

Joint Test and Evaluation Program

The Joint Test and Evaluation (JT&E) program is designed to provide quantitative information for analysis of existing joint military capabilities and potential options for increasing military effectiveness. The program is complimentary to, but not part of, the weapons acquisition process.

The JT&E program provides products to enhance the military effectiveness of fielded systems. JT&E products include joint or multi-Service tactics, techniques, and procedures (TTP); joint Service training programs; operational and technical testing methods; test and training range procedures; and joint and multi-Service data archives and analysis tools.

The JT&E program instituted a Quick Reaction Test (QRT) capability. A QRT responds to emergent warfighter needs and issues identified by a Combatant Commander (COCOM), Service, or National Agency sponsor. A QRT has a short duration without giving up the rigors of test and evaluation. A QRT is lead by a designated Operational Test Agency. The five active QRTs during FY06 were:

- Joint Shipboard Ammunition and Ammunition Boards (JSAABR)
- Joint Interoperability for Maritime Interdiction (JIMI)
- Joint Counter Remote-Control Improvised Explosive Devise (IED) Warfare (JCREW)
- Joint Contingency Operations Base Force Protection (JCOB)
- Joint Theater Ballistic Missile Early Warning (JTBMEW)

The JT&E program sponsors traditional JT&E projects, which address requirements of Joint Vision 2020 and/or focus on meeting the emergent needs of today's warfighter engaged in the Long War on Terror. The eight active Joint Tests are:

- Joint Space Control Operations - Negation (JSCO-N)
- Joint Fires Coordination Measures (JFCM)
- Joint Command and Control for War on Terror Activities (JC2WTA)
- Joint Mobile Network Operations (JMNO)
- Joint Test and Evaluation Methodology (JTEM)
- Joint Integrated (Interagency and International) Command and Control for Maritime Homeland Defense (JICM)
- Joint Airspace Command and Control (JACC)
- Joint Command and Control of Net Enabled Weapons (JC2NEW)

Five JT&E projects completed this year:

- Joint Logistics Planning Enhancements (JLOG/PE)
- Joint Datalink Information Combat Execution (JDICE)
- Joint Integration and Interoperability of Special Operations (JIISO)
- Joint Low Altitude Aircraft Survivability (JLAAS)
- Joint Forward Operating Base Force Protection (JFOB)

QUICK REACTION TESTS

JOINT SHIPBOARD AMMUNITION AND AMMUNITION BOARDS (JSAABR)

Test Description

JSAABR is sponsored by U.S. Special Operations Command (USSOCOM) and will complete testing in March 2007. This project will evaluate and make recommendations on how the Services and USSOCOM can safely use non-Naval ordnance when operating from Navy ships. Operations from ships present a unique ordnance challenge because of the concentration of electronic emitters that generate electromagnetic signals. JSAABR intends to provide recommendations to improve shipboard safety procedures when using non-Naval ordnance, as well as recommendations on how Services can make their weapon systems more compatible with the shipboard environment. JSAABR will also determine how the newly formed Joint Weapons Safety Technical Advisory Panel may facilitate certification of non-Navy ordnance for shipboard use. Commander, Operational Test and Evaluation Force (COMOPTEVFOR) leads this effort.

Test Activity

Mini-Test One (MT-1, February - April 2006) developed and tested a process to catalog USSOCOM ordnance into the Navy system. Mini-Test Two (MT-2, May - November 2006) validated a process for joint approval of a non-Naval weapons system and identified synergies that may be realized with the Joint Weapons Safety Technical Advisory Panel or other joint safety weapons board initiatives.

Benefits to the Warfighter

JSAABR's interim products include inputs for Navy Ordnance Pamphlet 4, published by the Naval Ordnance Safety and Security Activity organization, and Joint Publication 3-04, Shipboard Helicopter Operations, a joint staff level publication; developing a Joint Ammunition Cataloging Request system in collaboration with the Naval Operations Logistics Support Center-Ammunition organization, which streamlines the process

for bringing non-Navy ordnance onto Navy ships; working with the Weapon System Explosives Safety Review Board to formalize the reoccurring use of Special Operations Air Regiment aircraft and weapon systems on Navy ships. JSAABR continues to work on joint TTP that are needed to safely transport and store non-Navy munitions on Navy ships.

JOINT INTEROPERABILITY FOR MARITIME INTERDICTION (JIMI)

Test Description

JIMI is sponsored by U.S. Pacific Command (USPACOM) and ends in December 2006. The test will investigate, evaluate, and recommend solutions to Link-16 (a tactical datalink) interoperability shortfalls that are critical to successful execution of maritime interdiction. COMOPTEVFOR leads this effort.

Test Activity

JIMI's primary data collection event was during Exercise Valiant Shield 2006. JIMI developed TTP for E-2C, F/A-18, F-15E, and F-16CJ aircraft. The final JIMI test event was conducted in September 2006 and validated TTP refinements resulting from data assessment following the Valiant Shield Exercise.

Benefits to the Warfighter

JIMI provides a joint concept of operations and messaging standard to provide Link-16 information across joint tactical users to display and monitor seagoing surface vessels. JIMI evaluates joint technical and operational concepts and recommends improvements.

JOINT COUNTER REMOTE-CONTROL IMPROVISED EXPLOSIVE DEVICE ELECTRONIC WARFARE (JCREW)

Test Description

JCREW is sponsored by the Army and will consolidate Counter Remote-Control Improvised Explosive Device (IED) Electronic Warfare (CREW) employment training and training material for CREW jammers. A consolidated training manual (including an online version) will be provided to deploying units to ensure they receive standard instructions for CREW jammer use. The Army Test and Evaluation Command (ATEC) leads this effort.

Test Activity

JCREW is developing a CREW training handbook for publication by December 2006. A decision will be made by fall 2006 if active field testing of the procedures is required.

Benefits to the Warfighter

Standardized training information regarding IED employment will increase warfighter combat capability and will improve CREW performance, potentially resulting in fewer lives lost to IEDs, the primary cause of fatalities in Operation Iraqi Freedom (OIF).

JOINT CONTINGENCY OPERATIONS BASE (JCOB)

Test Description

JCOB (initiated in August 2006) is sponsored by the Army to develop joint TTP for U.S. military contingency camps for security, stability, transition, and reconstruction (SSTR) operations. JCOB will develop guidance on site selection, perimeter security, standoff, dispersion, compartmentalization, sidewall protection, and overhead cover. It will also recommend defensive measures against the threat of IEDs, rockets, artillery, and mortars. This TTP will enhance security, streamline camp set-up, and allow military units to focus on the mission. JCOB will observe and conduct research at counter rocket, artillery, and mortar exercises in August to October 2007. ATEC leads this effort.

JOINT THEATER BALLISTIC MISSILE EARLY WARNING (JTBMEW)

Test Description

JTBMEW (initiated in August 2006) is sponsored by the Army. It is intended to develop joint TTP that provide precise theater ballistic missile early warning to Combined Forces Command (CFC). This test will examine the Korea Theater of Operations theater ballistic missile early warning architecture to determine weaknesses, shortfalls, stovepipes, and single-points-of-failure involving all platforms and current methods of information collection, processing, reporting, and dissemination. JTBMEW team members are attending planning meetings for an integration exercise that they will use for data collection, projected to be held in March 2007. ATEC leads this effort.

ACTIVE JOINT TEST AND EVALUATION PROJECTS

JOINT SPACE CONTROL OPERATIONS - NEGATION (JSCO-N)

Test Description

The Air Force sponsored JSCO-N (initiated in February 2004) to evaluate improvements to command and control processes

and joint TTP associated with the space control negation (SC-N) mission. Its primary focus is on integrating the SC-N functions into the joint targeting cycle at the COCOM level.

Test Activity

During FY06, JSCO-N conducted Field Test Two (FT-2) in conjunction with USPACOM exercise Terminal Fury 2006 (TF06). FT-2 examined and recommended improved processes that included joint TTP, command and control processes, intelligence community support, and other critical elements of SC-N operations. In September 2006, JSCO-N conducted Field Test Three (FT-3) in conjunction with U.S. European Command's (USEUCOM) Austere Challenge 2006 (AC06). FT-3 evaluated recommended changes in procedures in a very different environment (physical venue and operational scenario) from Terminal Fury. This test enabled JSCO-N to evaluate the global applicability of its recommended procedures and advance the standardization of processes across multiple COCOMs. JSCO-N is scheduled to complete testing on March 31, 2007.

Benefits to the Warfighter

JSCO-N produced the following test products for the warfighter:

- Recommended changes that were incorporated into Contingency Plan 8035-06, Space Control Operations that provides guidance to the space control operational elements reporting to the U.S. Strategic Command (USSTRATCOM). Additional recommendations have been provided to improve Joint Publication 3-14, Space Operations, Strategic Directives (SD 504-3)
- Provided an exercise planning guide to enhance realistic training of this mission area and improve integration with other capabilities. This guidance will be finalized and published as a handbook upon completion of USEUCOM's AC06
- Provided Information Operations Joint Munitions Effectiveness Manual Working Group command and control processes, TTPs, and proof of concept software models to evaluate target - weapon pairings, which improved the integration of Information Operations into the joint force commanders' targeting cycle
- Assisted U.S. Joint Forces Command (USJFCOM) and USSTRATCOM in conducting a series of workshops on collaborative command and control processes involving Information Operations
- Provided feedback and organized a series of workshops to better organize and enhance intelligence support to the SC-N mission area
- Improved individual training by providing curriculum inputs to Air Force National Security Space Institute and Army Functional Area-40 courses

JOINT FIRES COORDINATION MEASURES (JFCM)

Test Description

The Air Force sponsored JFCM (initiated in February 2005) to investigate, evaluate, and recommend improvements to the effectiveness of joint fires areas (JFAs) by providing TTP. JFCM's two principal test issues are to determine:

- The extent to which JFCM-developed TTP enable a joint force commander (JFC) to plan and establish a JFA

- The adequacy of the current or near-term command, control, communications, and computer (C4) systems to enable the JFC to plan and establish a JFA

Test Activity

During FY06, JFCM conducted a risk-reduction event, executed two mini-tests, and began detailed test planning for the final field test. JFCM is scheduled to complete testing on March 31, 2008.

Benefits to the Warfighter

The JFCM will develop and provide new TTPs that standardize JFAs as an effective and efficient fire support coordinating measure using existing C4 systems to more fully integrate fires with maneuver, thus reducing the risk of fratricide. As interim products, JFCM participated in working groups to update the Air Land Sea Application Center's Kill Box Employment multi-Service TTP and provided inputs to USJFCOM to update Joint Publication 3-09, Joint Fire Support.

JOINT COMMAND AND CONTROL FOR WAR ON TERROR ACTIVITIES (JC2WTA)

Test Description

The Navy sponsored JC2WTA (initiated in February 2006) to develop, test, and evaluate joint TTP that enable a joint task force (JTF) commander to conduct distributed command and control of joint forces. This will allow a JTF commander, from a small clandestine forward-based command center and using a reachback capability to a rear command and to intelligence centers, to rapidly plan and execute Long War on Terror missions. The two principal test issues are:

- To what extent do TTP enable the JTF commander to command and control assigned forces from a clandestine forward location?
- To what extent do TTP enable intelligence in support of operations for Long War on Terror missions assigned to a JTF commander operating from a clandestine forward location?

Test Activity

During FY06, JC2WTA established their test team and initiated test development and planning for Mini-Test One (MT-1) scheduled for December 2006 at the Naval War College (NWC). MT-1 will use war-gaming techniques to test mission execution utilizing initial TTP for timeliness, accuracy, and completeness. Mini-Test Two (MT-2) will test mission execution using revised TTP and additional aspects of distributed Command, Control, and Intelligence (C2I) in a more challenging joint exercise environment. MT-2 will be conducted during exercise Talisman Saber 2007 in June 2007. The Field Test is the final JC2WTA test event. It will test all aspects of the joint TTP, including command and control of forces. The Field Test is scheduled for March 2008 aboard a guided missile nuclear submarine (SSGN) operating with an embarked JTF and Special Operations Forces (SOF). JC2WTA is scheduled to complete on December 31, 2008.

Benefits to the Warfighter

JC2WTA will develop, test, and evaluate new joint TTP that can support a JTF commander in conducting distributed command and control clandestinely from a small, forward deployed platform, in a limited communications bandwidth environment.

JOINT MOBILE NETWORK OPERATIONS (JMNO)

Test Description

The Marine Corps sponsored JMNO (initiated in February 2006) to identify, test, validate, and recommend network operations (NETOPS) procedures that enhance interoperability of mobile networks employed in joint, interagency, and coalition operations.

JMNO will develop joint TTP to establish network interoperability and improve joint forces' ability to access information and network services when crossing from one network to another network. The two test issues are:

- What is the level of network interoperability achieved between different Services at the tactical level?
- To what extent do JMNO-developed mobile NETOPS joint TTP enable a tactical user to access information resources and network services via a different Service's (host) network?

Test Activity

JMNO is currently researching the concepts for mobile NETOPS employed by the four Services, as well as industry and academia (for example, Massachusetts Institute of Technology and Naval Post Graduate School). It will then develop initial, mobile NETOPS joint TTP to address the test issues.

Benefits to the Warfighter

JMNO will provide validated, standardized, mobile NETOPS joint TTP that will:

- Integrate tactical and Service component networks
- Improve mobile network access and maintain current performance by identifying and developing joint TTP
- Enhance user connectivity to the user's information resources while maneuvering through the battlespace
- Enable interoperability and information assurance between different Services' networks
- Provide input to future concepts employing mobile NETOPS on the asymmetric battlefield
- Maintain quality of service across network boundaries

JOINT TEST AND EVALUATION METHODOLOGY (JTEM)

Test Description

The DOT&E sponsored JTEM (initiated in February 2006) to develop processes and test methods for testing in a joint environment. Specifically, JTEM will develop and evaluate methods and processes for defining and using a distributed live, virtual, constructive (LVC) joint test environment to evaluate system performance and joint mission effectiveness. The three principal test issues are:

- How effective are the proposed methods and processes for designing and executing tests of a system of systems in the joint mission environment?
- How suitable are the proposed methods and processes for designing and executing tests of system of systems in the joint mission environment?
- How effective are the proposed methods and processes for assessing performance as it pertains to capabilities supporting joint missions?

Test Activity

JTEM has selected 11 processes for product development. These processes are focused on determining the joint mission environment requirements for a particular test event and the subsequent joint mission effectiveness evaluation. The project uses process development teams composed of individuals from the requirements definition, acquisition, and test communities along with a series of tabletop exercises to develop the 11 processes. The tabletop exercises involve client programs (representative users) conceptually walking through the different processes at approximately one month intervals during FY06. JTEM is scheduled to complete testing on June 30, 2009.

Benefits to the Warfighter

JTEM intends to propose processes and test methodologies that can institutionalize testing in a joint mission environment. The project will demonstrate the viability of test and evaluation methods and processes in realistic joint mission environments as part of the overarching acquisition process. JTEM products will include methods and processes templates, handbooks for the testing and acquisition communities, recommended changes to the acquisition instructions, and directives that would facilitate testing in a joint environment.

JOINT INTEGRATED COMMAND AND CONTROL FOR MARITIME HOMELAND DEFENSE (JICM)

Test Description

The U.S. Northern Command (USNORTHCOM) sponsored JICM (initiated in March 2006) to test and evaluate Maritime Homeland Defense (MHD) command and control processes used to carry out USNORTHCOM roles and responsibilities in Maritime Awareness and Threat Response (MATR). The scope is focused on maritime command and control TTP, both DoD and non-DoD, from the strategic to the operational level.

Test Activity

The team executed its observation plan during Ardent Sentry 2006 (May 2006) and conducted a risk-reduction event during Frontier Sentinel 2006-2 (June 2006). The team participated in multiple planning conferences for Field Test One, Vigilant Shield 2007 and Field Test Two, Ardent Sentry/Northern Edge 2007. JICM is scheduled to complete testing on June 30, 2008.

Benefits to the Warfighter

JICM test products will include recommendations to improve DoD and intergovernmental command and control interoperability, maritime concept of operations, and joint TTP. It will also provide inputs into the Joint Capabilities Integration and Development System (JCIDS) to enhance MATR.

THE JOINT COMMAND AND CONTROL OF NET-ENABLED WEAPONS (JC2NEW)

Test Description

The Air Force sponsored JC2NEW (initiated in August 2006) to address the operational concepts, processes, and procedures for employment of net-enabled weapons in the net-centric battlespace. Specifically, JC2NEW will enhance Joint Force operational concepts, command and control, and TTP for employment of net-enabled weapon capabilities against time sensitive, stationary, and moving targets.

Test Activity

The test team was formed at Eglin Air Force Base, Florida, and is now working on a program test plan and draft concept of operations and joint TTP. The first test of the draft TTP is tentatively scheduled for fall 2007.

Benefits to the Warfighter

JC2NEW intends to define and incorporate operational concepts and command and control processes to enable the joint force commander and supporting forces to effectively integrate and employ net-enabled weapons as a force multiplier. JC2NEW will provide interim test products to the COCOMs and the Joint National Training Capability to allow their incorporation into

exercise venues to facilitate net-enabled weapons joint doctrine changes and training that should have immediate and positive impact on the warfighters' combat capabilities.

JOINT AIRSPACE COMMAND AND CONTROL (JACC)

Test Description

The Army sponsored JACC (initiated in August 2006) to provide solutions for airspace deconfliction for immediate missions supporting forward operating bases (FOB) and maneuver elements in response to trigger events.

Test Activity

The test team was established at Fort Bliss, Texas, in September 2006. JACC will conduct Field Test One in FY08 to set the baseline, and Field Test Two in FY09 to evaluate the enhanced processes. Key nodes of the Tactical Air Ground System will be evaluated within a joint task force exercise or equivalent scenario.

Benefits to the Warfighter

The primary goal of JACC is to deliver airspace command and control process enhancements to the warfighter. To achieve this, JACC will pursue the following objectives:

- Identify problems and concerns with the joint airspace command and control process for immediate missions generated in support of FOBs and maneuver elements
- Provide recommendations and products to the warfighter that support an enhanced airspace command and control process for missions generated in support of FOBs and maneuver elements

JOINT TEST AND EVALUATION PROJECTS COMPLETED IN FISCAL YEAR 2006

JOINT LOGISTICS PLANNING ENHANCEMENTS (JLOG/PE)

Test Description

The Army sponsored JLOG/PE (initiated in October 2002) to improve joint operational capabilities through enhancements in logistics sustainment information and processes. JLOG/PE coordinated with COCOMs and their logistics staffs to develop and test a variety of methods to enhance joint logistics. JLOG/PE closed on March 31, 2006.

Benefits to the Warfighter

JLOG/PE improved integrated logistics sustainment planning and management system performance through:

- The Rolling Brief - a web-based briefing that continually scrolls across a projection screen in the logistics operations center providing real-time situational awareness of selected types of supply
- The Joint Logistics Training Package (Munitions) - a self-paced educational package, focused on Joint Force J4 staff

officers responsible for managing joint theater-level logistics operations

- Modifications to the National Level Ammunition Capability - to create joint munitions decision support tools and methods for using real-world reporting systems in a combat environment

These test products were successfully implemented in the USPACOM, U.S. Central Command, USEUCOM, USJFCOM, and U.S. Forces Korea.

JOINT DATALINK INFORMATION COMBAT EXECUTION (JDICE)

Test Description

The Air Force sponsored JDICE (initiated in April 2003) to test and evaluate joint TTP and associated Link-16 network architecture modifications to provide actionable data to all types of tactical shooters. The joint TTP is designed to improve

tactical-level offensive and defensive deconfliction and targeting information to shooter platforms by employing 'man-in-the-loop' to place actionable data onto the Link-16 network. JDICE closed on October 1, 2006.

Benefits to the Warfighter

JDICE improved the warfighters' capability to provide actionable targeting and blue force tracking data to warfighters using Link-16. JDICE also:

- Identified significant flight software anomalies in several airborne platforms that applicable System Program Offices are correcting
- Produced and trained joint TTPs that are already playing an important role in operations of deployed forces
- Supported the USJFCOM role in transformation of doctrine to allow forces to make rapid, decentralized decisions based upon near real-time information
- Developed architecture integrating the Army's National Training Center at Fort Irwin, California, and ranges at Nellis Air Force Base, Nevada, helping to create a joint training/testing venue
- Pioneered the incorporation of a PATRIOT battery's capabilities with Link-16 connectivity into the joint tactical database for reducing the chance of fratricide between Air Force and Army units
- Introduced Combat Search and Rescue techniques to utilize Link-16 data to locate and recover downed airmen

The value of JDICE is evidenced by its transition from a JT&E project to a permanent Air Force organization, Joint Digital Integration for Combat Engagement, on October 1, 2006.

JOINT INTEGRATION AND INTEROPERABILITY OF SPECIAL OPERATIONS (JIISO)

Test Description

USSOCOM sponsored JIISO (initiated in February 2004) to improve and streamline a joint force commander's integration and interoperability (I&I) of conventional forces and SOF during planning and execution of maneuver and fire support operations. JIISO closed on November 30, 2006.

Benefits to the Warfighter

JIISO test products reduce the potential of fratricide and enhance situational awareness between SOF and conventional forces. JIISO introduced the Effects Management Tool, which allows the SOF and conventional forces to integrate indirect fires between the Advanced Field Artillery Tactical Data System (conventional forces) and the Command and Control Personal Computer (SOF). The I&I Handbook and the I&I Checklist were instrumental in guiding the development of the Headquarters, USJFCOM Joint Training Article entitled Support Conventional and Special Operations Forces Integration and Interoperability, and in updating six other Joint Training Articles. They were used by the Navy Warfare Development Command to update their Joint Force Maritime Component Commander Tactical Memorandums. Additionally, JIISO produced three handbooks that are in various stages of publication. These include:

- Conventional Forces and Special Operations Forces Integration and Interoperability Handbook
- Tactical Situation Awareness Systems Guide
- Procedures for Deconfliction of Tomahawk Land Attack Missile with Conventional Forces and SOF Aircraft

QUICK REACTION TESTS COMPLETED IN FISCAL YEAR 2006

JOINT LOW ALTITUDE AIRCRAFT SURVIVABILITY (JLAAS)

Test Description

The Air Force sponsored JLAAS (initiated in September 2004) to assess the effectiveness of selected arrival and departure TTP for one fixed-wing and one rotary-wing aircraft against the SA-16 Man-Portable Air-Defense Systems. In addition, JLAAS developed and documented a process to quantify joint TTP effectiveness. It was lead by the Air Force Test and Evaluation Center. JLAAS closed in December 2005.

Benefits to the Warfighter

The primary product from JLAAS is the quantified assessment of the selected pre-launch TTP identified by the first Joint Warfighter Advisory Group. Additionally, JLAAS produced databases that validated missile fly-out models used during evaluation of select TTP. These databases and TTP evaluation processes are potentially useful to joint tactics developers in COCOMs, component commands, and at the Air Land Sea Application Center. U.S. Central Command is responsible for appropriate implementation of the test products.

JOINT FORWARD OPERATIONS BASE FORCE PROTECTION (JFOB)

Test Description

The Army sponsored JFOB (initiated in February 2005) to develop and publish a Force Protection Handbook for current operations in Iraq. Test data was collected from the Army's Base Camp Survivability Program; the passive defense tests in the Counter Rockets, Artillery, and Mortars program; and other DoD sources, including best practices in the theater of operations. The test data focused on mitigation efforts on selection of a defensible site; perimeter security; access control; full-height sidewall protection, overhead cover, compartmentalization of high-occupancy facilities; and dispersion to reduce effectiveness of attacks. JFOB closed in November 2005.

Benefits to the Warfighter

JFOB delivered a handbook of TTP for defense against rockets, artillery, mortars, and vehicle-borne IEDs in Iraq, and recommended changes to joint publications for JFOB defense.