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 0605215N *I Mission Planning*							
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	64.340	32.032	72.566	86.134	-	86.134	90.736	64.537	40.897	41.712	Continuing	Continuing
2213: *Mission Planning*	42.625	23.991	61.283	74.928	-	74.928	79.436	52.544	28.967	29.544	Continuing	Continuing
2311: *Stores Planning and Weaponeering Module*	21.715	8.041	11.283	11.206	-	11.206	11.300	11.993	11.930	12.168	Continuing	Continuing

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 the Navy, 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 legacy Common Munitions BIT Reprogramming Equipment (CMBRE) and follow-on Standardized Tester of Reprogrammable Munitions (STORM) (Proj 2213) provides USN/USMC forces the critical capability to perform built-in test and programming/reprogramming of various weapons. FY 2021 and out includes funding for the research and the development of the STORM system to support advanced operational capabilities, address system obsolescence, meet cyber security requirements, and meet mission readiness requirements.

The Next Generation Naval Mission Planning System (NGNMPS) (Proj 2213) 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 2027 while also affordably leveraging prior investments across the legacy systems to deliver integrated and collaborative capabilities. NGNMPS will affordably address technological obsolescence while also delivering collaborative and automated capabilities in an integrated virtual collaborative data environment. NGNMPS will also incorporate 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 key objectives.

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 0605215N *I Mission Planning*

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, eliminate weapon delivery solutions that violate aircraft T/M/S specific safety-of-flight envelopes, and perform detailed weapons employment planning for F/A-18 and E/A-18G aircraft. FY21 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) SEAL, 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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	32.714	75.886	86.886	-	86.886
Current President's Budget	32.032	72.566	86.134	-	86.134
Total Adjustments	-0.682	-3.320	-0.752	-	-0.752
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-3.320			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.682	0.000			
• Program Adjustments	0.000	0.000	-1.368	-	-1.368
• Rate/Misc Adjustments	0.000	0.000	0.616	-	0.616

Change Summary Explanation

TECHNICAL: N/A

SCHEDULE:

Proj 2213:
-Moved JMPS-E V4.0 development to FY2022 to align with the Next Generation Naval Mission Planning (NGNMPS) schedule.
-Added JMPS-E 3.0 Virtualization and Architecture Development to JMPS Primary Software Development schedule which updates the required Common Components, Federated Applications, COTS and GOTS JMPS-E software products to an updated framework and cyber security posture to affordably comply with evolving cyber mandates.
-Renamed Next Generation CMBRE Development efforts to STORM Development.

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 0605215N *I Mission Planning*

-Added STORM system test beginning in 4Q FY2022.
-Changed STORM Prototype to a milestone event in 3Q FY2023.
-Added NGNMPS and STORM Knowledge Points.

Proj 2311:
-Moved WASP 5.0 start to 2Q FY2020; End date shifted to 2Q FY2022 to align future WASP development efforts with affordable transition to NGNMPS.
-Moved WASP 5.1 start to 3Q FY2021; End date shifted to 3Q FY2023 to align future WASP development efforts with affordable transition to NGNMPS.
-Removed WASP 5.2 & 5.3 efforts and created WASP NGNMPS with a Development and Testing starting date of 4Q FY2022. End date for Development is Q2 FY2024 while Testing is through the FYDP.

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 0605215N / *Mission Planning*	Project (Number/Name) 2213 / *Mission Planning*	

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
2213: *Mission Planning*	42.625	23.991	61.283	74.928	-	74.928	79.436	52.544	28.967	29.544	Continuing	Continuing
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 will be 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 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 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 to meet National Defense Strategy key objectives.

FY 2021 and out includes funding for STORM which provides the USN/USMC 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.

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 Mission Planning System Expeditionary (JMPS-E)	0.937	1.005	1.329	0.000	1.329
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 0605215N / *Mission Planning*	**Project (Number/Name)** 2213 / *Mission Planning*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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 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 2020 Plans:*** Continue integration, testing and fielding of JMPS-E Version 3.0 including virtualization which updates the required Common Components, Federated Applications, COTS and GOTS JMPS-E software products to an updated framework and cyber security posture to comply with cyber mandates. ***FY 2021 Base 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 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase of $0.324 million from FY 2020 to FY 2021 because of increased JMPS-E integration, test and completion of fielding to support continued capability.					
Title: Mission Planning Program Mgmt, Integration, and Test	12.326	12.368	12.615	0.000	12.615
Articles:	-	-	-	-	-
Description: Mission Planning Integration and Test efforts support the Navy's developmental testing/operational testing, integration, system of system testing, and managing Electronic Kneeboard (EKB) efforts. Life-cycle management efforts consist of integration of components provided by various developers into mission planning environments and testing of the integrated environment. Mission planning integration and testing results in a consistent and repeatable system configuration that enables stability and reliability. ***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 0605215N / *Mission Planning*	**Project (Number/Name)** 2213 / *Mission Planning*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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 2021 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. 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 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase of $0.247 million from FY 2020 to FY 2021 because of NWCF rate adjustments.					
Title: Mission Planning Framework (FW) and Common Components (CC) Development	10.728	8.230	8.784	0.000	8.784
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 modernized service-oriented architecture will provide 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 core required 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. Common Components software updates in a modernized software environment and architecture will continue and also augment core mission planning capabilities supporting multiple T/M/S. Mission Planning FW and Common Components will also transition to Windows 10. ***FY 2020 Plans:*** Continue development, integration and testing of modernized framework capabilities. Introduce capability involving new business services, utilities and data types. Continue development activities for modernized/					

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 0605215N / *Mission Planning*	**Project (Number/Name)** 2213 / *Mission Planning*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
architecture which include implementing a modular, scalable architecture to support cyber security implementations 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 environment. Integration activities will continue as platforms deliver modernized unique planning capabilities for integration, testing and fielding. ***FY 2021 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 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The Increase of $0.554 million to Mission Planning Framework (FW) and Common Components (CC) Development from FY 2020 to FY 2021 is because of both the consolidation of Common Helicopter PU into this Mission Planning PU ($0.014M) and development and integration of common components in a modernized and service-oriented architecture environment ($0.540M) to affordably address evolving cyber mandates and system sustainment.					
Title: Next Generation Naval Mission Planning System (NGNMPS) Development ***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 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 legacy systems to deliver integrated and collaborative capabilities. NGNMPS will affordably address technological obsolescence while also delivering collaborative and automated capabilities in an integrated virtual collaborative data environment. NGNMPS will also incorporate service-oriented architecture to provide revolutionary improvements in workflow, usability, cybersecurity, information and decision aids needed to rapidly	0.000 -	26.400 -	35.500 -	0.000 -	35.500 -

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 0605215N / *Mission Planning*	**Project (Number/Name)** 2213 / *Mission Planning*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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; provide integrated and advanced post-mission debrief/analysis; support cross-domain capabilities; and support portability of mission planning, mission, execution, and mission analysis functions. 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 requirements and performance metrics are currently under development in FY 2018 and FY 2019 under "Mission Planning Environment Program Mgmt, Integration, and Test". 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 deliver NGNMPS capability to the Navy across multiple platforms. ***FY 2020 Plans:*** Conduct NGNMPS program software development, architecture integration, and test across a family of systems. Conduct software development of services and service-oriented architecture, including engineering design reviews. Conduct rapid prototyping and transition of enabling technologies in support of NGNMPS collaboration, automation and other requirements. ***FY 2021 Base 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 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase in funding required to support second QTR FY 2021 contract award for the establishment of additional software development teams, integration of S&T items, development of micro-services supporting advanced mission planning, execution, dynamic re-planning, and analysis capabilities required to support lethality,					

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 0605215N / *Mission Planning*	**Project (Number/Name)** 2213 / *Mission Planning*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
survivability, supportability and responsiveness across the Naval Aviation Enterprise in direct support of the National Defense Strategy.					
Title: Standardized Tester of Reprogrammable Munitions (STORM) (previously titled: Next Generation Common Munitions BIT Reprogramming Equipment (CMBRE) ***Articles:***	0.000 -	13.280 -	16.700 -	0.000 -	16.700 -
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 deliver STORM capability to the Navy. ***FY 2020 Plans:*** Begin development of STORM to support Navy/Marine requirements. STORM will mitigate known cyber security and obsolescence issues. ***FY 2021 Base Plans:*** Continue development of STORM to support Navy/Marine requirements. STORM will mitigate known cyber security and obsolescence issues. ***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 0605215N / *Mission Planning*	**Project (Number/Name)** 2213 / *Mission Planning*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Increase of $3.420 million from FY 2020 to FY 2021 due to internal Navy realignments to support STORM efforts and capabilities, which include mission readiness, cyber security issues and obsolescence issues.					
Accomplishments/Planned Programs Subtotals	23.991	61.283	74.928	0.000	74.928

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/2876: *Mission Planning*	11.966	15.296	13.947	-	13.947	18.345	31.049	32.813	33.501	Continuing	Continuing

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 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.

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 0605215N / *Mission Planning*	**Project (Number/Name)** 2213 / *Mission Planning*

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. 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.

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 to the Navy across multiple platforms.

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 0605215N / *Mission Planning*	Project (Number/Name) 2213 / *Mission Planning*

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
Primary Software Development/JMPS Expeditionary	C/CPFF	Leidos : Reston, VA	0.698	0.302	Feb 2019	0.308	Feb 2020	0.314	Feb 2021	-		0.314	Continuing	Continuing	Continuing
Primary Software Development/JMPS Expeditionary	C/CPAF	BAE : San Diego, CA	0.568	0.553	Mar 2019	0.613	Mar 2020	0.625	Mar 2021	-		0.625	Continuing	Continuing	Continuing
Primary Software Development, FW	C/CPFF	Northrop Grumman : Long Beach, CA	4.730	0.240	Feb 2019	2.745	Feb 2020	3.750	Feb 2021	-		3.750	Continuing	Continuing	Continuing
Primary Software Development/(Human Factors)	C/CPFF	Georgia Technical Research Institute (GTRI) : Atlanta, GA	1.850	0.355	Mar 2019	2.108	Mar 2020	2.865	Mar 2021	-		2.865	Continuing	Continuing	Continuing
Primary Software Development (SEIC)	C/CPFF	Leidos : Orlando, FL	5.833	3.048	Feb 2019	3.075	Feb 2020	3.125	Feb 2021	-		3.125	Continuing	Continuing	Continuing
Primary Software Development	C/CPFF	MTI : Park City, UT	0.200	0.000		0.000		0.000		-		0.000	0.000	0.200	-
Primary Software Development	C/CPFF	ATC : Eden Prairie, MN	0.260	0.000		0.000		0.000		-		0.000	0.000	0.260	-
Primary Software Development	C/CPFF	IDT : Arlington, VA	0.760	0.783	Jan 2019	0.785	Jan 2020	0.801	Jan 2021	-		0.801	Continuing	Continuing	Continuing
Primary Software Development	C/CPFF	DCS : Alexandria, VA	0.490	0.800	Jan 2019	0.865	Jan 2020	0.882	Jan 2021	-		0.882	Continuing	Continuing	Continuing
Primary Software Development	C/CPFF	AMEWAS : California, MD	0.740	0.900	Jun 2019	0.950	Jun 2020	0.969	Mar 2021	-		0.969	Continuing	Continuing	Continuing
Primary Software Development	WR	NAWCWD : China Lake, CA	0.000	0.160	Dec 2018	0.160	Dec 2019	0.163	Dec 2020	-		0.163	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	C/CPFF	John's Hopkins University : Laurel, MD	0.000	2.500	Mar 2019	0.000		0.000		-		0.000	0.000	2.500	-
NGNMPS Primary Software Development	WR	NAWCWD : Point Mugu, CA	0.000	0.000		4.500	Nov 2019	5.483	Nov 2020	-		5.483	Continuing	Continuing	Continuing
NGNMPS Primary Software Development	C/CPFF	VARIOUS : VARIOUS	0.000	0.000		11.250	Jan 2020	15.517	Jan 2021	-		15.517	0.000	26.767	-
STORM Development	MIPR	Dep Of Energy : Kansas City, MO	0.000	0.000		13.280	Nov 2019	14.700	Nov 2020	-		14.700	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 0605215N / *Mission Planning*	Project (Number/Name) 2213 / *Mission Planning*	

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
		Subtotal	16.129	9.641		40.639		49.194		-		49.194	Continuing	Continuing	N/A

Remarks

FY 2020 increase in the Primary Software Development Framework and Human Factors cost categories from FY 2020 President's Budget request is due to consolidating the Next Generation Naval Mission Planning cost categories.
FY 2021 continues to support incremental funding for JMPS Primary Software Development efforts awarded via multiple contracts for service oriented architecture development.
FY 2021 supports incremental funding for the NGNMPS Primary Software Development efforts awarded via a competitive 2nd Qtr. FY 2021 contract award. Funding increases in FY2021 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. 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.

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
Integrated Logistics Support	WR	NAWCWD : Point Mugu, CA	0.433	0.216	Nov 2018	0.231	Nov 2019	0.238	Nov 2020	-		0.238	Continuing	Continuing	Continuing
Systems Eng & Integration	WR	NAWCWD : Point Mugu, CA	4.807	2.560	Nov 2018	2.352	Nov 2019	2.419	Nov 2020	-		2.419	Continuing	Continuing	Continuing
Systems Engineering	WR	NAWCAD : Patuxent River, MD	2.441	1.445	Nov 2018	1.430	Nov 2019	1.469	Nov 2020	-		1.469	Continuing	Continuing	Continuing
NGNMPS Systems Engineering	WR	NAWCAD : Patuxent River, MD	0.000	0.000		1.750	Nov 2019	2.000	Nov 2020	-		2.000	Continuing	Continuing	Continuing
NGNMPS Integrated Logistics Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.500	Nov 2019	0.750	Nov 2020	-		0.750	Continuing	Continuing	Continuing
NGNMPS Integrated Logistics Support	WR	NAWCWD : Point Mugu, CA	0.000	0.000		2.500	Nov 2019	3.250	Nov 2020	-		3.250	Continuing	Continuing	Continuing
NGNMPS Systems Engineering	C/CPFF	Zenetex : Herndon, VA	0.000	0.000		1.350	Jan 2020	1.750	Jan 2021	-		1.750	Continuing	Continuing	Continuing
Systems Engineering/ JMPS Expeditionary	WR	NAWCWD : Point Mugu, CA	0.080	0.082	Nov 2018	0.084	Nov 2019	0.390	Nov 2020	-		0.390	Continuing	Continuing	Continuing
STORM Systems Engineering Support	WR	NAWCWD : Point Mugu, CA	0.000	0.000		0.000		1.250	Nov 2020	-		1.250	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 0605215N / *Mission Planning*	**Project (Number/Name)** 2213 / *Mission Planning*

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
STORM Integrated Logistics Support	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.000		0.750	Nov 2020	-		0.750	0.000	0.750	-
		Subtotal	7.761	4.303		10.197		14.266		-		14.266	Continuing	Continuing	N/A

Remarks

FY 2021 supports NGNMPS systems engineering and ILS activities at multiple government and contractor sites. Funding increases in FY2021 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.
STORM is a FY 2020 new start program with funding supporting the development and required complimentary support for critical government engineering, logistics, program management and cybersecurity activities.

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
Test & Evaluation	WR	NAWCWD : Point Mugu, CA	10.890	5.408	Nov 2018	5.458	Nov 2019	5.726	Nov 2020	-		5.726	Continuing	Continuing	Continuing
Test & Evaluation	WR	COMOPTEVFOR : Norfolk, VA	2.396	1.308	Jan 2019	1.396	Nov 2019	1.465	Nov 2020	-		1.465	Continuing	Continuing	Continuing
NGNMPS Test & Evaluation	WR	NAWCAD : Patuxent River, MD	0.000	0.000		0.300	Nov 2019	0.750	Nov 2020	-		0.750	Continuing	Continuing	Continuing
		Subtotal	13.286	6.716		7.154		7.941		-		7.941	Continuing	Continuing	N/A

Remarks

Funding increases in FY2021 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.

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 and Travel	WR	NAWCAD : Patuxent River, MD	4.265	2.925	Nov 2018	2.943	Nov 2019	3.152	Nov 2020	-		3.152	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 0605215N / *Mission Planning*	Project (Number/Name) 2213 / *Mission Planning*	

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	C/CPFF	Ausley Associates : Lexington Park, MD	1.184	0.406	May 2019	0.350	May 2020	0.375	May 2021	-		0.375	Continuing	Continuing	Continuing
		Subtotal	5.449	3.331		3.293		3.527		-		3.527	Continuing	Continuing	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	42.625	23.991		61.283		74.928		-		74.928	Continuing	Continuing	N/A

Remarks

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

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 0605215N / *Mission Planning*	**Project (Number/Name)** 2213 / *Mission Planning*

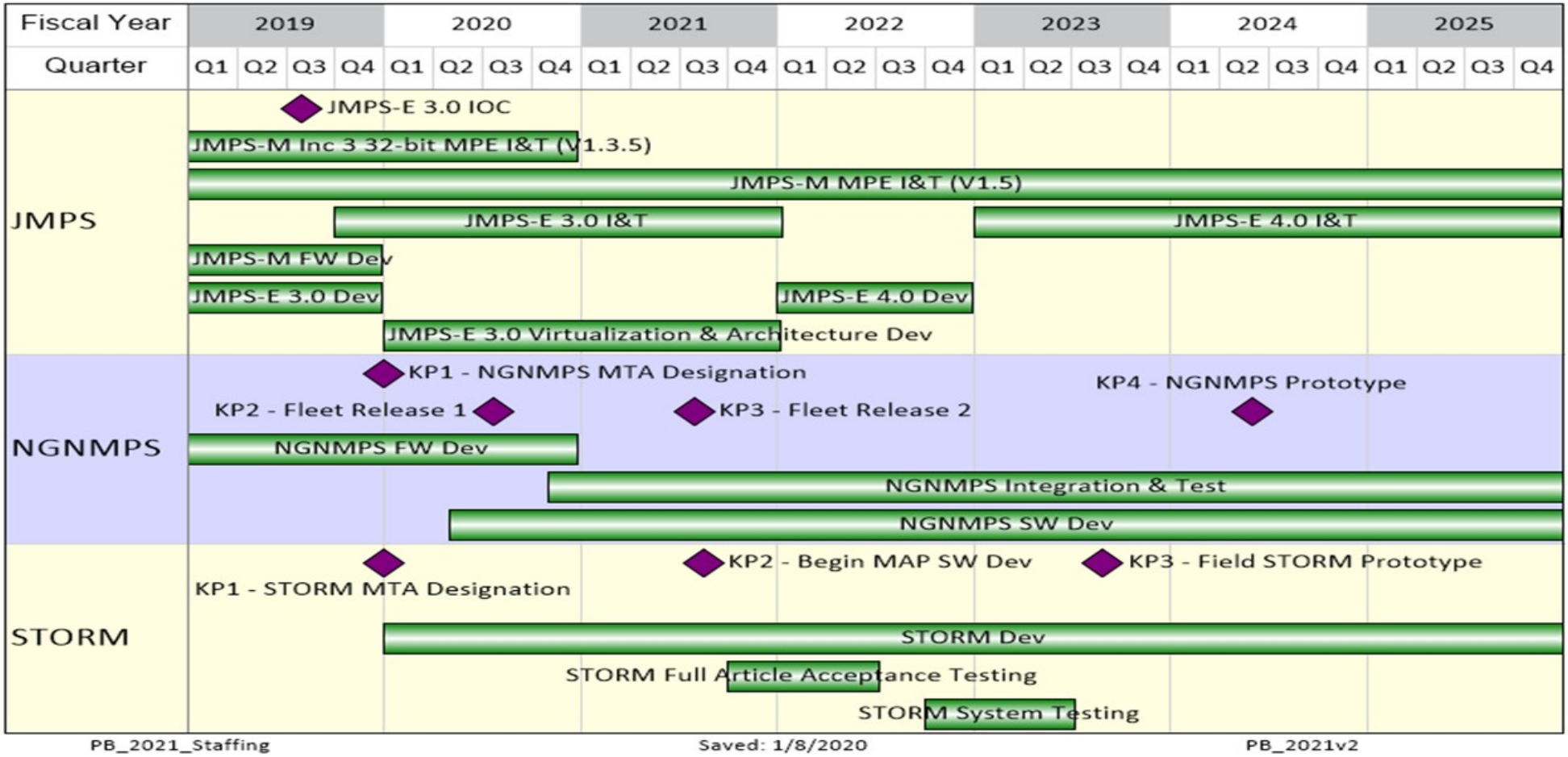

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605215N / *Mission Planning*	**Project (Number/Name)** 2213 / *Mission Planning*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Joint Mission Planning Systems (JMPS)				
Acquisition Milestones- JMPS: JMPS-E 3.0 Initial Operational Capability (IOC)	3	2019	3	2019
JMPS Mission Planning Environment (MPE) Development: JMPS MPE Integration and Test: 32 bit MPE Integration (V1.3.5)	1	2019	4	2020
JMPS Mission Planning Environment (MPE) Development: JMPS MPE Integration and Test: 32/64 bit MPE Integration (V1.5.X)	1	2019	4	2025
JMPS Mission Planning Environment (MPE) Development: JMPS MPE Integration and Test: JMPS-E 3.0/3.1 Integration and Test	4	2019	4	2021
JMPS Mission Planning Environment (MPE) Development: JMPS MPE Integration and Test: JMPS-E 4.0 Integration and Test	1	2023	4	2025
JMPS Primary Software Development: JMPS-M Framework Development	1	2019	4	2019
JMPS Primary Software Development: JMPS-E 3.0 Development	1	2019	4	2019
JMPS Primary Software Development: JMPS-E 3.0 Virtualization and Architecture Development	1	2020	4	2021
JMPS Primary Software Development: JMPS-E 4.0 Development	1	2022	4	2022
Acquisition Milestones- Next Generation Naval Mission Planning System: KP1- NGNMPS MTA Designation	4	2019	4	2019
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- Fleet Release 2	3	2021	3	2021
Acquisition Milestones- Next Generation Naval Mission Planning System: KP4- NGNMPS Prototype	2	2024	2	2024
NGNMPS Primary Software Development: NGNMPS Framework Development	1	2019	4	2020
NGNMPS Primary Software Development: NGNMPS Integration and Test	4	2020	4	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 0605215N / *Mission Planning*	**Project (Number/Name)** 2213 / *Mission Planning*

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
NGNMPS Primary Software Development: NGNMPS Software Development	2	2020	4	2025
Acquisition Milestones- STORM: KP1- STORM MTA Designation	4	2019	4	2019
Acquisition Milestones- STORM: KP2- Begin MAP SW Dev	3	2021	3	2021
Acquisition Milestones- STORM: KP3- Field STORM Prototype	3	2023	3	2023
STORM Development: STORM Development	1	2020	4	2025
STORM Development: STORM System Test	4	2022	3	2023
STORM Development: STORM Full Article Acceptance Testing	3	2021	2	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 0605215N / *Mission Planning*	Project (Number/Name) 2311 / *Stores Planning and Weaponeering Module*	

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
2311: *Stores Planning and Weaponeering Module*	21.715	8.041	11.283	11.206	-	11.206	11.300	11.993	11.930	12.168	Continuing	Continuing
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 (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 2020 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 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Product Development	2.436	5.386	5.387	0.000	5.387
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 of requirements, design oversight, and life cycle management of the WASP program. Develop new aircraft					

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 0605215N / *Mission Planning*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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 2020 Plans:*** Complete development of WASP V4.1 to support an FY 2020 release to the Fleet. Complete test and evaluations of multiple database updates to V4.1. Fund requirements definition and systems development for WASP 5.X, including integration with NGNMPS. ***FY 2021 Base 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 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The FY 2021 Product Development for WASP Major Version (V5.X) effort increase of $0.001M from FY 2020 is associated with the development of WASP V5.0 and multiple minor builds to support WASP v5.0.					
Title: Test and Evaluation (T&E)	2.235	2.390	2.437	0.000	2.437
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					

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 0605215N / *Mission Planning*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
released software must comply with DoN and DoD software directives to permit execution on ship Local Area Networks. ***FY 2020 Plans:*** Complete test and evaluation of WASP V4.1 to support an FY 2020 release to the Fleet. Complete test and evaluations of multiple database updates to V4.1. Conduct test and evaluation of WASP 5.X, including integration with NGNMPS. ***FY 2021 Base 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 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** The FY 2021 Test and Evaluation costs for WASP Major Version (V5.X) effort increase from FY 2020 is associated with inflation.					
Title: Systems Engineering Support	2.845	2.962	2.827	0.000	2.827
Articles:	-	-	-	-	-
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 2020 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 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 0605215N / *Mission Planning*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
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 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Systems Engineering Support cost decrease of $0.135M is due to NWCF rate adjustments.					
Title: Program Management	0.525	0.545	0.555	0.000	0.555
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 2020 Plans:*** Continue project management and systems engineering support to the WASP for future software releases to the fleet. Provide continued support for multiple database releases. ***FY 2021 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 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Management cost increase of $0.01M is due to inflation.					
Accomplishments/Planned Programs Subtotals	8.041	11.283	11.206	0.000	11.206

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

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 0605215N / *Mission Planning*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

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, 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.

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 0605215N / *Mission Planning*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

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
Product Development	WR	Naval Air Warfare Center Aircraft Division NAWCAD : Patuxent River, MD	0.279	0.100	Nov 2018	0.100	Nov 2019	0.100	Nov 2020	-		0.100	Continuing	Continuing	Continuing
Product Development	MIPR	Air Force Seek Eagle : Hill Air Force Base, UT	0.168	0.085	Mar 2019	0.085	Mar 2020	0.035	Mar 2021	-		0.035	Continuing	Continuing	Continuing
Primary Software Development	C/CPFF	DCS Corp : Alexandria, VA	2.367	0.000		0.000		0.000		-		0.000	0.000	2.367	2.502
Product Development (V4.X/V5.X)	C/CPFF	DCS Corp : Alexandria, VA	8.395	2.251	Mar 2019	5.201	Mar 2020	5.252	Mar 2021	-		5.252	Continuing	Continuing	Continuing
		Subtotal	11.209	2.436		5.386		5.387		-		5.387	Continuing	Continuing	N/A

Remarks

The FY 2021 Product Development for WASP Major Version (V5.X) effort increase from FY 2020 to FY 2021 is associated with the development of WASP V5 and multiple minor builds to support fielded WASP systems.

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
System Engineering and Program Support	WR	NAWCAD : Patuxent River, MD	2.203	1.210	Nov 2018	1.295	Nov 2019	1.321	Nov 2020	-		1.321	0.000	6.029	-
Government Engineering Support: Guided Weapons	WR	Naval Air Warfare Center Weapons Division NAWCWD : China Lake, CA	0.199	0.020	Nov 2018	0.022	Nov 2019	0.025	Nov 2020	-		0.025	0.000	0.266	-
Systems Engineering Support	C/CPFF	KBRwyle : Huntsville, AL	2.700	1.515	Mar 2019	1.545	Mar 2020	1.426	Mar 2021	-		1.426	0.000	7.186	-
Govt Engineering Support: Mission Planning Environment Integration	WR	NAWCWD : Point Mugu, CA	0.160	0.100	Nov 2018	0.100	Nov 2019	0.055	Nov 2020	-		0.055	0.000	0.415	-
		Subtotal	5.262	2.845		2.962		2.827		-		2.827	0.000	13.896	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 0605215N / *Mission Planning*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

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

Remarks

The Support costs in FY21 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 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
Test & Evaluation (Gov't)	WR	NAWCAD : Patuxent River, MD	2.444	1.099	Nov 2018	0.800	Nov 2019	0.815	Nov 2020	-		0.815	Continuing	Continuing	Continuing
Test & Evaluation (Contractor)	C/CPFF	DCS Corp : Alexandria, VA	1.884	1.136	Mar 2019	0.700	Mar 2020	0.715	Mar 2021	-		0.715	0.000	4.435	2.805
Test & Evaluation (Contract)	C/CPFF	KBRwyle : Huntsville, AL	0.000	0.000		0.890	Mar 2020	0.907	Mar 2021	-		0.907	0.000	1.797	-
		Subtotal	4.328	2.235		2.390		2.437		-		2.437	Continuing	Continuing	N/A

Remarks

The FY 2021 Test and Evaluation costs for WASP Major Version (V5.X) effort decreased from FY 2020 to FY 2021 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 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	C/CPFF	Ausley Associates : Lexington Park, MD	0.891	0.310	May 2019	0.315	May 2020	0.320	May 2021	-		0.320	0.000	1.836	1.341
Program Management Support	WR	NAWCAD : Patuxent River, MD	0.000	0.200	Nov 2018	0.205	Nov 2019	0.210	Nov 2020	-		0.210	0.000	0.615	-
Travel	Various	NAVAIR : Patuxent River, MD	0.025	0.015	Nov 2018	0.025	Nov 2019	0.025	Nov 2020	-		0.025	Continuing	Continuing	Continuing
		Subtotal	0.916	0.525		0.545		0.555		-		0.555	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 0605215N / *Mission Planning*	Project (Number/Name) 2311 / *Stores Planning and Weaponeering Module*	

	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	21.715	8.041		11.283		11.206		-		11.206	Continuing	Continuing	N/A

Remarks

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

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 0605215N / *Mission Planning*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

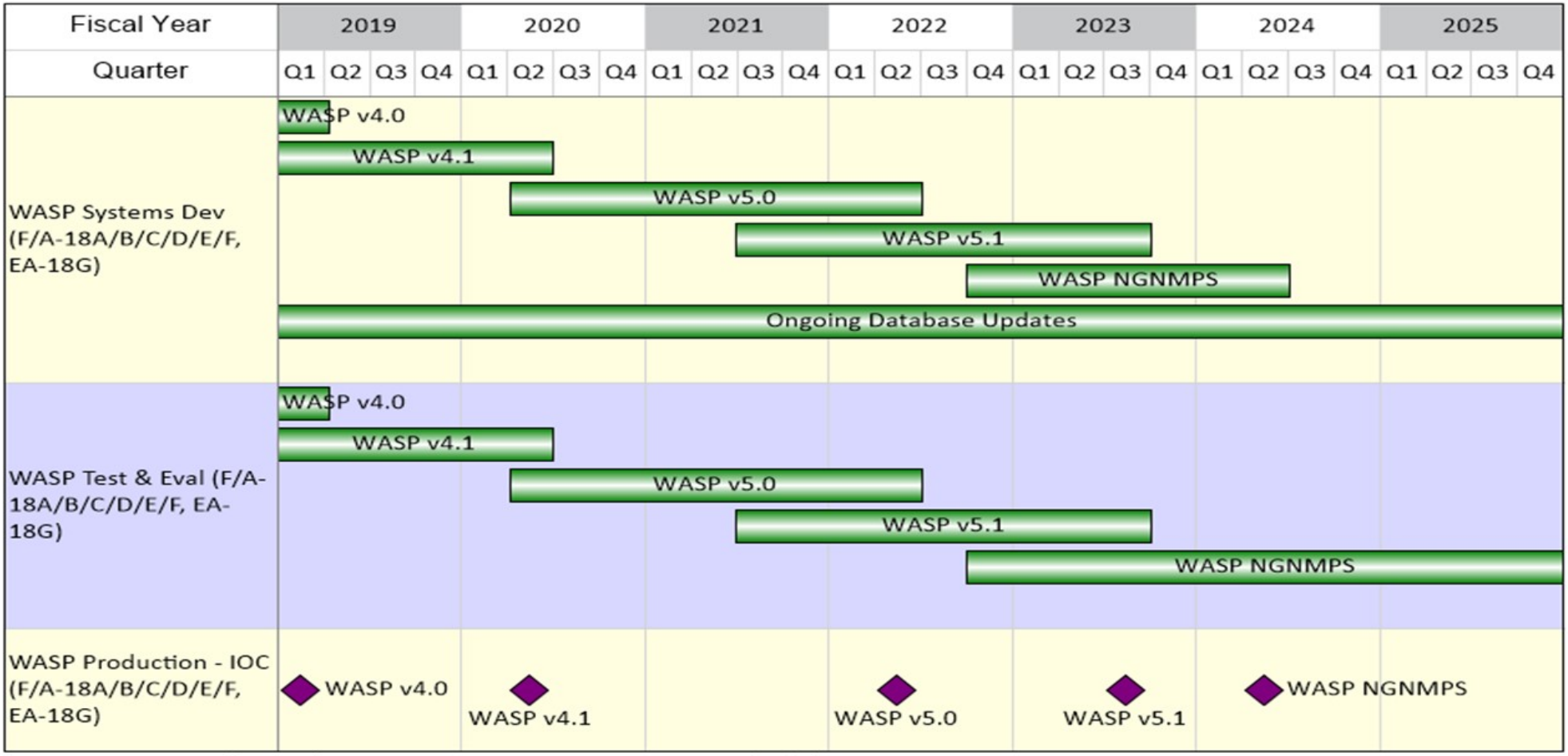

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 5	**R-1 Program Element (Number/Name)** PE 0605215N / *Mission Planning*	**Project (Number/Name)** 2311 / *Stores Planning and Weaponeering Module*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Stores Planning and Weaponeering Module				
Systems Development: WASP v4.0 (F/A-18A/B/C/D/E/F, EA-18G):	1	2019	1	2019
Systems Development: WASP v4.1 (F/A-18A/B/C/D/E/F, EA-18G):	1	2019	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	3	2023
Systems Development: WASP NGNMPS (F/A-18A/B/C/D/E/F, EA-18G):	4	2022	2	2024
Systems Development: WASP Ongoing Database Updates:	1	2019	4	2025
Test & Evaluation Milestones: WASP v4.0 (F/A-18A/B/C/D/E/F, EA-18G):	1	2019	1	2019
Test & Evaluation Milestones: WASP v4.1 (F/A-18A/B/C/D/E/F, EA-18G):	1	2019	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	3	2023
Test & Evaluation Milestones: WASP NGNMPS (F/A-18A/B/C/D/E/F, EA-18G):	4	2022	4	2025
Production Milestones: WASP v4.0 (F/A-18A/B/C/D/E/F, EA-18G) IOC::	1	2019	1	2019
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
Production Milestones: WASP v5.1 (F/A-18A/B/C/D/E/F, EA-18G) IOC::	3	2023	3	2023
Production Milestones: WASP NGNMPS (F/A-18A/B/C/D/E/F, EA-18G) IOC::	2	2024	2	2024