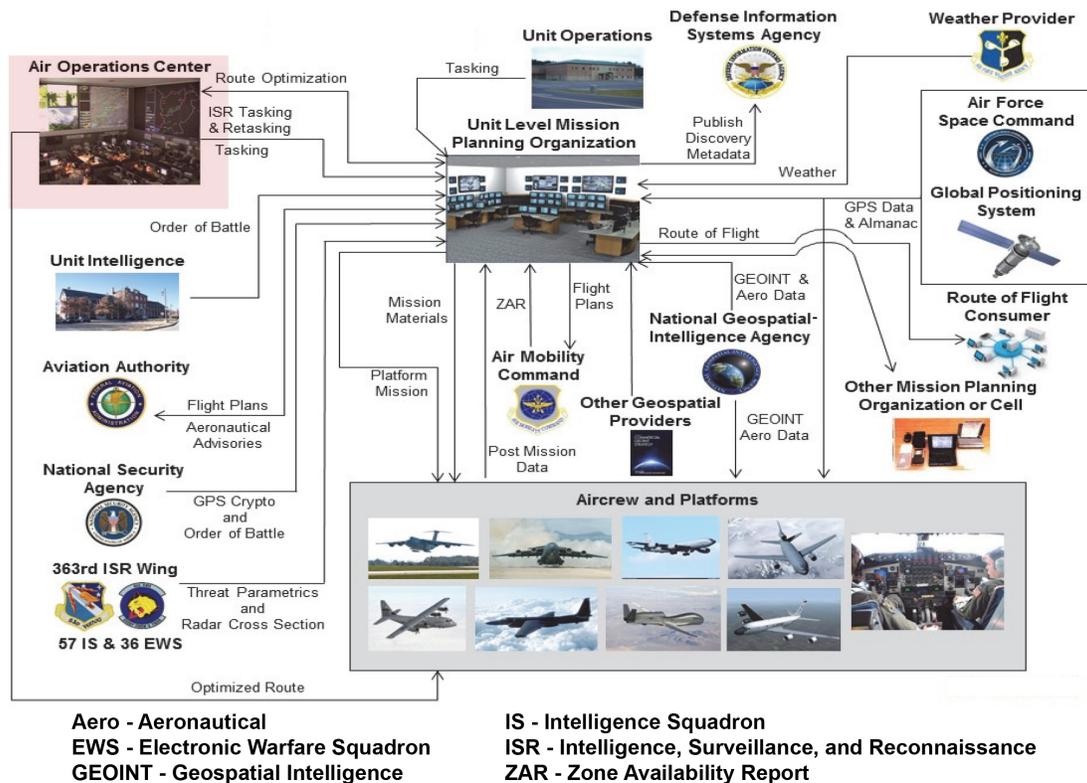


## Mission Planning Systems (MPS) / Joint Mission Planning System – Air Force (JMPS-AF)



### Executive Summary

- The Air Force completed developmental testing of the Air Force Mission Planning System Increment 5 (MPS Inc 5) C-17 and Mobility Air Force Automated Flight Planning Service (MAFPS) modules and certified these ready for IOT&E in FY17.
- The Air Force Operational Test and Evaluation Center (AFOTEC) conducted the C-17 Joint Mission Planning System (JMPS) IOT&E in 4QFY17. DOT&E issued an operational test report in December 2017 in support of the Air Force full deployment decision.
- AFOTEC began MAFPS IOT&E in August 2017 and plans to complete this testing in November 2017. Upon completion DOT&E will issue an operational test report on the effectiveness and suitability of MAFPS.
- The classified MAFPS functions were ready for test during the IOT&E period. However, its enclave-dependent environment and the interfaces required to implement the SECRET Internet Protocol Router (SIPR) concept of operations were not ready. Therefore, additional post-IOT&E operational test and evaluation will be required to assess MAFPS classified capabilities.

### System

- The Air Force MPS Inc 5 is a software-only acquisition category III program consisting of common mission planning software modules for unit-level aircraft platform mission planning and centralized Mobility Air Forces Air Operations Center global mobility planning and dispatching.
- MPS Inc 5 migrates Air Force airlift (C-5), tanker (KC-135, KC-10), airdrop (C-17, C-130), and combat search and rescue (HH-60 and HC/MC-130) legacy mission planning platforms to the JMPS.
  - JMPS is a standard desktop configuration solution for Air Force aircraft mission planning consisting of a package of common and platform-unique mission planning applications.
  - Aircraft platform-specific Mission Planning Environments (MPEs) are sets of developed applications built from a Framework, common components, and unique planning components.
  - The Framework is the basis of the MPE. Software developers add common components (e.g., weather, electronic warfare planner, etc.) and federated applications that support multiple users to the framework. Developers

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- then add a unique planning component for the specific aircraft type (e.g., C-17) to complete the MPE.
- An MPE can operate as an unclassified system or a classified system.
- MPS Inc 5 MAFPS replaces the legacy Air Force Air Mobility Command (AMC) 618th Air Operations Center (AOC)-Tanker Airlift Control Center Advanced Computer Flight Plan (ACFP) mission planning system.
  - MAFPS software supports AOC-level mission planning for Mobility Air Forces global strategic airlift, aerial refueling, and tactical airlift missions.
  - The MAFPS command and control enclave consists of a server suite; AOC, global flight planning, and administration clients; and mobility enterprise information services providing connections to external sources of information required to plan global air mobility missions.
  - MAFPS is a data-driven mission planning system that integrates aircraft performance data, weather, airspace restrictions, Digital Aeronautical Flight Information File data, global routing considerations, and international boundaries enabling global air mobility planning.

- MAFPS is designed to automate global mobility planning processes and data integration not available with the legacy ACFP mission planning system. MAFPS is further designed to provide a means for mission planners to optimize route planning with respect to flight mission time and fuel considerations.

## Mission

- AMC MAFPS force-level global mobility planning occurs worldwide at AOCs. For example, U.S. Transportation Command planners use MAFPS in the AOC environment then pass products to units for execution.
- At the aircraft unit level, individual aircrews or mission planning cells use MPS Inc 5 JMPS to plan flight missions across the full spectrum of air missions ranging from peacetime training missions to complex combat missions.

## Major Contractors

- DCS Corporation – Alexandria, Virginia
- BAE Systems – San Diego, California
- TYBRIN Corporation – Fort Walton Beach, Florida

## Activity

- AFOTEC conducted MPS Inc 5 testing in accordance with the DOT&E-approved TEMP and the DOT&E-approved C-17 JMPS and MAFPS IOT&E plans.
- The Air Force completed MPS Inc 5 C-17 and MAFPS developmental testing in FY17 and certified the systems ready for IOT&E.
- AFOTEC conducted the C-17 MPS Inc 5 JMPS IOT&E from July through September 2017.
  - The planned cybersecurity Cooperative Vulnerability and Penetration Assessment (CVPA) did not occur due to availability of the supporting test organization. Results of previous developmental test and evaluation cybersecurity cooperative vulnerability assessments informed the cybersecurity Adversarial Assessment in place of the planned IOT&E CVPA.
  - AFOTEC was not able to load and manipulate mission planning products in the C-17 simulator at Charleston AFB, South Carolina, pending completion of a Cyber Impact Evaluation by the C-17 Program Office.
  - IOT&E test data analysis was ongoing at the end of FY17.
- AFOTEC began MAFPS IOT&E in August 2017, and plans to complete testing in November 2017.
  - The classified MAFPS functions were ready for test during the IOT&E period. However, its enclave-dependent environment and the interfaces required to implement the

SIPR concept of operations were not ready. Post-IOT&E, formal FOT&E will be required to evaluate these capabilities.

## Assessment

- As of the end of FY17, DOT&E analysis of MPS Inc 5 IOT&E data and results was ongoing. DOT&E issued its operational test report in December 2017 to support the Air Force planned full deployment decision.
- Depending on results of the MPS Inc 5 C-17 JMPS IOT&E cybersecurity Adversarial Assessment, a post-IOT&E operational CVPA may be required to identify shortfalls not found during developmental testing assessments.
- MAFPS classified capabilities will require formal FOT&E once these systems are ready for operation.

## Recommendations

- Status of Previous Recommendations. There are no previous recommendations.
- FY17 Recommendation.
  1. The Air Force should plan on conducting formal FOT&E of MAFPS classified capabilities as soon as system readiness allows in FY18.