Joint Battle Command – Platform (JBC-P)

Executive Summary
- In 2012, the Army approved a Joint Battle Command – Platform (JBC-P) Milestone C based upon contractor testing, developmental testing, and a May 2012 customer test.
- Based upon an October through November 2012 customer test, the Army Test and Evaluation Command assessed JBC-P software build 4 as:
  - Not effective due to message completion rate deficiencies and problems sending and receiving orders
  - Not suitable due to poor reliability
  - Not survivable due to cyber security vulnerabilities
- In May 2013, the Army conducted a JBC-P IOT&E to support a planned 1QFY14 Full-Rate Production (FRP) decision. The IOT&E assessed JBC-P software build 5 as employed by the 2nd Brigade, 1st Armored Division executing a variety of missions under operationally realistic conditions.
- Based on results from the 2013 IOT&E, DOT&E released a JBC-P IOT&E report in November 2013, which assessed JBC-P as:
  - Operationally effective in supporting Army commanders and Soldiers with situational awareness, command and control (C2) messages, and chat when operating from Tactical Operational Centers (TOCs) and on-the-move in tactical vehicles. JBC-P served as the Soldiers' primary tool for C2 when on-the-move.
  - Not operationally suitable due to poor reliability (less than the Army's reduced requirement) and deficiencies in training provided to Soldiers.
  - Not survivable due to Information Assurance vulnerabilities.
- During October through November 2013, the Army conducted a JBC-P software build 5.1 customer test to demonstrate correction of IOT&E deficiencies to support an intended 1QFY14 FRP decision.
- The Army and Marine Corps plan to conduct a JBC-P software build 6 Multi-Service Operational Test and Evaluation (MOT&E) from May through June 2014.

System
- JBC-P 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 C2 messages. The Army and Marine Corps intend JBC-P to achieve platform-level interoperability for ground vehicles, dismounted Soldiers/Marines, and

aviation assets operating in land/littoral and joint operational environments.
- JBC-P is an upgrade from Force XXI Battle Command Brigade and Below Joint Capabilities Release and provides the following improvements:
  - Tactical chat combined with chat room capability, providing enhanced collaboration for commanders
  - Improved mission command applications for planning and execution
  - A more intuitive graphical user interface with improved display of maps and images
  - Enhanced blue force situational awareness between mobile platforms, TOCs, and dismounted Soldiers equipped with Nett Warrior
- JBC-P is fielded in both mobile and command post versions. JBC-P communications is supported by Blue Force Tracker 2 satellite for mobile operations, and the Tactical Internet for command post operations

Mission
Army, Marine Corps, and Special Operations Forces commanders use JBC-P to provide integrated, on-the-move, near real-time battle command information and situational awareness from brigade to maneuver platform to dismounted Soldiers/Marines.

Major Contractor
Software Engineering Directorate, U.S. Army Aviation & Missile Research, Development & Engineering Center – Huntsville, Alabama

Activity

- In July 2012, the Program Executive Office, Command Control Communications Tactical, as the JBC-P Milestone Decision Authority, approved the program's Milestone C. This decision was based upon developmental and contractor testing of JBC-P software build 3.
- During the October through November 2012 Network Integration Evaluation (NIE) 13.1, the Army conducted a JBC-P software build 4 customer test.
- During the May 2013 NIE 13.2, the Army conducted a JBC-P IOT&E in accordance with a DOT&E-approved test plan to support a planned 1QFY14 FRP decision. The Army tested JBC-P software build 5 as employed by the 2nd Brigade, 1st Armored Division executing a variety of missions under operationally realistic conditions.
- From July through September 2013, the Army conducted a lab-based Risk Reduction Event 13 to demonstrate correction of IOT&E deficiencies and to prepare JBC-P software build 5.1 for NIE 14.1.
- During the October through November 2013 NIE 14.1, the Army conducted a JBC-P software build 5.1 customer test to demonstrate correction of IOT&E deficiencies to support an intended 1QFY14 FRP decision.
- DOT&E released an IOT&E report in November 2013.
- The Army is planning a JBC-P MOT&E during the May through June 2014 NIE 14.2. The Army and Marine Corps intend to participate in the MOT&E and use the results to support JBC-P software build 6 fielding decisions.

Assessment

- During the 2012 NIE 13.1 customer test, the Army Test and Evaluation Command assessed JBC-P build 4 as not effective, not suitable, and not survivable. During the test, JBC-P:
  - Exceeded requirements for shared blue (friendly) situational awareness
  - Did not meet its survivability entity data (battlefield hazards) requirements
  - Demonstrated Network Operations Center reliability and interoperability problems
  - Did not meet its requirement to send and receive operations orders, fragmentary orders, and graphics
  - Did not meet its reliability requirement, demonstrating a Mean Time Between Essential Function Failure of 88 hours for the Joint Platform Tablet and 389 hours for Joint Version 5 (JV-5) Block I and II computers against the Army's requirement of 477 hours
  - Demonstrated significant survivability risks from threat computer network operations
- Based on the May 2013 IOT&E, DOT&E assessed the JBC-P as operationally effective for combat operations. During IOT&E, JBC-P:

  - Exceeded message completion and timeliness requirements for situational awareness and survivability data
  - Demonstrated the ability to pass C2 messages
  - Provided effective chat communications between all echelons of the brigade
  - Was used by Soldiers as their primary tool for maintaining extended communications while on-the-move
  - Cluttered its map display with numerous battlefield hazard icons, which confused Soldiers
- Based upon IOT&E, DOT&E assessed JBC-P as not operationally suitable and highlighted the following deficiencies:
  - JBC-P did not meet its reliability requirement, demonstrating a Mean Time Between Essential Function Failure of 74 hours for Joint Platform Tablet, and 59 and 82 hours respectively for JV-5 Block I and II computers against an Army-reduced requirement of 290 hours.
  - Seventy-eight percent of Essential Function Failures were due to software problems, with the largest share due to KGV-72 Encryption Device communications authentication failures.
  - Training provided to Soldiers did not prepare the unit to use all the capabilities of JBC-P. Soldiers required more hands-on training, extended leader training, and improved training on the KGV-72 Encryption Device.
  - Spontaneous JBC-P reboots reduced the Soldiers' confidence in the system.
- The JBC-P IOT&E demonstrated the system as not survivable against threat computer network operations. While improved from NIE 13.1, the Army needs to improve JBC-P's cyber security.
- The Army completed JBC-P Risk Reduction Event 13 and demonstrated many corrections of IOT&E deficiencies under benign lab-based conditions.

Recommendations

- Status of Previous Recommendations. This is the first annual report for this program.
- FY13 Recommendations. The Army should:
  1. Improve JBC-P reliability to include improving the ability of the JBC-P software to maintain encryption device synchronization and correcting the spontaneous reboot deficiency.
  2. Improve JBC-P leader and Soldier training.
  3. Improve the JBC-P map icon display to provide relevant and uncluttered information on battlefield hazards.
  4. Correct cyber security survivability deficiencies demonstrated during the JBC-P IOT&E.