Personnel and Pay (NP2) Pillar as part of the MPT&E Transformation effort.					
FY 2020 Base Plans: BBD functionality and requirements are being aligned under the Navy Personnel and Pay (NP2) Pillar as part of the MPT&E Transformation effort.					
FY 2020 OCO Plans: N/A					
Title: Learning Stack (LS) (formerly Learning Management System - Distance Learning)	0.000	6.469	4.851	0.000	4.851
Articles:	-	-	-	-	-
FY 2019 Plans: 1. Procure and implement Learning Management System - Distance Learning (LMS-DL) Web Conferencing capability and integrate with existing LMS-DL components to form decentralized learning environment. 2. Begin integration of Commercial Off-the-Shelf (COTS) LMS solution with Learning Content Repository.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
3. Integrate Optimized Scheduler with capability to manage classroom usage. 4. Begin development of Game Engine capability harmonizing with LMS components. 5. Development and integration of LMS components to support seamless Collaborative Learning Environment (CLE) toolset. ***FY 2020 Base Plans:*** 1. Complete Learning Management System (LMS) Commercial Off-The-Shelf (COTS) implementation 2. Complete COTS LMS solution integration with Learning Content Repository. 3. Procure and Integrate Scheduler with capability to manage classroom usage. 4. Continue Game Engine integration efforts with LMS components. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Decrease of $1.6M. FY20 decrease due to completion of Learning Management System (LMS) integration effort to support Collaborative Learning Environment (CLE) toolset.					
Title: Single Point of Entry (SPOE) (formerly My Navy Portal)	13.063	11.145	39.477	0.000	39.477
Articles:	-	-	-	-	-
FY 2019 Plans: 1. Support evolving MNP into a Single Point of Entry (SPOE) as a key component of the MPT&E Transformation efforts. 2. Continue the development and integration of portal Career Life Event (CLE) portlet capabilities for Sailors to manage their careers in an intuitive self-service web environment. 3. Integrate with MPT&E Transformation plan (system consolidation) in order to streamline MPT&E applications and capabilities. MNP functional users and sponsors continue to refine their priorities for MNP integration with outside systems. Those discrete system integrations require new MNP development/modernization code builds to enable MNP to successfully partner with them. 4. Support development of a commercial cloud MNP hosting solution. MNP seeks to migrate from a government cloud hosting platform to a commercial cloud hosting solution. 5. Develop several mobile applications as a key component of MPT&E's Sailor Self Service drive. My Navy Portal will serve as the front-end, electronic interface for Sailor ticket requests coming into the center. 6. Integrate and serve as a key platform to support the My Navy Career Center, My Navy Self Support Services, and a Customer Relations Management (CRM) solution.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
7. Assist in establishing a core Identity Access Management program to improve Fleet authorization and security procedures. Software will require modest reconfiguration to meet Navy security parameters. 8. Complete Customer Relations Management (CRM) Pilots. ***FY 2020 Base Plans:*** 1. Assist in establishing a core Identity Access Management (IdAM) program to improve Fleet authorization and security procedures. Software will require modest reconfiguration to meet Navy security parameters. The capability will make strong use of a cloud based IdAM solution. 2. Support integration of My Navy Portal (MNP) and mobile applications with cloud based Identity and Access Management (IdAM) systems and services to provide non-CAC authentication to OPNAV N1 MPT&E information 3. Support development and execution of cyber security documentation, reviews, and processes in support of MPT&E Transformation's Authority to Proceed (ATP) process, NAO's Risk Management Framework (RMF) Authority to Operate (ATO) process, and additional technical system modernization to meet current cyber security requirements 4. Continue evolving MNP into a Single Point of Entry (SPOE) as a key component of MPT&E's Transformation efforts. Providing direct integration for Sailors between various MPT&E capabilities allows for a more seamless interaction and lowers the overarching IT footprint. Integration efforts will also necessitate an electronic interface with the My Navy Career Center (MNCC). 5. Advance integration of portal Career Life Event (CLE) portlet capabilities for Sailors to manage their careers in an intuitive self-service web environment. 6. Plan system consolidations in order to streamline MPT&E applications and capabilities. System integrations require new MNP development/modernization code builds to enable MNP to successfully partner with them. 7. Continue migration of MNP from a government cloud hosting platform to a commercial cloud hosting solution. 8. Continue developing mobile applications as a key component of OPNAV N1s Sailor Self Service capabilities. This will include the need for additional software that provides high levels of encryption, in addition to device operating system protections and verifications. 9. Ensure compliance with National Information Assurance Partnership (NIAP) Protection Profiles through software and testing tools in order to meet leading mobile security protocols and standards 10. Partner with OPNAV N1 to integrate and serve as a key platform to support the MNCC and My Navy Self Support Services. ***FY 2020 OCO Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The increase in funding of $28.3M from FY19 ($11.1M to $39.5M) to FY20 can directly be attributed to the increase in scope and scale in which the Single Point of Entry (SPOE) program line is executing against. Increased efforts are directly attributed to: 1. New challenges within technical development including transactional mobile applications 2. Development and production of commercial cloud based Identity and Access Management (IdAM) services 3. More robust level-of-effort requirement for cybersecurity 4. System and services integration - integration with My Navy Career Center, CRM solution, IdAM, Mobile Apps, and legacy systems					
Title: Analysis of Alternative Economic Analysis (AOA EA) (Moving to NP2) ***Articles:*** ***FY 2019 Plans:*** 1. Begin AoA for risk reduction field test study for PersPay ***FY 2020 Base Plans:*** Beginning in FY20, AoA funding realigned to the Navy Personnel and Pay (NP2) Pillar as part of MPT&E Transformation. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Decrease of $500K. Beginning in FY20, AoA funding realigned to the Navy Personnel and Pay (NP2) Pillar as part of MPT&E transformation.	0.000 -	0.500 -	0.000 -	0.000 -	0.000 -
Title: Navy Personnel and Pay (NP2) (Formerly NSIPS) ***Articles:*** ***FY 2019 Plans:*** Transformation activities include conducting prototypes, testing, integration, and migration to a cloud environment. FY19 efforts include:	9.937 -	60.092 -	111.237 -	0.000 -	111.237 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
1. Continuation of the second Field Test / Rapid Pilot Prototype (RPP). Software development life cycle activities to enable desired HR and Payroll operations in a production environment while developing the Treasury Direct Disbursement (TDD) capability. 2. Migrate RPP to a secure and accredited commercial cloud hosting solution. The migration allows a development environment for future field tests, prototypes, and pilot projects to help achieve Navy MPT&E Transformation objectives. 3. Begin the Navy Enlisted System (NES) and Officer Personnel Information System (OPINS) consolidation efforts. 4. Build MPT&E system functionality into a COTS Pay Modernization baseline, which feed into modernized military personnel and pay capabilities and Active Component/Reserve Component (AC/RC) permeability. 5. Integration of Bi-Service PeopleSoft license with personnel and pay modernization solution. 6. Define scope and minimum attributes for the PERS/PAY solution set 7. Develop level A/B/C functional requirements to address the Personnel, Payroll, and Audit business needs across MPT&E to support FOC PERS/PAY capabilities 8. Analyze DFAS payroll services/functions and determine feasibility to transition services to Navy 9. Complete Meritorious Advancement Program (MAP) functionality 10. Realignment of NMRS and BBD functionality/requirements to NP2 RPP.					
FY 2020 Base Plans: NP2 increase in FY20 is aligned with the Navy's MPT&E IT Transformation initiative to develop a technology component that forms an MPT&E Navy Personnel and Pay (NP2) system. Transformation activities that were started in FY18 & FY19 will continue, and include conducting prototypes, testing, and integration. FY20 efforts will complete work on the NP2 Rapid Prototype Pilot (NP2 RPP) and start the NP2 Rapid Fielding Pilot (RFP): 1. Complete design and development of the PCS Travel theme. 2. Complete unit, functional, integration/regression testing and package handoff of the PCS Travel theme. 3. Complete development of the Performance theme. 4. Complete unit, functional, integration/regression test and package handoff of the Performance theme. 5. Complete integration sprints for the NP2 RPP themes. 6. Complete Iterative Development Test (DT) and Iterative System Integration Test (SIT) for NP2 RPP themes. 7. Testing organizations complete OTS observation for NP2 RPP. 8. Capability drop for NP2 RPP (Street to Fleet functionality). 9. Training for NP2 RPP					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
10. Limited User Testing (LUT) and Operational Testing for NP2 RPP. 11. Parallel processing begins. 12. Begin Rapid Fielding Pilot (RFP). 13. Conduct design and development sprints for NP2 RFP. 14. Begin second Rapid Prototype Pilot (RPP) to cover additional pay elements required to sunset DJMS AC/ RC. 15. Complete the consolidation of NES/OPINS functionality into NSIPS ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** In FY20, the funding increase is due to the overlap of two large scale pilots for NP2 (RPP & RFP). Rapid Pilot Prototype (RPP) funding will support the remainder of Developmental Testing (including Vendor support), Training and Deployment efforts, and Operational/ Parallel Testing with select populations in the fleet. Simultaneously, the Rapid Fielding Pilot (RFP) will be occurring for the full FY20 in an Agile methodology covering Requirements gathering, Development, Testing, and support for Deployment by Jan 2021. 1. RPP will use a rapid prototype approach to deliver pilot for PeopleSoft pay capability; build and demonstrate in production-like environment; delivery of "field-able" capability in the Government Cloud Environment. Maximize use of PeopleSoft 9.2 Human Capital Management (HCM) out of the box and leverage Field Test 1 build. Support Treasury Direct Disbursing (TDD) capabilities including testing and validation of a bi-directional interface with Treasury. Generate pay file to Global Exchange (GEX). Integration testing for RPP. 2. RFP will design, build and test sprint cycle for residual Pay & Personnel capability. In addition to build out interfaces and data exchanges needed for fielding; Operational Testing and parallel operations, as well as training activities.					
Title: Risk Management Information (RMI)	1.058	1.100	7.000	0.000	7.000
Articles:	-	-	-	-	-
FY 2019 Plans: 1. Complete development of RMI Streamlined Incident Reporting (SIR) and Analysis and Dissemination (A&D) requirements					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
2. Begin acquisition planning of RMI Safety Program Management (SPM) and Single Point of Entry (SPOE) ***FY 2020 Base Plans:*** Investment in development and modernization of predictive analytic system which will provide: 1.) Improvements in data analysis 2.) Predictive operational safety and risk information 3.) Participation in TYCOM near miss reporting processes to share lessons across the force 4.) Development of a robust process to assess instances of organizational drift and detect accumulation of accident risk over time 5.) Improve data visualization. Development of an SPM system/capability that replaces legacy systems and implements to-be process improvements for executing a safety and occupational health (SOH) program across the DON. Conduct trade off studies to determine options for providing a portal integration capability. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Increase of $5.9M. Funding increase from FY19 to FY20 associated with the following requirements: 1. Analysis and Dissemination Development, Modernization, and Integration. Funding to execute A/D mission of providing actionable information to reduce safety incidents. Without the support of more sophisticated analytics to include predictive analytics, Navy will not be able to employ more predictive capabilities to improve safety across the DON in alignment with the SECNAV Strategic Readiness Review. 2. Safety Program Management Development and Modernization - Develop and Deploy Safety Program Management functionality. RMI is developing an SPM capability that replaces legacy systems and modernizes interface and capabilities. Both initiatives consolidate safety systems, makes it easier to report mishaps, and provides authoritative data to help improve safety conditions.					
Title: Authoritative Data Environment (ADE)	0.000	10.000	5.200	0.000	5.200
Articles:	-	-	-	-	-
FY 2019 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
1. Establish ADE Functional laboratory Test environment in the cloud. 2. ADE architecture in the cloud and migrate the Navy Training Management Planning System (NTMPS) data warehouse (DW) to the cloud. This is the first of nine legacy MPT&E data warehouses being consolidated into ADE. 3. Consolidate the Navy Personnel Database (NPDB) data warehouse into the ADE environment. This is the second of nine legacy DWs being consolidated into ADE. 4. Consolidate Navy Manpower Program and Budget System (NMPBS) data warehouse into the ADE environment. This is the third of nine legacy MPT&E DWs being consolidated into ADE. ***FY 2020 Base Plans:*** 1. API Gateway fully deployed, continuing the ingest of data from the legacy system consolidation. 2. API Center of Excellence function operational to standardize and reuse API enabling a streamlined interface process 3. Continue to build out the following capability: A. Migrate ADE BBD Ad Hoc capability B. Migrate FLTMPS capability C. Consolidate NPDB Data Warehouse D. Enable view My Pay Check 4. Initial Analytic capability focusing on Supply Chain ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Decrease of $4.8M. The FY20 RDT&E,N funding decreased by $4.8M from FY19 because of transition into sustainment. The portions of the legacy data warehouses that have been consolidated into the ADE environment will transfer to sustainment.					
Title: Applicant Relationship Management (ARM) (Moving to NP2)	0.537	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2019 Plans: N/A ***FY 2020 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
N/A ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** No change.					
Accomplishments/Planned Programs Subtotals	24.995	89.306	167.765	0.000	167.765

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• 8106: *Command Support Equipment*	2.755	5.883	3.372	-	3.372	4.481	6.335	5.755	5.871	0.000	47.685
• 0604703N / PU 1822: *Personnel Training, Sim & Human Factors*	24.229	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	24.229

Remarks

BLI 8106 for NP2 and ADE.
Research and Development Funds for MPT&E Transformation under PE 0604703N have been consolidated within PE 0605013N PU 2905 starting in FY19.

D. Acquisition Strategy

As a general rule IT development programs use an agile software development methodology therefore milestones, tasks and phases are often conducted in parallel vice sequentially.

BILLET BASED DISTRIBUTION (BBD)
Beginning in FY20, distribution requirement falling under auspices of NP2 as part of the MPT&E transformation.

LEARNING STACK (Formerly LEARNING MANAGEMENT SYSTEM - DISTANCE LEARNING)
Use existing GWAC or competitive contract for any new product sourcing, use existing Bi-Service PeopleSoft license, Indefinite Delivery/Indefinite Quantity contract vehicles within PMW 240 for additional design and integration services. Investigate option of using an Interagency Agreement for an Assisted Acquisition with the Office of Personnel Management's USA Learning program.

NAVY PERSONNEL AND PAY SYSTEM (NP2)

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NP2 will incrementally implement Navy's personnel and pay modernization strategy using a variety of IDIQ contract task orders. These task orders will use commercial off the shelf (COTS) software (PeopleSoft Global Payroll and PeopleSoft General Ledger) to extend the Navy Personnel and Pay (NP2) functionality based on PeopleSoft Human Capital Management.

SINGLE POINT OF ENTRY (SPOE)
The required services will be procured through a competitive small business Indefinite Delivery / Indefinite Quantity (ID/IQ) Cost Plus Fixed Fee (CPFF) 8a contract.

NAVY MANPOWER REQUIREMENTS SYSTEM (NMRS)
Beginning in FY20, requirements for this system will fall under auspices of NP2 as part of the MPT&E transformation.

RISK MANAGEMENT INFORMATION (RMI)
There are existing Commercial-Off-the-Shelf (COTS) software and services that, with customization, can fill the Navy's documentation requirements and generate safety reporting of the United States Naval forces. These services will be procured through an 8A CPFF contract.

The Navy plans to leverage Contractor developed safety-related products by using a modular contracting approach to implement and combine capabilities from the following systems.

(a) Streamlined Incident Reporting (SIR)
(b) Single Point of Entry (SPOE)
(c) Safety Program Management (SPM);
(d) Analysis & Dissemination (A&D)

AUTHORITATIVE DATA ENVIRONMENT (ADE)
The required services will be procured through multiple Cost Plus Fixed Fee (CPFF) task orders awarded on a competitive, multiple award, small business Indefinite Delivery / Indefinite Quantity (ID/IQ) contract for PMW 240 enterprise services, and also on a competitive, single award, large business Indefinite Delivery / Indefinite Quantity (ID/IQ) contract for tasking related to personnel and pay modernization.

APPLICANT RELATIONSHIP MANAGEMENT (ARM)
Beginning in FY20, requirements for this system will fall under auspices of NP2 as part of the MPT&E transformation.

E. Performance Metrics

LEARNING STACK (LS)
Capturing end user screen refresh latency as compared to current system benchmarks for on-line courses.
Identifying all integration points, failure modes and data flows required for the additional technology and approach
Identifying supply chain, instructional, and student management business process changes needed to employ the technology

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Assessing server utilization and physical architecture projections (#s and types of hardware/SW/network appliances) needed for full scale use of the technology.

NAVY PERSONNEL AND PAY SYSTEM (NP2)
The system shall allow role-based access to SSN and/or masked SSN in accordance with Personally Identifiable Information (PII) instructions 100% of the time.
The system shall have a retrieval or generation of data entry/navigation screen within 4 seconds for 90% of transactions.
System maintainability - Failures or unplanned outages shall be restored within 4 hours.
The system shall have sufficient capacity to handle anticipated user demand based on increased functionality and accessibility for at least 12,000 simultaneous users.
Data consistency - The system shall produce consistent reports when a query is duplicated using identical user-selected parameters, to include the specific timestamp of the query. System will be within 99% accuracy in replicating the report content.
Data accuracy - The system shall generate forms and accurately populate them with authoritative source data with greater than 99% accuracy between the data auto-populated forms and the data contained within the system.

SINGLE POINT OF ENTRY (SPOE)
MNP will meet acquisition program and system engineering and technical review milestones for development with no outstanding severity 1-3 defects prior to production release. The portal will manage at least 50,000 concurrent actions per hour and 200,000 concurrent users per hour.

RISK MANAGEMENT INFORMATION (RMI)
Safety Incident Reporting Functionality - The system shall provide the ability to utilize RMI mishap, near mishap, and hazard initial notification, report drafting, report submission, report endorsement, and mishap recommendation / action item response and tracking functionality for at least 95% of Navy and Marine Corps operational ground forces, shore commands, surface forces, aviation forces, and submarine forces
Incident Data Capture - The system shall capture safety incident report data 100% of the time.
Security - The system shall protect flagged Safety Privilege, Personally Identifiable Information (PII), and Protected Health Information (PHI), and allow only role-based access in accordance with law, regulation and policy (LRP) instructions. 100% of flagged Safety Privilege, PII, and PHI data shall be protected from unauthorized roles and tacit export.
Registered Users - The system shall support user account access for Navy and Marine Corps members and safety support users for all safety user types = (administrative, power, occasional, and infrequent)
Concurrent Active Users - The system shall have sufficient capacity to support concurrent active users or greater than 20% of all safety users.
Response Time - Data requests/queries, reports, building of custom views, etc. shall not significantly impact transaction processing time. All items will be processed within 1 second or less for 90% of requests and 3 seconds or less for 10% of single record requests.

AUTHORITATIVE DATA ENVIRONMENT (ADE)
The system shall provide an audit trail for all system transactions.
The system shall transfer data payloads of up to 1 megabyte (MB) among services.
The system shall transfer data transactions of up to 1 MB among applications.
The system shall allow any authorized application or system to insert data.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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The system shall provide CAC-enabled login for identity management.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
BBD Phase 1c Increment 1 and 2, Phasde 2	C/CPFF	SSC, INC : New Orleans, LA	11.685	0.400	Dec 2017	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
LMS-DL Pilot and Career Profile Management	C/CPFF	OPM : Pensacola, FL	3.801	0.000		6.469	May 2019	4.851	May 2020	-		4.851	Continuing	Continuing	Continuing
MNP/SPOE	C/CPFF	Katmai : Arlington, VA	13.424	13.063	Jul 2018	11.145	May 2019	39.477	May 2020	-		39.477	Continuing	Continuing	Continuing
TFMMS Design, Development, Test & Deployment (2 Increments)	C/CPFF	A3IS : Palm Coast, FL	6.619	0.000		0.000		0.000		-		0.000	0.000	6.619	Continuing
PRIDE MOD II Design, Development, Test & Deployment	C/CPFF	CGI, Fed : Washington, DC	2.185	0.000		0.000		0.000		-		0.000	0.000	2.185	1.370
AOA Design, Development, Test & Deployment	C/CPFF	GDIT : New Orleans, LA	1.792	0.000		0.500	Mar 2019	0.000		-		0.000	Continuing	Continuing	Continuing
NP2 Rapid Prototype Pilot	C/CPFF	GDIT/Na Ali : Washington, DC	0.000	0.000		32.350	Oct 2018	46.243	Oct 2019	-		46.243	Continuing	Continuing	Continuing
NMRS Design, Development, Test & Deployment	C/CPFF	Millienium : New Orleans, LA	0.262	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
RMI SIR/SPOE/SPM/A&D Design, Development, Test & Deployment	C/CPFF	Syneren : Arlington, VA	8.651	1.058	Jul 2018	1.100	Jun 2019	7.000	Jun 2020	-		7.000	Continuing	Continuing	Continuing
ADE - BI / Visualization / Analytics Products	C/CPFF	GDIT : Washington, D.C.	3.500	0.000		5.600	May 2019	3.000	May 2020	-		3.000	Continuing	Continuing	Continuing
ADE - System Integration	C/CPFF	Millenium : Washington, D.C.	1.200	0.000		4.400	Apr 2019	2.200	Apr 2020	-		2.200	Continuing	Continuing	Continuing
ARM Phase 1-3 Design, Development, Test & Deployment	C/CPFF	HP : Orlando, FL	2.700	0.537	Dec 2017	0.000		0.000		-		0.000	0.000	3.237	2.221
NP2 Rapid Fielding Pilot	C/CPFF	GDIT/ Na Ali : Honolulu, HI	0.000	0.000		0.000		51.805	Oct 2019	-		51.805	0.000	51.805	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NP2 Transformation	C/CPFF	GDIT/Na Ali : Washington, DC	13.736	6.248	Jan 2018	23.937	Jan 2019	13.189	Jan 2020	-		13.189	0.000	57.110	-
		Subtotal	69.555	21.306		85.501		167.765		-		167.765	Continuing	Continuing	N/A

Remarks

NP2 - The Navy intends to transform labor intensive, antiquated paper-based processes into standardized, automated processes that support audit readiness, improve customer service, and require less complex management oversight. NP2 will develop and deploy modernizations, enhancements, and integration of products towards an objective capability focused on Navy personnel process standardization, authoritative data, and a central personnel and pay service delivery model to achieve CNP's transformation goal.

In FY20, the funding increase is due to the overlap of two large scale pilots for NP2 (RPP & RFP). Rapid Pilot Prototype (RPP) funding will support the remainder of Developmental Testing (including Vendor support), Training and Deployment efforts, and Operational/ Parallel Testing with select populations in the fleet. Simultaneously, the Rapid Fielding Pilot (RFP) will be occurring for the full FY20 in an Agile methodology covering Requirements gathering, Development, Testing, and support for Deployment by Jan 2021.
1. RPP will use a rapid prototype approach to deliver pilot for PeopleSoft pay capability; build and demonstrate in production-like environment; delivery of "field-able" capability in the Government Cloud Environment. Maximize use of PeopleSoft 9.2 Human Capital Management (HCM) out of the box and leverage Field Test 1 build. Support Treasury Direct Disbursing (TDD) capabilities including testing and validation of a bi-directional interface with Treasury. Generate pay file to Global Exchange (GEX). Integration testing for RPP.
2. RFP will design, build and test sprint cycle for residual Pay & Personnel capability. In addition to build out interfaces and data exchanges needed for fielding; Operational Testing and parallel operations, as well as training activities.

SPOE - Increase of $28.3M. The increase in funding of $28.3M from FY19 ($11.1M to $39.5M) to FY20 can directly be attributed to the increase in scope and scale in which the Single Point of Entry (SPOE) program line is executing against. Increased efforts are directly attributed to:
1. New challenges within technical development including transactional mobile applications
2. Development and production of commercial cloud based Identity and Access Management (IdAM) services
3. More robust level-of-effort requirement for cybersecurity
4. System and services integration - integration with My Navy Career Center, CRM solution, IdAM, Mobile Apps, and legacy systems

RMI - Increase of $5.9M. Funding increase from FY19 to FY20 associated with the following requirements:
1. Analysis and Dissemination Development, Modernization, and Integration. Funding to execute A/D mission of providing actionable information to reduce safety incidents. Without the support of more sophisticated analytics to include predictive analytics, Navy will not be able to employ more predictive capabilities to improve safety across the DON in alignment with the SECNAV Strategic Readiness Review.
2. Safety Program Management Development and Modernization - Develop and Deploy Safety Program Management functionality. RMI is developing an SPM capability that replaces legacy systems and modernizes interface and capabilities. Both initiatives consolidate safety systems, makes it easier to report mishaps, and provides authoritative data to help improve safety conditions.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NSIPS Bi-Service License	C/CPFF	Oracle : Redwood City, CA	13.206	3.689	Dec 2017	3.805	Dec 2018	0.000		-		0.000	Continuing	Continuing	Continuing
		Subtotal	13.206	3.689		3.805		0.000		-		0.000	Continuing	Continuing	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	82.761	24.995		89.306		167.765		-		167.765	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
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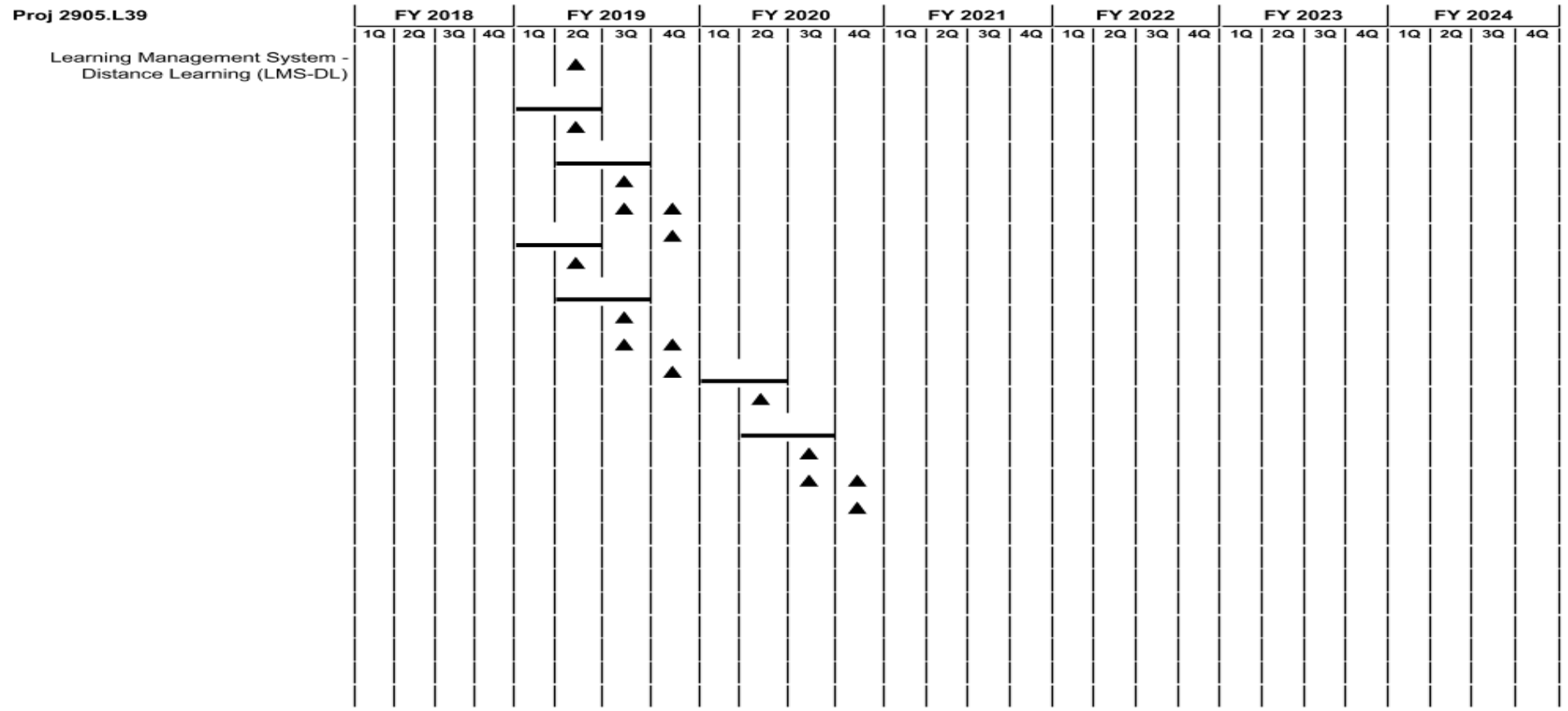

2020PB - 0605013N - 2905.L39

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
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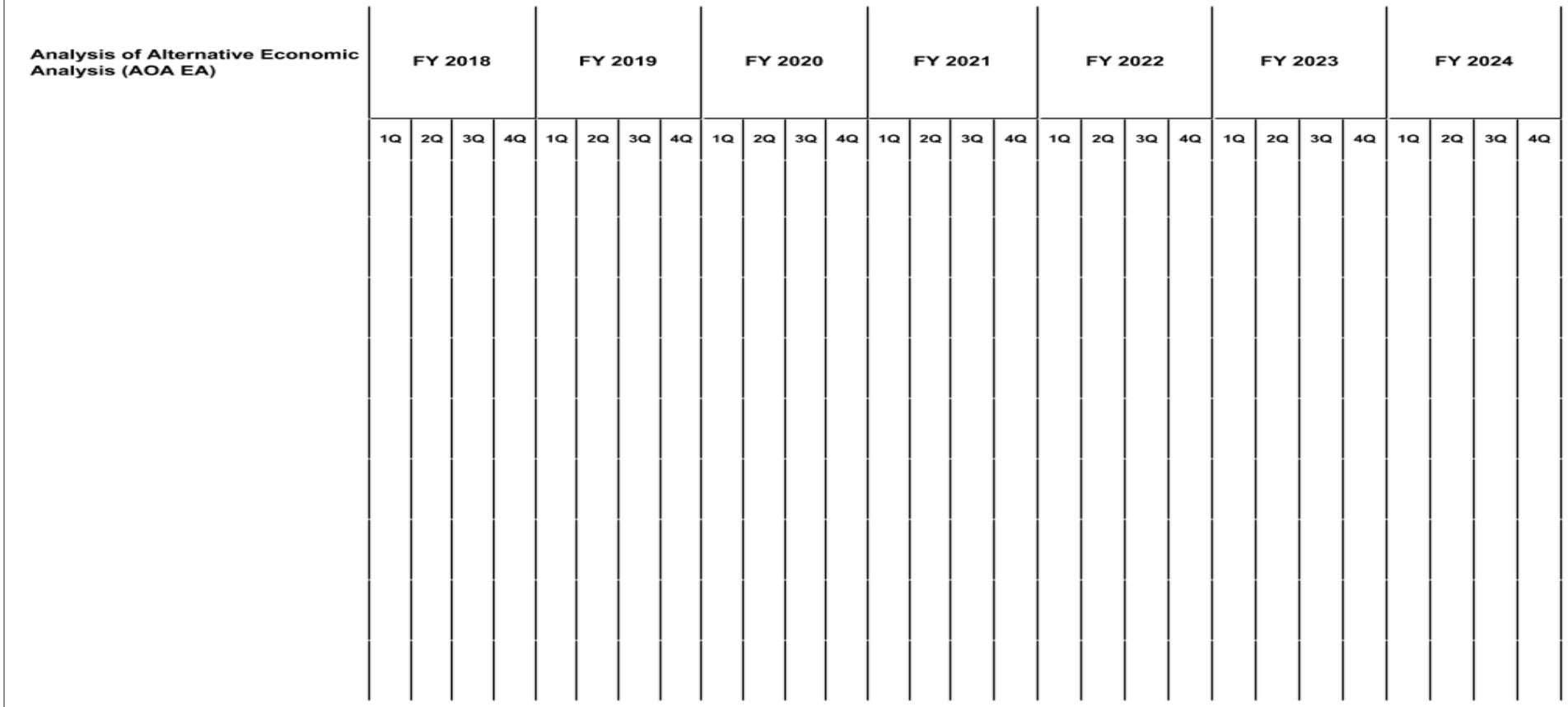

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
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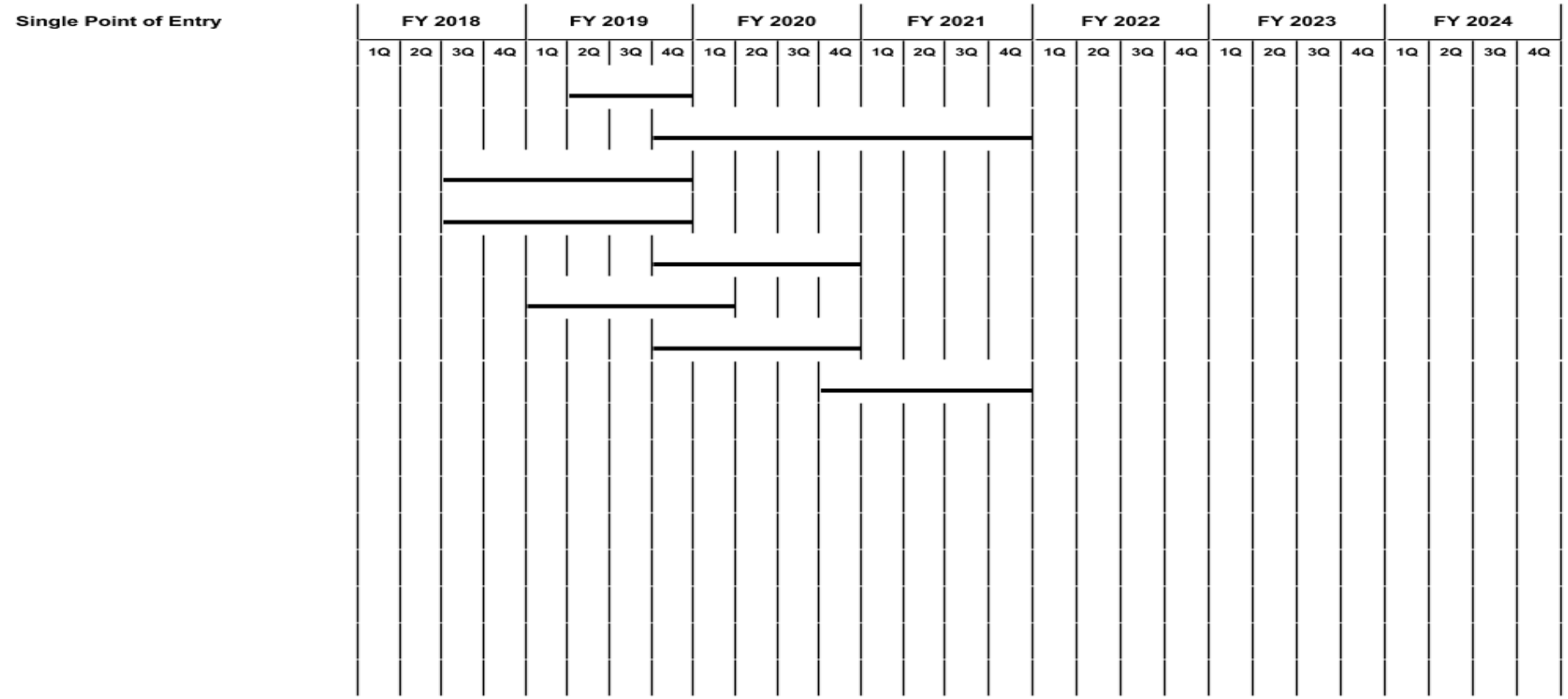

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
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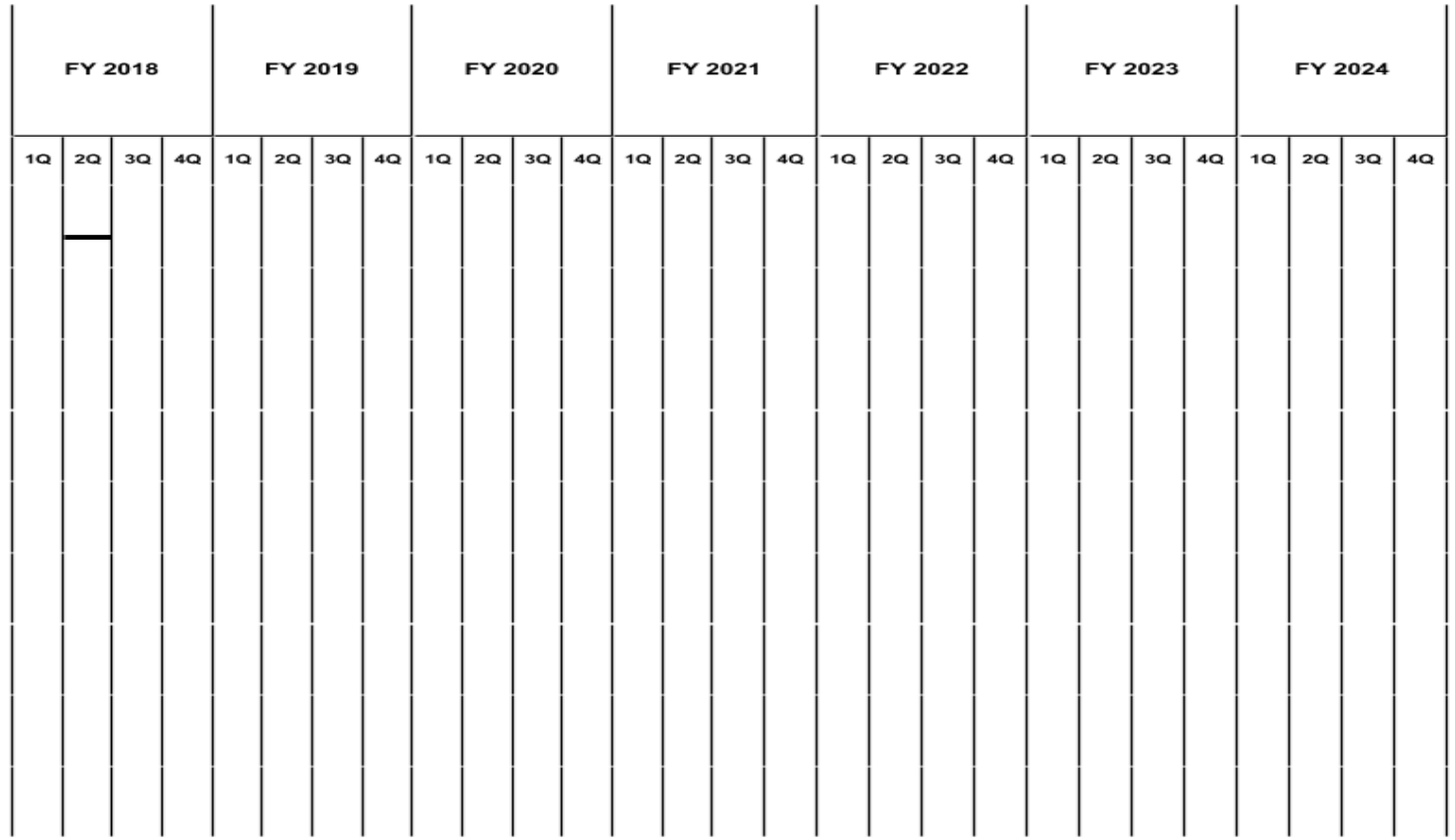

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Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
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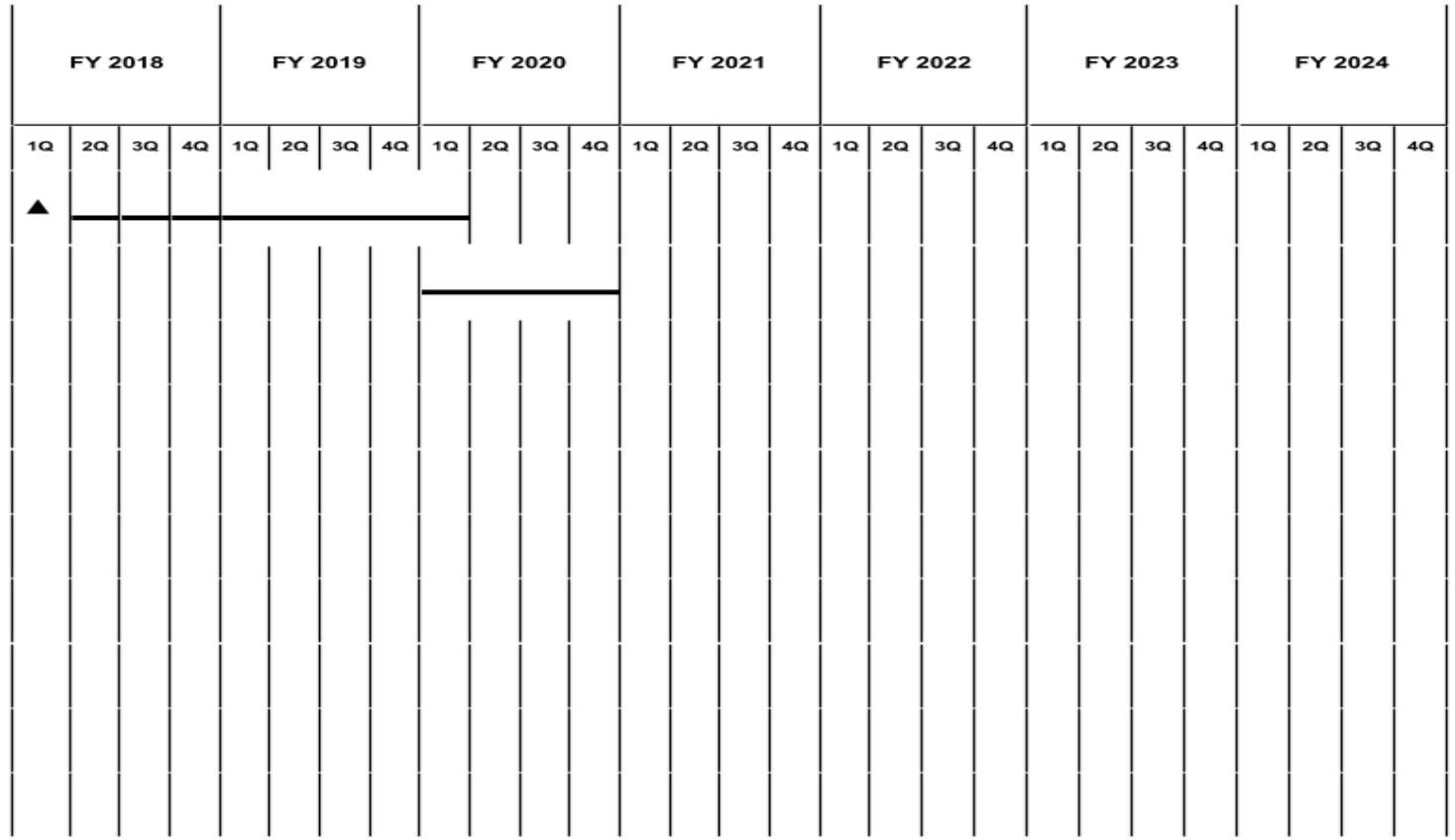

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2905.L39				
Learning Management System - Distance Learning (LMS-DL): LMS-DL Pilot Tech Assessment Report	2	2019	2	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Career Profile Management Design	1	2019	2	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Career Profile Management Preliminary Design Review	2	2019	2	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Career Profile Management Development	2	2019	3	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Career Profile Management Critical Design Review	3	2019	3	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Career Profile Management Testing	3	2019	3	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Career Profile Management Production Readiness Review	4	2019	4	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Career Profile Management Deployment	4	2019	4	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Decentralized Learning Delivery & Management Design	1	2019	2	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Decentralized Learning Delivery & Management Preliminary Design Review	2	2019	2	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Decentralized Learning Delivery & Management Development	2	2019	3	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Decentralized Learning Delivery & Management Critical Design Review	3	2019	3	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Learning Management System - Distance Learning (LMS-DL): LMS-DL Decentralized Learning Delivery & Management Testing	3	2019	3	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Decentralized Learning Delivery & Management Production Readiness Review	4	2019	4	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Decentralized Learning Delivery & Management Deployment	4	2019	4	2019
Learning Management System - Distance Learning (LMS-DL): LMS-DL Advancement Changes Design	1	2020	2	2020
Learning Management System - Distance Learning (LMS-DL): LMS-DL Advancement Changes Preliminary Design Review	2	2020	2	2020
Learning Management System - Distance Learning (LMS-DL): LMS-DL Advancement Changes Development	2	2020	3	2020
Learning Management System - Distance Learning (LMS-DL): LMS-DL Advancement Changes Critical Design Review	3	2020	3	2020
Learning Management System - Distance Learning (LMS-DL): LMS-DL Advancement Changes Testing	3	2020	3	2020
Learning Management System - Distance Learning (LMS-DL): LMS-DL Advancement Changes Production Readiness Review	4	2020	4	2020
Learning Management System - Distance Learning (LMS-DL): LMS-DL Advancement Changes Deployment	4	2020	4	2020
Analysis of Alternative Economic Analysis (AOA EA)				
AoA Risk Reduction Field Test Study - PersPay	1	2019	4	2019
Single Point of Entry				
MNP Phase 2C Acceptance Testing	2	2019	4	2019
MNP Phase 2C Production	4	2019	4	2021
MNP Phase 2C Final Development	3	2018	4	2019
MNP Develop & Integrate Additional CLE Portlets	3	2018	4	2019
MNP: MNCC Sailor Self-Service Integration	1	2019	2	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MNP: Establish IdAM Solution	4	2018	2	2020
MNP: SPOE Integration with ADE	4	2018	4	2020
MNP: Infrastructure Upgrades and Expansion	4	2019	4	2020
MNP: SPOE Training Support Content and Page Administrators	1	2018	3	2020
MNP Planning for SPOE Migration to Commercial Cloud Hosting Solution	1	2019	1	2020
MNP Develop, Test & Release Portlets	4	2019	4	2020
MNP Develop, Test & Release Additional Portlets	4	2020	4	2021
Mobile Applications: My Record native mobile application development	2	2018	4	2021
Mobile Applications: Integration with IdAM services for MR mobile application	3	2018	3	2020
Mobile Applications: Integration with ADE services for data delivery to MR mobile application	3	2018	3	2020
Mobile Applications: Development of the uniform mobile application	2	2018	3	2021
Identity and Access Management: Execution of a Full Scale IdAM pilot	2	2018	2	2019
Identity and Access Management: Development and testing of an IdAM solution	2	2019	1	2021
Identity and Access Management: End user, cycber security, and technical testing of the IdAM solution	1	2019	1	2020
Identity and Access Management: Integration of the IdAM solution with the MR mobile application	2	2019	2	2020
Identity and Access Management: Integration of the IdAM solution with additional mobile and web applications	1	2020	4	2020
Identity and Access Management: Integration of the IdAM solution to obtain, authorize, and control multiple persons	4	2020	3	2021
BILLET BASED DISTRIBUTION (BBD)				
BBD Phase 1c Increment 1 Production Readiness Review/Production Rollout	2	2018	2	2018
NAVY PERSONNEL AND PAY (NP2)				
NP2 PERS MOD Critical Design Review	2	2018	2	2018
NP2 PERS MOD Application Test Readiness Review	3	2018	3	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
NP2 PERS MOD PRR	4	2018	4	2018
NP2 PeopleSoft License Renewal FY18	1	2018	1	2018
NP2: Testing for the NP2 Rapid Prototype Pilot	1	2019	1	2020
NP2: Compile to Combat Activities for NP2	4	2018	1	2020
NP2: Capability Drop for NP2 RPP	1	2020	1	2020
NP2: Rapid Fielding Pilot# 1	1	2020	2	2021
NP2: Transition of NP2 to commercial cloud environment	1	2020	4	2020
NP2: Complete DJMS data celeaning	2	2020	4	2020
NP2: Deployment Planning for NP2 RFP # 1	4	2020	1	2021
NP2 Risk Reduction Field Test Study - PersPay	1	2020	4	2020
NP2: Conduct design and development sprints for NP2 RFP # 1	1	2020	4	2020
NP2: Conduct SE events for NP2 RFP # 1	2	2020	1	2021
PAY MOD Increment 1 Preliminary Design Review	2	2018	2	2018
NP2: Planning activities for NP2 RFP # 2	4	2020	1	2021
NP2: Training activities for RFP # 1	4	2020	1	2021
NP2: Interoperability and Operational Testing for RFP # 1	2	2021	2	2021
NP2: Deployment of RFP # 1	1	2021	2	2021
NP2: Deployment Planning for NP2 RFP # 2	2	2021	3	2021
NP2: Training activities for RFP # 2	3	2021	4	2021
NP2: Planning activities for NP2 RFP # 3	4	2021	1	2022
PAY MOD Increment 1 Development	2	2018	3	2019
NP2: Conduct design and development sprints for NP2 RFP # 2	4	2021	3	2022
NP2: Conduct SE events for NP2 RFP # 2	1	2022	4	2022
PAY MOD Continue Execution of Field Test 2 Sprint X	4	2018	2	2020
PAY MOD Incremental deployment of Field Test 2 Functionality into NP2 baseline	3	2019	4	2019

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
PAY MOD Deployment to IPPS-N baseline	2	2020	2	2020
PAY MOD Pers Driving Pay capability removed from NP2 baseline	2	2020	2	2020
PAY MOD Capability Set 2 deployed to NP2b aseline	2	2021	2	2021
PAY MOD Capability Set 2 removed from NP2 baseline	2	2021	2	2021
PAY MOD Capability Set 3 deployed to NP2 baseline	2	2022	2	2022
PAY MOD Capability Set 3 removed from NP2 baseline	2	2022	2	2022
PAY MOD 55 to X functionality set 1 deployed to NP2 baseline	4	2020	4	2020
PAY MOD 55 to X functionality set 2 deployed to NP2 baseline	4	2021	4	2021
PAY MOD 55 to X functionality set 3 deployed to NP2 baseline	4	2022	4	2022
AC/RC PERMEABILITY SOLUTION - Task Order Award	1	2018	1	2018
PH1 AC/RC PERMEABILITY SOLUTION - Systems Requirements Review	2	2018	2	2018
PH1 AC/RC PERMEABILITY SOLUTION - Design	2	2018	3	2018
PH1 AC/RC PERMEABILITY SOLUTION - Preliminary Design Review	3	2018	3	2018
PH1 AC/RC PERMEABILITY SOLUTION - Critical Design Review Iteration One	1	2019	1	2019
PH1 AC/RC PERMEABILITY SOLUTION - Application Test Readiness Review Phase One	2	2019	2	2019
PH1 AC/RC PERMEABILITY SOLUTION - Application Functional Testing /System Int. Testing	2	2019	2	2019
PH1 AC/RC PERMEABILITY SOLUTION - Full Deployment Phase	3	2019	3	2019
PH2 AC/RC PERMEABILITY SOLUTION - Critical Design Review Phase Two	3	2019	3	2019
PH2 AC/RC PERMEABILITY SOLUTION - Application Test Readiness Review Phase Two	4	2019	4	2019
PH2 AC/RC PERMEABILITY SOLUTION - Application Functional Testing /System Int. Testing Nov 19	1	2020	1	2020
PH2 AC/RC PERMEABILITY SOLUTION - Full Deployment Phase Two Jan 20	2	2020	2	2020
PH3 AC/RC PERMEABILITY SOLUTION - Critical Design Review Phase Three April 20	3	2020	3	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
PH3 AC/RC PERMEABILITY SOLUTION - Application Test Readiness Review Phase Three Jul 20	4	2020	4	2020
PH3 AC/RC PERMEABILITY SOLUTION - Application Functional Testing /System Int. Testing Sep 20	4	2020	4	2020
PH3 AC/RC PERMEABILITY SOLUTION - Full Deployment Phase Three Nov 20	1	2021	1	2021
PH4 AC/RC PERMEABILITY SOLUTION - Critical Design Review Phase Four Jan 21	2	2021	2	2021
PH4 AC/RC PERMEABILITY SOLUTION - Application Test Readiness Review Phase Four Apr 21	3	2021	3	2021
PH4 AC/RC PERMEABILITY SOLUTION - Application Functional Testing /System Int. Testing Jul 21	4	2021	4	2021
PH4 AC/RC PERMEABILITY SOLUTION - Full Deployment Phase Three Sept 21	4	2021	4	2021
Risk Management Information (RMI)				
RMI Safety Program Management Acceptance Test Readiness Review	2	2018	2	2018
RMI Safety Program Management Test Readiness Review	4	2018	4	2018
RMI Safety Program Management Post Implementation Review	3	2018	3	2019
RMI Safety Program Management Full Deployment	3	2019	4	2021
RMI Analysis and Dissemination Phase II Acceptance Test Readiness Review	1	2018	1	2018
RMI Analysis and Dissemination Phase II Test Readiness Review	3	2018	3	2018
RMI Analysis and Dissemination Phase II Acceptance Post Implementation Review	4	2018	4	2018
RMI Analysis and Dissemination Phase II Full Deployment	4	2018	2	2019
RMI Analysis and Dissemintation Phase 3 - Predictive Analytics	2	2019	1	2021
RMI Streamlined Incident Reporting 2.0	2	2018	2	2019
RMI Streamlined Incident Reporting 3.0	2	2019	2	2020
Authoritative Data Environment (ADE)				
ADE Phase 2 Enterprise ADE Baseline SRR/SFR	2	2018	2	2018
ADE Phase 2 Enterprise ADE Baseline PDR	2	2018	2	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ADE Phase 2 Enterprise ADE Baseline CDR	2	2018	3	2018
ADE Phase 2 Enterprise ADE Baseline PRR	3	2018	3	2018
ADE Phase 2 Enterprise ADE Baseline IOC	3	2018	3	2018
ADE Phase 3 Enterprise ADE Functional Laboratory Build	1	2019	3	2019
ADE Phase 3 Enterprise ADE Infrastructure in Cloud Build	1	2019	3	2019
ADE Phase 4 NTMPS consolidation to ADE migration to cloud	1	2019	2	2019
ADE Phase 4 NPDB consolidation to ADE in cloud	1	2019	2	2021
ADE Phase 4 NMPBS consolidation to ADE in cloud	3	2019	4	2021
ADE Phase 4 NTMPS ADE 1.5 BBD Ad Hoc Caapbility into ADE in cloud	1	2018	1	2024
ADE Phase 4 NPDB Finalized consolidation to ADE in cloud	1	2018	1	2024
ADE Phase 4 Enable FLTMPS capability into ADE in cloud	1	2018	1	2024
ADE Phase 4 NRDW consolidation to ADE in cloud	1	2020	2	2020
ADE Phase 4 C-WAY consolidation to ADE in cloud	3	2020	4	2020
ADE Phase 4 PRIDE-MOD consolidation to ADE in cloud	3	2020	4	2020
ADE Phase 4 CeTARS consolidation to ADE in cloud	1	2021	2	2021
ADE Phase 4 NSIPS Analytics consolidation to ADE in cloud	3	2021	4	2021
ADE Phase 4 NSIPS Analytics consolidation to ADE in cloud (FOC)	1	2022	2	2022
Applicant Relationship Management (ARM)				
ARM Phase 2 Incremental Test # 2	1	2018	1	2018
ARM Phase 2 Code Release # 2	1	2018	1	2018
ARM Phase 2 Development # 3	1	2018	3	2018
ARM Phase 2 Critical Design Review	1	2018	1	2018
ARM Phase 2 Incremental Test # 3	3	2018	3	2018
ARM Phase 2 Code Release # 3	3	2018	3	2018
ARM Phase 2 Development # 4	3	2018	3	2019

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / *Information Technology Development*	Project (Number/Name) 3167 / *Joint Technical Data Integration (JTDI)*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
3167: *Joint Technical Data Integration (JTDI)*	35.093	2.462	3.883	5.545	-	5.545	8.178	6.233	7.211	7.989	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Joint Technical Data Integration (JTDI) Program - JTDI funding supports the evaluation, testing and integration to develop a JTDI Government Off-The-Shelf (GOTS) solution for installation on Carrier and Amphibious Assault class ships and at other globally deployed Navy/Marine Corp aviation activities. JTDI is a digital technical data access, delivery and local Organizational & Intermediate level library management toolset. It improves accuracy and timeliness of technical manual and other technical data delivery and minimizes the Fleet's library management burden. JTDI reduces maintenance work hours with a savings Return on Investment of 2.5:1. JTDI also provides deployed maintenance personnel with 24x7 collaborative reach-back/tele-maintenance capabilities so that Fleet Support Teams/Engineering Technical Services can remotely diagnose problems and assist with repairs, and provides for process efficiencies to support ongoing Aviation Fleet Technical Representative reductions.

Marine Aviation Logistics Enterprise Information Technology (MAL-EIT) - MAL-EIT funding supports the evaluation, development, testing and integration of software and hardware solutions across all US Marine Corps Aviation activities to be used in the planning and execution of geographically distributed, expeditionary Aviation Logistics (AVLOG) chains in support of deployed USMC Air Combat Element operations. The MAL-EIT Program is one of four programs contained within the Marine Aviation Logistics Support Program (MALSP) modernization program known as MALSP II. Legacy MALSP is nearly 25 years old and grossly inadequate in IT capability to meet the informational, planning, and C2 needs of a dynamic, geographically distributed nodal AVLOG system. MAL-EIT is a Defense Business System Abbreviated Acquisition Program that will develop and deliver the required IT capability necessary to eliminate the IT related gaps existing in the legacy MALSP. MAL-EIT is a family of IT solutions to be developed and delivered in three increments. These increments are depicted below:

Expeditionary Pack Up Kit (EPUK): Provides Expeditionary Supply Operations to include business administration, inventory, and customer service operations.

Next Generation Buffer Management System: Provides buffer management in a time domain, and buffer sizing analysis.

Logistics Planning Tool and Optimizer Tool: Provides capability to develop tailored Remote Expeditionary Support Packages, consumption forecasts, and Nodal Logistics Lay down designs.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Joint Technical Data Integration (JTDI)	0.924	1.413	4.945	0.000	4.945
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
FY 2019 Plans: Conduct development and redeployment efforts associated with a major release of fully deployed GOTS intensive JTDI system Version 2.0.6.5. Conduct COTS requirements definition, evaluation, integration, and testing of annual baseline releases. Perform development and testing in support of integration and consolidation of the Next Generation - Technical Manual Management Program (NG-TMMP) with the JTDI Program. ***FY 2020 Base Plans:*** Conduct development, modernization, obsolescence management, and cybersecurity mandated activities associated with a major release of fully deployed COTS-intensive JTDI system Version 2.0.6.5. Conduct COTS requirements definition, evaluation, integration, and testing of annual baseline releases. Perform development and testing in support of integration with authoritative sources of technical data and enterprise business systems. Continued development of Global Data Repository (GDR), a common repository for Condition Based Maintenance Plus (CBM+) raw data files collected by smart aircraft diagnostic, prognostic, health and usage monitoring systems. GDR provides an enterprise solution to eliminate the need for weapon system programs to develop and maintain redundant, platform-unique IT solutions. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The $3.532M increase from FY 2019 to FY 2020 will modernize and scale the standard data repository (SDR) and enterprise analytics infrastructure for CBM+ data to integrate additional weapon system platforms and provide core analytics at the edge. Funding will also support the integration with Agile Core Services (ACS) to achieve greater interoperability with other applications; control future fielding and sustainment costs; and enable rapid development, integration, and deployment of future system releases. As well as incorporate automated configuration control and improved inventory management of globally deployed technical data and IT assets.					
Title: Marine Aviation Logistics Enterprise Information Technology (MAL-EIT)	1.538	2.470	0.600	0.000	0.600
Articles:	-	-	-	-	-
FY 2019 Plans: Complete fielding of Logistics Planning Tool/MAL-EIT 3.0 solution and begin software development of MAL-EIT 3.1. ***FY 2020 Base Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Complete software development of MAL-EIT 3.1 and begin test and evaluation and limited fielding of MAL-EIT 3.1 solution ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The $1.87M decrease from FY 2019 to FY 2020 is due to the completion of software development of MAL-EIT 3.1 and limited fielding of MAL-EIT 3.1 solution.					
Accomplishments/Planned Programs Subtotals	2.462	3.883	5.545	0.000	5.545

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• OPN/4268/JTDI: *Joint Technical Data Integration (JTDI) Other Aviation Support Equipment*	0.752	2.340	2.365	-	2.365	2.408	2.453	2.502	2.552	Continuing	Continuing
• OPN/4268/MALSP II: *Marine Aviation Logistics Support Program (MALSP II) Aviation Support*	0.200	0.219	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

Remarks

D. Acquisition Strategy

Joint Technical Data Integration (JTDI) Program - The management approach includes the Program Management Office residing in NAVAIR with Milestone Decision Authority delegated to the NAVAIR 6.0, Assistant Commander for Logistics and Industrial Operations . The evolutionary development approach will be used to execute requirements. Contracting for the prime integrator will be via competitively awarded indefinite delivery - indefinite quantity contracts.

Marine Aviation Logistics Enterprise Information Technology (MAL-EIT) Program - The management approach includes the Program Management Office residing within NAVAIR 6.0 and Milestone Decision Authority delegated to NAVAIR 6.7. The evolutionary development approach will be used to execute requirements. Contracting for the prime integrator will be via competitively awarded cost plus fixed fee contracts.

E. Performance Metrics

Joint Technical Data Integration (JTDI) - Successful government testing of JTDI annual software release and system performance availability as defined in acquisition documentation. Marine Aviation Logistics Enterprise Information Technology (MAL-EIT)- Successful government testing of JTDI annual software release.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development for JTDI	MIPR	DTIC : Fort Belvior, VA	2.489	0.434	Jan 2018	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Software Development/ Hardware Integration for Marine Aviation Logistics Enterprise Information Technology (MAL-EIT)	C/CPFF	Wyle : Patuxent River, MD	5.937	0.600	Jan 2018	1.179	Jan 2019	0.390	Jan 2020	-		0.390	Continuing	Continuing	Continuing
Software Development/ Hardware Integration for MAL-EIT	C/T&M	Applied Research : Penn State	1.015	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Prior year support no longer funded in the FYDP	Various	Various : Various	15.326	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Software Development/ Hardware Integration MAL-EIT	WR	NAWCAD : Patuxent River, MD	1.153	0.178	Nov 2017	0.395	Nov 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Software Development/ Hardware Integration MAL-EIT	WR	NEDC : New Orleans, LA	0.261	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Development/Software Integration - MAL-EIT	WR	NAWCWD : China Lake	0.700	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Development/Software Integration - MAL-EIT	WR	NEDC : Patuxent River, MD	0.045	0.099	Oct 2017	0.100	Oct 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Software Development for JTDI	C/CPFF	Control Point Corporation : Patuxent River, MD	0.000	0.000		0.550	Apr 2019	0.000		-		0.000	Continuing	Continuing	Continuing
Software Development/ Hardware Integration MAL-EIT	C/CPFF	TLOG SBJV : Patuxent River, MD	0.000	0.185	Jan 2018	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Software Development for JTDI	C/CPFF	Wyle : Patuxent River, MD	0.000	0.000		0.000		2.929	May 2020	-		2.929	Continuing	Continuing	Continuing
		Subtotal	26.926	1.496		2.224		3.319		-		3.319	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

JTDI increase in FY20 will modernize and scale the standard data repository (SDR) and enterprise analytics infrastructure for CBM+ data to integrate additional weapon system platforms and provide core analytics at the edge. Funding will also support the integration with Agile Core Services (ACS) to achieve greater interoperability with other applications; control future fielding and sustainment costs; and enable rapid development, integration, and deployment of future system releases. As well as incorporate automated configuration control and improved inventory management of globally deployed technical data and IT assets.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation for MAL-EIT	WR	SPAWAR : Norfolk, VA	1.629	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation for MAL-EIT	C/CPFF	Wyle : Patuxent River, MD	0.886	0.149	Jan 2018	0.272	Jan 2019	0.090	Jan 2020	-		0.090	Continuing	Continuing	Continuing
Prior year Test & Eval no longer funded in the FYDP	Various	Various : Various	0.909	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation, MAL-EIT	WR	NAWCAD : Patuxent River, MD	0.030	0.030	Feb 2018	0.076	Nov 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation, MAL-EIT	WR	NSWC : Corona, CA	0.025	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation JDTI	C/CPFF	Control Point Corporation : Patuxent River, MD	0.000	0.000		0.500	Jan 2019	0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation JDTI	C/CPFF	Wyle : Patuxent River, MD	0.000	0.000		0.000		1.577	May 2020	-		1.577	Continuing	Continuing	Continuing
		Subtotal	3.479	0.179		0.848		1.667		-		1.667	Continuing	Continuing	N/A

Remarks

JTDI increase will support testing of annual baseline releases and integration testing with authoritative sources of technical data and enterprise business systems.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support for Marine Aviation Logistics Enterprise Information Technology (MAL-EIT)	WR	SPAWAR : Norfolk, VA	0.832	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Support MAL-EIT	WR	NAWCAD : Patuxent River, MD	0.324	0.072	Nov 2017	0.072	Nov 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Support MAL-EIT	C/CPFF	Wyle : Patuxent River, MD	1.040	0.198	Jan 2018	0.346	Jan 2019	0.120	Jan 2020	-		0.120	Continuing	Continuing	Continuing
Prior year Mgmt Svcs Cost no longer funded in the FYDP	Various	Various : Various	0.473	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering Support - JTDI	WR	NAWCAD : Patuxent River, MD	1.894	0.491	Nov 2017	0.363	Nov 2018	0.094	Nov 2019	-		0.094	Continuing	Continuing	Continuing
Program Management Support - TRAVEL - MAL-EIT	WR	NAVAIR HQ : Patuxent River, MD	0.106	0.026	Oct 2017	0.030	Oct 2018	0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Support MAL-EIT	WR	W4MK Armament RDEC : Pacatiny Arsenal, NJ	0.019	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering Support - JTDI	C/CPFF	Wyle : Patuxent River, MD	0.000	0.000		0.000		0.345	May 2020	-		0.345	Continuing	Continuing	Continuing
		Subtotal	4.688	0.787		0.811		0.559		-		0.559	Continuing	Continuing	N/A

Remarks

JTDI increase will support the development, modernization, obsolescence, and cybersecurity mandated activities associated with a major release of fully deployed COTS-intensive JTDI system Version 2.0.6.5.

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	35.093	2.462		3.883		5.545		-		5.545	Continuing	Continuing	N/A

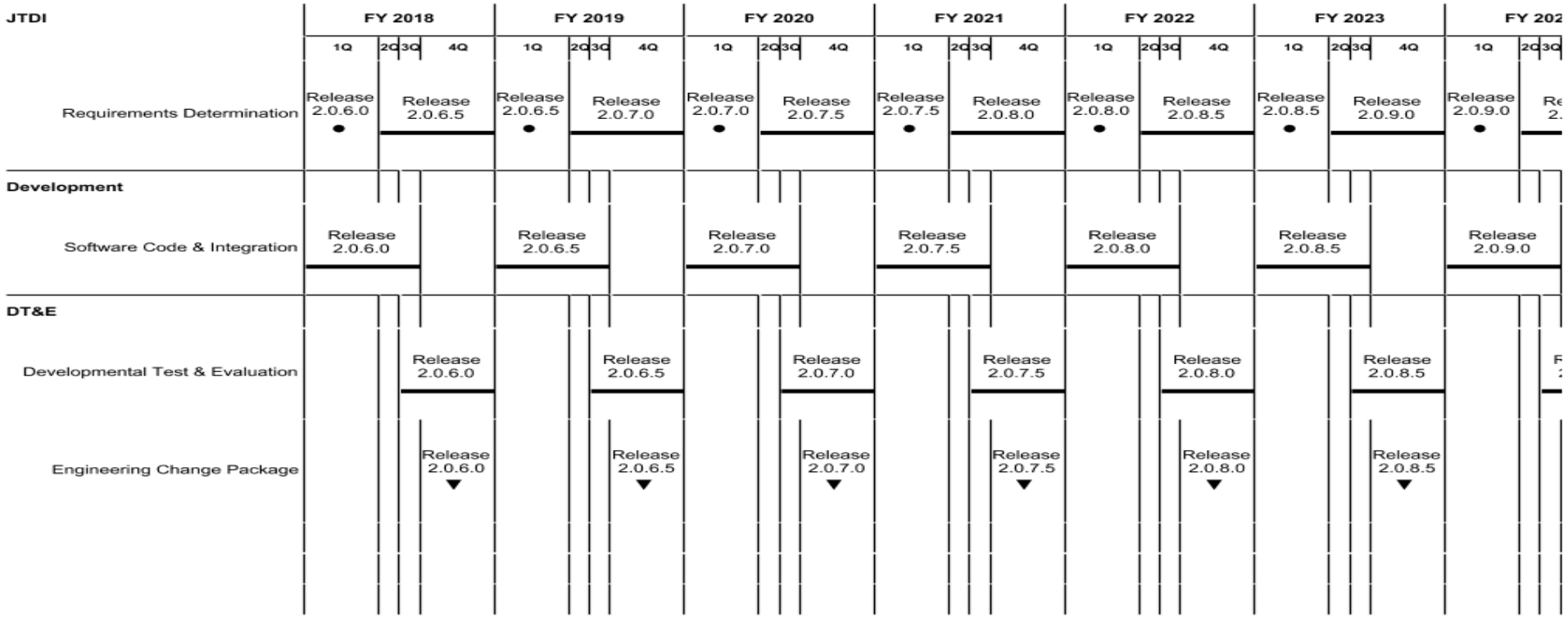
Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / *Information Technology Development*	Project (Number/Name) 3167 / *Joint Technical Data Integration (JTDI)*	

	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Footnotes:
(1) JTDI increase in FY20 will modernize and scale the standard data repository (SDR) and enterprise analytics infrastructure for CBM+ data to integrate additional weapon system platforms and provide core analytics at the edge. Funding will also support the integration with Agile Core Services (ACS) to achieve greater interoperability with other applications; control future fielding and sustainment costs; and enable rapid development, integration, and deployment of future system releases. As well as incorporate automated configuration control and improved inventory management of globally deployed technical data and IT assets.
(2) JTDI increase will support testing of annual baseline releases and integration testing with authoritative sources of technical data and enterprise business systems.
(3)JTDI increase will support the development, modernization, obsolescence, and cybersecurity mandated activities associated with a major release of fully deployed COTS-intensive JTDI system Version 2.0.6.5.

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3167 / *Joint Technical Data Integration (JTDI)*



2020DON - 0605013N - 3167

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3167 / *Joint Technical Data Integration (JTDI)*

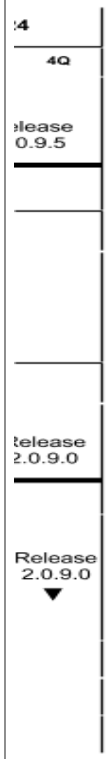
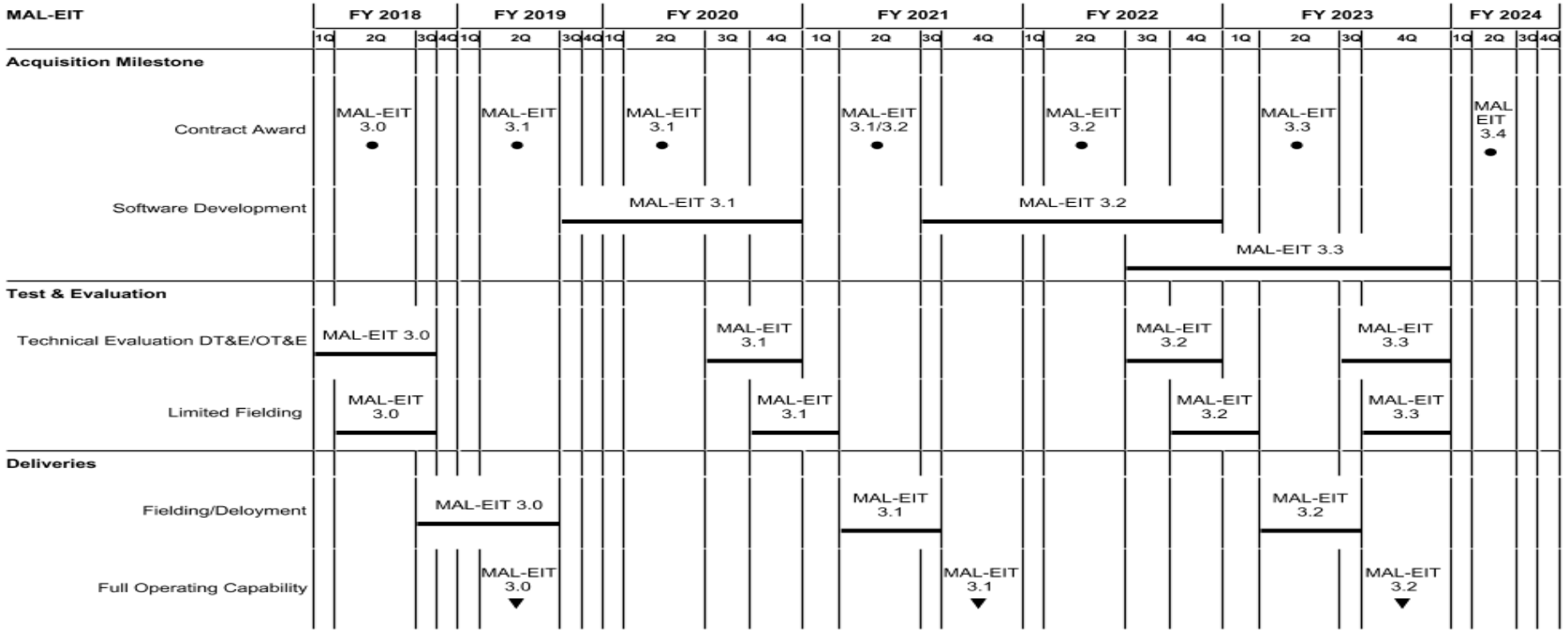


Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3167 / *Joint Technical Data Integration (JTDI)*



2020DON - 0605013N - 3167

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3167 / *Joint Technical Data Integration (JTDI)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
JTDI				
Requirements Determination: Release 2.0.6.5	2	2018	4	2018
Requirements Determination: Release 2.0.7.0	2	2019	4	2019
Requirements Determination: Release 2.0.7.5	2	2020	4	2020
Requirements Determination: Release 2.0.8.0	2	2021	4	2021
Requirements Determination: Release 2.0.8.5	2	2022	4	2022
Requirements Determination: Release 2.0.9.0	2	2023	4	2023
Requirements Determination: Release 2.0.9.5	2	2024	4	2024
Requirements Determination: Contract Award, Release 2.0.6.0	1	2018	1	2018
Requirements Determination: Contract Award, Release 2.0.6.5	1	2019	1	2019
Requirements Determination: Contract Award, Release 2.0.7.0	1	2020	1	2020
Requirements Determination: Contract Award, Release 2.0.7.5	1	2021	1	2021
Requirements Determination: Contract Award, Release 2.0.8.0	1	2022	1	2022
Requirements Determination: Contract Award, Release 2.0.8.5	1	2023	1	2023
Requirements Determination: Contract Award, Release 2.0.9.0	1	2024	1	2024
Development: Software Code & Integration: Release 2.0.6.0	1	2018	3	2018
Development: Software Code & Integration: Release 2.0.6.5	1	2019	3	2019
Development: Software Code & Integration: Release 2.0.7.0	1	2020	3	2020
Development: Software Code & Integration: Release 2.0.7.5	1	2021	3	2021
Development: Software Code & Integration: Release 2.0.8.0	1	2022	3	2022
Development: Software Code & Integration: Release 2.0.8.5	1	2023	3	2023
Development: Software Code & Integration: Release 2.0.9.0	1	2024	3	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3167 / *Joint Technical Data Integration (JTDI)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
DT&E: Developmental Test & Evaluation: Release 2.0.6.0	3	2018	4	2018
DT&E: Developmental Test & Evaluation: Release 2.0.6.5	3	2019	4	2019
DT&E: Developmental Test & Evaluation: Release 2.0.7.0	3	2020	4	2020
DT&E: Developmental Test & Evaluation: Release 2.0.7.5	3	2021	4	2021
DT&E: Developmental Test & Evaluation: Release 2.0.8.0	3	2022	4	2022
DT&E: Developmental Test & Evaluation: Release 2.0.8.5	3	2023	4	2023
DT&E: Developmental Test & Evaluation: Release 2.0.9.0	3	2024	4	2024
DT&E: Engineering Change Package: Release 2.0.6.0	4	2018	4	2018
DT&E: Engineering Change Package: Release 2.0.6.5	4	2019	4	2019
DT&E: Engineering Change Package: Release 2.0.7.0	4	2020	4	2020
DT&E: Engineering Change Package: Release 2.0.7.5	4	2021	4	2021
DT&E: Engineering Change Package: Release 2.0.8.0	4	2022	4	2022
DT&E: Engineering Change Package: Release 2.0.8.5	4	2023	4	2023
DT&E: Engineering Change Package: Release 2.0.9.0	4	2024	4	2024
MAL-EIT				
Acquisition Milestone: Contract Award: Contract Award (6)	2	2018	2	2018
Acquisition Milestone: Contract Award: Contract Award (7)	2	2019	2	2019
Acquisition Milestone: Contract Award: Contract Award (8)	2	2020	2	2020
Acquisition Milestone: Contract Award: Contract Award (9)	2	2021	2	2021
Acquisition Milestone: Contract Award: Contract Award (10)	2	2022	2	2022
Acquisition Milestone: Contract Award: Contract Award (11)	2	2023	2	2023
Acquisition Milestone: Contract Award: Contract Award (12)	2	2024	2	2024
Acquisition Milestone: Software Development: Software Development (4)	3	2019	4	2020
Acquisition Milestone: Software Development: Software Development (5)	3	2021	4	2022
Acquisition Milestone: Software Development: Software Development (6)	3	2022	4	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3167 / *Joint Technical Data Integration (JTDI)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test & Evaluation: Technical Evaluation DT&E/OT&E: Technical Evaluation DT&E/ OT&E (4)	1	2018	3	2018
Test & Evaluation: Technical Evaluation DT&E/OT&E: Technical Evaluation DT&E/ OT&E (5)	3	2020	4	2020
Test & Evaluation: Technical Evaluation DT&E/OT&E: Technical Evaluation DT&E/ OT&E (6)	3	2022	4	2022
Test & Evaluation: Technical Evaluation DT&E/OT&E: Technical Evaluation DT&E/ OT&E (7)	3	2023	4	2023
Test & Evaluation: Limited Fielding: Limited Fielding (3)	2	2018	3	2018
Test & Evaluation: Limited Fielding: Limited Fielding (4)	4	2020	1	2021
Test & Evaluation: Limited Fielding: Limited Fielding (5)	4	2022	1	2023
Test & Evaluation: Limited Fielding: Limited Fielding (6)	4	2023	4	2023
Deliveries: Fielding/Deloyment: Fielding/Deployment (2)	3	2018	2	2019
Deliveries: Fielding/Deloyment: Fielding/Deployment (3)	2	2021	3	2021
Deliveries: Fielding/Deloyment: Fielding/Deployment (4)	2	2023	3	2023
Deliveries: Full Operating Capability: Full Operating Capability (3)	2	2019	2	2019
Deliveries: Full Operating Capability: Full Operating Capability (4)	4	2021	4	2021
Deliveries: Full Operating Capability: Full Operating Capability (5)	4	2023	4	2023

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy											Date: March 2019	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / *Information Technology Development*				Project (Number/Name) 3185 / *Joint Airlift Information System (JALIS)*			
COST ($ in Millions)	**Prior Years**	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
3185: *Joint Airlift Information System (JALIS)*	2.014	0.335	0.353	0.349	-	0.349	0.356	0.364	0.372	0.380	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

JALIS is an operational scheduling and aircraft management system that facilitates real-time data analysis. JALIS is a critical element in the management of DoD air logistics assets. JALIS allows:

(1) DoD Service Personnel to submit airlift requirements for DoD Personnel and cargo
(2) Air Logistics Flying Units to communicate their aircraft availability in a real-time graphic display
(3) Designated Scheduling Organizations to compare airlift requirements with available aircraft
(4) Designated Scheduling Organizations to create mission assignments

JALIS informs applicable users of mission details and modifications by using a combination of system displays and email updates. JALIS is geographically distributed and has a user base in excess of 4,000 members. JALIS facilitates the movement of thousands of DoD Personnel and tons of cargo annually in support of the following:

(1) Navy Unique Fleet Essential Airlift
(2) Army's Operational Support Airlift Agency (OSAA)
(3) United States Transportation Command (USTRANSCOM)
(4) United States Marine Corps (USMC)

The Joint Chiefs of Staff mandates JALIS as the official DoD Airlift scheduling system for Operational Support Airlift (OSA). JALIS meets the requirement for multi-service coordinated Air Logistics scheduling as directed by Chairman, Joint Chiefs of Staff. The Navy is designated as lead agency for sponsoring and funding the JALIS program.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**
Title: Joint Air Logistic Information System (JALIS)	0.335	0.353	0.349	0.000	0.349
Articles:	-	-	-	-	-
FY 2019 Plans: 1. Create capability to archive historical flight and airlift request records, to include full querying and reporting functions.					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3185 / *Joint Airlift Information System (JALIS)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
2. Create new query and analysis tools to automatically identify solutions for consolidating airlift requests and scheduled flights 3. Begin design and developments of new user interface displays that will consolidate functions currently distributed throughout the system ***FY 2020 Base Plans:*** 1. Continue to build capability to archive historical flight and airlift request records, to include full querying and reporting functions. 2. Continue development of new query and analysis tools to automatically identify solutions for consolidating airlift requests and scheduled flights 3. Continue design and development of new user interface displays that will consolidate functions currently distributed throughout the system ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** Decrease of $4K. Funding profile reduced by $4K due to pricing.					
Accomplishments/Planned Programs Subtotals	0.335	0.353	0.349	0.000	0.349

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

As a general rule, IT development programs use an agile software development methodology therefore milestones, tasks and phases are often conducted in parallel vice sequentially.

Contract activities will focus on developing the following capabilities:

(1) Improved functionality for flight scheduling
(2) Improved coordination between JALIS scheduling organizations
(3) Integration of JALIS and JALIS Dashboard functions

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3185 / *Joint Airlift Information System (JALIS)*

E. Performance Metrics

Performance metrics for JALIS include:

(1) Completion of system change request requirements enabling production of articles as itemized in Section B.
(2) Increase operational efficiency
(a) Reduce time to train scheduling personnel by 15%
(b) Reduce time to search for scheduling solutions 10%
(c) Reduce time to train new JALIS users by 20%

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3185 / *Joint Airlift Information System (JALIS)*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development, Analysis and QA support	C/CPFF	SPAWAR : New Orleans, LA	2.014	0.335	Feb 2018	0.353	Feb 2019	0.349	Feb 2020	-		0.349	Continuing	Continuing	Continuing
		Subtotal	2.014	0.335		0.353		0.349		-		0.349	Continuing	Continuing	N/A

Remarks

Development efforts are focused on improving system querying and reporting performance, as well as automating and simplifying common user tasks.

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.014	0.335		0.353		0.349		-		0.349	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3185 / *Joint Airlift Information System (JALIS)*

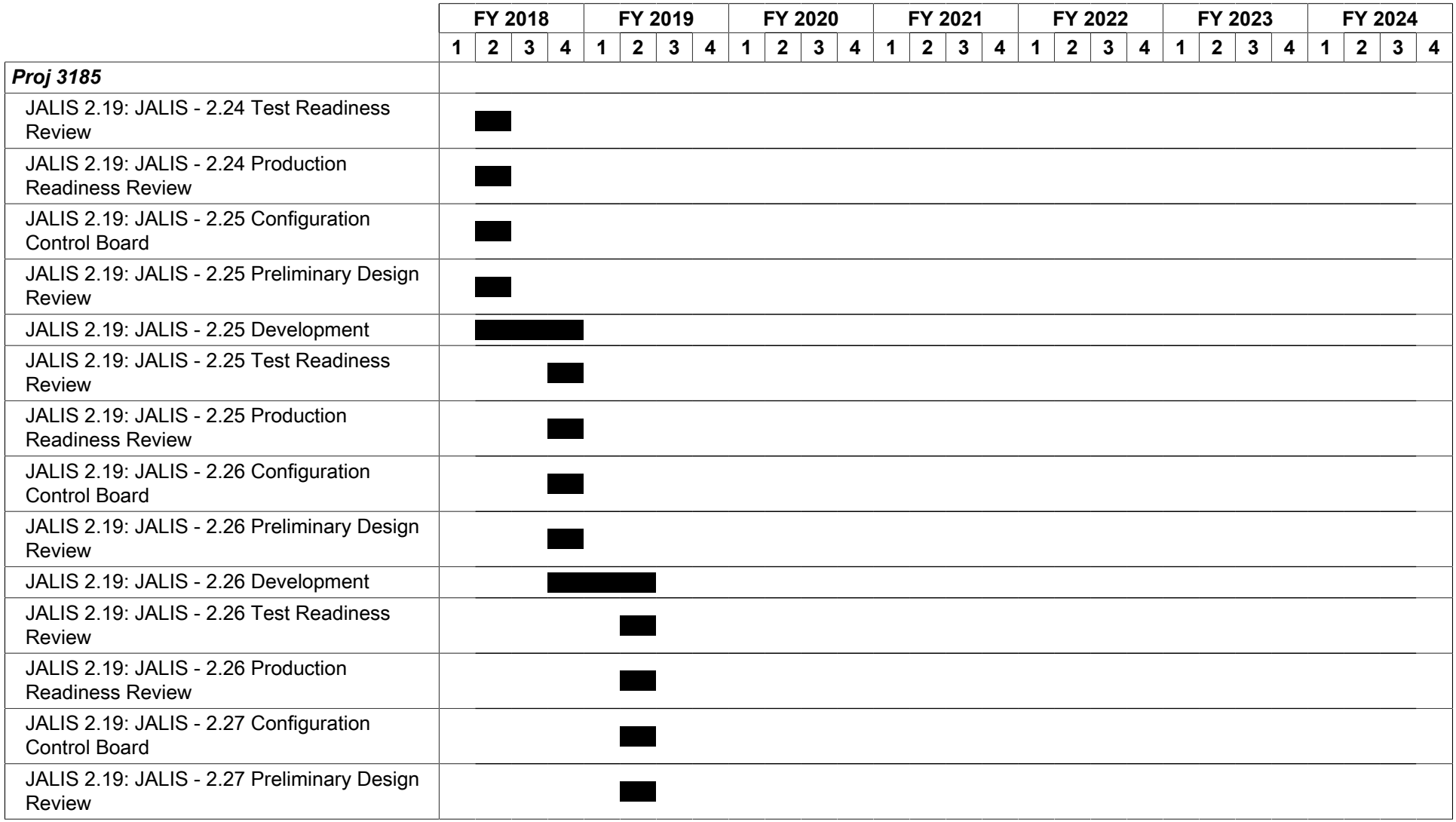


Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3185 / *Joint Airlift Information System (JALIS)*

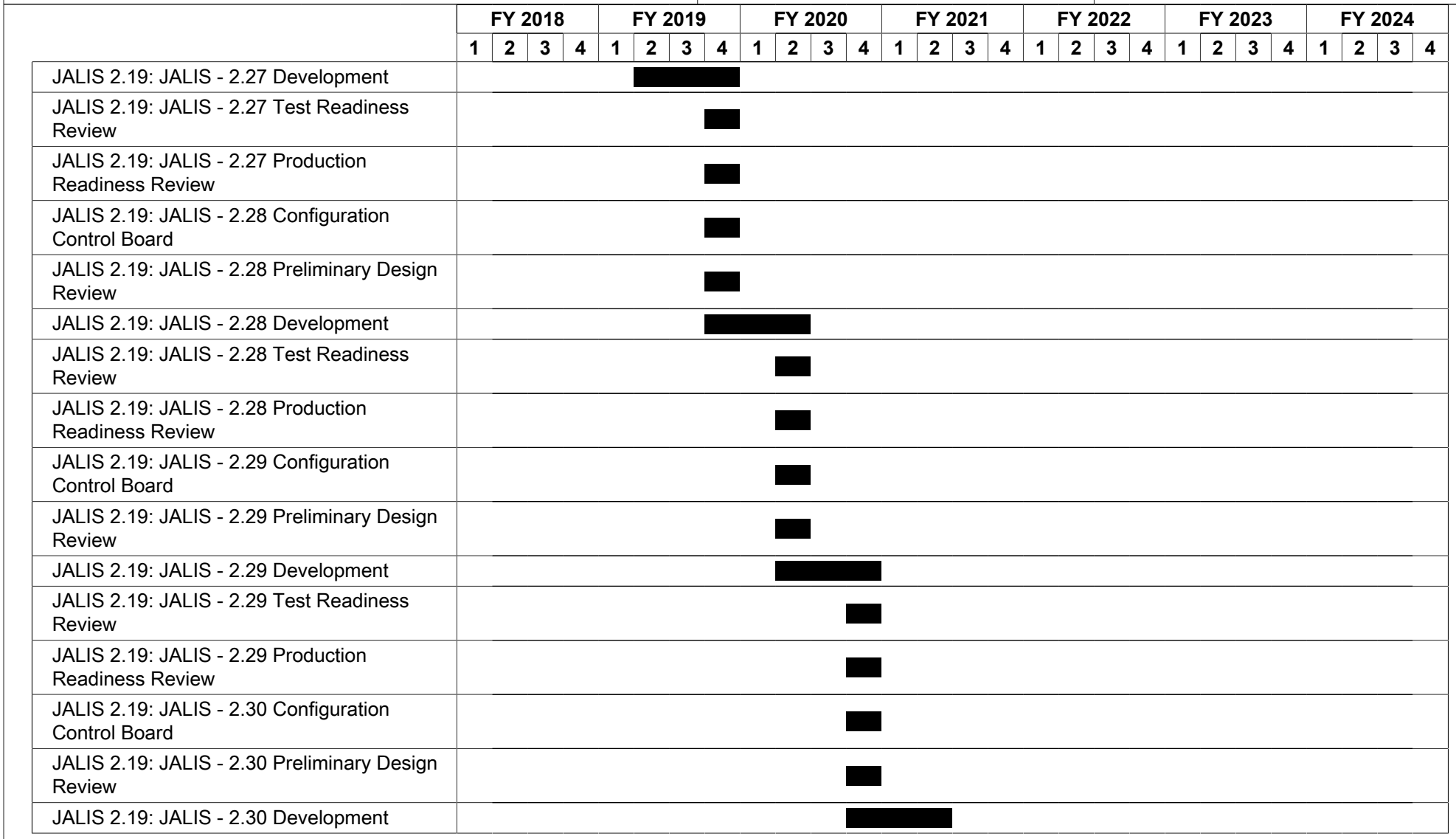


Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3185 / *Joint Airlift Information System (JALIS)*

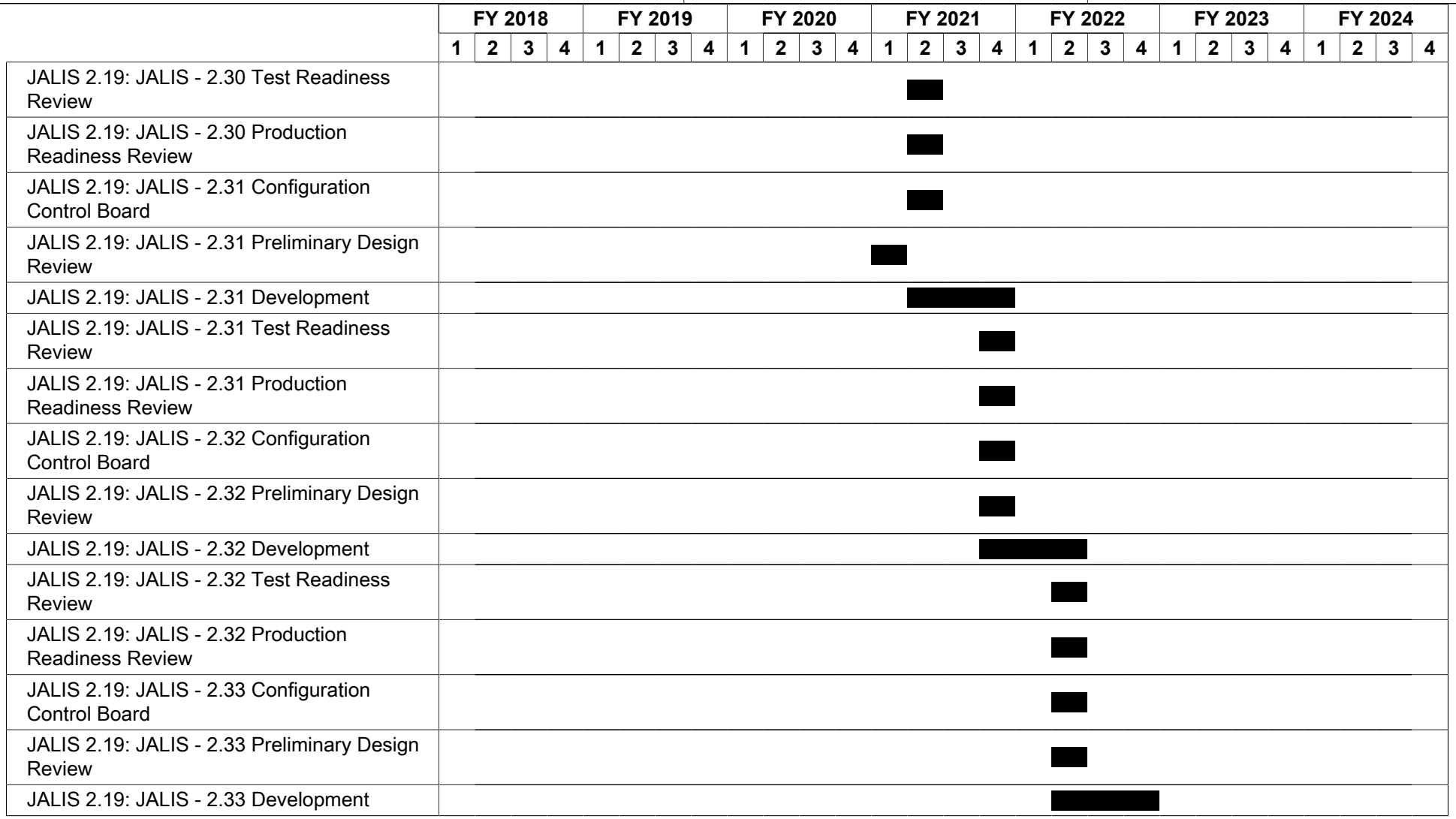


Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3185 / *Joint Airlift Information System (JALIS)*

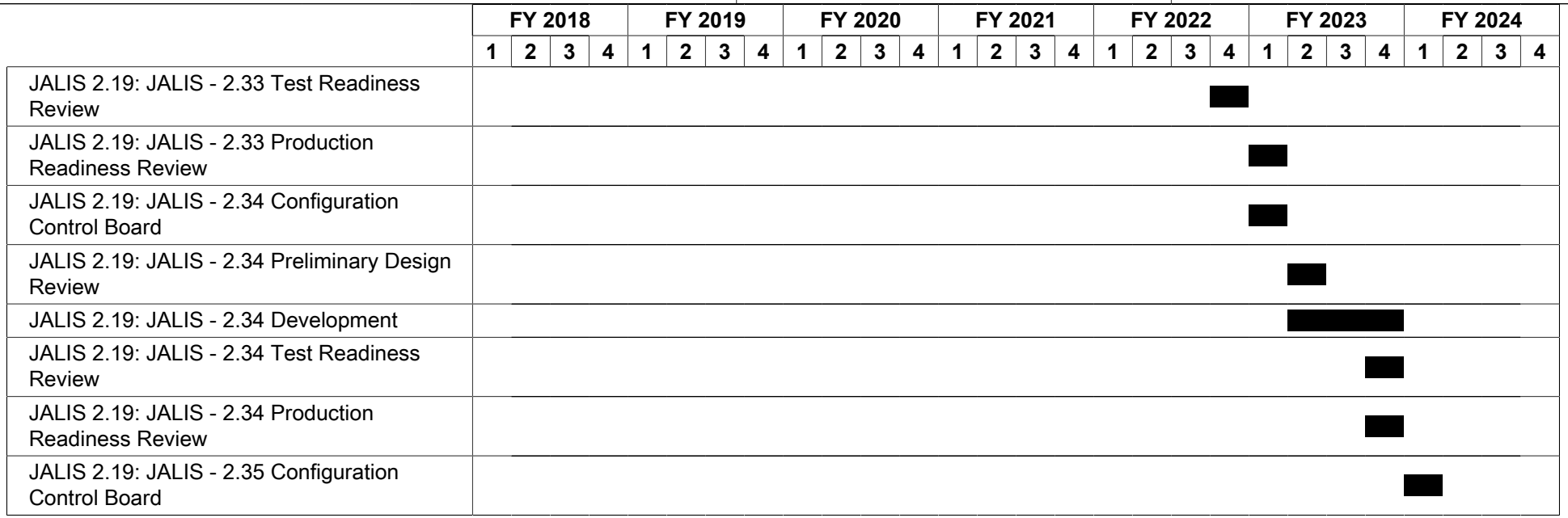


Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3185 / *Joint Airlift Information System (JALIS)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3185				
JALIS 2.19: JALIS - 2.24 Test Readiness Review	2	2018	2	2018
JALIS 2.19: JALIS - 2.24 Production Readiness Review	2	2018	2	2018
JALIS 2.19: JALIS - 2.25 Configuration Control Board	2	2018	2	2018
JALIS 2.19: JALIS - 2.25 Preliminary Design Review	2	2018	2	2018
JALIS 2.19: JALIS - 2.25 Development	2	2018	4	2018
JALIS 2.19: JALIS - 2.25 Test Readiness Review	4	2018	4	2018
JALIS 2.19: JALIS - 2.25 Production Readiness Review	4	2018	4	2018
JALIS 2.19: JALIS - 2.26 Configuration Control Board	4	2018	4	2018
JALIS 2.19: JALIS - 2.26 Preliminary Design Review	4	2018	4	2018
JALIS 2.19: JALIS - 2.26 Development	4	2018	2	2019
JALIS 2.19: JALIS - 2.26 Test Readiness Review	2	2019	2	2019
JALIS 2.19: JALIS - 2.26 Production Readiness Review	2	2019	2	2019
JALIS 2.19: JALIS - 2.27 Configuration Control Board	2	2019	2	2019
JALIS 2.19: JALIS - 2.27 Preliminary Design Review	2	2019	2	2019
JALIS 2.19: JALIS - 2.27 Development	2	2019	4	2019
JALIS 2.19: JALIS - 2.27 Test Readiness Review	4	2019	4	2019
JALIS 2.19: JALIS - 2.27 Production Readiness Review	4	2019	4	2019
JALIS 2.19: JALIS - 2.28 Configuration Control Board	4	2019	4	2019
JALIS 2.19: JALIS - 2.28 Preliminary Design Review	4	2019	4	2019
JALIS 2.19: JALIS - 2.28 Development	4	2019	2	2020
JALIS 2.19: JALIS - 2.28 Test Readiness Review	2	2020	2	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3185 / *Joint Airlift Information System (JALIS)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
JALIS 2.19: JALIS - 2.28 Production Readiness Review	2	2020	2	2020
JALIS 2.19: JALIS - 2.29 Configuration Control Board	2	2020	2	2020
JALIS 2.19: JALIS - 2.29 Preliminary Design Review	2	2020	2	2020
JALIS 2.19: JALIS - 2.29 Development	2	2020	4	2020
JALIS 2.19: JALIS - 2.29 Test Readiness Review	4	2020	4	2020
JALIS 2.19: JALIS - 2.29 Production Readiness Review	4	2020	4	2020
JALIS 2.19: JALIS - 2.30 Configuration Control Board	4	2020	4	2020
JALIS 2.19: JALIS - 2.30 Preliminary Design Review	4	2020	4	2020
JALIS 2.19: JALIS - 2.30 Development	4	2020	2	2021
JALIS 2.19: JALIS - 2.30 Test Readiness Review	2	2021	2	2021
JALIS 2.19: JALIS - 2.30 Production Readiness Review	2	2021	2	2021
JALIS 2.19: JALIS - 2.31 Configuration Control Board	2	2021	2	2021
JALIS 2.19: JALIS - 2.31 Preliminary Design Review	1	2021	1	2021
JALIS 2.19: JALIS - 2.31 Development	2	2021	4	2021
JALIS 2.19: JALIS - 2.31 Test Readiness Review	4	2021	4	2021
JALIS 2.19: JALIS - 2.31 Production Readiness Review	4	2021	4	2021
JALIS 2.19: JALIS - 2.32 Configuration Control Board	4	2021	4	2021
JALIS 2.19: JALIS - 2.32 Preliminary Design Review	4	2021	4	2021
JALIS 2.19: JALIS - 2.32 Development	4	2021	2	2022
JALIS 2.19: JALIS - 2.32 Test Readiness Review	2	2022	2	2022
JALIS 2.19: JALIS - 2.32 Production Readiness Review	2	2022	2	2022
JALIS 2.19: JALIS - 2.33 Configuration Control Board	2	2022	2	2022
JALIS 2.19: JALIS - 2.33 Preliminary Design Review	2	2022	2	2022
JALIS 2.19: JALIS - 2.33 Development	2	2022	4	2022
JALIS 2.19: JALIS - 2.33 Test Readiness Review	4	2022	4	2022

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3185 / *Joint Airlift Information System (JALIS)*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
JALIS 2.19: JALIS - 2.33 Production Readiness Review	1	2023	1	2023
JALIS 2.19: JALIS - 2.34 Configuration Control Board	1	2023	1	2023
JALIS 2.19: JALIS - 2.34 Preliminary Design Review	2	2023	2	2023
JALIS 2.19: JALIS - 2.34 Development	2	2023	4	2023
JALIS 2.19: JALIS - 2.34 Test Readiness Review	4	2023	4	2023
JALIS 2.19: JALIS - 2.34 Production Readiness Review	4	2023	4	2023
JALIS 2.19: JALIS - 2.35 Configuration Control Board	1	2024	1	2024

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / *Information Technology Development*	Project (Number/Name) 3432 / *NMMES-TR*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
3432: *NMMES-TR*	0.000	0.000	33.049	77.351	-	77.351	119.323	122.603	54.100	55.182	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

The NMMES Technical Refresh (NMMES-TR) program replaces current GOTS software with cloud-based COTS software. NMMES-TR is not a new start; it was formerly a project under Navy Maritime Maintenance Enterprise Solution (NMMES) and reported under Project 2904 of PE 0605013N prior to FY19. The NMMES and NMMES-TR projects complement each other to provide both sustainment of the existing systems and the initial system design, development, and migration to a cloud-based commercial solution. Both programs are essential to build the integrated environment so the existing applications can transition to the follow-on technical refresh replacement solution.

A. Mission Description and Budget Item Justification

The NMMES-TR is an Information Technology (IT) acquisition program that will provide a sustainable enterprise IT solution leveraging Commercial, Off-The-Shelf (COTS) technology and business processes for shore maritime maintenance. Unlike the uniquely custom designed status quo toolset, the NMMES-TR solution will not implement extensive product customization to match the current maintenance business processes; but rather, maintenance business processes will be modified to match the software solution, thereby adopting industry best practices. Accordingly, the solution will be more flexible to the BPR process, and more agile to capitalize on efficiency improvement opportunities and innovations. This will facilitate alignment with the Optimized Fleet Response Plan (OFRP) by assisting the maintenance activities with accomplishing assigned tasks as planned in order that submarines, aircraft carriers, and surface ships can properly train and deploy on schedule. NMMES-TR will also provide a modern solution that will be more effective and efficient in combating cybersecurity threats, and capable of continuous monitoring.

The NMMES-TR initiative has been a pre-acquisition Defense Business System (DBS) effort for the past three years funded Line Item 0605013N, Project Number 2904. In April 2017, the Department approved the NMMES-TR initiative to commence as an acquisition program, resulting in the establishment of a new Project Number 3432 beginning in FY19.

In FY18, the program began working toward the award of a System Integrator contract. Major milestones in FY18 include completion of Gates 3 and 4. Gate 5 is scheduled for Q2 FY19 to be followed by an Acquisition Authority to Proceed to release the Request for Proposal. The program office also conducted a review of the schedule in response to the 19 month schedule risk identified by NCCA during the Gate 4 Cost Review Board (CRB) and formalized in the approved Component Cost Position (CCP) dated 12 Apr 2018. After careful review of the scheduled activities, the timeline for Increment 1 and the total program were increased by a combined total of 14 months to mitigate the stated risk.

The FY19 funding increase reflects a risk reduction effort to award a contract to provide a Cloud-based Capability Integration Platform (CIP) environment similar to what will be used to integrate core NMMES financial management, human capital management, digital shipbuilding environment, and the cloud-based COTS solution that provides the Maintenance, Repair and Overhaul (MRO) and Portfolio and Project Management (PPM) functionality in support of the Shore Maritime Maintenance community mission. Additionally, FY19 supports higher levels of effort associated with inherently Governmental efforts (i.e. contracting, acquisition planning & source

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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selection, financial and business management, engineering, testing, logistics, etc.), and Contractor Support Services (i.e. systems engineering, organizational change management, logistics, deployment support, training, etc.). These activities support the award of the System Integrator contract planned for Q2 FY20 following a competitive source selection.

The FY20 funding increase reflects the award of a single prime System Integrator contract and a MAC award for all commercial items including cloud hosting, integration environment layers, business applications, and other commercial items during Q2. The SI and the MAC vendors will begin the requirements and design review of the NMMES-TR solution to support a Critical Design Review scheduled for FY21 Q1.

The NMMES-TR program office is staffed by government personnel from NAVSEA and SPAWAR SYSCOMS and their supporting Warfare/Systems Centers on a reimbursable basis. Based on a cross-SYSCOM Operating Agreement, the FY19 budget includes funding for inherently governmental efforts in the following functional areas:
a. SPAWAR HQ: Contracting, Legal, Engineering and Cybersecurity
b. SPAWAR Systems Center Atlantic: Engineering and Acquisition
c. NWSC Dahlgren Division: Program Cost Estimating and Analysis
d. Naval Sea Logistics Center (NSLC): Acquisition, Financial and Business Management, Testing and Logistics

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Systems Integration and MRO/PPM Solution	0.000	33.049	77.351	0.000	77.351
Articles:	-	-	-	-	-
FY 2019 Plans: The NMMES-TR initiative has been a pre-acquisition Defense Business System (DBS) effort for the past three years funded by Line Item 0605013N, Project Number 2904. In April 2017, the Department approved the NMMES-TR initiative to commence as an acquisition program, resulting in the establishment of a new Project Number 3432 beginning in FY19. On 10 Jun 2018, the USD A&S designated the NMMES-TR as a BCAT 1 DBS program to the DON. NMMES-TR will be formally baselined as a BCAT I Program of Record as of Gate 6 planned for FY20 Q2, therefore FY19 efforts continue to support the initial acquisition planning and the standup of the risk reduction project to develop a commercial cloud prototype environment for the NMMES-TR program. These preparatory efforts in FY19 support a full and open competition for a System Integrator (SI) and Multiple Award Contract (MAC) for commercial items scheduled for award in FY20 Q2. Additional FY19 efforts include fully staffing the program office and establishing the Community of Practice with the shipyards, regional maintenance centers, Trident refit and ship repair facilities.					
FY 2020 Base Plans: Upon successful completion of the Gate 6 Review, the NMMES-TR program will conclude pre-acquisition designation preparatory efforts. The NMMES-TR PMO will then award a single prime System Integrator contract					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
and a MAC award for all commercial items including cloud hosting, integration environment layers, business applications, and other commercial items during Q2. The SI and the MAC vendors will begin the requirements and design review of the NMMES-TR solution to support a Critical Design Review scheduled for FY21 Q1. These activities will substantially increase the level of effort to design the system solution and conduct prototype demonstrations. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The $44.302M increase from FY19 to FY20 reflects the award a single prime System Integrator contract and a MAC award for all commercial items including cloud hosting, integration environment layers, business applications, and other commercial items during Q2. The SI and the MAC vendors will begin the requirements and design review of the NMMES-TR solution to support a Critical Design Review scheduled for FY21 Q1.					
Accomplishments/Planned Programs Subtotals	0.000	33.049	77.351	0.000	77.351

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Based on the results of the Analysis of Alternatives completed in FY17, NMMES-TR will acquire cloud hosted COTS applications using an incremental approach based on the required functionality for the shore maritime maintenance community. This program will integrate the following Mission Tasks; Maintenance, Repair and Overhaul (MRO), Project and Portfolio Management, Supply Chain Management, Environmental Safety and Occupational Health (ESOH) and Data Analytics. The program will use a third-party Systems Integrator to integrate existing legacy systems with cloud hosted COTS applications that will be deployed to the Navy's Regional Maintenance Centers, public naval shipyards, ship repair facilities, and other maintenance activities. The incremental approach provides off ramps in the event that not all functionality can be delivered within the cost/schedule/performance constraints of the program.

E. Performance Metrics

SPM 1.0 OPERATIONAL AVAILABILITY:
Operational availability is defined as the percentage of time that NMMES-TR is operationally capable of performing an assigned mission. The operational availability SPM measures the degree to which a system can be supported both in terms of its inherent design characteristics of reliability, availability, maintainability, and operational effectiveness, and the efficacy of the various elements of product support, tools, and training. NMMES-TR will provide a supportable framework with a direct focus on COTS.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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SPM 1.1 Reliability - Reliability represents the probability the system will operate without failure over a specified period of time. Reliability accounts for Unscheduled Maintenance.

Mission Critical Functions Threshold
99.5% at LD ATP
99.9% at FD ATP

Mission Critical Functions Objective
97.8% At LD ATP
99.9% at FD ATP

SPM 1.2 Availability - This represents the ability of an end user to access and use the service provided by the system. A Consumer Facing availability requirement is a promise to consumers that they will be able to use the service a certain percentage of time. Availability downtime includes both scheduled and unscheduled maintenance. NMMES-TR must be operationally available to support the maritime maintenance mission.

Mission Critical Functions Threshold
AO > 86.2% at LD ATP
AO > 96.6% at FD ATP

Mission Critical Functions Objective
AO > 98.3% at LD ATP
AO > 99.3% at FD ATP

SPM 1.3 Maintainability - The system's ability to be retained in, or restored to, a specified condition when maintenance is performed by personnel with a specified skill, using prescribed procedures and resources, and at each prescribed level of maintenance and repair. Mean time to repair (MTTR) is a basic technical measure of maintainability. The service may be made unavailable for scheduled maintenance, as long as schedule maintenance intervals last no longer than four hours and occur no more frequently than once per month.

Mission Critical Functions Threshold
MTTR < or equal to 6 hrs at LD ATP
MTTR < or equal to 2 hrs at FD ATP

Mission Critical Functions Objective
MTTR < or equal to 4 hrs at LD ATP

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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MTTR < or equal to 1 hrs at FD ATP

SPM 2.0 SCALABILITY:
Scalability is defined as the capability of a system, network, or process to handle a growing amount of work or its potential to enlarge to accommodate growth. NMMES-TR must be able to support enterprise level usage above 51,000 users worldwide with 25,000 concurrent users. NMMES-TR will also provide scheduling, monitoring, and tracking (SMT) of an upwards of 300,000 individual tasks within a single project for a single site (public NSY or RMC). The dynamic usage solutions will also have the capacity to scale down based on user demand, reducing system resource demand when the high volume is not required. Elastic provisioning and service management targets real end users and mission needs for functionality as the services evolve over time.

SPM 2.1 Dynamic Users - NMMES-TR must be able to support enterprise level usage of at least 51,000 users NMMES-TR must be designed to support user growth.

User Accounts Threshold
> 10,000 at LD ATP
> 51,000 at FD ATP

User Accounts Objective
> 20,000 at LD ATP
> 55,000 at FD ATP

SPM 2.2 Concurrent Users - NMMES-TR must support concurrent users without degradation in System Response Time.

Threshold: > 50% of total users
Objective: > 75% of total users

SPM 2.3 Resources/Project SMT Capacity - NMMES-TR must support scheduling and critical chain project management tracking of at least 300,000 individual tasks within a single project for a single site (public NSY or RMC). NMMES-TR must be capable of providing a 50% surge in the level of user accounts.

Project Tasks Threshold
> 75,000 Activity Tasks per Project at LD ATP and > or equal to 100,000 Activity Tasks per Project at FD ATP
> 150,000 Detail Level Tasks per Project at LD ATP and > or equal to 400,000 Detail Level Tasks per Project at FD ATP
> or equal to 75% Surge Capacity in Level of User Growth at LD ATP and FD ATP

Project Tasks Objective
> or equal to 100,000 Activity Tasks per Project at LD ATP and FD ATP
> or equal to 400,000 Detail level Tasks per Project at LD ATP and FD ATP

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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> or equal to 75% Surge capacity in Level of User Growth at LD ATP and FD ATP

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3432 / *NMMES-TR*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Risk Reduction Prototype	SS/CPFF	TBD : Not Specified	0.000	0.000		17.350	May 2019	4.551	May 2020	-		4.551	Continuing	Continuing	Continuing
Systems Integrator	C/IDIQ	TBD : Not Specified	0.000	0.000		0.000		38.600	Mar 2020	-		38.600	0.000	38.600	-
Applications & Commercial Items	C/IDIQ	TBD : Not Specified	0.000	0.000		0.000		15.600	May 2020	-		15.600	0.000	15.600	-
Risk Reduction Pilot	C/CPFF	Kapsuum : WNY	0.000	0.000		2.500	Sep 2019	2.600	Sep 2020	-		2.600	0.000	5.100	-
		Subtotal	0.000	0.000		19.850		61.351		-		61.351	Continuing	Continuing	N/A

Remarks

Growth in FY20 product development support activities include the configuration and integration of cloud hosted COTS applications with NMMES legacy systems migration to a cloud hosted environment. Specific tasks include the Capability Integration Platform, the Maintenance Repair and Overhaul (RMO) solution for the Regional Maintenance Centers (RMCs) and Naval Shipyards, Supply Chain Management, Data Analytics and Business Intelligence, Asset Management, ESOH, Laboratory Management, and the Technical Refresh of the MRO Work Brokering and Requirements Management system.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO Support	Various	Various : WNY & Norfolk	0.000	0.000		9.900	Mar 2019	10.000	Jun 2020	-		10.000	Continuing	Continuing	Continuing
Community of Practice	WR	Various : Various	0.000	0.000		3.299	Mar 2019	6.000	Mar 2020	-		6.000	0.000	9.299	-
		Subtotal	0.000	0.000		13.199		16.000		-		16.000	Continuing	Continuing	N/A

Remarks

Funding supports the Program Management Office contractors and the establishment of the Community of Practice with the shipyards, regional maintenance centers, Trident refit and ship repair facilities.

	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		33.049		77.351		-		77.351	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
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	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

The increase from FY19 to FY20 coincides with the NMMES-TR program concluding pre-acquisition designation preparatory efforts and the award a single prime System Integrator (SI) contract and a MAC award for all commercial items including cloud hosting, integration environment layers, business applications, and other commercial items during FY20 Q2. The SI and the MAC vendors will begin the requirements and design review of the NMMES-TR solution to support a Critical Design Review scheduled for FY21 Q4. These activities will substantially increase the level of effort to design the system solution and conduct prototype demonstrations.

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
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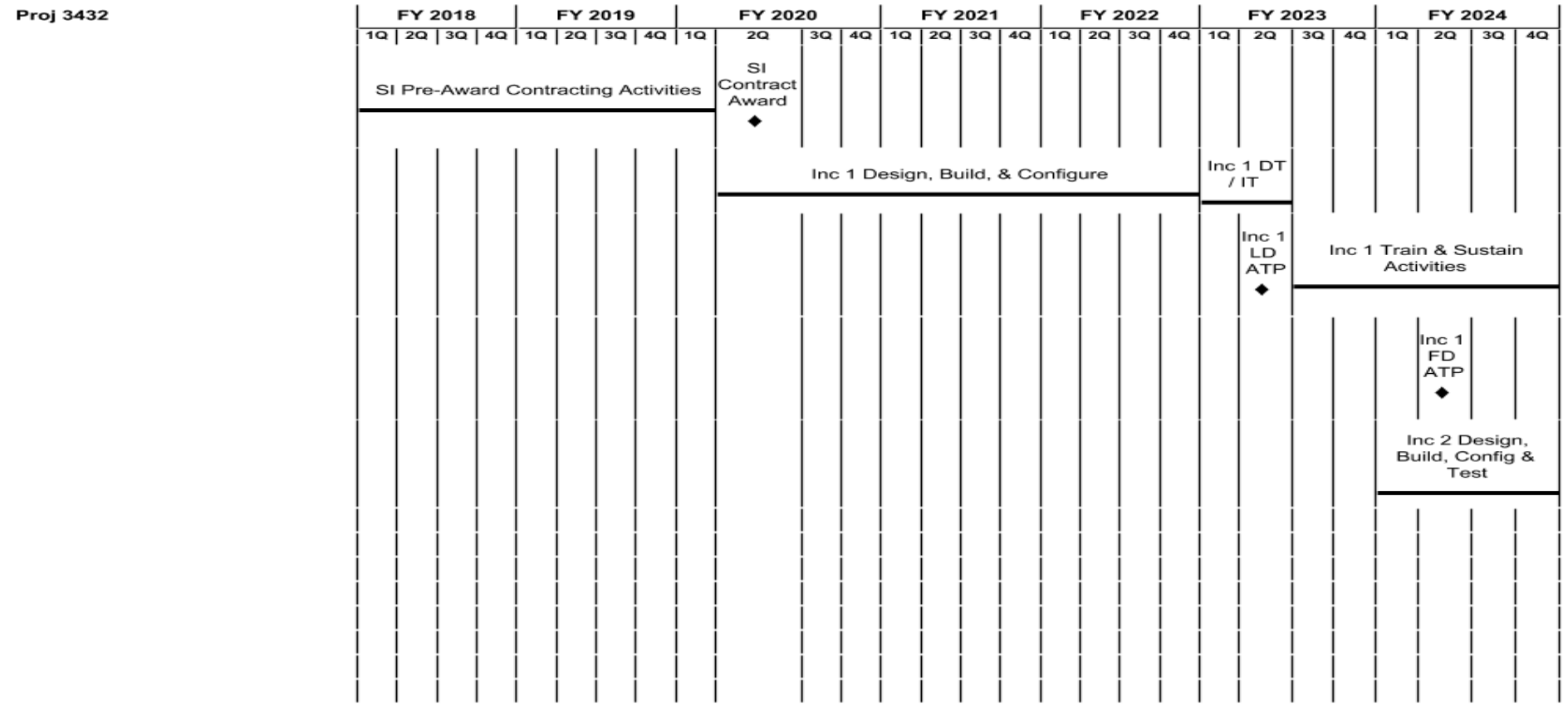

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Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3432				
Systems Integrator Pre-Award Contracting Activities	1	2018	1	2020
Systems Integrator Contract Award	2	2020	2	2020
Increment 1 - MRO & PPM Design, Build, & Configure	2	2020	4	2022
Increment 1 - MRO & PPM Developmental Test / Integrated Test	1	2023	2	2023
Increment 1 - MRO & PPM Limited Deployment ATP	2	2023	2	2023
Increment 1 - MRO & PPM Training & Sustainment	3	2023	4	2024
Increment 1 - MRO & PPM Full Deployment ATP	2	2024	2	2024
Increment 2 - SCM, ESOH & Data Analytics Build, Configure & Test	1	2024	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / *Information Technology Development*	Project (Number/Name) 3784 / *Judge Advocate General (JAG) Enterprise System*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
3784: *Judge Advocate General (JAG) Enterprise System*	0.000	0.000	0.000	1.100	-	1.100	0.000	0.000	0.000	0.000	0.000	1.100
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

This project is a new Start in FY2020 for one-time cost to purchase and configure system for JAG.

A. Mission Description and Budget Item Justification

The Judge Advocate General (JAG) will migrate all current JAG Enterprise System (JES) modules to Microsoft Azure Services and Dynamics 365 as Software as a Service (SaaS) in a DoD-approved Commercial Cloud environment. JAG/Naval Legal Service Command (NLSC) currently has one hosted business system named the JAG Enterprise System (JES.) The JES hardware and virtual servers are hosted in the Navy Criminal Investigative Service (NCIS) data center on Quantico, VA. The hardware servers are at end of life and require replacement or virtualization, the software is outdated and requires upgrading, and NCIS requires that JAG seek another hosting platform outside of the NCIS datacenter by 2020. The office of the Judge Advocate General adjudicates a large volume of Claims, Reports and other pertinent Legal documentation which needs to be maintained and accessed quickly.

The JES replacement solution will modernize and automate six crucial functions of the JAG/NLSC organizations:

1. Tort Claims (including Admiralty)
2. Medical Claims
3. Personal & Property Claims
4. Investigations
5. JAG Recruiting and Accessions
6. Legal Assistance

Detailed module information and their function

1) The Claims and Investigations Module: The Claims and Tort Litigation Division (Code 15) has worldwide responsibility for processing different types of claims under various statutes and regulations. Code 15 utilizes JES to process approximately 45,000 claims each year, with claims paid and recovered totaling $60-$70 million. Code 15 is also the custodian and designated release authority for all command investigations convened pursuant to Chapter II of the Manual of the Judge Advocate General conducted prior to December 1995, and all litigation report investigations. These records are all stored in JES. Code 15 is not the custodian or release authority for command investigations convened after December 1995 nor investigations involving breaches of classified information or information security regulations maintained by the Chief of Naval Operations.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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2) The Recruiting and Accessions Module: Military Personnel (Code 61) utilizes JES to evaluate applicant qualifications for selection to participate in the Judge Advocate General Corps (JAGC); to evaluate applicant performance in the JAGC internship/externship program; to evaluate and improve the JAGC application and selection process; to conduct statistical analysis for internal management purposes; to manage the officers of the JAGC since the Judge Advocate General is statutorily required to make a recommendation on the assignment of all active-duty JAGC officers; to determine qualifications of an officer to receive a JAGC designation and to be certified as a trial or defense counsel; to determine the rotation dates and release from active-duty dates of JAGC officers, as well as the date new officers will be available for duty; to prepare JAGC strength plans for submission to the Office of the Chief of Naval Operations; and to obtain an officer's preference for duty assignment, as well as eligibility for consideration for postgraduate education and overseas assignments. Certain information is promulgated to all active-duty JAGC officers in an annual publication known as the Directory of Navy Judge Advocates. The information is promulgated in the directory for general informational purposes within the JAGC, including provision of position (billet) availability information to officers contemplating rotation.

3) The Legal Assistance Module: Formerly embedded in the Court Martial Tracking and Information System (CMTIS), this module enables Legal Assistance to track the time attorneys and support staff spend on the legal services they provide. It also provides Legal Assistance the ability to conduct client conflict checks before providing their services. The remaining data in CMTIS will be archived to provide historical data and is not part of the scope.

Microsoft Azure Services, Dynamics 365 and PowerBI as Software as a Service (SaaS) would be utilized to replace the functionality found in the JAG Enterprise System (JES) currently hosted in the NCIS Data Center on Quantico, VA. The migration of JES will eliminate the need to maintain the physical and virtual server environment that JES currently operates on. Dynamics 365's strong out-of-the-box case management capabilities and client management capabilities gives JAG an opportunity to modernize business processes. JAG estimates that Dynamics 365 and PowerBI will be able to support 85% of the requirements with out-of-the box functionality and configuration alone. Minimal customization should be required. Replacing JES with a Dynamics 365 and PowerBI based solution will not only improve JAG's operational efficiency, insights, and agility, but will also provide an integrated, agile, and highly secure platform for future military justice capabilities.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Judge Advocate General (JAG) Enterprise System	0.000	0.000	1.100	0.000	1.100
Articles:	-	-	-	-	-
FY 2019 Plans: N/A					
FY 2020 Base Plans: New Start. - JAG/NLSC plans to migrate to the Microsoft Cloud environment. - JAG/NLSC plans to contract out the configuration changes with an authorized vendor in coordination with an authorized Cloud Service provider to migrate all existing JES modules, framed by the stakeholder requirements					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
information, to a new Software as a Service (SaaS) environment and all functionality currently in JES expanded and enhanced. - JAG/NLSC plans to to prepare, document and implement all security controls necessary for Navy Risk Management Framework (RMF) certification based on the RMF utilizing in-house and contracted Cybersecurity services. Since many of the RMF controls can be inherited from the cloud vendor in the DoD environment, expect the support need in this realm to be significantly smaller than in our current on-premises hosting environment. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** New Start, one-time cost to purchase and configure system for the JAG.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	1.100	0.000	1.100

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

Performance metrics will be based on the progress of agile development until completion of all activities listed in the Statement of Objectives (SOO). The data below lists the estimated time required to develop and deliver each module in the new cloud environment. The estimates are based on industry and vendor research based on our requirements. Each timeframe encompasses development, testing, and user acceptance. Development is driven in weekly sprints with weekly summary meetings held at the end of each week with the Contract Officer Representative (COR). Parallel development will be utilized when possible. The reporting of these metrics will be required in the SOO and will be measured by the COR.

Activity Name Estimated Duration
Tort Claims (including Admiralty) 9 Weeks
Medical Claims 7 Weeks
Personal & Property Claims 5 Weeks
Investigations 7 Weeks

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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Recruiting 7 Weeks
Legal Assistance 4 Weeks

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/FFP	Microsoft : Washington, DC	0.000	0.000		0.000		1.100	Dec 2019	-		1.100	0.000	1.100	-
		Subtotal	0.000	0.000		0.000		1.100		-		1.100	0.000	1.100	N/A

Remarks

Migration of existing data center system to Software as a Service (SaaS) in a Navy approved cloud environment.

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		0.000		1.100		-		1.100	0.000	1.100	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3784 / *Judge Advocate General (JAG) Enterprise System*

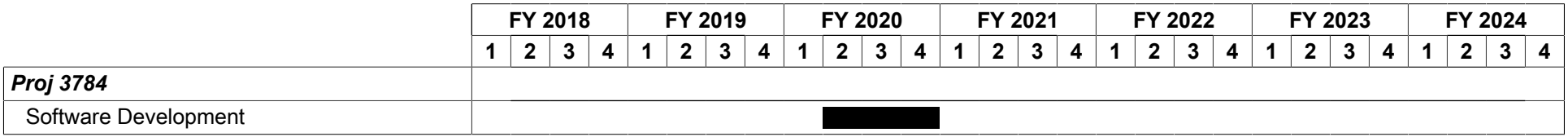

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3784 / *Judge Advocate General (JAG) Enterprise System*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3784				
Software Development	2	2020	4	2020

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy											Date: March 2019	
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605013N / *Information Technology Development*				Project (Number/Name) 9406 / *Maintenance Data Warehouse*			
COST ($ in Millions)	**Prior Years**	**FY 2018**	**FY 2019**	**FY 2020 Base**	**FY 2020 OCO**	**FY 2020 Total**	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**	**Cost To Complete**	**Total Cost**
9406: *Maintenance Data Warehouse*	48.603	4.338	26.502	43.797	-	43.797	40.418	16.285	22.845	23.300	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Maintenance Data Warehouse funds the Naval Aviation Enterprise (NAE) Sustainment Vision (SV) 2020 digital transformation which is a critical component of improving readiness. It will be executed in a fully agile manner providing continuous fleet readiness improvements across the FYDP. The initial SV 2020 configuration will be supported with an agile Minimal Viable Product (MVP) as the foundation for continuous capability introduction. The Aviation Logistics Environment (ALE) will provide the seamless environment to support the integration of the other capabilities developed in Maintenance Data Warehouse.

Aviation Data Warehouse/Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE) program is the next generation data warehouse containing over 30 years of aircraft maintenance, flight, components, and usage data. Through the use of web-based, commercial off the shelf software for data load, analysis, query, and reporting tools, the user has the capabilities to effectively obtain readiness data in a near real-time environment, as well as providing historical data for long range planning, trend and records analysis, records reconstruction, and compliance with technical directives. DECKPLATE supports the mission of the warfighter who requires a single source of near real-time aviation data in which to base critical readiness decisions. DECKPLATE collects data from authoritative sources, such as the fleet maintenance systems, into a data warehouse. Because the warfighter only needs to access one database, the time consuming task of collecting various pieces of data from various sources will be reduced and ultimately eliminated. This also accomplishes a reduction in legacy systems mandated by Office of the Chief of Naval Operations. DECKPLATE manages total inventory for two major categories of assets, Aircraft (General Equipment) and Engine/Propulsion Systems/Modules (EPSMs) (Operating Materials & Supply). DECKPLATE is comprised of the transactional Aircraft Inventory and Readiness Reporting (DECK-AIRRS) and the Engine Transaction Reporting (DECK-ETR) subsystems which provide the complete lifecycle for aircraft and Engine/ Propulsion System/Modules (EPSMs). DECKPLATE has been identified as a level 1 financial feeder system due to the value of the aircraft and EPSM's managed in the system, and continues to respond to audit compliance and Cyber Security mandates. DECKPLATE is a core feeder system to numerous NAVAIR efforts.

Condition Based Maintenance Plus (CBM+) solution is an initiative which provides Naval Aviation Enterprise with common enabling capabilities which deliver timely data-driven, decisional information to optimize aircraft availability and materiel readiness by incorporating health and usage leading indicators into the failure mode mitigation process, enabling the Warfighter to more efficiently meet mission requirements through automated analysis and decision making processes. The CBM+ initiative increases readiness through streamlined maintenance processes which provide the sustainment base with timely, actionable logistics/engineering data and integrated analytics not previously available, enabling engineers and acquisition professionals to support system improvements based on CBM+ acquired data and analytic results. CBM+ provides the enabling infrastructure and storage solutions within an Enterprise common environment needed to store and analyze weapon system sensor data to extend the life of current and new acquisition aircraft, realizing savings from reductions in field (organizational and intermediate) maintenance actions, reduced functional check flight hours, mishap mitigation, and reduced parts usage.

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

The Aviation Logistics Environment (ALE) program is the Naval Aviation Information Technology (IT) solution to deliver full lifecycle weapon system logistics and maintenance capabilities to the functional Naval Aviation Support Process (NASP). ALE will provide a seamless digital environment that will improve readiness and provide for reduced system development, testing, deployment, and sustainment costs, as well as reduced cyber risk due to lower number of IT systems and ability to address capability gaps via an integrated technology schedule. It will deliver these capabilities via a net centric, shared data environment that supports shore based, afloat, and expeditionary operations. The ALE integrates IT services plane-side and interfaces with infrastructure systems where necessary. ALE is a global logistics enterprise solution and a part of the total enterprise solution architecture. ALE is designed to structure IT services with the ability to connect with other parts of the enterprise solution set, thus enabling an interoperable end-to-end business process. ALE consolidates Naval Aviation data into an integrated data environment for high level analysis. ALE will integrate, organize, and develop an underlying infrastructure and analytical capacity across the NASP in order to generate a holistic timely picture of readiness and condition for all T/M/S. ALE will be providing modern Product Lifecycle Management (PLM), Decision Support (Predictive Analytics), Planeside Interfacing, and the Enterprise Infrastructure to support the NAE. The ALE program is a "system of systems" that will provide a common, integrated data environment that will enable NAE Vision 2020 data transparency across the Naval Aviation Enterprise; end-to-end process view to enable both consuming and providing on-demand information to stakeholders; a capability to view "digital twins" of all T/M/S for both allowable and as- configured states; a consolidation of aging, near-end-of-life systems and applications to modern technology and cost efficient support infrastructures; consistent and accurate weapons systems technical and Computer Aided Design (CAD) engineering documentation to support additive manufacturing capabilities; standardized metrics, algorithms, and business analysis tools; an architecture that enables migration to the cloud; and alignment to Information Assurance (IA) and Cybersecurity standards, and Risk Management Framework (RMF) compliance.

Vector (formally Integrated Logistics Management System (ILSMS)) supports the development of a common logistics analytical application which uses a disciplined approach to Business Intelligence (BI) architecture by combining products, data, technology and methods aimed at key Naval Aviation Enterprise (NAE) business processes. Vector provides a single view of the data to focus on aircraft readiness, maintenance, supply, cost, and man-hours. Vector provides naval aviation with a common view of approved key performance metrics and the capability to perform multi-system analysis of Ready for Tasking (RFT)/Ready Basic Aircraft (RBA) Gap drivers, 'Top-Down' aircraft systems analysis down to the component level. Vector identifies system performance trends early to mitigate future readiness and cost impacts to the fleet.

Dynamic Scheduling optimizes aircraft (BuNo specific), engine and component maintenance through task sequencing based on reliability and failure data, and asset utilization vice calendar directed maintenance. Dynamic Scheduling will have insight to demand across the NAE and can affect maintenance across all levels of maintenance. Dynamic Scheduling IT system capability will interface with authoritative source systems providing and consuming operational demand, man power, training, supply and others. Near term Dynamic Scheduling capability is planned for NALCOMIS OOMA and future state DS capability is planned for NAMS implementation. Both material and non-material changes implemented along with the DS IT system will provide capability that overcomes the challenges faced by the as-is state to include:

.Advanced scheduling capabilities interfaced with current future MRO system to enable system assisted scheduling, optimization and opportunistic maintenance.
.Insight and the ability to collaborate and affect schedules across all levels of maintenance and MRO systems.
.Capture and analysis of RCM mitigations strategies with the ability to quickly implement changes to maintenance tasks and periodicities.
.The ability to package Technical Manuals for serial number specific, scheduled event tasks at the point of maintenance.
.The ability to provide additional point of maintenance technical data and support to enable the maintainer of the future.

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Optimized Scheduled Maintenance and Dynamic Scheduling IT system capabilities will contribute to the reduction of MMHs and increase in operational availability objectives by positively affecting the efficiency of maintenance at the O, I & D-Levels of maintenance across the NAE. Future state OSM IT system capability may be provided by the Aviation Logistics Environment (ALE)/Product Lifecycle Management (PLM) solutions. Dynamic Scheduling IT capability is schedule to be developed as an interface to NALCOMIS OOMA . Future state version of Dynamic Scheduling IT capability will interoperate with Naval Aviation Maintenance System (NAMS) and other future state system such as Naval Data Repository (NDR), ALE/PLM, and Navy Depot Management System (NDMS).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Title: Aviation Data Warehouse/Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE)	1.537	1.971	4.190	0.000	4.190
Articles:	-	-	-	-	-
FY 2019 Plans: Develop additional financial management requirements for the DECKPLATE financial feeder systems, Engine Management and Aircraft Inventory Readiness and Reporting System (AIRRS), required as a result of ongoing audit assessments. Data aggregation capabilities and data source integration will be developed between DECKPLATE and Vector to streamline data timeliness for NAE Business Intelligence and Data Analytics. These capabilities will improve the Naval Aviation Enterprise's ability to perform readiness analysis. Development will continue for the DECKPLATE Auto-Log set Phase II capabilities, which has the objective of providing improved algorithms, reduced data duplication, and extension of the life limits for aircraft components.					
FY 2020 Base Plans: Continue development of additional financial management requirements for the DECKPLATE financial feeder subsystems, Engine Management and Aircraft Inventory Readiness and Reporting System (AIRRS), required as a result of ongoing audits; development of anticipated use cases for blockchain technologies to enable improved audit compliance for multiple transactional equipment inventory and other feeder systems. Continue development and enhancements as a result of Naval Aviation Maintenance Program policy changes and emerging fleet requirements. Develop and integrate Joint Strike Fighter Automated Logistics Information System (ALIS) data into the aviation data warehouse. Data mapping, integration, and implementation plans will begin for the Naval Aviation Maintenance System (NAMS), the replacement for legacy Naval Aviation Logistics Command Management Information Systems (NALCOMIS). Modernize existing software to be maintained as part of the future enterprise suite of data warehousing and analytics tools. Integration and capability enablement will continue with other key NAVAIR Defense Business Systems and initiatives, including Joint Technical Data Integration (JTDI), Configuration Management System (CMS), Joint Engineering Data Management					

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Information & Control System (JEDMICS), Aviation Logistics Environment (ALE), Dynamic Scheduling in support of NAVAIR's Digital Transformation and Vision 2020 Initiatives ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The $2.219M increase will include solidifying data warehousing requirements for the and begin analytic initiatives as required for Vision 2020. DECKPLATE will begin development of the base Naval Data Repository capabilities which need to be developed in order to support these programs. Data mapping, integration, and implementation plans will begin for the Naval Aviation Maintenance System (NAMS).					
Title: Aviation Logistics Environment (ALE)	0.000	20.500	32.985	0.000	32.985
Articles:	-	-	-	-	-
FY 2019 Plans: The program was provided FY 2018 funding for Vision 2020 in support of Aviation Logistics Environment (ALE) in order to meet the FY 2019 demands. The ALE program was able to accomplish document preparation, acquisition strategy for contracting, and initial base lining of the requirements documents. Initiation of the common ground station prototype for various T/M/S commenced along with the Product Lifecycle Management (PLM) for ALE modernization as the solution set to support the NAE and additive manufacturing in FY19. FY19 efforts will be solidifying requirements, development of documentation to support the Naval Aviation Enterprise (NAE) and Vision 2020, and prototyping the base capabilities to support the Vision 2020 program schedule. The Aviation Logistics Environment (ALE) program will start modernizing existing software that will be maintained as part of the enterprise set of tools. ALE will be supporting the Digital Warfare Office (DWO) readiness initiatives by beginning the development of necessary IT tools, processes, and a common ground station. ALE will begin the development of an integrated data environment, and the determination of a Product Lifecycle Management solution set to support the NAE and additive manufacturing. ***FY 2020 Base Plans:*** The ALE program will continue to modernize existing software by developing automated workflows, integrating aviation platform content, and initiating legacy system transitions into the NAVAIR Product Lifecycle Management (PLM) solution for NAVAIR IT products. ALE has 35 systems that will be transitioned into the					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
aviation PLM solution and will continue to build the Enterprise Service Bus (ESB) connectors, continue user acceptance testing of the common ground station and determine requirements for the use by other T/M/S. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The $12.485M ALE increase due to developing automated workflows, integrating aviation platform content, and initiating legacy system transitions into the NAVAIR Product Lifecycle Management (PLM) solution , and continuing to build Enterprise Service Bus (ESB) connectors.					
Title: Dynamic Scheduling	0.000	0.000	3.238	0.000	3.238
Articles:	-	-	-	-	-
FY 2019 Plans: N/A ***FY 2020 Base Plans:*** Build the initial configuration of Dynamic Scheduling to support SV 2020. Begin working on the task decomposition baseline required for platform integration. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:*** The $3.238M increase is to build the initial configuration of Dynamic Scheduling capability and begin the complex task decomposition required for platform integration.					
Title: Condition Based Maintenance Plus (CBM+)	2.801	4.031	1.048	0.000	1.048
Articles:	-	-	-	-	-
FY 2019 Plans: Continue expansion of CBM+ Standard Data Repository (based on the Hadoop Distributed File System) in production to accommodate and make accessible all BIT/Parametric/Mechanical/Diagnostics data across all NAVAIR smart weapon system platforms, and continue evolving advanced analytic and Business Intelligence tools within the Enterprise Common CBM+ Environment (Ozone Widget Framework). Integration and enhancement efforts include scaling and widget enablement of Data Miner, Active Reporting Client (ARC), Mechanical Diagnostics Analysis Tool Navy (MDAN), and Regime Recognition analytic tools with the common					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
storage and analytics environment. Integration of the environment's best of breed analytical tools will continue per the annual CBM+ Engineering Analysis Tool consolidation and reuse plan, including the migration of Regime Recognition from Oracle to Hadoop, further enabling the large scale storage and analytics environment. Further enable NAVAIRs Core Data Science IPT with massively large scale advanced Statistical Analysis capabilities (COTS and GOTS), standing up MatLab, Python, R, and Anaconda for integrated advanced analytics sandbox capability for rapid algorithm development, testing and fielding, while enabling select Organizational Level Maintenance activities at New River with a wireless infrastructure foundation tier using standard applications for configuration management and smart aircraft data movement, enabling integrated technologies in support of plane side maintenance and sensor data collection and movement to improve the on-weapon system maintenance process. ***FY 2020 Base Plans:*** Integrate and transition CBM+ Standard Data Repository (SDR) and Analytic Tool Suite with Naval Aviation Data Warehouse (DECKPLATE) and Joint Technical Data Integration (JTDI) Defense Business Systems in test and production environments making all weapon system and supporting maintenance data remotely accessible and transportable across the Enterprise within a comprehensive Integrated Data Environment. Further enablement of best of breed Business Intelligence and Advanced Analytic tools within the Enterprise Common CBM+ Environment (Ozone Widget Framework) will continue at the Enterprise Level, while enabling comparable capabilities at edge locations ashore and afloat using NAVAIR Fleet System Array (NFSA) infrastructure and analytics hosting environment. GOTS / COTS / Open source integration and enhancement efforts will continue for established widgets (Data Miner, Active Reporting Client (ARC), Mechanical Diagnostics Analysis Tool Navy (MDAN), and Regime Recognition, Zoom Data, Anaconda (Python / R), Zeppelin, and other analytic tools) within the common storage and analytics environment. Enhancements to the environment's best of breed analytical tools and will continue with focus on serial number tracking and supporting transactional system reconciliation by integrating Configuration Management System (CMS) capabilities with the CBM+ enabled data platform and integrated analytics within the common data and analytics environment. Complete appropriate migrations of CBM+ applications to containerized architecture to improve scalability of analytic sandbox environments supporting Engineering and Data Science community use cases to access data and integrated analytics at scale. ***FY 2020 OCO Plans:*** N/A ***FY 2019 to FY 2020 Increase/Decrease Statement:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
The $2.983M decrease reduces the Development efforts for the Future Readiness Cross-Functional Team (FR-CFT) CBM+ Initiative established IT products, including the Standard Data Repository (SDR) and Analytic Tool Suite will be transitioned to the Joint Technical Data Integration (JTDI) and Naval Aviation Data Warehouse (DECKPLATE), and Configuration Management System (CMS) Defense Business Systems in test and production environments for continued enhancements to maintain timely and remote access to all weapon system and supporting maintenance data, while enabling bidirectional transport capabilities from the warfighting edge across the Enterprise within a comprehensive Integrated Data Environment.					
Title: Vector	0.000	0.000	2.336	0.000	2.336
Articles:	-	-	-	-	-
FY 2019 Plans: N/A					
FY 2020 Base Plans: Continued development of additional Vector capabilities to satisfy requirements of Naval Aviation Enterprise customers to include: Implementing Business Intelligence (BI) software capabilities selected as part of Analysis of Alternatives performed in FY19; complete NAVSUP Predictive Supply Digital Interface development and implementation; Continued development of Engine and Engine Components Readiness Module Phase Two; Consolidation and Integration of Aircraft Status Dashboard and Daily Maintenance Status into Vector; compliance with emerging Cyber Security policies; consolidation and automation of data sources between Decision Knowledge Programming for Logistics and Technical Evaluation (DECKPLATE), Naval Business Information System (NBIS), Defense Logistics Agency (DLA), and Navy Visibility and Management of Operating and Support Cost (VAMOSC) to support improved data accuracy, integrity, and availability; begin analysis and data mapping efforts for integration of the Naval Aviation Maintenance System (NAMS) data elements received through the DECKPLATE data feed into Vector.					
FY 2020 OCO Plans: N/A					
FY 2019 to FY 2020 Increase/Decrease Statement: The $2.336M increase will perform development of Vector analytics requirements for Vision 2020 initiatives and integration of Vector and best of breed CBM+ analytics into DECKPLATE, transitioning from current .net architecture to commercial Business Intelligence tools to support the future analytics platform and Enterprise Integrated Data Environment. DECKPLATE will be Integrated with the Joint Technical Data Integration (JTDI) Standard Data Repository (SDR) Data Platform providing seamless access and at scale analysis to all Naval					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total
Aviation weapon and IT system sensor, logs and maintenance related data. Begin the analysis of data mapping and new requirements of the Naval Aviation Maintenance System (NAMS).					
Accomplishments/Planned Programs Subtotals	4.338	26.502	43.797	0.000	43.797

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
• OPN/4268/DECKPLATE: *Other Aviation Support Equipment*	1.870	2.049	2.221	-	2.221	2.253	2.289	2.346	2.394	Continuing	Continuing
• OPN/4268/CBM: *Other Aviation Support Equipment*	0.199	0.216	0.286	-	0.286	0.291	0.298	0.303	0.309	Continuing	Continuing

Remarks

D. Acquisition Strategy

Aviation Data Warehouse/Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE) - Development services will be performed under a competitively awarded contract. The task order contains a matrix of tasks and required levels of performance. Follow on contracts will utilize the same competitive system. The services provided under the contract support acquisition will not encompass tasks inherently Governmental in nature. The Statement of Work includes a matrix that establishes the minimum acceptable performance standards.

Condition Based Maintenance Plus (CBM+) - Development will be provided using competitively awarded contracts coordinated via NAVAIR's Aviation Logistics Environment (ALE) Program Management and supporting Contract Business Office, and will contain a matrix of tasks and required levels of performance. Follow on Contracts will utilize the same competitive system. The Services provided under the contract support acquisition will not encompass tasks inherently Governmental in nature, and Statements of Work will include a matrix that establishes the minimum acceptable performance standards.

Aviation Logistics Environment (ALE)- Development services will be awarded using a competitively awarded contract that will contain a matrix of tasks and required levels of performance. Follow on contracts will also follow the same competitive system. The Services provided under the contract support acquisitions will not encompass tasks inherently Governmental in nature and the Statements of Work will include a matrix that establishes the minimum acceptable performance standards.

Vector Software - Software development will be performed under a competitively awarded Cyber Security (CS) Contract. Follow on Contracts will utilize the same competitive system. The Services provided under the contract support acquisitions will not encompass tasks inherently governmental in nature. The Statements of Work will include a matrix that establishes the minimum acceptable performance standards.

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Dynamic Scheduling - Development services will be awarded using a competitively awarded contract under the Seaport Contract System containing a matrix of tasks and required levels of performance. Follow on Contract will utilize the same competitive system. The Services provided under the contract support acquisition.

E. Performance Metrics

The following performance metrics apply to Aviation Data Warehouse/
Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE), Condition Based Maintenance (CBM+), Vector, Aviation Logistics Environment (ALE) and Dynamic Scheduling:

1. Metric - During the life of the contract verify conformance with agency specific information processing standards and functional requirements. Prior to delivery of enhanced software, demonstrate the operational capability of the system software. Standard - Functionality of the software to meet required systems architecture and processing capabilities. Max Deviation Allowed - All requirements mandated by law or regulation must be 100% compliant. Quality Assurance - Independent Verification and Validation (IV&V) for testing new releases of software to determine that previous functionality is maintained. Customer satisfaction as measured through limited validated customer complaints, feedback, and surveys.
2. Metric - Interfaces must maintain compatibility among system components in the operational environment. Standard - Service Levels for software: Throughput in terms of processing response time, number of transactions processed per second; volume of data processed over time. Compatibility with particular hardware and software within the existing processing environment. Functionality of software to meet required systems architecture and processing capabilities. Max Deviation Allowed - None. Quality Assurance - Customer satisfaction as measured through limited validated customer complaints, feedback and surveys. Operational monitoring by use of system statistics and logs. IV&V for testing new software, including verifying results to determine that requirements and specifications are met.
3. Metric - Documentation for deliverables must match the agency specific system processing and operational procedures. Standard - Documentation meets agency specific formats for accuracy and completeness. Max Deviation Allowed - None. Quality Assurance - IV&V for determining that documentation delivered by the contractor matches the system processing and operational procedures.
4. Metric - Meet delivery dates/milestones. Period of Performance will be 12 months from the date of award. Standard - Delivery dates are met, or exceeded. Max Deviation Allowed - None. Quality Assurance - 100% inspection.
5. Metric - Security. Standard - Meet all Government and agency specific requirements. Max Deviation Allowed - None. Quality Assurance - 100% inspection to ensure that all Government and Agency specific requirements have been met. Independent verification of security procedures defined by agency (could be performed by a third party, or another agency according to current security regulations and measures).
6. Metric - Enhancement to software shall not adversely affect system performance. Standard - Standards affecting system performance include but are not limited to: response time for resolving problems; central processing unit busy; response time; memory utilization; storage utilization. Max Deviation Allowed - Base line functionality is met at 100%. Non critical functionality is met at 95%. Quality Assurance - Operational monitoring by use of system statistics and logs.
7. Metric - New releases of software must maintain previously provided functionality, while providing enhanced capabilities, or systems corrections. Standard - Software adds value and improves existing functionality without negatively impacting the existing operational environment. Max Deviation Allowed - Base line functionality is met at 100%. Non critical functionality is met at 95%. Quality Assurance - Independent Verification and Validation for testing new releases of software to determine that previous functionality is improved. Customer satisfaction is measured through validated customer complaints and surveys.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy			Date: March 2019
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year Prod Def no longer funded in the FYDP	Various	Various : Various	16.255	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Software Development for Aviation Logistics Environment (ALE)	Various	Various : Various	0.000	0.000		17.800	Jul 2019	29.405	Feb 2020	-		29.405	Continuing	Continuing	Continuing
Software Development for Decision Knowledge Programming for Logistics Analysis and Technical Evalutaion (DECKPLATE)	C/CPFF	Spalding : Lexington Park, MD	5.670	0.547	Nov 2017	0.882	Nov 2018	3.054	Dec 2019	-		3.054	Continuing	Continuing	Continuing
Softare Development for Condition Based Maintenance Plus (CBM+)	C/CPFF	KRB Wyle : Patuxent River, MD	17.172	2.532	Nov 2017	3.511	Nov 2018	0.880	Dec 2019	-		0.880	Continuing	Continuing	Continuing
Software Development for Vector	C/CPFF	KRB Wyle : Patuxent River, MD	0.000	0.000		0.000		2.026	Dec 2019	-		2.026	Continuing	Continuing	Continuing
Software Development for Vector	C/CPFF	Spalding : Lexington Park, MD	0.000	0.000		0.000		0.125	Dec 2019	-		0.125	0.000	0.125	0.125
Software development for Dynamic Scheduling	Various	Various : Various	0.000	0.000		0.000		3.040	Jan 2020	-		3.040	Continuing	Continuing	Continuing
Software Development for Decision Knowledge Programming for Logistics Analysis and Technical Evalutaion (DECKPLATE)	C/CPFF	KRB Wyle : Patuxent River, MD	0.000	0.000		0.000		0.838	Dec 2019	-		0.838	0.000	0.838	0.838
Software Development for Aviation Logistics Environment (ALE)	C/CPFF	KRB Wyle : Patuxent River, MD	0.593	0.000		0.000		0.000		-		0.000	0.000	0.593	0.593
		Subtotal	39.690	3.079		22.193		39.368		-		39.368	Continuing	Continuing	N/A

Remarks

(1) The ALE program will continue to modernize existing software by developing automated workflows, integrating aviation platform content, and initiating legacy system transitions into the NAVAIR Product Lifecycle Management (PLM) solution for NAVAIR IT products. ALE has 35 systems that will be transitioned into the aviation PLM solution and will continue to build the Enterprise Service Bus (ESB) connectors, continue user acceptance testing of the common ground station and determine requirements for the use by other T/M/S.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(2) DECKPLATE increase will support the development of the base Naval Data Repository capabilities which need to be developed in order to support these programs. Data mapping, integration, and implementation plans will begin for the Naval Aviation Maintenance System (NAMS). (3) VECTOR increase will support the development of Vector analytics requirements for Vision 2020 initiatives and integration of Vector and best of breed CBM+ analytics into DECKPLATE, transitioning from current .net architecture to commercial Business Intelligence tools to support the future analytics platform and Enterprise Integrated Data Environment.															

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support for DECKPLATE	WR	NAWCAD : Patuxent River, MD	6.126	0.899	Oct 2017	1.089	Oct 2018	0.298	Oct 2019	-		0.298	Continuing	Continuing	Continuing
Prior year Prod Def no longer funded in the FYDP	Various	Various : Various	0.628	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Support for CBM+	WR	NAWCAD : Patuxent River, MD	2.159	0.360	Oct 2017	0.520	Oct 2018	0.168	Oct 2019	-		0.168	Continuing	Continuing	Continuing
Program Management Support for Aviation Logistics Environment (ALE)	WR	NAWCAD : Patuxent River, MD	0.000	0.000		2.700	Oct 2018	3.580	Oct 2019	-		3.580	Continuing	Continuing	Continuing
Program Management Support for Vector	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.092	Oct 2019	-		0.092	Continuing	Continuing	Continuing
Program Management Support for Vector	C/CPFF	KRB Wyle : Patuxent River, MD	0.000	0.000		0.000		0.093	Dec 2019	-		0.093	0.000	0.093	0.093
Program Management Support for Dynamic Scheduling	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.198	Oct 2019	-		0.198	Continuing	Continuing	Continuing
		Subtotal	8.913	1.259		4.309		4.429		-		4.429	Continuing	Continuing	N/A

Remarks

(1) The ALE program will continue to modernize existing software by developing automated workflows, integrating aviation platform content, and initiating legacy system transitions into the NAVAIR Product Lifecycle Management (PLM) solution for NAVAIR IT products. ALE has 35 systems that will be transitioned into the aviation PLM solution and will continue to build the Enterprise Service Bus (ESB) connectors, continue user acceptance testing of the common ground station and determine requirements for the use by other T/M/S.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

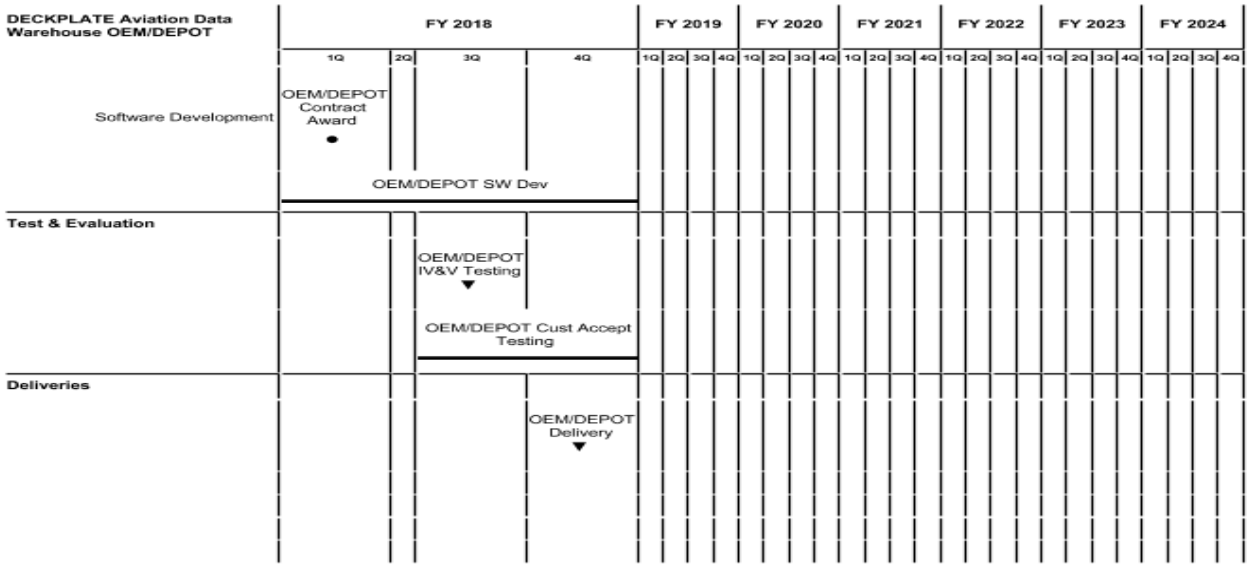
Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
(2) DECKPLATE increase will support the development of the base Naval Data Repository capabilities which need to be developed in order to support these programs. Data mapping, integration, and implementation plans will begin for the Naval Aviation Maintenance System (NAMS). (3) VECTOR increase will support the development of Vector analytics requirements for Vision 2020 initiatives and integration of Vector and best of breed CBM+ analytics into DECKPLATE, transitioning from current .net architecture to commercial Business Intelligence tools to support the future analytics platform and Enterprise Integrated Data Environment.															

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	48.603	4.338		26.502		43.797		-		43.797	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*



2020PB - 0605013N - 9406

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

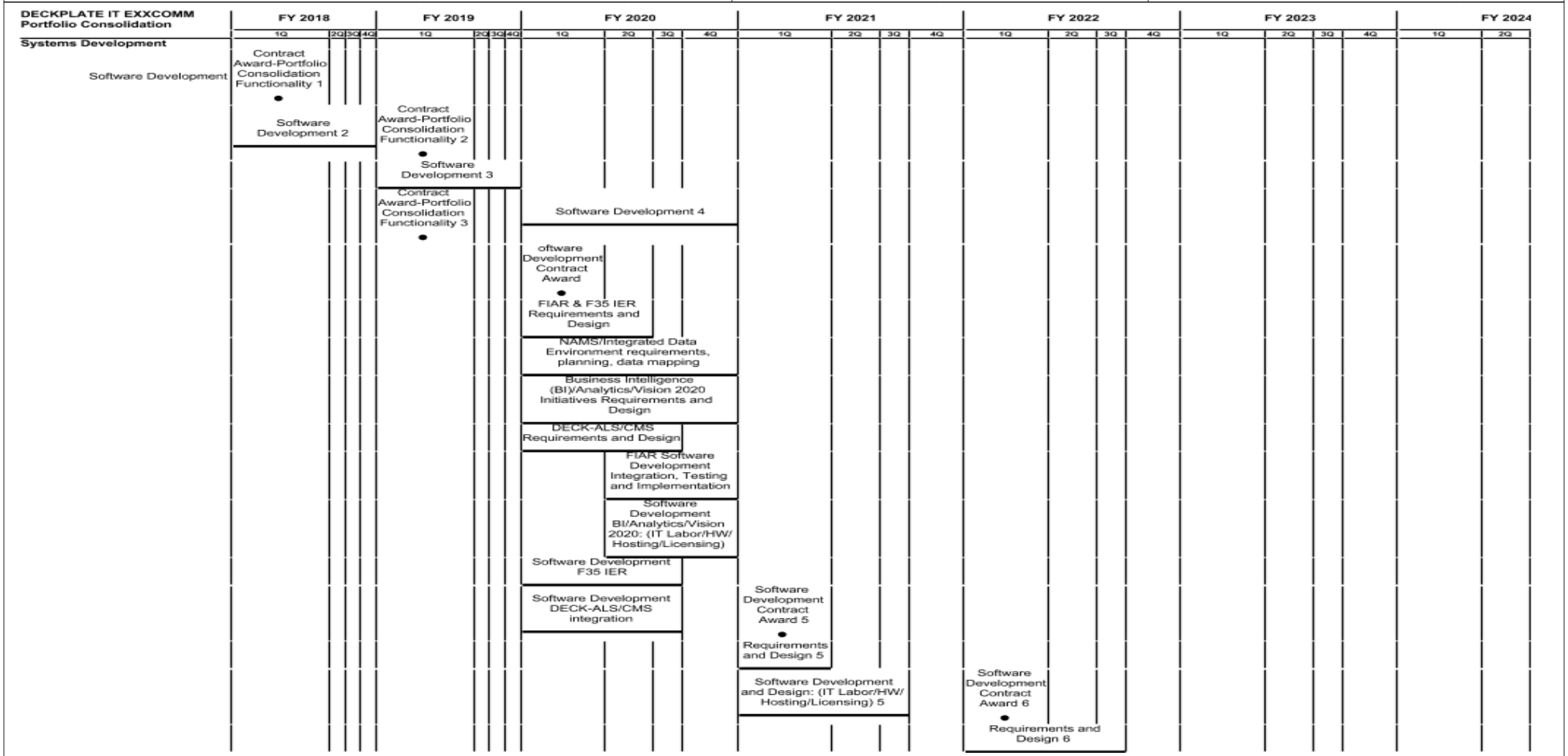


Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

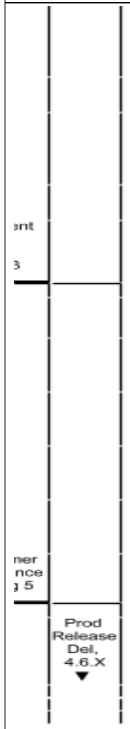


Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

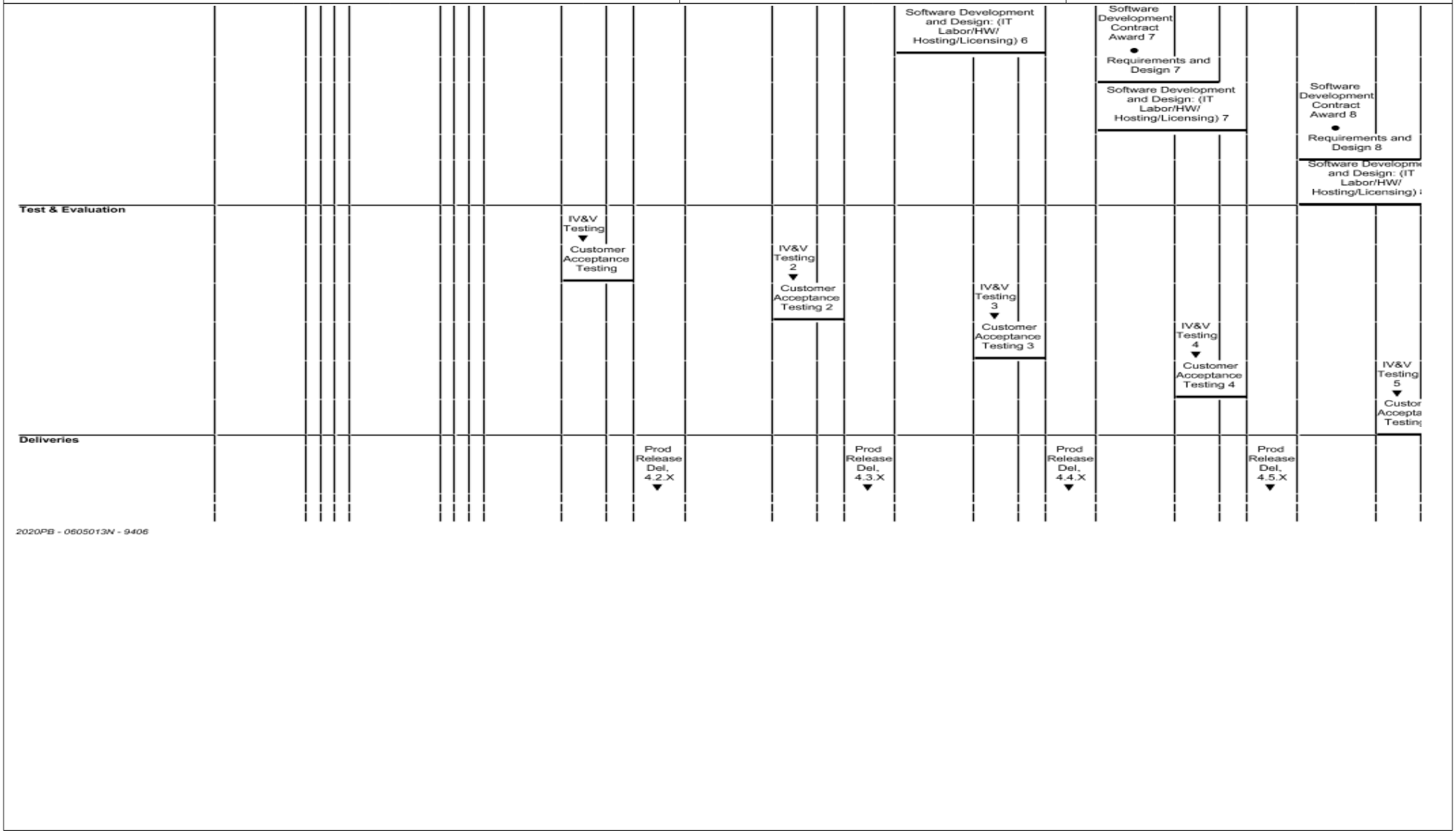


Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

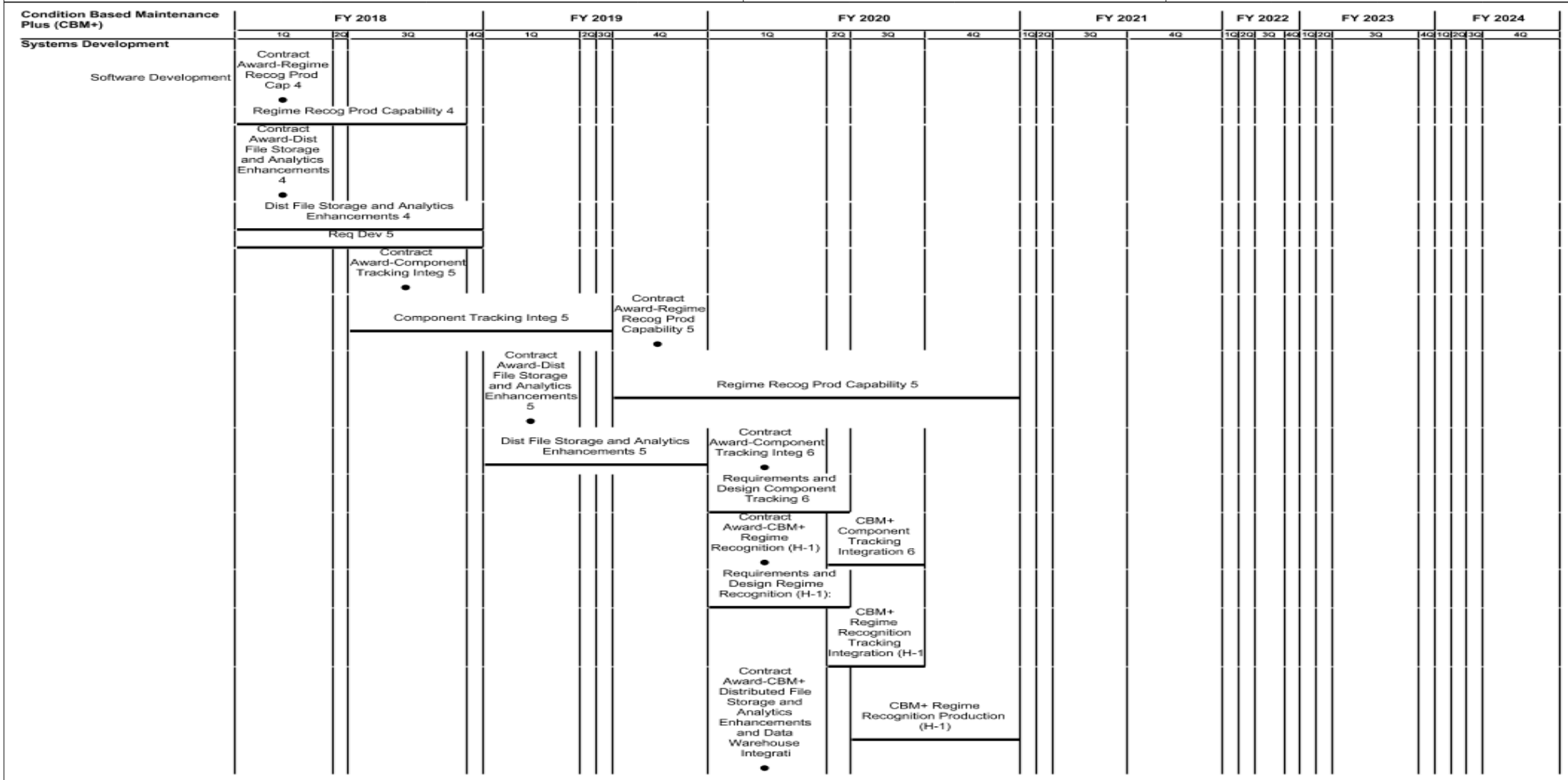


Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

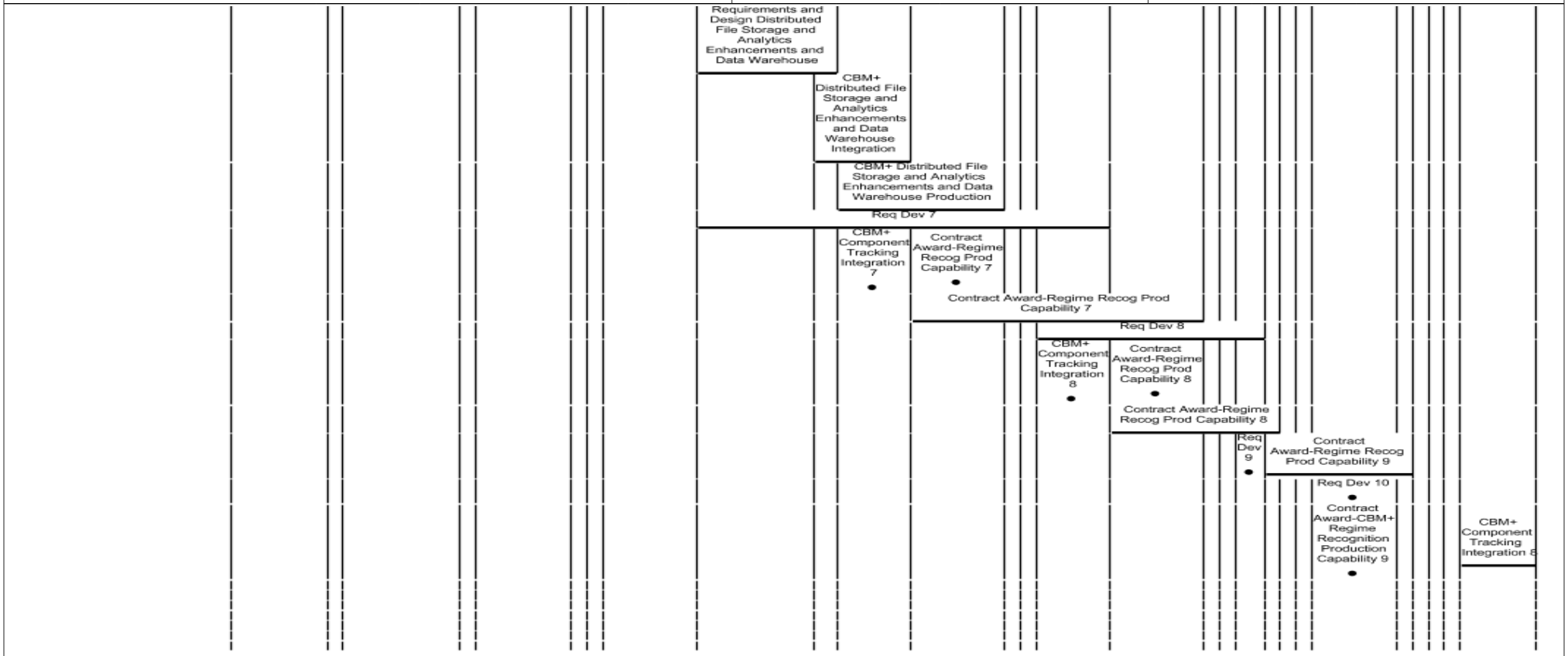
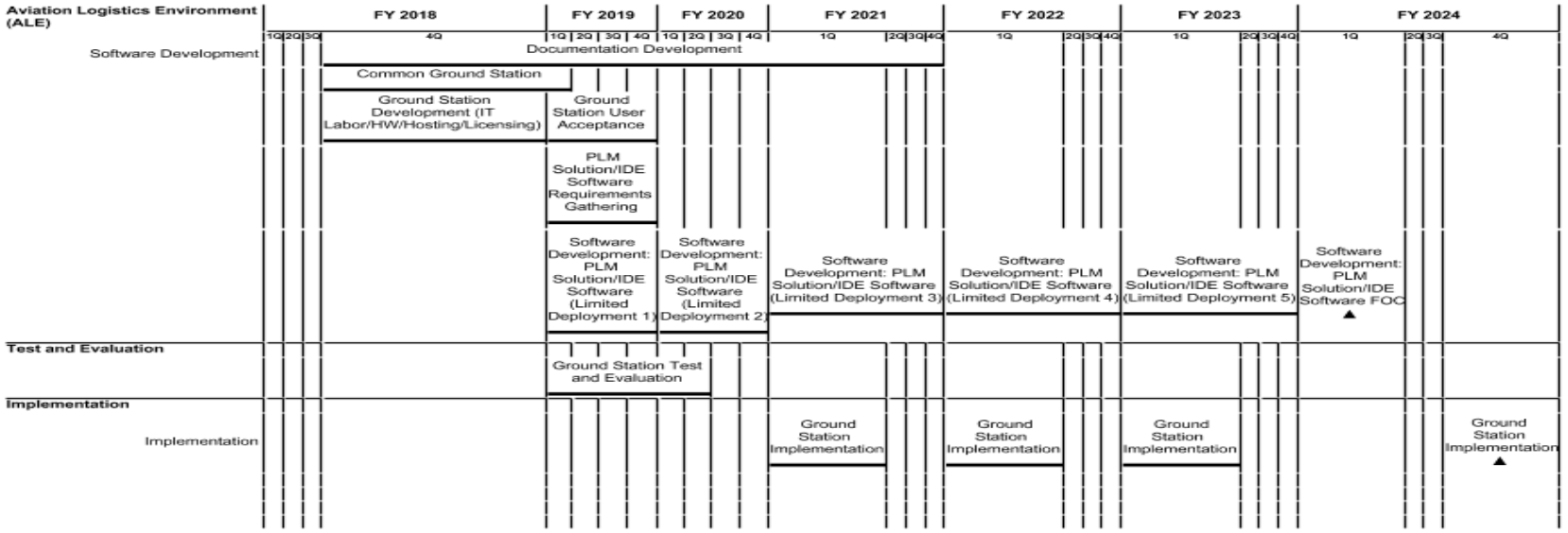
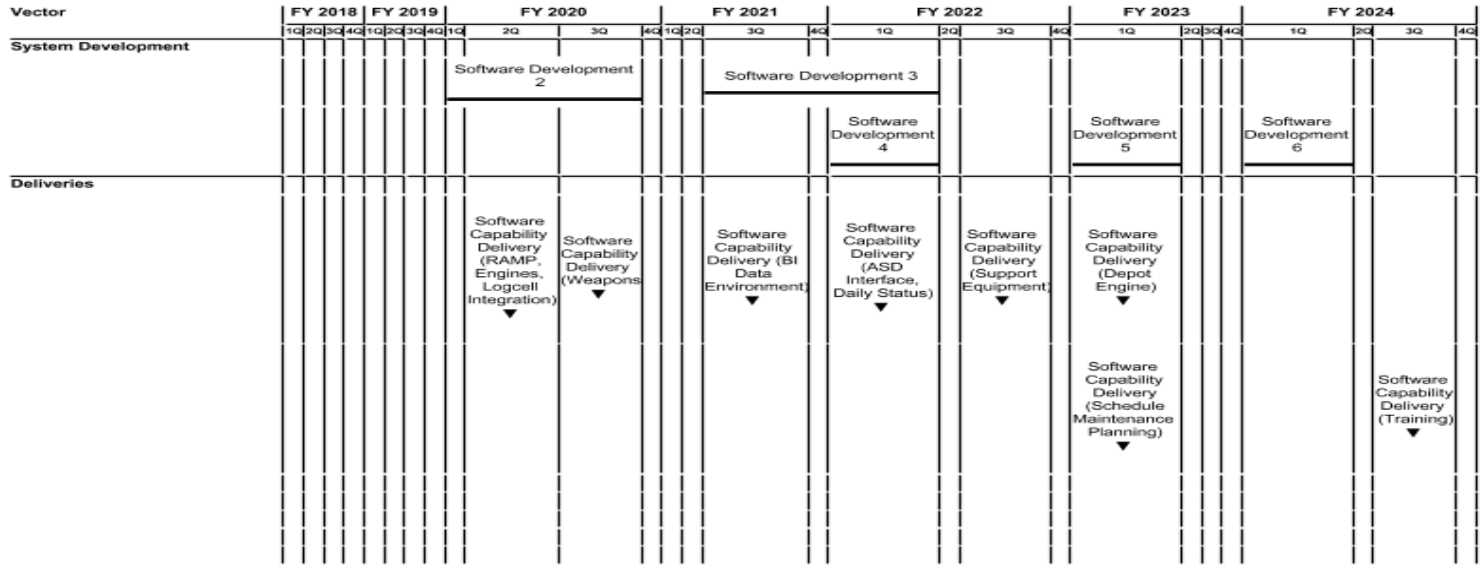


Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*



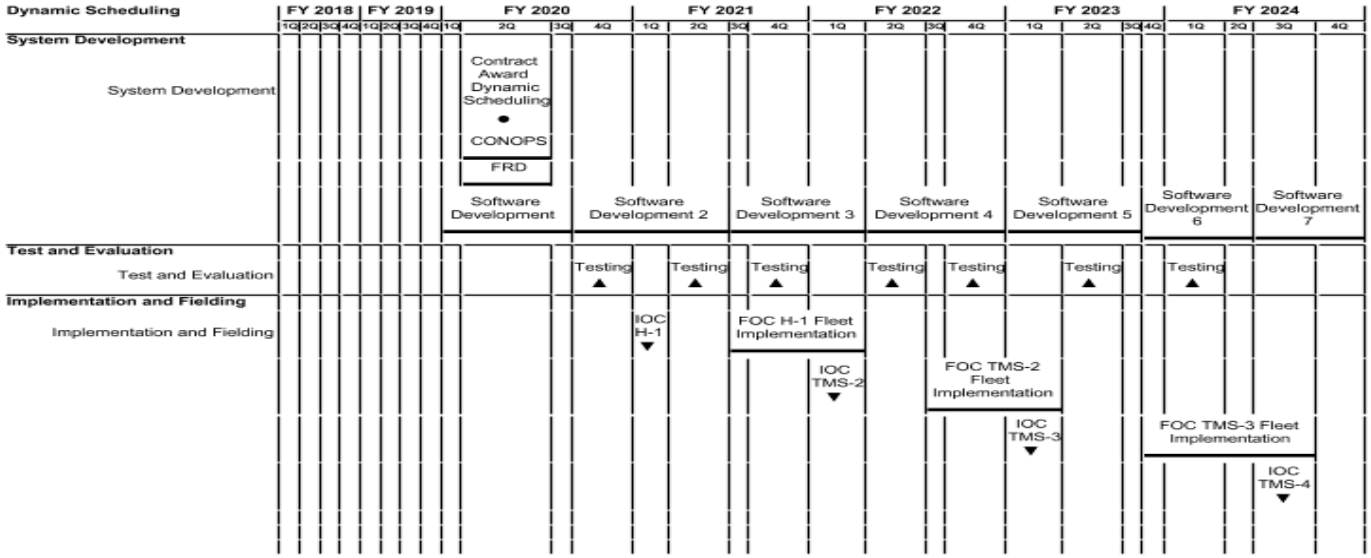
2020PB - 0605013N - 9406

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*



2020PB - 0605013N - 9406

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*



2020PB - 0605013N - 9406

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
DECKPLATE Aviation Data Warehouse OEM/DEPOT				
Software Development: Contract Award OEM/DEPOT Reporting into DEKCPLATE	1	2018	1	2018
Software Development: OEM/DEPOT Software Development	1	2018	4	2018
Test & Evaluation: OEM/DEPOT IV&V Testing	3	2018	3	2018
Test & Evaluation: OEM/DEPOT Customer Acceptance Testing	3	2018	4	2018
Deliveries: OEM/DEPOT Production Release Delivery	4	2018	4	2018
DECKPLATE IT EXXCOMM Portfolio Consolidation				
Systems Development: Software Development: Contract Award-DECKPLATE IT EXXCOMM Portfolio Consolidation Functionality 1	1	2018	1	2018
Systems Development: Software Development: DECKPLATE Software Development 2	1	2018	4	2018
Systems Development: Software Development: Contract Award-DECKPLATE IT EXXCOMM Portfolio Consolidation Functionality 2	1	2019	1	2019
Systems Development: Software Development: DECKPLATE Software Development 3	1	2019	4	2019
Systems Development: Software Development: Contract Award-DECKPLATE IT EXXCOMM Portfolio Consolidation Functionality 3	1	2019	1	2019
Systems Development: Software Development: DECKPLATE Software Development 4	1	2020	4	2020
Systems Development: Software Development: Software Development Contract Award	1	2020	1	2020
Systems Development: Software Development: FIAR & F35 IER Requirements and Design	1	2020	2	2020
Systems Development: Software Development: NAMS/Integrated Data Environment requirements, planning, data mapping 5	1	2020	4	2020
Systems Development: Software Development: Business Intelligence (BI)/Analytics/ Vision 2020 Initiatives Requirements and Design	1	2020	4	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Systems Development: Software Development: DECK-ALS/CMS Requirements and Design	1	2020	3	2020
Systems Development: Software Development: FIAR Software Development Integration, Testing and Implementation	2	2020	4	2020
Systems Development: Software Development: Software Development BI/Analytics/ Vision 2020: (IT Labor/HW/ Hosting/Licensing)	2	2020	4	2020
Systems Development: Software Development: Software Development F35 IER	1	2020	3	2020
Systems Development: Software Development: Software Development DECK-ALS/ CMS integration	1	2020	3	2020
Systems Development: Software Development: Software Development Contract Award 5	1	2021	1	2021
Systems Development: Software Development: Requirements and Design 5	1	2021	1	2021
Systems Development: Software Development: Software Development and Design: (IT Labor/HW/ Hosting/Licensing) 5	1	2021	3	2021
Systems Development: Software Development: Software Development Contract Award 6	1	2022	1	2022
Systems Development: Software Development: Requirements and Design 6	1	2022	3	2022
Systems Development: Software Development: Software Development and Design: (IT Labor/HW/ Hosting/Licensing) 6	1	2022	3	2022
Systems Development: Software Development: Software Development Contract Award 7	1	2023	1	2023
Systems Development: Software Development: Requirements and Design 7	1	2023	2	2023
Systems Development: Software Development: Software Development and Design: (IT Labor/HW/ Hosting/Licensing) 7	1	2023	3	2023
Systems Development: Software Development: Software Development Contract Award 8	1	2024	1	2024
Systems Development: Software Development: Requirements and Design 8	1	2024	2	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Systems Development: Software Development: Schedule DetailSoftware Development and Design: (IT Labor/HW/ Hosting/Licensing) 8	1	2024	3	2024
Test & Evaluation: DECKPLATE IV&V Testing	2	2020	2	2020
Test & Evaluation: DECKPLATE Customer Acceptance Testing	2	2020	3	2020
Test & Evaluation: DECKPLATE IV&V Testing 2	2	2021	2	2021
Test & Evaluation: DECKPLATE Customer Acceptance Testing 2	2	2021	3	2021
Test & Evaluation: DECKPLATE IV&V Testing 3	2	2022	2	2022
Test & Evaluation: DECKPLATE Customer Acceptance Testing 3	2	2022	3	2022
Test & Evaluation: DECKPLATE IV&V Testing 4	2	2023	2	2023
Test & Evaluation: DECKPLATE Customer Acceptance Testing 4	2	2023	3	2023
Test & Evaluation: DECKPLATE IV&V Testing 5	2	2024	2	2024
Test & Evaluation: DECKPLATE Customer Acceptance Testing 5	2	2024	3	2024
Deliveries: DECKPLATE Production Release, Delivery 4.2.X	4	2020	4	2020
Deliveries: DECKPLATE Production Release Delivery 4.3.X	4	2021	4	2021
Deliveries: DECKPLATE Production Release Delivery 4.4.X	4	2022	4	2022
Deliveries: DECKPLATE Production Release Delivery 4.5.X	4	2023	4	2023
Deliveries: DECKPLATE Production Release Delivery 4.6.X	4	2024	4	2024
Condition Based Maintenance Plus (CBM+)				
Systems Development: Software Development: Contract Award-CBM+ Regime Recognition Production Capability 4	1	2018	1	2018
Systems Development: Software Development: CBM+ Regime Recognition Production Capability 4	1	2018	3	2018
Systems Development: Software Development: Contract Award-CBM+ Distributed File Storage and Analytics Enhancements 4	1	2018	1	2018
Systems Development: Software Development: CBM+ Distributed File Storage and Analytics Enhancements 4	1	2018	4	2018
Systems Development: Software Development: CBM+ Requirements Development 5	1	2018	4	2018

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Systems Development: Software Development: Contract Award-CBM+ Component Tracking Integration 5	3	2018	3	2018
Systems Development: Software Development: CBM+ Component Tracking Integration 5	3	2018	3	2019
Systems Development: Software Development: Contract Award-CBM+ Regime Recognition Production Capability 5	4	2019	4	2019
Systems Development: Software Development: CBM+ Regime Recognition Production Capability 5	4	2019	4	2020
Systems Development: Software Development: Contract Award-CBM+ Distributed File Storage and Analytics Enhancements 5	1	2019	1	2019
Systems Development: Software Development: CBM+ Distributed File Storage and Analytics Enhancements 5	1	2019	4	2019
Systems Development: Software Development: Contract Award-CBM+ Component Tracking Integration 6	1	2020	1	2020
Systems Development: Software Development: Requirements and Design Component Tracking 6	1	2020	2	2020
Systems Development: Software Development: CBM+ Component Tracking Integration 6	2	2020	3	2020
Systems Development: Software Development: Contract Award-CBM+ Regime Recognition (H-1)	1	2020	1	2020
Systems Development: Software Development: Requirements and Design Regime Recognition (H-1)	1	2020	2	2020
Systems Development: Software Development: CBM+ Regime Recognition Tracking Integration (H-1)	2	2020	3	2020
Systems Development: Software Development: CBM+ Regime Recognition Production (H-1)	3	2020	4	2020
Systems Development: Software Development: Contract Award-CBM+ Distributed File Storage and Analytics Enhancements and Data Warehouse Integration	1	2020	1	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Systems Development: Software Development: Schedule DetailRequirements and Design Distributed File Storage and Analytics Enhancements and Data Warehouse	1	2020	2	2020
Systems Development: Software Development: CBM+ Distributed File Storage and Analytics Enhancements and Data Warehouse Integration	2	2020	3	2020
Systems Development: Software Development: CBM+ Distributed File Storage and Analytics Enhancements and Data Warehouse Production	3	2020	4	2020
Systems Development: Software Development: CBM+ Requirements Development 7	1	2020	3	2021
Systems Development: Software Development: Contract Award-CBM+ Component Tracking Integration 7	3	2020	3	2020
Systems Development: Software Development: CBM+ Component Tracking Integration 7	4	2020	4	2020
Systems Development: Software Development: Contract Award-CBM+ Regime Recognition Production Capability 7	4	2020	4	2021
Systems Development: Software Development: CBM+ Requirements Development 8	3	2021	3	2022
Systems Development: Software Development: Contract Award-CBM+ Component Tracking Integration 8	3	2021	3	2021
Systems Development: Software Development: CBM+ Component Tracking Integration 8	4	2021	4	2021
Systems Development: Software Development: Contract Award-CBM+ Regime Recognition Production Capability 8	4	2021	4	2022
Systems Development: Software Development: CBM+ Requirements Development 9	3	2022	3	2022
Systems Development: Software Development: Contract Award-CBM+ Regime Recognition Production Capability 9	4	2022	4	2023
Systems Development: Software Development: CBM+ Requirements Development 10	3	2023	3	2023
Systems Development: Software Development: Contract Award-CBM+ Regime Recognition Production Capability 10	3	2023	3	2023
Systems Development: Software Development: CBM+ Component Tracking Integration 10	4	2024	4	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Aviation Logistics Environment (ALE)				
Software Development: Software Documentation Development	4	2018	4	2021
Software Development: Software Requirements Gathering -Common Ground Station	4	2018	1	2019
Software Development: Ground Station Development (IT Labor/HW/Hosting/Licensing)	4	2018	4	2018
Software Development: Ground Station User Acceptance	1	2019	4	2019
Software Development: PLM Solution/IDE Software Requirements Gathering	1	2019	4	2019
Software Development: Software Development: PLM Solution/IDE Software (Limited Deployment 1)	1	2019	4	2019
Software Development: Software Development: PLM Solution/IDE Software (Limited Deployment 2)	1	2020	4	2020
Software Development: Software Development: PLM Solution/IDE Software (Limited Deployment 3)	1	2021	4	2021
Software Development: Software Development: PLM Solution/IDE Software (Limited Deployment 4)	1	2022	4	2022
Software Development: Software Development: PLM Solution/IDE Software (Limited Deployment 5)	1	2023	4	2023
Software Development: Software Development: PLM Solution/IDE Software FOC	1	2024	1	2024
Test and Evaluation: Ground Station Test and Evaluation	1	2019	2	2020
Implementation: Implementation: Ground Station Implementation 1	1	2021	1	2021
Implementation: Implementation: Ground Station Implementation 2	1	2022	1	2022
Implementation: Implementation: Ground Station Implementation 3	1	2023	1	2023
Implementation: Implementation: Ground Station Implementation - FOC	4	2024	4	2024
Vector				
System Development: Software Development 2	1	2020	3	2020
System Development: Software Development 3	3	2021	1	2022
System Development: Software Development 4	1	2022	1	2022
System Development: Software Development 5	1	2023	1	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
System Development: Software Development 6	1	2024	1	2024
Deliveries: Software Capability Delivery (RAMP, Engines, Logcell Integration)	2	2020	2	2020
Deliveries: Software Capability Delivery (Weapons)	3	2020	3	2020
Deliveries: Software Capability Delivery (BI Data Environment)	3	2021	3	2021
Deliveries: Software Capability Delivery (ASD Interface, Daily Status)	1	2022	1	2022
Deliveries: Software Capability Delivery (Support Equipment)	3	2022	3	2022
Deliveries: Software Capability Delivery (Depot Engine)	1	2023	1	2023
Deliveries: Software Capability Delivery (Schedule Maintenance Planning)	1	2023	1	2023
Deliveries: Software Capability Delivery (Readiness Training)	3	2024	3	2024
Dynamic Scheduling				
System Development: System Development: Contract Award Dynamic Scheduling	2	2020	2	2020
System Development: System Development: Concept of Operations (CONOPS)	2	2020	2	2020
System Development: System Development: Functional Reqwuirements Document (FRD)	2	2020	2	2020
System Development: System Development: Software Development	1	2020	3	2020
System Development: System Development: Software Development 2	4	2020	2	2021
System Development: System Development: Software Development 3	3	2021	1	2022
System Development: System Development: Software Development 4	2	2022	4	2022
System Development: System Development: Software Development 5	1	2023	3	2023
System Development: System Development: Software Development 6	4	2023	2	2024
System Development: System Development: Software Development 7	3	2024	4	2024
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing	4	2020	4	2020
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing 2	2	2021	2	2021
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing 3	4	2021	4	2021
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing 4	2	2022	2	2022
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing 5	4	2022	4	2022

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing 6	2	2023	2	2023
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing 7	1	2024	1	2024
Implementation and Fielding: Implementation and Fielding: Initial Operational Capability (IOC) Single Squadron H-1	1	2021	1	2021
Implementation and Fielding: Implementation and Fielding: Full Operation Capability (FOC) (H-1 Fleet Implementation)	3	2021	1	2022
Implementation and Fielding: Implementation and Fielding: Initial Operational Capability (IOC) Single Squadron TMS-2	1	2022	1	2022
Implementation and Fielding: Implementation and Fielding: Full Operation Capability (FOC) (TMS-2 Fleet Implementation)	3	2022	1	2023
Implementation and Fielding: Implementation and Fielding: Initial Operational Capability (IOC) Single Squadron TMS-3	1	2023	1	2023
Implementation and Fielding: Implementation and Fielding: Full Operation Capability (FOC) (TMS-3 Fleet Implementation)	4	2023	3	2024
Implementation and Fielding: Implementation and Fielding: Initial Operational Capability (IOC) Single Squadron TMS-4	3	2024	3	2024

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy			Date: March 2019
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605013N / *Information Technology Development*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2018	FY 2019	FY 2020 Base	FY 2020 OCO	FY 2020 Total	FY 2021	FY 2022	FY 2023	FY 2024	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	13.997	10.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	23.997
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

CONDITION BASED MAINTENANCE PLUS (CBM+):

The CBM+ solution is an initiative which provides Naval Aviation Enterprise with common enabling capabilities which deliver timely data-driven decisional information to optimize aircraft availability and materiel readiness by incorporating health and usage leading indicators into the failure mode mitigation process, enabling the Warfighter to more efficiently meet mission requirements through automated analysis and decision making processes. The CBM+ Initiative increases readiness through streamlined maintenance processes which provide actionable logistics/engineering data and integrated analytics not previously available, enabling engineers and acquisition professionals to support system improvements based on CBM+ acquired data and analytic results. CBM+ provides the enabling infrastructure and storage solutions within an Enterprise common environment needed to store and analyze weapon system sensor data to extend the life of current and new acquisition aircraft, realizing savings from reductions in field (organizational and intermediate) maintenance actions, reduced functional check flight hours, mishap mitigation, and reduced parts usage.

PRODUCT LIFECYCLE MANAGEMENT (PLM):

This program includes funding to support Information Technology (IT) Rationalization and Product Lifecycle Management migration efforts to modernize NAVSEA's Technical Data, Configuration and Logistics IT systems. This will enable advanced warfighter readiness capabilities in accordance with OPNAV N4's Digital Transformation Vision. This IT solution will be used by over 40,000 civilian and military personnel, impacting a yearly $6.5B investment in product sustainment. The absence of a centrally sponsored PLM with a commonly defined and enforced system and data architecture has resulted in a proliferation of unique non-standardized, non-integrated, stove-piped IT solutions across the Navy, all supporting singular logistics functions and none able to influence warfighter readiness holistically. To enable enterprise readiness analytics, this effort will eliminate stove-piped legacy logistics IT applications and in place field an NAVSEA PLM capability that enables programs to acquire and manage product support data/information within a single, structured, authoritative product data environment linking material readiness outcomes to the Program's core systems engineering processes. The key enabling construct of the PLM is a digital thread/digital twin capability which provides a formal framework for controlled interplay of authoritative technical and as-built data with the ability to access, integrate, transform and analyze data throughout the product lifecycle into actionable information. Moreover as these capabilities mature, the cost of readiness becomes significantly more affordable and combat logistics operations become significantly more effective. As the Navy realizes these outcomes, Enterprise Digital Logistics IT services effectively become combat multipliers. The most significant benefit being that they maximize the effectiveness of our warfighters as we deliver them right data, at the right time, so they can continuously make the right decision faster than the enemy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019
Congressional Add: Enterprise Condition Based Maintenance	4.346	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019
FY 2018 Accomplishments: Congressional Plus-up resourced algorithm and analytic research and development associated with Condition Based Maintenance Plus (CBM+) supporting NAVAIR Engineering, Logistics, and Data Science communities, while collaborating with academia and Industry to identify algorithms capable of correlating cause and effect of statistical anomalies in collected weapons system sensor data at scale. Algorithm development required the integration of academia's best practices and industry leading COTS analytic solutions to evaluate applications and proof of concept efforts for implementation across naval aviation. Algorithm development and testing required large scale sensor data storage and compute capability provided by NAVAIR's Standard Data Repository data platform and integrated analytics. Facilitated work on algorithms and analytics associated with Condition Based Maintenance Plus (CBM+) software research/development. Funding supported contract support services for infrastructure standup and integration within the closed loop and connected test environments as required to support COTS product evaluations associated with Congressional Plus-Up efforts. Support focused on system integration, Cyber Security compliance, Information Assurance, Content Management, as related to enterprise and edge node compute capability. Facilitated work on algorithms and analytics associated with Condition Based Maintenance Plus (CBM+) software research/development. Funding supported the investigation and configuration of industry leading COTS solutions for data translation, mining, analytics, distribution, visualization, accessibility for NAVAIR Engineering, Logistics and Data Science communities to evaluation to determine new diagnostic and prognostic methodologies which leverage all available data supporting naval aviation support processes. Specific focus enabled COTS solutions in support of Conditioned Based Maintenance Plus (CBM+) capabilities and objectives in direct support of fleet mission effectiveness and weapon system readiness improvements. COTS product proof of concept evaluations focused on Enterprise level and Edge analytics enablement and integration with warfighter maintenance/support processes. Implementation strategies assessed, included premises, connected/ disconnected concepts of operation, cloud, and hybrid approaches, while provided cloud readiness assessments for current and future CBM+ IT systems and applications. ***FY 2019 Plans:*** N/A		
Congressional Add: Enterprise Product Lifecycle Management	9.651	0.000
FY 2018 Accomplishments: Congressional Add: Product Lifecycle Management (PLM) 1. Established the acquisition program baseline		

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2018	FY 2019
2. Competitively awarded PLM prototype efforts 3. Completed Phase 1 of the PLM prototypes ***FY 2019 Plans:*** N/A		
Congressional Add: Advanced Radar Condition Based Maintenance ***FY 2018 Accomplishments:*** N/A ***FY 2019 Plans:*** N/A	0.000	10.000
Congressional Adds Subtotals	13.997	10.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

CONDITION BASED MAINTENANCE PLUS:
Development services will be provided using a competitively awarded contract coordinated via NAVAIR's Aviation Logistics Environment (ALE) Program Management and supporting Contract Business Office, and will contain a matrix of tasks and required levels of performance. Follow on Contracts will utilize the same competitive system. The Services provided under the contract support acquisition will not encompass tasks inherently Governmental in nature, and Statements of Work will include a matrix that establishes the minimum acceptable performance standards.

PRODUCT LIFECYCLE MANAGEMENT:
Product Lifecycle Management development services will be solicited in late FY 18 / early FY 19 using competitively awarded contracts and Government programmatic and technical subject matter expertise to rapidly prototype core product data management, readiness at cost decision modeling and timely and relevant bi-directional distribution of serialized readiness data analytics capabilities. Follow on contracts will utilize the same competitive system and leverage previous prototyping efforts and lessons learned to the maximum extent possible. Contractual services will not encompass tasks inherently Governmental in nature and will include a matrix that establishes the minimum acceptable performance standards.

E. Performance Metrics

CONDITION BASED MAINTENANCE PLUS:
1. Metric - During the life of the contract verify conformance with agency specific information processing standards and functional requirements. Prior to delivery of enhanced software, demonstrate the operational capability of the system software. Standard - Functionality of the software to meet required systems architecture and processing capabilities. Max Deviation Allowed - All requirements mandated by law or regulation must be 100% compliant. Quality Assurance - Independent Verification

Exhibit R-2A, RDT&E Project Justification: PB 2020 Navy		Date: March 2019
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and Validation (IV&V) for testing new releases of software to determine that previous functionality is maintained. Customer satisfaction as measured through limited validated customer complaints, feedback, and surveys.
2. Metric - Interfaces must maintain compatibility among system components in the operational environment. Standard - Service Levels for software: Throughput in terms of processing response time, number of transactions processed per second; volume of data processed over time. Compatibility with particular hardware and software within the existing processing environment. Functionality of software to meet required systems architecture and processing capabilities. Max Deviation Allowed - None. Quality Assurance - Customer satisfaction as measured through limited validated customer complaints, feedback and surveys. Operational monitoring by use of system statistics and logs. IV&V for testing new software, including verifying results to determine that requirements and specifications are met.
3. Metric - Documentation for deliverables must match the agency specific system processing and operational procedures. Standard - Documentation meets agency specific formats for accuracy and completeness. Max Deviation Allowed - None. Quality Assurance - IV&V for determining that documentation delivered by the contractor matches the system processing and operational procedures.
4. Metric - Meet delivery dates/milestones. Period of Performance will be 12 months from the date of award. Standard - Delivery dates are met, or exceeded. Max Deviation Allowed - None. Quality Assurance - 100% inspection.
5. Metric - Security. Standard - Meet all Government and agency specific requirements. Max Deviation Allowed - None. Quality Assurance - 100% inspection to ensure that all Government and Agency specific requirements have been met. Independent verification of security procedures defined by agency (could be performed by a third party, or another agency according to current security regulations and measures).
6. Metric - Enhancement to software shall not adversely affect system performance. Standard - Standards affecting system performance include but are not limited to: response time for resolving problems; central processing unit busy; response time; memory utilization; storage utilization. Max Deviation Allowed - Base line functionality is met at 100%. Non critical functionality is met at 95%. Quality Assurance - Operational monitoring by use of system statistics and logs.
7. Metric - New releases of software must maintain previously provided functionality, while providing enhanced capabilities, or systems corrections. Standard - Software adds value and improves existing functionality without negatively impacting the existing operational environment. Max Deviation Allowed - Base line functionality is met at 100%. Non critical functionality is met at 95%. Quality Assurance - Independent Verification and Validation for testing new releases of software to determine that previous functionality is improved. Customer satisfaction is measured through validated customer complaints and surveys.

PRODUCT LIFECYCLE MANAGEMENT:
1. Resource Sponsor approved and POM aligned acquisition program baseline will be defined by the competitive prototype acquisition process and consistent with the OPNAV Digital Transformation Team plan.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Refreshment (PLM)	Various	Various : Various	0.000	4.150	Sep 2018	0.000		0.000		-		0.000	0.000	4.150	-
		Subtotal	0.000	4.150		0.000		0.000		-		0.000	0.000	4.150	N/A

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HW/SW (CBM+)	C/FFP	Washington HQ Services : Washington, DC	0.000	2.626	Sep 2018	3.788	Sep 2019	0.000		-		0.000	0.000	6.414	1.575
Software Development for (CBM+)	C/CPFF	Wyle : Patuxent River, MD	0.000	1.700	Sep 2018	0.000	Sep 2019	0.000		-		0.000	0.000	1.700	2.700
Systems Engineering (PLM)	WR	NSWC : Philadelphia, PA	0.000	0.425	Sep 2018	0.355	Sep 2019	0.000		-		0.000	0.000	0.780	-
Systems Engineering (PLM)	WR	NSWC : Crane, ID	0.000	0.646	Sep 2018	0.618	Sep 2019	0.000		-		0.000	0.000	1.264	-
Systems Engineering (PLM)	WR	NSWC : Port Hueneme, CA	0.000	0.414	Sep 2018	1.830	Sep 2019	0.000		-		0.000	0.000	2.244	-
Technical Support (PLM)	Various	Various : Various	0.000	2.865	Sep 2018	0.000	Sep 2019	0.000		-		0.000	0.000	2.865	-
Systems Engineering (PLM)	WR	NSWC : Carderock, MD	0.000	0.384	Sep 2018	0.496	Sep 2019	0.000		-		0.000	0.000	0.880	-
Systems Engineering (PLM)	WR	NSWC : Dahlgren, VA	0.000	0.305	Sep 2018	0.225	Sep 2019	0.000		-		0.000	0.000	0.530	-
Systems Engineering (PLM)	WR	NAVSEALOGCEN : Mechanicsburg, PA	0.000	0.462	Sep 2018	2.688	Sep 2019	0.000		-		0.000	0.000	3.150	-
		Subtotal	0.000	9.827		10.000		0.000		-		0.000	0.000	19.827	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2020 Navy		Date: March 2019
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2018 Cost	FY 2018 Award Date	FY 2019 Cost	FY 2019 Award Date	FY 2020 Base Cost	FY 2020 Base Award Date	FY 2020 OCO Cost	FY 2020 OCO Award Date	FY 2020 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support for (CBM+)	WR	NAWCAD : Patuxent River, MD	0.000	0.020	Aug 2018	0.000		0.000		-		0.000	0.000	0.020	-
		Subtotal	0.000	0.020		0.000		0.000		-		0.000	0.000	0.020	N/A

	Prior Years	FY 2018		FY 2019		FY 2020 Base		FY 2020 OCO		FY 2020 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	13.997		10.000		0.000		-		0.000	0.000	23.997	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2020 Navy		Date: March 2019
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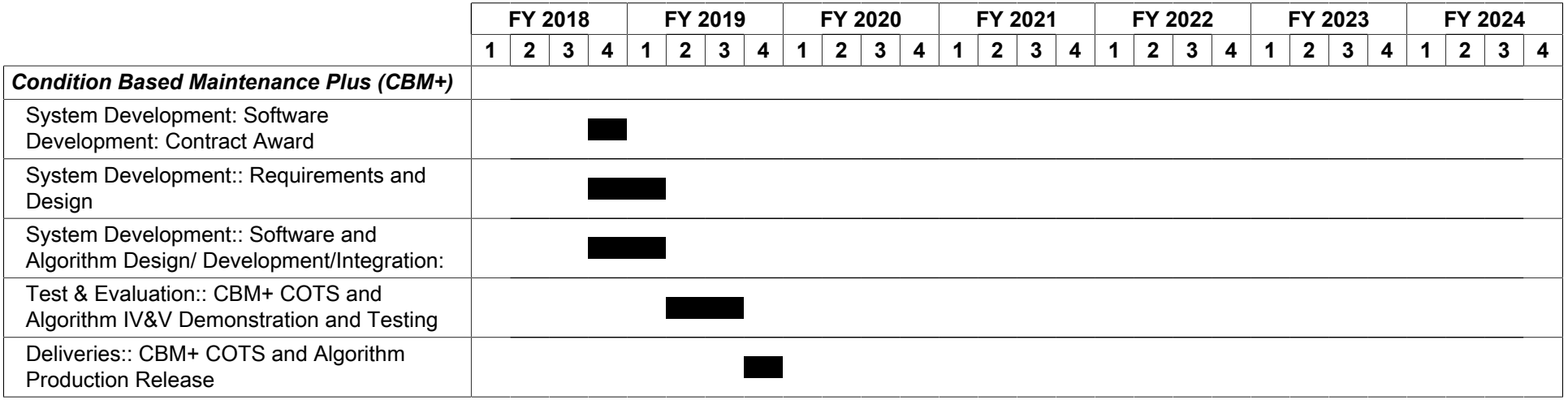

Exhibit R-4A, RDT&E Schedule Details: PB 2020 Navy		Date: March 2019
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Condition Based Maintenance Plus (CBM+)				
System Development: Software Development: Contract Award	4	2018	4	2018
System Development:: Requirements and Design	4	2018	1	2019
System Development:: Software and Algorithm Design/ Development/Integration:	4	2018	1	2019
Test & Evaluation:: CBM+ COTS and Algorithm IV&V Demonstration and Testing	2	2019	3	2019
Deliveries:: CBM+ COTS and Algorithm Production Release	4	2019	4	2019