Advanced Battle Management System (ABMS)



Throughout FY24, the Air Force conducted quarterly minimum viable capability releases (MVCRs) of Cloud-Based Command and Control (CBC2), a component of the Advanced Battle Management System (ABMS). In FY24, the Air Force scheduled a CBC2 operational assessment (OA) as part of an MVCR event, however the Air Force Operational Test and Evaluation Center (AFOTEC) postponed the OA due to software immaturity. CBC2 is the only ABMS component to schedule operational testing (OT) to date and is the focus of this report.

SYSTEM DESCRIPTION

The ABMS portfolio of systems

and capabilities is designed to create a next-generation command and control (C2) system that will allow Air Force and Space Force systems to share data that will enable faster C2 decision making. The portfolio is composed of multiple programs and lines of effort including:

• CBC2 (the focus of this report),

- Digital Infrastructure (DI),
- Distributed Battle Management Node (DBMN), and
- Aerial Networking.

Together, these contribute to the Department of the Air Force (DAF) BATTLE NETWORK, which is the DAF contribution to Combined Joint All-Domain Command and Control warfighting concepts.

CBC2 was developed in partnership with the Royal Canadian Air Force to modernize battle management and C2 functions by replacing the Battle Control System-Fixed at U.S. and Canadian Air Defense Sectors with modern cloud-based applications to create a single fused C2 air picture with automated decision aids.

MISSION

DoD military commanders use ABMS to share data and information and receive a realtime, complete picture of the battlespace so that they can quickly make informed decisions, direct action, and monitor execution of operations. The CBC2 component of ABMS will provide an air defense C2 platform that supports homeland defense/ homeland security missions, as well as disaster relief and national special security events by maintaining air sovereignty and executing C2 for air defense.

PROGRAM

Each ABMS component program is a separate acquisition program. CBC2, the only program to schedule OT in FY24, is a software acquisition pathway effort. DOT&E approved the CBC2 TES in August 2024. DOT&E also approved the CBC2 OA test plan in August 2024.

The other ABMS component programs are Middle Tier of Acquisition rapid prototyping pathway efforts. Several TESs for ABMS component programs, other than CBC2, are under development.

» MAJOR CONTRACTOR

 Science Applications International Corporation, Inc.
Rosslyn, Virginia (CBC2)

TEST ADEQUACY

DOT&E approved the CBC2 TES with two conditions. First, the Air Force needs to submit the verification, validation, and accreditation (VV&A) plans for the modeling and simulation (M&S) tools required for OT. Second, the Air Force needs to provide an updated cyber test strategy that includes a schedule of events and operational cyber testing that follows the developmental cyber test program.

The Air Force has conducted quarterly CBC2 MVCRs since June 2023. Although the first five MVCRs were developmental test and evaluation (DT&E) events, the Air Force made significant efforts to ensure early OT involvement in CBC2. AFOTEC Detachment 2 observed all MVCRs and was a key stakeholder in all CBC2 DT&E events and processes.

AFOTEC Detachment 2 was scheduled to perform an OA during the sixth MVCR. The OA was postponed due to software immaturity.

PERFORMANCE

» EFFECTIVENESS, SUITABILITY, AND SURVIVABILITY

DOT&E will provide an assessment of CBC2's potential to be operationally effective, suitable, and cyber survivable in the classified CBC2 OA report that is anticipated in FY26.

RECOMMENDATIONS

The Air Force should:

- 1. Continue to develop TESs for the remaining ABMS components.
- Submit the VV&A plans for the M&S tools required for OT to DOT&E for approval and AFOTEC for accreditation.
- Update the CBC2 cyber test strategy and submit to DOT&E for approval. The revised cyber strategy should include a schedule of events for cyber OT that provides time for, and builds upon, a cyber DT&E program.