

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

- There are two different JMPS programs. Air Force JMPS (also referred to as AF MPS) is an Acquisition Category level 1 (ACAT I) program managed by the Electronic Systems Command at Hanscom AFB, Massachusetts. Navy JMPS-M (Maritime) is an ACAT IV program managed by individual platform program offices.
- JMPS is a Windows 2000 and Windows XP, PC-based common solution for aircraft mission planning for all the Services.
- A JMPS MPE is a total set of developed applications built from modules. The basis of a JMPS MPE is the framework, to which a Unique Planning Component is added for the specific aircraft type (e.g., F-15E or F/A-18). Other Common Components that can support multiple users are added as well (e.g., Global Position System-guided weapons, navigation planner, etc.) to complete 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, 1.2, and 1.3.



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

- The Air Force Operational Test and Evaluation Center (AFOTEC) conducted an operational test of the F-15 MPE version 1.2 during FY07. The test was conducted in accordance with the DOT&E-approved Test and Evaluation Master Plan (TEMP) and Test Plan. DOT&E monitored its execution.
- The Electronic Systems Center Program Manager for AF MPS conducted user tests of the B-1B bomber MPE during FY07. DOT&E monitored the conduct of this pre-Developmental Test event.

Navy

- The Commander, Operational Test and Evaluation Force (COMOPTEVFOR) conducted two operational tests of the Joint Mission Planning System-Maritime MV-22 MPE during FY07 and early FY08. DOT&E monitored the first test. The second operational test on MV-22 MPS was conducted

by the deployed Marine MV-22 Squadron while on a Navy amphibious ship enroute to support combat operations in Southwest Asia. DOT&E did not monitor the second test.

Assessment

- DOT&E published a Beyond Low-Rate Initial Production Report supporting the fielding decision for the Air Force F-15 Version 1.2 MPE. The test was adequate to demonstrate that the F-15 MPE was operationally effective but not operationally suitable. Aircrews could use the Mission Planning System to plan missions although there were some human factors and data fidelity issues with some of the F-15 MPE software modules. It was not operationally suitable based in large part on system instability, reliability, maintenance, system administration training, and logistics supportability. A comprehensive evaluation of Information Assurance vulnerabilities indicated additional development

is needed to support direct interface with classified communications networks.

- DOT&E's observations of the B-1B bomber MPE user tests (conducted during developmental testing) indicated the aircrews were generally receptive of the implementation although some of the air-to-ground weapons software modules require additional development before Operational Test. The system also experienced instability with six failures recorded during 36 hours of operation. The segment of the test where the planned mission information is inserted into the B-1B bomber's host computer was not observed.
- The Navy proceeded with the JMPS-M MV-22 MPE operational test in accordance with an approved TEMP but without a DOT&E-approved Test Plan. The test concept appeared adequate, but the plan was not submitted until after the operational testing completed. The emerging results indicate the system was stable and supported required aircrew mission planning needs during the first operational test conducted at Yuma Proving Ground, Arizona. A second operational test was prompted by a change in host aircraft avionics software requiring changes to the mission planning software. This test is being conducted with operational MV-22 aircraft onboard an amphibious ship enroute to Southwest Asia and is still ongoing. No meaningful test data has been received by DOT&E for independent analysis.

Recommendations

- Status of Previous Recommendations. All previous recommendations have been addressed.

• FY07 Recommendations.

1. The Air Force, Navy, and Army Mission Planning System Program Managers and operational test agencies should establish a forum to collaborate on opportunities for shared or joint testing of their products to reduce test cost and schedule as well as exchange lessons learned.
2. The Navy should apply additional test planning and management resources to manage and conduct the numerous JMPS-M host platform MPE tests planned for FY08. These additional personnel should be sufficient to prepare and update required TEMP annexes and operational test plans in a timely manner for DOT&E review and approval.
3. All Services should review the results of the Information Assurance vulnerability evaluation from the F-15 Version 1.2 MPE testing and implement designs and procedures to allow direct connection of JMPS to classified communications networks, to speed access to intelligence and other data needed to plan missions, and reduce the proliferation of copies of classified data media.
4. Future MPE operational testing should focus on the following areas:
 - Continuous evaluation of system stability during more complex operational scenarios
 - Larger sample size of participating aircrew
 - Live flight of the planned missions in the host aircraft to verify the fidelity of the transferred mission planning data