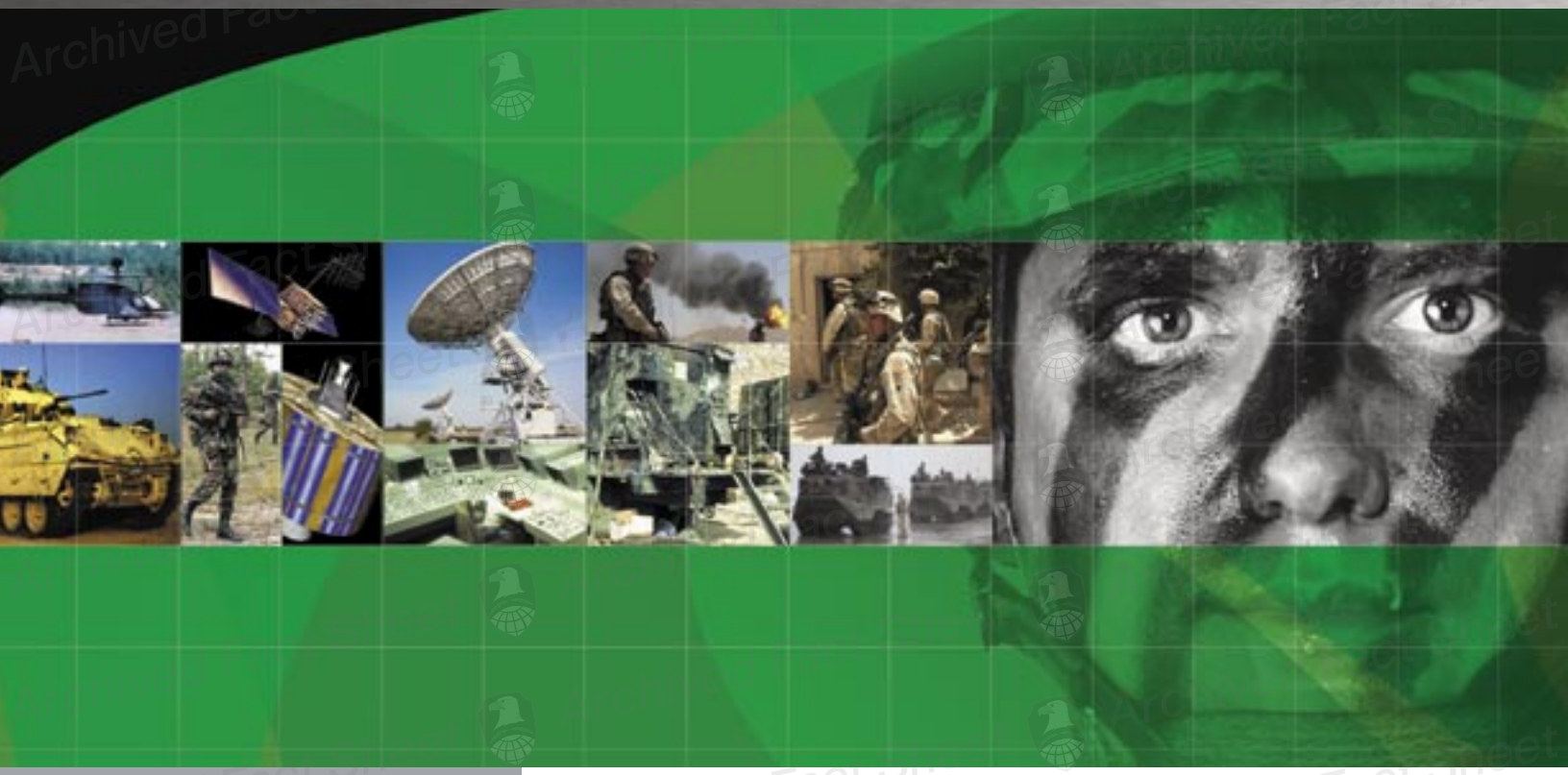
UNITED STATES ARMY
SPACE AND MISSILE
DEFENSE COMMAND

Joint Blue Force Situational Awareness

Advanced Concept Technology Demonstration



Summary

- Provides interim JBFSA concept and capability that is sustainable for 60-120 months
- Provides integrated JBFSA architecture across all current operational domains (Department of Defense/Line of sight/ Commercial)
- Disseminates and displays a consistent Blue Force Situation picture
- Disseminates select JBFSA information to Coalition Common Operational Pictures
- Provides theater-focused CONOPS and Tactics, Techniques, and Procedures (TTPs)

The Joint Blue Force Situational Awareness (JBFSA) Advanced Concept Technology Demonstration (ACTD) integrates information from Blue Force Tracking stovepipe systems over a common architecture for display on user defined operational pictures.

There are two current JBFSA warfighter shortfalls: 1) the inability to display all JBFSA data onto an accurate user defined operational picture and 2) the inability to select, display, and send tailored JBFSA data between strategic, operational, and tactical levels. These problems are manifested by the variety of unique, stovepiped Blue Force Tracking (BFT) systems in operational use today. This ACTD provides an integrated architecture addressing today's disparate BFT systems, an interim concept of operations, and also establishes integration standards for future JBFSA capabilities/systems. Additionally, this effort documents theater concept of operations (CONOPS) to implement the ACTD's capabilities.

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Future Warfare Center

Experiment Objective

The objective of the Joint Blue Force Situational Awareness (JBFSA) Advanced Concept Technology Demonstration (ACTD) is to improve the capabilities to select, receive, and display current Blue Force Tracking (BFT) systems forging resultant interoperability information onto an accurate Common Operational Picture (COP) and provide a relevant level of situational awareness for the warfighter. The operational effectiveness of candidate technologies and supporting Tactics, Techniques, and Procedures (TTPs) are being assessed with a combination of software interface testing and a series of joint live exercises. A Joint Military Utility Assessment (JMUA) has been produced documenting the warfighter's positive evaluation of the JBFSA capabilities. Systems and technologies that have shown promise of providing significant enhancements to operational effectiveness may be rapidly matured to provide interim capabilities at the end of the JBFSA ACTD and their official acquisition and production would be supported by the Transition Plan.

Experiment Description and Functions

The experimentation hypothesis of the ACTD is that the warfighter at the strategic, operational, and tactical levels does not have a system to display all JBFSA data into an accurate COP that is relevant and specific to his mission/operation. Additionally, the warfighter lacks the ability to send tailored, relevant JBFSA data to users that need data. The technical and procedural issues associated with this problem include:

- Non-standard message formats
- Different display software associated with each BFT device
- Data translation/format problems
- Inadequate correlation capability
- Lack of supporting dissemination architectures
- Lack of filter capability and processes
- Lack of integration of Non-Line of Sight (NLOS)/Beyond Line of Sight (BLOS) into Line of Sight (LOS) architectures

Benefit to the Warfighter

JBFSA will reduce the fog and uncertainty of war by providing the warfighter with a globally responsive and tailorable capability to identify and track friendly forces in assigned areas of operations (in near real time), thereby augmenting and enhancing command and control at key levels of command. It is anticipated that the JBFSA architecture will facilitate horizontal integration and support a wide variety of joint missions and operations including dominant maneuver, time critical targeting, and combat search and rescue.

Technical Description

The ACTD has demonstrated a robust architecture leveraging and integrating existing capabilities in addition to new capabilities and technologies with the Global Command and Control System (GCCS) Family of Systems, other tactical displays, existing tactical data links, and secure networks. The ACTD architecture ensures compatibility with (personal computer (PC)-based systems by building on the emerging PC-based GCCS 4.x architecture, while ensuring interfaces exist to the existing GCCS 3.x baseline. The ACTD architecture also leverages the Extensible Markup Language (XML) repository to ensure interoperability with future Web-based versions of GCCS.

This ACTD has:

- Developed an open systems architecture software framework to accommodate future BFT devices
- Demonstrated software interfaces and connectivity
- Validated newly developed CONOPS and TTPs
- Integrated current BFT devices into the JBFSA architecture
- Disseminated and displayed a consistent Blue Force picture within the GCCS Family of Systems COP and select tactical level display devices
- Interacted with additional BFT data dissemination paths
- Integrated line of site receivers mounted on aircraft into the JBFSA architecture
- Disseminated select BFT data to the Coalition COP
- Provided an enhanced Mission Management Center capability

Experiments/Demonstrations

- Tech Demo: Joint Warfighter Interoperability Demonstration (JWID) 03
- Ops Demo: Jagged Thrust 03
- Ops Demo: Foal Eagle 04
- Ops Demo: Support routine training as well as exercises during Extended User Evaluation during FY05/06 i.e. Foal Eagle (March 05), Talisman Saber (June 05)

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Distribution A 0205/0513