

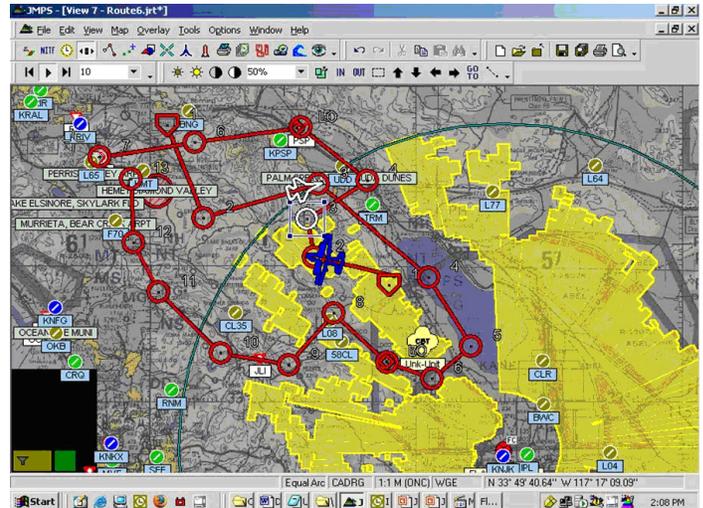
Joint Mission Planning System – Maritime (JMPS-M)

Executive Summary

- The Navy and Marine Corps Joint Mission Planning System - Maritime (JMPS-M) for host platforms has demonstrated improved results during developmental and operational tests.
- PMA-281 Mission Planning Systems, the Navy JMPS-M Program Manager, is modifying Framework 1.2 to integrate new mission planning features and federated applications, and is planning to re-host MPEs to the new Joint Framework 1.4.
- PMA-281 is developing JMPS-Expeditionary (JMPS-E) as a Force-Level Planning tool to support amphibious operations.

System

- JMPS-M is a Windows XP, PC-based common solution for aircraft mission planning. It is a system of common and host platform unique mission planning applications for Navy and Marine Corps host platforms. The operating system is modified with the Defense Information Infrastructure – Common Operating Environment (DII-COE) core.
- A Mission Planning Environment (MPE) is a total set of developed applications built from modules. The basis of an MPE is the Framework, to which a Unique Planning Component (UPC) is added for the specific aircraft type (e.g., F-18 or EA-6B). Other common components that can support multiple users are added as well (e.g., GPS-guided weapons, navigation planner, etc.) to complete the MPE. Additional UPCs (Joint Direct Attack Munition) required for planning are included in aircraft specific MPEs to support specific mission requirements.
- Each JMPS-M MPE consists of a mixture of stand-alone, locally networked, and domain controlled Windows XP computers
- Although the JMPS-M software is being co-developed among DoD components, JMPS-M is not a joint program.



Mission

- Aircrews use JMPS-M MPEs to plan all phases of their missions and then save required aircraft, navigation, threat, and weapons data on a data transfer device so they can load it into their aircraft before flight. They also use JMPS-M to support post-flight mission analysis.
- Amphibious planners will use the Joint Mission Planning System-Expeditionary (JMPS-E) to plan the movement of personnel, equipment, and logistics support between the amphibious fleet and the shore.
- As Framework 1.4 is implemented, JMPS-M users will eventually be able to collaborate on mission planning, even when operating from different bases.

Prime Contractor

- Framework: BAE Systems

Activity

- DOT&E hosted a JMPS-E test strategy planning meeting with Navy and Marine Corps user requirements, program management, and operational test representatives.
- Commander, Operational Test and Evaluation Force (COTF) continued to execute the MV-22 MPE test in conjunction with the platform operational test that began in late FY07. COTF conducted the test onboard an amphibious ship while en route to the Operation Iraqi Freedom theater of operations and while deployed to the theater.
- Detachment 5, Air Force Operational Test and Evaluation Center (AFOTEC) conducted a CV-22 platform test that also

- included the test of the supporting JMPS-M MPE version 1.0.5 at Hurlburt Field AFB, Florida, and Nellis AFB, Nevada.
- PMA-281 Mission Planning Systems conducted a developmental test of the C-130T MPE version 1.0. DOT&E monitored test execution at Naval Air Station (NAS) Point Mugu, California, in order to collect data to identify risks to a successful operational test outcome and fleet release.
- PMA-281 Mission Planning Systems conducted a developmental test of the EA-18G MPE version 2.2.
- PMA-281 Mission Planning Systems conducted a developmental test of the E-2C MPE version 3.0.

- PMA-281 Mission Planning Systems conducted a developmental test of the AV-8B MPE version 2.1, and Air Test and Evaluation Squadron NINE collected MPE data during a separate AV-8B Operational Test. Testing took place at NAS China Lake, California, and Marine Corps Air Station Yuma, Arizona.
- PMA-281 Mission Planning Systems experienced funding shortfalls in the development of several Operational Requirements Document (ORD)-mandated JMPS-M common components, including Anti-Submarine Warfare (ASW), Collaboration, and Mission Rehearsal.
- All operational testing was conducted in accordance with a DOT&E-approved Test and Evaluation Master Plan (TEMP) and test plan.

Assessment

- The Services have not clarified all of the applicable JMPS-M ORD requirements for JMPS-E. An approved set of requirements is needed to develop the test strategy and the JMPS-E TEMP.
- COTF has completed their test report for the MV-22 MPE and evaluated the MPE version 1.0 as operationally effective and suitable. Critical deficiencies in training, aircrew documentation, and information assurance were documented.
- AFOTEC has not completed their test report for the CV-22 platform, including the MPE. DOT&E analysis of emerging MPE test data shows improved software stability; however, mission planning computer crashes still occur. The flight performance model is also immature requiring aircrew to manually calculate fuel burn.
- C-130T MPE developmental testing results showed the MPE was stable, but numerous deficiencies indicate it is not ready for OT&E. PMA-281 decided to delay operational testing until these deficiencies are corrected. Early tests indicate incompatibility with Optimum Path Aircraft Routing System due to the system's inability to easily import pre-planned flight routes. The MPE does not support direct data transfer to K/C-130J host computer load media and does not contain the airdrop mission planning application essential for the Marine Corps C-130T and K/C-130J fleet. This developmental test did not include loading the completed mission plans into the C-130T aircraft in order to verify accurate data transfer.
- Results from the EA-18G MPE developmental test indicate it provides EA-18G aircrew with new features and tools useful for electronic warfare mission planning, but it is unstable and results in frequent computer crashes. Aircrews require improved in-depth training to effectively use the many features of this complex MPE.

- Results from the E-2C MPE test indicate the MPE was acceptable to over half of the participating aircrew; however, they identified deficiencies with training, checklists, cluttered displays, controls, and order of battle files. There was no test loading the completed mission plans into the E-2C to verify accurate data transfer. This aircraft data transfer test will be conducted by PMA-281 when a suitable aircraft is available.
- COTF has not yet completed testing of the AV-8B MPE. Emerging results from the tests of the MPE indicate that the MPE was more stable than legacy mission planning systems and transfer of mission planning data to the AV-8B host computer was complete and accurate.
- PMA-281 funding volatility has negatively impacted development of several ORD-mandated common components, including ASW, Collaboration, and Mission Rehearsal. This funding volatility caused JMPS-M program instability, which resulted in delays in the operational testing and fielding of MPEs. A contributing factor is the organizational complexity of having two resource sponsors. JMPS-M is sponsored by the Office of the Chief of Naval Operations for Communications Networks, Warfare Integration (OPNAV N6F) within the Naval NETWAR FORCENet Enterprise (NNFE). However, all JMPS-M MPEs are used in Navy and Marine Corp aircraft within the Naval Aviation Enterprise (NAE) and sponsored by Office of the Chief of Naval Operations, Air Warfare Division, Integration of Capabilities and Resources (OPNAV N88).

Recommendations

- Status of Previous Recommendations. This is the first annual report for the JMPS-M program.
- FY08 Recommendations.
 1. The Navy should identify the unique requirements for the JMPS-Expeditionary Force Planner and document the test strategy in a TEMP.
 2. The Navy should develop and test updated software to resolve MV-22 MPE information assurance deficiencies and provide improved training and documentation to the users.
 3. The Navy should ensure that developmental test of MPEs include a test of the transfer of mission planning data to host platform computers.
 4. The developer must improve JMPS-M MPE software stability to reduce the incidence of mission planning computer crashes.
 5. The Navy should fully fund development of JMPS-M common components, including ASW, Collaboration, and Mission Rehearsal.