Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy											Date: February 2020	
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COST ($ in Millions)	**Prior Years**	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
Total Program Element	515.588	233.521	268.547	356.173	-	356.173	355.056	295.170	127.943	129.341	Continuing	Continuing
2901: *AAUSN IT*	69.045	23.719	38.744	43.495	-	43.495	40.743	7.653	7.677	7.607	Continuing	Continuing
2903: *NAVAIR IT*	25.489	18.678	19.311	8.039	-	8.039	5.834	7.107	6.445	5.592	Continuing	Continuing
2904: *NAVSEA IT*	230.844	33.996	15.696	25.983	-	25.983	18.362	20.754	20.129	21.845	Continuing	Continuing
2905: *BUPERS IT*	83.368	85.864	106.091	137.429	-	137.429	148.061	127.385	1.298	0.000	0.000	689.496
3167: *Joint Technical Data Integration (JTDI)*	37.555	3.766	5.545	7.788	-	7.788	6.229	7.207	7.986	8.146	Continuing	Continuing
3185: *Joint Airlift Information System (JALIS)*	2.349	0.339	0.349	0.356	-	0.356	0.364	0.372	0.380	0.388	Continuing	Continuing
3432: *NMMES-TR*	0.000	31.754	50.492	96.190	-	96.190	114.244	94.075	52.793	53.899	Continuing	Continuing
3784: *Judge Advocate General (JAG) Enterprise System*	0.000	0.000	1.100	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.100
9406: *Maintenance Data Warehouse*	52.941	25.758	23.219	36.893	-	36.893	21.219	30.617	31.235	31.864	Continuing	Continuing
9999: *Congressional Adds*	13.997	9.647	8.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	31.644

Note

The Fleet Architecture Integration Tool (FAIT) funding was previously executed out of PE 0604027N project 3425. Beginning in FY21, funding is aligned under PE 0605013N project 2901. FAIT is not a new start in FY21.

Beginning in FY21 funding associated with Risk Management Information (RMI) has been realigned to Program Element (PE) 0608013N / Project 2901.

A. Mission Description and Budget Item Justification

2901 AAUSN IT

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),the Requirements to Award Process Tool (RAPT), and other applications, which enable and manage the business workflow. NET is a custom 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.

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.

FLEET ARCHITECTURE INTEGRATIOJN TOOL (FAIT)

The Fleet Architecture Integration Tool (FAIT) provides the means by which the Department of the Navy (DoN) can develop a warfighting-focused budget leveraging digital technology enabled by machine learning and artificial intelligence algorithms. FAIT is an artificial intelligence (AI) enabled decision support tool that gives users the ability to:

1) View current investment plans pertaining to platforms, weapons, sensors, and C2 across the Department of Navy (DoN) enterprise with the aid of rich visualizations;
2) Create custom excursions for analysis and investment consideration; and
3) Validate effectiveness of investment choices nearly instantaneously through direct connection to AI-enabled, war-gaming technology.

The Fleet Architecture Integration Tool (FAIT) assists DCNO and CNO level decisions on POM year investments by modeling future-year end strength and capabilities against anticipated peer threats based on current year funding decision options. This capability cannot be duplicated through use or modification of current budget analysis or system modeling tool sets.

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.

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SECNAV Projects (BCNR, CORD, Other) IT Modernization supports priority SECNAV IT System Modernization projects with RDTEN requirements, including the Council of Review Board's (CORB) eCase IT system. This system provides a single holistic integrated case management system that supports all review board activities at Board for Correction of Naval Records (BCNR) and CORB. The eCase platform will modernize all review board activities case management capability to include: workflow integration, business intelligence/analytics, online applicant portal, applicant notifications, file/records management, document generation, and future integration with supporting systems inside and outside the Naval enterprise.

MULTIPLE THREAT ALERT CENTER (MTAC)
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.

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2903 NAVAIR IT

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

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This program includes the funding for the Information Technology (IT) tools utilized in shore maritime maintenance planning, execution, tracking, quality control, certification, closeout, employee qualifications, and payroll. This program supports ship, submarine, and aircraft carrier maintenance. The Navy Maritime Maintenance Enterprise Solution (NMMES) includes efforts for the development, support, and sustainment of maritime shore maintenance and includes multiple modernization efforts to insure effectiveness of Fleet maintenance systems. This includes the retirement and/or replacement of costly systems and applications, transition planning, and systems engineering for integration with current and future enterprise solutions. These efforts align with direction to insure that these solutions support a planned, single maintenance solution end state, as well as direction to align with multiple laws, regulations, policies, and guidance across the FYDP. It includes the modernization of Naval Shipyard, Regional Maintenance Centers, and Forward Deployed Naval Forces' planning, Maintenance, Repair and Overhaul (MRO) production tools. This includes modifications/enhancements to Shipyard IT applications, for work execution management, critical chain scheduling, workload and performance applications, the availability cost tracking, and material management applications, and other solutions such as the Electronic Technical Working Document (eTWD) initiative. The goal is to provide modernization, migration, and consolidation of obsolete legacy IT tools to a modern, supportable, and modular solution enabling Fleet Maintenance across Intermediate and Depot level maintenance activities worldwide for the Navy.

2905 BUPERS IT

My Navy Human Resources (HR) Transformation - formerly known as Manpower, Personnel, Training & Education (MPT&E) Transformation -- will change how HR services are provided throughout a Sailor's entire "Hire-to-Retire" lifecycle and improve fleet combat readiness. By streamlining processes and systems, MyNavy HR will improve the speed, accuracy, and quality of personnel and pay services, better positioning the Navy to equip and manage its people.

This effort is the linchpin of the Navy's MPT&E Business IT Transformation strategy that 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 neither cost efficient nor effective. MyNavy HR involves revolutionary change by using agile delivery model to the greatest extent possible to implement business IT products using the Industry Best Practices Model (e.g., early investment for largest ROI, rapid prototyping, and vanilla COTS products usage.) MyNavy HR is a fully integrated portfolio of IT Systems segmented by MyNavy HR Core (Navy Personnel and Pay (NP2); Learning Stack (LS) and the Customer Relationship Management (CRM) Solution) and Infrastructure Platforms (Single Point of Entry (SPOE) and Authoritative Data Warehouse (ADE)). This portfolio of systems serves as the cornerstone of the OPNAV N1 MyNavy HR strategy.

The impetus for building an adaptive family of systems is gearing MyNavy HR Transformation towards customer needs. The traditional waterfall delivery methodology of IT goods and services cannot meet the emergent requirements evolving from shortened technical obsolescence. Thus, MyNavy HR Transformation will employ an Agile delivery method that is highly structured, with a repeatable software development approach designed to quickly deliver usable capability to the end user. These capabilities are packaged as Minimum Viable Products (MVPs) which are routinely delivered to the customer for their use and evaluation. Favorably received MVPs are subsequently refined and integrated into a production baseline.

Rapidly integrating a family of systems using an agile methodology necessitates an overarching system integrator and coordinator to ingest pilots and prototypes into a technical baseline. The Transformation Portfolio Coordinator & Production (TPC&P) contract is an IDIQ contract that will deliver a family of systems in support of MyNavy HR. This contract will provide the Global Design & Strategic Planning to baseline the "55 to 1" global design and strategic technical execution plan and will articulate

the "system of systems" baseline release. Additionally, pilots and prototypes that have reached sufficient maturity will be integrated and deployed into the production baseline under this contract, as well as, sustainment of the production baseline.

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 MyNavy HR Transformation.

The NP2 adapts and reengineers business processes to conform to the technical parameters of PeopleSoft 9.2 while integrating with the Direct to Treasury Pay Capability via Pay Modernization (Pay Mod). This combined effort 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.

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 Defense Joint Military Pay 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.

LEARNING STACK (LS)

Learning Stack supports Ready Relevant Learning (RRL), 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 program of instruction 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:

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1. Mobile & flexible delivery of modular training to the sailor to ensure every Sailor receives the appropriate level of training at the real world point of need to support assigned taskings;
2. Synchronization of work requirements with learning modules to ensure proper training delivery
3. Leverage cloud-hosted curriculum to optimize the speed of updates to Navy training content

The learning management tools 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 MyNavy HR mobility efforts, gaming and simulation technology as it is brought on-line.

Learning Stack 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)
SPOE is an information management concept that provides an intuitive self-service capability for Sailors to view and manage personnel and career information, providing Sailors with access to information including learning content, HR applications, and career business processes. SPOE will be the user-facing capability, enabling the MyNavy Career Center (MNCC), linking Sailors to modernized personnel and pay capabilities in NP2, providing Sailor training through the LS, and access to authoritative data, which holds their personnel and pay record information. SPOE consolidates Navy's Human HR portals, knowledge, and applications into a single, simplified user experience and will include processes and functionality, such as

1. Integration of capabilities, to include: My Navy Portal (MNP), Mobile Applications, CRM solution, and Identity Access Management (IdAM);
2. MNP
A. Capability to have a low bandwidth version accessible to Sailors operating in a restricted bandwidth environment
B. Ability to host and manage mobile applications through the Navy App Locker
C. Provide Mobile application management suite/platform
3. IdAM
A. Provide authentication, authorization, and single sign on capability for access to the objective My Navy HR capability

AUTHORITATIVE DATA ENVIRONMENT (ADE)
The Authoritative Data Environment (ADE) is an enterprise information management system that will migrate the existing legacy data warehouses into a central data repository that is composed of a data warehouse, data lake, data management tools and an Application Program Interface (API) Layer.
ADE will provide an authoritative data sharing framework, leveraging scalable and interoperable technologies as well as business intelligence and data analytic capabilities.
ADE will need to interface and integrate with SPOE and all MyNavy HR transactional and business systems, including enabling 'plug & play' of new services, technologies, and system capabilities. Some of the key principles of ADE include:
1. Flexible architecture and scalable design.
2. Data Governance to produce authoritative, cleansed, conformed, consolidated, and calculated data.

3. Data Access to specified users.
4. Master Data Management (core elements, metadata tagging, business rules, standards, metrics, and tools).
5. Data analytics and business intelligence (descriptive, prescriptive, and predictive).
6. Identification, development, and maintenance of enterprise data policies.

CUSTOMER RELATIONSHIP MANAGEMENT (CRM) solution is part of the MyNavy HR Core IT System that will integrate business processes, supporting systems, and authoritative data in support of Navy Personnel Command's (NPC's) MNCC (My Navy Career Center), Navy Recruiting Command (NRC), Navy Education & Training Command (NETC), and other commands that manage the Navy workforce.
The CRM solution will provide an approach to manage information on current and future Sailors, veterans, and their families. The CRM solution is organized into the following main segments:

1. Sales Management - recording all stages of the prospecting process to include contact management, leads tracking, forecasting and initial processing.
2. Knowledge Management - providing the tools for identifying, capturing, evaluating, retrieving, and sharing information assets.
3. Case Management - supporting the automation of processes to formulate opinions, approvals, and fulfillment of case related requests.
4. Performance Management- supporting the performance of Navy Sailors.
5. CRM capabilities can provide several functions in support of the Navy's recruiting needs, to include:
A. Provide personally identifiable information (PII) in a commercial cloud platform.
B. Provide ability for users to access mobile platforms.
C. Meet Navy Cybersecurity requirements to protect Impact Level (IL) 4 data and will achieve an Authority to Operate (ATO) from the Navy Authorizing Official (NAO).
D. Support non-recruiting activities and address case management and knowledge management. Case management functionality supports tracking incidents, and knowledge management provides for sharing and collaborating across various business areas.

RISK MANAGEMENT INFORMATION (RMI) (Not part of MyNavy HR Transformation)
Beginning in FY21 funding associated with Risk Management Information (RMI) has been realigned to Program Element (PE) 0608013N / Project 2901.

3167 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, the Consolidated Afloat Networks and Enterprise Services Network (CANES) 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.

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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)

3432 NMMES-TR

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

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.

The Aviation Logistics Environment (ALE) provides a global logistics enterprise solution, delivering capabilities via a net-centric, shared data environment that supports shore-based, afloat, and expeditionary operations. ALE also hosts its own distinct capability solutions which include modern Product Lifecycle Management (PLM), Decision Support (Predictive Analytics), Planeside Interfacing, and the Enterprise Infrastructure to support the Naval Aviation Enterprise (NAE). ALE accomplishes this through the integration, organization, and development of an underlying infrastructure creating an end-to-end process view, enabling the simultaneous sending and receiving of on-demand data to stakeholders. ALE consolidates aging, near-end-of-life systems and applications. Additionally, ALE standardizes metrics, algorithms and business analysis tools; produces consistent and accurate weapons system technical and Computer Aided Design (CAD) engineering documentation; supports additive manufacturing capabilities; and aligns Information Assurance (IA) and cybersecurity standards. ALE is built to evolve with the technology it supports, utilizing enterprise architecture that enables migration to the cloud. ALE is a digital ecosystem, composed of crucial systems, models, and databases across the Navy. The core of ALE consists of three components; Ground Station, Aviation PLM, and Enterprise Service Bus (ESB). The Maintenance Engineering Ground Station for Aviation (MEGA) is the Naval Aviation Type/Model/Series (T/M/S)-agnostic ground station. The software and hardware will enable reduced costs for the fleet and streamlined training for maintainers. MEGA is currently under development using Government off-the-Shelf (GOTS) software. The Aviation Product Lifecycle Management (Aviation PLM) capability will provide the digital thread of aviation logistics data for allowable and as-configured Repair Bill of Materials (R BOM) sustainment, technical bulletins, technical directives and engineering change proposals, and reliability centered maintenance and maintenance planning. The Enterprise Service Bus (ESB) capability will provide the digital backbone for data connections to and from authoritative data sources. To enable all necessary business processes, ALE incorporates five additional capability solutions; Data Warehouse (DECKPLATE), Data Analytics (Vector and CBM+), Maintenance Scheduler (Dynamic Scheduling and Optimized Scheduled Maintenance), Maintenance, Repair and Overhaul (MRO), and User Experience and User Interface Design (UXD).

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.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy	Date: February 2020
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605013N *I Information Technology Development*

- 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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	242.110	384.162	416.246	-	416.246
Current President's Budget	233.521	268.547	356.173	-	356.173
Total Adjustments	-8.589	-115.615	-60.073	-	-60.073
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-123.615			
• Congressional Rescissions	-	-			
• Congressional Adds	-	8.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-11.985	0.000			
• Program Adjustments	0.000	0.000	-59.715	-	-59.715
• Rate/Misc Adjustments	3.396	0.000	-0.358	-	-0.358

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2019	FY 2020
Project: 9999: *Congressional Adds*		
Congressional Add: *Advanced Radar Condition Based Maintenance*	9.647	0.000
Congressional Add: *NAVSEA readiness and logistics information technology digital transformation pla*	0.000	8.000
Congressional Add Subtotals for Project: 9999	9.647	8.000
Congressional Add Totals for all Projects	9.647	8.000

Change Summary Explanation

Technical: Not applicable.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy	Date: February 2020
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*	**R-1 Program Element (Number/Name)** PE 0605013N *I Information Technology Development*

The FY 2020 Enacted budget included a FY 2019 Congressional Rescission to this PE, however it is not included in the FY 2021 President's Budget request/FY 2019. The FY 2020 Enacted/FY 2019 rescission reduced PE0605013N by a total of $6.3 million, which was split between Project 2904, NAVSEA IT ($3.257M) and Project 3432, NMMES-TR ($3.043M)

Funding:
The FY2021 funding request for PE0605013N was reduced by $12.794M to account for the availability of prior year execution balances. The following projects were included in this reduction:

- Project 2905,BUPERS IT FY21 funding request was reduced by $0.654 million to account for the availability of prior year execution balances.
- Project 2901, AAUSN IT FY21 funding request was reduced by $1.346 million to account for the availability of prior year execution balances.
- Project 3432, NMMES-TR FY21 funding request was reduced by $10.794 million to account for the availability of prior year execution balances.

Schedule:
Project 3167 - MAL-EIT changes to correct events for MAL-EIT 3.3 that were erroneously reflected in the schedule. Software Development, Technical Evaluation DT&E/OT&E and Limited Fielding have moved 12 months.

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 - With a better understanding of the Integrated Data Resource Node (IDRN) Aviation Logistics Environment (ALE) changed from and Integrated Data Environment (IDE) to Enterprise Service Bus (ESB) along with adding major and minor capabilities for more granularity into details of the schedule. A minor capability is equivalent to adding to an existing workflow, a major capability is a new workflow and Integration is transitioning a current system in sustainment to the modernization Product Lifecycle Management/ESB infrastructure.

Due to emerging Fleet and Naval Aviation Enterprise customer requirements Vector has combined Capability Deliveries together which has caused the following deliveries to move: Weapons from 3/2020 to 02/2020, BI Data Environment from 03/2021 to 01/2025, ASD Interface and Daily Status from 01/2022 to 01/2023, Support Equipment from 03/2022 to 01/2023, Depot Engine form 01/2023 to 01/2022, Schedule Maintenance Planning from 01/2023 to 01/2022 and Readiness Training from 03/2024 to 01/2022.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy											Date: February 2020	
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 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
2901: *AAUSN IT*	69.045	23.719	38.744	43.495	-	43.495	40.743	7.653	7.677	7.607	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

The Fleet Architecture Integration Tool (FAIT) funding was previously executed out of PE 0604027N project 3425. Beginning in FY21, funding is aligned under PE 0605013N project 2901. FAIT is not a new start in FY21.

In FY21 and out, Risk Management Information (RMI) funding was realigned from PE0605013N, Project 2901 to PE0608013N Project 2901 as part of the BA08 Software Pilot Program.

A. Mission Description and Budget Item Justification

Secretariat Offices (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. The Secretariat Offices 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.
ELECTRONIC PROCUREMENT SYSTEM (ePS)

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 obsolete legacy systems.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

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 conducts standardized, seamless, end-to-end contract management in a secure computing environment, issuing timely contracts that comply with all DoD/Federal laws, regulations, and policies.

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)and other applications which enable and manage the business workflow. NET is a custom 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.

FLEET ARCHITECTURE INTEGRATION TOOL (FAIT)

The Fleet Architecture Integration Tool (FAIT) provides the means by which the Department of the Navy (DoN) can develop a warfighting-focused budget leveraging digital technology enabled by machine learning and artificial intelligence algorithms. FAIT is an artificial intelligence (AI) enabled decision support tool that gives users the ability to:

1) View current investment plans pertaining to platforms, weapons, sensors, and C2 across the Department of Navy (DoN) enterprise with the aid of rich visualizations;
2) Create custom excursions for analysis and investment consideration; and
3) Validate effectiveness of investment choices nearly instantaneously through direct connection to AI-enabled, war-gaming technology.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

The Fleet Architecture Integration Tool (FAIT) assists DCNO and CNO level decisions on POM year investments by modeling future-year end strength and capabilities against anticipated peer threats based on current year funding decision options. This capability cannot be duplicated through use or modification of current budget analysis or system modeling tool sets.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Modernization - Secretariat	0.400	0.350	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The Secretariat has numerous requirements to modernize its financial management system and portal applications. Secretariat Automated Resources Management Information System (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 2020 Plans: FY 2019 modernization efforts to update SARMIS to be compliant with current DON CIO Risk Management Framework (RMF) security controls were determined to be extensive, resulting in major upgrades to a legacy system at a high cost. In DON's efforts to reduce the number of Financial Management (FM) systems, a decision was made to modify the Secretariat budget formulation and execution processes to enable the use of existing FM systems funded by other Department of Navy Programs. No funds will be executed in FY 2020 or 2021 for SARMIS modernization.					
FY 2021 Base Plans: N/A					
FY 2021 OCO Plans: N/A					
FY 2020 to FY 2021 Increase/Decrease Statement: Funding decrease from FY 2020 to FY 2021 reflects the transition of funding programmed to support SARMIS modernization being realigned to support priority SECNAV IT System Modernization projects.					
Title: SECNAV Projects (BCNR, CORD, Other) IT System Moderization	1.002	0.350	0.700	0.000	0.700
Articles:	-	-	-	-	-
Description: CORB's eCase IT system replaces out-of-date systems and furthers CORB's digitization effort.					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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. ***FY 2020 Plans:*** 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 2021 Base Plans:*** RDTEN funding will be used continue to support priority SECNAV IT System Modernization projects. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding increase from FY 2020 to FY 2021 reflects the transition of funding programmed to support SARMIS modernization being realigned to support priority SECNAV IT System Modernization projects.					
Title: Electronic Procurement System (ePS)	18.170	36.050	37.437	0.000	37.437
Articles:	-	-	-	-	-
Description: Funding required for the Electronic Procurement System (ePS) to provide support for configuration, integration, testing, training, deployment and implementation of the system. ***FY 2020 Plans:*** Complete Deployment for initial Limited Deployment (LD) ePS site, which will encompass: - Complete interface development and testing for Navy ERP financial system, and other DoD/federal systems - Complete cybersecurity testing to achieve authority to operate (ATO) - Complete integration testing, user acceptance testing, operational assessment, operational test readiness review,and Initial Operational Test and Evaluation (IOT&E) - Complete Production Readiness Review (PRR) - Complete user training - Complete functional configuration audit - Deploy to single initial LD site (without data migration)					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Begin Release 1 (R1) deployment preparation and gap closure for over 3,000 additional critical users - Initial gap closure efforts for R1 planned requirements - Initial Interface development for additional R1 financial systems including MSC-FMS, DIFMS, NEST, SYMIS MF- COST, MATmf and STARS-FL - Complete R1 Build Technical Review (BTR)					
Begin Release 2 (R2) preparation activities - Conduct data profiling and data migration preparation for R2 sites					
FY 2021 Base Plans: Complete R1 Deployment - R1 CGI Momentum User developmental software licenses - Complete R1 Fielding Technical Review (FTR) and Production Readiness Review (PRR) - Begin integration testing for R1 - Complete testing for R1 - Update training materials - Complete user training for R1 users - Complete data migration mocks and cutover for R1 legacy contracting writing system instances Continue R2 Deployment Preparation for over 3,000 additional critical users - Initial gap closure efforts for R2 planned requirements - Initial Interface development and testing for additional R2 financial systems including ieFACMAN, CFMS, FASTDATA, DMLSS, DWAS, STARS-HCM and GFEBS - Complete R2 Build Technical Review (BTR) and Fielding Technical Review (FTR) - Begin integration testing for R2 - Update training materials					
FY 2021 OCO Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The increase from FY20 to FY21 of $1.4M is driven by the expanding user base for Release 1, the expanded license purchases, and the transition from LD to R1. Tasks completed in FY20 include standing up the hosting environment, achieving authority to operate, system installation, development of all federal, DoD, and initial Navy financial interfaces, software configuration, LD testing, and LD training. New tasks in FY21 include LD data migration, the purchase of the R1 licenses (which were originally planned for FY20), an expanded hosting environment, R1 financial system integrations, additional testing efforts for R1, R1 data migration, R1 training, and initial Release 2 (R2) efforts for gap closure and integration. Release 1 completes in FY21 as Release 2 begins for the remaining commands. Navy specific requirements regarding gap closure, software configuration, and testing activities continue for all remaining commands.					
Title: NMCI Enterprise Service Tools (NEST) ***Articles:*** ***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)and other applications which enable and manage the business workflow. NET is a custom 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 2020 Plans:*** In FY20, tasks will be centered on End User Hardware (EUHW) and Service Management, Integration and Transport (SMIT) integration, OSD PDS compliance, and address any additional requirements after the NGEN-R award. As well as address changes in DOD/DON procurement policies and mandates. Support will also include identifying any Navy ePS interface requirements. ***FY 2021 Base Plans:*** In FY21, tasks will be a continuation of tasks centered on the completion of Service Management, Integration and Transport (SMIT) integration, NEST Graphical User Interface (GUI) updates, address any additional	4.147 -	1.994 -	1.750 -	0.000 -	1.750 -

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
requirements after the NGEN-R award, and any changes in DOD/DON procurement policies and mandates. Support will include implementation of Navy ePS interface. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The decrease of $.244M from FY20 to FY21 is due to fewer new developmental efforts because NGEN-R tool readiness requirements will be deployed. The focus will be to enhance deployed functionality while providing IT service lifecycle management processes during the transition from the NGEN contract to NGEN-R contracts (EUHW and SMIT).					
Title: Fleet Architecture Integration Tool (FAIT) ***Articles:*** ***FY 2020 Plans:*** FAIT FY20 plans will be executed from PE 0604027N project 3425. ***FY 2021 Base Plans:*** - FY21 funding develops FAIT capabilities, including integration between the core cost estimation, fleet architecture -investment database, and the war-gaming simulation components. - Work with Resource Sponsor divisions across OPNAV and Program Offices at NAVSEA, NAVAIR, and NAVWAR to refine inputs and data in the system. - Interface with operations and planning representatives in OPNAV, CUSFFC, and CPF to inform war-gaming simulations and outputs. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** In FY21, FAIT will focus on delivering initial capability aimed at integrating various systems components that will provide the foundation for an analytical capability.	0.000 -	0.000 -	3.608 -	0.000 -	3.608 -
Accomplishments/Planned Programs Subtotals	23.719	38.744	43.495	0.000	43.495

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• 0604027N/3425: *DWO*	0.500	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.500

Remarks

The Fleet Architecture Integration Tool (FAIT) funding was previously executed out of PE 0604027N project 3425. Beginning in FY21, funding is aligned under PE 0605013N project 2901. FAIT is not a new start in FY21.

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.
ELECTRONIC PROCUREMENT SYSTEM (ePS)
The ePS program awarded a 10-year hybrid contract to a single System Integrator (SI). The vendor chosen was CGI Federal. CGI 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 tools (BPM), Business Process Re-Engineering (BPR), or COTS enhancements).

FLEET ARCHITECTURE INTEGRATION TOOL (FAIT)

There are existing Commercial-Off-the-Shelf (COTS) software and services that, with customization, can fulfill the Navy's modeling and simulation requirements for weapon system procurement planning and simulation. Market research is underway to determine the best path for this acquisition.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 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	NIWC LANT : CHARLESTON, SC	3.626	0.400	Oct 2018	0.350	Oct 2019	0.350	Oct 2020	-		0.350	0.000	4.726	-
CORB SYSTEM Modernization	WR	NIWC LANT : CHARLESTON, SC	1.000	1.002	Oct 2018	0.350	Oct 2019	0.350	Oct 2020	-		0.350	0.000	2.702	-
ePS Data Transition Strategy	Various	NAVSUP BSC : Mechanicsburg, PA	1.702	0.000		0.000		0.000		-		0.000	0.000	1.702	-
ePS NESB Data Mapping	C/FP	BOOZ ALLEN : Tysons Corner, Va	7.150	0.000		0.000		0.000		-		0.000	0.000	7.150	-
NESB Configuration and Validation	C/FP	NAVWAR : San Diego, CA	7.371	0.000		0.000		0.000		-		0.000	0.000	7.371	-
Contract Writing System (ePS)	C/FP	CGI Federal : Fairfax, VA	0.000	10.554	Mar 2019	23.102	Mar 2020	25.509	Mar 2021	-		25.509	Continuing	Continuing	Continuing
NERP Interface Analysis (ePS)	Various	NAVWAR : San Diego, CA	2.409	0.000		0.000		0.000		-		0.000	0.000	2.409	-
Fleet Architecture Integration Tool (FAIT)	Various	FFRDC/Various : Arlington, VA	0.000	0.000		0.000		3.608	Nov 2020	-		3.608	0.000	3.608	-
		Subtotal	31.523	11.956		23.802		29.817		-		29.817	Continuing	Continuing	N/A

Remarks

During FY21, the ePS program will continue Release 1 activities and begin Release 2 activities including interface development, gap closure activities, integration, testing, and data cleansing. R2 activities bring the remaining commands into the system.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 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	NAVWAR : San Diego, CA	1.045	0.180	Jun 2019	0.189	Jun 2020	0.190	Jun 2021	-		0.190	0.000	1.604	-
Systems Engineering (ePS)	Various	NAVWAR : San Diego, CA/ Charleston, SC	14.566	3.084	Sep 2019	4.670	Mar 2020	3.068	Mar 2021	-		3.068	Continuing	Continuing	Continuing
Logistics Analysis (ePS)	Various	NIWC LANT : Charleston, SC	2.636	1.970	Oct 2018	0.438	Dec 2019	0.450	Dec 2020	-		0.450	Continuing	Continuing	Continuing
Requirements Validation (ePS) - Small Business set aside	C/FFP	NAVWAR : 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	3.536	0.000		0.000		0.000		-		0.000	0.000	3.536	-
ePS Engineering Services - Small Business set aside	Various	Bowhead : Alexandria, VA	2.652	0.465	Jul 2019	0.170	Jul 2020	0.170	Jul 2021	-		0.170	0.000	3.457	-
ePS Testing and Validation/ Architecture Tool	Various	NSWC Dahlgren : Dahlgren, VA	0.100	0.000		0.000		0.000		-		0.000	0.000	0.100	-
System Engineering Support (NEST)	C/CPFF	Deloitte : Rosslyn, VA	5.014	4.147	Nov 2019	1.994	Nov 2019	1.750	Nov 2020	-		1.750	Continuing	Continuing	Continuing
(ePS) Project Management/ Implementation	C/CPFF	Chenega : Chesapeake, VA	0.294	0.310	Sep 2019	0.650	Sep 2020	0.660	Sep 2021	-		0.660	0.000	1.914	-
Cloud Broker Services	C/CPFF	NAVAIR : Patuxent River, MD	0.000	0.517	Jun 2019	3.900	Jun 2020	4.400	Jun 2021	-		4.400	0.000	8.817	-
ePS engineering services	C/CPFF	Falconwood : Arlington, VA	0.000	0.373	May 2019	1.310	May 2020	1.340	May 2021	-		1.340	0.000	3.023	-
		Subtotal	35.077	11.046		13.321		12.028		-		12.028	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Testing Preparations (ePS)	C/FFP	NIWC LANT : Charleston, SC	0.800	0.000		0.000		0.000		-		0.000	0.000	0.800	-
Software Hosting (ePS)	C/FP	NAVWAR : San Diego, CA	0.815	0.000		0.000		0.000		-		0.000	0.000	0.815	-
Testing (ePS)	C/FP	OPTEVFOR : NORFOLK,VA	0.330	0.208	Aug 2019	0.674	Aug 2020	0.690	Aug 2021	-		0.690	Continuing	Continuing	Continuing
Testing (ePS)	MIPR	JITC : Ft. Huachuca, AZ	0.000	0.000		0.424	Mar 2020	0.430	Mar 2021	-		0.430	0.000	0.854	-
Testing/Cyber	C/CPFF	Falconwood : Arlington, VA	0.000	0.509	May 2019	0.523	May 2020	0.530	May 2021	-		0.530	0.000	1.562	-
		Subtotal	1.945	0.717		1.621		1.650		-		1.650	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 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 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	69.045	23.719		38.744		43.495		-		43.495	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

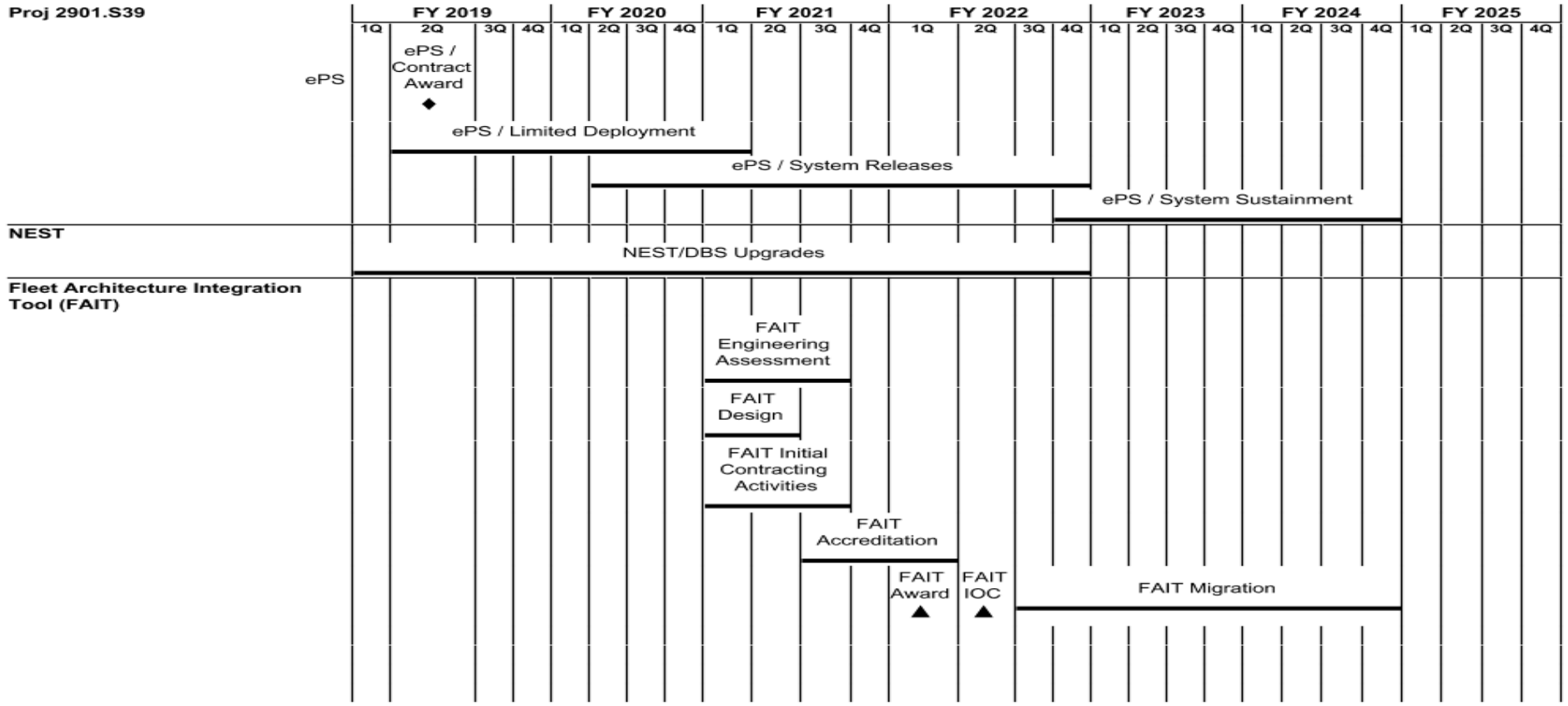

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2901 / *AAUSN IT*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2901.L12				
Technology Development (Modernization)	1	2019	4	2025
System Development & Demonstration (Modernization)	1	2019	4	2025
Production & Deployment (Modernization)	1	2019	4	2025
System Development (Secretariat)	1	2019	4	2025
System Testing (Secretariat)	1	2019	4	2025
Deployment (Secretariat)	3	2021	4	2025
ePS: ePS / Award the ePS contract	2	2019	2	2019
ePS: ePS / Conduct Limited Deployment	2	2019	1	2021
ePS: ePS / Deploy System Releases	2	2020	4	2022
ePS: ePS / Conduct Sustainment of System	4	2022	4	2024
NEST: NEST/DBS Upgrades	1	2019	4	2022
Fleet Architecture Integration Tool (FAIT): FAIT Engineering Assessment	1	2021	3	2021
Fleet Architecture Integration Tool (FAIT): FAIT Design	1	2021	2	2021
Fleet Architecture Integration Tool (FAIT): FAIT Initial Contracting Activities	1	2021	3	2021
Fleet Architecture Integration Tool (FAIT): FAIT Accreditation of Software for Fielding in Navy Secret Hosting Envrionments	3	2021	1	2022
Fleet Architecture Integration Tool (FAIT): FAIT OTA Award	1	2022	1	2022
Fleet Architecture Integration Tool (FAIT): FAIT IOC	2	2022	2	2022
Fleet Architecture Integration Tool (FAIT): FAIT Migration of system components from NAVAIR R&D networks	3	2022	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
2903: *NAVAIR IT*	25.489	18.678	19.311	8.039	-	8.039	5.834	7.107	6.445	5.592	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 2021 Navy		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: CMIS Annual Software Release	0.658	0.639	0.603	0.000	0.603
Articles:	-	-	-	-	-
FY 2020 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 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 2021 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 and input formats, 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 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					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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. Procure COTS licenses as needed when increased users are added for fleet data entry. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Decrease from FY20 to FY21 due to reduced requirement for Program Management Support.					
Title: Navy Cybersecurity	5.240	4.636	4.947	0.000	4.947
Articles:	-	-	-	-	-
FY 2020 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 2021 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
- 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, hands on adversarial assessments, and engineering investigations. - Continued support of emergent Fleet Cyber Command/10th Fleet (FLTCYBERCOM/C10F) Operations Orders (OPORD) and Tasking Orders (TASKORD) requiring urgent development of cyber incidence planning and response capability and customized weapon and control systems solutions for identified Fleet risks. - Increased FY21 capability investment directly supports emergent intelligence, FLTCYBERCOM/C10F OPORDs/TASKORDs, Blackbeard After Action Report (AAR), Cyber Risk Assessments of Aviation Weapons Systems and Platforms, Aviation Resiliency, incident response investigations, Cyber Supply Chain risk management (SCRM) and hardening, 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 nontraditional systems (e.g., Aircraft, Weapons, Radars, Aircraft Launch and Recovery Equipment (ALRE)) and will result in significant residual risk to aviation combat systems. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The $0.311M increase in NAWC Support in development aviation weapon systems customized tools, methodologies, and procedures.					
Title: Digital Thread	12.780	14.036	2.489	0.000	2.489
Articles:	-	-	-	-	-
FY 2020 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					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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 2021 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. Integrate Program Management Activity (PMA) Product Life Cycle (PLM) systems with IDRN to manage digital technical data for key platforms. Create additional networked capability to extend information across digital platforms. Expand and extend capability for DT to allow for Additive Manufacturing (AM) Integration for cybersecure capacity expansion to meet fleet requirements. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Decrease from FY20 to FY21 due to Digital Thread IDRN capability being fielded in FY20.					
Accomplishments/Planned Programs Subtotals	18.678	19.311	8.039	0.000	8.039

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.

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.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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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
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.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Solutions for Cyber Warfare Capabilities for Navy Cybersecurity	Various	Various : Various	11.197	2.147	Oct 2018	2.050	Oct 2019	1.700	Oct 2020	-		1.700	Continuing	Continuing	Continuing
Solutions for Digital Thread	Various	Various : Various	0.614	10.209	Oct 2018	11.500	Oct 2019	1.192	Oct 2020	-		1.192	Continuing	Continuing	Continuing
		Subtotal	11.811	12.356		13.550		2.892		-		2.892	Continuing	Continuing	N/A

Remarks

Digital Thread decrease in FY21 due to Integrated Data Resource Node (IDRN) capability being fielded in FY20.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Prior year Prod Def no longer funded in the FYDP	Various	Various : Various	1.869	0.000		0.000		0.000		-		0.000	0.000	1.869	-
Software Support for Configuration Management Information System (JCMIS)	C/FFP	Wyle : Lexington Park, MD	1.339	0.172	Mar 2019	0.000		0.404	Nov 2020	-		0.404	Continuing	Continuing	Continuing
Software Support for Configuration Management Information System (JCMIS)	Various	Various : Various	0.000	0.000		0.501	Mar 2020	0.101	Feb 2021	-		0.101	Continuing	Continuing	Continuing
		Subtotal	3.208	0.172		0.501		0.505		-		0.505	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 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	1.072	0.486	Dec 2018	0.138	Dec 2019	0.098	Dec 2020	-		0.098	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering Support for Navy Cybersecurity	WR	NAWCAD : Patuxent River, MD	8.594	1.937	Oct 2018	1.800	Oct 2019	2.941	Oct 2020	-		2.941	Continuing	Continuing	Continuing
Systems Engineering Support for Digital Thread	WR	NAWCAD : Patuxent River, MD	0.287	2.571	Oct 2018	2.536	Oct 2019	1.303	Oct 2020	-		1.303	Continuing	Continuing	Continuing
Systems Engineering Support for Navy Cybersecurity	WR	NAWCWD : China Lake, CA	0.517	1.156	Oct 2018	0.786	Oct 2019	0.300	Oct 2020	-		0.300	Continuing	Continuing	Continuing
		Subtotal	10.470	6.150		5.260		4.642		-		4.642	Continuing	Continuing	N/A

	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	25.489	18.678		19.311		8.039		-		8.039	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

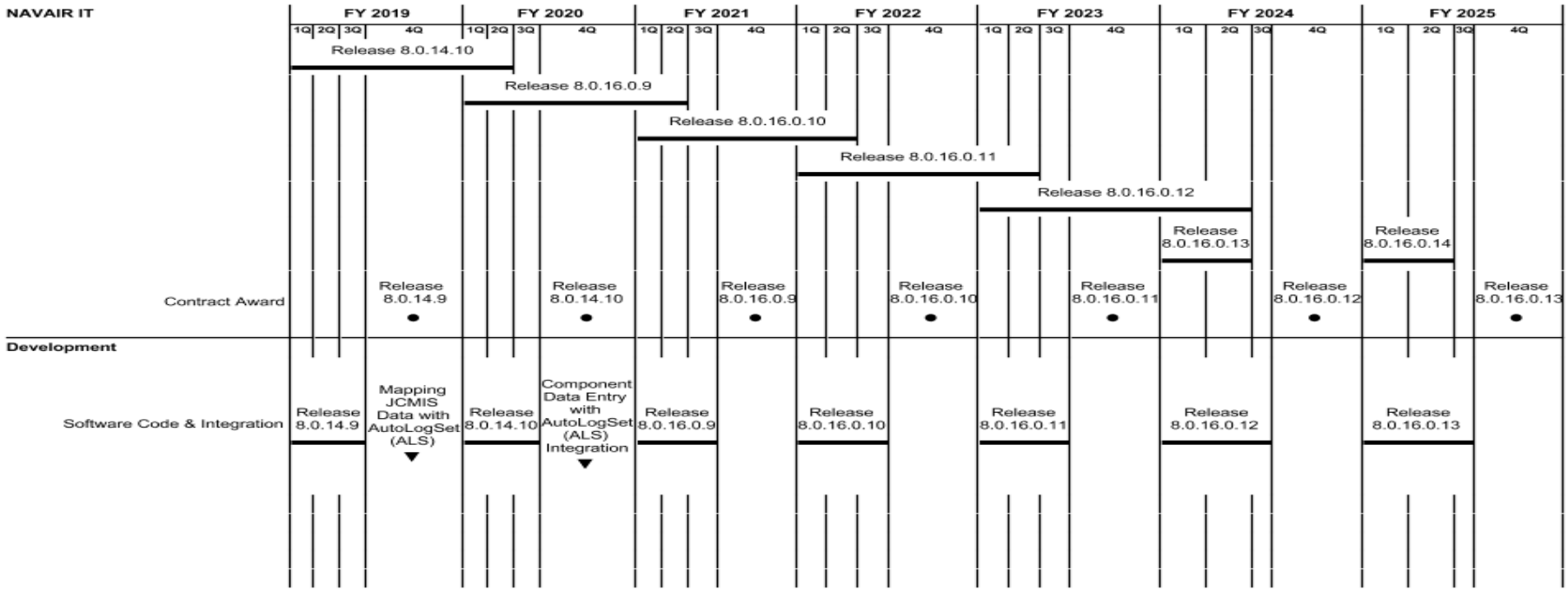

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

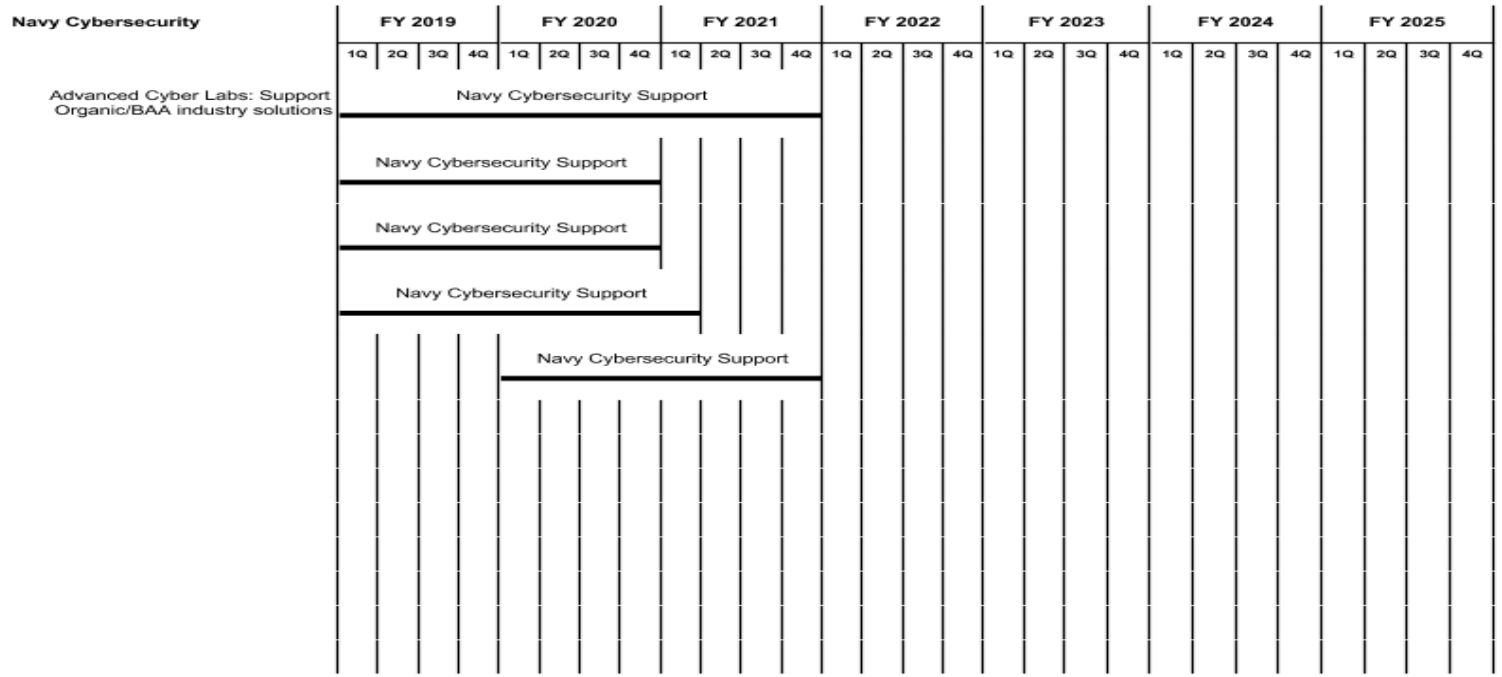

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

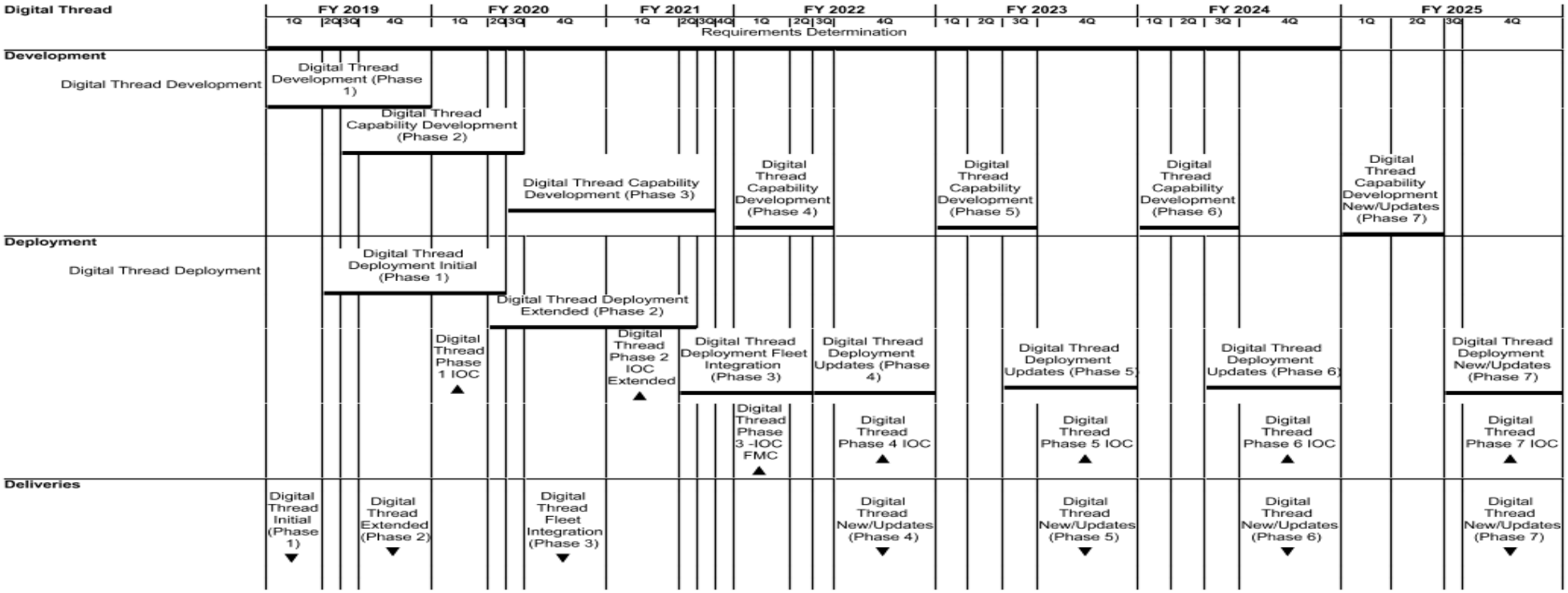

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2903 / *NAVAIR IT*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
NAVAIR IT				
Requirements Determination: Release 8.0.14.10	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
Requirements Determination: Release 8.0.16.0.14	1	2025	2	2025
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
Contract Award: Contract Award, Release 8.0.16.0.13	4	2025	4	2025
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 2021 Navy		Date: February 2020
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
Development: Software Code & Integration: Release 8.0.16.0.13	1	2025	3	2025
Navy Cybersecurity				
Advanced Cyber Labs: Support Organic/BAA industry solutions: Advanced Cyber Labs: Support Organic/BAA industry solutions	1	2019	4	2021
Advanced Cyber Labs: Support Organic/BAA industry solutions: Advanced Cyber Labs: Risk Assessment tools and security environments	1	2019	4	2020
Advanced Cyber Labs: Support Organic/BAA industry solutions: Advanced Cyber Labs: Cyber RDT&E Toolsets	1	2019	4	2020
Advanced Cyber Labs: Support Organic/BAA industry solutions: Cyber Planning and Response Center (CPRC), Forensics, Incident Response and Malware Analysis	1	2019	1	2021
Advanced Cyber Labs: Support Organic/BAA industry solutions: Cyber Aviation Red Team	1	2020	4	2021
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

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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: Digital Thread Development: Digital Thread Capability Development New/Updates (Phase 6)	1	2024	3	2024
Development: Digital Thread Development: Digital Thread Capability Development New/Updates (Phase 7)	1	2025	2	2025
Deployment: Digital Thread Deployment: Digital Thread Deployment Initial (Phase 1)	2	2019	2	2020
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 Deployment New/Updates (Phase 7)	3	2025	4	2025
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
Deployment: Digital Thread Deployment: Digital Thread Phase 7 IOC	4	2025	4	2025
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

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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**
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
Deliveries: Digital Thread New/Updates (Phase 7)	4	2025	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy											Date: February 2020	
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 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
2904: *NAVSEA IT*	230.844	33.996	15.696	25.983	-	25.983	18.362	20.754	20.129	21.845	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), Forward Deployed Regional Maintenance Center, 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 $8.9B (FY19) of ship, aircraft carrier, and submarine 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 applications, 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 IT tools and code base to the next generation of centrally hosted tools supporting Fleet Maintenance systems for the Navy. Funding for NMMES PU 2904 addresses critical deficiencies and minimizes the inherent risks that a catastrophic failure would be to fleet readiness. The funds are required to support the modernization of products that are on outdated software, align maintenance applications and processes with evolving shipbuilding techniques, and 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 requirement. 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 functions. The Workforce Management, Metrology and Calibration, and Financial Management functionality/requirements 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 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.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**
Title: electronic Technical Work Document (eTWD)	6.699	1.783	3.970	0.000	3.970
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Description: The FY 2020 Enacted FY 2019 Congressional rescission of $3.257M is not included in the FY 2021 President's Budget request R2A for project 2904. The FY19 enacted control should reflect $3.442M for eTWD when taking into account the rescission. 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 paperless work packages, pulling authoritative data from the existing NMMES applications supporting ship maintenance. The interactive electronic work instruction will be used at the jobsite replacing the current paper based 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 drawings accessible for problem resolution. The eTWD Initiative is in progress. ***FY 2020 Plans:*** With the environment build and integration testing completed the project alignment within the Centrally Hosted NMMES Maritime Systems Environment will move forward. This will include continued deployment planning and training necessary. Post code merge of the eTWD solution will be aligned to the MSE go-live schedule for the Naval Shipyards. Deployment is reliant on DISA, NMCI, and their vendors to acquire, install, test, and secure network circuits to support bandwidth and failover requirements. Once deployed the initial stabilization period will commence in the first naval shipyard. Following this effort the implementations at the remaining naval shipyards will continue in coordination with the network circuit installations in concert with the start of new maintenance availabilities. The NMMES program office is working closely with DISA and NMCI to coordinate schedules. ***FY 2021 Base Plans:*** The follow-on modules will be initiated based on the success during government testing and evaluation. The functionality will include interfaces with the systems of record that are utilized for work brokering and the development and implementation of class maintenance plans. This will then lead to the ability to compare work plans against the varied configurations across ship/sub classes in future years. The existing functionality will					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
move into the NMMES sustainment operational baseline. Planning for deployment to the Intermediate Level activities will begin. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY20 to 21 funding increases by $2.187M as the initial deployments complete and the integration of the follow-on modules are initiated to support maintenance improvements.					
Title: Project Sequencing & Scheduling (PSS) Upgrade	1.000	0.450	0.635	0.000	0.635
Articles:	-	-	-	-	-
Description: The PSS scheduling application 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 Chief of Naval Operations maintenance availabilities and other maintenance, repair and overhaul work assigned to the activities in support of the first phase of the Optimized Fleet Response Plan. 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 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 interrupting 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. ***FY 2020 Plans:*** Complete the analysis necessary for continued vendor upgrade to ensure supportability, patching, and bug fixes. Conduct the software configuration and integration with the NMMES applications. Continue testing the product to ensure critical chain scheduling requirements and conduct implementation and training of the user community in the use of the PSS Upgrade. ***FY 2021 Base Plans:*** Begin configuration for maintenance support functions not currently included in the critical chain scheduling functions across shipyard availabilities. Identify scheduling and sequencing requirements for lifting and handling to conduct analysis to identify configuration and integration tasks into single NSY scheduling tool. Begin					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
configuration to integrate and configure product enhancements based on continuous improvement process requirements and Fleet recommendations. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding increases by $0.185M from FY20 to FY21 in support of establishing of a single scheduling tool that is integrated across all shipyard work. This may include cranes, temporary services, and other trade shops supporting maintenance.					
Title: Planned Maintenance System (PMS) Upgrade	1.323	1.495	1.525	0.000	1.525
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 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 2020 Plans:*** The software development for PMSMIS and PMS Scheduling will continue utilizing spiral development philosophy using a 3 month development cycle to implement "feature set" solution packages planned and approved by the 3-M CCB. Following each 3 month development period, the 3-M CCB will conduct an In Progress Review (IPR) to verify "feature sets" adhere to approved user story requirements and review					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
programmatic elements including risk, schedule, resources and barriers. This will occur in line with the updates required to transition to the Risk Management Framework for cybersecurity. ***FY 2021 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 the end of FY23. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY20 to FY21 increased by $0.030M to support contracting obligations.					
Title: Strategic Planning &Forecasting (SPF) Upgrade	1.755	1.333	1.423	0.000	1.423
Articles:	-	-	-	-	-
Description: SPF is part of a suite of tools in NMMES 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 applications; 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 applications have known software deficiencies, which limit productivity and require cumbersome manual adjustments of key planning, availability progress, and workload leveling progress reports. This data is reported to the CNO on a weekly basis and is shared with others such as the Joint Chiefs and Congress when requested. 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. The SPF Upgrade is part of the Service Life Extension that will address the accumulation of significant problems with this application, 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 applications to produce a seamless real-time environment that can accommodate all project					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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. These efforts are in direct support of the CNO's Design for Maritime Superiority line of effort for the role of data in decision-making. ***FY 2020 Plans:*** Complete configuration of upgrade, and begin testing in the consolidated environment once network circuit upgrades are complete for the SPF upgrade in preparation. Initiate design for configuration on the QPS and PMC components. ***FY 2021 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 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding increase of $0.090M in FY 21 supports requirements identified for follow-on modules to provide end-to-end analytics and business intelligence capability.					
Title: Financial Technical Upgrade	3.590	2.320	2.860	0.000	2.860
Articles:	-	-	-	-	-
Description: NMMES has two primary applications that are financial feeders; 1) SYMIS Mission Funded COST (aka COST) 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 which manages the Time & Attendance data from NMMES to the Defense Civilian Payroll System (DCPS). These applications 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 2019; 3) both these applications 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 application 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 applications in					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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 transition these applications 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 system in support of ship and submarine maintenance operations. ***FY 2020 Plans:*** DON SABRS interface integration will require continued support to address open items that were not closed prior to deployment and end of year rollover. A feasibility assessment to address COBOL alternatives will be conducted to ensure supportability. Will initiate the software development necessary to transition both the COST & PPPP applications to be non-COBOL solutions. Conduct COST & PPPP planning to deploy the replatformed the applications to a supportable and affordable code base/COTS product. This is dependent on the continued DISA network circuit procurement, installation, and cybersecurity protections that will continue into FY20 to support the Depot Maintenance user community. ***FY 2021 Base Plans:*** Continue integration and configuration. Begin deployment of select modules in the replatformed toolset. Complete training and deployment. Begin planning and requirements identification for future potential Navy ERP interface.. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY20 to FY21 budget increase of $0.540M supports requirements for deployment, planning, and ongoing auditability efforts.					
Title: Material Management Upgrade	4.414	2.172	1.893	0.000	1.893
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					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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). Utilizing the findings from multiple LEAN events NAVSEA 08 and the Corporate Material Process Action Team have 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 2020 Plans:*** Conduct software configuration efforts based on the design analysis and market research. Begin functional testing of the replacement solution. Conduct Integration testing to insure the planned solution satisfactorily integrates with NMMES System and external material management systems of record. This is dependent on the continued DISA network circuit procurement, installation, and cybersecurity protections that will continue into FY20 to support the Depot Maintenance user community. ***FY 2021 Base Plans:*** 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 deployment and implementation. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY20 to FY21 decrease of $0.279M is based on requirements identified during FY20 & FY21 project planning. The analysis of solution sets reduced complexity and cost.					
Title: NMMES -- Maritime Systems Environment (MSE) -- Database Optimization	2.104	0.810	2.775	0.000	2.775

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Articles:	-	-	-	-	-
Description: The NMMES system 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 Component Enterprise Data Center (CEDC). Once the transition from four geographically dispersed instances to the CEDC is complete and has reached stability the Database will be optimized to gain throughput efficiencies, capitalize on economies of scale, and rationalize data structures to streamline the use of authoritative data and to provide standardized access to data across the fleet maintenance enterprise. ***FY 2020 Plans:*** Conduct database alignment and restructuring in sequence with the centrally hosted MSE environment rollout. Initiate independent validation of database performance. ***FY 2021 Base Plans:*** Continue integration and testing to support COTS utilization within toolset. Conduct tuning, verification, and validation of the restructured database. Continue deployment within the NMMES toolset. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The project FY20 to FY21 project increase by $2.23M reflects work execution plans in support of the ongoing architecture, testing and analysis to support I & D Level maintenance. The project team conducted the analysis based on the changes required for auditablity and realigned plans to support program goals.					
Title: SUPDESK - Timekeeping For All	0.000	0.375	1.450	0.000	1.450
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 by enabling time attestation for all employees. ***FY 2020 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Conduct advanced planning for Workforce Management Update including revalidation of requirements. Conduct initial design analysis and market research of current technologies. Begin software development and integration with NMMES; begin product deployment. ***FY 2021 Base Plans:*** Continue integration; begin training and deployment and activities. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY20 to FY21 increased of $1.075M enables deployment and training activities for the NSYs, and the detachments. This will include train the trainer activities.					
Title: MSE Waterfront Process Improvement	1.000	0.570	1.250	0.000	1.250
Articles:	-	-	-	-	-
Description: The Maritime Systems Environment (MSE) Waterfront Processes Improvement project is focusing on aligning the NMMES toolset to compliment waterfront industrial processes changes that were recommended based on the outcomes of multiple LEAN events. 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 implementation of additional process improvements to gain further economies in the maintenance community. ***FY 2020 Plans:*** Prioritize mature LEAN findings based on best return on investment and begin analysis for integration into MSE within the centrally hosted environment. Structure improvements into series of releases aligned with the MSE regular update cycle in order to accelerate delivery of capability to users. This is dependent on the continued DISA network circuit procurement, installation, and cybersecurity protections that will continue into FY20 to support the Depot Maintenance user community. ***FY 2021 Base Plans:*** Continue configuration, testing, and implementation of process improvements into the consolidated baseline at CEDC Charleston. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Project funding increases by $0.68M in FY21 to support implementation of releases to the workforce.					
Title: Enterprise Data Analytics	2.714	1.603	1.843	0.000	1.843
Articles:	-	-	-	-	-
Description: Establish capability to fully utilize navy authoritative maintenance data to develop predictive analysis and gain efficiencies in ship availabilities to provide data driven decisions based on current information. ***FY 2020 Plans:*** Finalize functional and business process analysis and market analysis of commercial products. Select commercial package(s) and begin configuration and integration planning. ***FY 2021 Base Plans:*** Continue integration, configuration, and deployments of selected toolset(s) as functionality is delivered based on lessons learned, user community feedback, leadership direction, and data quality improvements. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY20 to FY21 increases by $0.24M in support of improving data quality and configuration adjustments based on feedback from the functional user and leadership guidance.					
Title: Local Application Rationalization	0.000	0.298	0.580	0.000	0.580
Articles:	-	-	-	-	-
Description: Several local applications provide site-specific augmentation to the NMMES toolset due to the historically distributed environment. The project rationalizes application to provide standardized functionality across the shore maritime maintenance community in line with the centralized hosting. This requires reviewing local application functionality and to determine which application functionality should be migrated. ***FY 2020 Plans:*** Conduct analysis and rationalization of local applications that provide site specific augmentation to the NMMES program for maintenance operations. Begin planning and design for the standardization, configuration/integration into NMMES portfolio. Review and implement cyber security changes required to host this at the Component Enterprise Data Center (CEDC). ***FY 2021 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continue configuration and integration to incorporate the required end-to-end functionality into the centrally hosted single instance of the NMMES system. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY20 to FY21 increased by $0.282M to support cybersecurity assurance and compliance processes during integration.					
Title: Product Data Management Integration	8.533	2.387	2.835	0.000	2.835
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 applications 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 2020 Plans:*** FY20 efforts will include analysis, configuration 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. This is dependent on the continued DISA network circuit procurement, installation, and cybersecurity protections that will continue into FY20 to support the Depot Maintenance user community. ***FY 2021 Base Plans:*** Continue configuration, integration, and testing activities. Correct deficiencies identified during the testing processes. Initiate deployment in alignment with the rest of the NMMES modules as usable features become available. ***FY 2021 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY20 to FY21 increased by $0.448M to support FORD and COLUMBIA Class work and continue deployment with ongoing configuration efforts.					
Title: Mobility Solutions	0.864	0.100	2.944	0.000	2.944
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 2020 Plans:*** Deploy to a limited user base for testing, conduct support, project plans were shifted due to funding realignment from FY20 and into FY21 and FY22. Assess waterfront process improvements that align with mobility solutions. ***FY 2021 Base Plans:*** Begin configuration, testing, and integration of the full NMMES capability for mobile use on official use devices. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY20 to FY21 funding increases by $2.844M to support full configuration of NMMES capability for I & D Level maintenance.					
Accomplishments/Planned Programs Subtotals	33.996	15.696	25.983	0.000	25.983

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

The backbone of the present solution is a set of dated information technology (IT) products that have exceeded or are approaching end-of-life and do not meet the increasingly digitized operating environment. In order to ensure that the IT toolset continued 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

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necessary to gain further efficiencies in the toolset; and to transition this solution to a more modern and efficient end state. Selected modernizations, utilizing Commercial Off The Shelf (COTS) are aligned with ongoing sustainment to provide an IT solution until a 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 required services, utilizing existing delivery orders where feasible.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/CPFF	NAVSEA : WNY, D.C.	168.900	33.996	Oct 2018	15.696	Oct 2019	25.983	Nov 2020	-		25.983	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	NAVWAR : Arlington, VA	7.471	0.000		0.000		0.000		-		0.000	0.000	7.471	-
Advance Planning Analysis	C/CPFF	NAVSEA : WNY, D.C.	33.474	0.000		0.000		0.000		-		0.000	0.000	33.474	-
Advance Planning Analysis	C/CPFF	NSWC PHD : Port Hueneme, CA	5.000	0.000		0.000		0.000		-		0.000	0.000	5.000	-
		Subtotal	230.844	33.996		15.696		25.983		-		25.983	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 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	230.844	33.996		15.696		25.983		-		25.983	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
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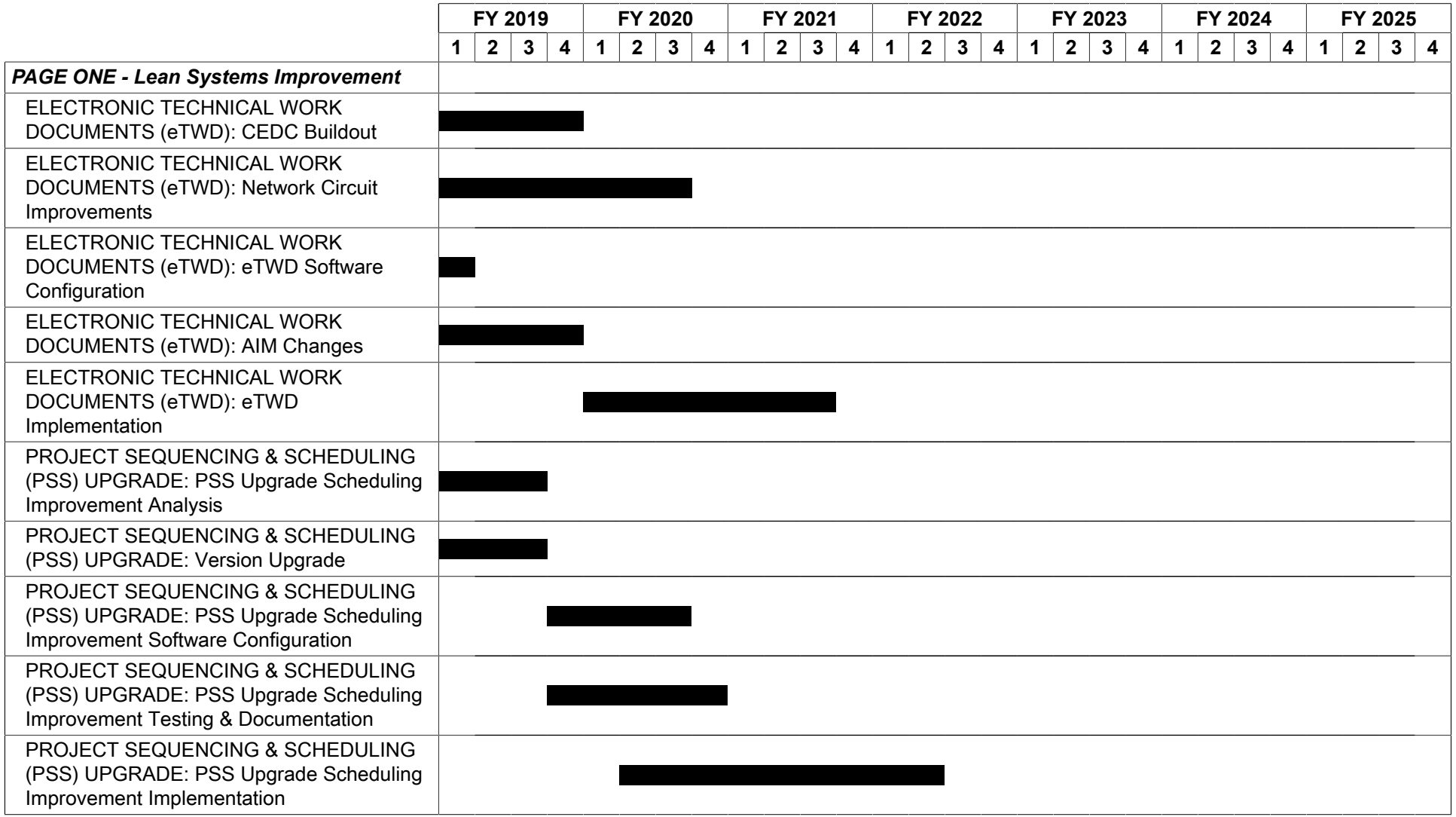

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
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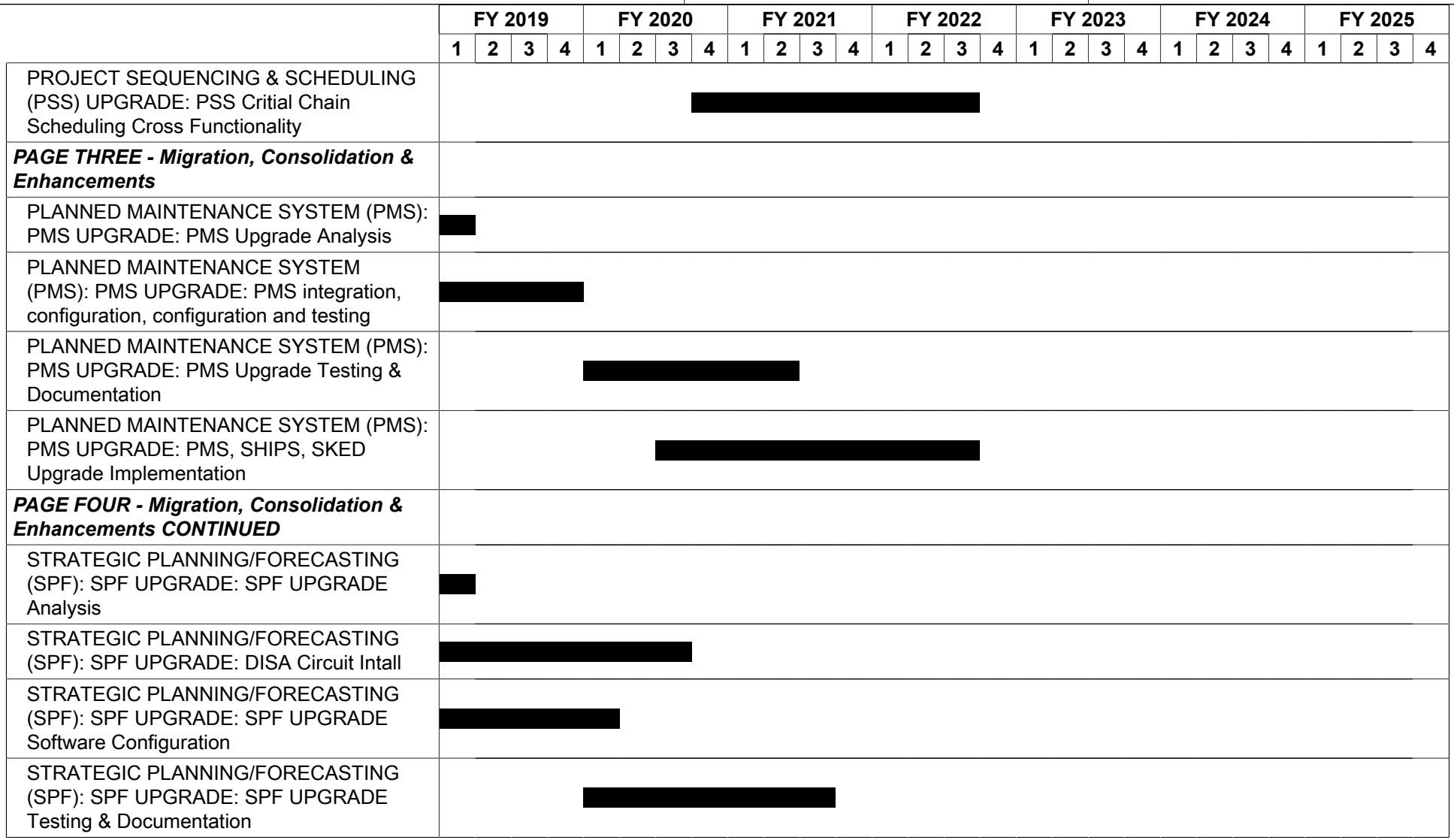

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

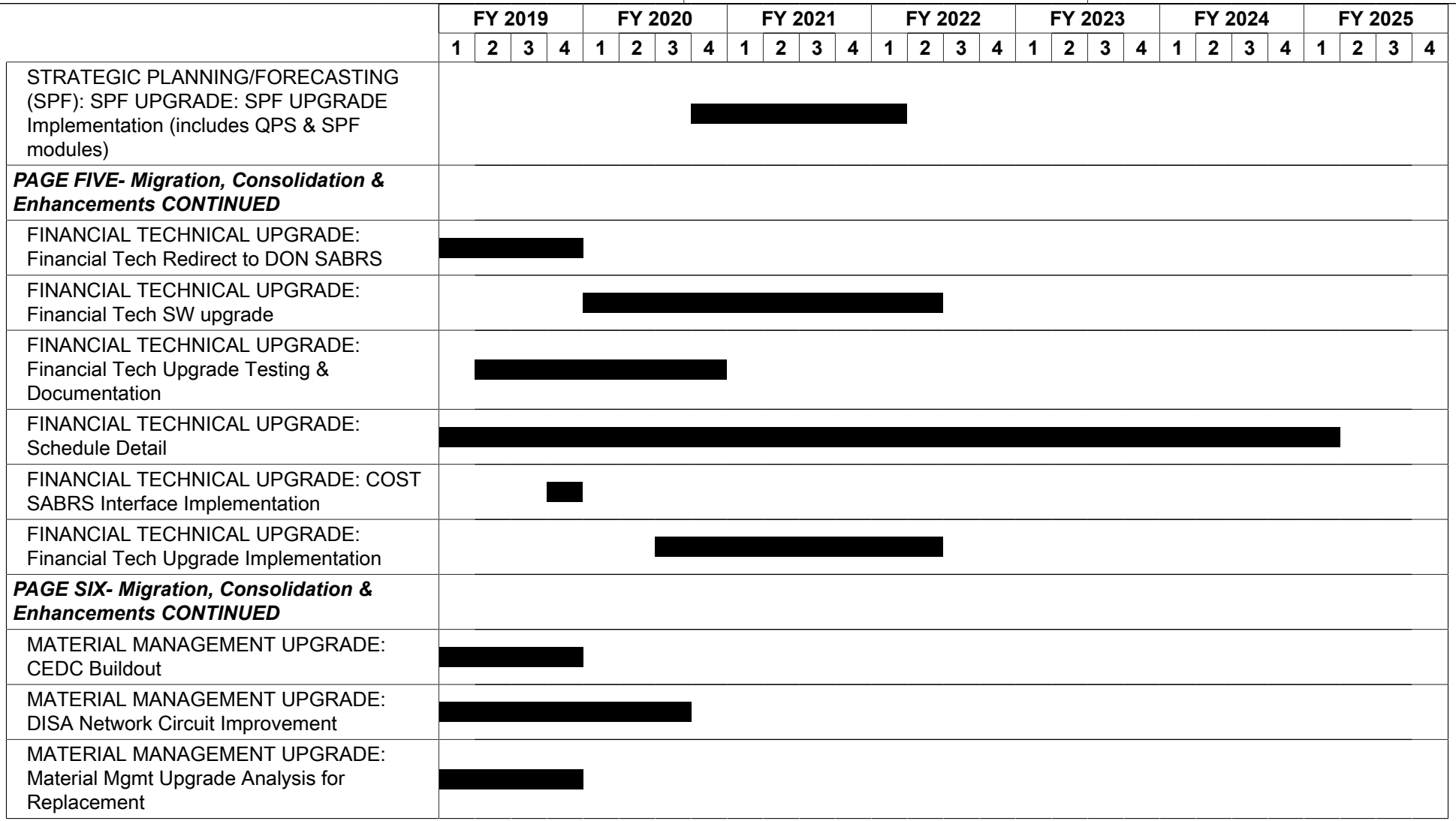

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
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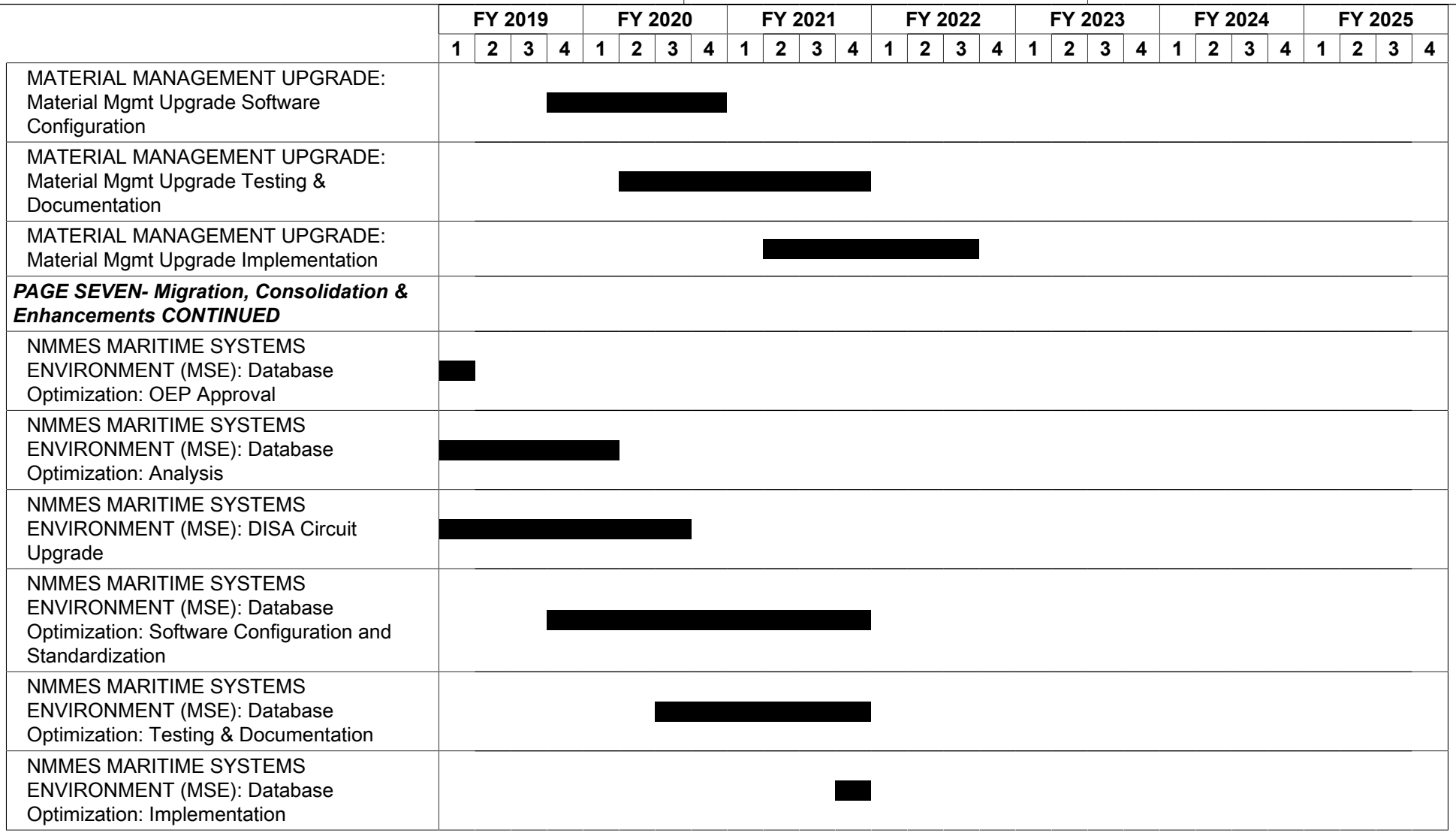

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2904 / *NAVSEA IT*

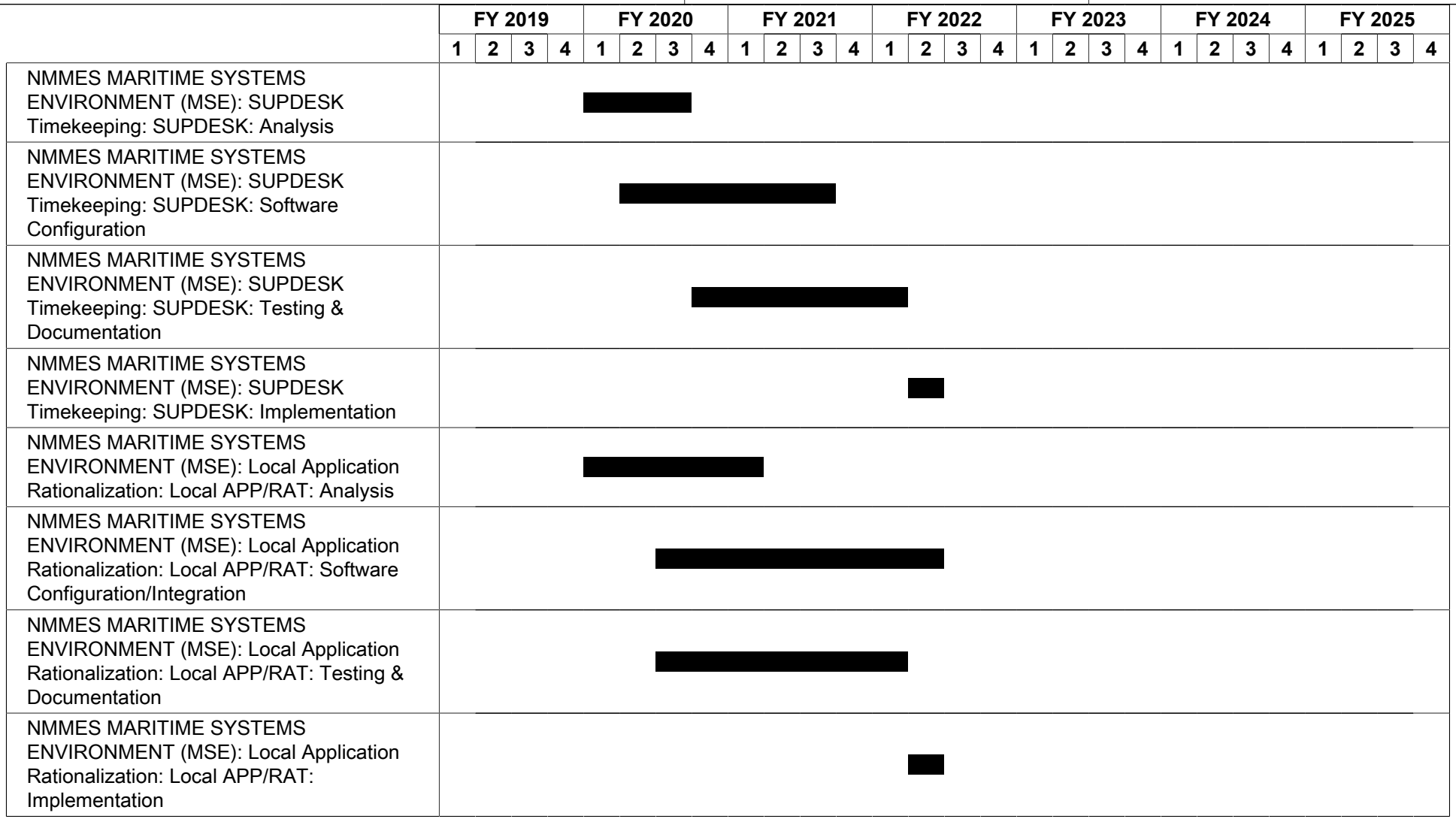

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
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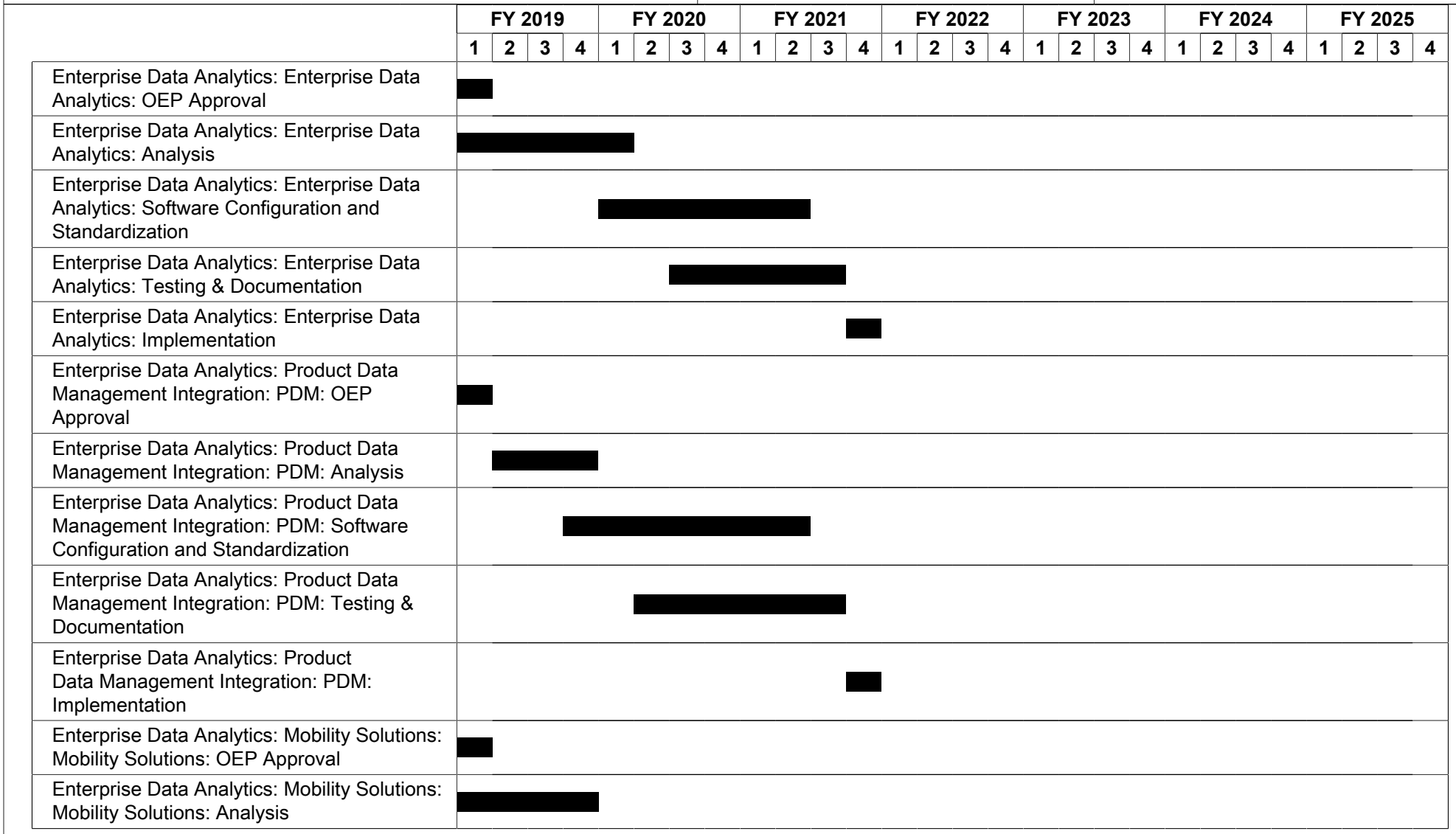

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
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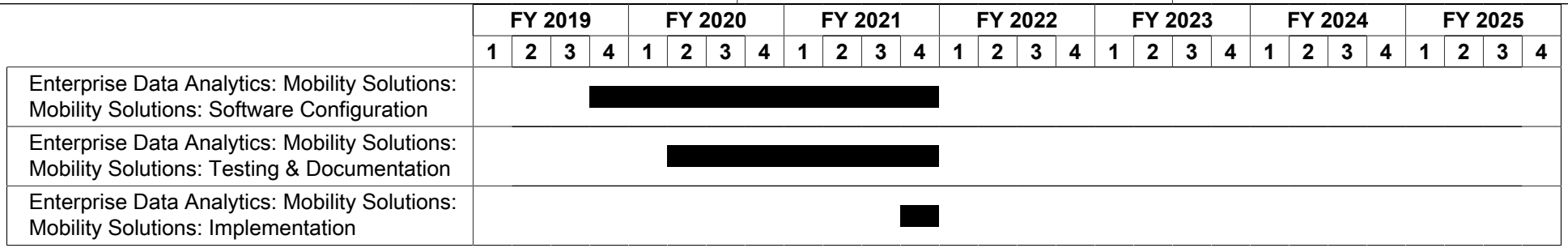

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
PAGE ONE - Lean Systems Improvement				
ELECTRONIC TECHNICAL WORK DOCUMENTS (eTWD): CEDC Buildout	1	2019	4	2019
ELECTRONIC TECHNICAL WORK DOCUMENTS (eTWD): Network Circuit Improvements	1	2019	3	2020
ELECTRONIC TECHNICAL WORK DOCUMENTS (eTWD): eTWD Software Configuration	1	2019	1	2019
ELECTRONIC TECHNICAL WORK DOCUMENTS (eTWD): AIM Changes	1	2019	4	2019
ELECTRONIC TECHNICAL WORK DOCUMENTS (eTWD): eTWD Implementation	1	2020	3	2021
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Upgrade Scheduling Improvement Analysis	1	2019	3	2019
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: Version Upgrade	1	2019	3	2019
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Upgrade Scheduling Improvement Software Configuration	4	2019	3	2020
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Upgrade Scheduling Improvement Testing & Documentation	4	2019	4	2020
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Upgrade Scheduling Improvement Implementation	2	2020	2	2022
PROJECT SEQUENCING & SCHEDULING (PSS) UPGRADE: PSS Critial Chain Scheduling Cross Functionality	4	2020	3	2022
PAGE THREE - Migration, Consolidation & Enhancements				
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS Upgrade Analysis	1	2019	1	2019
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS integration, configuration, configuration and testing	1	2019	4	2019

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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS Upgrade Testing & Documentation	1	2020	2	2021
PLANNED MAINTENANCE SYSTEM (PMS): PMS UPGRADE: PMS, SHIPS, SKED Upgrade Implementation	3	2020	3	2022
PAGE FOUR - Migration, Consolidation & Enhancements CONTINUED				
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Analysis	1	2019	1	2019
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: DISA Circuit Intall	1	2019	3	2020
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Software Configuration	1	2019	1	2020
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Testing & Documentation	1	2020	3	2021
STRATEGIC PLANNING/FORECASTING (SPF): SPF UPGRADE: SPF UPGRADE Implementation (includes QPS & SPF modules)	4	2020	1	2022
PAGE FIVE- Migration, Consolidation & Enhancements CONTINUED				
FINANCIAL TECHNICAL UPGRADE: Financial Tech Redirect to DON SABRS	1	2019	4	2019
FINANCIAL TECHNICAL UPGRADE: Financial Tech SW upgrade	1	2020	2	2022
FINANCIAL TECHNICAL UPGRADE: Financial Tech Upgrade Testing & Documentation	2	2019	4	2020
FINANCIAL TECHNICAL UPGRADE: Schedule Detail	1	2019	1	2025
FINANCIAL TECHNICAL UPGRADE: COST SABRS Interface Implementation	4	2019	4	2019
FINANCIAL TECHNICAL UPGRADE: Financial Tech Upgrade Implementation	3	2020	2	2022
PAGE SIX- Migration, Consolidation & Enhancements CONTINUED				
MATERIAL MANAGEMENT UPGRADE: CEDC Buildout	1	2019	4	2019
MATERIAL MANAGEMENT UPGRADE: DISA Network Circuit Improvement	1	2019	3	2020
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Analysis for Replacement	1	2019	4	2019

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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Software Configuration	4	2019	4	2020
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Testing & Documentation	2	2020	4	2021
MATERIAL MANAGEMENT UPGRADE: Material Mgmt Upgrade Implementation	2	2021	3	2022
PAGE SEVEN- Migration, Consolidation & Enhancements CONTINUED				
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: OEP Approval	1	2019	1	2019
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Analysis	1	2019	1	2020
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): DISA Circuit Upgrade	1	2019	3	2020
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Software Configuration and Standardization	4	2019	4	2021
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Testing & Documentation	3	2020	4	2021
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Database Optimization: Implementation	4	2021	4	2021
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Analysis	1	2020	3	2020
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Software Configuration	2	2020	3	2021
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Testing & Documentation	4	2020	1	2022
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): SUPDESK Timekeeping: SUPDESK: Implementation	2	2022	2	2022
NMMES MARITIME SYSTEMS ENVIRONMENT (MSE): Local Application Rationalization: Local APP/RAT: Analysis	1	2020	1	2021

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

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COST ($ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
2905: *BUPERS IT*	83.368	85.864	106.091	137.429	-	137.429	148.061	127.385	1.298	0.000	0.000	689.496
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Beginning in FY21 funding associated with Risk Management Information (RMI) has been realigned to Program Element (PE) 0608013N / Project 2901.

A. Mission Description and Budget Item Justification

My Navy Human Resources (HR) Transformation - formerly known as Manpower, Personnel, Training & Education (MPT&E) Transformation -- will change how HR services are provided throughout a Sailor's entire "Hire-to-Retire" lifecycle and improve fleet combat readiness. By streamlining processes and systems, MyNavy HR will improve the speed, accuracy, and quality of personnel and pay services, better positioning the Navy to equip and manage its people.

This effort is the linchpin of the Navy's MPT&E Business IT Transformation strategy that 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 neither cost efficient nor effective. MyNavy HR involves revolutionary change by using agile delivery model to the greatest extent possible to implement business IT products using the Industry Best Practices Model (e.g., early investment for largest ROI, rapid prototyping, and vanilla COTS products usage.) MyNavy HR is a fully integrated portfolio of IT Systems segmented by MyNavy HR Core (Navy Personnel and Pay (NP2); Learning Stack (LS) and the Customer Relationship Management (CRM) Solution) and Infrastructure Platforms (Single Point of Entry (SPOE) and Authoritative Data Warehouse (ADE)). This portfolio of systems serves as the cornerstone of the OPNAV N1 MyNavy HR strategy.

The impetus for building an adaptive family of systems is gearing MyNavy HR Transformation towards customer needs. The traditional waterfall delivery methodology of IT goods and services cannot meet the emergent requirements evolving from shortened technical obsolescence. Thus, MyNavy HR Transformation will employ an Agile delivery method that is highly structured, with a repeatable software development approach designed to quickly deliver usable capability to the end user. These capabilities are packaged as Minimum Viable Products (MVPs) which are routinely delivered to the customer for their use and evaluation. Favorably received MVPs are subsequently refined and integrated into a production baseline.

Rapidly integrating a family of systems using an agile methodology necessitates an overarching system integrator and coordinator to ingest pilots and prototypes into a technical baseline. The Transformation Portfolio Coordinator & Production (TPC&P) contract is an IDIQ contract that will deliver a family of systems in support of MyNavy HR. This contract will provide the Global Design & Strategic Planning to baseline the "55 to 1" global design and strategic technical execution plan and will articulate the "system of systems" baseline release. Additionally, pilots and prototypes that have reached sufficient maturity will be integrated and deployed into the production baseline under this contract, as well as, sustainment of the production baseline.

NAVY PERSONNEL AND PAY (NP2)

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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 MyNavy HR Transformation.

The NP2 adapts and reengineers business processes to conform to the technical parameters of PeopleSoft 9.2 while integrating with the Direct to Treasury Pay Capability via Pay Modernization (Pay Mod). This combined effort 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.

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 Defense Joint Military Pay 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.

LEARNING STACK (LS)

Learning Stack supports Ready Relevant Learning (RRL), 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 program of instruction 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 to ensure every Sailor receives the appropriate level of training at the real world point of need to support assigned taskings;
2. Synchronization of work requirements with learning modules to ensure proper training delivery
3. Leverage cloud-hosted curriculum to optimize the speed of updates to Navy training content

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The learning management tools 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 MyNavy HR mobility efforts, gaming and simulation technology as it is brought on-line.

Learning Stack 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)
SPOE is an information management concept that provides an intuitive self-service capability for Sailors to view and manage personnel and career information, providing Sailors with access to information including learning content, HR applications, and career business processes. SPOE will be the user-facing capability, enabling the MyNavy Career Center (MNCC), linking Sailors to modernized personnel and pay capabilities in NP2, providing Sailor training through the LS, and access to authoritative data, which holds their personnel and pay record information. SPOE consolidates Navy's Human HR portals, knowledge, and applications into a single, simplified user experience and will include processes and functionality, such as

1. Integration of capabilities, to include: My Navy Portal (MNP), Mobile Applications, CRM solution, and Identity Access Management (IdAM);
2. MNP
A. Capability to have a low bandwidth version accessible to Sailors operating in a restricted bandwidth environment
B. Ability to host and manage mobile applications through the Navy App Locker
C. Provide Mobile application management suite/platform
3. IdAM
A. Provide authentication, authorization, and single sign on capability for access to the objective My Navy HR capability

AUTHORITATIVE DATA ENVIRONMENT (ADE)
The Authoritative Data Environment (ADE) is an enterprise information management system that will migrate the existing legacy data warehouses into a central data repository that is composed of a data warehouse, data lake, data management tools and an Application Program Interface (API) Layer.
ADE will provide an authoritative data sharing framework, leveraging scalable and interoperable technologies as well as business intelligence and data analytic capabilities.
ADE will need to interface and integrate with SPOE and all MyNavy HR transactional and business systems, including enabling 'plug & play' of new services, technologies, and system capabilities. Some of the key principles of ADE include:
1. Flexible architecture and scalable design.
2. Data Governance to produce authoritative, cleansed, conformed, consolidated, and calculated data.
3. Data Access to specified users.
4. Master Data Management (core elements, metadata tagging, business rules, standards, metrics, and tools).
5. Data analytics and business intelligence (descriptive, prescriptive, and predictive).
6. Identification, development, and maintenance of enterprise data policies.

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CUSTOMER RELATIONSHIP MANAGEMENT (CRM) solution is part of the MyNavy HR Core IT System that will integrate business processes, supporting systems, and authoritative data in support of Navy Personnel Command's (NPC's) MNCC (My Navy Career Center), Navy Recruiting Command (NRC), Navy Education & Training Command (NETC), and other commands that manage the Navy workforce.
The CRM solution will provide an approach to manage information on current and future Sailors, veterans, and their families. The CRM solution is organized into the following main segments:

1. Sales Management - recording all stages of the prospecting process to include contact management, leads tracking, forecasting and initial processing.
2. Knowledge Management - providing the tools for identifying, capturing, evaluating, retrieving, and sharing information assets.
3. Case Management - supporting the automation of processes to formulate opinions, approvals, and fulfillment of case related requests.
4. Performance Management- supporting the performance of Navy Sailors.
5. CRM capabilities can provide several functions in support of the Navy's recruiting needs, to include:
A. Provide personally identifiable information (PII) in a commercial cloud platform.
B. Provide ability for users to access mobile platforms.
C. Meet Navy Cybersecurity requirements to protect Impact Level (IL) 4 data and will achieve an Authority to Operate (ATO) from the Navy Authorizing Official (NAO).
D. Support non-recruiting activities and address case management and knowledge management. Case management functionality supports tracking incidents, and knowledge management provides for sharing and collaborating across various business areas.

RISK MANAGEMENT INFORMATION (RMI) (Not part of MyNavy HR Transformation)
Beginning in FY21 funding associated with Risk Management Information (RMI) has been realigned to Program Element (PE) 0608013N / Project 2901.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Learning Stack (LS)	4.148	4.851	11.000	0.000	11.000
Articles:	-	-	-	-	-
FY 2020 Plans: 1. Complete Learning Stack Commercial Off-The-Shelf (COTS) implementation: A. Content Delivery System (CDS) Phase I Limited Deployment provides capability to build curriculum and student/instructor guides B. Learning Management System (LMS) IL2 Limited Deployment completes LMS integration with Learning Content Repository (LCR) and receive content from Ready Relevant Learning (RRL) C. LMS (Learning Management System)/LAS (Learning Assessment System)/LRS SIPR On Premise Limited Deployment to deliver classified content 2. Complete COTS Impact Level (IL) 2 LMS solution integration with Learning Content Repository (LCR); 3. Procure and Integrate Scheduler with capability to manage classroom usage;					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
4. Begin Game Engine (xAPI Dictionary) creation efforts with Learning Stack components to enable trend analysis and tracking course effectiveness					
FY 2021 Base Plans: Learning Stack (LS) is a learning management system that provides on-demand training and education content to Navy personnel afloat and ashore. LS provides course completion and course catalog information located in a centralized repository. The LS capabilities will be integrated into the objective MyNavy HR capability which will enhance the quality assurance of training and education content made available to the end user(s). 1. Pilot LMS Secret Internet Protocol Router (SIPR) RRL content on Network; 2. Complete design and development of resource management capability into Campus Solutions COTS solution to enable an integrated enterprise view of people, resources, and locations; 3. Pilot the Learning Record Store (LRS) in Impact Level (IL) IL4 environment with dashboards; 4. Develop Campus Solutions Pilots and licensing purchases; 5. Complete Content Planning Module COTS pilot implementation to expand curriculum development capability; 6. Pilot Learning Content Repository (LCR) in IL4 environment to determine the path for establishing an authoritative repository; 7. Pilot Learning Stack Afloat disconnected operations solutions along with completion data reporting to Learning Record Stores (LRS); 8. Complete game engine xAPI dictionary integration efforts with LMS components					
FY 2021 OCO Plans: N/A					
FY 2020 to FY 2021 Increase/Decrease Statement: Increase of $6.1M. The FY21 RDT&E,N funding increase is a result of fielding four Learning Stack Pilot solutions within COTS products in Afloat disconnected and Ashore cloud IL4 environments. Three existing capabilities (Recruiting Training Manuals, Corporate Enterprise Training Activity Resource Systems, and Content Planning Module) will migrate to the four prototyped environments, which will be integrated into the MyNavy HR system of systems. The CeTARS migration is complex given 11 of 24 high level functions need to map to a COTS solution in IL4, while the current system continues serving Sailors. This will require licensing, data migration, single sign on, and enterprise API implementation.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Learning Stack is building these Ready Relevant Learning enhancements, fundamentally altering the sailor/ student experience through multiple delivery options of enhanced content so the right training, at the right time, is delivered via the right means. Beyond the scope of planned pilots, this increase also allows for system consolidation into improved technological outlets and, where necessary, preservation of a secure medium for content delivery.					
Title: Single Point of Entry (SPOE)	16.636	22.465	17.700	0.000	17.700
Articles:	-	-	-	-	-
FY 2020 Plans: SPOE will continue development of the MNP public page, completion of the Risk Management Framework (RMF) conversions, and completion of the idAM Pilot. These activities will be accomplished through the following tasks: 1. Integrate 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 MyNavy HR information; 2. Integrate and deploy MNP self service capability (into the CRM platform) 3. Deploy / update 11 mobile applications to support MyNavy HR Transformation. Mobile apps serve as a key component of OPNAV N1s Sailor Self Service capabilities. 4. Redesign the MNP Public page to allow for easier accessibility to Career Life Events (CLE) content for Sailors 5. Begin analysis on the legacy website consolidation strategy across the OPNAV N1 Enterprise 6. Complete the MNCC CRM and Telephony integration with SPOE to provide Sailors with a more seamless interaction of various MyNavy HR capabilities					
FY 2021 Base Plans: FY21 will see several SPOE pilot efforts shift from completion to ingestion in the technical baseline. 1. Deploy / update 8 mobile applications (Financial Literacy, PFA Update, Pregnancy & Parent, MyNavy Family, Records Mgmt, CENSECFOR, Life skills Reachback, Navy Cool Program) 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. 2. Transition IdAM pilot to production baseline and complete integration with My Navy HR programs requiring IdAM. Effort improves Fleet authorization and security procedures. Software will require modest reconfiguration to meet Navy security parameters.					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
3. Advance integration of portal Career Life Event (CLE) portlet capabilities for Sailors to manage their careers in an intuitive self-service web environment. 4. Perform system consolidations in order to streamline MyNavy HR applications and capabilities. System integrations require new MNP development/modernization code builds to enable MNP to successfully partner with them. 5. Deploy MNP Quarterly releases to enhance capabilities for Sailor Self-Service, Personnel and Pay Data, and CLE pages ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Decrease of $4.8M. Two major pieces of development work conclude in FY20 which lessen the FY21 RDT&E,N requirement for SPOE. 1.) Completion of RMF conversions 2.) Complete 80% of iDAM piloting activities					
Title: Customer Relationship Management (CRM) ***Articles:*** ***FY 2020 Plans:*** The Customer Relationship Management solution is an extension of requirements and pilots previously funded under SPOE and NP2 (Applicant Relationship Management (ARM) initiatives) in FY19 and prior. After the completion of initial small scale CRM Pilots it was determined that a SalesForce solution should be used to integrate business processes, supporting systems, and authoritative data in support of Navy Personnel Command's (NPC's) MNCC (My Navy Career Center), Navy Recruiting Command (NRC), Navy Education & Training Command (NETC), and other commands that manage the Navy workforce. Efforts have been undertaken to separately identify the continuing requirements and funding beginning in FY20. FY20 plans include: 1. Complete interface and Go-Live with CRM/ICAM interface; 2. Complete rollout of the Applicant Relationship Management (ARM); 3. Complete field testing for PET IV(a) (i.e. Coaching) to assess coaching tools and capability 4. Complete Fleet Field Test Phase IV(a) Training	0.000 -	27.367 -	29.487 -	0.000 -	29.487 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
5. Procure Software-as-a-Service (SaaS) Licenses to provide high level capabilities to manage and track current Sailors and future Navy Recruits ***FY 2021 Base Plans:*** FY21 will focus on completing all CRM deliverables. Planned tasks and accomplishments in FY21 include (SalesForce Licenses (Software as a Service) account for $12.0M of FY21 costs): 1. Integrate and migrate MVP 3 (TOPS) capability from MNCC into the CRM platform to provide a reliable document transfer system; 2. Integrate and migrate MVP 4 Credential, Apprenticeship and Voluntary Education (CAVE-VOLED) capability from MNCC into the CRM platform in order to provide an integrated credentialing, apprenticeship and voluntary education suite of HR functions 3. Integrate and migrate MVP 5 N-17-H-EO (21st Century Sailor Office OPNAV N17 Harassment and Equal Opportunity) capability from MNCC into the CRM platform to allow for fast, easy and secure submission of Harassment and EO complaints 4. Procure Software-as-a-Service (SaaS) Licenses to provide high level capabilities to manage and track current Sailors and future Navy Recruits ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The $2.1M increase is attributed to the increased cost for SalesForce SaaS licenses. The cost is projected to increase on an annual basis as a result of the number of user licenses increasing year over year.					
Title: Navy Personnel and Pay (NP2)	50.726	30.008	56.092	0.000	56.092
Articles:	-	-	-	-	-
FY 2020 Plans: FY20 efforts focus on configuring the initial 155 pay elements along with a subset of personnel processes to trigger the pay transactions. Additionally, efforts include a Global Design and Strategic Plan to develop the enterprise architecture (ashore & afloat, unclassified and classified) target system supporting the 55-to-1 Transformation Strategy. 1. Complete design and development of the PCS Travel theme;					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
2. Complete development of the Performance theme; 3. Complete unit, functional, integration/regression testing and package handoff of the 1) PCS Travel and 2) Performance themes; 4. Complete integration sprints for the NP2 Rapid Prototype Pilot (RPP) themes; 5. Complete Iterative Development Test (DT) and Iterative System Integration Test (SIT) for NP2 RPP themes; 6. Testing organizations complete OTS observation for NP2 RPP; 7. Complete NP2 RPP (Street to Fleet functionality) capability 8. Conduct training for NP2 RPP 9. Support JITC services for audit efforts such as SFIS Compliance, Financial Compliance, and Interoperability certification. 10. Limited User Testing (LUT) and Operational Testing for NP2 RPP. 11. Complete Preliminary Design Review (PDR) and Critical Design Review (CDR) for Navy Enlisted System (NES)/Officer Personnel Information System (OPINS) consolidation 12. Plan and perform data cleansing analysis of the Defense Joint Military System (DJMS); 13. Perform analysis of Afloat requirements for NP2; 14. Develop a Global Design and strategic plan that will baseline the shutdown and integration of legacy IT functions into the future enterprise system environment. 15. Conduct the initial analysis of 13 legacy IT System applications for integration into the 55-to-1 strategy. Develop a technical report that recommends "when" and "how" Personnel/Pay; Transfers/Accessions; Advancements and Promotions; Manpower; Financials; functionality will transform into the future enterprise system baseline.					
FY 2021 Base Plans: Efforts in FY21 are focused on achieving the Initial Operating Capability (IOC) for NP2 and stand-up the Navy payroll operations and customer support for all pay and personnel transactions. FY21 will initiate the second Pilot Project within NP2, Rapid Fielding Prototype (RFP) - that will design, configure, and test the remaining 48 pay elements and associated personnel processes. The completion of RFP provides the Navy with the capability to pay Sailors using TDD for Active and Reserve Components (and discontinuing the use of DFAS System (DJMS)): 1. Conduct design and development sprints for NP2 RFP; 2. Begin Defense Joint Military System (DJMS) data cleansing and Personnel data transfer into NP2; 3. Conduct integration sprints for the NP2 RFP themes;					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
4. Perform Iterative Development Test (DT) and Iterative System Integration Test (SIT) for NP2 RFP themes; 5. Conduct the Government planned Systems Engineering Technical Reviews (SETR) for initial NP2 Release 6. Perform capability drops for NP2 RFP to complete functionality configurations and fixes from development tests; 7. Plan and Design activities for remaining NP2 personnel pilots supporting the capabilities under the 'Distribution' Line of Business; 8. Begin design, development, and integration sprints for remaining NP2 personnel pilots supporting the capabilities under the 'Distribution' Line of Business; 9. Begin planning activities for remaining NP2 personnel pilots supporting the capabilities under the 'Personnel Management' Line of Business; 10. Integrate old and new business processes, functionalities and capabilities for personnel pilots 11. Develop training for NP2 to support Operational Testing 12. Build and deploy capabilities (Personnel/Pay; Transfers/Accessions; Advancements and Promotions; Manpower; Financials) from 13 legacy IT System applications into the NP2 System. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** $26M increase in FY21 is driven primarily by the RFP Project required to support the planning, development, and testing of the remaining 48 pay elements, and personnel processes required to achieve Treasury Direct Disbursement (TDD). Additionally, the TPC&P will design and develop a Global Strategic Plan to analyze the legacy IT Systems and functions supporting the MyNavy HR 55 to 1 Strategy. Resulting from this plan will be the consolidation and integration of 5 functionality across 13 legacy IT systems into the NP2 production baseline.					
Title: Risk Management Information (RMI)	1.100	7.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2020 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					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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 2021 Base Plans:*** Funds realigned to PE 0608013N Project 2901 in FY21 and out. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Decrease between FY20 and FY21 due to realignment of RMI funding in FY21 to PE 0608013N project 2901.					
Title: Authoritative Data Environment (ADE)	13.254	14.400	23.150	0.000	23.150
Articles:	-	-	-	-	-
FY 2020 Plans: Authoritative Data Environment (ADE) will provide a single integrated database for all data in the systems and technologies associated with the MyNavy HR Transformation In FY20, these activities will be accomplished through the following tasks: 1. Integrate ADE 1.5 with CRM, Defense Manpower Data Center (DMDC) and Aviation Maintenance Experience (Amex) to provide additional Sailor profile data 2. Load data from 10 additional data sources (10+ TB data) to achieve ADE 2.0 (Gov-Cloud Environment) Initial Operating Capability (IOC)/Limited Deployment 3. Complete 3 outbound Applicant Program Interfaces (APIs) to include UIC, DoDID, and "Get Sailor" API reducing the point-to-point interfaces 4. Development of analytical capability and dashboard focused on predictive analytics 5. Develop analytic toolsets that will allow users to implement google-like searches; provide enhanced data science capabilities; and expand cloud native services (Lambda, Glue, Athena)					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
6. Establish API gateway enabling data warehouse consolidation ***FY 2021 Base Plans:*** Efforts in FY21 will be focused on establishing the ADE in a commercial cloud environment and to allow for an enterprise implementation across all MyNavy HR systems and applications. 1. Piloting of emerging commercial cloud offerings 2. Consolidation of two MyNavy HR data warehouses 3. API Gateway enterprise implementation 4. Integrate Machine Learning Tools into the ADE Environment enabling predictive (trending) and prescriptive (modeling) analytics 5. Deploy the Billet Based Distribution (BBD) capability into the ADE (Gov-Cloud) environment 6. Initiate the Fleet Training Management and Planning System (FLTMPS) capability into the ADE environment 7. Develop a prescriptive (modeling) dashboard environment ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase of $8.8M. ADE FY21 increase ties to five significant development areas: 1.) Planning, testing and deployment of ADE to Government and Commercial Cloud environments. 2.) Employing API Layer enhancements in FY21 - implementing reusable API's and data across the My Navy HR portfolio. This will require a new approach to Single sign-on (SSO) utilizing Identity Credential and Access Management (ICAM). 3.) Consolidation of two MyNavy HR data warehouses into the ADE environment 4.) ADE increase also stems from COTS Piloting. ADE is taking commercially available products and applying them for use within ADE, the API Gateway, development of analytical, products, modernizing how data is fed, and building predictive analytics. Significant costs are incurred establishing data governance around the new commercial tools and their implementation.					
Accomplishments/Planned Programs Subtotals	85.864	106.091	137.429	0.000	137.429

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C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• OPN/8106: *Command Support Equipment*	2.001	3.372	0.000	-	0.000	1.715	1.757	0.000	0.000	0.000	24.833
• OMN/3B4K: *Training Support*	5.663	3.246	8.567	-	8.567	22.470	19.955	0.000	0.000	0.000	76.656
• OMN / 4A4M: *Military Manpower and Personnel Mgmt*	63.247	61.048	133.207	-	133.207	263.724	208.396	80.683	0.121	0.000	823.154
• OMNR/4A4M: *Military Manpower and Personnel Mgt*	0.000	0.000	2.645	1.349	3.994	0.000	0.000	0.000	0.000	0.000	3.994
• OMN/1C1C: *Combat Communications and Electronic Warfare (CIVPERS)*	0.000	6.487	6.715	-	6.715	6.850	6.989	3.252	0.108	0.000	30.401

Remarks

MyNavy HR Transformation is not just a technology refresh of existing systems, Transformation is a holistic change to how MyNavy HR Services are provided. Simultaneous functional investment (O&M,N) in business processes re-engineering and acquisition investment (RDT&E) in IT is critical to increase quality, auditability, efficiency and overall personnel readiness to meet Navy readiness needs - both current and future.

1. OMN / 3B4K is required to support the sustainment costs associated with delivering a non-CAC Identity and Access Management (IdAM) capability across the MyNavy HR Enterprise that provides authentication, authorization and single sign on for access to the objective MPT&E capability. Additionally, to provide the ability to host and manage mobile applications developed through the Navy App Locker (past, present and future). In addition, continued operations and sustainment for the LS Transformation effort to acquire Software as a Service (SaaS) subscriptions, required interface maintenance with legacy systems; in addition to hosting N1 learning applications within the cloud environment.

2. OMN / 4A4M is required to support the hosting and transition costs of migrating to a cloud environment (Amazon Web Services). Additionally, funding is required to support the strategic advisory into MyNavy HR technology implementation planning for HR technology solutions, including multiple cloud delivery models, Change Management, Business Process Re-engineering, Risk Management Framework, etc.

3. OMN / 1C1C is for Civilian Labor Salaries / costs to support MyNavy HR Transformation

4. OMNR / 4A4M is required to support IT Scaffolding of legacy IT Systems. Scaffolding is "throw-away" development required for transformation and the execution of the 55:1 Shutdown Plan. Due to the change in plan and moving towards a functional (vs. System) shutdown approach drives the need for IT Scaffolding as portions of IT system capabilities are retired between FY20 - 23

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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D. Acquisition Strategy

Rapidly integrating a family of systems using an agile methodology necessitates an overarching system integrator and coordinator to ingest pilots and prototypes into a technical baseline. The Transformation Portfolio Coordinator & Production (TPC&P) contract is an IDIQ contract that will deliver a family of systems in support of MyNavy HR. This contract will provide strategic transformation planning enabling the implementation and execution of the 55:1 plan. Pilots and prototypes that have reached sufficient maturity will be integrated and deployed into the production baseline under this contract, as well as, sustainment of the production baseline.

LEARNING STACK (LS)
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. Leverage the Interagency Agreement for an Assisted Acquisition with the Office of Personnel Management's USA Learning program.

NAVY PERSONNEL AND PAY SYSTEM (NP2)

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.

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.

ADE will leverage Other Transaction Authority and Small Business Innovation Research to develop and field Minimum Viable Products

CUSTOMER RELATIONSHIP MANAGEMENT (CRM)
The CRM solution strategy will be implemented using a variety of IDIQ contract task orders. Commercial off the shelf (COTS) software and integration services will be acquired through the IQIQ contract task orders.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Learning Stack (LS)	C/CPFF	OPM : Pensacola, FL	3.801	4.148	May 2019	4.851	May 2020	11.000	May 2021	-		11.000	0.000	23.800	Continuing
MNP/SPOE	C/CPFF	Katmai : Arlington, VA	26.487	16.636	May 2019	19.065	Dec 2019	17.700	Dec 2020	-		17.700	0.000	79.888	Continuing
AOA Design, Development, Test & Deployment	C/CPFF	GDIT : New Orleans, LA	1.792	0.000		0.000		0.000		-		0.000	0.000	1.792	Continuing
NP2 Rapid Prototype Pilot	C/CPFF	GDIT/Na Ali : Washington, DC	0.000	22.194	Oct 2018	15.678	Nov 2019	0.000		-		0.000	0.000	37.872	Continuing
RMI SPM Development	C/CPFF	Kapsuun : Arlington, VA	9.709	1.100	Jun 2019	7.000	Jun 2020	0.000		-		0.000	0.000	17.809	Continuing
ADE + Data Analytics	C/CPFF	GDIT : Washington, D.C.	4.700	13.254	May 2019	8.302	May 2020	8.000	May 2021	-		8.000	0.000	34.256	Continuing
Transformation Portfolio Coordinator and Production	C/IDIQ	CACI : Chantilly, VA	0.000	3.000	Sep 2019	23.828	Nov 2019	44.159	Nov 2020	-		44.159	778.679	849.666	Continuing
CRM Pilot	C/IDDQ	Ideamatics : Mclean, VA	0.000	0.000		17.487	Feb 2020	17.487	Feb 2021	-		17.487	0.000	34.974	Continuing
NP2 Rapid Fielding Pilot	C/IDIQ	CACI / Na Ali : Chantilly, VA	0.000	0.000		0.000		27.083	Oct 2020	-		27.083	0.000	27.083	Continuing
NP2 Transformation	C/CPFF	GDIT/Na Ali : Washington, DC	19.984	21.727	Feb 2019	0.000		0.000		-		0.000	0.000	41.711	Continuing
		Subtotal	66.473	82.059		96.211		125.429		-		125.429	778.679	1,148.851	N/A

Remarks

1. In FY19 CRM Pilot and SAAS requirements were funded under SPOE and NP2. Beginning in FY20, CRM requirements have been separated and reflected independently due to the scope of the effort.
2. The Transformation Portfolio Coordinator & Production (TPC&P) will deliver a family of systems in support of MyNavy HR Transformation. In addition to designing and planning the "55 to 1" Strategic Plan, the vendor will integrate and deploy Minimal Viable Products (MVPs) resulting from pilots and prototypes across each of the Transformation Pillar areas (NP2, ADE, SPOE, LS and CRM) into the production baseline. As a result, the TPCP lines shares funding from each of the Pillars. The increase in FY21 focuses the vendor on executing the Global Design Strategy and Transformation Plan (developed in FY20) to integrate legacy IT system capabilities into the Enterprise platform system.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
CRM SAAS	C/IDIQ	Carahsoft : San Francisco, CA	0.000	0.000		9.880	Jan 2020	12.000	Jan 2021	-		12.000	0.000	21.880	-
NSIPS Bi-Service License	C/CPFF	Oracle : Redwood City, CA	16.895	3.805	Dec 2018	0.000		0.000		-		0.000	0.000	20.700	-
		Subtotal	16.895	3.805		9.880		12.000		-		12.000	0.000	42.580	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	83.368	85.864		106.091		137.429		-		137.429	778.679	1,191.431	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2905 / *BUPERS IT*

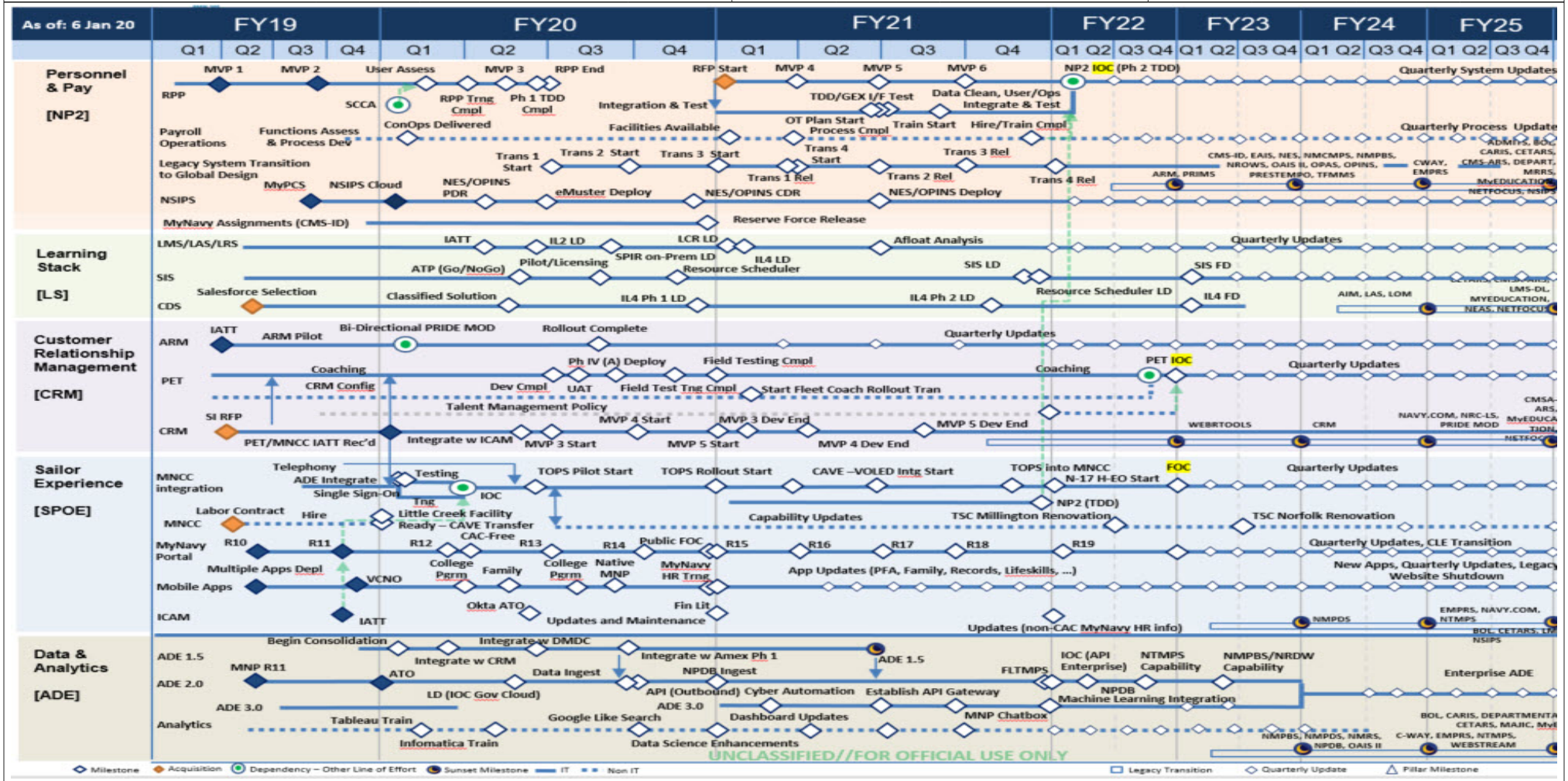

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2905 / *BUPERS IT*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 2905.L39				
Learning Stack: LMS/LAS/LRS Interim Authority to Test	2	2020	2	2020
Learning Stack: Content Delivery System (AIM) Phase I (IL4) Limited Deployment	4	2020	4	2020
Learning Stack: Content Delivery System (AIM) Phase 2 (IL4) Limited Deployment	1	2021	1	2021
Learning Stack: CDS IL4 Full Deployment	1	2023	1	2023
Learning Stack: MyNavy HR Transformation (LS) 55 to 1 System Shutdown	2	2024	4	2025
Learning Stack: Classified CRM Solution	1	2020	1	2020
Learning Stack: Student Information System (SIS) Pilot Licensing	3	2020	3	2020
Learning Stack: Procure and Integrate REsource Scheduler	4	2020	4	2020
Learning Stack: Student Information System (SIS) Limited Deployment	4	2021	4	2021
Learning Stack: Student Information System (SIS) Resource Scheduler Limited Deployment	4	2021	4	2021
Learning Stack: Student Information System (SIS) Full Deployment	1	2023	1	2023
Learning Stack: SIS Quarterly Updates	2	2023	4	2025
Learning Stack: Learning Management System (LMS) IL2 Limited Deployment	2	2020	2	2020
Learning Stack: Learning Management System (LMS) SIPR On-Premise	3	2020	3	2020
Learning Stack: Learning Content Repository (LCR) Limited Deployment	1	2021	1	2021
Learning Stack: Learning Content Repository (LCR) IL4 Limited Deployment	1	2021	1	2021
Learning Stack: xAPI Dictionary Integration	1	2021	1	2021
Learning Stack: LMS / LAS / LRS Afloat Analysis	1	2021	1	2021
Learning Stack: LMS / LAS / LRS Quarterly System Update	1	2022	4	2025
NAVY PERSONNEL AND PAY (NP2)				

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 2905 / *BUPERS IT*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
NP2: Rapid Pilot Prototype Pay Calculation/TDD and Manpower MVPs	1	2019	1	2019
NP2: Rapid Pilot Prototype Pay Accounting, Initial Gain, Personal Events and PCS Mobile MVPs	3	2019	3	2019
NP2: Rapid Pilot Prototype Post Payroll, User Access Pilot, Orders Integration, PCS Transfer and Member Conversion MVPs	2	2020	2	2020
NP2: RPP Training Complete	2	2020	2	2020
NP2: RPP (Street to Fleet) Complete	3	2020	3	2020
NP2: Rapid Fielding Prototype	1	2021	1	2023
NP2: Rapid Fielding Prototype Debts & Collections, Vendor Interfaces, Performance and Career Path MVPs	1	2021	1	2021
NP2: Rapid Fielding Prototype PCS Travel Expenses, Reserve Activities, Separations and Job History Conversion MVPs	2	2021	2	2021
NP2: Rapid Fielding Prototype inance, Payroll Reporting, Enroute Orders and Miscellaneous Conversion MVPs	3	2021	3	2021
NP2: RFP Complete	1	2022	1	2022
NP2: Quarterly System Updates	3	2022	4	2025
NP2: Integratin and Testing	2	2021	2	2021
NP2: Integration and Testing: TDD / GEX I/F Test	3	2021	3	2021
NP2: Integration and Testing: RFP Testing Complete	3	2021	3	2021
NP2: RFP Training	1	2022	1	2023
NP2: Legacy System Transition and Global Design Begin	3	2020	3	2020
NP2: Legacy System Transition and Global Design	3	2020	1	2023
NP2: Develop and Deploy MyPCS	3	2019	3	2019
NP2: Comlete Preliminary Design Review of NES/OPINS Consolidation	2	2020	2	2020
NP2: Complete Critical Design Review of NES/OPINS Consolidation	4	2020	4	2020
NP2: Deploy NES / OPINS	3	2021	3	2021
NP2: Legacy Transition Functional Release 1	1	2021	1	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
NP2: Legacy Transition Functional Release 2	2	2021	2	2021
NP2: Legacy Transition Functional Release 3	3	2021	3	2021
NP2: Legacy Transition Functional Release 4	1	2022	1	2022
NP2: Payroll Operations Functional Assessment & Process Design	4	2019	4	2025
MyNavy HR Transformation (NP2) 55 to 1 System Shutdown	3	2022	4	2025
Authoritative Data Environment (ADE)				
ADE 1.5 Fielding	1	2019	3	2021
ADE 2.0 Development	2	2019	2	2022
ADE 2.0 Authority to Operate	1	2020	1	2020
ADE 2.0 IOC (API Enterprise)	2	2022	2	2022
ADE 2.0 NTMPS Capabilitity Drop	4	2022	4	2022
ADE 2.0 NMPBS/NRDW Capability Drop	2	2023	2	2023
Sunset NMPBS,NMDS,NMRS,NPDB,OAISII	4	2023	4	2023
Sunset C-Way, EMPRS, NTMPS, WEBSTREAM	4	2024	4	2024
Sunset BOL, CARIS, Departmental, CETARS, MAJIC, MyED	4	2025	4	2025
ADE 3.0 Development	1	2021	4	2023
ADE 3.0	4	2023	4	2023
ADE/BBD Capability Initiated	1	2021	1	2021
Integrate DMDC	2	2020	2	2020
Integrate w/ Amex Ph1	3	2020	3	2020
Customer Relationship Management				
Applicant Relationship Management (ARM) Interim Authority to Test	1	2019	1	2019
Complete Rollout of Applicant Relationship Management (ARM)	3	2020	3	2020
ARM Quarterly Updates	1	2021	4	2025
PET (CRM) Coaching Phase IV	4	2020	4	2020

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
PET Phase IVa Development Complete	3	2020	3	2020
PET Phase IVa User Acceptance Testing	3	2020	3	2020
PET Phase IVa Fleet Testing Complete	4	2020	4	2020
PET Phase IVa Fleet Training Complete	4	2020	4	2020
PET Phase V and PET-TM	1	2021	1	2021
PET Phase V and TM Development Complete	3	2021	3	2021
PET Phase V and TMFleet Testing Complete	2	2021	2	2021
PET Phase V and TM Fleet Training Complete	4	2021	4	2021
PET Phase V and TM User Acceptance Testing	4	2021	4	2021
PET Initial Operating Capability	1	2023	1	2023
PET Quarterly Updates	2	2023	4	2025
MyNavy HR Transformation (CRM) 55 to 1 System Shutdown	1	2022	4	2025
Interface and Go LIve withCRM/ICAM Interface	2	2020	2	2020
Integrate MNCC/CRM TOPS	1	2021	1	2021
Integrate MNCC/CRM CAVE-VOLED	3	2021	3	2021
Integrate MNCC/CRM N-17 H-EO	4	2021	4	2021
Single Point of Entry (SPOE)				
MNCC/CRM Integration/Testing	3	2019	1	2020
MNCC IOC	1	2019	1	2019
MNCC FOC	4	2022	4	2022
MNCC Updates	1	2020	4	2025
MNP Quarterly Updates	2	2019	4	2025
MNP FOC	4	2020	4	2020
MNCC Labor Contract Award	2	2019	2	2019
Mobile Apps Deployment and Updates	2	2019	1	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
ICAM Deployment and Updates	2	2019	1	2025
Sunset NMPDS	4	2023	4	2023
Sunset NTMPS	4	2024	4	2024
Sunset NSIPS	4	2025	4	2025
MNCC / CRM Integration with ADE	1	2020	1	2020
MNCC / CRM TOPS Pilot Start	3	2020	3	2020
MNCC / CRM TOPS Rollout Start	1	2021	1	2021
MNCC / CRM CAVE-VOLED Integration Start	2	2021	2	2021
Analyze legacy portal / website consolidation strategy	4	2020	4	2020
Legacy Website / Portal Consolidation	4	2020	2	2023

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
3167: *Joint Technical Data Integration (JTDI)*	37.555	3.766	5.545	7.788	-	7.788	6.229	7.207	7.986	8.146	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, the Consolidated Afloat Networks and Enterprise Services Network (CANES) 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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Joint Technical Data Integration (JTDI)	1.370	4.945	5.093	0.000	5.093
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
FY 2020 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 2021 Base Plans:*** Conduct development, modernization, obsolescence management, and cybersecurity mandated activities associated with a major release of fully deployed COTS-intensive JTDI system Version 2.0.7.0. Conduct COTS requirements definition, evaluation, integration, and testing of annual baseline releases. Perform development and testing to further enhance JTDI top-tier infrastructure to reduce system administration tasks, and improve user authentication and certificate management. Conduct modernization activities to include additional cloud capabilities per DoD cloud strategy 2018; commence integration of modules to enhance cyber security and enable tighter configuration control over globally deployed IT assets. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The increase from FY 2020 to FY 2021 incorporates automated configuration control and improved inventory management of globally deployed technical data and IT assets.					
Title: Marine Aviation Logistics Enterprise Information Technology (MAL-EIT)	2.396	0.600	2.695	0.000	2.695
Articles:	-	-	-	-	-
FY 2020 Plans: Complete software development of MAL-EIT 3.1 and begin test and evaluation and limited fielding of MAL-EIT 3.1 solution ***FY 2021 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Complete fielding of Next Generation Buffer Management System (NGBMS)/MAL-EIT 3.1, begin updates to Expeditionary Pack-Up Kit (EPUK) and Logistics Planning Tool (LPT)/MAL-EIT 3.2 Software code to meet cybersecurity/cyber readiness mandate requirements, and complete Cloud Migration. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The increase from FY 2020 to FY 2021 due to software development, testing and cybersecurity activities for the release of fully deployed Next Generation Buffer Management System (NGBMS).					
Accomplishments/Planned Programs Subtotals	3.766	5.545	7.788	0.000	7.788

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• OPN/4268/JTDI: *Joint Technical Data Integration (JTDI) Other Aviation Support Equipment*	2.340	2.365	2.392	-	2.392	2.465	2.519	2.558	2.609	Continuing	Continuing
• OPN/4268/MALSP II: *Marine Aviation Logistics Support Program (MALSP II) Aviation Support*	0.219	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.679

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
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)*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development/ Hardware Integration for Marine Aviation Logistics Enterprise Information Technology (MAL-EIT)	C/CPFF	KRB Wyle : Patuxent River, MD	6.537	1.126	Jan 2019	0.390	Jan 2020	1.752	Jan 2021	-		1.752	Continuing	Continuing	Continuing
Prior year support no longer funded in the FYDP	Various	Various : Various	20.410	0.000		0.000		0.000		-		0.000	0.000	20.410	-
Software Development/ Hardware Integration MAL-EIT	WR	NAWCAD : Patuxent River, MD	1.331	0.580	Nov 2018	0.000		0.000		-		0.000	0.000	1.911	-
Development/Software Integration - MAL-EIT	WR	NEDC : Patuxent River, MD	0.144	0.064	Oct 2018	0.000		0.000		-		0.000	0.000	0.208	-
Software Development for JTDI	C/CPFF	Control Point Corporation : Patuxent River, MD	0.000	0.550	Apr 2019	0.000		0.000		-		0.000	0.000	0.550	0.550
Software Development for JTDI	C/CPFF	KRB Wyle : Patuxent River, MD	0.000	0.000		2.929	May 2020	2.984	May 2021	-		2.984	Continuing	Continuing	Continuing
		Subtotal	28.422	2.320		3.319		4.736		-		4.736	Continuing	Continuing	N/A

Remarks

The MAL-EIT increase in FY 2021 is due to software development, testing and cybersecurity activities for the release of fully deployed Next Generation Buffer Management System (NGBMS).

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation for MAL-EIT	C/CPFF	Wyle : Patuxent River, MD	1.035	0.256	Jan 2019	0.090	Jan 2020	0.404	Jan 2021	-		0.404	Continuing	Continuing	Continuing
Prior year Test & Eval no longer funded in the FYDP	Various	Various : Various	2.623	0.000		0.000		0.000		-		0.000	0.000	2.623	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
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)*

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation JTDI	C/CPFF	Control Point Corporation : Patuxent River, MD	0.000	0.457	Jan 2019	0.000		0.000		-		0.000	0.000	0.457	0.457
Developmental Test & Evaluation JTDI	C/CPFF	Wyle : Patuxent River, MD	0.000	0.000		1.577	May 2020	1.614	May 2021	-		1.614	Continuing	Continuing	Continuing
		Subtotal	3.658	0.713		1.667		2.018		-		2.018	Continuing	Continuing	N/A

Remarks

The MAL-EIT increase in FY 2021 is due to software development, testing and cybersecurity activities for the release of fully deployed Next Generation Buffer Management System (NGBMS).

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support MAL-EIT	WR	NAWCAD : Patuxent River, MD	0.396	0.012	Nov 2018	0.000		0.000		-		0.000	0.000	0.408	-
Program Management Support MAL-EIT	C/CPFF	KRB Wyle : Patuxent River, MD	1.238	0.341	Jan 2019	0.120	Jan 2020	0.539	Jan 2021	-		0.539	Continuing	Continuing	Continuing
Prior year Mgmt Svcs Cost no longer funded in the FYDP	Various	Various : Various	1.324	0.000		0.000		0.000		-		0.000	0.000	1.324	-
Systems Engineering Support - JTDI	WR	NAWCAD : Patuxent River, MD	2.385	0.363	Nov 2018	0.094	Nov 2019	0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Support - TRAVEL - MAL-EIT	WR	NAVAIR HQ : Patuxent River, MD	0.132	0.017	Oct 2018	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering Support - JTDI	C/CPFF	KRB Wyle : Patuxent River, MD	0.000	0.000		0.345	May 2020	0.495	May 2021	-		0.495	Continuing	Continuing	Continuing
		Subtotal	5.475	0.733		0.559		1.034		-		1.034	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
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)*

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

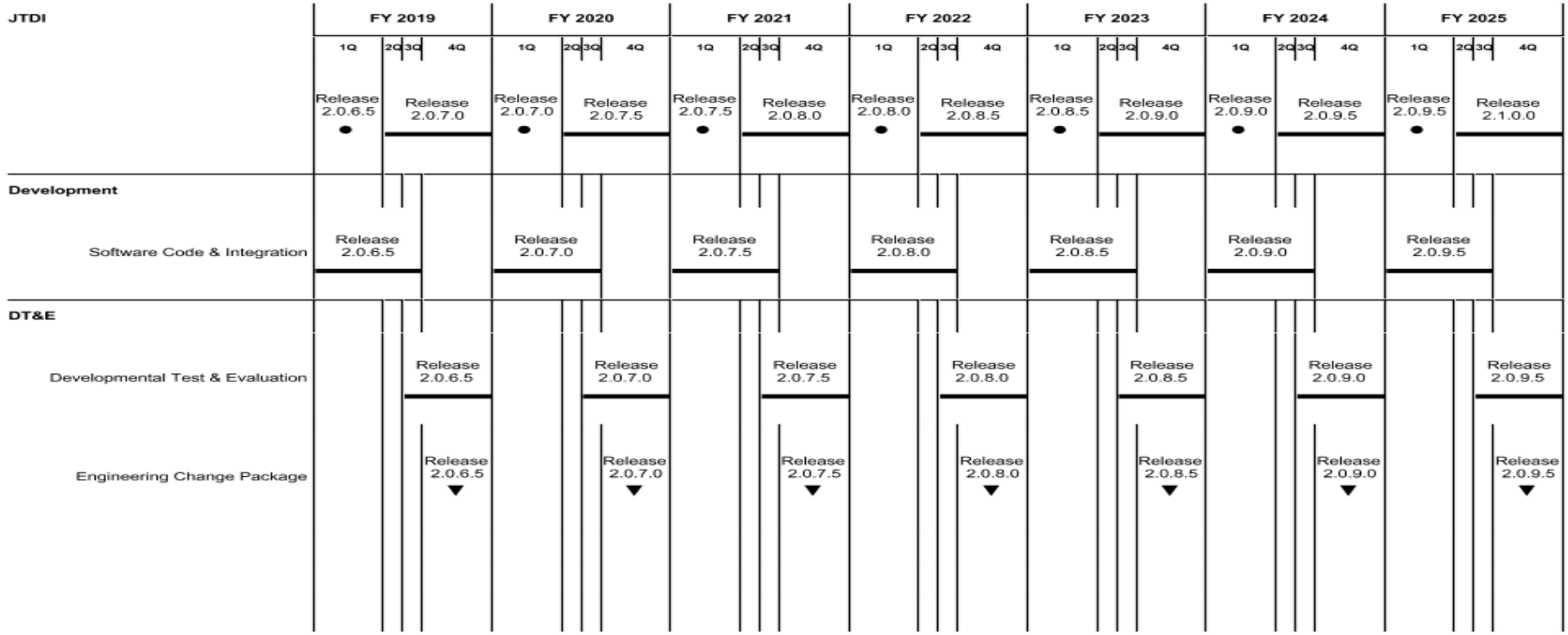
Remarks

The MAL-EIT increase in FY 2021 is due to software development, testing and cybersecurity activities for the release of fully deployed Next Generation Buffer Management System (NGBMS).

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	37.555	3.766		5.545		7.788		-		7.788	Continuing	Continuing	N/A

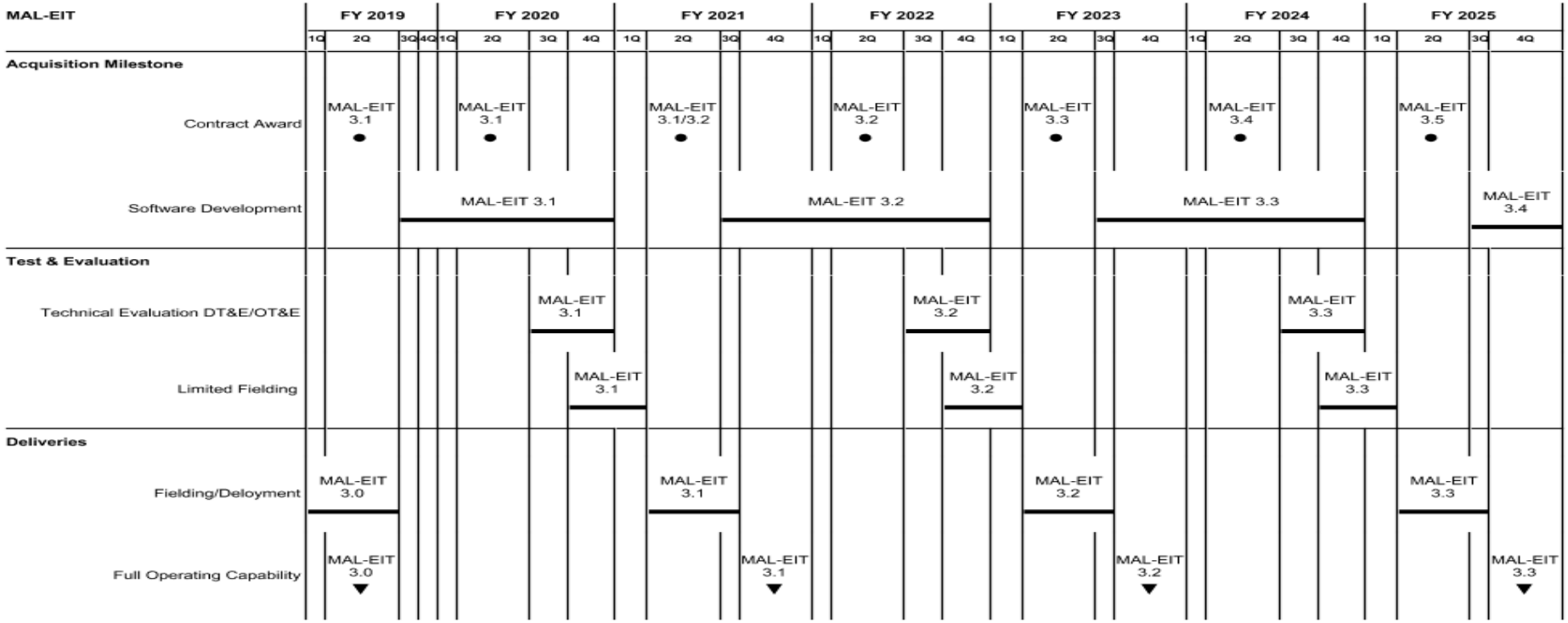
Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
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)*



2021PB - 0605013N - 3167

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
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)*



2021PB - 0605013N - 3167

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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				
Release 2.0.7.0	2	2019	4	2019
Release 2.0.7.5	2	2020	4	2020
Release 2.0.8.0	2	2021	4	2021
Release 2.0.8.5	2	2022	4	2022
Release 2.0.9.0	2	2023	4	2023
Release 2.0.9.5	2	2024	4	2024
Release 2.1.0.0	2	2025	4	2025
Contract Award, Release 2.0.6.5	1	2019	1	2019
Contract Award, Release 2.0.7.0	1	2020	1	2020
Contract Award, Release 2.0.7.5	1	2021	1	2021
Contract Award, Release 2.0.8.0	1	2022	1	2022
Contract Award, Release 2.0.8.5	1	2023	1	2023
Contract Award, Release 2.0.9.0	1	2024	1	2024
Contract Award, Release 2.0.9.5	1	2025	1	2025
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
Development: Software Code & Integration: Release 2.0.9.5	1	2025	3	2025

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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 2.0.6.5	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: Developmental Test & Evaluation: Release 2.0.9.5	3	2025	4	2025
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
DT&E: Engineering Change Package: Release 2.0.9.5	4	2025	4	2025
MAL-EIT				
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: Contract Award: Contract Award (13)	2	2025	2	2025
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	2023	4	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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**
Acquisition Milestone: Software Development: Software Development (7)	3	2025	4	2025
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	2024	4	2024
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	2024	1	2025
Deliveries: Fielding/Deloyment: Fielding/Deployment (2)	1	2019	2	2019
Deliveries: Fielding/Deloyment: Fielding/Deployment (3)	2	2021	3	2021
Deliveries: Fielding/Deloyment: Fielding/Deployment (4)	2	2023	3	2023
Deliveries: Fielding/Deloyment: Fielding/Deployment (5)	2	2025	3	2025
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
Deliveries: Full Operating Capability: Full Operating Capability (6)	4	2025	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
3185: *Joint Airlift Information System (JALIS)*	2.349	0.339	0.349	0.356	-	0.356	0.364	0.372	0.380	0.388	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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Joint Air Logistic Information System (JALIS)	0.339	0.349	0.356	0.000	0.356
Articles:	-	-	-	-	-
FY 2020 Plans: 1. Continue to build capability to archive historical flight and airlift request records, to include full querying and reporting functions.					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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 2021 Base Plans:*** 1. Develop and integrate aircraft scheduling optimization tools to increase aircraft utilization efficiency. 2. Continue design and development of new user interface displays that will consolidate functions currently distributed throughout the system. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** $7K increase is consistent with inflation.					
Accomplishments/Planned Programs Subtotals	0.339	0.349	0.356	0.000	0.356

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-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Development, Analysis and QA support	C/CPFF	NAVWAR : New Orleans, LA	2.349	0.339	Feb 2019	0.349	Feb 2020	0.356	Feb 2021	-		0.356	Continuing	Continuing	Continuing
		Subtotal	2.349	0.339		0.349		0.356		-		0.356	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 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.349	0.339		0.349		0.356		-		0.356	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
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)*

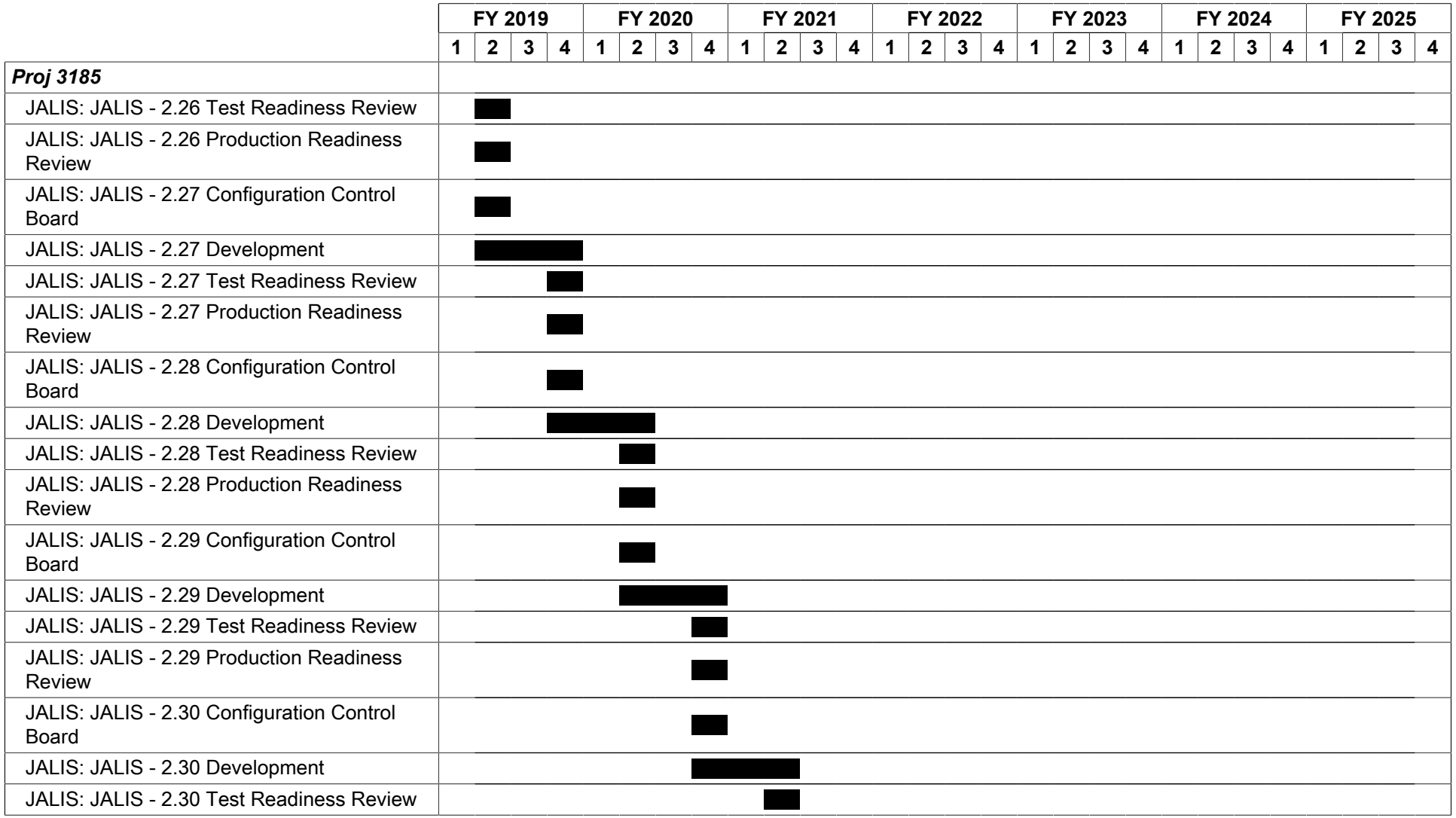


Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3185 / *Joint Airlift Information System (JALIS)*

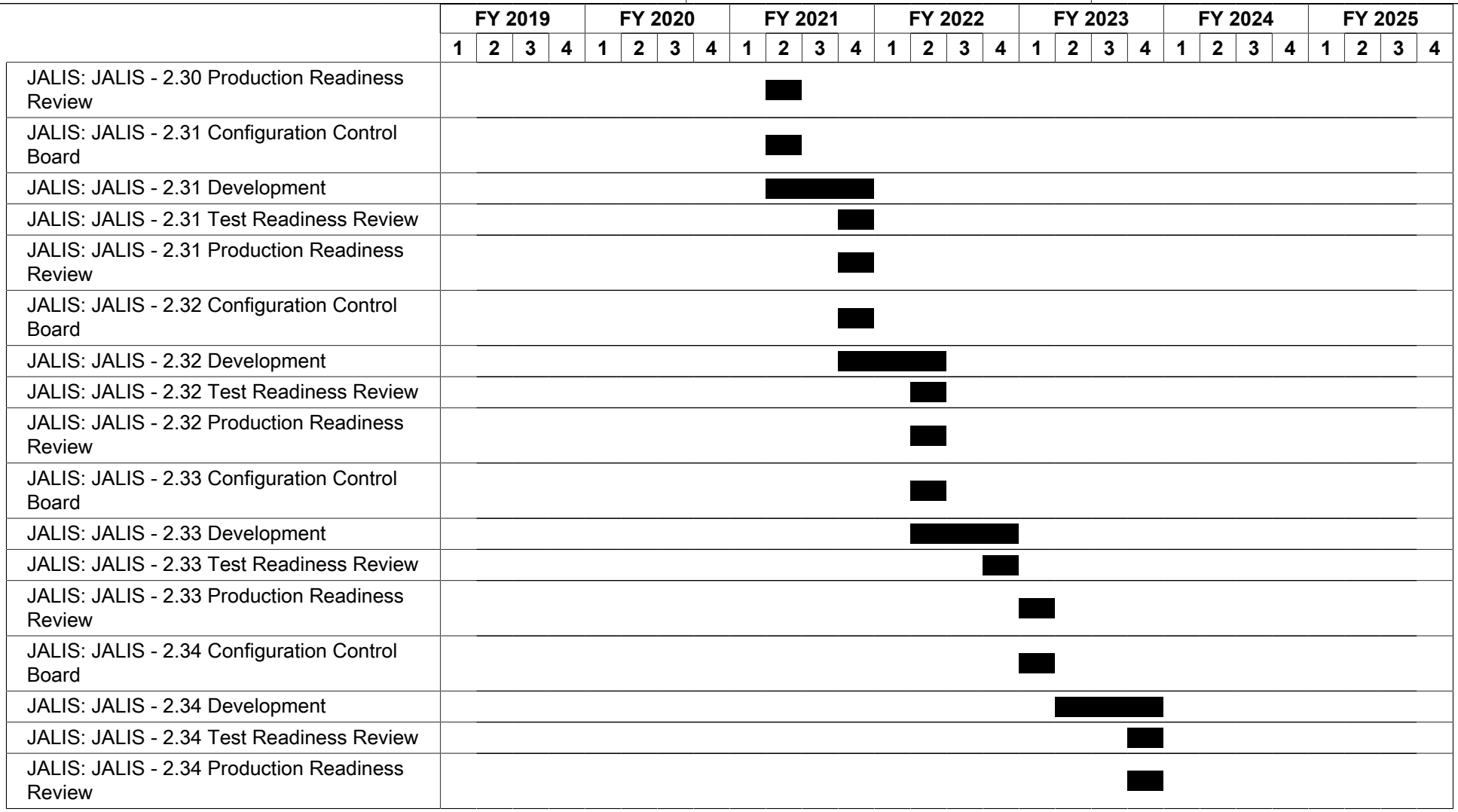


Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3185 / *Joint Airlift Information System (JALIS)*

	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JALIS: JALIS - 2.35 Configuration Control Board																					■							

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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: JALIS - 2.26 Test Readiness Review	2	2019	2	2019
JALIS: JALIS - 2.26 Production Readiness Review	2	2019	2	2019
JALIS: JALIS - 2.27 Configuration Control Board	2	2019	2	2019
JALIS: JALIS - 2.27 Development	2	2019	4	2019
JALIS: JALIS - 2.27 Test Readiness Review	4	2019	4	2019
JALIS: JALIS - 2.27 Production Readiness Review	4	2019	4	2019
JALIS: JALIS - 2.28 Configuration Control Board	4	2019	4	2019
JALIS: JALIS - 2.28 Development	4	2019	2	2020
JALIS: JALIS - 2.28 Test Readiness Review	2	2020	2	2020
JALIS: JALIS - 2.28 Production Readiness Review	2	2020	2	2020
JALIS: JALIS - 2.29 Configuration Control Board	2	2020	2	2020
JALIS: JALIS - 2.29 Development	2	2020	4	2020
JALIS: JALIS - 2.29 Test Readiness Review	4	2020	4	2020
JALIS: JALIS - 2.29 Production Readiness Review	4	2020	4	2020
JALIS: JALIS - 2.30 Configuration Control Board	4	2020	4	2020
JALIS: JALIS - 2.30 Development	4	2020	2	2021
JALIS: JALIS - 2.30 Test Readiness Review	2	2021	2	2021
JALIS: JALIS - 2.30 Production Readiness Review	2	2021	2	2021
JALIS: JALIS - 2.31 Configuration Control Board	2	2021	2	2021
JALIS: JALIS - 2.31 Development	2	2021	4	2021
JALIS: JALIS - 2.31 Test Readiness Review	4	2021	4	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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: JALIS - 2.31 Production Readiness Review	4	2021	4	2021
JALIS: JALIS - 2.32 Configuration Control Board	4	2021	4	2021
JALIS: JALIS - 2.32 Development	4	2021	2	2022
JALIS: JALIS - 2.32 Test Readiness Review	2	2022	2	2022
JALIS: JALIS - 2.32 Production Readiness Review	2	2022	2	2022
JALIS: JALIS - 2.33 Configuration Control Board	2	2022	2	2022
JALIS: JALIS - 2.33 Development	2	2022	4	2022
JALIS: JALIS - 2.33 Test Readiness Review	4	2022	4	2022
JALIS: JALIS - 2.33 Production Readiness Review	1	2023	1	2023
JALIS: JALIS - 2.34 Configuration Control Board	1	2023	1	2023
JALIS: JALIS - 2.34 Development	2	2023	4	2023
JALIS: JALIS - 2.34 Test Readiness Review	4	2023	4	2023
JALIS: JALIS - 2.34 Production Readiness Review	4	2023	4	2023
JALIS: JALIS - 2.35 Configuration Control Board	1	2024	1	2024

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy											Date: February 2020	
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 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
3432: *NMMES-TR*	0.000	31.754	50.492	96.190	-	96.190	114.244	94.075	52.793	53.899	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 the successful completion of Gates 3 and 4. The program office also conducted a review of the schedule in response to the schedule risk identified by NCCA during the Gate 4 Cost Review Board (CRB) and 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 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 selection, financial and business management, engineering, testing, logistics, etc.), and Contractor Support Services (i.e. systems engineering, organizational change

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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management, logistics, deployment support, training, etc.). The program also successfully completed Gate 5 during Q3 FY19. These activities support the award of the System Integrator contract planned for Q2 FY20 following a competitive source selection.

The FY20 funding reflects the Q2 contract award of a single prime System Integrator contract and a Business Applications (BA) multiple award contract that together provide for all Commercial Off The Shelf (COTS) products, cloud hosting, integration environment layers, and business applications.

The FY21 funding reflects the first full year System Integrator development effort. Specific efforts include requirements analysis, the development of prototypes, cyber testing, human centered design assessments and the execution of Systems Engineering Technical Reviews (SETRs) including Preliminary Design Review (PDR) and Build Technical Review (BTR). Task orders awarded through the Multiple Award Contract will support Increment 1 functional demonstrations and the development of prototypes to support the down select of candidate applications to form the NMMES-TR technical solution. During this period, the System Integrator will deliver an integration platform that will include a centralized data environment that will support business application processes as well as enterprise-wide analytics for improved business intelligence.

The NMMES-TR program office is staffed by government personnel from NAVSEA and NAVWAR SYSCOMS and their supporting Warfare Centers on a reimbursable basis. Based on a cross-SYSCOM Operating Agreement, the FY21 budget includes funding for inherently governmental efforts in the following functional areas:
a. NAVWAR HQ: Contracting, Legal, Engineering and Cybersecurity
b. NAVWAR 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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Systems Integration and MRO/PPM Solution	31.754	50.492	96.190	0.000	96.190
Articles:	-	-	-	-	-
Description: The FY 2020 Enacted/FY 2019 Congressional rescission of $3.043M is not included in the FY 2021 President's Budget request R2A for project 3432. The FY 2019 control should be $28.711M with the rescission taken into account.					
FY 2020 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 and a Business Application (BA) contract award for all commercial items including cloud hosting, integration environment layers, business applications, and other commercial items during Q2. These activities will substantially increase the level of effort to design the system solution and conduct prototype demonstrations.					
FY 2021 Base Plans:					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
The FY21 funding reflects the first full year System Integrator development effort. Specific efforts include the development of prototypes, the preliminary design review, the build technical review, cyber testing, and human systems design assessments. The SI and the BA vendors will begin the requirements and design review of the NMMES-TR solution to support a Preliminary Design Review scheduled for FY21 Q2. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The $45.7M increase from FY20 to FY21 represents the first full year of developmental activities resulting from the System Integrator and the Business Application contracts awarded in FY20. Specific efforts include the development of prototypes, the preliminary design review, the build technical review, cyber testing, and human systems design assessments.					
Accomplishments/Planned Programs Subtotals	31.754	50.492	96.190	0.000	96.190

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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Risk Reduction Prototype	SS/CPFF	Army PEO STRI : Orlando, FL	0.000	11.000	Jun 2019	2.700	May 2020	0.000		-		0.000	0.000	13.700	-
Systems Integrator	C/IDIQ	TBD : Not Specified	0.000	0.000		19.100	Jun 2020	48.720	Mar 2021	-		48.720	Continuing	Continuing	Continuing
Business Applications	C/IDIQ	TBD : Not Specified	0.000	0.000		4.600	Sep 2020	14.300	May 2021	-		14.300	Continuing	Continuing	Continuing
Risk Reduction Pilot	C/CPFF	Kapsuun : WNY	0.000	7.400	May 2019	2.600	Sep 2020	0.000		-		0.000	0.000	10.000	-
		Subtotal	0.000	18.400		29.000		63.020		-		63.020	Continuing	Continuing	N/A

Remarks

Growth in FY21 reflects the first full year of product development activities resulting from the award of the prime system integrator contract in FY20 Q3. Specific tasks include the development of the Capability Integration Platform, and the configuration and integration of the cloud hosted COTS applications to support the migration of NMMES legacy systems to a cloud hosted environment for the following functions: 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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
PMO Support	Various	Various : WNY & Norfolk	0.000	9.854	Mar 2019	12.500	Mar 2020	13.356	Mar 2021	-		13.356	Continuing	Continuing	Continuing
Community of Practice	WR	Various : Various	0.000	3.500	Mar 2019	8.597	Mar 2020	19.300	Mar 2021	-		19.300	Continuing	Continuing	Continuing
		Subtotal	0.000	13.354		21.097		32.656		-		32.656	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.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
JITC	MIPR	Fort Huachuca : AZ	0.000	0.000		0.032	Oct 2019	0.048	Oct 2020	-		0.048	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Cyber Security	MIPR	Various : Various	0.000	0.000		0.095	Oct 2019	0.193	Oct 2020	-		0.193	Continuing	Continuing	Continuing
Cyber Security	TBD	TBD : TBD	0.000	0.000		0.268	Jan 2020	0.273	Jan 2021	-		0.273	Continuing	Continuing	Continuing
		Subtotal	0.000	0.000		0.395		0.514		-		0.514	Continuing	Continuing	N/A

Remarks

Funding supports the Test & Evaluation and cyber security test activities provided by government and contractor personnel.

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	31.754		50.492		96.190		-		96.190	Continuing	Continuing	N/A

Remarks

The $45.7M increase from FY20 to FY21 represents the first full year of developmental activities resulting from the System Integrator and the Business Application contracts awarded in FY20. Specific efforts the development of prototypes, the preliminary design review, the build technical review, cyber testing, and human systems design assessments.

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
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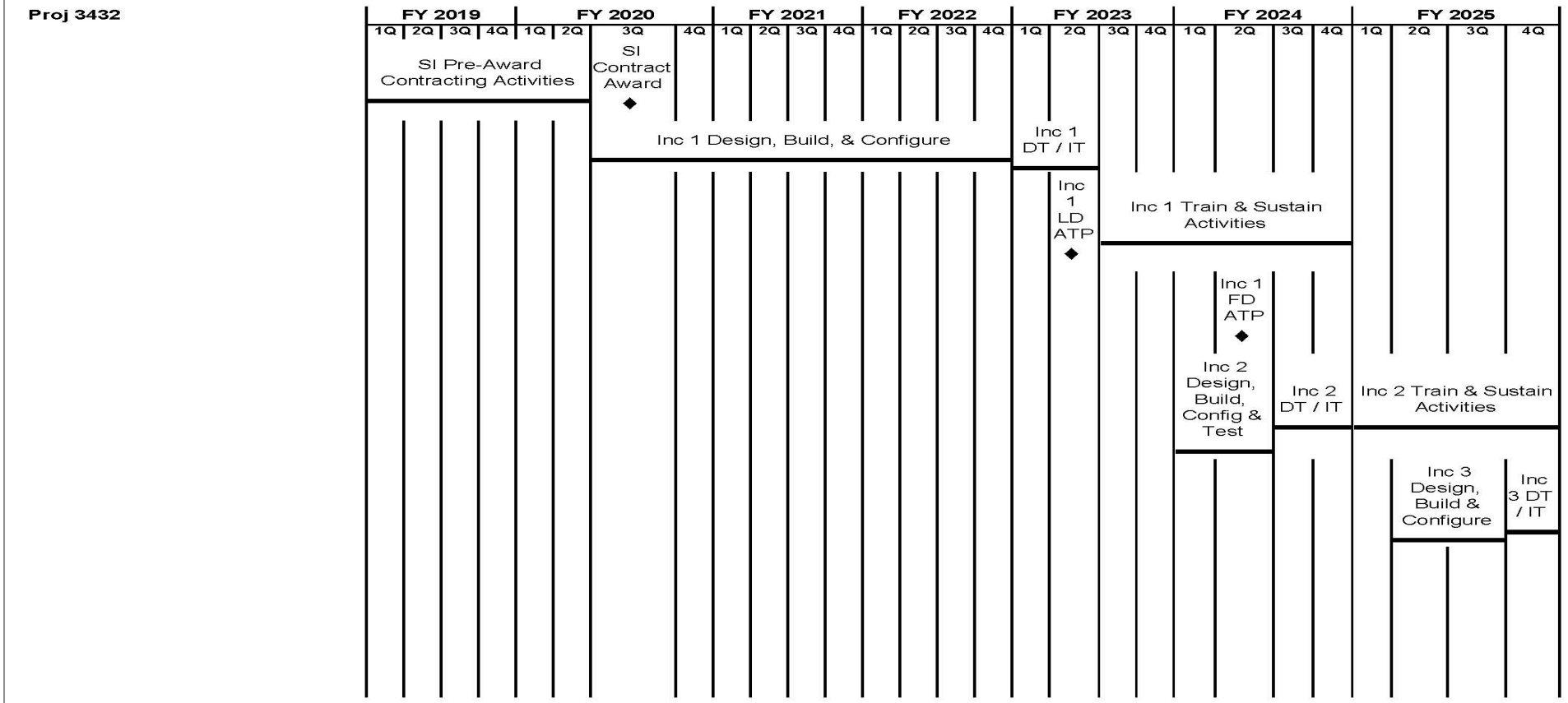

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj 3432				
Systems Integrator Pre-Award Contracting Activities	1	2019	2	2020
Systems Integrator Contract Award	3	2020	3	2020
Increment 1 - MRO & PPM Design, Build, & Configure	3	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	2	2024
Increment 2 - SCM, ESOH & Data Analytics Developmental Test / Integrated Test	3	2024	4	2024
Increment 2 - SCM, ESOH & Data Analytics Training & Sustainment	1	2025	4	2025
Increment 3 - MRO Work Brokering, Reqmts Mgmt & PPM EVM - Design, Build & Confirgure	2	2025	3	2025
Increment 3 - MRO & PPM Developmental Test / Integrated Test	4	2025	4	2025

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
3784: *Judge Advocate General (JAG) Enterprise System*	0.000	0.000	1.100	0.000	-	0.000	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.

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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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Judge Advocate General (JAG) Enterprise System	0.000	1.100	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2020 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 information, to a new Software as a Service (SaaS) environment and all functionality currently in JES expanded and enhanced.					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
- 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 2021 Base Plans:*** N/A ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Funding was provided for one-time cost to migrate the system into the cloud.					
Accomplishments/Planned Programs Subtotals	0.000	1.100	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	C/FFP	Microsoft : Washington, DC	0.000	0.000		1.100	Dec 2019	0.000		-		0.000	0.000	1.100	-
		Subtotal	0.000	0.000		1.100		0.000		-		0.000	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 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000		1.100		0.000		-		0.000	0.000	1.100	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
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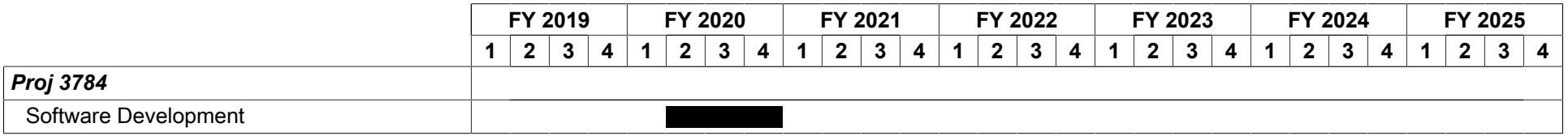

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 3784 / *Judge Advocate General (JAG) Enterprise System*

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 2021 Navy											Date: February 2020	
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 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
9406: *Maintenance Data Warehouse*	52.941	25.758	23.219	36.893	-	36.893	21.219	30.617	31.235	31.864	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Maintenance Data Warehouse funds the Naval Aviation Enterprise (NAE) components of digital transformation (formerly Sustainment Vision (SV) 2020) which is a critical component of improving readiness; giving Navy users access to authoritative truth data and automating inefficient manual processes. It will be executed in a fully agile manner providing continuous fleet readiness improvements across the FYDP. The initial 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 Logistics Environment (ALE) provides a global logistics enterprise solution, delivering capabilities via a net-centric, shared data environment that supports shore-based, afloat, and expeditionary operations. ALE consists of three components; Ground Station, Aviation PLM, and Enterprise Service Bus (ESB). The Maintenance Engineering Ground Station for Aviation (MEGA) is the Naval Aviation Type/Model/Series (T/M/S)-agnostic ground station. MEGA is currently under development using Government off-the-Shelf (GOTS) software and PLM/ESB is configuring Commercial off-the-Shelf (COTS). The Aviation Product Lifecycle Management (Aviation PLM) capability will provide the digital thread of aviation logistics data for allowable and as-configured Repair Bill of Materials (R BOM) sustainment, technical bulletins, technical directives and engineering change proposals, and reliability centered maintenance and maintenance planning. The Enterprise Service Bus (ESB) capability will provide the digital backbone for data connections to and from authoritative data sources. ALE consolidates aging, near-end-of-life systems and applications and aligns Information Assurance (IA) and cybersecurity requirements.

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.

Vector supports the development of a common logistics analytical tool which 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. This is critical for fleet understanding of readiness degraders and issue resolution.

Dynamic Scheduling provides insight and the ability to collaborate and affect schedules across all levels of maintenance and MRO systems. Advanced scheduling capabilities interfaced with current future MRO system to enable system assisted scheduling, optimization and opportunistic maintenance. Dynamic Scheduling will have access to demand across the NAE and will improve readiness across all levels of maintenance by allowing precise planning and execution.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Aviation Data Warehouse/Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE)	1.916	4.190	4.350	0.000	4.350
Articles:	-	-	-	-	-
FY 2020 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					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Data Integration (JTDI), Configuration Management System (CMS), Joint Engineering Data Management Information & Control System (JEDMICS), Aviation Logistics Environment (ALE), Dynamic Scheduling in support of NAVAIR's Digital Transformation and Vision 2020 Initiatives ***FY 2021 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 because of ongoing Financial Management and Comptroller (FM&C) audits; Continue development and enhancements as a result of Naval Aviation Maintenance Program policy changes and emerging fleet requirements. Complete Phase III development of Joint Strike Fighter Automated Logistics Information System (ALIS) data into the aviation data warehouse, incorporating additional data elements as they become available within the provided interfaces. 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), Aviation Logistics Environment (ALE), Naval Aviation Maintenance System (NAMS), and Aviation Logistics Environment (ALE) in support of Navy Digital Transformation Initiatives. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase from FY20-21 will accelerate the data mapping of Joint Strike Fighter (JSF) Automated Logistics Information System (ALIS) into the DECKPLATE data warehouse. By FY21, there will be over 200 potential additional data elements available to be mapped through the JSF Program Provided Inspection Device (PPID).					
Title: Aviation Logistics Environment (ALE)	19.924	16.571	29.341	0.000	29.341
Articles:	-	-	-	-	-
FY 2020 Plans: The Aviation Logistics Environment (ALE) program will continue to configure Product Lifecycle Management (PLM), ESB and Maintenance Engineering Ground Station for Aviation (MEGA) by developing automated workflows, integrating aviation platform content, and initiating legacy system transitions into the ALE products. ALE will begin integration of multiple systems into the PLM, ESB and MEGA. ***FY 2021 Base Plans:*** The Aviation Logistics Environment (ALE) program will continue to configure Product Lifecycle Management (PLM), ESB and Ground Station (GS) by developing automated workflows, integrating aviation platform content,					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
and initiating legacy system transitions into the ALE products with six-month software releases. ALE will begin integration of multiple systems into the PLM, ESB and MEGA. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase from FY20-FY21 required to acquire additional licenses to scale capabilities to more users. All users must have ALE licenses to retire Legacy Systems.					
Title: Dynamic Scheduling ***Articles:*** ***FY 2020 Plans:*** Complete the scheduler portion of Dynamic Scheduling. ***FY 2021 Base Plans:*** Begin working on the maintenance task decomposition baseline required for platform integration and develop optimization algorithm by Type Model Series (TMS). ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY20-21 increase is due to the start of task decomposition and developing new algorithms.	0.000 -	0.750 -	1.000 -	0.000 -	1.000 -
Title: Condition Based Maintenance Plus (CBM+) ***Articles:*** ***FY 2020 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	3.918 -	1.048 -	0.210 -	0.000 -	0.210 -

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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 2021 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. Continued enablement of best of breed Business Intelligence and Advanced Analytic tools within the Enterprise Common CBM+ Environment, including GOTS / COTS / Open source products (Active Reporting Client (ARC), Mechanical Diagnostics Analysis Tool Navy (MDAN), Regime Recognition, Zoom Data, Anaconda (Python / R), Zeppelin, and other evolving 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 improvements for interfacing transactional systems of record. Continue 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 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Decrease from FY20-21 is the result of CBM+ Initiative capabilities transitioning to sustainment.					
Title: Vector	0.000	0.660	1.992	0.000	1.992
Articles:	-	-	-	-	-
FY 2020 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continued development of additional Vector capabilities 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 2021 Base Plans:*** Continue development of additional enhancements to Vector Analytics as a result of emerging Fleet and Naval Aviation Enterprise customer requirements. New capabilities include implementation of DEPOT Event Maintenance Status Analysis and Metric Reports for Engines and Engine Modules to identifying Aircraft Readiness Impact Degraders; Implement data analytic capabilities for Aircraft DEPOTS. Integration and analytics capability enablement will expand into the Secure Internet Protocol Router Network environment and will continue with other key NAVAIR Defense Business Systems and initiatives. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** FY20-21 increase is due to planned development and implementation of RAMP Phase II, BI Integration Phase II, DEPOT Engines, Schedule Maintenance Planning, Weapons and Training Readiness Analytics Initial Deployment.					
Accomplishments/Planned Programs Subtotals	25.758	23.219	36.893	0.000	36.893

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
• OPN/4268/DECKPLATE: *Other Aviation Support Equipment*	2.049	2.221	2.238	-	2.238	2.300	2.363	2.400	2.448	Continuing	Continuing
• OPN/4268/CBM: *Other Aviation Support Equipment*	0.216	0.286	0.288	-	0.288	0.300	0.305	0.310	0.316	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 - Development services 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.

Dynamic Scheduling - 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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 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	0.000	16.255	-
Development for Aviation Logistics Environment (ALE)	Various	Various : Various	0.000	17.224	Jul 2019	13.170	Feb 2020	13.478	Feb 2021	-		13.478	Continuing	Continuing	Continuing
Development for Decision Knowledge Programming for Logistics Analysis and Technical Evalutaion (DECKPLATE)	C/CPFF	Spalding : Lexington Park, MD	6.217	1.402	Nov 2018	3.054	Dec 2019	1.600	Dec 2020	-		1.600	Continuing	Continuing	Continuing
Development for Condition Based Maintenance Plus (CBM+)	C/CPFF	KRB Wyle : Patuxent River, MD	19.704	1.502	Nov 2018	0.880	Dec 2019	0.168	Dec 2020	-		0.168	Continuing	Continuing	Continuing
Development for Vector	C/CPFF	KRB Wyle : Patuxent River, MD	0.000	0.000		0.475	Dec 2019	1.250	Nov 2020	-		1.250	Continuing	Continuing	Continuing
Development for Vector	C/CPFF	Spalding : Lexington Park, MD	0.000	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Development for Dynamic Scheduling	Various	Various : Various	0.000	0.000		0.552	Jan 2020	0.795	Jan 2021	-		0.795	Continuing	Continuing	Continuing
Development for Decision Knowledge Programming for Logistics Analysis and Technical Evalutaion (DECKPLATE)	C/CPFF	KRB Wyle : Patuxent River, MD	0.000	0.276	Dec 2018	0.838	Dec 2019	0.750	Dec 2020	-		0.750	Continuing	Continuing	Continuing
Development for Condition Based Maintenance Plus (CBM+)	C/CPFF	Spalding : Lexington Park, MD	0.000	1.125	Nov 2018	0.000		0.000		-		0.000	0.000	1.125	1.125
Development for Aviation Logistics Environment (ALE)	C/CPFF	KRB Wyle : Patuxent River, MD	0.593	0.000		0.000		4.008	Jan 2021	-		4.008	Continuing	Continuing	Continuing
Development for Vector	C/FFP	TBD : TBD	0.000	0.000		0.000		0.522	Dec 2020	-		0.522	Continuing	Continuing	Continuing
Development for Decision Knowledge Programming for Logistics Analysis	C/FFP	TBD : TBD	0.000	0.000		0.000		1.100	Oct 2020	-		1.100	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
and Technical Evalutaion (DECKPLATE)															
Development for Aviation Logistics Environment (ALE) Ground Station	C/CPFF	Redstone : Huntsville, AL	0.000	0.000		0.000		6.690	Jun 2021	-		6.690	Continuing	Continuing	Continuing
		Subtotal	42.769	21.529		18.969		30.361		-		30.361	Continuing	Continuing	N/A

Remarks

(1) Increase in FY21: Acquire additional licenses to scale capabilities to more users

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support for DECKPLATE	WR	NAWCAD : Patuxent River, MD	7.025	0.238	Oct 2018	0.298	Oct 2019	0.750	Oct 2020	-		0.750	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	0.000	0.628	-
Program Management Support for CBM+	WR	NAWCAD : Patuxent River, MD	2.519	1.291	Oct 2018	0.168	Oct 2019	0.042	Oct 2020	-		0.042	Continuing	Continuing	Continuing
Program Management Support for Aviation Logistics Environment (ALE)	WR	NAWCAD : Patuxent River, MD	0.000	2.700	Oct 2018	3.401	Oct 2019	1.000	Oct 2020	-		1.000	Continuing	Continuing	Continuing
Program Management Support for Vector	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.092	Oct 2019	0.098	Oct 2020	-		0.098	Continuing	Continuing	Continuing
Program Management Support for Vector	C/CPFF	KRB Wyle : Patuxent River, MD	0.000	0.000		0.093	Dec 2019	0.122	Nov 2020	-		0.122	Continuing	Continuing	Continuing
Program Management Support for Dynamic Scheduling	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.198	Oct 2019	0.205	Oct 2020	-		0.205	Continuing	Continuing	Continuing
Program Management Support for DECKPLATE	C/CPFF	KRB Wyle : Patuxent River, MD	0.000	0.000		0.000		0.150	Nov 2020	-		0.150	Continuing	Continuing	Continuing

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support for Aviation Logistics Environment (ALE)	WR	NAWCWD : China Lake, CA	0.000	0.000		0.000		0.145	Oct 2020	-		0.145	Continuing	Continuing	Continuing
Program Management Support - TRAVEL Aviation Logistics Environment (ALE)	WR	NAVAIR HQ : Patuxent River, MD	0.000	0.000		0.000		0.030	Oct 2020	-		0.030	Continuing	Continuing	Continuing
Program Management Support for Aviation Logistics Environment (ALE)	C/CPFF	KRB Wyle : atuxent River, MD	0.000	0.000		0.000		2.290	Feb 2021	-		2.290	0.000	2.290	-
Program Management Support for Aviation Logistics Environment (ALE)	C/CPFF	Booz Allen Hamilton : atuxent River, MD	0.000	0.000		0.000		1.700	Feb 2021	-		1.700	0.000	1.700	-
		Subtotal	10.172	4.229		4.250		6.532		-		6.532	Continuing	Continuing	N/A

Remarks

(1)Increase in FY21: Acquire additional licenses to scale capabilities to more users.
(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).

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	52.941	25.758		23.219		36.893		-		36.893	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

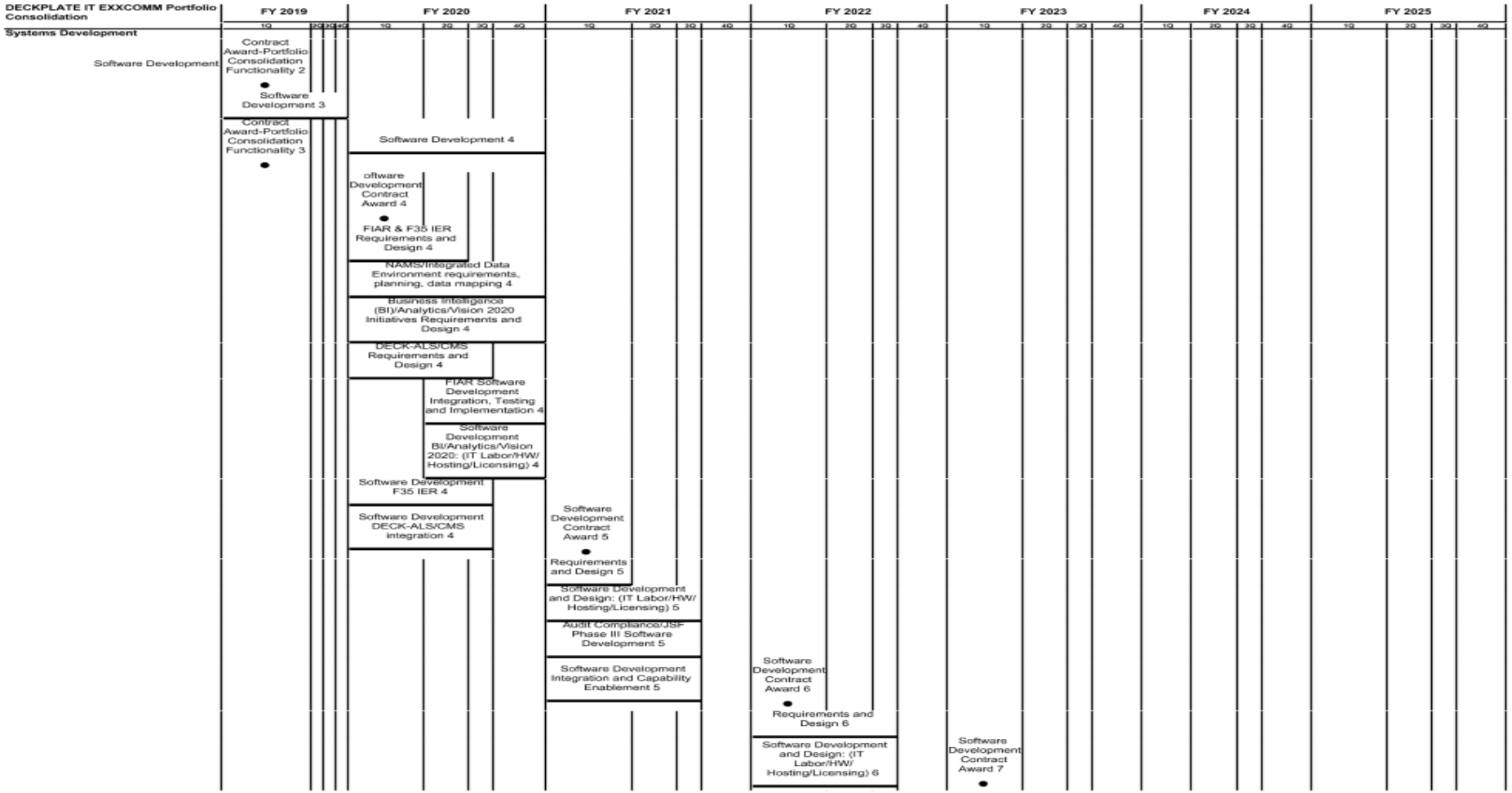

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

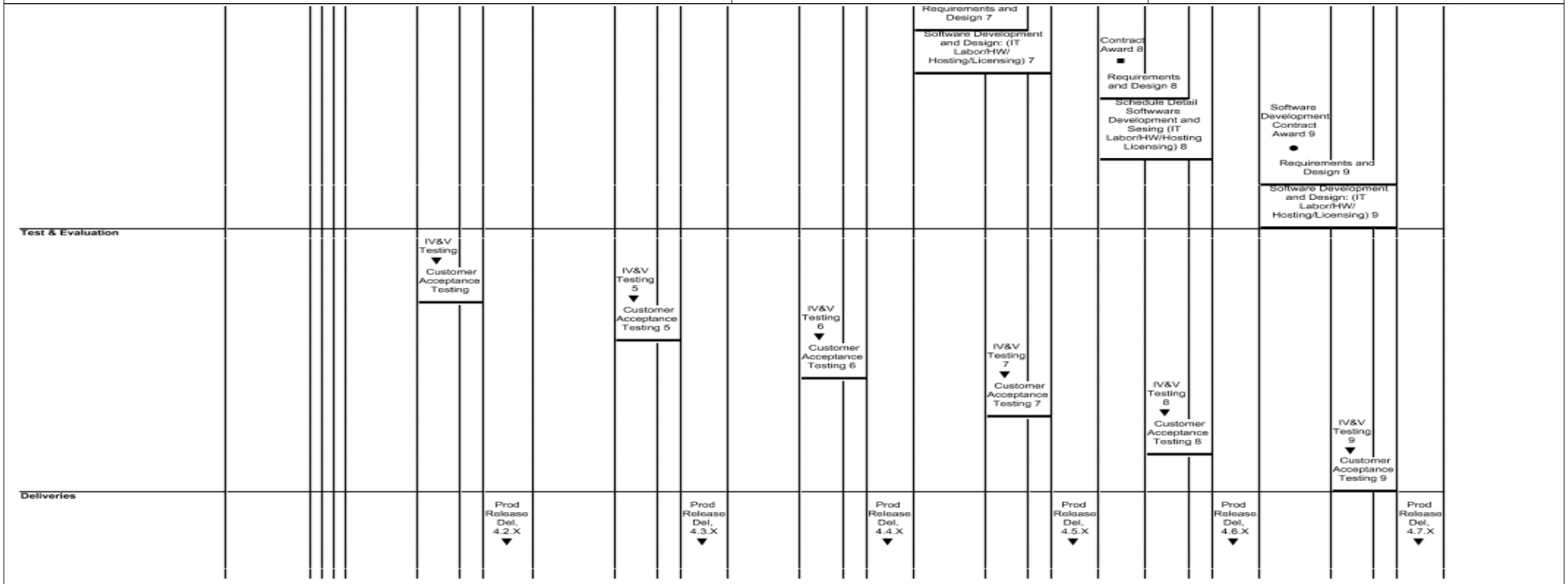

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

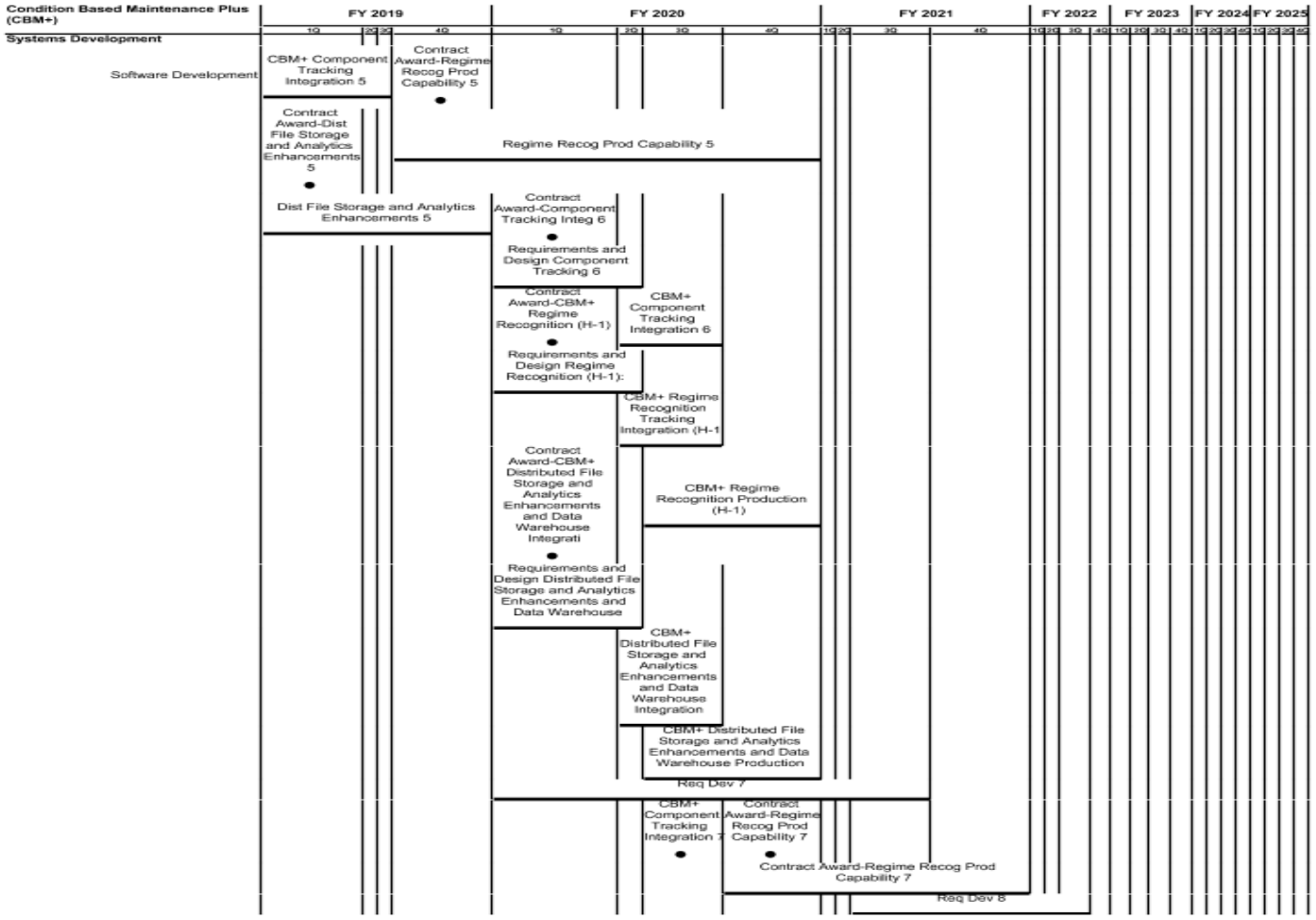

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

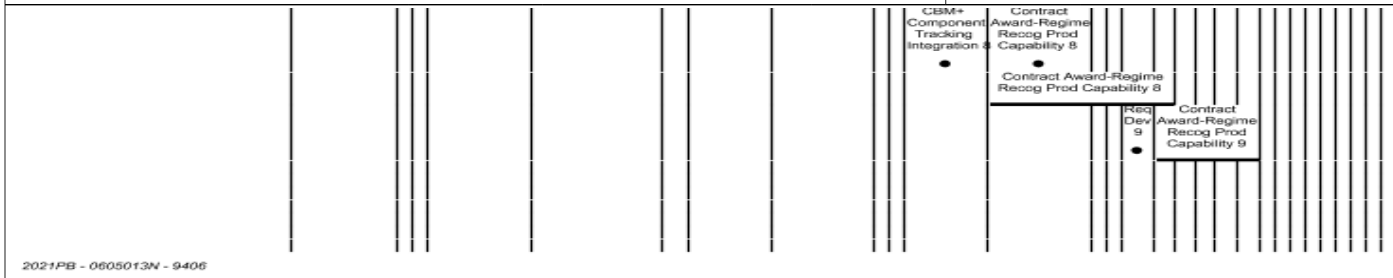

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

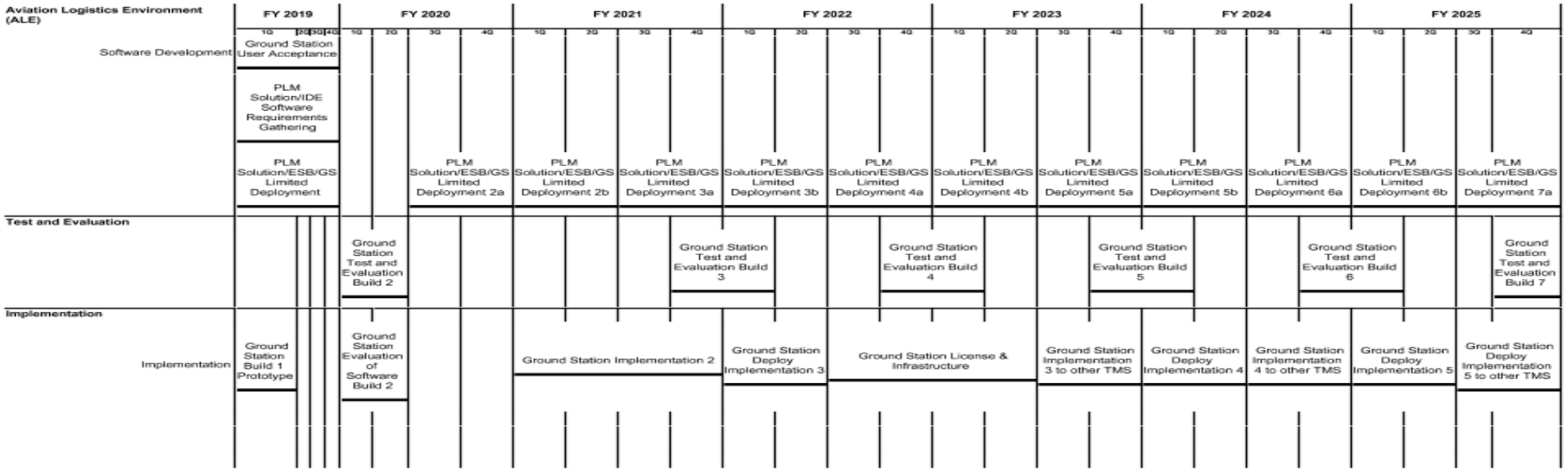

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

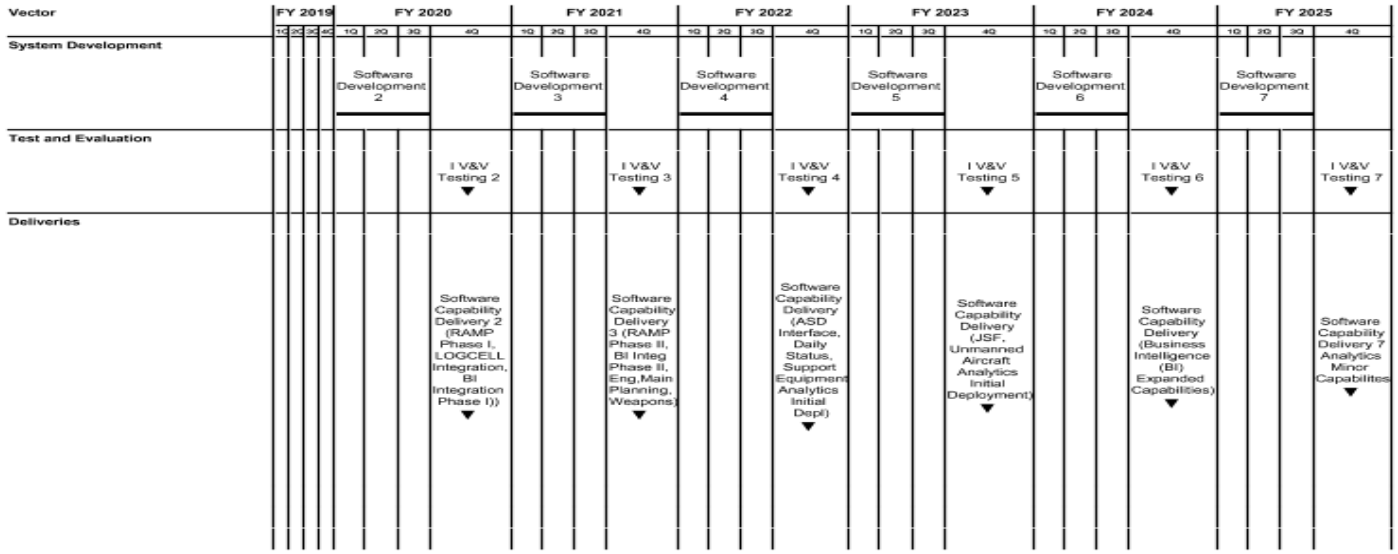

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
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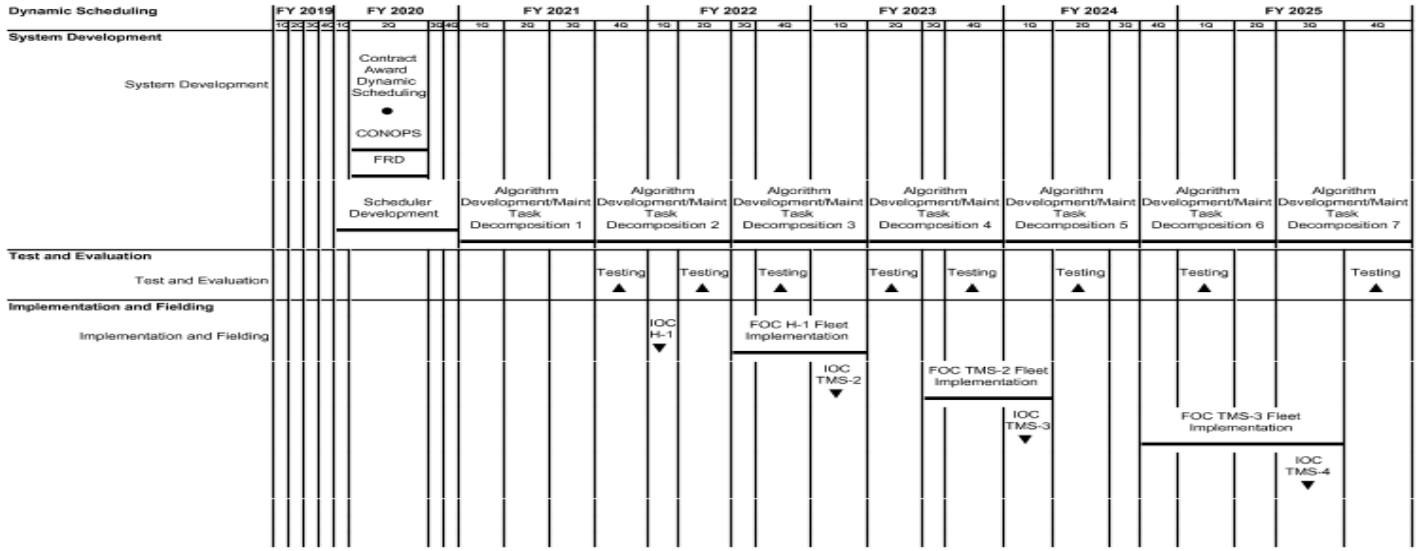

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605013N / *Information Technology Development*	**Project (Number/Name)** 9406 / *Maintenance Data Warehouse*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
DECKPLATE IT EXXCOMM Portfolio Consolidation				
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: Contract Award 4	1	2020	1	2020
Systems Development: Software Development: FIAR & F35 IER Requirements and Design 4	1	2020	2	2020
Systems Development: Software Development: NAMS/Integrated Data Environment requirements, planning, data mapping 4	1	2020	4	2020
Systems Development: Software Development: Business Intelligence (BI)/Analytics/ Vision 2020 Initiatives Requirements and Design 4	1	2020	4	2020
Systems Development: Software Development: DECK-ALS/CMS Requirements and Design 4	1	2020	3	2020
Systems Development: Software Development: FIAR Software Development Integration, Testing and Implementation 4	2	2020	4	2020
Systems Development: Software Development: BI/Analytics/Vision 2020: (IT Labor/ HW/ Hosting/Licensing) 4	2	2020	4	2020
Systems Development: Software Development: F35 IER 4	1	2020	3	2020
Systems Development: Software Development: DECK-ALS/CMS integration 4	1	2020	3	2020
Systems Development: Software Development: Contract Award 5	1	2021	1	2021
Systems Development: Software Development: Requirements and Design 5	1	2021	1	2021

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Systems Development: Software Development: Software Development and Design: (IT Labor/HW/ Hosting/Licensing) 5	1	2021	3	2021
Systems Development: Software Development: Audit Compliance/JSF Phase III Software Development 5	1	2021	3	2021
Systems Development: Software Development: Integration and Capability Enablement5	1	2021	3	2021
Systems 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: 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: Contract Award 8	1	2024	1	2024
Systems Development: Software Development: Requirements and Design 8	1	2024	2	2024
Systems Development: Software Development: Schedule Detail Softwware Development and Sesing (IT Labor/HW/Hosting Licensing) 8	1	2024	3	2024
Systems Development: Software Development: Contract Award 9	1	2025	1	2025
Systems Development: Software Development: Requirements and Design 9	1	2025	3	2025
Systems Development: Software Development: Schedule DetailSoftware Development and Design: (IT Labor/HW/ Hosting/Licensing) 9	1	2025	3	2025
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 5	2	2021	2	2021
Test & Evaluation: DECKPLATE Customer Acceptance Testing 5	2	2021	3	2021
Test & Evaluation: DECKPLATE IV&V Testing 6	2	2022	2	2022

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test & Evaluation: DECKPLATE Customer Acceptance Testing 6	2	2022	3	2022
Test & Evaluation: DECKPLATE IV&V Testing 7	2	2023	2	2023
Test & Evaluation: DECKPLATE Customer Acceptance Testing 7	2	2023	3	2023
Test & Evaluation: DECKPLATE IV&V Testing 8	2	2024	2	2024
Test & Evaluation: DECKPLATE Customer Acceptance Testing 8	2	2024	3	2024
Test & Evaluation: DECKPLATE IV&V Testing 9	2	2025	2	2025
Test & Evaluation: DECKPLATE Customer Acceptance Testing 9	2	2025	3	2025
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
Deliveries: DECKPLATE Production Release Delivery 4.7.X	4	2025	4	2025
Condition Based Maintenance Plus (CBM+)				
Systems Development: Software Development: CBM+ Component Tracking Integration 5	1	2019	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

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
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
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

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
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
Aviation Logistics Environment (ALE)				
Software Development: Ground Station User Acceptance	1	2019	4	2019
Software Development: PLM Solution/ESB Software Requirements Gathering	1	2019	4	2019
Software Development: PLM Solution/ESB/GS Limited Deployment 1	1	2019	4	2019
Software Development: PLM Solution/ESB/GS Limited Deployment 2a	3	2020	4	2020
Software Development: PLM Solution/ESB/GS Limited Deployment 2b	1	2021	2	2021
Software Development: PLM Solution/ESB/GS Limited Deployment 3a	3	2021	4	2021
Software Development: PLM Solution/ESB/GS Limited Deployment 3b	1	2022	2	2022
Software Development: PLM Solution/ESB/GS Limited Deployment 4a	3	2022	4	2022
Software Development: PLM Solution/ESB/GS Limited Deployment 4b	1	2023	2	2023
Software Development: PLM Solution/ESB/GS Limited Deployment 5a	3	2023	4	2023
Software Development: PLM Solution/ESB/GS Limited Deployment 5b	1	2024	2	2024
Software Development: PLM Solution/ESB/GS Limited Deployment 6a	3	2024	4	2024
Software Development: PLM Solution/ESB/GS Limited Deployment 6b	1	2025	2	2025
Software Development: PLM Solution/ESB/GS Limited Deployment 7a	3	2025	4	2025
Test and Evaluation: Ground Station Test and Evaluation Build 2	1	2020	2	2020
Test and Evaluation: Ground Station Test and Evaluation Build 3	4	2021	1	2022

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test and Evaluation: Ground Station Test and Evaluation Build 4	4	2022	1	2023
Test and Evaluation: Ground Station Test and Evaluation Build 5	4	2023	1	2024
Test and Evaluation: Ground Station Test and Evaluation Build 6	4	2024	1	2025
Test and Evaluation: Ground Station Test and Evaluation Build 7	4	2025	4	2025
Implementation: Implementation: Ground Station Build 1 Prototype	1	2019	1	2019
Implementation: Implementation: Ground Station Evaluation of Software Build 2	1	2020	2	2020
Implementation: Implementation: Ground Station Implementation 2	1	2021	4	2021
Implementation: Implementation: Ground Station Deploy Build 3	1	2022	2	2022
Implementation: Implementation: Ground Station License & Infrastructure	3	2022	2	2023
Implementation: Implementation: Ground Station Implementation 3 to other TMS	3	2023	4	2023
Implementation: Implementation: Ground Station Deploy Implementation 4	1	2024	2	2024
Implementation: Implementation: Ground Station Implementation 4 to other TMS	3	2024	4	2024
Implementation: Implementation: Ground Station Deploy Implementation 5	1	2025	2	2025
Implementation: Implementation: Ground Station Deploy Implementation 5 to other TMS	3	2025	4	2025
Vector				
System Development: Software Development 2	1	2020	3	2020
System Development: Software Development 3	1	2021	3	2021
System Development: Software Development 4	1	2022	3	2022
System Development: Software Development 5	1	2023	3	2023
System Development: Software Development 6	1	2024	3	2024
System Development: Software Development 7	1	2025	3	2025
Test and Evaluation: I V&V Testing 2	4	2020	4	2020
Test and Evaluation: I V&V Testing 3	4	2021	4	2021
Test and Evaluation: I V&V Testing 4	4	2022	4	2022
Test and Evaluation: I V&V Testing 5	4	2023	4	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Test and Evaluation: I V&V Testing 6	4	2024	4	2024
Test and Evaluation: I V&V Testing 7	4	2025	4	2025
Deliveries: Software Capability Delivery 2 (RAMP Phase I, LOGCELL Integration, BI Integration Phase I)	4	2020	4	2020
Deliveries: Software Capability Delivery 3 (RAMP Phase II, BI Integration Phase II, DEPOT Engines, Schedule Maintenance Planning, Weapons, Training Readiness Analytics Initial Deployment)	4	2021	4	2021
Deliveries: Software Capability Delivery 4 (ASD Interface, Daily Status, Support Equipment Analytics Initial Deployement)	4	2022	4	2022
Deliveries: Software Capability Delivery 5 (JSF, Unmanned Aircraft Analytics Initial Deployment)	4	2023	4	2023
Deliveries: Software Capability Delivery 6 (Business Intelligence (BI) Expanded Capabilities)	4	2024	4	2024
Deliveries: Software Capability Delivery 7 Analytics Minor Capabilites	4	2025	4	2025
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: Scheduler Development	1	2020	4	2020
System Development: System Development: Algorithm Development/Maint Task Decomposition 1	1	2021	3	2021
System Development: System Development: Algorithm Development/Maint Task Decomposition 2	4	2021	2	2022
System Development: System Development: Algorithm Development/Maint Task Decomposition 3	3	2022	1	2023
System Development: System Development: Algorithm Development/Maint Task Decomposition 4	2	2023	4	2023

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
System Development: System Development: Algorithm Development/Maint Task Decomposition 5	1	2024	3	2024
System Development: System Development: Algorithm Development/Maint Task Decomposition 6	4	2024	2	2025
System Development: System Development: Algorithm Development/Maint Task Decomposition 7	3	2025	4	2025
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing	4	2021	4	2021
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing 2	2	2022	2	2022
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing 3	4	2022	4	2022
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing 4	2	2023	2	2023
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing 5	4	2023	4	2023
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing 6	2	2024	2	2024
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing 7	1	2025	1	2025
Test and Evaluation: Test and Evaluation: Dynamic Scheduling Testing 8	4	2025	4	2025
Implementation and Fielding: Implementation and Fielding: Initial Operational Capability (IOC) Single Squadron H-1	1	2022	1	2022
Implementation and Fielding: Implementation and Fielding: Full Operation Capability (FOC) (H-1 Fleet Implementation)	3	2022	1	2023
Implementation and Fielding: Implementation and Fielding: Initial Operational Capability (IOC) Single Squadron TMS-2	1	2023	1	2023
Implementation and Fielding: Implementation and Fielding: Full Operation Capability (FOC) (TMS-2 Fleet Implementation)	3	2023	1	2024
Implementation and Fielding: Implementation and Fielding: Initial Operational Capability (IOC) Single Squadron TMS-3	1	2024	1	2024
Implementation and Fielding: Implementation and Fielding: Full Operation Capability (FOC) (TMS-3 Fleet Implementation)	4	2024	3	2025
Implementation and Fielding: Implementation and Fielding: Initial Operational Capability (IOC) Single Squadron TMS-4	3	2025	3	2025

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy										Date: February 2020		
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 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**	**FY 2022**	**FY 2023**	**FY 2024**	**FY 2025**	**Cost To Complete**	**Total Cost**
9999: *Congressional Adds*	13.997	9.647	8.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	31.644
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.

MODEL BASED PRODUCT SUPPORT (MBPS) - Formerly known as 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 MBPS 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 MBPS 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 MBPS 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. Any decrease in funding will negatively impact MBPS schedule.

Please note that, since the FY20 President's Budget, the name of this program has changed from Product Lifecycle Management (PLM) to Model Based Product Support (MBPS). The change was made as MBPS is a more accurate reflection of the scope of work involved in this program, as PLM is only a portion of the larger MBPS undertaking.

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2019	FY 2020
Congressional Add: Advanced Radar Condition Based Maintenance ***FY 2019 Accomplishments:*** "Other Transaction Authority (OTA) is currently in development for Model Based Product Support (MBPS) Prototype Development. Industry Day event took place in January, where SEA06L worked with Industry to identify possible emerging technologies and refine the Request for Solution (i.e. statement of need) for the MBPS Prototype Project. Request for Services were released to Industry in March, resulting in ten solution papers submissions by Industry. In May, source selection panel reviewed and down-selected two vendors to perform technical demonstrations, which will take place in July. Following the demonstrations, source selection will take place, with OTA agreement to be awarded in August for MBPS Prototype Development. Additionally, MPBS project has been designated as a Business Category (BCAT) level II program which will enable the Navy to sunset current stove-piped configuration, technical data management, provisioning and readiness IT applications and replace there functionality with modern commercial integrated cloud based Data as a Service/Platform as a Service solutions." ***FY 2020 Plans:*** N/A	9.647	0.000
Congressional Add: NAVSEA readiness and logistics information technology digital transformation pla ***FY 2019 Accomplishments:*** N/A ***FY 2020 Plans:*** Model Based Product Support (MBPS) will field three core capabilities under the current Other Transaction Authority (OTA), Navy Product Data Management, Navy Common Readiness Model and Navy Data Acquisition Requirements tool, begin transition and workforce training, and sunset (i.e. rationalize) the following current stand-alone applications: 1. Configuration Data Manager's Database - Open Architecture (CDMD-OA) 2. Revised Alternative Dataflow WEB (RADWEB) 3. Advanced Technical Information Support (ATIS) 4. Naval Ships Engineering Drawing Repository (NSEDR) 5. Technical Manual Management Information Systems (TDMIS) 6. Streamlined Modular Acquisition Requirements Tailoring Tool (SMART-T) 7. Naval Logistics Technical Data (NAVLOG-TD) Repository 8. Interactive Computer-Aided Provisioning System (ICAPS) 9. Navy Maintenance Figures of Merit (MFOM) Modeling Analysis Tool (NMMAT) 10. Readiness Based Sparing Availability Centered Inventory Model (ACIM)	0.000	8.000
Congressional Adds Subtotals	9.647	8.000

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
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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.

MODEL BASED PRODUCT SUPPORT (MBPS):
MBPS development services were solicited in 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.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy		Date: February 2020
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Technology Refreshment (PLM)	Various	Various : Various	4.150	0.000		0.000		0.000		-		0.000	0.000	4.150	-
		Subtotal	4.150	0.000		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 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
HW/SW (CBM+)	C/FFP	Washington HQ Services : Washington, DC	2.626	3.435	Sep 2019	3.700	Sep 2020	0.000		-		0.000	0.000	9.761	1.575
Software Development for (CBM+)	C/CPFF	Wyle : Patuxent River, MD	1.700	0.000	Sep 2019	0.000		0.000		-		0.000	0.000	1.700	2.700
Systems Engineering (PLM)	WR	NSWC : Philadelphia, PA	0.425	0.355	Sep 2019	0.200	Sep 2020	0.000		-		0.000	0.000	0.980	-
Systems Engineering (PLM)	WR	NSWC : Crane, ID	0.646	0.618	Sep 2019	0.400	Sep 2020	0.000		-		0.000	0.000	1.664	-
Systems Engineering (PLM)	WR	NSWC : Port Hueneme, CA	0.414	1.830	Sep 2019	1.700	Sep 2020	0.000		-		0.000	0.000	3.944	-
Technical Support (PLM)	Various	Various : Various	2.865	0.000	Sep 2019	0.000		0.000		-		0.000	0.000	2.865	-
Systems Engineering (PLM)	WR	NSWC : Carderock, MD	0.384	0.496	Sep 2019	0.300	Sep 2020	0.000		-		0.000	0.000	1.180	-
Systems Engineering (PLM)	WR	NSWC : Dahlgren, VA	0.305	0.225	Sep 2019	0.200	Sep 2020	0.000		-		0.000	0.000	0.730	-
Systems Engineering (PLM)	WR	NAVSEALOGCEN : Mechanicsburg, PA	0.462	2.688	Sep 2019	1.500	Sep 2020	0.000		-		0.000	0.000	4.650	-
		Subtotal	9.827	9.647		8.000		0.000		-		0.000	0.000	27.474	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
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Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support for (CBM+)	WR	NAWCAD : Patuxent River, MD	0.020	0.000		0.000		0.000		-		0.000	0.000	0.020	-
		Subtotal	0.020	0.000		0.000		0.000		-		0.000	0.000	0.020	N/A

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	13.997	9.647		8.000		0.000		-		0.000	0.000	31.644	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
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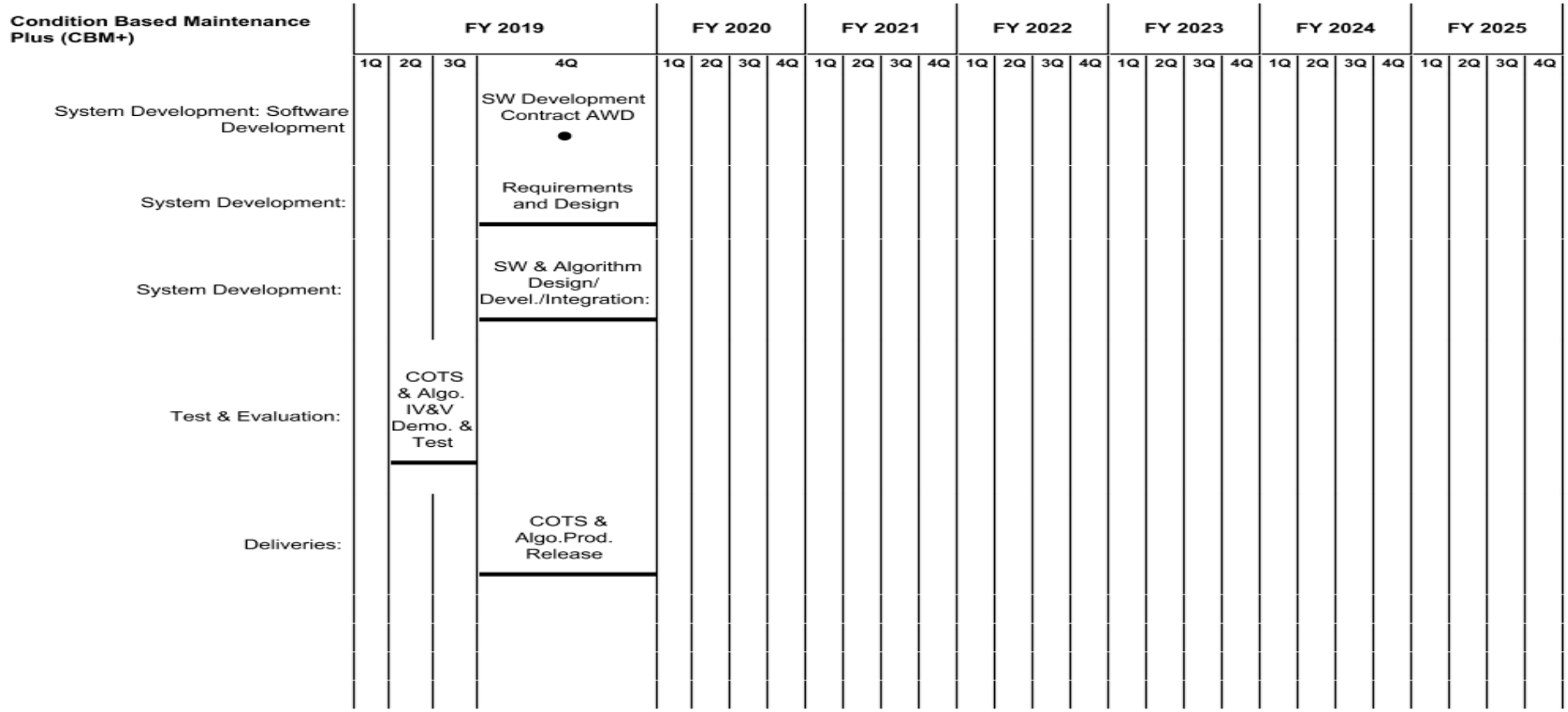

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Condition Based Maintenance Plus (CBM+)				
System Development:: Requirements and Design	1	2019	1	2019
System Development:: Software and Algorithm Design/ Development/Integration:	1	2019	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