

Multi-Sensor Command and Control Aircraft (MC2A) Multi-Platform Radar Technology Insertion Program (MP-RTIP), Multi-Platform Common Data Link (MP-CDL)

The Multi-sensor Command and Control Aircraft (MC2A) is intended to meet the Air Force's need to integrate Command and Control, Intelligence, Surveillance, and Reconnaissance (ISR), and Information Warfare functions on a single platform – the Boeing 767-400ER. Integration of these functions is to improve the effectiveness of military operations through information superiority by supporting rapid decision analysis, increased battlespace awareness, and shortened decision cycles. The Spiral 1 MC2A capability will include the Multi-Platform Radar Technology Insertion Program (MP-RTIP) sensor and Battle Management Command, Control, Communications, Computer and Intelligence (BMC⁴I) suite enabled by an open-system architecture. The sensor will support a Ground Moving Target Indicator capability and cruise missile defense support. The MP-CDL will provide the data link to other airborne and ground platforms prosecuting the ground war. Other capabilities may include interfaces to Space-Based Radar, reception of data from, and control of Unmanned Aerial Vehicles (UAV), and combat operations functions. Spiral 1 will include both hardware and software growth provisions to permit incorporation of additional sensor configurations, as well as other BMC4I functionality for future Spirals.

The MC2A evolved from the Block 40 upgrade to the Joint Surveillance Target Attack Radar System (JSTARS) E-8C (a B-707), designated the Radar Technology Insertion Program (RTIP). Soon after, RTIP was restructured as MP-RTIP and the program office was directed to develop a scalable sensor for multiple platforms. An Analysis of Alternatives was conducted to determine whether to install the sensor on a B-707 or on a newer aircraft. Using this analysis, the Air Force decided a B-767-400ER best suited their needs for capability and growth. After the aircraft was chosen, the Air Force further decided to evolve the MP-RTIP into Spiral 1 of the MC2A.

The MP-RTIP program is still charged with developing a scalable sensor. The largest sensor being developed is for MC2A. A smaller sensor is also being developed for the Global Hawk UAV. Additionally, there are provisions to develop a sensor for the NATO Advanced Ground Surveillance Program.

The Multi-Platform Common Data Link (MP-CDL) was initially planned to replace the JSTARS Surveillance and Control Data Link, which transmitted data to/from the E-8C and its ground station, the Common Ground Station. The Air Force attempted to restructure the MP-CDL program into the backbone for a Network Centric Warfare capability to support Network Centric Collaborative Targeting (NCCT). Because of difficulties determining the requirements, the Air Force has restructured the program as a technology development and experimentation program. The MP-CDL program will produce a few systems with which to explore concepts and capabilities. If those capabilities meet an operational need, the Air Force may decide to produce them for employment on combat systems.

TEST & EVALUATION ACTIVITIES

- The MP-RTIP program participated in three operator in the loop (OITL) modeling and simulation events during 2002.



The Spiral 1 Multi-Sensor Command and Control Aircraft capability will include the Multi-Platform Radar Technology Insertion Program sensor and Battle Management Command, Control, Communications, Computer and Intelligence suite enabled by an open-system architecture with the MP-CDL as the datalink.

AIR FORCE PROGRAMS

- The MC2A program is modifying the test strategy developed by the MP-RTIP program to support the broader mission and requirements of MC2A Spiral 1.
- Because of problems determining its requirements, the MP-CDL program is restructuring the program as a technology development and experimentation program.

TEST & EVALUATION ASSESSMENT

MP-RTIP participation in OITL events has been used to explore how MP-RTIP can contribute to the conduct of the air war. Information gained from the OITL events will help scope the MC2A Spiral 2 and to ensure that Spiral 1 provides adequate provisions for follow-on spirals.

Testing MC2A Spiral 1 will present significant challenges that must be addressed early. The MC2A will provide simultaneous air, ground, and sea C2ISR support and targeting information to all the services. It will require a high degree of joint interoperability for both ground combat and air defense. Demonstrating the ability to support the joint prosecution of the air and ground wars simultaneously will require carefully planned field tests augmented by modeling and simulation, and will demand an unprecedented level of joint cooperation.

The MP-CDL is being designed to connect many joint C4ISR platforms. Therefore, coordination with each of these platforms will be crucial during development. Thus far, the MP-CDL program has not produced an Operational Requirements Document, in part because of current CDL user's concerns that the MP-CDL's broadcast mode has potential to cause significant electromagnetic interference. The current acquisition strategy was conceived as a means to continue test and experimentation to support the MP-RTIP data link and NCCT requirements, while allowing the CDL community time to resolve the potential problems. However, the Air Force has indicated a need to field MP-CDL terminals produced under this strategy if MP-CDL meets the Air Force's requirements. Therefore, continued oversight of MP-CDL by the multi-service CDL community and DOT&E will be required to ensure that the system meets joint requirements.

Finally, the risk associated with the interdependency of these two Acquisition Category 1D programs (MC2A and MP-RTIP) must not be underestimated. MC2A Spiral 1 is dependent on MP-RTIP to deliver its primary sensor. MP-RTIP is dependent on MC2A to provide a test platform for the sensor. Planned delivery of the two will have to be closely coordinated to ensure neither has to wait for the delivery of the other. Due to the scope and the long lead-times required for both programs, neither will be able to tolerate delays of this type without experiencing significantly increased costs.