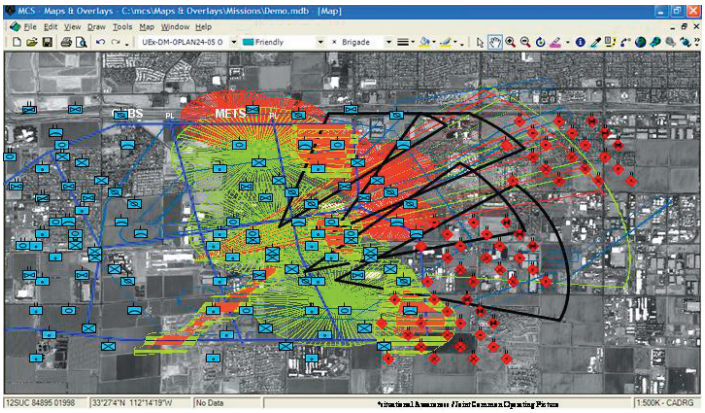
Maneuver Control System (MCS) Army Tactical Command and Control System (MCS (ATCCS))

Executive Summary

- The IOT&E was completed in April 2005. DOT&E delivered the assessment to the Milestone Decision Authority in July 2005.
- The Maneuver Control System (MCS) is operationally effective, suitable, and survivable with limitations in all areas.
- MCS supported the battle staff in managing the available information to create the common operational picture to support planning, monitoring, and execution of combat operations.
- The program office is correcting limitations identified in interoperability, software, and information assurance to support deployment of forces to Operation Iraqi Freedom.
- The Army is working longer-term solutions to correct limitations caused by inadequate networking products and collective staff training.
- MCS is now a Major Automated Information System Acquisition Category 1AC program. MCS, along with the Marine Corps Command and Control Personal Computer and the Defense Advanced Research Projects Agency Command Post of the Future, will be integrated into the Joint Tactical Common Operating Picture Workstation.

System

- The MCS is a battle command information system for commanders and their staff from battalion through unit of employment (corps/division).
- MCS is a networked set of laptop computers, software, and servers located within tactical operations centers and selected battle command platforms.
- Local area networks link MCS computers and servers within a tactical operations center while tactical communications networks link them between dispersed tactical operations centers.
- Software consists of commercial, common DoD, and MCS unique applications.
- Key functions include development and sharing of the common operational picture, operations plans and orders, unit task organization information, and various reports.



- It uses publish and subscribe services and a query function to share data with, and obtain data from, other Army battle command systems.

Mission

- Commanders equipped with MCS are able to command and control their forces by seeing and understanding the battlespace faster and with greater clarity than the enemy.
- It supports planning, monitoring, and execution of combat operations.
- It creates and displays the common operational picture, which includes the location of friendly and enemy forces, as well as boundary lines and other force control measures found in the combined arms overlay.
- It creates and exchanges plans and orders.
- MCS manages and integrates information from subordinate maneuver elements with that from higher headquarters; and information from the Army battle command systems for fire support, intelligence and electronic warfare, combat service support, and air defense.

Activity

- Developmental activities included integration, Intra-Army Interoperability Certification, and the MCS System Stress Test. No formal independent developmental testing was completed.
- IOT&E began in March 2005 and concluded in April 2005, and was conducted in accordance with the DOT&E-approved Test and Evaluation Master Plan (TEMP) and test plan. The test centered around a 4th Infantry Division command post

exercise as part of the Joint Red Flag/Roving Sands 2005 exercise. Command posts from battalion through Unit of Employment (division) participated. Missions executed include high intensity offensive and defensive operations, and low intensity operations including counter insurgency, and security and stability operations. Test events included information assurance testing and displacement of the division tactical command post.

- Follow-on testing occurred in August and September 2005 in conjunction with other 4th Infantry Division training events at both Fort Hood, Texas, and the National Training Center in California.
- In July 2005, MCS was designated an Acquisition Category 1AC program. MCS is responsible for transitioning MCS and the Marine Corps Command and Control Personal Computer into the Joint Tactical Common Operating Picture Workstation, and integrating the Command Post of the Future visualization technologies.

Assessment

Operational testing was adequate, but we recommended additional testing to confirm fixes for shortfalls in interoperability and information assurance. Testing in August 2005 successfully demonstrated the information assurance fixes and the unit was more alert to electronic attacks. Loading Information Assurance Vulnerability Alert patches onto each MCS computer remains a challenge as these software patches are frequent and there is no automated means to download patches onto each computer from a central location/server.

The MCS is operationally effective, suitable, and survivable with limitations. The system was able to perform its critical missions to include:

- Support to the battle staff in managing the available information that creates the Common Operational Picture including friendly situation, enemy situation, and the combined arms overlay to support planning, monitoring, and execution of combat operations
- Creation and dissemination of operations orders and plans primarily using the unit's internal Microsoft Exchange server and tactical web servers

For the first time, the MCS system gathered and disseminated information horizontally and vertically across the Army Battle Command Systems. However, important problems remain for the Army to correct:

- Network management and information distribution tools require improvement. Establishing the networks and information flows presented significant challenges that affected exchange of information and thus the ability of the MCS to provide an accurate and consistent picture, interoperability, and unit task reorganizations.
- Increased processing power of the MCS laptops is needed to support users desire to display multiple overlays simultaneously.
- A training program is needed to better prepare a unit to employ the MCS as a coherent command and control system within the Army Battle Command Systems. Record test was suspended after three days to allow additional training on system operations, staff functions, and collective tasks.
- System-of-systems issues affecting MCS performance must be addressed by the Army if MCS is going to reach its full capability. These include developing a flexible networking schema and products that limited flexibility and interoperability during the test, and sufficient collective training that integrates the Army Battle Command Systems into a coherent command and control system.

Recommendations

1. Demonstrate, in an operational venue, that all high priority software problems are corrected.
2. Obtain Intra-Army Interoperability Certification to optimize exchange of overlays and other critical data between the MCS and the family of Army Battle Command Systems.
3. Complete Joint interoperability certification to ensure MCS can share critical command and control information with the Marine Corps.
4. Resolve system-of-system shortfalls in networking products and improve and fund collective and sustainment training programs.