Exhibit R-2, RDT&E Budget Item Justification: PB 2022 Navy											Date: May 2021	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 5: *System Development & Demonstration (SDD)*					R-1 Program Element (Number/Name) PE 0605215N *I Mission Planning*							
COST ($ in Millions)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Cost To Complete**	**Total Cost**
Total Program Element	96.372	70.881	83.980	88.128	-	88.128	-	-	-	-	-	-
2213: *Mission Planning*	66.616	59.977	72.774	76.932	-	76.932	-	-	-	-	-	-
2311: *Stores Planning and Weaponeering Module*	29.756	10.904	11.206	11.196	-	11.196	-	-	-	-	-	-

A. Mission Description and Budget Item Justification

The Mission Planning PE is used to develop automated mission planning systems to support Naval Aviation.

The Joint Mission Planning System (JMPS) (Proj 2213) is the designated automated mission planning system for Naval Aviation, supporting over 40 Type/Model/Series (T/M/S) of U.S. Navy and Marine Corps aircraft and expeditionary forces. JMPS-M (Maritime) enables weapon system employment by providing the information, automated tools, and decision aids needed to rapidly plan aircraft, weapon, or sensor missions, load mission data into aircraft and weapons, conduct mission rehearsal, execute missions, and conduct post-mission analysis. JMPS-E (Expeditionary) is a scalable, tailorable, and collaborative web-based mission planning and execution monitoring tool for Amphibious Squadron staffs embarked with each Amphibious Ready Group and Expeditionary Strike Group. Electronic Kneeboard (EKB) is a mobile device configured with various software applications and features to support aircrew during pre-flight planning, in-flight re-planning and mission execution, and post-mission debriefing and analysis.

The Standardized Tester of Reprogrammable Munitions (STORM) system (Proj 2213) replaces the legacy Common Munitions Built-in-Test (BIT)/Reprogramming Equipment (CMBRE) and provides USN/USMC forces the critical capability to perform built-in test and programming/reprogramming of various advanced weapons. Funding through FY 2023 is for the research and the development of the STORM system to support advanced operational capabilities, address system obsolescence, enable cybersecurity requirements, and meet mission readiness requirements.

The Next Generation Naval Mission Planning System (NGNMPS) will address critical capability gaps and deficiencies in the legacy JMPS that are required for modern 21st century integrated mission-centric and collaborative multi-domain mission planning, execution and analysis. NGNMPS will replace Naval Aviation's legacy JMPS no later than FY 2027 while also affordably leveraging prior investments across the systems of systems to deliver integrated and collaborative capability. NGNMPS will affordably address technological obsolescence while also delivering collaborative and automated capabilities in an integrated virtual collaborative data environment. NGNMPS capability provides advanced multiple aircraft planning capabilities focused on emerging, high-threat mission areas. Current mission planning capabilities support individual aircraft and weapon initialization requirements. The emerging, near-peer threat environment demands a much more capable system that enables a team of aircraft to cooperate effectively across multiple mission areas, domains, and security levels. NGNMPS will also leverage service-oriented architecture to provide revolutionary improvements in workflow, usability, cybersecurity, information and decision aids needed to rapidly plan/employ/maximize effectiveness of aircraft/weapon/sensor/payload mission plans; perform advanced pre-mission rehearsal/analysis; provide functionality to load mission data into aircraft and weapons; enable dynamic replanning/retargeting against evolving threats in contested environments; perform integrated and advanced post-mission debrief/analysis; support cross-domain

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capabilities; and support portability of mission planning, mission execution, and mission analysis functions to meet National Defense Strategy and Interim National Security Strategic Guidance key objectives.

The Stores Planning and Weaponeering Module, also referred to as Weaponeering and Stores Planning (WASP) (Proj 2311), is an integrated software product that allows aircrew to determine the best combinations of weapons and delivery conditions to achieve the desired level of target damage. The WASP program perform detailed weapons employment planning for F/A-18 and E/A-18G aircraft. The WASP program provides inherent safety checks which eliminate weapon delivery solutions that violate aircraft T/M/S specific safety-of-flight envelopes. FY 2022 and out include funding for the research and development in order to integrate WASP with 3-D mission rehearsal, provide dynamic Safe Escape Automation Layer (SEAL) calculations on Electronic Kneeboard (EKB), develop WASP for other Navy and Marine Corps platforms, and support WASP development and integration with Next Generation Mission Planning Systems (NGNMPS).

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under SYSTEM DEVELOPMENT & DEMONSTRATION (SDD) because it includes those projects that have passed Milestone B approval and are conducting engineering and manufacturing development tasks aimed at meeting validated requirements prior to full-rate production decision.

B. Program Change Summary ($ in Millions)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Previous President's Budget	72.566	86.134	90.736	-	90.736
Current President's Budget	70.881	83.980	88.128	-	88.128
Total Adjustments	-1.685	-2.154	-2.608	-	-2.608
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.154			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.685	0.000			
• Program Adjustments	0.000	0.000	-1.663	-	-1.663
• Rate/Misc Adjustments	0.000	0.000	-0.945	-	-0.945

Change Summary Explanation

FUNDING: Changes in FY 2022 since the previous President's Budget include programmatic reduction of $1.663M for JMPS-E divestiture beginning in FY 2022, and a reduction of $0.945M for rate adjustments.

TECHNICAL: N/A

SCHEDULE:

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Proj 2213:
- Renamed NGNMPS KP3 "Initial Net Enabled Weapon mission planning capability"
- Added NGNMPS "KP 3.5: Advanced Net Enabled Weapon mission planning capability" in 3rd QTR of FY 2022.
- Renamed "NGNMPS SW Dev" line "NGNMPS 804 Development" from 2Q FY 2020 - 4Q FY 2022.
- Removed "JMPS-E 4.O I&T" and "JMPS-E 4.0 Dev" due to JMPS-E divestiture beginning in FY 2022.

Proj 2311: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy									Date: May 2021			
Appropriation/Budget Activity 1319 / 5					R-1 Program Element (Number/Name) PE 0605215N / *Mission Planning*				Project (Number/Name) 2213 / *Mission Planning*			
COST ($ in Millions)	**Prior Years**	**FY 2020**	**FY 2021**	**FY 2022 Base**	**FY 2022 OCO**	**FY 2022 Total**	**FY 2023**	**FY 2024**	**FY 2025**	**FY 2026**	**Cost To Complete**	**Total Cost**
2213: *Mission Planning*	66.616	59.977	72.774	76.932	-	76.932	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

JMPS-Maritime (JMPS-M) is the designated automated mission planning system for naval aviation, supporting over 40 T/M/S of U.S. Navy and Marine Corps aircraft. JMPS-M enables weapon system employment by providing the information, automated tools, and decision aids needed to rapidly plan aircraft, weapon, or sensor missions, load mission data into aircraft and weapons, conduct mission rehearsal, and conduct post-mission analysis. JMPS-M is a mission critical system which is a co-development effort between the United States Navy (USN) and United States Air Force (USAF). Common requirements are identified and core JMPS-M capabilities are developed and prioritized in an evolutionary approach. An individual JMPS-M Mission Planning Environment (MPE) requires the JMPS framework, common components, unique planning components (UPCs), federated applications, and the necessary system hardware required to satisfy mission planning objectives. Most tactical naval aviation platforms are dependent solely on JMPS-M to plan precision guided munitions, sensor systems, tactical data links, secure voice communications, and basic Safety of Flight functions. Common helicopter functionality has been developed for implementation in Joint Mission Planning System (JMPS). Common Helicopter components include, Weight and Power Calculators, Common Mission Data Loader, Weapon Employment Zone Overlays Tool and Point Selection Tool. The Mission Planning Program Element also includes Electronic Kneeboard (EKB) which is a mobile device configured with various software applications and features to support aircrew during pre-flight planning, in-flight re-planning and mission execution, and post-mission debriefing and analysis.

The Next Generation Naval Mission Planning System (NGNMPS) will address critical capability gaps and deficiencies in the legacy JMPS that are required for modern 21st century integrated mission-centric and collaborative multi-domain mission planning, execution and analysis. NGNMPS will replace Naval Aviation's legacy JMPS no later than FY 2027 while also affordably leveraging prior investments across the systems of systems to deliver integrated and collaborative capability. NGNMPS will affordably address technological obsolescence while also delivering collaborative and automated capabilities in an integrated virtual collaborative data environment. NGNMPS capability provides advanced multiple aircraft planning capabilities focused on emerging, high-threat mission areas. Current mission planning capabilities support individual aircraft and weapon initialization requirements. The emerging, near-peer threat environment demands a much more capable system that enables a team of aircraft to cooperate effectively across multiple mission areas, domains, and security levels. NGNMPS will also leverage service-oriented architecture to provide revolutionary improvements in workflow, usability, cybersecurity, information and decision aids needed to rapidly plan/employ/maximize effectiveness of aircraft/weapon/sensor/payload mission plans; perform advanced pre-mission rehearsal/analysis; provide functionality to load mission data into aircraft and weapons; enable dynamic replanning/retargeting against evolving threats in contested environments; perform integrated and advanced post-mission debrief/analysis; support cross-domain capabilities; and support portability of mission planning, mission execution, and mission analysis functions to meet National Defense Strategy and Interim National Security Strategic Guidance key objectives.

FY 2022 and out includes funding for STORM, which provides USN/USMC units with the critical capability to perform built-in-test and programming/reprogramming of various weapons. Funding will provide research and the development in order to develop the STORM system to support advanced operational capabilities, address system obsolescence, meet cyber security requirements, and meet mission readiness requirements.

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Mission Planning Program Mgmt, Integration, and Test	12.368	12.615	12.725	0.000	12.725
Articles:	-	-	-	-	-
Description: Perform Mission Planning Program Management, and Integration and Test efforts supporting the Navy's system development, developmental testing/operational testing, integration, system-of-system testing, and managing Naval Mission Planning efforts. Life-cycle management efforts consist of development of program execution plans, development/integration of components provided by various developers into mission planning environments and testing of the integrated environment. ***FY 2021 Plans:*** Continue mission planning integration and testing, project management and system engineering for over 40 T/M/S that are supported by legacy JMPS and by the Next Generation Naval Mission Planning System. Test and verify capabilities to support multi-ship mission coordination and transition of components to services. Continue to update/validate fleet requirements in support of the Next Generation Naval Mission Planning System. Conduct integration and test of EKB to the fleet for functionality and cyber security mandates. ***FY 2022 Base Plans:*** Continue mission planning integration and testing, project management and system engineering for over 40 T/M/S that are supported by legacy JMPS and by the Next Generation Naval Mission Planning System with a focus transitioning to NGNMPS. Test and verify capabilities to support multi-ship mission coordination and transition of components to services. Continue to update/validate fleet requirements in support of the Next Generation Naval Mission Planning System. Implement and improve fleet-priority functionality and cyber-security mandates. Conduct EKB studies, analyses, integrations, and tests to meet emergent fleet security and aircraft interface/data exchange requirements. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Increase of $0.110 million from FY 2021 to FY 2022 due to inflation.					
Title: Joint Mission Planning System Expeditionary (JMPS-E)	0.984	1.329	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: JMPS Expeditionary (JMPS-E): JMPS-E provides a scalable, tailorable, mission planning and execution monitoring tool for Amphibious Squadron staffs. The primary focus of this system is to provide an automated capability to assist planners with mission analysis, course of action development and automated					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
creation of doctrinal orders based on planning data in the system. JMPS-E provides a digital map enabling better response times to changing plans, easier distribution of planning artifacts and a reduction in human error during the planning process. The variety and geographically separated nature of forces involved with Ship to Objective Maneuver (STOM) amplifies the need for web-based technologies to enable collaborative planning, improve overall situational awareness and enable the monitoring of mission execution from different locations. The primary outputs are tasking orders, route plans, battlespace geometries and decision briefs. The system will also incorporate modeling and simulation tools to rehearse and deconflict mission plans. ***FY 2021 Plans:*** Continue integration, testing and fielding of JMPS-E Version 3.0 including virtualization to transition legacy JMPS-E capabilities to an updated framework and cyber security posture to comply with cyber mandates. ***FY 2022 Base Plans:*** Beginning in FY 2022 JMPS-E has been divested. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Beginning in FY22 JMPS-E has been divested					
Title: Mission Planning Framework (FW) and Common Components (CC) Development	8.230	8.784	8.829	0.000	8.829
Articles:	-	-	-	-	-
Description: As platform(s) requirements emerge for new and enhanced mission planning capabilities, the demand for more complex integrated applications and software products increases. The transition to a modern service-oriented architecture will increase the volume of integrated mission planning capability that will be required by complex integrated combat operations. This task continues development and integration of modernized mission planning software frameworks and architecture which provide the required core mission planning capabilities supporting all naval aircraft. Framework and architecture development tasks include: system engineering processes, management interface controls, software architectural analysis, requirements management and a centralized website for Mission Planning developers. Updating Common Component software into a modernized software environment and architecture will continue and also augment core mission planning capabilities supporting multiple T/M/S. ***FY 2021 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605215N / *Mission Planning*	**Project (Number/Name)** 2213 / *Mission Planning*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Continue development, integration and testing of modernized framework capabilities and architecture. Introduce capability involving new business services, utilities and data types. Continue development activities which include implementing a modular, scalable service-oriented architecture to reduce development and sustainment costs while also supporting cyber security hardening and resilience for compliance with cyber mandates. Continue development and integration of common components to meet platform(s) requirements for new and enhanced mission planning capability required in a modernized and service-oriented architecture environment. Integration activities will continue as platforms deliver modernized unique planning capabilities for integration, testing and fielding. ***FY 2022 Base Plans:*** Continue development, integration and testing of modernized framework capabilities and architecture. Introduce capability involving new business services, utilities and data types. Continue development activities which include implementing a modular, scalable service-oriented architecture to reduce development and sustainment costs while also supporting cyber security hardening and resilience for compliance with cyber mandates. Continue development and integration of common components to meet platform(s) requirements for new and enhanced mission planning capability required in a modernized and service-oriented architecture environment. Integration activities will continue as platforms deliver modernized unique planning capabilities for integration, testing and fielding. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Increase of $0.045 million from FY 2021 to FY 2022 due to inflation.					
Title: Next Generation Naval Mission Planning System (NGNMPS) Development	25.420	35.500	37.606	0.000	37.606
Articles:	-	-	-	-	-
Description: The Next Generation Naval Mission Planning System (NGNMPS) will address critical capability gaps and deficiencies in the legacy JMPS that are required for modern 21st century integrated mission-centric and collaborative multi-domain mission planning, execution and analysis. NGNMPS will replace Naval Aviation's legacy JMPS no later than FY 2027 while also affordably leveraging prior investments across the systems of systems to deliver integrated and collaborative capability. NGNMPS will affordably address technological obsolescence while also delivering collaborative and automated capabilities in an integrated virtual collaborative data environment. NGNMPS capability provides advanced multiple aircraft planning capabilities focused on emerging, high-threat mission areas. Current mission planning capabilities support individual aircraft and weapon initialization requirements. The emerging, near-peer threat environment demands a much more capable					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
system that enables a team of aircraft to cooperate effectively across multiple mission areas, domains, and security levels. NGNMPS will also leverage service-oriented architecture to provide revolutionary improvements in workflow, usability, cybersecurity, information and decision aids needed to rapidly plan/employ/maximize effectiveness of aircraft/weapon/sensor/payload mission plans; perform advanced pre-mission rehearsal/ analysis; provide functionality to load mission data into aircraft and weapons; enable dynamic replanning/ retargeting against evolving threats in contested environments; perform integrated and advanced post-mission debrief/analysis; support cross-domain capabilities; and support portability of mission planning, mission execution, and mission analysis functions to meet National Defense Strategy and Interim National Security Strategic Guidance key objectives. The NGNMPS will be integrating rapid prototyped capability developed under multiple S&T efforts (e.g., Future Naval Capability, Rapid Innovation Fund, Small Business Innovative Research) as those projects mature sufficiently to meet critical advanced warfighting needs. NGNMPS will utilize a Middle Tier Acquisition approach, per Section 804 of the Fiscal Year (FY) 2016 National Defense Authorization Act (NDAA), as amended in FY 2017 NDAA (codified at 10 U.S.C. sub sec 2302 note) to prototype and deliver NGNMPS capabilities to Naval Aviation across multiple platforms. ***FY 2021 Plans:*** Develop NGNMPS program software in a DevSecOps environment, conduct software integration, cyber accreditation, test and deployment across a family of systems. Conduct software development of services, user interfaces, supportability, data management, and service-oriented architecture, including engineering design reviews. Conduct rapid prototyping and transition of enabling technologies in support of NGNMPS collaboration, automation and user requirements. ***FY 2022 Base Plans:*** Continue development, integration and testing of modernized framework capabilities and architecture. New capabilities will be developed to enable complex mission planning for the warfighter. The user interface will be updated to allow for ease of use and reduced time to plan a mission. Development activities will include implementing a modular, scalable service-oriented architecture to reduce development and sustainment costs while supporting cyber security hardening and resilience for compliance with cyber mandates. Continue to develop and integrate micro-services to meet platform(s) requirements for new and enhanced mission planning capability required in a modernized and service-oriented architecture environment. ***FY 2022 OCO Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy		Date: May 2021
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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Increase in funding required for the establishment of additional software development teams, migration of additional capabilities derived from transition programs, development of micro-services supporting advanced mission planning, execution, dynamic re-planning, and analysis capabilities required to support lethality, survivability, supportability and responsiveness across the Naval Aviation Enterprise in direct support of the National Defense Strategy and Interim National Security Strategic Guidance. Development of a new user interface and user experience to increase ease of use and reduce operator workload. Increase cyber security and cyber resilience for compliance with cyber mandates.					
Title: Standardized Tester of Reprogrammable Munitions (STORM) (previously titled: Next Generation Common Munitions BIT Reprogramming Equipment (CMBRE) ***Articles:*** ***Description:*** The technology inherent to the legacy CMBRE is obsolete and cannot be sustained beyond 2025. In addition to sustainability issues and cyber security concerns, the Fleet also requires a more transportable, lighter weight and rugged test set that has the ability to service existing and future weapons with increased data transfer capability in austere operating environments. Formerly named "CMBRE Next Generation" the Standardized Tester of Reprogrammable Munitions (STORM) efforts enhance mission readiness and security, generate improved flexibility, depth, and capacity for existing and emerging aviation weapon capabilities during the conduct of ship, shore, and ship-to-shore operations in both conventional and Distributed Aviation Operations environments. STORM will support current and future fleet weapon support requirements, CONOPS, and will comply with Cyber security mandates while affordably addressing legacy CMBRE system obsolescence. STORM will utilize a Middle Tier Acquisition approach, per Section 804 of the Fiscal Year (FY) 2016 National Defense Authorization Act (NDAA), as amended in FY 2017 NDAA (codified at 10 U.S.C. sub sec 2302 note) to prototype and deliver STORM capability to USN/USMC forces. ***FY 2021 Plans:*** Continue development of STORM to support Navy/Marine requirements. STORM will mitigate known cyber security and obsolescence issues. ***FY 2022 Base Plans:***	12.975 -	14.546 -	17.772 -	0.000 -	17.772 -

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Continue development of STORM system. Complete prototype Munitions Application Program (MAP) software development. Complete assembly of STORM prototype hardware components. Conduct hardware/software system integration. Begin system-level test and evaluation. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Increases from FY 2021 to FY 2022 completes fabrication of STORM prototype hardware as well as completion of software associated with the 804 mid-tier acquisition program. Funding in FY 2022 supports completion of environmental testing of STORM components. In FY 2022 hardware/software integration efforts complete and system-level testing begins					
Accomplishments/Planned Programs Subtotals	59.977	72.774	76.932	0.000	76.932

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
• OPN/2876: *Mission Planning*	15.296	13.947	17.951	-	17.951	-	-	-	-	-	-

Remarks

D. Acquisition Strategy

The initial Joint Mission Planning System (JMPS) development effort was a phased evolutionary approach. JMPS is a post Milestone III program and Initial Operational Capability (IOC) occurred in December 2005. Cost Plus Award Fee (CPAF) and Cost Plus Incentive Fee (CPIF) contracts were awarded during initial development. During the down-select process, one contractor was selected to develop the JMPS architecture framework and Version 1.0 basic flight planning components. Additional phases focused on strike planning requirements (i.e., support Precision Guided Missions and other tactical data intensive missions) in order to migrate platforms from legacy mission planning systems to JMPS. The USAF and USN continued the joint development of JMPS Frameworks via the USAF Mission Planning Enterprise Contract, which is used for JMPS Framework software development. The USN integration and fielding strategy supports a Mission Planning Environment (MPE) focus, where the JMPS Framework and other software components are integrated, tested, and fielded by T/M/S. As platforms plan their migration to newer versions of JMPS, the acquisition strategy, plan, and program baseline will be updated in order to divest legacy mission planning systems, meet the evolving requirements for integrated mission planning, and lower total life cycle cost. JMPS End of Life (EOL) is planned for 2027. This necessitates the development of a replacement system, Next Generation Naval Mission Planning System (NGNMPS).

NGNMPS will provide a modernized mission planning system which supports multi-domain mission planning, execution, management, and mission analysis capabilities required by the 21st century warfighter. NGNMPS will address critical capability gaps and deficiencies in the legacy JMPS that are required for modern 21st century

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integrated mission-centric and multi-domain collaborative mission planning, execution and analysis. NGNMPS will replace Naval Aviation's legacy JMPS no later than 2027 while also affordably leveraging prior investments across the systems of systems to deliver integrated and collaborative capability. NGNMPS will affordably address technological obsolescence while also delivering collaborative and automated capabilities in an integrated virtual collaborative data environment. NGNMPS will also leverage service-oriented architecture to provide revolutionary improvements in workflow, usability, cybersecurity, information and decision aids needed to rapidly plan/employ/maximize effectiveness of aircraft/weapon/sensor/payload mission plans; perform advanced pre-mission rehearsal/analysis; provide functionality to load mission data into aircraft and weapons; enable dynamic replanning/retargeting against evolving threats in contested environments; perform integrated and advanced post-mission debrief/analysis; support cross-domain capabilities; and support portability of mission planning, mission execution, and mission analysis functions.

NGNMPS will address shortfalls in the family of legacy systems (including JMPS) by modernizing the foundational software to a services based architecture that will improve composability of software applications to support advanced mission planning, dynamic re-planning, mission execution, and post-mission analysis that is required to support the National Defense Strategy and Interim National Security Strategic Guidance. Adopting composable infrastructure that includes computing, storage and network elements treated as individual services allows greater speed and flexibility when performing tasks, allows software applications to operate independently of a single hardware platform, and supports affordable component re-use and supportability across the family of systems.

The CMBRE program was designed to provide USN/USMC units with the critical capability to perform built-in-test and programming / reprogramming of various weapons. Because the legacy CMBRE is obsolete and cannot be sustained beyond 2025 a follow-on program, the Standardized Tester of Reprogrammable Munitions (STORM) will replace CMBRE and support current and future fleet weapon support requirements, CONOPS, and will comply with Cyber security mandates while affordably addressing legacy CMBRE system obsolescence. NGNMPS and STORM will utilize a Middle Tier Acquisition approach per Section 804 of the Fiscal Year (FY) 2016 National Defense Authorization Act (NDAA), as amended in FY 2017 NDAA(codified at 10 U.S.C. sub sec 2302 note) to deliver NGNMPS and STORM capability across multiple DoN platforms.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Software Development/JMPS Expeditionary	C/CPFF	Leidos : Reston, VA	1.000	0.260	Feb 2020	0.358	Feb 2021	0.000		-		0.000	-	-	-
Primary Software Development/JMPS Expeditionary	C/CPAF	BAE : San Diego, CA	1.121	0.438	Mar 2020	0.679	Mar 2021	0.000		-		0.000	-	-	-
Primary Software Development, FW	C/CPFF	Northrop Grumman : Long Beach, CA	4.970	0.000	Feb 2020	0.000	Feb 2021	0.000		-		0.000	-	-	-
Primary Software Development/(Human Factors)	C/CPFF	Georgia Technical Research Institute (GTRI) : Atlanta, GA	2.205	0.378	Mar 2020	0.714	Mar 2021	0.775	Mar 2022	-		0.775	-	-	-
Primary Software Development (SEIC)	C/CPFF	Leidos : Orlando, FL	8.881	3.540	Feb 2020	3.611	Feb 2021	3.725	Feb 2022	-		3.725	-	-	-
Primary Software Development	C/CPFF	MTI : Park City, UT	0.200	1.195	Feb 2020	1.400	Feb 2021	1.675	Feb 2022	-		1.675	-	-	-
Primary Software Development	C/CPFF	ATC : Eden Prairie, MN	0.260	0.000		0.000		0.000		-		0.000	-	-	-
Primary Software Development	C/CPFF	IDT : Arlington, VA	1.543	1.168	Jan 2020	1.000	Jan 2021	0.000		-		0.000	-	-	-
Primary Software Development	C/CPFF	DCS : Alexandria, VA	1.290	1.491	Jan 2020	1.520	Jan 2021	1.650	Jan 2022	-		1.650	-	-	-
Primary Software Development	C/CPFF	AMEWAS : California, MD	1.640	0.135	Jun 2020	0.000		0.000		-		0.000	-	-	-
Primary Software Development	WR	NAWCWD : China Lake, CA	0.160	0.160	Dec 2019	0.163	Dec 2020	0.166	Dec 2021	-		0.166	-	-	-
NGNMPS Primary Software Development	C/CPFF	John's Hopkins University : Laurel, MD	2.500	0.000		1.100	Jan 2021	1.122	Jan 2022	-		1.122	-	-	-
NGNMPS Primary Software Development	WR	NAWCWD : Point Mugu, CA	0.000	5.402	Nov 2019	5.510	Nov 2020	5.732	Nov 2021	-		5.732	-	-	-
NGNMPS Primary Software Development	C/CPFF	VARIOUS : VARIOUS	0.000	1.217	Jul 2020	13.159	Jan 2021	17.900	Jan 2022	-		17.900	-	-	-

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy		Date: May 2021
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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
NGNMPS Primary Software Development	C/CPFF	Northrop Grumman : Linthicum Heights, MD	0.000	8.738	Jul 2020	3.209	Apr 2021	0.000		-		0.000	-	-	-
STORM Development	MIPR	Dep Of Energy : Kansas City, MO	0.000	11.814	Nov 2019	9.796	Nov 2020	9.233	Nov 2021	-		9.233	-	-	-
STORM MAP SW Development	C/CPFF	Raytheon : Tuscon, AZ	0.000	0.750	Sep 2020	2.750	Jan 2021	2.250	Jan 2022	-		2.250	-	-	-
Primary Software Development	WR	NRL/Inc Lab : Washington DC	0.000	1.279	Nov 2019	1.375	Nov 2020	1.502	Nov 2021	-		1.502	-	-	-
Primary Software Development	C/CPFF	Carnegie Mellon University : Pittsburgh, PA	0.000	0.490	Mar 2020	0.508	Mar 2021	0.520	Mar 2022	-		0.520	-	-	-
Primary Software Development	WR	NIWC PAC : San Diego, CA	0.000	1.450	Nov 2019	1.630	Nov 2020	1.780	Nov 2021	-		1.780	-	-	-
Primary Software Development	MIPR	Elmendorf AFB : Jber, AK	0.000	0.750	Jul 2020	1.500	Jan 2021	1.825	Jan 2022	-		1.825	-	-	-
Primary Software Development	C/CPFF	2-Circle : Arlington, VA	0.000	0.600	Jul 2020	0.750	Mar 2021	0.925	Mar 2022	-		0.925	-	-	-
		Subtotal	25.770	41.255		50.732		50.780		-		50.780	-	-	N/A

Remarks

Product Development: Beginning in FY 2022 JMPS-E is divested.
FY 2022 NGNMPS prime development contract increases in FY 2022 because of continued development of micro-services and continuous software integration supporting advanced mission planning, execution, dynamic re-planning, and analysis capabilities required to support lethality, survivability, supportability and responsiveness across the Naval Aviation Enterprise in direct support of the National Defense Strategy and Interim National Security Strategic Guidance.
FY 2022 continues to support incremental funding for JMPS Primary Software Development efforts awarded via multiple contracts for service oriented architecture development.
FY 2022 supports incremental funding for the NGNMPS Primary Software Development efforts awarded via a competitive 2nd Qtr. FY 2021 contract award. Funding in FY 2022 supports NGNMPS program phasing required to transition legacy JMPS-M platforms to NGNMPS before JMPS-M end of life while also developing advanced mission planning, execution, dynamic re-planning, and analysis capabilities required to support the National Defense Strategy and Interim National Security Strategic Guidance. The performing activities and locations are currently various to support a competitive contracting strategy. Once awarded, the performing activities and locations will be updated to reflect the selected contractors.

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Integrated Logistics Support	WR	NAWCWD : Point Mugu, CA	0.649	0.209	Nov 2019	0.212	Nov 2020	0.214	Nov 2021	-		0.214	-	-	-
Systems Eng & Integration	WR	NAWCWD : Point Mugu, CA	7.367	1.809	Nov 2019	1.845	Nov 2020	1.860	Nov 2021	-		1.860	-	-	-
Systems Engineering	WR	NAWCAD : Patuxent River, MD	3.886	1.430	Nov 2019	1.469	Nov 2020	1.475	Nov 2021	-		1.475	-	-	-
NGNMPS Systems Engineering	WR	NAWCAD : Patuxent River, MD	0.000	1.750	Nov 2019	2.000	Nov 2020	2.020	Nov 2021	-		2.020	-	-	-
NGNMPS Integrated Logistics Support	WR	NAWCAD : Patuxent River, MD	0.000	0.250	Nov 2019	0.255	Nov 2020	0.258	Nov 2021	-		0.258	-	-	-
NGNMPS Integrated Logistics Support	WR	NAWCWD : Point Mugu, CA	0.000	0.250	Nov 2019	0.255	Nov 2020	0.258	Nov 2021	-		0.258	-	-	-
NGNMPS Systems Engineering	C/CPFF	Zenetex : Herndon, VA	0.000	1.166	Jan 2020	1.356	Jan 2021	1.365	Jan 2022	-		1.365	-	-	-
Systems Engineering/ JMPS Expeditionary	WR	NAWCWD : Point Mugu, CA	0.162	0.286	Nov 2019	0.292	Nov 2020	0.000		-		0.000	-	-	-
STORM Systems Engineering Support	WR	NAWCWD : Point Mugu, CA	0.000	0.000		1.250	Nov 2020	1.270	Nov 2021	-		1.270	-	-	-
STORM Integrated Logistics Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.750	Nov 2020	0.744	Nov 2021	-		0.744	-	-	-
Systems Engineering	MIPR	Hill AFB : Ogden, UT	0.000	0.050	Nov 2019	0.050	Nov 2020	0.051	Nov 2021	-		0.051	-	-	-
Systems Engineering	C/CPFF	MITRE : Lexington Park, MD	0.000	0.362	May 2020	0.739	Jan 2021	0.754	Jan 2022	-		0.754	-	-	-
		Subtotal	12.064	7.562		10.473		10.269		-		10.269	-	-	N/A

Remarks

Support: Beginning in FY 2022 JMPS-E is divested.
FY 2022 supports NGNMPS systems engineering and design for ILS activities at multiple government and contractor sites. Funding in FY2022 support NGNMPS program phasing required to transition legacy JMPS-M platforms to NGNMPS before JMPS-M end of life while also developing advanced mission planning, execution, dynamic re-planning, and analysis capabilities required to support the National Defense Strategy and Interim National Security Strategic Guidance.
FY 2022 STORM funding supports the required complimentary support for critical government engineering, logistics, program management and cybersecurity activities.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
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Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation	WR	NAWCWD : Point Mugu, CA	16.298	5.458	Nov 2019	5.726	Nov 2020	5.728	Nov 2021	-		5.728	-	-	-
Test & Evaluation	WR	COMOPTEVFOR : Norfolk, VA	3.704	0.520	Nov 2019	0.530	Nov 2020	0.538	Nov 2021	-		0.538	-	-	-
NGNMPS Test & Evaluation	WR	NAWCAD : Patuxent River, MD	0.000	1.490	Nov 2019	1.519	Nov 2020	1.521	Nov 2021	-		1.521	-	-	-
STORM Test & Evaluation	WR	Dep Of Energy : Kansas City, MO	0.000	0.000		0.000		4.000	Nov 2021	-		4.000	-	-	-
STORM Test & Evaluation	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.275	Nov 2021	-		0.275	-	-	-
		Subtotal	20.002	7.468		7.775		12.062		-		12.062	-	-	N/A

Remarks

Test and Evaluation: Funding increases in FY 2022 support the start of STORM system test activities as well as NGNMPS program phasing required to transition legacy JMPS-M platforms to NGNMPS before JMPS-M end of life while also developing advanced mission planning, execution, dynamic re-planning, and analysis capabilities required to support the National Defense Strategy and Interim National Security Strategic Guidance.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support and Travel	WR	NAWCAD : Patuxent River, MD	7.190	2.425	Nov 2019	2.473	Nov 2020	2.480	Nov 2021	-		2.480	-	-	-
Program Management Support	C/CPFF	Ausley Associates : Lexington Park, MD	1.590	0.781	May 2020	0.825	May 2021	0.840	May 2022	-		0.840	-	-	-
Program Management Support and Travel	WR	NAWCWD : China Lake, CA	0.000	0.486	Nov 2019	0.496	Nov 2020	0.501	Nov 2021	-		0.501	-	-	-
		Subtotal	8.780	3.692		3.794		3.821		-		3.821	-	-	N/A

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	66.616	59.977		72.774		76.932		-		76.932	-	-	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
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	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract

Remarks

Prior to FY17, the Mission Planning PU 2213 was funded under PE 0604231N.

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605215N / *Mission Planning*	**Project (Number/Name)** 2213 / *Mission Planning*

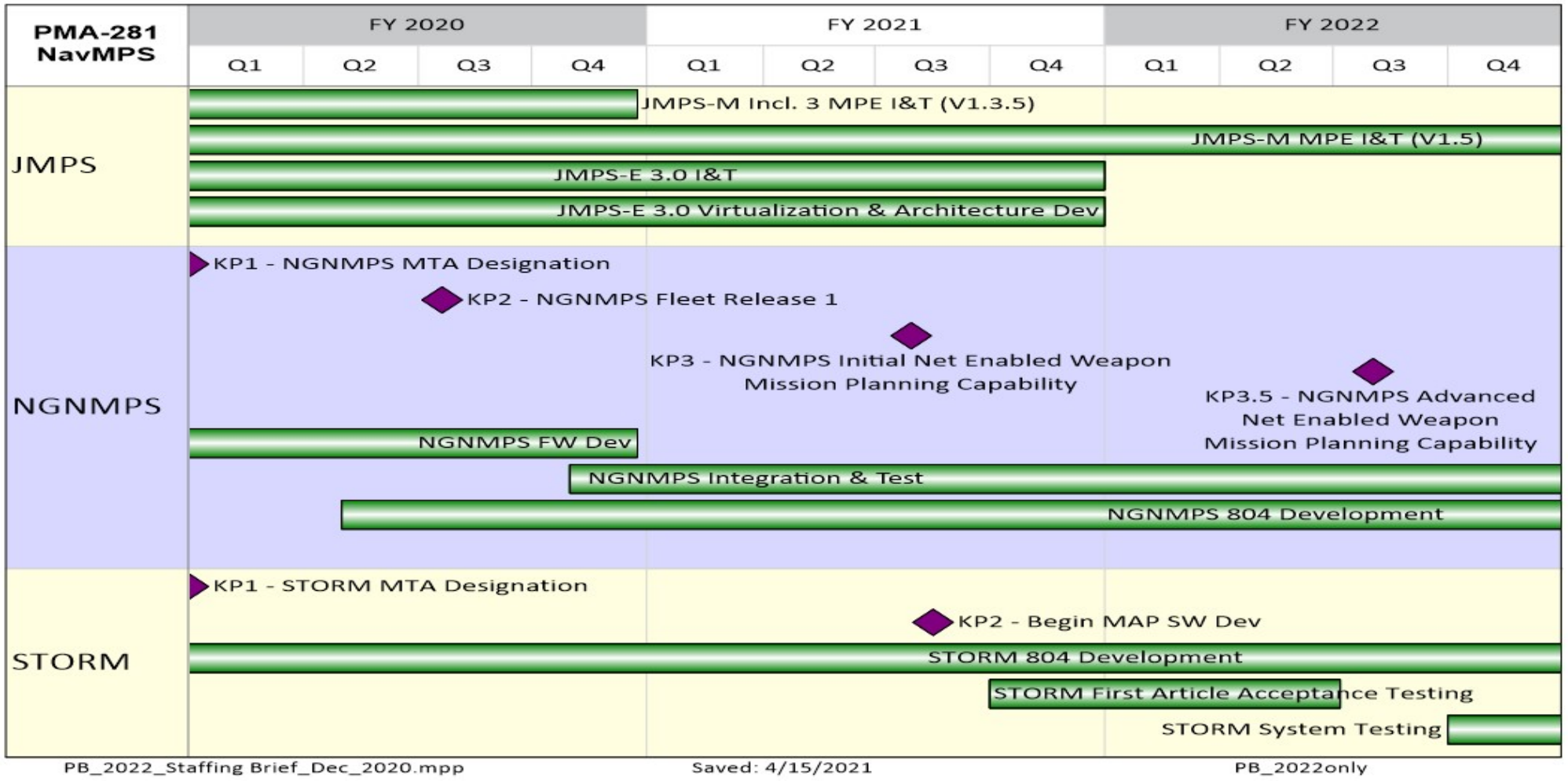

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
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Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Joint Mission Planning Systems (JMPS)				
JMPS Mission Planning Environment (MPE) Development: JMPS MPE Integration and Test: MPE Integration (V1.3.5)	1	2020	4	2020
JMPS Mission Planning Environment (MPE) Development: JMPS MPE Integration and Test: MPE Integration (V1.5.X)	1	2020	4	2022
JMPS Mission Planning Environment (MPE) Development: JMPS MPE Integration and Test: JMPS-E 3.0 Integration and Test	1	2020	4	2021
JMPS Primary Software Development: JMPS-E 3.0 Virtualization and Architecture Development	1	2020	4	2021
Acquisition Milestones- Next Generation Naval Mission Planning System: KP2- Fleet Release 1	3	2020	3	2020
Acquisition Milestones- Next Generation Naval Mission Planning System: KP3- Initial Net Enabled Weapon mission planning capability	3	2021	3	2021
Acquisition Milestones- Next Generation Naval Mission Planning System: KP3.5- Advanced Net Enabled Weapon mission planning capability	3	2022	3	2022
NGNMPS Primary Software Development: NGNMPS Framework Development	1	2020	4	2020
NGNMPS Primary Software Development: NGNMPS Integration and Test	4	2020	4	2022
NGNMPS Primary Software Development: NGNMPS 804 Development	2	2020	4	2022
Acquisition Milestones- STORM: KP2- Begin MAP SW Dev	3	2021	3	2021
STORM Development: STORM 804 Development	1	2020	4	2022
STORM Development: STORM System Test	4	2022	4	2022
STORM Development: STORM First Article Acceptance Testing	3	2021	2	2022

Exhibit R-2A, RDT&E Project Justification: PB 2022 Navy			Date: May 2021
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COST ($ in Millions)	Prior Years	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total	FY 2023	FY 2024	FY 2025	FY 2026	Cost To Complete	Total Cost
2311: *Stores Planning and Weaponeering Module*	29.756	10.904	11.206	11.196	-	11.196	-	-	-	-	-	-
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Prior to FY 2017, Stores Planning and Weaponeering Module (PU 2311) was budgeted under Standards Development (PE 0604215N).

A. Mission Description and Budget Item Justification

The Weaponeering and Stores Planning (WASP) components are integrated software products that allow aircrew to determine the best combinations of weapons and delivery conditions to achieve the desired level of target damage, eliminate weapon delivery solutions that violate aircraft Type/Model/Series (T/M/S) specific safety-of-flight envelopes, and perform detailed weapons employment planning. WASP is approved by NAVAIR Airworthiness and Cybersafe Office (formerly AIR 4.0P) as a flight clearance implementation system for the F/A-18 A, A+, A++, B, C, C+, D, D (RC), E, F, EA-18G. WASP includes potential support for other platforms to include F-35, P-8, AH-1, and other fixed wing and rotary wing platforms. WASP components will alert pilots if their planned weapon release conditions meet flight clearance limits, will result in bomb-to-bomb collisions, bomb-to-aircraft collisions, aircraft overstress, or excessive risk of aircraft loss/damage in the event of fuze early bursts. Weapon employment planning is fundamental to the Joint Capability Area of Force Application and joint mission areas of Strike and Amphibious Warfare. WASP provides the Navy and Marine Corp with weaponeering capabilities that are critical requirements for Interdiction, Armed Reconnaissance and Close Air Support mission planning. Therefore, WASP product availability is critical to successful employment of the Joint Mission Planning System (JMPS) for the F/A-18 A-F and EA-18G. The WASP product encompasses a multitude of Government Furnished Information software components and tools including aircraft target maneuver simulations and weapon flyout models. WASP products will require updates as emergent requirements for new aircraft T/M/S, stores and weapons are approved, new flight clearances and flight restrictions are issued by Naval Air Systems Command and cyber security mandates are released. FY 2022 and out includes funding for the research and development in order to integrate WASP with 3-D mission rehearsal, provide dynamic Safe Escape Automation Layer (SEAL) calculations on Electronic Kneeboard (EKB), develop WASP for other Navy and Marine Corps platforms, and support WASP development and integration with the Next Generation Naval Mission Planning System (NGNMPS).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
Title: Product Development	5.125	5.387	5.422	0.000	5.422
Articles:	-	-	-	-	-
Description: Includes associated system engineering design, development, installation, integration and software development for Weaponeering and Stores Planning (WASP) components to support F/A-18 A-F and EA-18G. Provide domain engineering support for weapons separation, aircraft loads, flutter, fuzing and Safe Escape Automation Layer (SEAL)for application to WASP. Provide analysis of new requirements, allocation					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
of requirements, design oversight, and life cycle management of the WASP program. Develop new aircraft configuration, aircraft loading, store release and delivery planning components for F/A-18 A-F and EA-18G new flight clearances and flight restrictions issued by NAVAIRSYSCOM. Provide configuration management, system administration, quality assurance, documentation, metrics and software risk management for WASP. Acquire, integrate and modify numerous Government Furnished Information (GFI) software components and tools (aircraft target maneuver simulations, weapon flyout models, etc.) that are used for the WASP software development. Integrate WASP with Joint Standoff Weapon/Joint Direct Attack Munitions/Standoff Land-Attack Missile - Expanded Response and other weapons mission planning systems as required. ***FY 2021 Plans:*** Complete development of WASP V5.0 to support an FY 2022 release to the Fleet. Complete test and evaluations of multiple database updates to V5.0. Fund requirements definition and initial systems development for WASP 5.1, including continued integration with NGNMPS. ***FY 2022 Base Plans:*** Continue development of WASP 5.1 for an FY 2023 release to the fleet. Fund requirements definition and initial system development of WASP NGNMPS for an FY 2024 release to the Fleet. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Increase due to inflation.					
Title: Test and Evaluation (T&E)	2.390	2.437	2.465	0.000	2.465
Articles:	-	-	-	-	-
Description: Provide test and evaluation for unit and system level testing; functional qualification testing; safety of flight certification testing; integration and standards compliance testing for WASP versions. Provide JMPS-M and Next Generation Naval Mission Planning System Integration test support. Provide testing and test support to ensure all components (to include internally developed software, externally developed GFI) comply with Department of Navy (DoN) and Department of Defense (DoD) software mandates and directives. These include Integrated Shipboard Network System IT-21, and Cyber Risk Management Framework (RMF). All Fleet					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
released software must comply with DoN and DoD software directives to permit execution on ship Local Area Networks. ***FY 2021 Plans:*** Continue test and evaluation of WASP V5.0 to support an FY 2022 release to the Fleet. Complete test and evaluations of multiple database updates to V5.0. ***FY 2022 Base Plans:*** Complete test and evaluations of multiple database updates to V5.0. Continue test and evaluation of WASP v5.1 to support an FY23 release to the Fleet. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Increase due to inflation.					
Title: Systems Engineering Support ***Articles:***	2.847 -	2.827 -	2.814 -	0.000 -	2.814 -
Description: Provide systems engineering support, which includes requirements definition and analysis, compliance with Naval Air Systems Command systems engineering technical review processes, acquisition documentation development, cost, schedule and performance management, and compliance with external directives. Provide travel for government personnel. ***FY 2021 Plans:*** Continue Systems Engineering support to the WASP for future software releases to the fleet. Develop integration plans with services architecture and NGNMPS. Provide continued support for multiple database releases. ***FY 2022 Base Plans:*** Continue Systems Engineering support to the WASP for future software releases to the fleet. Develop integration plans with services architecture and NGNMPS. Provide continued support for multiple database releases. ***FY 2022 OCO Plans:***					

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B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2020	FY 2021	FY 2022 Base	FY 2022 OCO	FY 2022 Total
N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Decrease due to NWCF rate adjustments.					
Title: Program Management ***Articles:*** ***Description:*** Provide program management support, which includes requirements definition and analysis, compliance with Naval Air Systems Command systems engineering technical review processes, acquisition documentation development, cost, schedule and performance management, and compliance with external directives. Provide travel for government personnel. ***FY 2021 Plans:*** Continue project management support to the WASP for future software releases to the fleet. Develop integration plans with services architecture and NGNMPS. Provide continued support for multiple database releases. ***FY 2022 Base Plans:*** Continue project management support to the WASP for future software releases to the fleet. Develop integration plans with services architecture and NGNMPS. Provide continued support for multiple database releases. ***FY 2022 OCO Plans:*** N/A ***FY 2021 to FY 2022 Increase/Decrease Statement:*** Decrease due to less contractor support in the out years.	0.542 -	0.555 -	0.495 -	0.000 -	0.495 -
Accomplishments/Planned Programs Subtotals	10.904	11.206	11.196	0.000	11.196

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Weaponeering and Stores Planning (WASP) products, delivered quarterly, are developed in-house by NAVAIR consisting of Naval Air Warfare Center Aircraft Division and Naval Air Warfare Center Weapons Division engineers and support contractors. The team has migrated to a smaller government team that provides functional expertise in aircraft safety-of-flight (air-vehicle stores compatibility, weapons separation, aircraft aerodynamic flutter, ground/flight loads, authorized fuze arm times,

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aircraft SEAL), and guided weapons employment, with the majority of the software development conducted by various contractors. The Government, engineering, test, and support teams (test facilities, functional qualification testing and certification/accreditation test) are supplemented with contractor labor.

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Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Product Development	WR	Naval Air Warfare Center Aircraft Division NAWCAD : Patuxent River, MD	0.379	0.100	Nov 2019	0.100	Nov 2020	0.100	Nov 2021	-		0.100	-	-	-
Product Development	MIPR	Air Force Seek Eagle : Hill Air Force Base, UT	0.253	0.025	Mar 2020	0.035	Mar 2021	0.000		-		0.000	-	-	-
Primary Software Development	C/CPFF	DCS Corp : Alexandria, VA	2.367	0.000		0.000		0.000		-		0.000	-	-	-
Product Development (V4.X/V5.X)	C/CPFF	DCS Corp : Alexandria, VA	10.646	5.000	Mar 2020	5.252	Mar 2021	5.322	Mar 2022	-		5.322	-	-	-
		Subtotal	13.645	5.125		5.387		5.422		-		5.422	-	-	N/A

Remarks

The FY 2022 Product Development for WASP Major Version (V5.X) effort increase from FY 2021 to FY 2022 is associated with the development of WASP V5 and multiple minor builds to support fielded WASP systems. No update planned in FY22 with Air Force Seek Eagle Office.

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
System Engineering and Program Support	WR	NAWCAD : Patuxent River, MD	3.413	1.255	Nov 2019	1.321	Nov 2020	1.308	Nov 2021	-		1.308	-	-	-
Government Engineering Support: Guided Weapons	WR	Naval Air Warfare Center Weapons Division NAWCWD : China Lake, CA	0.219	0.022	Nov 2019	0.025	Nov 2020	0.025	Nov 2021	-		0.025	-	-	-
Systems Engineering Support	C/CPFF	KBRwyle : Houston, TX	4.215	1.470	Mar 2020	1.426	Mar 2021	1.426	Mar 2022	-		1.426	-	-	-
Govt Engineering Support: Mission Planning Environment Integration	WR	NAWCWD : Point Mugu, CA	0.260	0.100	Nov 2019	0.055	Nov 2020	0.055	Nov 2021	-		0.055	-	-	-
		Subtotal	8.107	2.847		2.827		2.814		-		2.814	-	-	N/A

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Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract

Remarks

The Support costs in FY22 are associated with the development of WASP V5 and multiple minor builds to support fielded WASP systems.

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test & Evaluation (Gov't)	WR	NAWCAD : Patuxent River, MD	3.543	0.800	Nov 2019	0.815	Nov 2020	0.822	Nov 2021	-		0.822	-	-	-
Test & Evaluation (Contractor)	C/CPFF	DCS Corp : Alexandria, VA	3.020	0.700	Mar 2020	0.715	Mar 2021	0.725	Mar 2022	-		0.725	-	-	-
Test & Evaluation (Contract)	C/CPFF	KBRwyle : Houston, TX	0.000	0.890	Mar 2020	0.907	Mar 2021	0.918	Mar 2022	-		0.918	-	-	-
		Subtotal	6.563	2.390		2.437		2.465		-		2.465	-	-	N/A

Remarks

The FY 2022 Test and Evaluation costs for WASP Major Version (V5.X) effort increased from FY 2021 to FY 2022 is associated with the development of WASP V5.0 and multiple minor builds to support fielded WASP systems.

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2020 Cost	FY 2020 Award Date	FY 2021 Cost	FY 2021 Award Date	FY 2022 Base Cost	FY 2022 Base Award Date	FY 2022 OCO Cost	FY 2022 OCO Award Date	FY 2022 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/CPFF	Ausley Associates : Lexington Park, MD	1.201	0.312	May 2020	0.320	May 2021	0.260	May 2022	-		0.260	-	-	-
Program Management Support	WR	NAWCAD : Patuxent River, MD	0.200	0.205	Nov 2019	0.210	Nov 2020	0.210	Nov 2021	-		0.210	-	-	-
Travel	Various	NAVAIR : Patuxent River, MD	0.040	0.025	Nov 2019	0.025	Nov 2020	0.025	Nov 2021	-		0.025	-	-	-
		Subtotal	1.441	0.542		0.555		0.495		-		0.495	-	-	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2022 Navy			Date: May 2021
Appropriation/Budget Activity 1319 / 5	R-1 Program Element (Number/Name) PE 0605215N / *Mission Planning*	Project (Number/Name) 2311 / *Stores Planning and Weaponeering Module*	

	Prior Years	FY 2020		FY 2021		FY 2022 Base		FY 2022 OCO		FY 2022 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	29.756	10.904		11.206		11.196		-		11.196	-	-	N/A

Remarks

Prior to FY17, PU 2311 was budgeted under PE 0604215N.

Exhibit R-4, RDT&E Schedule Profile: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605215N / *Mission Planning*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

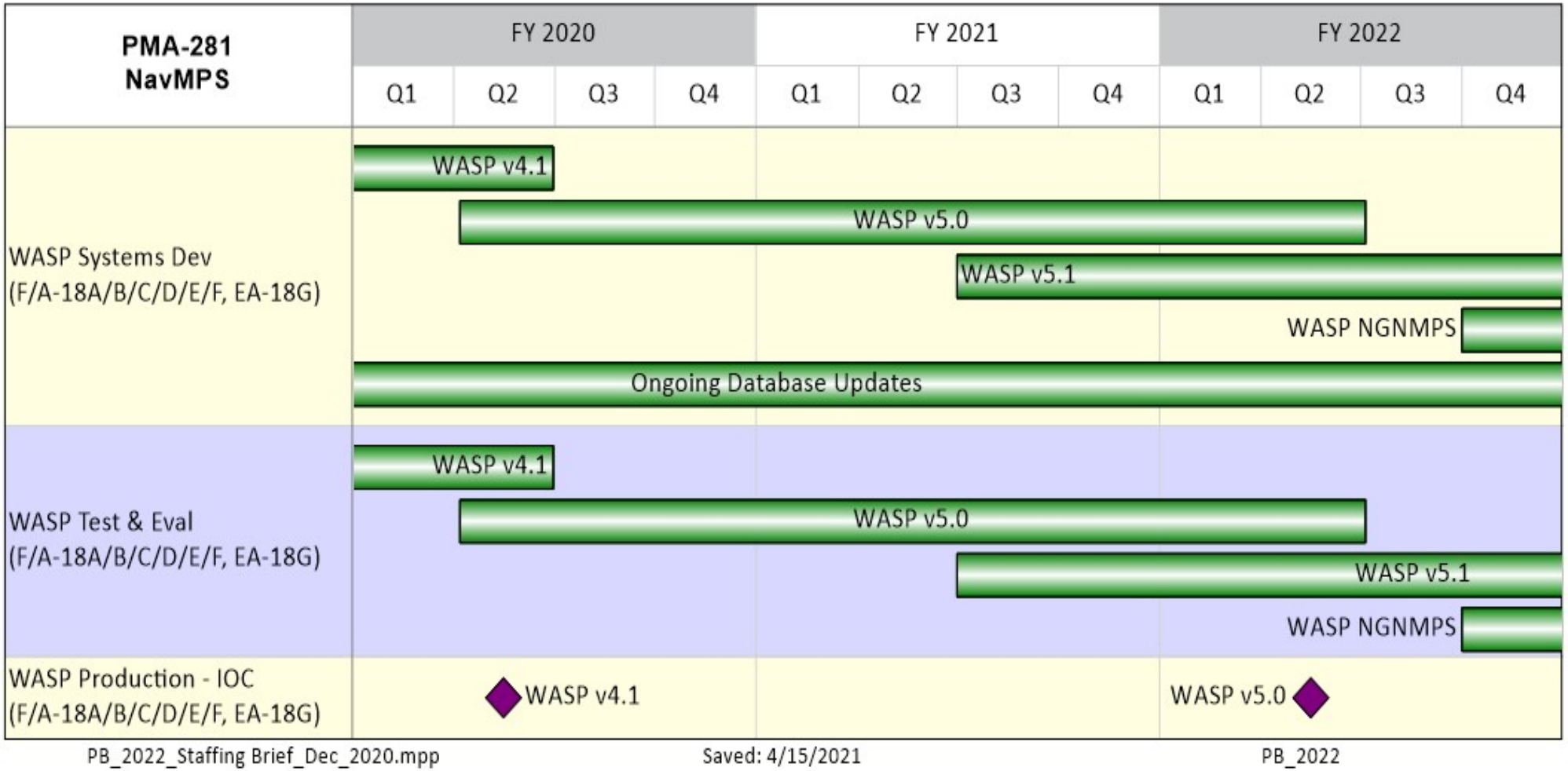

Exhibit R-4A, RDT&E Schedule Details: PB 2022 Navy		Date: May 2021
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605215N / *Mission Planning*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Stores Planning and Weaponeering Module				
Systems Development: WASP v4.1 (F/A-18A/B/C/D/E/F, EA-18G):	1	2020	2	2020
Systems Development: WASP v5.0 (F/A-18A/B/C/D/E/F, EA-18G):	2	2020	2	2022
Systems Development: WASP v5.1 (F/A-18A/B/C/D/E/F, EA-18G):	3	2021	4	2022
Systems Development: WASP NGNMPS (F/A-18A/B/C/D/E/F, EA-18G):	4	2022	4	2022
Systems Development: WASP Ongoing Database Updates:	1	2020	4	2022
Test & Evaluation Milestones: WASP v4.1 (F/A-18A/B/C/D/E/F, EA-18G):	1	2020	2	2020
Test & Evaluation Milestones: WASP v5.0 (F/A-18A/B/C/D/E/F, EA-18G):	2	2020	2	2022
Test & Evaluation Milestones: WASP v5.1 (F/A-18A/B/C/D/E/F, EA-18G):	3	2021	4	2022
Test & Evaluation Milestones: WASP NGNMPS (F/A-18A/B/C/D/E/F, EA-18G):	4	2022	4	2022
Production Milestones: WASP v4.1 (F/A-18A/B/C/D/E/F, EA-18G) IOC::	2	2020	2	2020
Production Milestones: WASP v5.0 (F/A-18A/B/C/D/E/F, EA-18G) IOC::	2	2022	2	2022