Leveraging LVC training capabilities to satisfy T&E

By

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The Air Force Distributed Mission Operations Center (DMOC) has participated in many Joint Test and Evaluations (JT&Es) in the past and is currently involved in the Joint Command and Control for Net-Enabled Weapons (JC2NEW) JT&E. The DMOC has an extensive representation of Air Force Command and Control and weapons simulators available either internally or through external connections. These systems provide a complete collection of sensor-to-shooter-to-assessor as well as communication capabilities that can provide data on all aspects of modern air warfare. The systems used during a DMOC exercise may be live, virtual, or constructive, depending on the needs, and produce communications such as TADIL-J, IBS-I, tactical voice, or others.

This paper will discuss how JC2NEW JT&E is able to take advantage of a typical DMOC quarterly training exercise, Virtual Flag 08-1, to collect the data and information they needed to support their efforts. Problems encountered on both sides and solutions achieved to support the JT&E in addition to the standard Virtual Flag training will be discussed.

What is JC2NEW

What is DMOC

How JC2NEW takes advantage of DMOC

1.1. Systems to be Modeled

The JC2NEW team will accredit the integrated environment to include the tactical scenarios, weapon simulations (TACTOM, SLAM-ER, and JDAM-AMSTE), C2 nodes, and communications simulations as operationally representative to accomplish JT&E objectives.

Requirement: The DMOC will coordinate efforts with the appropriate DoD networks to link each weapon simulation to the DMOC architecture to ensure operationally representative system capabilities of both employment and communications capabilities.

Requirement: JC2NEW will require land and maritime targets to be modeled to stimulate C2 processes and procedures for employment of the JC2NEW net-enabled weapons. The land targets will be from the VF 08-1 venue Target Nomination List (TNL), and the maritime targets will be from the venue threat order of battle with some additional threat systems included to replicate specific threat systems/targets of interest to JC2NEW. Additionally, JC2NEW may request a limited number of blue forces (BLUFOR) and neutral assets be constructively modeled if planned VF 08-1 assets are not scheduled to play in the JC2NEW area of interest or do not fulfill JC2NEW requirements.

Requirement: In addition, JC2NEW may request to integrate the DMOC's Unmanned Aerial System (UAS) and/or Integrated Fires Forward Air Control Trainer (IFFACT) simulations during the event. Figure 3-2 depicts the network structure.

1.2. Data Collection, Reduction, and Analysis

JC2NEW's quantitative data collection focuses on a two-tiered approach. First, the Combined Air and Space Operations Center (CAOC) Performance Assessment System (CPAS) at Nellis Air Force Base (AFB) will collect find, fix, track, target, engage, and assess (F2T2EA) data from the Joint Automated Deep Operations Coordination System (JADOCS), Chat, and the Information Work Space (IWS). Secondly, JC2NEW will collect truth, link, and Advanced Simulation Technology, Incorporated (ASTi) voice data at the DMOC.

Requirement: JC2NEW will install four computers on the DMOC exercise network for utilization of the Modular Analysis and Test Support System (MAnTSS) and the Warfare Assessment Module (WAM) tools. The MAnTSS and WAM tools will capture

distributive interactive simulation (DIS) protocol data unit (PDU) traffic to include truth and track data for both opposition forces (OPFOR), BLUFOR, and neutral players.
Requirement: JC2NEW will also install two servers on the DMOC network to collect and store all exercise data for subsequent data analysis efforts. JC2NEW will perform data analysis functions at the Eglin AFB JC2NEW Data Analysis Center facility. JC2NEW will collect qualitative battle management data via questionnaires administered to selected nodes, and JC2NEW subject matter experts will log data specific to the node they are monitoring based on checklists, data collection forms, and positional screen captures as required.
Requirement: JC2NEW requires the time-tagged ASTi log files to merge with the common operational picture.
Requirement: JC2NEW may request network performance data and the Clear Quest log files to resolve anomalies.
Requirement: The JC2NEW RR-1 control cell will require approximately 400 square feet of workspace in the DMOC for data collectors and test management personnel.
Requirement: JC2NEW will need to install three to five computers on the Non-Secure Internet Protocol Router (NIPR) network to provide connectivity to the JC2NEW server at Eglin AFB, FL.
Requirement: JC2NEW will require that communications capabilities be established so JC2NEW RR-1 control cell personnel can communicate with all JC2NEW distributed locations to include voice, NIPR chat, and secure video teleconferencing (VTC).
Requirement: JC2NEW will position data collectors within applicable C2 nodes in the DMOC (e.g., Virtual Surveillance Target Attack Radar Simulation [VSTARS] and IFFACT) within the VF 08-1 white cell and "MAYTAG" on a non-interference basis.

How DMOC takes advantage of JC2NEW

DMOC will learn about Net-Enabled Weapons and the methods used to activate and control them. DMOC will gain knowledge of new systems being introduced in DOD and will be able to maintain currency as a training facility.