

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development					R-1 Program Element (Number/Name) PE 0208006F I Mission Planning Systems							
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
Total Program Element	391.096	69.104	85.531	63.653	0.000	63.653	81.131	90.334	85.733	91.334	Continuing	Continuing
675302: Precision Aerial Delivery Systems (PADS)	37.431	7.245	8.397	8.845	0.000	8.845	7.021	3.090	1.896	1.931	Continuing	Continuing
675380: Mission Planning Systems (MPS) Modernization	353.665	57.480	76.316	54.808	0.000	54.808	74.110	87.244	83.837	89.403	Continuing	Continuing
675385: MPS Increment 5	0.000	4.379	0.818	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.197
Program MDAP/MAIS Code: 509												
Note Prior costs for Inc 5 is \$59.9M and are included in Project 675380 as those programs were under MPS Modernization. Total Cost for Inc 5 in Project 675385 is \$5.197 this does not include TWCF (Transportation Capital Working Fund).												
A. Mission Description and Budget Item Justification Mission planning involves the creation of a flight plan based on multiple inputs including threats, targets, terrain, weather, aircraft performance capability, and configuration. It is an essential task that must be completed prior to any fixed- or rotary wing aircraft sortie. The planner must have the ability to plan weapon, cargo, passenger, and/or fuel delivery, calculate fuel requirements, and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print, and brief the plan; download pertinent flight information to on-board aircraft avionics; and, conduct dynamic/in-flight re-planning as applicable. The Mission Planning Systems (MPS) program is a collaborative program with the Navy to leverage technical solutions and business practices for all Department of Defense (DoD) platforms. It provides automated mission planning tools and support for fixed- and rotary wing aircraft and guided munitions. It replaces two closed architecture legacy mission planning systems (UNIX-based MPS (UNIX-MPS) and the PC-based Portable Flight Planning Software (PFPS)), with a single multi-service, open architecture system, frequently referred to as the Joint Mission Planning System (JMPS). MPS will compress the mission planning cycle by providing an improved integrated planning environment, reducing the time required to respond to changing situations and urgent needs such as striking time sensitive/critical targets and conducting combat search and rescue. MPS products have the potential to support all DoD fixed-wing and rotary wing aircraft and is shared with the selected programs in the Navy. MPS will deliver significant benefits to command and control performance by enhancing information superiority for the warfighter and by providing unique capabilities in support of both precision engagement and dominant maneuver. FY19 funding will continue MPS Inc 5 project which will complete the initial migration of select Air Force platforms from their legacy planning systems to the new Mission Planning System (aka (JMPS)). MPS Inc 5 is comprised of three efforts originally started as separate and individual projects with the MPS Modernization development effort. Those projects are: 1) Mobility Air Forces Automated Flight Planning Service (MAFPS); 2) Air Mobility Command (AMC) Transition; and 3) Special Mission Air Combat Command, Combat Search and Rescue (SMACC CSAR). These projects, and their associated platforms, are now included in the overarching program known												

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development	R-1 Program Element (Number/Name) PE 0208006F I Mission Planning Systems	
<p>as MPS Inc 5 to improve transparency and oversight. As such, MPS Inc 5 is a continuation of efforts previously stated under the development umbrella of the MPS Modernization project. Inc 5, formally an Acquisition Category (ACAT) IAC Program, was reclassified to ACAT III by the Milestone Decision Authority on 17 October 2017.</p> <p>In addition, FY19 funding will continue the MPS Modernization project. It will develop pre-, post-, and in-flight mission planning capabilities for Air Force aircraft Global Positioning System (GPS) and weapons migrating from legacy mission planning systems to the Joint Mission Planning System (JMPS), as well as, continuing to provide new capabilities and updates for Air Force platforms/weapon systems that have already migrated to JMPS. These platforms/weapon systems include, but are not limited to, the B-1, EC-130, E-3, E-8, F-15, F-16, F-22A, RC-135, and their associated weapons (e.g., Small Diameter Bomb (SDB), Joint Direct Attack Munitions (JDAM), Joint Air-to-Surface Standoff Munitions (JASSM), Network Enabled Weapons (NEW)) Development of NEW modules support the configuration of this class of weapons, thereby; enabling warfighters to enter and execute missions using data links used by US and coalition aircraft. It will support the development of follow on modernization efforts for MAFPS, SMACC CSAR (HC/MC-130, HH-60)and Global Mobility (C-5,C-17,C-130, KC-10, KC-135, KC-46) to be delivered after the initial MPS Inc 5 releases are fielded.</p> <p>Finally, FY19 funding will be utilized to continue the development of the Joint Precision Airdrop System- Mission Planning (JPADS-MP)system in conjunction with the Army. This program includes the JPADS-MP airdrop software (and other system components) to provide a precision airdrop capability for the C-17, C-130 and other selected platforms as necessary and deliver a planning capability for DoD airdrop requirements. It is the primary airdrop mission planning system for all ballistic airdrop missions, as well as, precision guided airdrops that are required when the mission profile or surface-to-air threat assessment warrants a high-altitude and/or standoff precision delivery. JPADS-MP enables high-altitude, precise airdrop delivery to forward ground forces, mitigating surface-to-air threats, reducing risk of Improvised Explosive Device (IED) and insurgent attack on ground convoys. JPADS allows the warfighter to consider weather, terrain, aircraft capabilities, threat, and other data to accurately deliver payloads to keep the warfighter supplied and in the fight.</p> <p>This program element may include necessary civilian pay expenses required to manage, execute, and deliver Mission Planning weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.</p> <p>This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.</p>		

UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2019 Air Force				Date: February 2018	
Appropriation/Budget Activity 3600: Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development		R-1 Program Element (Number/Name) PE 0208006F I Mission Planning Systems			
B. Program Change Summary (\$ in Millions)	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total
Previous President's Budget	71.785	85.531	75.318	0.000	75.318
Current President's Budget	69.104	85.531	63.653	0.000	63.653
Total Adjustments	-2.681	0.000	-11.665	0.000	-11.665
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	-2.681	0.000			
• Other Adjustments	0.000	0.000	-11.665	0.000	-11.665
Change Summary Explanation					
The FY2019 funding request was reduced by \$11.665M to account for the availability of prior year execution balances.					

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0208006F / Mission Planning Systems				Project (Number/Name) 675302 / Precision Aerial Delivery Systems (PADS)			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
675302: Precision Aerial Delivery Systems (PADS)	37.431	7.245	8.397	8.845	0.000	8.845	7.021	3.090	1.896	1.931	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on multiple inputs including threats, targets, terrain, weather, aircraft performance capability, and configuration. It is an essential task that must be completed prior to any fixed- or rotary wing aircraft sortie. The planner must have the ability to plan weapon, cargo, passenger, and/or fuel delivery, calculate fuel requirement and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print and brief the plan; download pertinent flight information to on-board aircraft avionics; and, conduct dynamic/in-flight re-planning as applicable.

This project continues the development of a Joint Precision Airdrop System-Mission Planner (JPADS-MP) capability in conjunction with the Army. JPADS provides a planning capability for DoD airdrop requirements. It is the primary airdrop mission planning system for all ballistic airdrop missions as well as precision guided airdrops that are required when the mission profile or surface-to-air threat assessment warrants a high-altitude and/ or standoff precision delivery. It enables high-altitude, precise airdrop delivery to forward ground forces, while mitigating surface-to-air threats, reducing risk of exposure to Improvised Explosive Devices (IEDs) and insurgent attack on ground convoys. JPADS allows the warfighter to consider weather, terrain, aircraft capabilities, threat, and other data to accurately deliver payloads to combat and other friendly forces.

Consolidated Airdrop Tool (CAT) is the key JPADS-MP software deliverable. It will increase the accuracy of airdrop mission planning by improving aircraft, payload, and chute specific calculations along with weather analysis visualization tools specifically adapted for airdrop. Future initiatives are designated to achieve automation of airdrop planning and execution to reduce task saturation in the cockpit and support Air Mobility Command's (AMC) objective of moving to a two-man cockpit. These efforts include the ability to automatically receive and use real-time winds in any location, calculation of a release point and airdrop in a single pass, the ability to conduct real-time objective area analysis to calculate probable damage estimates and execute dynamic re-tasking, the ability to conduct post-drop assessments, and the implementation of new technologies (e.g. Service Oriented Architecture (SOA) Touch Screen environment).

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

FY19 funding continues CAT v6.x and 7.x while beginning 8.x development and testing to provide precision and conventional airdrop capabilities including, but not limited to, Airdrop Damage Estimate (ADE), 3D Hazard and obstruction data for guided delivery system navigation, automation for aircrew in-flight airdrop workflow, Extracted Container Delivery Systems (ExCDS), data services to multiple mission planning devices, and calculations to maximize payload impact success on drop zones.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force							Date: February 2018				
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0208006F / <i>Mission Planning Systems</i>			Project (Number/Name) 675302 / <i>Precision Aerial Delivery Systems (PADS)</i>				
<p>This program element may include necessary civilian pay expenses required to manage, execute, and deliver Mission Planning weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.</p>											
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2017	FY 2018	FY 2019		
Title: JPADS-MP Phase I Description: Continues development of a JPADS capability for precise, high altitude delivery of material to forward ground forces. FY 2018 Plans: - Complete testing and field CAT v4.1, v4.2 and v5.0 - Continue development of CAT v6.x which will include but is not limited to: Failure Footprint and Impact Point optimization, Software User Notifications, JPADS Mission Reconstruction, the addition of new canopy types for the Automated Guidance Unit (AGU). Percent Success Zone, and Date Interface development/optimization - Begins development of CAT v7.x, which includes but is not limited to: Visual Navigation and GPS Coverage, Software User Notifications, HUD/SCNS Display/Workflow, Wind Transfer to the AGU, Dry Pass, LT-ADE Integration, initial tablet capabilities, Ensemble Weather and Kalman Filter implementation. FY 2019 Plans: - Will complete operational testing of CAT v6.x for fielding in FY19 - Will continue development and testing of CAT v7.x - Will begin development of CAT v8.x, which includes but is not limited to: Hazard Avoidance, HALO for JAPADS, Run-n Planning; Terrain Effects, Simulations for Training and Mission Rehearsal, Workflow Updates, and Optimum Dropsonde Release FY 2018 to FY 2019 Increase/Decrease Statement: \$0.500M increase as CAT 6.x, 7.x and 8.x have overlapping development and test in FY19.							7.245	8.397	8.845		
Accomplishments/Planned Programs Subtotals							7.245	8.397	8.845		
C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u> <u>Base</u>	<u>FY 2019</u> <u>OCO</u>	<u>FY 2019</u> <u>Total</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• OPAF 03 Line Item 833170: <i>Mission Planning Systems</i>	13.330	15.486	14.263	-	14.263	16.738	16.754	16.492	16.785	Continuing	Continuing
Remarks											

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / <i>Mission Planning Systems</i>	Project (Number/Name) 675302 / <i>Precision Aerial Delivery Systems (PADS)</i>
<p>D. Acquisition Strategy</p> <p>The MPS PADS efforts are developed and fielded using a variety of contracting instruments. Efforts to accomplish activities such as software development, systems engineering and integration, training, and support are completed using competitively awarded contracts (e.g. Cost Plus Award Fee (CPAF), Fixed Price (FP)).</p> <p>Program Management Administration (PMA) contracts are awarded competitively and consist of various types of contracts at various locations.</p> <p>MITRE, a Federally Funded Research and Development Center (FFRDC) contractor, provides technical support via a no fee for service contract.</p> <p>Other efforts are accomplished using Purchase Orders (PO) and Military Interdepartmental Purchase Requests (MIPR).</p> <p>For the efforts listed above, the Air Force Life Cycle Management Center at Hanscom AFB (AFLCMC/HB) is the Contracting Authority and provides Contracts, Legal, and Comptroller Support.</p> <p>Air Force Program Executive Officer (PEO) for Battle Management (AFPEO/BM) is the PEO and Milestone Decision Authority (MDA) for the PADS program.</p> <p>E. Performance Metrics</p> <p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force												Date: February 2018			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0208006F / Mission Planning Systems				Project (Number/Name) 675302 / Precision Aerial Delivery Systems (PADS)					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Development	MIPR	Various : Various	22.859	6.035	Nov 2016	6.159	Nov 2017	6.569	Nov 2018	-		6.569	Continuing	Continuing	-
Systems Engineering and Integration	C/CPAF	Leidos, Inc. : Reston, VA	6.060	0.716	Jan 2017	1.377	Jan 2018	1.404	Jan 2019	-		1.404	Continuing	Continuing	-
Subtotal			28.919	6.751		7.536		7.973		-		7.973	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Cost Estimating	C/T&M	Quantech Services : Lexington, MA	0.090	0.064	Nov 2016	0.027	Nov 2017	-		-		-	0.000	0.181	0.181
Subtotal			0.090	0.064		0.027		-		-		-	0.000	0.181	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Type I Training	C/FP	Spiral Solutions & Technologies : Bellevue, NE	2.172	0.000		-		-		-		-	0.000	2.172	2.172
Subtotal			2.172	0.000		-		-		-		-	0.000	2.172	N/A
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Administration	Various	Various : Various	6.250	0.430	Nov 2016	0.834	Nov 2017	0.872	Nov 2018	-		0.872	Continuing	Continuing	-
Subtotal			6.250	0.430		0.834		0.872		-		0.872	Continuing	Continuing	N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force										Date: February 2018			
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0208006F / <i>Mission Planning Systems</i>					Project (Number/Name) 675302 / <i>Precision Aerial Delivery Systems (PADS)</i>			
	Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	37.431	7.245		8.397		8.845		-		8.845	Continuing	Continuing	N/A
Remarks													

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force

Date: February 2018

Appropriation/Budget Activity

3600 / 7

R-1 Program Element (Number/Name)

PE 0208006F / Mission Planning Systems

Project (Number/Name)

675302 / Precision Aerial Delivery Systems (PADS)

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Precision Aerial Delivery Systems (PADS)																												
JPADS-MP CAT v4.1 Development and Testing																												
Testing of CAT v4.2																												
Testing of CAT v5.0																												
JPADS-MP CAT v4.1 Fielding (C-17)																												
JPADS-MP CAT v4.2 Fielding																												
JPADS-MP CAT v5.0 Fielding																												
JPADS-MP CAT v6.x Development and Testing																												
JPADS-MP CAT v6.x Fielding																												
JPADS-MP CAT v7.x Development and Testing																												
JPADS-MP CAT v7.x Fielding																												
JPADS-MP CAT v8.x Development and Testing																												
JPADS-MP CAT v8.x Fielding																												
JPADS-MP CAT v9.x Development and Testing																												
JPADS-MP CAT v9.x Fielding																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / <i>Mission Planning Systems</i>	Project (Number/Name) 675302 / <i>Precision Aerial Delivery Systems (PADS)</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Precision Aerial Delivery Systems (PADS)</i>				
JPADS-MP CAT v4.1 Development and Testing	1	2017	1	2017
Testing of CAT v4.2	4	2017	1	2018
Testing of CAT v5.0	4	2017	2	2018
JPADS-MP CAT v4.1 Fielding (C-17)	1	2018	2	2018
JPADS-MP CAT v4.2 Fielding	1	2018	2	2018
JPADS-MP CAT v5.0 Fielding	2	2018	2	2018
JPADS-MP CAT v6.x Development and Testing	1	2018	4	2019
JPADS-MP CAT v6.xFielding	4	2019	4	2019
JPADS-MP CAT v7.x Development and Testing	4	2018	3	2020
JPADS-MP CAT v7.x Fielding	3	2020	3	2020
JPADS-MP CAT v8.x Development and Testing	4	2019	3	2021
JPADS-MP CAT v8.x Fielding	3	2021	3	2021
JPADS-MP CAT v9.x Development and Testing	3	2021	4	2023
JPADS-MP CAT v9.x Fielding	4	2023	4	2023

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0208006F / Mission Planning Systems				Project (Number/Name) 675380 / Mission Planning Systems (MPS) Modernization			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
675380: Mission Planning Systems (MPS) Modernization	353.665	57.480	76.316	54.808	0.000	54.808	74.110	87.244	83.837	89.403	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Mission planning involves the creation of a flight plan based on multiple inputs including threats, targets, terrain, weather, aircraft performance capability, and configuration. It is an essential task that must be completed prior to any fixed- or rotary wing aircraft sortie. The planner must have the ability to plan weapon, cargo, passenger, and/or fuel delivery, calculate fuel requirements, and assess the route based on known enemy threat location and type. Mission planners must be able to optimize and de-conflict flight routes with other aircraft; review, print and brief the plan; download pertinent flight information to on-board aircraft avionics; and, conduct dynamic/in-flight re-planning as applicable. This project focuses on modernizing MPS to support Combat Air Forces (CAF) and Mobility Air Forces (MAF), including the development, test and sustainment of Mission Planning Environments (MPEs) to support the B-1, C-5, C-17, C-130, HC-130, EC-130, E-3, E-8, F-15, F-16, F-22A, KC-10, KC-46, KC-135, RC-135, HH-60 other platforms, Framework (FW) and all Common Component (CCs) software tools for mission requirements. Activities also include studies and analysis to support both current program planning and execution and future program planning. MPS Modernization efforts are as follows:

1) CAF MPS Modernization: These development efforts modernize CAF Mission Planning Environments (MPEs). The modernization effort will provide new and improved mission planning capability for individual Operational Flight Program (OFP) requirements, such as new weapons, avionics upgrades, communications systems, etc. The OFPs requiring MPE updates under the CAF modernization effort include, but are not limited to, B-1 (Sustainment Blocks 15, 16, 16a, 17, 17a and 18), F-15 (Suites 7, 8, 9 and 10) and F-22 (Increments 3.2B, 3.2M, and 4.0). CAF modernization also includes updates to mission planning capabilities supporting associated weapons including, but not limited to, Small Diameter Bomb (SDB-II), Joint Direct Attack Munitions (JDAM) and the Joint Air-to-Surface Standoff Missile (JASSM). Finally, CAF modernization will address required improvements to CAF related JMPS MPE CCs, including Weapon Planning Software (WPS), Electronic Warfare CC (EWCC), GPS Crypto (including GPS M-code), Weather CC, etc. CAF MPE Modernization includes, but is not limited to, the following platform efforts:

a. F-15 Modernization Phase II & III: This modernization program consists of multiple software development efforts driven by OFP updates for F-15 Suites 7, 8, and 9.X. Suite 7-9 MPE capabilities include, but are not limited to, Data Transfer Device (DTD) improvements, updates for new features in weapons such as Joint Direct Attack Munition (JDAM), Small Diameter Bomb I and II (SDB I and II), AIM-9X, AIM-120D, and Network Enable Weapon support elements (e.g. key handling, weapon data link and Link 16). It will also include enhancements to the synthetic aperture radar planning tool (SAR-PT) and the global area reference tool as well as radar modernization updates (e.g. combat identification, radar planning tool enhancements). Development efforts for F-15 Suite 8 include, but are not limited to, integration of B61 Life Extension Program (LEP), feature updates for several weapons, and the expansion of Link-16 messages sets. F-15 Suite 9 MPE will include a variety of updates and enhancements for weapons and aircraft systems to include, but are not limited to, Eagle Passive Active Warning Survivability System (EPAWSS), a new Advanced Dual Core Process II (ADCP-II) computer as well as Digital Transfer Device/Modules (DTD/DTM) modernization.

b. F-16 Block 40/50 Modernization Phases I&II: The F-16 Block 40/50 modernization completed fielding and transitioned to full sustainment the 2Q of FY17.

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / <i>Mission Planning Systems</i>	Project (Number/Name) 675380 / <i>Mission Planning Systems (MPS) Modernization</i>
<p>c. F-22 Modernization Phase I: The F-22 Modernization program includes OFP-driven software updates v13.1, v14.0 and v14.1. These enhancements include, but are not limited to, the addition of improved capabilities for the AIM-9X and AIM-120D, the incorporation of additional electronic protection tasks, combat identification improvements, addition of an Inter-flight Data Link Gateway, Mode 5 IFF and Combat ID updates, and incorporation of the synthetic aperture radar planning tool. Additionally, other new and emerging OFP-generated requirements will be addressed as identified by the operational user(s). Other Common Component (CC) updates will also be completed as required.</p> <p>d. B-1 Modernization Phase I&II: The B-1 Modernization program includes OFP-driven software updates for Releases 7.0, 8.0, 9.0 and 11.0. It will incrementally update the platform MPE and provide for integration with the Reliability and Maintainability Improvement Program (RMIP)/Inertial Navigation System Replacement (INSR), Laptop Computer Targeting Pod Phase 2 (LCTP), Integrated Battle Station (IBS) elements (including Fully Integrated Data Link(FIDL)/Visual Situation Display Upgrade (VSDU)), Central Integrated Test System Upgrade (CITS), and related follow on enhancements. Additionally, it will migrate the B-1 MPE to the Windows 10 operating system and convert the B-1 Unit Planning Component (UPC) Visual Basic (VB) code to C# .NET.</p> <p>2) MAF MPS Modernization: These development efforts modernize MAF MPEs. The modernization effort will provide new and improved mission planning capability for individual Operational Flight Program (OFP), Global C2, and AMC fuel efficiency requirements.</p> <p>3) The SMACC Modernization Program includes development, testing, and fielding of MP software for the E-3 DRAGON, E-3/E-8, RC-135 and EC-130. Combat Search and Rescue (CSAR) is providing a new JMPS capability to the HH-60 and MC/HC aircraft. The follow-on versions continue that development. The MAF Modernization effort builds upon the fielded E-8 MPE to provide new and improved mission planning capabilities for the MAF fleet (e.g. C-5, C-130, KC-10, etc.) as required to meet OFP, fuel efficiency, and global planning net-centric requirements. It includes, but is not limited to, enhanced capabilities to accommodate avionics upgrades, improved communications systems, interfaces with command and control systems, new parachutes, etc. for various MAF platforms. Development efforts also include, but are not limited to, integrating improvements to MAF related Common Components (CCs). Examples of these CCs include, but are not limited to, MAF tools, such as Assault Zone CC and the Air Refueling Tool (ART) CC. CSAR Release 1.1 program began in FY17 modernizing the efforts begun with the CSAR products developed in MPS Inc 5.</p> <p>Mobility Air Forces Automated Flight Planning Service (MAFPS) Phase Two began in FY17. This effort modernizes the MAFPS products developed in Increment 5. This effort completes the development of a centralized/net-centric global mobility flight planning capability, which will provide significant fuel savings through automated flight route, airspeed, and altitude optimization utilizing aircraft performance, air traffic management, weather, and other data.</p> <p>Test, Training, and Certification: Continues all MPS-related integration, test, and certification activities for all CAF and MAF platforms.</p> <p>Program Support: Continues all program office management operations and support activities to ensure the timely development, testing, and delivery of mission planning systems to the warfighter.</p>		

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018		
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0208006F / Mission Planning Systems	Project (Number/Name) 675380 / Mission Planning Systems (MPS) Modernization		
FY19 funding continues the development and modernization of Mission Planning Environments (MPEs). MAFPS and related planning capabilities for a variety of Air Force aircraft and weapons platforms for the CAF, MAF, and other operational users. The modernization programs will be closely aligned and compatible with the capabilities being developed for the platforms within their respective and regularly scheduled Operational Flight Programs (OFPs).					
This program element may include necessary civilian pay expenses required to manage, execute, and deliver Mission Planning weapon system capability. The use of such program funds would be in addition to the civilian pay expenses budgeted in program elements 0605826F, 0605827F, 0605828F, 0605829F, 0605830F, 0605831F, 0605832F, and 0605898F.					
This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.					
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2017	FY 2018	FY 2019
Title: F-15 Modernization Phase II and III			11.548	14.751	11.265
Description: Continues the modernization of previously fielded F-15 Mission Planning Environments (MPEs) to enable efficient use of new and improved capabilities being developed in platform Operational Flight Programs (OFPs).					
FY 2018 Plans: - Complete Developmental Testing (DT) and Operation Testing (OT) of MPE v4.1. MPE v4.1 will support SDB-II OT and B61-12 in FY18, deficiencies found in v4.0 and Suite 8E and Suite 7 requirements. - Continue development of MPE v5.0 which includes: Digital Transfer Device/Modules (DTD/DTM) modernization Radar library updates MIDS-JTRS upgrade - Continue to work requirements and begin development for MPE v6.0 with focus on systems interfacing with the OFP and EPAWSS					
FY 2019 Plans: - Will complete FQT and DT on MPE v5.0 - Will continue requirements definition and development of MPE v6.0					
FY 2018 to FY 2019 Increase/Decrease Statement: \$3.4M decrease, with the ramp down of Ph II and the slow ramp up of Ph III in FY19. F-15 MPE is build to budget. Requirements fluctuate slightly from year to year based on changing F-15 SPO requirements					
Title: F-22 Modernization Phase I and II			11.418	7.313	9.148

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018	
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / <i>Mission Planning Systems</i>	Project (Number/Name) 675380 / <i>Mission Planning Systems (MPS) Modernization</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018
<p>Description: Continues the modernization of previously fielded F-22 MPEs to enable efficient use of new and improved capabilities being developed in the OFPs.</p> <p>FY 2018 Plans:</p> <ul style="list-style-type: none"> - Complete Developmental Testing (DT) & Operational Testing (OT) for v13.1 - Continue development for MPE v14.0 - MPE v14.0 will be built from the v13.1 baseline and will integrate with requirements established through OFP Inc 3.2M and will consist of Link 16 Transmit - v14.1 will consist of planning for Mode 5 IFF and Combat ID updates and electronic protection and embedded training which will incorporate electronic protection, combat ID <p>FY 2019 Plans:</p> <ul style="list-style-type: none"> - Complete FQT of v14.0 - Complete DT of v14.0 - Field v13.1 Update 6 - Complete CDR for v14.0 <p>FY 2018 to FY 2019 Increase/Decrease Statement:</p> <p>\$1.8M increase: F-22 MPE is build to budget. Requirements fluctuate slightly from year to year based on changing F-22 SPO requirements.</p>			
<p>Title: B-1 Modernization Phase I and II</p> <p>Description: Continues the modernization of previously fielded B-1 MPEs to enable efficient use of new and improved capabilities being developed in the OFPs.</p> <p>FY 2018 Plans:</p> <ul style="list-style-type: none"> - Incorporate FIDL Editor and Draw File into Release 9.0 - Award new Delivery Order (DO) for Release 11.0 - Continue development of Release 9.0 - Continue development of LRASM - Perform Final Quality Test (FQT) - Field Release 9 - Formalize Developmental Test (DT) and scenario testing <p>FY 2019 Plans:</p>		12.925	14.783
			12.083

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018		
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / Mission Planning Systems	Project (Number/Name) 675380 / Mission Planning Systems (MPS) Modernization		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018	FY 2019
<div>- Will continue development of LRASM</div> <div>- Will continue development of Release 11</div> <div>FY 2018 to FY 2019 Increase/Decrease Statement: \$2.7 decrease: B-1 MPE is build to budget. Requirements fluctuate slightly from year to year based on changing B-1 SPO / requirements.</div>				
<div>Title: MAF Modernization</div> <div>Description: Develops the KC-46 JMPS Mission Planning Environment (MPE). In addition, develop, test, and field the follow on modernization of the Global Mobility (GM) 100 series MPE previously fielded under MPS Inc 5 (e.g. modernization efforts to begin as the GM 200 series) to account for changes in aircraft operational flight profiles account for changes in aircraft operational flight profiles (OFPs) and Global Command and Control Changes.</div> <div>FY 2018 Plans: - Complete GM 1.4 (KC-46) development, formal qualification testing, and initiate formal Government developmental testing</div> <div>FY 2019 Plans: - Will complete both operational testing and fielding for the GM 1.4 (KC-46) MPE - Begin development of the GM 200 series</div> <div>FY 2018 to FY 2019 Increase/Decrease Statement: Program increase as KC-46 testing is winding down but MAF Modernization (GM 200 series) is in development and will enter test.</div>		5.855	10.614	5.974
<div>Title: Special Mission ACC (SMACC)</div> <div>Description: Continues the modernization of previously fielded mission planning software environments for the E-3, E-8, E-4, EC-130, and RC-135. In addition, continues modernization efforts for the Inc 5 follow on for SMACC CSAR.</div> <div>FY 2018 Plans: - Complete developmental testing, operational testing, and fielding decision for RC-135 V3.2 - Start development of RC-135 V 3.3 - Begin development of E-3/E-8 v2.1.1 - Complete development and testing of EC-130H v2.0 - Complete testing and fielding decision for E-3 DRAGON - Continue development and testing of CSAR v1.1 including an agile development release in the 4th Quarter</div> <div>FY 2019 Plans: - Complete testing and fielding decision for RC-135 V 3.3</div>		13.190	16.442	15.055

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force							Date: February 2018				
Appropriation/Budget Activity 3600 / 7				R-1 Program Element (Number/Name) PE 0208006F / <i>Mission Planning Systems</i>			Project (Number/Name) 675380 / <i>Mission Planning Systems (MPS) Modernization</i>				
B. Accomplishments/Planned Programs (\$ in Millions)							FY 2017	FY 2018	FY 2019		
<ul style="list-style-type: none"> - Start development of RC-135 V 3.4 - Continue development activities for E-3/E-8, and the EC-130 - Continue testing and fielding of CSAR v1.1 agile releases <p><i>FY 2018 to FY 2019 Increase/Decrease Statement:</i> There is a slight decrease in FY19. This was due to FY18 being in a peak year with all four SMACC aircraft being in development modifications at the same time.</p>											
<p><i>Title:</i> MAF Automated Flight Planning Service (MAFPS)</p> <p><i>Description:</i> Develops a centralized/net-centric global mobility flight planning capability, which will provide significant fuel savings through automated flight route, airspeed, and altitude optimization utilizing aircraft performance, air traffic management, weather, and other data.</p> <p><i>FY 2018 Plans:</i> - Continue development activities for Release 2 through Critical Design Review and developmental and operational testing.</p> <p><i>FY 2019 Plans:</i> - Complete testing and field Release 2</p> <p><i>FY 2018 to FY 2019 Increase/Decrease Statement:</i> Program funding decrease in FY19 as the major development and test activities were completed in FY18</p>							2.544	12.413	1.283		
Accomplishments/Planned Programs Subtotals							57.480	76.316	54.808		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
• OPAF 03 Line Item 833170: <i>Mission Planning Systems</i>	9.539	9.403	9.345	-	9.345	9.511	9.681	9.857	-	Continuing	Continuing
Remarks											
D. Acquisition Strategy											
MPS Modernization consists of multiple capability upgrades across multiple platforms that are developed and fielded using a variety of contracting instruments. The Air Force Life Cycle Management Center at Hanscom AFB AFLCMC/HB) competitively awarded multiple ID/IQ (Indefinite Delivery/Indefinite Quantities) contracts for software development. Currently there are five (5) contractors, one of which is Small Business set aside, who are qualified sources. Each Delivery Order (DO) is competed among the five contractors. Efforts to accomplish program activities such as software development, systems engineering and integration, training, and											

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / <i>Mission Planning Systems</i>	Project (Number/Name) 675380 / <i>Mission Planning Systems (MPS) Modernization</i>
<p>support are competitively awarded using a variety of contract types (e.g. Cost Plus Award Fee (CPAF), Fixed Price (FP), Fixed Price Incentive Fee (FPIF)). Program Management Administration (PMA) contracts are awarded competitively and consist of various types of contracts at various locations. Mitre, a Federally Funded Research and Development Center (FFRDC) contractor provides technical support on a no fee for service contract.</p> <p>Other efforts are accomplished via Purchase Orders (PO) and Military Interdepartmental Purchase Requests (MIPR). For the efforts listed above, the Air Force Life Cycle Management Center at Hanscom AFB (AFLCMC/HB) provides program management, contracts, legal, and financial management support. Air Force Program Executive Officer (PEO) for Battle Management (AFPEO/HB) is the PEO and Milestone Decision Authority (MDA) for all MPS Modernization projects (with the exception of those efforts that make up MPS Inc 5 for which the Under Secretary of Defense, Acquisition, Technology, and Logistics is the MDA).</p> <p><u>E. Performance Metrics</u></p> <p>Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.</p>		

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force												Date: February 2018			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0208006F / Mission Planning Systems				Project (Number/Name) 675380 / Mission Planning Systems (MPS) Modernization					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Planning Software Development (MPEC II)	C/Various	Various : Various	131.073	16.667	Nov 2016	29.977	Nov 2017	15.237	Nov 2018	-		15.237	Continuing	Continuing	-
A-10 Modernization	PO	Organic : Hill AFB, UT	1.917	-		-		-		-		-	0.000	1.917	1.917
F-16 Modernization	PO	Organic : Hill AFB, UT	17.961	-		-		-		-		-	0.000	17.961	17.961
EC-130H Modernization	PO	Organic : Robins AFB, GA	4.704	1.011	Jan 2017	1.031	Jan 2018	1.051	Jan 2019	-		1.051	Continuing	Continuing	-
F-22 MilCloud SIL	MIPR	GSA : Washington, DC	0.105	0.459	Dec 2016	-		-		-		-	0.000	0.564	0.564
MAF AMC Transition Tools	MIPR	AMCOM : Redstone Arsenal, AL	4.632	-		-		-		-		-	0.000	4.632	4.632
SMACC CSAR Tools	MIPR	Various : Various	3.997	1.368	Jan 2017	3.173	Jan 2018	2.497	Jan 2019	-		2.497	Continuing	Continuing	-
Systems Engineering and Integration	C/CPAF	Leidos, Inc. : Reston, VA	51.441	8.531	Jan 2017	8.367	Jan 2018	8.535	Jan 2019	-		8.535	Continuing	Continuing	-
Framework	C/FPIF	Northrop Grumman : Herndon, VA	8.748	5.991	Jan 2017	10.835	Jan 2018	8.060	Jan 2019	-		8.060	Continuing	Continuing	-
Common Components	C/Various	Various : Various	38.200	8.679	Nov 2016	6.328	Nov 2017	4.844	Nov 2018	-		4.844	Continuing	Continuing	-
Subtotal			262.778	42.706		59.711		40.224		-		40.224	Continuing	Continuing	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Software Engineering	C/T&M	SEI : Pittsburgh, PA	0.080	0.000		-		-		-		-	0.000	0.080	0.080
Cost Estimating	C/T&M	Tecolote Inc : Goleta, CA	1.219	0.162	Nov 2016	0.202	Nov 2017	0.021	Nov 2018	-		0.021	Continuing	Continuing	-
Subtotal			1.299	0.162		0.202		0.021		-		0.021	Continuing	Continuing	N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force												Date: February 2018			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0208006F / Mission Planning Systems				Project (Number/Name) 675380 / Mission Planning Systems (MPS) Modernization					
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Responsible Test Organization (RTO)	PO	46TS : Eglin AFB, FL	29.330	3.882	Dec 2016	4.246	Dec 2017	3.775	Dec 2018	-		3.775	Continuing	Continuing	-
Certification and Accreditation	MIPR	JITC : Fort Huachuca, AZ	0.164	0.090	Feb 2017	0.123	Feb 2018	0.115	Feb 2019	-		0.115	Continuing	Continuing	-
Type I Training	C/FP	Summit Technologies Inc : Winter Park, FL	4.567	0.777	Jul 2017	1.212	Jul 2018	1.004	Jul 2019	-		1.004	Continuing	Continuing	-
Field Representative Hardware	C/Various	Various : Various	0.589	0.193	Nov 2016	0.421	Nov 2017	0.164	Nov 2018	-		0.164	Continuing	Continuing	-
Subtotal			34.650	4.942		6.002		5.058		-		5.058	Continuing	Continuing	N/A
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Technical Support	RO	MITRE Corp : Bedford, MA	17.124	3.231	Oct 2016	4.066	Oct 2017	0.475	Oct 2018	-		0.475	Continuing	Continuing	-
Program Management Administration	Various	Various : Various	37.814	6.439	Nov 2016	6.335	Nov 2017	9.030	Nov 2018	-		9.030	Continuing	Continuing	-
Subtotal			54.938	9.670		10.401		9.505		-		9.505	Continuing	Continuing	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			353.665	57.480		76.316		54.808		-		54.808	Continuing	Continuing	N/A
Remarks															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force

Date: February 2018

Appropriation/Budget Activity

3600 / 7

R-1 Program Element (Number/Name)

PE 0208006F / Mission Planning Systems

Project (Number/Name)

675380 / Mission Planning Systems (MPS)
Modernization

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Mission Planning Systems (MPS) Modernization																												
F-15 v4.0 Fielding																												
F-15 v4.1 Fielding																												
F-15 v4.2 Fielding																												
F-15 v5.0 Fielding																												
F-15 v6.0 Fielding																												
F-16 Blk 40/50 M7.1 Fielding																												
F-16 Blk 40/50 M7.2 Fielding																												
F-22 v13.1 Fielding																												
F-22 v14.0 Fielding																												
B-1 Release 9 Fielding																												
B-1 Release 11 Fielding																												
SMACC E-3/ E-8 Release 2.1 Fielding																												
SMACC E-3/E8 Release 2.4 Fielding																												
SMACC E-3/E8 Release 2.5 Fielding																												
SMACC EC-130H Release 2.0																												
SMACC EC-130H Release 2.1 Fielding																												
SMACC EC-130H Release 2.2 Fielding																												
SMACC EC-130H Release 2.3 Fielding																												
SMACC EC-130H Release 2.4 Fielding																												
SMACC E-3 DRAGON Release 3 Fielding																												
SMACC E-3 DRAGON Release 3.1 Fielding																												
SMACC E-3 DRAGON Release 3.2 Fielding																												
SMACC E-3 DRAGON Release 3.3 Fielding																												

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force																			Date: February 2018									
Appropriation/Budget Activity 3600 / 7										R-1 Program Element (Number/Name) PE 0208006F / Mission Planning Systems								Project (Number/Name) 675380 / Mission Planning Systems (MPS) Modernization										
FY 2017					FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
1 2 3 4					1 2 3 4				1 2 3 4				1 2 3 4				1 2 3 4				1 2 3 4				1 2 3 4			
SMACC E-3 DRAGON Release 3.4 Fielding																												
SMACC RC-135 Release 3.2 Fielding																												
SMACC RC-135 Release 3.3 Fielding																												
SMACC RC-135 Release 3.4 Fielding																												
SMACC CSAR v1.1 (Rel 3)																												
SMACC CSAR v1.1 (Rel 5)																												
GM 1.4 (KC-46) Release 1 Fielding																												
GM 2.0 Release Fielding																												
MAFPS Release 2 Fielding																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / <i>Mission Planning Systems</i>	Project (Number/Name) 675380 / <i>Mission Planning Systems (MPS) Modernization</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Mission Planning Systems (MPS) Modernization</i>				
F-15 v4.0 Fielding	3	2017	3	2017
F-15 v4.1 Fielding	3	2018	3	2018
F-15 v4.2 Fielding	1	2019	1	2019
F-15 v5.0 Fielding	4	2019	4	2019
F-15 v6.0 Fielding	3	2020	3	2020
F-16 Blk 40/50 M7.1 Fielding	1	2017	2	2017
F-16 Blk 40/50 M7.2 Fielding	3	2019	3	2019
F-22 v13.1 Fielding	4	2018	4	2018
F-22 v14.0 Fielding	1	2020	1	2020
B-1 Release 9 Fielding	2	2018	2	2018
B-1 Release 11 Fielding	3	2020	3	2020
SMACC E-3/ E-8 Release 2.1 Fielding	2	2019	2	2019
SMACC E-3/E8 Release 2.4 Fielding	1	2021	1	2022
SMACC E-3/E8 Release 2.5 Fielding	1	2022	1	2022
SMACC EC-130H Release 2.0	4	2018	4	2018
SMACC EC-130H Release 2.1 Fielding	4	2019	4	2019
SMACC EC-130H Release 2.2 Fielding	4	2020	4	2020
SMACC EC-130H Release 2.3 Fielding	4	2021	4	2021
SMACC EC-130H Release 2.4 Fielding	4	2022	4	2022
SMACC E-3 DRAGON Release 3 Fielding	3	2018	3	2018
SMACC E-3 DRAGON Release 3.1 Fielding	3	2021	3	2021

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force			Date: February 2018	
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0208006F / <i>Mission Planning Systems</i>		Project (Number/Name) 675380 / <i>Mission Planning Systems (MPS) Modernization</i>

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
SMACC E-3 DRAGON Release 3.2 Fielding	1	2022	1	2022
SMACC E-3 DRAGON Release 3.3 Fielding	2	2023	2	2023
SMACC E-3 DRAGON Release 3.4 Fielding	4	2023	4	2023
SMACC RC-135 Release 3.2 Fielding	4	2018	1	2019
SMACC RC-135 Release 3.3 Fielding	4	2019	4	2020
SMACC RC-135 Release 3.4 Fielding	4	2020	4	2021
SMACC CSAR v1.1 (Rel 3)	4	2018	4	2018
SMACC CSAR v1.1 (Rel 5)	2	2019	2	2019
GM 1.4 (KC-46) Release 1 Fielding	4	2019	4	2019
GM 2.0 Release Fielding	3	2020	3	2020
MAFPS Release 2 Fielding	3	2019	3	2019

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force										Date: February 2018		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0208006F / Mission Planning Systems				Project (Number/Name) 675385 / MPS Increment 5			
COST (\$ in Millions)	Prior Years	FY 2017	FY 2018	FY 2019 Base	FY 2019 OCO	FY 2019 Total	FY 2020	FY 2021	FY 2022	FY 2023	Cost To Complete	Total Cost
675385: MPS Increment 5	0.000	4.379	0.818	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.197
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

Note

Prior costs for Inc 5 is \$59.9M and are included in Project 675380 as those programs were under MPS Modernization. Total Cost for Inc 5 in Project 675385 is \$5.197 this does not include TWCF.

A. Mission Description and Budget Item Justification

MPS Inc 5 will complete the initial migration of select Air Force platforms from their legacy planning systems to Joint Mission Planning System (JMPS). It will complete development and begin Operational Testing (OT) of three efforts originally started as separate and individual projects within the MPS Modernization development effort. Those projects are:

- 1) Mobility Air Forces Automated Flight Planning Service (MAFPS);
- 2) Air Mobility Command (AMC) Transition; and
- 3) Special Mission Air Combat Command, Combat Search and Rescue (SMACC CSAR)

These projects, and their associated platforms, comprise the overarching program known as MPS Inc 5.

Specific capabilities include but are not limited to the following:

A. Mobility Air Forces Automated Flight Planning Service (MAFPS): The MAFPS component to MPS Inc 5 provides modern flight planning service compliant with current and emerging airspace and air traffic control constraints. Central to the program is an improved route and fuel optimizer. MAFPS replaces the legacy Advanced Computer Flight Planning (ACFP) system. Warfighter benefits include:

- Flight planning calculations for Tanker Airlift Control Center (TACC)-managed missions and AMC aircraft
- Produce and graphically display optimum mission routes, fuel calculations, and aerial refueling activity
- Calculate optimized fuel loads to include Cost Indexing
- Graphical user interface and capability to dynamically re-compute flight plans

B. AMC Transition: The AMC Transition to MPS component will migrate selected Airlift (C-17, C-5), Tanker (KC-135, KC-10) and Air Drop (C-17, C-130) platforms from their legacy Portable Flight Planning Systems (PFPS) mission planning systems which is sun setting at the end of FY2020. Additional warfighter benefits include:

- Color moving map (Digimap) Common Component
- Enhanced Air Refueling Common Component

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force			Date: February 2018		
Appropriation/Budget Activity 3600 / 7		R-1 Program Element (Number/Name) PE 0208006F / Mission Planning Systems	Project (Number/Name) 675385 / MPS Increment 5		
<div>- Aircraft Flight Performance Module (FPM)/Take-Off and Landing Data (TOLD)/ Vehicle Install Package (VIP) Development</div> <div>- Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) certified navigation avionics images</div> <div>C. Special Missions Air Combat Command (SMACC) Combat Search and Rescue (CSAR): This development effort will migrate the CSAR community (HH-60, HC/MC-130 aircraft) from PFPS to the MPS environment. Warfighter benefits include:</div> <div>- Ability to support a spectrum of missions ranging from simple day-to-day training and proficiency flying to peacetime operational/exercise sorties</div> <div>- Rapid mission planning</div> <div>- Mission data transfer to the aircraft via DTD</div> <div>- In flight situational awareness</div>					
B. Accomplishments/Planned Programs (\$ in Millions)			FY 2017	FY 2018	FY 2019
<div>Title: MPS Increment 5</div> <div>Description: MPS Inc 5 continues and completes the development of: 1) Mobility Air Forces Automated Planning Service (MAFPS) system; 2) AMC Transition; and 3) Special Mission Air Combat Command, Combat Search and Rescue (SMACC CSAR).</div> <div>FY 2018 Plans:</div> <div>MAF Automated Flight Planning Service (MAFPS):</div> <div>- Will complete MAFPS Release 1 operational testing and provide the release recommendation to the in the AMC enclaves.</div> <div>AMC Transition:</div> <div>- Will complete operational testing and field the C-17 Mission Planning Environment (MPE).</div> <div>- Will complete development and Government developmental testing (DT) for the release that transitioning the remaining Air Mobility Command platforms to JMPS, (Global Movility Release 1.3.300; C-130, C-5, KC-10 and KC-135).</div> <div>- Will develop, test, and field C-17 Sustainment Release.</div> <div>SMACC CSAR:</div> <div>- Will complete the development and integration of the CSAR tools (Search Pattern, Fuel Analysis, and Survivor Broadcast) into the CSAR MPE, developmental testing and; conduct operational testing, for the HH-60 and HC/MC-130.</div> <div>FY 2019 Plans:</div> <div>Complete testing and field CSAR and Global Mobility 1.3.300. This effort was originally programmed and planned in FY18 with FY18 funding. Recent slips have shifted approximately \$300k of effort into FY19. This effort will be budgeted as originally planned.</div> <div>FY 2018 to FY 2019 Increase/Decrease Statement:</div>			4.379	0.818	0.000

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2019 Air Force		Date: February 2018	
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / <i>Mission Planning Systems</i>	Project (Number/Name) 675385 / <i>MPS Increment 5</i>	
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2017	FY 2018
There is no funding in FY19 as development is completed as planned in FY18 with FY18 funding.			
Accomplishments/Planned Programs Subtotals		4.379	0.818
C. Other Program Funding Summary (\$ in Millions)			
N/A			
Remarks			
D. Acquisition Strategy			
MPS Inc 5 will reach the Full Deployment Decision (FDD) by the second quarter of FY18 upon successful completion of the C-17 release testing and fielding release recommendation to AMC.			
MPS Inc 5 consists of multiple capability upgrades across multiple platforms that are developed and fielded using a variety of contracting instruments. It leverages strategies and efforts originally established under MPS Increment IV and MPS Modernization. The Air Force Life Cycle Management Center at Hanscom AFB (AFLCMC/HB) competitively awarded multiple ID/IQ (Indefinite Delivery/Indefinite Quantities) contracts for software development. Currently there are 5 qualified contractors, one of which is Small Business set aside, and each Delivery Order (DO) is competed among the 5 contractors.			
Efforts to accomplish program activities such as software development, systems engineering and integration, training, and support are competitively awarded using a variety of contract types (e.g. Cost Plus Award Fee (CPAF), Fixed Price (FP), Fixed Price Incentive Fee (FPIF)).			
Program Management Administration (PMA) contracts are awarded competitively and consist of various types of contracts at various locations.			
MITRE, a Federally Funded Research and Development Center (FFRDC) contractor provides technical support on a no fee for service contract.			
Other efforts are accomplished via Purchase Orders (PO) and Military Interdepartmental Purchase Requests (MIPR).			
For the efforts listed above, the Air Force Life Cycle Management Center at Hanscom AFB (AFLCMC/HB) provides program management, contracting, legal, and financial management support.			
E. Performance Metrics			
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.			

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force												Date: February 2018			
Appropriation/Budget Activity 3600 / 7						R-1 Program Element (Number/Name) PE 0208006F / Mission Planning Systems				Project (Number/Name) 675385 / MPS Increment 5					
Product Development (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Mission Planning Software Development (MPEC II)	C/CPIF	DCS Corporation : Alexandria, VA	0.000	0.965	Nov 2016	0.050	Nov 2017	-		-		-	0.000	1.015	0.388
HH-60/HC-130J/N/P Release 1	PO	Organic : Robins AFB, GA	0.000	0.148	Nov 2016	0.021	Nov 2017	-		-		-	0.000	0.169	0.169
SM-ACC CSAR Tools	MIPR	Various : Various	0.000	0.296	Dec 2016	-		-		-		-	0.000	0.296	0.296
Systems Engineering and Integration	C/CPAF	Leidos, Inc. : Reston, VA	0.000	0.931	Jan 2017	0.271	Jan 2018	-		-		-	0.000	1.202	1.202
Air Refueling Tool	C/FFP	Navy Mission Planning Systems : Point Mugu, CA	0.000	0.359	Feb 2017	-		-		-		-	0.000	0.359	0.359
Subtotal			0.000	2.699		0.342		-		-		-	0.000	3.041	N/A
Support (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Cost Estimating	C/T&M	Tecolote Inc. : Goleta, CA	0.000	0.028	Nov 2016	-		-		-		-	0.000	0.028	0.028
Subtotal			0.000	0.028		-		-		-		-	0.000	0.028	N/A
Test and Evaluation (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Responsible Test Organization (RTO)	PO	46TS : Eglin AFB, FL	0.000	0.301	Dec 2016	0.104	Dec 2017	-		-		-	0.000	0.405	0.405
Type I Training	C/FP	Spiral solutions & Technologies, Inc. : Bellevue, NE	0.000	0.266	Jan 2017	0.104	Jan 2018	-		-		-	0.000	0.370	0.370
Subtotal			0.000	0.567		0.208		-		-		-	0.000	0.775	N/A

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2019 Air Force												Date: February 2018			
Appropriation/Budget Activity						R-1 Program Element (Number/Name)				Project (Number/Name)					
3600 / 7						PE 0208006F / Mission Planning Systems				675385 / MPS Increment 5					
Management Services (\$ in Millions)				FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Engineering and Technical Support	RO	MITRE Corp. : Bedford, MA	0.000	0.796	Nov 2016	0.170	Nov 2017	-		-		-	0.000	0.966	0.966
Program Management Administration	C/CPFF	Odyssey Systems Consulting Group, LTD. : Wakefield, MA	0.000	0.289	Nov 2016	0.098	Nov 2017	-		-		-	0.000	0.387	0.387
Subtotal			0.000	1.085		0.268		-		-		-	0.000	1.353	N/A
			Prior Years	FY 2017		FY 2018		FY 2019 Base		FY 2019 OCO		FY 2019 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	4.379		0.818		-		-		-	0.000	5.197	N/A
Remarks															
Prior costs for Inc 5 is \$59.9M and are included in Project 675380 as those programs were under MPS Modernization. As well as cost to complete for Inc 5 of \$5.168 are in Project 675380. Total Cost for Inc 5 in Project 675385 is \$5.197 this does not include TWCF (Transportation Capital Working Fund).															

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: PB 2019 Air Force	Date: February 2018
---	----------------------------

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / <i>Mission Planning Systems</i>	Project (Number/Name) 675385 / <i>MPS Increment 5</i>
--	---	---

	FY 2017				FY 2018				FY 2019				FY 2020				FY 2021				FY 2022				FY 2023			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<i>MPS Increment 5</i>																												
MAFPS Release 1 Fielding																												
AMC Transition C-17 Release 1 Fielding																												
AMC Transition (GM 1.3.300)																												
CSAR Rel 1.0																												

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2019 Air Force			Date: February 2018
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0208006F / <i>Mission Planning Systems</i>	Project (Number/Name) 675385 / <i>MPS Increment 5</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>MPS Increment 5</i>				
MAFPS Release 1 Fielding	1	2018	3	2018
AMC Transition C-17 Release 1 Fielding	1	2018	2	2018
AMC Transition (GM 1.3.300)	3	2019	4	2019
CSAR Rel 1.0	1	2018	1	2018

Note

Complete testing and field CSAR and Global Mobility 1.3.300. This effort was originally programmed and planned in FY18 with FY18 funding. Recent slips have shifted approximately \$300k of effort into FY19. This effort will be budgeted as originally planned.