

Joint Mission Planning Systems (JMPS)

Executive Summary

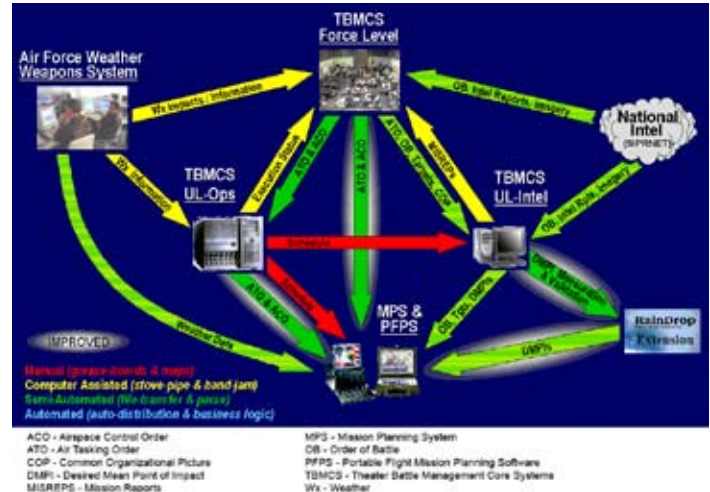
- Initial Joint Mission Planning System (JMPS) Mission Planning Environments (MPEs) have shown mixed results in OT&E.
- Service JMPS developers must give more attention to fixing critical deficiencies and improving system stability prior to submitting MPEs for OT&E.

System

- JMPS is a Windows 2000, PC-based common solution for aircraft mission planning for all the Services.
- The JMPS system is built in modules, starting with a Unique Planning Component (UPC) for a specific aircraft type (e.g., F-15E or F/A-18) and adding additional common components (e.g., Global Position System-guided weapon, navigation planner, etc.) that together form the MPE.
- The system operates as either a stand-alone PC or laptop, or as a secure, networked system supported by servers.
- The Navy and Air Force are initial users of MPEs built on JMPS framework versions 1.1 and 1.2.

Mission

- Aircrews use JMPS 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.

- All JMPS users will eventually be able to collaborate on mission planning, even when operating from different bases.
- The Army and U.S. Special Operations Command eventually plan to transition to JMPS.

Activity

Air Force

- F-15:
 - The Air Force Operational Test and Evaluation Center (AFOTEC) operationally tested the F-15 MPE Version 1.1 during the first quarter of FY06. The MPE failed most of the critical operational issues. AFOTEC, however, did not assess effectiveness and suitability as specified in the approved test plan. Despite the results, the Air Force fielded the F-15 MPE citing urgent operational need to deploy Small Diameter Bomb, which is supported by the MPE.
 - The Air Force is going to produce a Version 1.2 to address the significant shortfalls from Version 1.1. This version will receive the same scope of testing as Version 1.1. DOT&E will hold the submission of a Beyond Low-Rate Initial Production report until the completion of the MPE Version 1.2 operational test, which is planned for November 2006.
- B-1B: The mission planning suite that supports the B-1B aircraft weapons system software upgrade SB-10 uses the In-Flight Re-planning portion of JMPS. The 28th Test Squadron operationally tested this mission planning suite

in October 2005. Air Combat Command issued a test report in December 2005, stating that the overall planning suite's performance was satisfactory, however of four major discrepancies, three were due to JMPS. The next B-1B weapons system software upgrade (SB-11) will be entirely dependent on the JMPS B-1B MPE and will enter IOT&E in third quarter of FY07. While other users frequently comment that JMPS lacks desired functionality and ease of use, the B-1B MPE benefits from periodic "early look" developmental test events for operational users.

Navy

- F/A-18: Commander, Operational Test and Evaluation Force (COMOPTEVFOR) conducted IOT&E on F/A-18 MPE Version 1.2 from March 2005 through January 2006. The IOT&E report in August 2006 found the MPE operationally effective and suitable.
- AV-8B: COMOPTEVFOR conducted IOT&E on AV-8B MPE Version 1.1 from July 2005 - February 2006. The IOT&E report in July 2006 found the MPE operationally effective and suitable, despite the fact that one of the Key Performance Parameters (Mission Planning Time) was not satisfied.

AIR FORCE PROGRAMS

- EA-6B: COMOPTEVFOR assessed the EA-6B MPE as part of follow-on test and evaluation of the Improved Capabilities (ICAP) III Block 2 weapon system. This assessment did not follow the DOT&E-approved test plan for JMPS. The Navy subsequently deployed JMPS to support ICAP III Block 2. Operational testing, in accordance with the DOT&E-approved Test and Evaluation Master Plan and test plan, will take place between September 2006 and January 2007 using ICAP II Block 3.

Army

- The Army is developing its Test and Evaluation Master Plan and test plan to support a third quarter FY07 operational test of the UH-60M helicopter.

Assessment

- Operational testing of the F-15 MPE revealed problems with route creation and manipulation, weapons planning, mission rehearsal, system stability, interoperability, and security. Lack of software system stability was the key to the majority of the system failures. Because this is an incremental acquisition program, instability in one increment flows into the next. Recent developmental test user evaluations have shown improved system performance, but stability is still a concern.
- The F/A-18 MPE met all operational requirements. However, an extended operational test period beyond the approved test plan, along with continued development to the software, was needed to reach that conclusion.
- The AV-8B MPE did not satisfy critical operational issues requirements for mission planning, reliability, and training. However, it was more effective than the legacy AV-8B mission planning system, and aircrews could plan missions in accordance with the AV-8B's concept of operations.
- The EA-6B MPE has not yet been tested according to the DOT&E-approved JMPS test plan. Additional testing is required to make a determination whether the current fielded MPE meets JMPS performance requirements.

Recommendations

- Status of Previous Recommendations. The following FY05 recommendations remain valid:
 - FY05 #1: DOT&E recommended that Operational Test Agencies should not accept JMPS MPEs for operational test prior to confirmation in development testing that the development program has been adequate and complete, and that critical deficiencies have been eliminated. Due to pressures on Service program managers to deliver aircraft MPEs aligned with the supported platform operational flight program, the recommendation remains valid.
 - FY05 #2: DOT&E recommended that JMPS developers need to pay more attention to installation and operating instructions, training, system administration, and security settings. The four Services have made progress on this recommendation but it is not solved and this recommendation remains valid.
 - FY05 #3: The Services should conduct risk assessments for follow-on JMPS MPEs to help define the amount of operational testing necessary to mitigate these risks. This recommendation remains valid.
- FY06 Recommendations.
 1. The Air Force should strengthen the responsibility and accountability for system engineering and integration in all stages of MPE development.
 2. The Air Force should address system stability concerns.
 3. The Air Force should improve training, which is updated to reflect the current platform concept of operations.
 4. The Air Force should involve operational users very early in the development process.
 5. The Navy should ensure that the EA-6B MPE is fully tested for both the ICAP II Block 3 and the ICAP III Block 2 variants.