

## Joint Test and Evaluation (JT&E)

The primary objective of the Joint Test and Evaluation (JT&E) Program is to rapidly provide non-materiel solutions to operational deficiencies identified by the joint military community. The program achieves this objective by developing new tactics, techniques, and procedures (TTP) and rigorously measuring the extent to which their use improves operational outcomes. JT&E projects may develop products that have implications beyond TTP. 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, Joint Staff doctrine updates, Service training centers, 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 Joint Test and the Quick Reaction Test (QRT). Additionally, a Special Project is available for command directed or customer funded test projects.

The Joint Test is, on average, a two-year 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 their solutions. DOT&E funds the sponsor-led test team, which provides the customer periodic feedback and useable, interim test products. The JT&E Program charts two new Joint Tests annually. The JT&E Program managed seven Joint Tests in FY16 that focused on the needs of operational forces. Projects annotated with an asterisk (\*) were completed in FY16:

- Digitally Aided Close Air Support (DACAS)
- Four Pillars of Integrated Air and Missile Defense (4-PI)\*
- Joint Advanced Zensor to Zhooter (JAZZ)
- Joint-Base Architecture for Secure Industrial Control Systems (J-BASICS)\*
- Joint-Fiber Laser Mission Engagement (J-FLaME)\*
- Joint Pre-/Post-Attack Operations Supporting Survivability And Endurability (J-POSSE)
- Joint Tactical Air Picture (JTAP)\*

QRTs are intended to solve urgent issues in less than a year. The program managed 18 QRTs in FY16:

- Civil Military Engagement Development-Joint Targeting/ Non-Lethal (CMED-JT/NL)\*
- Cyber Degraded Training (CDT)
- Homeland Underwater Port Assessment Plan (HUPAP)
- Joint Accelerated Collaborative Targeting (J-ACT)
- Joint Air Operations Center Command and Control in a Contested Degraded Environment (JADC)
- Joint Biological/Radiological Mortuary Affairs Contaminated Remains Mitigation Site (JBRM)\*
- Joint-Cyber Synchronization into Air Tasking Order (J-CAT)\*
- Joint Cyber Integration of DOD Information Network Operations (J-CID)
- Joint Intelligence Surveillance and Reconnaissance in a Contested Area (JICA)\*
- Joint Interagency-Cyber Enhanced Detection and Monitoring (JI-CEDM)
- Joint Laser Anti-Satellite Mitigation Mission Planning (J-LAMMP)\*
- Joint Personnel Recovery Information Digital Exchange (J-PRIDE)
- Joint Sniper Performance Improvement Methodology (JSniPIM)\*
- Joint Talon Thresher Theater Integration (JT3I)
- Joint Target Development: Target System Analysis Standards and Procedures (T-SaP)\*
- Joint Unmanned Aerial Vehicle Swarming Integration (JUSI)\*
- Theater Joint Land Forces Component Commander Common Operational Picture (T-COP)\*
- Optimization of Social Media and Open Source Information Support (OSMOSIS)

As directed by DOT&E, the program executes Special Projects that address DOD-wide problems. Special Projects generally address emergent issues that are not addressed by any other DOD agency, but that need a rigorously tested solution. The program managed two Special Projects in FY16:

- Joint and Community Attributes-Based Access Control Authorization for Transportation Services (J-CAATS)\*
- Joint National Capital Region Enhanced Surveillance Tactics, Techniques, and Procedures (J-NEST)

### JOINT TESTS

#### DIGITALLY AIDED CLOSE AIR SUPPORT (DACAS)

**Sponsor/Start Date:** Joint Staff J6/February 2016

**Purpose:** To develop, test, and evaluate standardized TTP so Joint Terminal Attack Controllers (JTAC), Joint Fires Observers

(JFO), and Close Air Support (CAS) aircrew can realize the advantage of DACAS capabilities, including shared situational awareness, increased confidence prior to weapons release, and improved kill chain timeliness.

## Products/Benefits:

- Enable JTAC and aircrew to access existing networks and exploit DACAS benefits
- Decrease human input error through machine-to-machine data exchange
- Instill confidence prior to weapons release

## FOUR PILLARS OF INTEGRATED AIR AND MISSILE DEFENSE (4-PI)

(CLOSED AUGUST 2016)

**Sponsor/Start Date:** U.S. European Command (USEUCOM), U.S. Army Space and Missile Defense Command, and U.S. Air Forces Europe-Air Forces Africa/August 2014

**Purpose:** To develop and test TTP that enable sharing of existing sensor data to enhance the concurrent execution of integrated air and missile defense (IAMD) active defenses, passive defenses, attack operations, and battle management command, control, communications, and intelligence (BMC3I) in response to ballistic missile attacks across Combatant Command areas of responsibility (AOR) in a coalition environment.

## Products/Benefits:

- TTP on sharing data to support concurrent offensive and defensive counter-air operations in order to better defend against, and mitigate the effects of, a ballistic missile attack across Combatant Command boundaries with coalition partners (USEUCOM, U.S. Central Command (USCENTCOM) and NATO)
- Enabled cross-AOR data sharing of Joint Automated Deep Operations Coordination System information, which allows communication of USEUCOM priorities and real-time engagement monitoring and established persistent capability that can be easily turned on when operational need arises
- Developed cross-AOR attack operations Joint Planning Team construct and Collaborative Planning Environment TTP, which serves as a baseline for Joint Staff cross-AOR planning orders to resolve potential cross-AOR gaps and seams
- Standardized BMC3I capabilities and Global Command and Control System – Joint configurations to maximize efficiencies, support command and control collaboration, and enable sharing of IAMD sensor data
- Enhanced civil-military passive defense/missile warning process for NATO nations, extensible to other Shared Early Warning System partners

## JOINT ADVANCED ZENSOR-TO-ZHOOTER (JAZZ)

**Sponsor/Start Date:** U.S. Pacific Command (USPACOM)/ August 2015

**Purpose:** To develop, evaluate, and validate TTP to more efficiently and effectively gain and maintain battlespace awareness through integration of rapidly developed capabilities to support combat operations in anti-access/area denial environments.

## Products/Benefits:

- A sensor to shooter TTP that enables sharing of advanced sensor and National-Tactical Integration (NTI) data between 5th and 4th generation fighters, resulting in increased situational awareness, improved engagement opportunities, and better utilization of weapon systems
- Documented roles and responsibilities for the Operational Air Component Commander and the tactical datalink network designers to plan and execute integration of advanced sensors and NTI into any theater of operations

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

(CLOSED DECEMBER 2015)

**Sponsor/Start Date:** U.S. Cyber Command (USCYBERCOM)/ February 2014

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

**Products/Benefits:** ACI TTP and related ICS network manager training packages provided the following capabilities:

- Resiliency to DOD ICS networks and IT infrastructures
- Increased Command confidence resulting from the ACI TTP, for ICS network managers to: detect nation-state 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 be mission capable
- Policy and implementation guidance recommendations for ICS network security to Commander, USCYBERCOM and the Assistant Secretary of Defense, Energy, Installations and Environment
- Training package and cyber exercise scenarios that provide ICS operators an understanding of the TTP and its practical application

## JOINT-FIBER LASER MISSION ENGAGEMENT (J-FLAME)

(CLOSED AUGUST 2016)

**Sponsor/Start Date:** Naval Surface Warfare Center, Dahlgren Division/August 2014

**Purpose:** To develop and test TTP that integrate emerging directed energy laser (DEL) capabilities into joint fires and force protection missions.

**Products/Benefits:** Improved DEL Operations in the Joint Battlespace:

- Integrated DEL systems into joint fires planning and execution, focusing on actions required for deconfliction, integration, synchronization, and safety of these systems in a complex and congested battlespace

- Addressed force protection mission requirement against asymmetric threats (unmanned aerial systems and small boats), focusing on unique aspects of DELs that impact the joint battlespace (for example, new coordinating measures, Laser Engagement Zones, and Laser Operating Areas) that personnel at both operational and tactical levels need to consider
- Provided laser dwell time versus range graphs for various DEL power classes and mission sets to assist operators to effectively and efficiently employ DELs
- Provided information on risks associated with DEL reflected energy and risk estimate distances for use in minimizing risks to friendly troops in close proximity to DEL targets
- Provided recommendations to assist the Services in DEL system development and acquisition, as well as with integrating DELs into the battlespace common operational picture

## **JOINT PRE-/POST-ATTACK OPERATIONS SUPPORTING SURVIVABILITY AND ENDURABILITY (J-POSSE)**

**Sponsor/Start Date:** U. S. Strategic Command (USSTRATCOM)/February 2015

**Purpose:** To develop, test, and evaluate TTP to provide joint operators the ability to survive an electromagnetic pulse (EMP) event in order to ensure continuous mission functionality.

## **Products/Benefits:**

- Standardized procedures that provide overarching guidance for required actions before and after an EMP event in order to survive it
- Results inform future resourcing decisions regarding physical enhancements
- Extensible to other mission systems potentially vulnerable to EMP effects

## **JOINT TACTICAL AIR PICTURE (JTAP) (CLOSED FEBRUARY 2016)**

**Sponsor/Start Date:** USPACOM/February 2014

**Purpose:** To develop, evaluate, and validate TTP to improve the joint air picture and engagement opportunities, which decrease the risks of preemptive hostile attack and fratricide.

## **Products/Benefits:**

- Developed TTP to reduce radio frequency network loading by moving participants to internet protocol architectures resulting in a greater number of timeslots available for participants
- Developed Multi-Service IAMD TTP to enhance integrated fire control/between ground sensors and air shooters for defensive counter-air engagements thereby increasing the number of available tracks containing fire control quality data

## **QUICK REACTION TESTS**

### **CIVIL MILITARY ENGAGEMENT DEVELOPMENT-JOINT TARGETING/NON-LETHAL (CMED-JT/NL) (CLOSED MAY 2016)**

**Sponsor/Start Date:** U.S. Army Civil Affairs & Psychological Operations Command (Airborne)/February 2015

**Purpose:** To develop, test, and validate civil-military engagement development (CMED) TTP to improve the non-lethal aspects of the joint targeting process. To increase the Combatant Command staff's ability to integrate civil information and analysis products into the joint targeting cycle and improve basic, intermediate, and advanced joint target folder development, entity-level development, prioritization (phase two of the joint targeting process), and no strike and restricted target lists.

## **Products/Benefits:**

The CMED-JT/NL-developed TTP provided Commanders the ability to integrate civil military information into phase two of the joint targeting process.

### **CYBER-DEGRADED TRAINING (CDT)**

**Sponsor/Start Date:** USPACOM/Feb 2016

**Purpose:** To develop, test, and evaluate concept of operations (CONOPS) and TTP that will address the characteristics of cyber-degraded training environments as well as how to select, employ, and overcome these capabilities relative to factors such

as military training objectives, Commander's risk tolerance, threat representation, and exercise complexity

## **Products/Benefits:** TTP & CONOPS

- TTP and CONOPS that provide USPACOM with standardized, comprehensive tools to support Commanders at all levels with the ability to function in a cyber-degraded environment
- CONOPS identifies the different types of degraded cyber environments that can be created and options of how trainers, planners, and subject matter experts can employ them for training and exercise activities

### **HOMELAND UNDERWATER PORT ASSESSMENT PLAN (HUPAP)**

**Sponsor/Start Date:** North American Aerospace Defense Command (NORAD)-U.S. Northern Command (USNORTHCOM)/June 2015

**Purpose:** To develop and evaluate TTP for underwater port assessments to include specific details about the roles and responsibilities of the stakeholders; identify available local, state, and federal force multipliers; provide data collection, compilation, and sharing guidance; and identify gaps in response considerations.

## **Products/Benefits:**

- Comprehensive TTP that prescribes the standards and activities necessary to gather interagency underwater port

information for homeland ports and internal waterways in preparation for a catastrophic event

- Assists port authorities when developing an Interagency Underwater Port Assessment that will provide DOD and interagency partners with preparation, response, and recovery information necessary to reopen ports and waterways

## **JOINT ACCELERATED COLLABORATIVE TARGETING (J-ACT)**

**Sponsor/Start Date:** USSTRATCOM/February 2016

**Purpose:** To develop and assess a CONOPS that uses an accelerated intelligence processing, exploitation, and dissemination (PED) process that streamlines intelligence analysis and coordination with targeteers to increase the speed of potential target object classification and verification.

### **Products/Benefits:**

- A PED CONOPS that accelerates imagery analysis, target object classification, and target verification.

## **JOINT AIR OPERATIONS CENTER (AOC) COMMAND AND CONTROL (C2) IN A CONTESTED DEGRADED ENVIRONMENT (JADC)**

**Sponsor/Start Date:** USPACOM/February 2016

**Purpose:** To develop TTP to support joint AOC distributed planning, execution, and assessment in a contested, degraded, and operationally limited environment by distributing authorities and effectively employing airpower and supporting forces.

### **Products/Benefits:**

- TTP that enables delegation of operational airpower C2 from the joint AOC to subordinate Commanders
- Delegation of authorities that empower leaders at lower echelons of command to continue execution of the Commander's intent with limited loss of operational or tactical initiative

## **JOINT BIOLOGICAL/RADIOLOGICAL MORTUARY AFFAIRS CONTAMINATED REMAINS MITIGATION SITE (JBRM) (CLOSED SEPTEMBER 2016)**

**Sponsor/Start Date:** U.S. Army Quartermaster School/June 2015

**Purpose:** To develop TTP for the safe processing, identification, and preparation for evacuation of biologically or radiologically contaminated human remains. To improve the Mortuary Affairs Contaminated Remains Mitigation Site effectiveness and safety for operational mission requirements, including hazard mitigation, preserving forensic evidence, establishing chain of custody, supporting positive identification processes, and preparing remains for evacuation.

### **Products/Benefits:**

- Updates to Army and joint doctrine, with primary focus on Army Techniques Publication 4-46.2, Mortuary Affairs Contaminated Remains Mitigation Site Operations, as related to biological or radiological contaminated human remains

- Verified data and tools to the mortuary affairs community for use in both USNORTHCOM homeland defense missions and DOD's worldwide contingency operations
- Creation of the Mortuary Affairs Contaminated Remains Mitigation Site Tactical Handbook

## **JOINT-CYBER SYNCHRONIZATION INTO AIR TASKING ORDER (J-CAT)**

**(CLOSED FEBRUARY 2016)**

**Sponsor/Start Date:** USPACOM/October 2014

**Purpose:** To develop TTP for Combatant Commands to direct regionally synchronized and globally deconflicted cyber fires and integrate offensive cyberspace operations into air tasking order development and execution processes to synchronize cyber operations with other joint fires and provide coordination and deconfliction of global cyber operations with USCYBERCOM's cyberspace tasking order.

**Products/Benefits:** An operational TTP for incorporation of cyber fires and effects into the Combatant Command's air tasking order and USCYBERCOM's cyberspace tasking order.

## **JOINT CYBER INTEGRATION OF DOD INFORMATION NETWORK OPERATIONS (J-CID)**

**Sponsor/Start Date:** USPACOM/June 2015

**Purpose:** To develop a CONOPS and TTP for the Combatant Commands' Joint Cyber Centers that fully integrates the organization, authorities, and capabilities of DOD Information Network commands in support of joint theater cyber operations.

**Products/Benefits:** CONOPS and TTP that provide best practices for the support of regional operations, situational understanding, and decision making for cyberspace operations between regional DOD Information Network commands and Joint Cyber Centers.

## **JOINT INTELLIGENCE SURVEILLANCE AND RECONNAISSANCE IN A CONTESTED AREA (JICA) (CLOSED FEBRUARY 2016)**

**Sponsor/Start Date:** 25th Air Force/October 2014

**Purpose:** To develop TTP that improve information flow from national intelligence, surveillance, and reconnaissance (ISR) capabilities to operational and tactical-level users in an anti-access/area denial environment.

**Products/Benefits:** TTP that establish a 'trigger' for AOC intelligence personnel to request ISR support from national assets by defining and identifying the level of degradation impairing organic theater and tactical ISR capabilities and instructions on how to efficiently request ISR support.

## **JOINT INTERAGENCY-CYBER ENHANCED DETECTION AND MONITORING (JI-CEDM)**

**Sponsor/Start Date:** Joint Interagency Task Force South (JIATFS)/June 2016



**Purpose:** To develop TTP to coordinate and utilize interagency cyber domain support from DOD, law enforcement, and intelligence community partners in the conduct of detection and monitoring (D&M) missions.

**Products/Benefits:** CONOPS and TTP for the timely and efficient use of internal and external cyber resources to support JIATFS requirements, eliminate redundancy, and maximize the impact of cyber domain information in conducting D&M operations

## **JOINT LASER ANTI-SATELLITE MITIGATION MISSION PLANNING (J-LAMMP) (CLOSED OCTOBER 2015)**

**Sponsor/Start Date:** U.S. Air Force Warfare Center/June 2014

**Purpose:** To develop TTP to quantify the anti-satellite (ASAT) risk to low-earth and highly elliptical orbit satellites using optical systems and requiring operational and tactical methods to mitigate existing low-power laser threats. The TTP incorporates payload susceptibility information into mission planning to mitigate laser ASAT threats at both the operational and tactical levels of space operations.

### **Products/Benefits:**

- Ability to incorporate payload susceptibility information into the mission planning processes at operational and tactical levels in response to laser ASAT threats
- Formalized established communications processes within the Joint Space Operations Center (JSpOC) and between the JSpOC and subordinate units

## **JOINT PERSONNEL RECOVERY INFORMATION DIGITAL EXCHANGE (J-PRIDE) (CLOSED OCTOBER 2016)**

**Sponsor/Start Date:** Joint Staff J7/June 2015

**Purpose:** To develop TTP to pass critical information across existing hybrid networks between isolated personnel, recovery forces, and command and control nodes during joint personnel recovery (PR) missions.

### **Products/Benefits:**

- Formalized mission critical information across operational and tactical PR nodes to enhance mission effectiveness and increase survivability
- Provided a standardized 15-line PR message format across joint forces

## **JOINT SNIPER PERFORMANCE IMPROVEMENT METHODOLOGY (JSNIPIM) (CLOSED JANUARY 2016)**

**Sponsor/Start Date:** U.S. Marine Corps Weapons Training Battalion/October 2014

**Purpose:** To develop TTP and training methodologies to improve sniper teams' ability to identify, range, lead, and engage human motion-type moving targets at distances of 300 to 1,000 meters at speeds of up to 10 miles per hour.

**Products/Benefits:** Developed a sniper-carried memory aid and a training support package with learning objectives, an instructor guide, and student handouts that:

- Enable instructors to teach, test, and qualify students on engaging moving targets at distances of 300 to 1,000 meters at speeds of up to 10 miles per hour
- Update curriculums for all DOD sniper schools

## **JOINT TALON THRESHER THEATER INTEGRATION (JT3I)**

**Sponsor/Start Date:** USPACOM/October 2015

**Purpose:** To develop a CONOPS that clearly defines the optimal operating parameters of the Talon THRESHER system and standardizes user operating procedures to enhance air domain awareness within theater command and control nodes, joint AOCs, and national-tactical integration cells.

### **Products/Benefits:**

- Standardized operating parameters and procedures to utilize and disseminate Talon THRESHER data
- Enhanced analysis of air track patterns of behavior
- Timely output of correlated air picture in multiple security formats

## **JOINT TARGET DEVELOPMENT: TARGET SYSTEM ANALYSIS STANDARDS AND PROCEDURES (T-SAP) (CLOSED MAY 2016)**

**Sponsor/Start Date:** Joint Staff J2/February 2015

**Purpose:** To develop TTP for targeteers and intelligence analysts to conduct target system analysis (TSA) for joint force operations and to standardize and enhance federated TSA production in support of deliberate and crisis action planning.

### **Products/Benefits:**

- TSA TTP to support joint force planning and update Chairman of the Joint Chiefs of Staff Instruction 3370.01, Target Development Standards
- Provided applicable doctrine change recommendations that will be transitioned to the Joint Staff J2

## **JOINT UNMANNED AERIAL VEHICLE SWARMING INTEGRATION (JUSI) (CLOSED JULY 2016)**

**Sponsor/Start Date:** USPACOM/February 2015

**Purpose:** To develop, test, and validate a concept of employment that addresses operational use of swarming unmanned aircraft (UA) carrying electronic attack (EA) payloads against an advanced integrated air defense system (IADS) in an anti-access/area denial environment.

### **Products/Benefits:**

- A concept of employment for UA swarms performing stand-in EA to degrade and deny the hostile IADS kill chain in support of joint air vehicles
- Identified capabilities and limitations of existing planning and modeling and simulation tools for this mission

## **THEATER JOINT LAND FORCES COMPONENT COMMANDER COMMON OPERATIONAL PICTURE (T-COP) (CLOSED JUNE 2016)**

**Sponsor/Start Date:** USPACOM/February 2015

**Purpose:** To develop a TTP and handbook for the USPACOM land forces common operating picture (COP) system to streamline the integration of participating units and various systems into the existing land domain COP.

### **Products/Benefits:**

- Joint TTP that is extensible to other Combatant Commands seeking to enhance or develop similar land domain COPs for their specific needs
- A common processes handbook to effectively maintain the COP and document Service specific practices

## **OPTIMIZATION OF SOCIAL MEDIA AND OPEN SOURCE INFORMATION SUPPORT QRT (OSMOSIS)**

**Sponsor/Start Date:** USCENTCOM/May 2016

**Purpose:** To develop TTP to rapidly and effectively gain near-real-time situational awareness using published digital media (new and traditional media sources) available on a global basis to enhance decision-making, planning, and execution of the Civil Affairs, Psychological Operations/Military Information and Support Operations, and Public Affairs missions.

### **Products/Benefits:**

- Improved information gathering from traditional and non-traditional sources to provide the data necessary to create value focused, fused information for analysis to enhance the situational awareness of Commanders at the tactical, operational, and strategic levels.
- Accelerate employment of the Information Volume and Velocity application, a data extraction and aggregation application, across a broad set of missions such as: Defense support of civil authorities, humanitarian aid/disaster relief, strategic communications, counterterrorism, stability and counterinsurgency operations, joint interdiction operations, and peace operations

## **SPECIAL PROJECTS**

### **JOINT AND COMMUNITY ATTRIBUTES-BASED ACCESS CONTROL AUTHORIZATION FOR TRANSPORTATION SERVICES (J-CAATS) (CLOSED JULY 2016)**

**Sponsor/Start Date:** U.S. Transportation Command/February 2015

**Purpose:** To develop TTP and CONOPS for providing secure, yet timely and appropriate, data access for DOD users using an attributes-based access control approach.

### **Products/Benefits:**

- TTP that detailed the technical parameters and provided step-by-step guidance regarding the installation and use of the J-CAATS capability
- CONOPS that describes the overall planning, resources, and timelines required to proceed with usage

### **JOINT NATIONAL CAPITAL REGION ENHANCED SURVEILLANCE TACTICS, TECHNIQUES, AND PROCEDURES (J-NEST)**

**Sponsor/Start Date:** NORAD/October 2014

**Purpose:** To develop TTP to incorporate emerging sensor capabilities into the NORAD and USNORTHCOM family of systems to support the air defense mission.

### **Products/Benefits:**

- TTP that enable tactical, operational, and strategic command and control nodes to more fully employ the expanded detection, improved identification, and enhanced engagement of cruise missile threats to the national capital region
- TTP on utilization of advanced equipment capabilities to execute an effective joint engagement sequence for cruise missile defense