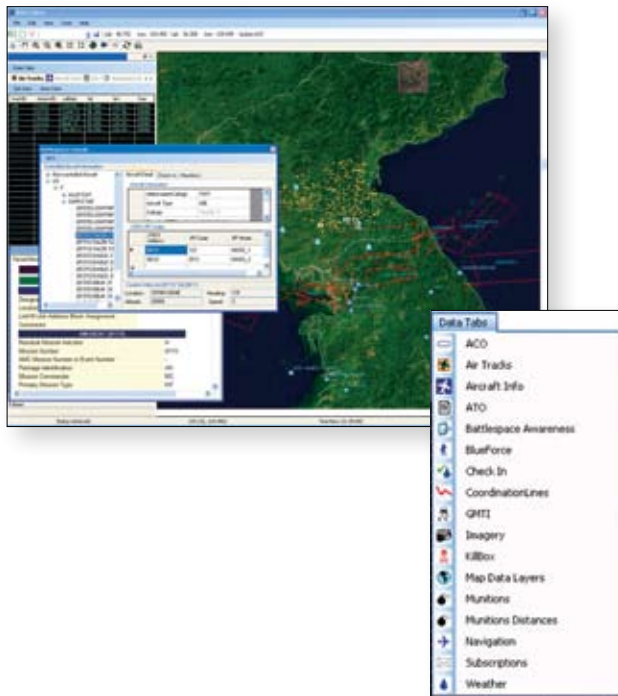


Electronic Systems Center: Providing Shared Situational Awareness over Airborne Networks through Airborne Web Services

Airborne networking of military weapon systems is a critical capability needed for netcentric operations on the modern-day battlefield. The 753rd Electronic Systems Group (ELSG) at Hanscom Air Force Base, Massachusetts, is leading ongoing research and development efforts in the airborne networking technology area for command and control (C2) mission applications. A key program significantly contributing to risk reduction for developing future military C2 applications for airborne networks is the Airborne Web Services (AWS) program.

AWS is a collaborative effort between the 753rd ELSG, 751st ELSG (Joint STARS), and 551st ELSG (AWACS) with support from MITRE and government contractors ProLogic and SAIC. ProLogic developed the shared situational awareness end user application using CJMTK/JMTK and SAIC developed the Airborne Web Services and data interfaces.

CJMTK/JMTK was utilized by ProLogic to develop the primary



visualization client for AWS and has been a key enabler to rapidly developing the program's visualization capabilities. Leveraging prior research and development work with CJMTK/JMTK on ProLogic's Service Oriented Visualization Framework (SOVF) technology, this system follows design guidelines from the Department of Defense (DoD) Net-Centric Enterprise Solutions for Interoperability (NESI).

AWS services provide shared battle space situational awareness information, satisfying requirements for in-flight E-8 Joint STARS and E-3 AWACS air battle managers along with commanders and controllers on the ground in the Combined Air Operations Center (CAOC). AWS applications include visualization of

- Air tasking orders (ATOs)
- Airspace control orders (ACOs)
- Blue and red force tracking
- Ground moving target indicators (GMTI)
- Imagery (SAR, NITF)
- Kill boxes
- Coordination lines (FLOT, FSCL, FEBA)
- Air tracks
- Munitions
- Check-in
- Navigation
- Weather

Many AWS features are designed to help automate the AWACS and Joint STARS air battle manager's workflow. The resulting capabilities enhance decision support for C2 operations and time-sensitive targeting (TST). This increased situational awareness and improved workflow are specifically designed to reduce timelines in the kill chain.

AWS was highlighted in the U.S. Air Force Chief of Staff's large-scale directed Joint Expeditionary Force Experiment (JEFX) 06 as part of an AWACS effort demonstrating netcentric warfare using the Tactical Targeting Network Technology (TTNT) data communications system. AWS was also demonstrated in late 2006 during Airborne Networking live fly risk reduction experiments on the Paul Revere 707 aircraft operated by MIT Lincoln Labs.

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