Joint Battle Command – Platform (JBC-P)

Executive Summary

- DOT&E released a November 2013 IOT&E report that assessed Joint Battle Command – Platform (JBC-P) software build 5.0 as operationally effective, not operationally suitable, and not survivable. This report was based upon the May 2013 JBC-P software build 5.0 IOT&E.
- In November 2013, the Army approved a fielding decision for JBC-P software build 5.1 based upon the May 2013 JBC-P IOT&E and demonstrated corrections to discovered deficiencies.
- In May 2014, the Army and Marine Corps conducted a JBC-P software build 6.0 Multi-Service Operational Test and Evaluation (MOT&E) to support fielding decisions in both Services. While software build 6.0 delivered several enhanced capabilities, it introduced deficiencies which significantly detracted from mission capabilities and led to a change in the assessment. DOT&E assessed JBC-P software build 6.0 as:
  - Not operationally effective due to low message completion rates, phantom Mayday messages, inaccurate representation of blue force icons, and the poor performance of JBC-P Logistics (Log)
  - Not operationally suitable due to reliability that was below the Army's requirement for five of seven JBC-P hardware variants, deficiencies in training provided to Soldiers, and lack of a force structure to support JBC-P Log
  - Not survivable due to cybersecurity vulnerabilities

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 command and control (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 to the 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, Tactical Operational Centers, and dismounted Soldiers equipped with Nett Warrior
  - JBC-P Log provides tracking of logistics cargo within the unit's area of operations through the use of Radio Frequency Identification tags

1 - JBC-P on Mounted Family of Computer Systems (MFoCS)
2 - JBC-P on Joint Version - 5 (JV-5) Block 2
3 - JBC-P Screen Shot
4 - JBC-P LOG on Military Rugged Tablet Plus (MRT+)
5 - JBC-P on JV-5 Block 2

  - Hybrid capability to connect JBC-P across different networks through the use of its Network Services Gateway and associated terrestrial and satellite radios
- JBC-P is fielded in both mobile and command post versions. JBC-P communications is supported by:
  - Blue Force Tracker 2 satellite communications for mobile operations
  - Tactical radios for connectivity between JBC-P-equipped vehicles and to support dismounted operations
  - 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

- During the October 2013 Network Integration Evaluation 14.1, the Army conducted a JBC-P software build 5.1 customer test to demonstrate correction of the May 2013 JBC-P IOT&E software build 5.0 deficiencies.
- In November 2013, DOT&E released a JBC-P IOT&E report to support the Army's JBC-P software 5.1 fielding decision.
- In November 2013, the Army completed a fielding decision for JBC-P software build 5.1, based upon the May 2013 IOT&E and correction of noted deficiencies. The fielding decision was contingent upon completion of Army Interoperability Certification.
- During FY14, the program received a conditional material release, and completed Army and Joint Interoperability Certifications on JBC-P software build 5.1.
- During the May 2014 Network Integration Evaluation 14.2, the Army and Marine Corps conducted a JBC-P software build 6.0 MOT&E to support fielding decisions for both Services. The test was conducted according to a DOT&E-approved Test and Evaluation Master Plan and test plan, and employed an Army brigade with an attached Marine Corps battalion conducting missions under operationally realistic conditions.
- DOT&E will publish an MOT&E report in FY15.

Assessment

- Based on results from the 2013 JBC-P software build 5.0 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, C2 messages, and chat when operating from Tactical Operational Centers 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.
- Based upon MOT&E, DOT&E assessed the effectiveness of the JBC-P software build 6.0 for combat operations. While software build 6.0 delivered several enhanced capabilities, it introduced deficiencies which significantly detracted from mission capabilities and led to an assessment that the JBC-P was now not effective. During MOT&E, JBC-P:
  - Demonstrated the ability to pass situational awareness messages.
  - Provided effective chat communications between all echelons of the brigade.
  - Did not meet message completion and timeliness requirements for C2 and survivability data.
  - Generated numerous false Mayday messages and provided inaccurate representations of blue force icons, which reduced the Soldiers' confidence in the system.
  - Did not provide an effective means to track logistics cargoes using JBC-P Log.
- Based upon MOT&E, DOT&E assessed JBC-P as not operationally suitable and highlighted the following deficiencies:
  - The majority of JBC-P hardware did not meet the Mean Time Between Essential Function Failure reliability requirement of 290 hours. Two of the seven JBC-P hardware variants met their Mean Time Between Essential Function Failure reliability requirement, the JV-5 (469 hours lower confidence bound) and JV-5 Block II (895 hours lower confidence bound).
  - Soldiers experienced problems with spontaneous reboots and shared user displays within Warfighter Information Network – Tactical-equipped vehicles.
  - Although improved since IOT&E, training does not afford Soldiers and leaders the ability to use all of the features of JBC-P. Soldiers require more hands-on training and leaders require extended leader training.
  - Logistics units did not have signal Soldiers required to configure, operate, and maintain JBC-P Log. Units diverted Soldiers from other unit missions (e.g. fuel handler) to perform this duty.
- The JBC-P MOT&E demonstrated the system as not survivable against threat computer network operations. While improved compared to IOT&E results, the Army needs to further improve JBC-P's cybersecurity.

Recommendations

- Status of Previous Recommendations. The Army made improvements in deficiencies noted during IOT&E, yet still needs to improve JBC-P reliability, training, and cybersecurity.
- FY14 Recommendations. The Army should:
  1. Improve JBC-P effectiveness by correcting MOT&E deficiencies to include low message completion rates, phantom Mayday messages, inaccurate blue force icon representation, and poor JBC-P Log performance.
  2. Improve JBC-P reliability by improving hardware variants that did not meet requirements and correcting software build 6.0 deficiencies.
  3. Assess Army force structure to support JBC-P and JBC-P Log, and provide necessary Soldiers to configure, operate, and maintain the system.
  4. Improve JBC-P leader and Soldier training.
  5. Correct cybersecurity survivability deficiencies demonstrated during the JBC-P MOT&E.