

Joint Test and Evaluation (JT&E)

The primary objective of the Joint Test and Evaluation (JT&E) Program is to provide solutions rapidly to operational deficiencies identified by the joint military community. The program achieves this objective by developing new tactics, techniques, and procedures (TTPs) and rigorously measuring the extent to which their use improves operational outcomes. JT&E projects may develop products that have implications beyond TTPs. Sponsoring organizations submit these products to the appropriate Service or Combatant Command as doctrine change requests. Products from JT&E projects have been incorporated into joint and multi-Service documents through the Joint Requirements Oversight Council process and through coordination with the Air, Land, Sea Application Center. The JT&E Program also develops operational testing methods that have joint application. The program is complementary to, but not part of, the acquisition process.

The JT&E Program has two test methods available for customers: the traditional Joint Test and the Quick Reaction Test (QRT).

The traditional Joint Test method is, on average, a two-year joint test project, preceded by a six-month Joint Feasibility Study. A Joint Test involves an in-depth, methodical test and evaluation of issues and seeks to identify solutions. DOT&E funds the sponsor-led test team, which provides the customer periodic feedback and useful, interim test products. The JT&E Program charters two new Joint Tests annually. The program managed six Joint Tests in FY14 that focused on the needs of operational forces. Projects annotated with an asterisk (*) completed in FY14.

- Joint Advanced Capability Employment (J-ACE)*
- Joint Base Architecture for Secure Industrial Control Systems (J-BASICS)
- Joint Counter Low, Slow, Small Unmanned Aircraft Systems (JCLU)
- Joint Deployable Integrated Air and Missile Defense (JDIAMD)*
- Joint Tactical Air Picture (JTAP)
- Unmanned Aircraft Systems – Airspace Integration (UAS-AI)

QRTs are intended to be less than a year in duration and solve urgent issues. The program managed 19 QRTs in FY14:

- Command and Control of Ballistic Missile Defense (C2BMD)
- Cyber Agility and Defensive Maneuver (CAADM)
- Electromagnetic Battle Management Concept of Operations Development and Evaluation (E-CODE)*
- En-Route Mission Command Capability (EMCC)*
- Heterogeneous Sensor Integration (HSI)*
- Joint Assessment Doctrine Evaluation (JADE)
- Joint Automated Net-Centric Satellite Communications (SATCOM) Electromagnetic Interference (EMI) Resolution (J-ANSER)
- Joint Cyberspace Intelligence, Surveillance, and Reconnaissance (JCISR)
- Joint Decision Support – Air (JDeS-A)
- Joint Graphical Rapid Assessment of Mission Impact (J-GRAMI)*
- Joint Homeland Mining Prevention and Response (JHMPR)
- Joint Integration of Cyber Effects (J-ICE)*
- Joint Integrated Standoff Weapons Employment (JISOWE)
- Joint Logistics Enterprise Data Sharing (JLEDS)*
- Joint National Capital Region (NCR) Air Surveillance Concept of Operations (CONOPS) – Accelerated (JNASCA-A)
- Joint Positive Hostile Identification (J-PHID)*
- Joint Precise Timing (JPT)
- Joint Sensor Awareness to Target Tracking (J-SATT)*
- Mortuary Affairs Contaminated Remains Mitigation Site (MACRMS)

As directed by DOT&E, the program executes special projects that address DoD-wide problems. The program managed one special project in FY14:

- Joint Personnel Recovery Collaboration and Planning (JPRCaP)

JOINT TESTS

JOINT ADVANCED CAPABILITY EMPLOYMENT (J-ACE)* (CLOSED AUGUST 2014)

Sponsor/Start Date: U.S. Strategic Command (USSTRATCOM)/August 2011

Purpose: To develop, test, and evaluate a standardized process to support the Joint Force Commander's ability to employ enhanced special programs to overcome complex targeting challenges.

Products/Benefits:

- A repeatable operational employment process that will enhance planning by developing, evaluating, and coordinating concepts of employment (CONEMP) that can be used by the Joint

Staff, Combatant Commands, Services, and National Security Agency to solve complex targeting challenges

- Multiple enhanced special program CONEMPs to overcome complex targeting challenges that are approved and signed at the General Officer/Flag Officer level and maintained by the appropriate Combatant Command or Service component
- Relevant training scenarios and vignettes
- Documented effects associated with techniques against representative targets
- Developed CONEMPs allow for expeditious development of concept of operations (CONOPS) and improved special program capability approval packages

JOINT – BASE ARCHITECTURE FOR SECURE INDUSTRIAL CONTROL SYSTEMS (J-BASICS)

Sponsor/Start Date: U.S. Cyber Command/February 2014

Purpose: To develop, test, and evaluate Advanced Cyber Industrial Control System (ICS) TTPs to improve the ability of ICS network managers to detect, mitigate, and recover from nation-state-level cyber attacks.

Products/Benefits:

- Resiliency (fight-through capability) to DOD ICS networks and immediate supporting Information Technology infrastructures
- Advanced means, in the form of TTPs, for ICS network managers to detect nation-state-level presence in DOD ICS networks; mitigate damage to underlying processes supported by the ICS in the event of a cyber attack; and quickly recover the ICS network to a condition free of any nation-state-level cyber presence
- Increased Commander confidence resulting from the ability of ICS managers to defend ICS networks from active nation-state-level attacks, ensuring mission readiness of ICS-dependent activities
- Policy and implementation guidance recommendations on ICS network security to Commander, U.S. Cyber Command and USD(AT&L)/Installations and Environment Business Enterprise Integration

JOINT COUNTER LOW, SLOW, SMALL UNMANNED AIRCRAFT SYSTEMS (JCLU)

Sponsor/Start Date: Air Force/August 2012

Purpose: To develop, test, and evaluate integrated air and missile defense (IAMD) operator TTPs that increase operators' ability to detect, track, and identify adversary low, slow, and small Unmanned Aircraft Systems (UAS) and provide timely notification to the Area Air Defense Commander.

Products/Benefits:

- TTPs to increase the operators' ability to detect, track, and identify this UAS threat category
- Integration of information from National Technical Means into a tactical datalink to support situational awareness and target identification
- Development of the operational architecture and organizational relationships that will increase the sharing of tactical information to improve the operators' ability to execute the joint engagement sequence

JOINT DEPLOYABLE INTEGRATED AIR AND MISSILE DEFENSE (JDIAMD)* (CLOSED JUNE 2014)

Sponsor/Start Date: North American Aerospace Defense (NORAD), U.S. Northern Command (USNORTHCOM), Army Space and Missile Defense Command/August 2011

Purpose: To develop joint planning and execution processes and procedures for deployable IAMD for the homeland.

Products/Benefits:

- IAMD process modeling that provides a comprehensive view of the integrated planning and execution process
- NORAD and USNORTHCOM current operations planning processes, checklists, and procedures for IAMD
- Continental NORAD Region, Alaska NORAD Region, and Air Forces North planning and execution TTPs for IAMD
- Naval Forces North and Third Fleet planning and execution TTPs for naval support of IAMD
- Army North planning and execution TTPs for operational control of ground-based IAMD forces
- 263rd Army Air and Missile Defense Command planning and execution TTPs for IAMD

JOINT TACTICAL AIR PICTURE (JTAP)

Sponsor/Start Date: U.S. Pacific Command (USPACOM)/February 2014

Purpose: To develop, evaluate, and validate joint TTPs to improve the joint air picture and engagement opportunities, which decreases the risk of hostile attack and fratricide.

Products/Benefits:

- Link 16 implementation procedures that reduce radio frequency network loading by moving participants to internet protocol architecture
 - Improves combat identification consistency
 - Increases the number of tracks containing fire control quality data
 - Enhances track update rates
- Multi-Service TTPs that enhances integrated fire control for defensive counter air engagements

UNMANNED AIRCRAFT SYSTEMS AIRSPACE INTEGRATION (UAS-AI)

Sponsor/Start Date: NORAD-USNORTHCOM, and the Army Test and Evaluation Command/August 2012

Purpose: Standardize and evaluate procedures to effectively operate UAS in the National Airspace System (NAS).

Products/Benefits:

- Standardized procedures for predictably operating UAS in the NAS under routine, lost command link, lost two-way radio communications, and lost sense and avoid conditions
- A common lexicon for UAS operations in the NAS
- Partnership and collaboration with the Federal Aviation Administration to integrate UAS into the NAS by 2015

QUICK REACTION TESTS

COMMAND AND CONTROL OF BALLISTIC MISSILE DEFENSE (C2BMD)

Sponsor/Start Date: Air Force Joint Test Office/February 2014

Purpose: To develop, test, and refine joint TTPs leveraging current Command and Control, Battle Management and Communications (C2BMC) capabilities resident, but not fully utilized, to enhance intra- and inter-theater joint BMD operations planning and re-planning efforts.

Products/Benefits:

- Improve BMD coordination among the Air Operations Center, Maritime Operations Center, and Army Air and Missile Defense Command in support of intra- and inter-theater BMD operations
- Enhance the ability of theaters to successfully plan and employ limited organic BMD assets
- Improve use of capabilities resident, but underutilized, in fielded C2BMC 6.4 software

CYBER AGILITY AND DEFENSIVE MANEUVER (CAADM)

Sponsor/Start Date: USPACOM/August 2014

Purpose: To develop, test, and refine TTPs to enhance moving target technologies to enable cyber agility and defensive cyber maneuver for the protection of selected critical command and control capabilities and information resources from advanced threats. Also, to provide recommendations for amendments of joint doctrine (principally Joint Publication 3-12) to introduce more comprehensive operational concepts for defensive maneuver in cyberspace.

Products/Benefits:

- Develop TTPs and recommend changes to joint doctrine to provide the following:
 - Assist commanders and network defenders in overcoming disadvantages inherent in static cyber defenses
 - Decrease vulnerability to enemy surveillance of and attacks against DOD network enclaves
 - Enhance ability to rapidly adapt cyber defenses in the face of changing missions and threats
 - Improve capability to counter and observe enemy actions in cyberspace
 - Increase wherewithal to shift initiative from attackers to network defenders
 - More effective application of technology for agile defense of key terrain in cyberspace
- Will underpin more effective joint planning and operations for defense of critical capabilities and information resources

ELECTROMAGNETIC SPECTRUM BATTLE MANAGEMENT CONCEPT OF OPERATIONS DEVELOPMENT AND EVALUATION (E-CODE)* (CLOSED MAY 2014)

Sponsor/Start Date: USSTRATCOM/March 2013

Purpose: To validate a CONOPS for establishing a Joint Electromagnetic Spectrum Operations Cell at the Combatant Command or Joint Task Force-level.

Products/Benefits:

- Integrated Joint Electromagnetic Spectrum Operations cell planning, tasking, coordination, and conflict resolution processes
- Synchronized operations to shape the electromagnetic battlespace to meet the commander's objectives
- Codified processes to gain and maintain freedom of movement in the electromagnetic operating environment while denying access to adversaries
- Improved information exchange, situational awareness, and command and control decision processes to reduce the timeline for dynamic reallocation of the congested and contested electromagnetic spectrum
- Improved processes for prioritizing, nominating, and neutralizing electromagnetic spectrum targets

EN-ROUTE MISSION COMMAND CAPABILITY (EMCC)* (CLOSED JULY 2014)

Sponsor/Start Date: XVIII Airborne Corps/May 2013

Purpose: To develop, test, and refine TTPs for installation and operational use of a robust EMCC that provides global response forces with the ability to establish and maintain optimal situational awareness while airborne, en-route, and on the ground to conduct forcible entry operations.

Products/Benefits:

- Formalized TTPs for EMCC installation and operation for the 82nd Airborne Division and 75th Ranger Regiment
- Provided guidance for leveraging EMCC to support forcible entry operations
- Developed supporting architectures for EMCC connectivity

HETEROGENEOUS SENSOR INTEGRATION (HSI)* (CLOSED JULY 2014)

Sponsor/ Start Date: USPACOM/March 2013

Purpose: To develop and test TTPs for training, alignment, and integration of experimental sensors with existing, signature-based sensors to enhance situational awareness of key terrain in cyberspace. The objective is to demonstrate, through the test and evaluation process, a significant reduction in false-positive reporting and an improvement in the precision of detection

of intrusions when employing heterogeneous sensor pairs in accordance with the HSI-developed TTPs.

Products/Benefits:

- Improved network defenders' detection rates while reducing false-positive alert rates associated with network intrusions, enhancing the Joint Force Commander's situational awareness of key terrain in cyberspace
- The associated operational CONEMP describes when and where it is appropriate to employ the HSI-developed TTPs by showing how the capability fits within the broader context of joint operations

JOINT ASSESSMENT DOCTRINE EVALUATION (JADE)

Sponsor/Start Date: U.S. European Command; USPACOM; U.S. Special Operations Command; Center for Army Analysis, Army Materiel System Analysis Activity/February 2014

Purpose: Refinement and validation of the assessment process and methodology developed from observations at the joint forces level, and identifying how to better integrate assessments into existing plans and operations processes. The process will initially look at using a checklist guide in a handbook format aimed at the end user, working closely with the Joint Staff J7 Joint Doctrine Note on assessments to vet and synchronize identified assessments process and methodology.

Products/Benefits: Standardize processes and doctrinal guidance to assist planners and operators on how to develop an assessment strategy for identifying indicators, triggers to decision points, and methods to measure progress (or lack of it) towards a desired end state.

JOINT AUTOMATED NET-CENTRIC SATCOM EMI RESOLUTION (J-ANSER)

Sponsor/Start Date: USSTRATCOM, Air Force Joint Test Office/November 2013

Purpose: To develop SATCOM EMI TTPs leveraging recently fielded net-centric systems to immediately detect, characterize, and cue geolocation assets.

Products/Benefits:

- Allows commanders and operators to advance operations in a SATCOM-denied and/or degraded environment by visually displaying SATCOM lines of communication health and status
- Improve SATCOM operators responsiveness to SATCOM interference or breadth of attack
- Enhance real-time situational awareness by reducing SATCOM EMI resolution timelines from hours to minutes

JOINT CYBERSPACE INTELLIGENCE, SURVEILLANCE AND RECONNAISSANCE (JCISR)

Sponsor/Start Date: USPACOM/January 2014

Purpose: To develop and evaluate TTPs that enable a joint cyber center to integrate the Intelligence Community (IC) cyberspace ISR into joint operation planning, joint targeting, and operations.

Products/Benefits:

- Establish and refine processes for full integration of the IC cyberspace ISR into planning, targeting, and execution of offensive cyber operations by Combatant Commander's Cyber Mission Forces (CMFs)
- Provide a framework for the IC to communicate with newly-formed Combatant Command CMFs
- Develop a doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy change request on factors that impede IC support for offensive cyber operations
- Validate TTPs through an assessment of developed processes across Combatant Commands

JOINT DECISION SUPPORT – AIR (JDES-A)

Sponsor/Start Date: NORAD/November 2013

Purpose: To develop, test, and refine TTPs for use by operators of the Air/Event Information Sharing Service (A/EISS) to bring A/EISS formally into the Operation NOBLE EAGLE threat decision processes and to achieve its full operational capability.

Products/Benefits:

- Enhanced A/EISS TTPs to deliver air-domain situational awareness and decision support and enable the Commander, NORAD-USNORTHCOM, Civil Aircraft Engagement Authorities, Canadian Recommending Authorities, and all participating joint, interagency, intergovernmental, and multinational air defense and security mission partners to make responsible and timely decisions during air events over North America
- Training and evaluation products to ensure implementation of TTPs is consistent and reliable

**JOINT GRAPHICAL RAPID ASSESSMENT OF MISSION IMPACT (J-GRAMI)*
(CLOSED MARCH 2014)**

Sponsor/Start Date: USSTRATCOM/December 2012

Purpose: To develop and evaluate TTPs for mission impact documentation, collaboration, and visualization of problem sets for USSTRATCOM's space missions and nuclear command and control. The TTPs leveraged the proof-of-concept Graphical Mission Impact Tool that USSTRATCOM's Mission Assurance Division created to graphically display mission effects resulting from loss or disruption of critical systems, assets, and infrastructure.

Products/Benefits:

- TTPs that provide USSTRATCOM and USPACOM an operational mission impact evaluation methodology for loss or disruption of critical systems, assets, or infrastructure
- Extensive detailed directions for using the Graphical Mission Impact Tool to do the following:
 - Dynamically identify vulnerabilities in critical systems, assets, and defense infrastructure needed to support assigned missions and mission-essential tasks

- Assess and graphically represent potential impacts resulting from loss or disruption of critical systems, assets, or infrastructure
- Provide decision makers with rapid capability to support informed decision making

JOINT HOMELAND MINING PREVENTION AND RESPONSE (JHMPR)

Sponsor/Start Date: NORAD-USNORTHCOM/August 2013

Purpose: To develop a standardized, cross-departmental, interagency CONOPS to support the expediency and accuracy of the information necessary to better enable detection and mine countermeasures (MCM) response to a mine or an underwater improvised explosive device (UWIED) incident in the United States.

Products/Benefits:

- CONOPS for the rapid, accurate, and standardized information exchange between the Department of Homeland Security mission of mine/UWIED detection and prevention and the DOD's MCM response
- Timely and effective MCM responses, which will better allow the quick restoration of commerce and port security

JOINT INTEGRATION OF CYBER EFFECTS (J-ICE)* (CLOSED NOVEMBER 2013)

Sponsor/Start Date: USPACOM/October 2012

Purpose: To develop and evaluate TTPs that enable a joint cyber center to integrate cyber effects into joint planning, targeting, and operations.

Products/Benefits:

- Established and refined processes for planning, targeting, and executing offensive cyber operations
- Enabled the Combatant Commander's application of operational art to project cyber power's capability to achieve an objective
- Provided a framework for command and control of newly-formed cyber forces within the command
- Developed inputs for doctrine, organization, training, materiel, leadership and education, personnel, and facilities on factors that impede planning for offensive cyber operations
- Validated TTPs through an assessment of developed processes across the Combatant Commands

JOINT INTEGRATED STANDOFF WEAPONS EMPLOYMENT (JISOWE)

Sponsor/Start Date: USPACOM/February 2014

Purpose: To develop and evaluate TTPs enabling more efficient and effective employment of scarce stand-off resources by enhancing mission planning and analysis for execution with the right number of standoff weapons at the right place and at the right time to ensure successful mission accomplishment and minimize fratricide.

Products/Benefits:

- Qualitative and empirical data analysis to support findings, conclusions, and recommendations for Combatant Command leadership, the United States Air Force Warfare Center, and the 561st Joint Tactics Squadron leadership on system employment
- Effective joint TTPs for the integrated planning and employment of joint packages of standoff munitions, decoys, and jammers

JOINT LOGISTICS ENTERPRISE DATA SHARING (JLEDS)* (CLOSED APRIL 2014)

Sponsor/Start Date: Joint Staff, U.S. Transportation Command/January 2013

Purpose: To develop and test credentialed-access, web-based enterprise interfaces to multiple sources of data regarding redeployment and retrograde of materiel from the U.S. Central Command theater. The interface will present these data with aggregated or detailed visualizations.

Products/Benefits:

- User manual and TTPs that provide step-by-step guidance regarding the use of the Cargo Movement Report widget. It describes the system and environments in which the widget resides and describes the functionality existing within the widget to access logistics data relevant to Afghanistan retrograde operations
- The JLEDS-developed CONOPS is a Microsoft Word-based user guide document, which can be delivered to customers in either electronic format or hard copy. The CONOPS describes how an Authoritative Data Source (ADS) can expose logistics data, or, for a user organization to establish a process to access data from an ADS. It includes use case examples, requirements definitions, and best practices regarding systems architectures.

JOINT NATIONAL CAPITOL REGION AIR SURVEILLANCE CONCEPT OF OPERATIONS – ADVANCED (JNASC-A)

Sponsor/Start Date: NORAD-USNORTHCOM/August 2013

Purpose: To develop the procedures to enable Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System (JLENS) to detect, track, and characterize items of interest within the JLENS field of view supporting the air surveillance of the NCR and surrounding areas to positively identify contacts and increase the time available to take action to counter air and missile threats.

Products/Benefits:

- The JLENS TTPs provide Eastern and Western Air Defense Sector operators efficient and effective detection and identification capabilities to improve the NORAD homeland defense mission of the NCR
- Hastens the ability of commanders to utilize the JLENS for homeland defense by expediting the development of joint TTPs 6 to 12 months earlier than previously possible

JOINT POSITIVE HOSTILE IDENTIFICATION (J-PHID)* (CLOSED JUNE 2014)

Sponsor/Start Date: NORAD-USNORTHCOM/March 2013

Purpose: To develop and evaluate TTPs to improve IAMD decision-making processes that will enable faster and more accurate responses in an increasingly dynamic air- and missile-defense environment. The goal of this QRT was to decrease the time required to positively identify a contact of interest and increase the time available to take action to counter air and missile threats.

Products/Benefits:

- IAMD TTPs to more efficiently and effectively execute the joint engagement sequence in defense of the homeland
- J-PHID-developed algorithm assigns a confidence level to a contact of interest, resulting in an improved IAMD decision-making process, reduced response time, and increased accuracy while executing the joint engagement sequence

JOINT PRECISE TIMING (JPT)

Sponsor/Start Date: Office of the Chief of Naval Operations/August 2013

Purpose: To develop, test, and refine TTPs to provide overarching guidance and best practices for the standardization and operation of DOD Precision Time and Time Interval (PTTI) systems.

Products/Benefits:

- TTPs that provide overarching guidance for the standardization and operation of DOD PTTI distribution systems
- Formalizes and documents the best practices that provide a methodical, repeatable, and verifiable set of guidelines to improve the reliability, redundancy, and assurance of DOD systems and provide system installers, maintainers, and operators with a more comprehensive understanding of PTTI effects for DOD systems
- Enables the joint force to achieve and sustain accurate, synchronized time of day and frequency worldwide to support joint operations

JOINT SENSOR AWARENESS TO TARGET TRACKING (J-SATT)* (CLOSED MAY 2014)

Sponsor/Start Date: USPACOM/March 2013

Purpose: To develop and evaluate TTPs for the rapid injection of fused track data derived from the Dynamic Time Critical Warfighting Capability into available tactical datalinks.

Products/Benefits:

- Provided methods to disseminate unverified intelligence over tactical networks for timely situational awareness of mobile threats to warfighters
- The datalink message supplements the original track information, specifically highlighting the type of threat, when it was last detected, and accuracy

MORTUARY AFFAIRS CONTAMINATED REMAINS MITIGATION SITE (MACRMS)

Sponsor/Start Date: U.S. Army Quartermaster School/February 2014

Purpose: To test and evaluate the MACRMS TTPs during a simulated chemical, biological, radiological, or nuclear incident in order to accomplish the following:

- Capture lessons learned and best practices related to the operation of a MACRMS
- Refine and validate the TTPs for joint personnel conducting the MACRMS mission, including hazard mitigation, processing remains, performing identification tasks, and preparing contaminated human remains for evacuation
- Assess personnel protective equipment, site equipment, and training support for the safe execution of the MACRMS mission

Products/Benefits:

- Validated TTPs for processing contaminated human remains and their personal effects resulting from a chemical, biological, radiological, or nuclear incident overseas or in the United States
- Update to Mortuary Affairs school curriculum for training
- Update to applicable Service and joint doctrine

SPECIAL PROJECTS

JOINT PERSONNEL RECOVERY COLLABORATION AND PLANNING (JPRCAP)

Sponsor/Start Date: Joint Personnel Recovery Agency/January 2013

Purpose: To develop, test, and evaluate procedures that will formalize planning, crisis response, and information sharing between the Combatant Commands, senior defense officials, and State Department defense attachés prior to and during personnel recovery responses where a State Department Chief of Mission (generally the ambassador), and not a DOD official, is the lead U.S. Government authority for activity in a country.

Products/Benefits:

- Processes and products that provide formal personnel recovery planning and training protocols that inform senior defense officials and State Department defense attachés in United States embassies, in coordination with the Combatant Commands, on how to build and implement country-specific personnel recovery plans tailored for the Chief of Mission