

## Force XXI Battle Command Brigade and Below (FBCB2) Joint Capabilities Release (JCR)/Blue Force Tracker 2 (BFT2)

### Executive Summary

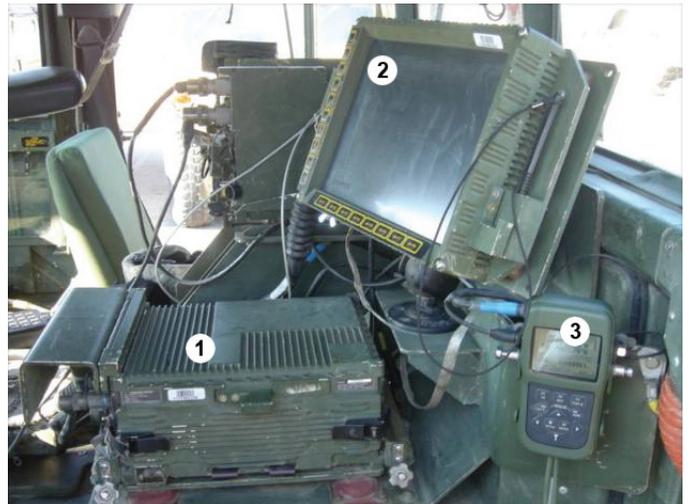
- In FY11, the Army and Marine Corps conducted a Limited User Test (LUT) of Force XXI Battle Command Brigade and Below (FBCB2) Joint Capabilities Release (JCR)/Blue Force Tracker 2 (BFT2). The test demonstrated the system is operationally effective for combat operations. Commanders and units experienced improved situational awareness and improved transfer of orders and graphics compared to previous versions of FBCB2/BFT1.
- During the LUT, FBCB2 JCR/BFT2 demonstrated a 275-hour Mean Time Between Essential Function Failure (MTBEFF) compared to its requirement of 700 hours. The demonstrated MTBEFF translates to a 77 percent probability of successfully completing a 72-hour mission without an essential function failure compared to the requirement of 90 percent. The reliability demonstrated during the LUT is equivalent to that of the existing deployed version of FBCB2, which Soldiers have found acceptable to support operations in Iraq and Afghanistan.
- The Army conducted the FBCB2 JCR/BFT2 LUT to support its planned February 2012 fielding decision.
- The FBCB2 JCR/LUT resolved 11 of the 12 performance and reliability deficiencies described in DOT&E's 2004 Beyond Low-Rate Initial Production (BLRIP) report. Reliability remains as the only unresolved problem.
- The LUT highlighted interoperability problems with the terrestrial line-of-sight Enhanced Position Location Reporting System (EPLRS) versions of FBCB2. The versions that use satellite communications performed well.

### System

- FBCB2 JCR is a networked battle command information system that enables units to share near-real-time friendly and enemy situational awareness information, operational maps and graphics, and command and control (C2) messages.
- FBCB2 JCR/BFT2 is a technology upgrade from FBCB2/BFT1 to provide improved capability and ensure interoperability between Army and Marine Corps forces. The improvements include updated computer hardware and software, improved satellite connectivity, and the addition of communications security (COMSEC) devices.

### Activity

- In 2004, the Defense Acquisition Executive approved an FBCB2 full-rate production decision. The DOT&E BLRIP report highlighted a need for additional operational testing to address 12 performance and reliability deficiencies.



**FBCB2 JCR – AN/UYK-128(V3)**

- 1 - Jv5 Computer**
- 2 - Display**
- 3 - Global Positioning System Device**

- FBCB2 JCR is fielded in both mobile and command post versions. It is supported by the following transmission means:
  - BFT2 – satellite support for mobile operations
  - EPLRS – terrestrial radio support for mobile operations
  - Tactical Internet – network support for command post operations

### Mission

- Army and Marine Corps commanders use FBCB2 JCR/BFT2 to provide integrated, on-the-move, near-real-time battle command information and situational awareness from brigade to maneuver platform.
- Units employ FBCB2 JCR/BFT2 to gain near-real-time situational awareness and C2 capability intended to assist in the accomplishment of their combat missions.

### Major Contractor

Northrop Grumman, Information Systems – McLean, Virginia

# ARMY PROGRAMS

- During FY11, the Army conducted three developmental tests on versions of FBCB2 JCR and BFT2.
  - In December 2010, the Army and Marine Corps conducted a combined Customer Test/Field User Evaluation to test FBCB2/BFT performance and interoperability when used by the 11th Armored Cavalry Regiment at the National Training Center, California, and the 1st Marine Regiment at Camp Pendleton, California.
  - In June — July 2011, as part of the Network Integration Evaluation (NIE), the Army conducted an FBCB2/BFT2 LUT to support a planned February 2012 Army fielding decision. The NIE tested an FBCB2/BFT2 network with elements from:
    - 2nd Brigade, 1st Armored Division, White Sands Missile Range, New Mexico
    - Marine Corps Battalion, Camp Pendleton, California
    - Simulated Corps command post, Fort Hood, Texas
    - Aviation Systems Integration Laboratory, Huntsville, Alabama
  - The Army is planning a developmental test in October 2011 to assess actions taken to correct deficiencies highlighted during the FY11 FBCB2 JCR/BFT2 LUT.
  - The Army is planning a formal logistics demonstration for November 2011.
- Improved ability to transfer orders and operational graphics compared to previous versions of FBCB2
  - Command and control communications exceeding the range of terrestrial combat net radio
  - Interoperability between Army and Marine Corps forces using BFT2
  - Interoperability with previous versions of FBCB2 supported by BFT1
  - Satisfactory employment of the new communications security
- The FBCB2 JCR/BFT2 LUT highlighted the following deficiencies:
    - Less than required reliability
    - Situational awareness “fading,” which would freeze display icons for 30 seconds to 5 minutes
    - New Equipment Training was not adequate to train new FBCB2 operators
    - All versions of FBCB2 supported by line-of-sight EPLRS radios demonstrated poor interoperability
  - The FBCB2 JCR/BFT2 LUT resolved 11 of the 12 deficiencies noted in the 2004 BLRIP report. Reliability remains unresolved. Nonetheless, the demonstrated reliability is equivalent to that of the existing deployed version of FBCB2, which Soldiers have found adequate to support combat operations.

## Assessment

- The Army’s developmental testing demonstrated FBCB2 JCR/BFT2’s capability to interoperate between the Army and Marine Corps, employ communications security, and utilize the increased bandwidth of BFT2.
- During the LUT, FBCB2 JCR/BFT2 did not meet its reliability requirement and demonstrated a 275-hour MTBEFF point estimate compared to its MTBEFF requirement of 700 hours. The point estimate translates to a 77 percent probability of successfully completing a 72-hour mission without an essential function failure compared to the requirement of 90 percent.
- The FBCB2 JCR/BFT2 LUT demonstrated the system is operationally effective for combat operations. Soldiers and Marines using the system experienced:
  - Improved situational awareness of friendly and enemy forces compared to previous versions of FBCB2

## Recommendations

- Status of Previous Recommendations. There are no previous recommendations.
- FY11 Recommendations. The Army should:
  1. Improve FBCB2 JCR/BFT2 reliability, fix FBCB2 JCR software (situational awareness fading), and improve New Equipment Training.
  2. Determine the future requirements of EPLRS and FBCB2 JCR. If the Army should determine the need for EPLRS supported FBCB2 JCR, the Army will need to conduct operational testing of FBCB2 JCR/EPLRS to support a fielding decision.