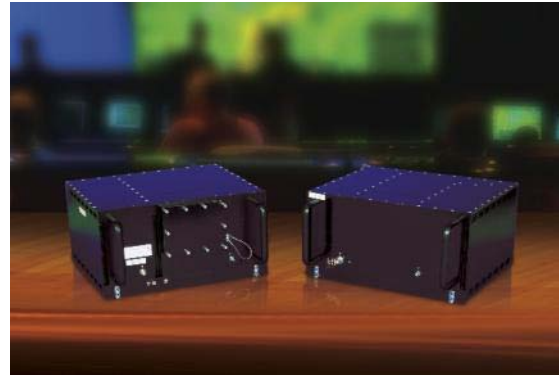


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Family of Advanced Beyond Line-of-Sight Terminals (FAB-T) – Nuclear Command and Control Network and Communication System (NC2NCS)



Description and Purpose: The FAB-T Nuclear Command and Control Network and Communication System program develops the architecture to support a family of satellite communications terminals for airborne, ground-fixed and ground-transportable applications. FAB-T provides the critical link enabling strategic nuclear command and control using the Milstar Extremely High Frequency (EHF) and Advanced Extremely High Frequency (AEHF) waveforms. This capability enables the command and control of the AEHF and Milstar satellites and provides the President and strategic leadership the secure communications with forces to direct a strategic nuclear response.

Terminals are planned for the B-2, B-52, RC-135 aircraft and ground sites and for upgrading the existing Command Post Terminals located on ground (fixed and transportable) and airborne (E-4 and E-6 aircraft) platforms. Capabilities will include transmission and reception of voice, data, imagery, and video as well as broadcast reception over protected SATCOM systems.

FAB-T is an information and communications system, rather than a simple satellite radio terminal. The system is modular, reconfigurable, scalable and upgradeable.

Customer: U.S. Air Force and U.S. Navy (terminal user)

General Characteristics:

- FAB-T is a net-ready, interoperable communications system established upon industrial-based open interfaces and is designed to grow and expand as platform requirements change.
- FAB-T is programmable and reconfigurable, allowing high-data-rate communications to be customized by the warfighter in the theater.

Background: The program completed an Integrated Baseline Review in September of 2010 and expects to complete full capability terminal functional qualification in 2012.

In April 2011, the U.S. Air Force installed, integrated and successfully flight-tested a FAB-T on a test version of an RC-135 Rivet Joint reconnaissance aircraft. The flight test

demonstrated successful integration on the RC-135 aircraft using the FAB-T platform integration interface control documentation. The flight test team communicated from the air with test locations on the ground via a Milstar satellite. As part of the in-flight testing, voice, data, and text were shared between the aircraft and the ground users who were part of the demonstration network.

Boeing and the Air Force demonstrated over-the-air, low-data-rate communication between an orbiting Milstar satellite and the FAB-T unit in January. This over-the-air test demonstrated for the first time that the more advanced Block 8 terminal can communicate with the Milstar satellite and serve as a network node with two legacy Milstar terminals.

Boeing and the Air Force completed intersegment tests of communications between a FAB-T and an AEHF satellite vehicle payload last year. In addition, FAB-T demonstrated communication through the AEHF payload to other Department of Defense terminals. The tests displayed the ability of FAB-T NC2NCS to communicate with the satellite, demonstrating increased functionality and development progress in air, ground and satellite communications.

In 2009, the FAB-T program successfully conducted its first series of flight tests. During the flight tests, a FAB-T NC2NCS terminal on a Boeing 707 test aircraft connected with Milstar satellites. The U.S. Air Force and Lincoln Laboratories flight test crew communicated with testers on the ground via the satellites, validating the integration of the FAB-T hardware and software.

Boeing is conducting hardware qualification, and integration is continuing on the extended data rate (XDR) software for the system. There are many test events planned with the AEHF and Milstar satellites, including the flight test and interoperability testing with other EHF terminals. Boeing and the Air Force have multiple intersegment and satellite payload tests planned prior to on-orbit testing.

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