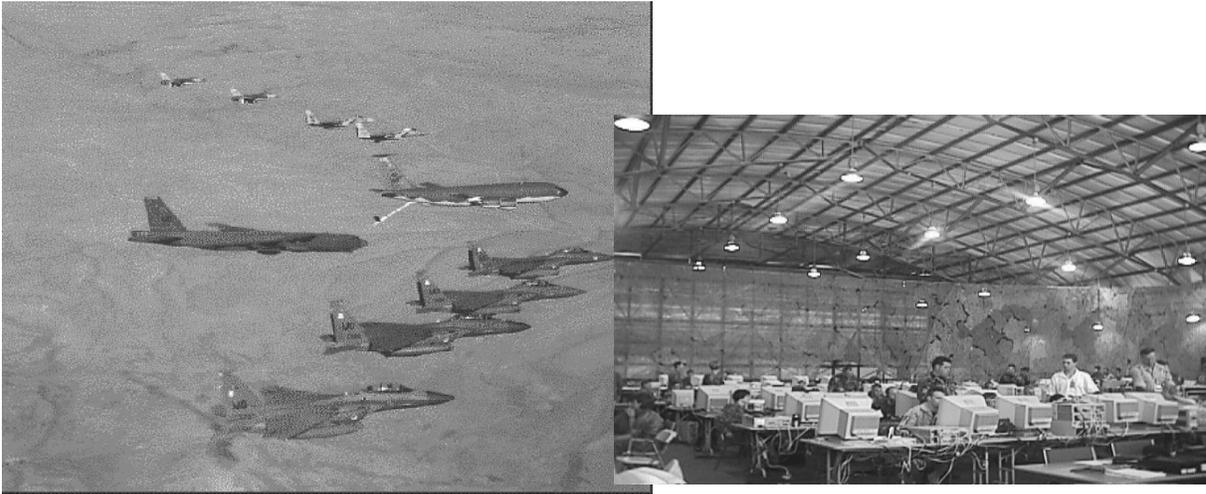


# THEATER BATTLE MANAGEMENT CORE SYSTEM (TBMCS)



## Air Force ACAT Program

Total Number of Systems:  
Total Program Cost (TY\$):  
Average Unit Cost (TY\$):  
Full-rate Production: 3QFY00  
OT&E/MOT&E (Version 1) 2QFY00

## Prime Contractor

Lockheed Martin

## SYSTEM DESCRIPTION & CONTRIBUTION TO JOINT VISION 2010

The Theater Battle Management Core Systems (TBMCS) provides Joint and Service Combat Air Forces with automated Command, Control, Communications, Computer, and Intelligence systems to plan and execute theater-level air campaigns. It is an Air Force lead program with Joint and Allied participation. TBMCS is the theater air module of the Global Command and Control System (GCCS) and includes the Force and Unit Contingency Theater Automated Planning System (CTAPS), Combat Intelligence System (CIS), Wing Command and Control System (WCCS), and the Air Support Operations Center (ASOC) top-level applications. Elements of TBMCS are planned for every theater air command and control and air weapons system from the Joint Forces Air Component Commander to the executing aircraft squadron.

The mission of TBMCS at the force level is to provide the Joint and Combined Air Component Commander with the automated tools necessary to effectively and efficiently plan, monitor, and execute the air campaign. This includes planning and issuing the Air Tasking and Air Control Orders that ensure the Theater Commander's intent is supported through the application of airpower using the latest intelligence. TBMCS capabilities should also ensure that air operations are de-conflicted.

The mission of TBMCS at the unit level is to provide the Wing and Base Commanders and their battle staffs with timely and accurate information for effective decision making. TBMCS is also supposed to provide the secure, automated, deployable, and distributed Wing-Level Command and Control System with connectivity to force-level TBMCS systems.

TBMCS contributes to *Joint Vision 2010* by providing *information superiority* through the integration and distribution of information relevant to the planning and execution of theater air operations. Through the extension of TBMCS to the Navy, Marines, and Army, as well as Allied nations' air forces, *integration of joint and coalition capabilities* is also achieved. The scalability and modularity of TBMCS supports *rapid strategic mobility* while the theater airlift application provides connectivity with theater mobility capabilities. One of the TBMCS applications provides an integrated air picture updated from a number of theater and strategic sensors and organizations. This integrated air picture, along with the fused intelligence provided by interaction with other Service intelligence systems, supports *increased situation awareness*.

## **BACKGROUND INFORMATION**

The first version of TBMCS combines the legacy functions of CTAPS, CIS, and WCCS automated theater air battle information systems to provide an open architecture interface with GCCS. Each of these legacy systems also has subordinate applications that are being updated and integrated as well as additional applications that will be developed in the future. Examples of these applications include the Airspace De-confliction, Integrated Intelligence and Imagery, JFACC Planning Tool, and Wing Support.

The Navy, Marines and Army, along with the United Kingdom, are involved in program and capability definition. The Command and Control System Program Office of the Electronic Systems Command is the acquisition agency, while the USAF Air Combat Center consolidates and develops the requirements.

TBMCS is a software intensive program that incorporates spiral development processes. The near term version will be replaced with future versions that incorporate solutions to identified deficiencies as well as add new functionality. The TBMCS program does not currently have a stand-alone requirements document. Instead, the program has a System Version Requirements Document that contains the operational requirements for TBMCS Version 1 and was derived from the legacy system's individual Operational Requirements Documents (ORD). The mission performance requirements in the System Version Requirements Document are grouped into a collection of 45 Mission Critical Functions, of which 19 are mapped to five Key Legacy Functions that define the requirement for the first version of TBMCS.

Due to concerns about immature functionality and inter-Service interoperability of TBMCS Version 1.0.1, and the USAF plan to field TBMCS prior to adequate operational testing, DOT&E placed TBMCS on the OT&E Oversight List during this evaluation period.

## **TEST & EVALUATION ACTIVITY**

A Joint Field Acceptance Test (JFAT) was conducted in March 1999 to support a joint fielding decision for TBMCS to the Army, Navy, Air Force, and Marines. This test was motivated by Year 2000 problems associated with the CTAPS system and the Services' desire to field TBMCS in lieu of revamping CTAPS. TBMCS entered JFAT with numerous Priority 1 and Priority 2 software deficiency reports, and the software tested in JFAT was not stable. The test was terminated early and the joint fielding decision was postponed. Since conducting JFAT, CTAPS has been updated to overcome Year 2000 problems.

Improved TBMCS Version 1.0.1 software underwent a combined DT/OT and an Air Force Unit Level Acceptance Test in October 1999. The DT/OT supported a recommendation to proceed to Multi-Service Operational Test and Evaluation (MOT&E) in January 2000. The Unit Level Acceptance Test supported an Air Force Unit Level Fielding Decision on October 30, 1999.

### **TEST & EVALUATION ASSESSMENT**

TBMCS software tested in DT/OT was more mature than the software tested during the April 1999 JFAT; there were more than 260 Priority 1 and 2 software deficiency reports compiled during the JFAT, whereas today there are currently 48 Priority 2 reports—eight against Key Legacy Functions.

MOT&E in January 2000 will consist of ten days of 12-hour operations that develop daily Air Tasking Orders during a simulated theater air campaign. AFOTEC is the lead operational test agency for TBMCS, and will prepare a combined test report including input from all Services. MOT&E will evaluate TBMCS against the 45 Mission Critical Functions in the System Version Requirements Document, focusing on five Key Legacy Functions.

The TEMP and MOT&E operational test plan have not been approved by the Services or staffed formally with OSD. Lack of a TBMCS ORD has been detrimental to the program, and one should be developed prior to Version 2 operational testing. The ORD should associate new functionality with specific versions of the software, and once the ORD has been approved and the Program Office has developed a new schedule, the TEMP should be updated.

