

Joint Test and Evaluation Programs

The Joint Test and Evaluation (JT&E) program provides information on joint military capabilities and potential solutions for increasing military effectiveness of fielded systems. JT&E products help develop joint or multi-Service Tactics, Techniques, and Procedures (TTP); joint and individual Service training programs; operational and scientific testing methods; joint or multi-Service data bases; test and training range procedures; and joint and multi-Service models and simulations.

To be more responsive to the warfighters, the JT&E program modified its processes to include a Quick Reaction Test (QRT) capability. A QRT responds to emergent warfighter issues identified by a Combatant Commander (COCOM), Service, or National Agency sponsor. Three QRTs were directed this year:

- Joint Low Altitude Aircraft Survivability (JLAAS)
- Joint Forward Operations Base (JFOB) Force Protection
- Joint Shipboard Ammunition and Ammunition Boards (JSAABR)

Nominations for Joint Test and Evaluation projects and QRTs are now being submitted by COCOMs, the Joint Staff, and the four Services. This year's nominations included first-time sponsors from U.S. Northern Command, Joint Staff J-4, and the U.S. Marine Corps. Joint feasibility studies include:

- Global Combat Support System (GCSS) Family of Systems (FoS)
- Joint Command and Control for War on Terror Precursor Operations (JC2WPO)

- Joint Integrated Command and Control for Maritime Homeland Defense Operations (JICM)
- Joint Mobile Network Operations (JMNO)
- Joint Test And Evaluation Methodology (JTEM)

We have five ongoing JT&E projects, most of which address requirements of Joint Vision 2020, and all of which focus on meeting the emergent needs of today's warfighter. Five projects have completed testing this year with products that have benefited the warfighter in important ways. Active projects are:

- Joint Datalink Information Combat Execution (JDICE)
- Joint Fires Coordination Measures (JFCM)
- Joint Integration and Interoperability of Special Operations (JIISO)
- Joint Logistics Planning Enhancements (JLOG/PE)
- Joint Space Control Operations - Negation (JSCO-N)

Completed projects are:

- Joint Command and Control, Intelligence, Surveillance, and Reconnaissance (JC2ISR)
- Joint Cruise Missile Defense (JCMD)
- Joint Methodology to Assess C4ISR Architecture (JMACA)
- Joint Unmanned Aerial Vehicle in Time-Sensitive Operations (JUAV-TSO)
- Joint Shipboard Weapons and Ordnance (JSWORD) Quick Reaction Test (QRT)

QUICK REACTION TESTS

JOINT LOW ALTITUDE AIRCRAFT SURVIVABILITY (JLAAS)

Test Description

The Joint Low Altitude Aircraft Survivability (JLAAS) QRT was directed in September 2004 and sponsored by the U.S. Air Force to employ multi-Service and DoD Agency support to produce TTP. This was done to enhance aircraft survivability and reduce U.S. casualty rates in Iraq. The JLAAS QRT has been tasked with assessing the effectiveness of selected arrival and departure TTP for one fixed-wing and one rotary-wing aircraft against the SA-16 MANPADS, and developing and documenting a process to quantify TTP effectiveness.

Test Activity

JLAAS completed its field test at Yuma Marine Core Air Station (MCAS), Arizona, in FY05, finished the Modeling and

Simulation (M&S) Validation, Verification, and Accreditation (VV&A) of the engagement and missile fly-out models, analyzed field test data, and is performing final M&S analysis for the C-130H and UH-60L TTP for Balad airfield in Iraq.

Benefits to the Warfighter

JLAAS quantified and documented departure and arrival TTP in support of airfield operations and recommended changes to Service, multi-Service, and joint doctrine and training. JLAAS validated a TTP assessment process with a guide for using selected engagement and missile flyout models to perform TTP assessments.

JOINT FORWARD OPERATIONS BASE (JFOB)

Test Description

The Joint Forward Operations Base (JFOB) QRT is a one-year project sponsored by the Army. JFOB was directed in February 2005 to develop a Force Protection Handbook for current U.S. operations in Iraq. Test data is being 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. Initial analysis of leveraged test data focused the mitigation efforts on selection of a defensible site; perimeter security; access control; full-height sidewall protection, overhead cover, and compartmentalization of high-occupancy facilities; compartmentalization; and dispersion to reduce effectiveness of attacks.

Test Activity

Based on best practices of units in theater and inputs from the JFOB Subject Matter Expert (SME) working group, JFOB published an initial draft in July 2005, and distributed it to the SME working group for evaluation.

Benefits to the Warfighter

JFOB delivered a handbook of TTP for defense against rockets, artillery, mortars and vehicle-borne improvised explosive devices in Iraq, and recommended changes to joint publications for JFOB defense. JFOB also published a final report that identifies the gaps and seams in expeditionary base defenses. The Army requested and received release approval from ATEC for 400 copies of the draft handbook to assist in training two deploying divisions for the next rotation, and another 2,000 copies are in production for use by deployed forces.

JOINT SHIPBOARD AMMUNITION AND AMMUNITION BOARDS (JSAABR)

Test Description

The Joint Shipboard Ammunition and Ammunition Boards (JSAABR) Quick Reaction Test (QRT) is an 18-month QRT sponsored by U.S. Special Operations Command (USSOCOM). Directed in late August 2005, this QRT will evaluate and make recommendations on how the Services and USSOCOM can safely use non-naval weapons when deploying from U.S. Navy ships. JSAABR will provide the Services and USSOCOM with recommendations to improve shipboard safety procedures when using non-naval weapons, and show the Services how they can make their weapon systems more compatible with the shipboard environment.

Test Activity

JSAABR is standing up their test team and preparing program and detailed test plans to execute the test.

Benefits to the Warfighter

JSAABR will provide safer and more realistic joint training, as well as a seamless execution of sea basing operations for non-naval weapons. This QRT will modify current procedures by assessing munitions that may be approved for shipboard use without completing a full System Safety Risk Analysis, and identify munitions that need additional testing. JSAABR will identify and develop detailed subprocesses for these two critical areas and determine how the newly formed Joint Weapons Safety Technical Advisory Panel may facilitate certification of non-Navy material for shipboard use.

JOINT FEASIBILITY STUDIES

GLOBAL COMBAT SUPPORT SYSTEM (GCSS) FAMILY OF SYSTEMS (FOS)

Global Combat Support System (GCSS) Family of Systems (FOS) Joint Feasibility Study (JFS) was directed in July 2005 to determine the feasibility of a JT&E project. This was done to establish a baseline evaluation and validation of the effectiveness of the GCSS FoS programs to deliver access to respective logistics data sources to meet the COCOM 129 requirements. If chartered, GCSS will capture and analyze the interoperability and interrelational flow of information between each of the family member's logistics systems and the operational user community at the COCOM, Joint Task Force (JTF), and component levels. In addition to recommending improvements, GCSS will facilitate documentation and training recommendations that delineate and define utilization measures for staff members to fully integrate into the GCSS system, and enhance the desired effects for the COCOM. GCSS's lead agency is the Joint Staff, J-4.

JOINT COMMAND AND CONTROL FOR WAR ON TERROR PRECURSOR OPERATIONS (JC2WPO)

The Joint Command and Control for War on Terror Precursor Operations (JC2WPO) JFS was directed in July 2005 to test and evaluate new joint- and multi-Service tactics, techniques, and procedures (J/MTTP) designed to provide an effective means for the Joint Task Force (JTF) Commander to plan and execute missions to support the Global War on Terror from clandestine forward-deployed platforms. Specifically, JC2WPO will improve Command, Control (C2) processes supporting the "find" and "fix" portions of the assigned GWOT mission, and develop J/MTTPs that support this critical mission area. JC2WPO's lead Service is the U.S. Navy.

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

The Joint Integrated Command and Control for Maritime Homeland Defense Operations (JICM) JFS was directed in July 2005 and proposes to test and evaluate U.S. Northern Command (USNORTHCOM) C2 capabilities. This will be done to deter, defend, and defeat potential adversaries' abilities to exploit the maritime domain and strike the continental United States. JICM will develop recommendations to improve DoD and interagency C2 systems interoperability, USNORTHCOM maritime defense Concepts of Operations (CONOPS), Joint Tactics, Techniques, and Procedures (JTTP), joint and interagency doctrine, and inputs to improve C2 systems being developed to support Maritime Homeland Defense. JICM's lead COCOM is USNORTHCOM.

JOINT MOBILE NETWORK OPERATIONS (JMNO)

Joint Mobile Network Operations (JMNO) JFS was directed in July 2005, and is developing its test concept and gaining Service buy-in to develop JTTP for warfighters using mobile Internet Protocol (IP) networks. JMNO will determine feasibility to identify, test, validate, and recommend network

operations procedures that enhance interoperability of IP-based mobile networks employed in joint, interagency, and coalition operations. JMNO will develop JTTP as "Net-Centric Warfare" standard procedures that provide interoperability regardless of the Services' material solution. Results will improve combat efficiency and effectiveness with joint mobile IP networks and seamless joint battle space situational awareness. JMNO's lead Service is the U.S. Marine Corps.

JOINT TEST AND EVALUATION METHODOLOGY (JTEM)

The Joint Test and Evaluation Methodology (JTEM) JFS was directed in January 2005, and proposes to test and evaluate a methodology for defining and using a distributed Live, Virtual, and Constructive (LVC) joint test environment to evaluate system performance and joint mission effectiveness. This will include those processes necessary to institutionalize testing (and training) in a joint mission environment. JTEM seeks to demonstrate viability of the methodology and processes to support operational, developmental, and joint test and evaluation requirements in realistic joint mission environments. JTEM's lead Service is the U.S. Air Force.

ACTIVE JOINT TEST AND EVALUATION PROJECTS

JOINT DATALINK INFORMATION COMBAT EXECUTION (JDICE)

Test Description

The Joint Datalink Information Combat Execution (JDICE) project was chartered in April 2003 to develop, evaluate, and validate Joint Tactics, Techniques, and Procedures (JTTP) and associated Link-16 network architecture modifications to provide actionable data to tactical shooters. The JTTP are designed to improve tactical-level offensive/defensive deconfliction and targeting by providing filtered Link-16 information via a man-in-the-loop to shooter platforms. The JDICE test concept is to execute three sequential mini-tests focused at different C2 nodes, and to conduct a final culminating field test that incorporates and validates all three mini-tests' JTTP. The lead Service is the U.S. Air Force.

Test Activity

JDICE completed one of its planned mini-tests, Mini-Test B, during Talisman Saber 2005. The final field test is planned for February 2006 during a Red Flag event. JDICE is scheduled to complete on October 31, 2006.

Benefits to the Warfighter

JDICE provides rapid feedback from each mini-test to the warfighter community via quick-look reports, briefings, and test reporting. JDICE has made important strides in improving the warfighter's 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 (SPOs) are correcting
- Produced JTTP and trained deploying forces
- Engaged U.S. Joint Forces Command (USJFCOM) to provide Doctrine, Organization, Training, Material, Leadership, Personnel, and Facility (DOTMLPF) inputs to support a DOTMLPF Change Recommendation to the Joint Staff

JOINT FIRES COORDINATION MEASURES (JFCM)

Test Description

The Joint Datalink Information Combat Execution project was chartered in April 2003 to develop, evaluate, and validate JTTP, and associated Link-16 network architecture modifications to provide actionable data to tactical shooters. The JTTP are designed to improve tactical-level offensive/defensive deconfliction and targeting by providing actionable information via Link-16 to shooter platforms. The JDICE test concept is to execute three sequential mini-tests focused at different C2 nodes, and to conduct a final culminating field test that incorporates and validates all three mini-tests' JTTP. The lead Service is the U.S. Air Force.

Test Activity

During FY05, JFCM conducted one risk-reduction event, and began detailed test planning for its first test event (Mini-Test 1) scheduled for January 2006. JFCM is scheduled to complete on March 31, 2008.

Benefits to the Warfighter

JFCM will determine and recommend new JTTP that standardize knowledge bases as a fire support coordination measure and associated C4 systems to more fully integrate fires with maneuver.

JOINT INTEGRATION AND INTEROPERABILITY OF SPECIAL OPERATIONS (JIISO)

Test Description

The Joint Integration and Interoperability of Special Operations (JIISO) was chartered in February 2004 to investigate, evaluate, and make recommendations to improve and streamline the Joint Force Commander's Integration and Interoperability (I&I) of Special Operations Forces (SOF) and Conventional Forces (CF), specifically during planning and execution of maneuver and fire support coordination to generate more timely actions and increased opportunities with less potential for fratricide. JIISO will test and evaluate the I&I of SOF and CF during tactical operations with a focus on TTP and supporting system-of-systems (SoS). JIISO will develop test products to support joint operational, training, and acquisition communities and recommend improvements to DOTMLPF. The lead COCOM is USSOCOM.

Test Activity

JIISO successfully completed a risk-reduction exercise in May 2005 in preparation for Field Test 1 (FT-1). Results of FT-1 are being reviewed and analyzed, and JIISO will publish a test report prior to January 2006. JIISO is scheduled to complete on March 31, 2007.

Benefits to the Warfighter

JIISO provides reduced fratricide potential and greater situational awareness for SOF and CF. JIISO introduced the Effects Management Tool which shares the conventional fires picture between the SOF and CF. This tool allows SOF to input their own fire control measures and check fires between the Advanced Field Artillery Tactical Data System (CF) and the Command and Control Personal Computer (SOF). Additionally, JIISO has 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 CF and SOF Aircraft

JOINT LOGISTICS PLANNING ENHANCEMENTS (JLOG/PE)

Test Description

Joint Logistics Planning Enhancements (JLOG/PE) improve joint operational capabilities through enhancements in logistics sustainment information and processes. JLOG/PE was chartered in October 2002 to coordinate with COCOMs and their logistics staffs to develop and test a variety of methods to enhance joint logistics. The test program focuses on improvements to logistics operations for Class III items (petroleum products) and Class V items (munitions). The lead Service is the U.S. Army.

Test Activity

During Terminal Fury 05 (TF05), JLOG/PE provided test products to the Theater Logistics Operations Cell (TLOC) pertaining to fuels and munitions. JLOG also deployed a test team to Taegu, Korea, to participate in the U.S. Forces Korea Reception, Staging, Onward Movement, and Integration (RSO&I) exercise in March 2005. The team went to Ulchi Focus Lens (UFL) 05 to collect data to formulate DoD Architecture Framework architectures for fuel and munitions, map processes for fuels, munitions, and future product enhancements. JLOG/PE is scheduled to complete on March 31, 2006.

Benefits to the Warfighter

JLOG/PE provides test products that improve integrated logistics sustainment planning and management system performance.

These products include:

- 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 classes 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 (NLAC), to create joint munitions decision support tools and methodologies for using real-world reporting systems in an exercise environment

JOINT SPACE CONTROL OPERATIONS - NEGATION (JSCO-N)

Test Description and Mission

The Joint Space Control Operations – Negation (JSCO-N) project was chartered in February 2004 to evaluate improvements to C2 processes and JTTP associated with Space Control Negation (SC-N). It primarily focuses on integrating the SC-N functions into the Joint Targeting Cycle at the COCOM level. Specifically, JSCO-N is evaluating the planning and assessment capabilities used at the COCOM to support the SC-N function. The lead Service is the U.S. Air Force.

Test and Evaluation Activity

JSCO-N conducted its first Field Test (FT-1) during the U.S. Pacific Command's (USPACOM) exercise Terminal Fury 2005 (TF05). FT-1 provided baseline information that documented SC-N mission processes. JSCO-N analysis of FT-1 resulted in recommended alternative processes, which will be evaluated in exercise Terminal Fury 2006 (TF06) during JSCO-N's Field Test 2 (FT-2). JSCO-N is scheduled to complete on March 31, 2007.

Benefits to the Warfighter

JSCO-N is:

- Providing inputs to USSTRATCOM's Joint Functional Component Command (JFCC) Space and Global Strike

- (S&GS) on Strategic Directives (SD 504-3), CONOPS, and Exercise Directives with respect to the SC-N mission area
- Drafting SC-N exercise planning guidance for USSTRATCOM, U.S. Pacific Command, and U.S. European Command to assist exercise developers in this mission area
- Assisting U.S. Joint Forces Command (USJFCOM) and USSTRATCOM with a joint Limited Objective Experiment (LOE) on collaborative processes that will use SC-N as a practical example in examining collaboration of C2 issues in general
- Providing inputs to update Joint Publication 3-14 (Space Operations)

JOINT TEST AND EVALUATION PROGRAMS COMPLETED IN FISCAL YEAR 2005

JOINT COMMAND AND CONTROL, INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE (JC2ISR)

Test Description

JC2ISR was chartered in FY00 to investigate, evaluate, and recommend improvements to the operational effectiveness of the Joint Task Force (JTF) and components' ability to dynamically task and re-task ISR collection platforms and sensors, and their ability to process, exploit, and disseminate combat information to support Time-sensitive Targeting (TST). JC2ISR baselined the processes used to prosecute time-sensitive targets; identified ISR platform and sensor tasking, processing, exploitation, and dissemination deficiencies; and identified opportunities for improvement. JC2ISR was completed in June 2005.

Benefits to the Warfighter

JC2ISR developed and produced JC2ISR test products that provide warfighters with a baseline effectiveness evaluation of current C2ISR capabilities and limitations, and quantify the effects of specific C2ISR enhancements to improve TST. Test products include:

- The Intelligence, Surveillance, and Reconnaissance Assessment Tool, which effectively evaluates JC2ISR improvements in TST prosecution
- The JC2ISR Methodology that, for the first time, integrates the rigors of joint testing and training of personnel in a Joint National Training Capability event

and TTP changes on command and control, sensor, and shooter system enhancements. JCMD completed in June 2005.

Benefits to the Warfighter

JCMD enhanced the capability of U.S. JIADS to defeat a cruise missile attack. JCMD provided crucial information on near-term LACM defense capabilities and recommendations for future architectures, technologies, and operational concepts. JCMD introduced a manned, BD-5 mini-jet, surrogate cruise missile to enhance real-world joint training.

JOINT METHODOLOGY TO ASSESS C4ISR ARCHITECTURE (JMACA)

Test Description

Joint Methodology to Assess C4ISR Architecture (JMACA) was chartered in October 2001 to test, evaluate, and enhance a set of tools and procedures to assess joint C4ISR architectures. The JMACA methodology consists of a set of analytical tools and procedures designed to rapidly identify deficiencies in the C4ISR architecture and identify appropriate solutions. JMACA focused on the JTF commander's need to rapidly assess the interoperability of an integrated joint C4ISR architecture prior to employment. JMACA completed in September 2005.

JOINT CRUISE MISSILE DEFENSE (JCMD)

Test Description

Joint Cruise Missile Defense (JCMD) was chartered to evaluate the operational effectiveness of joint operations against Land Attack Cruise Missiles (LACMs). JCMD quantified the effects of procedural and hardware enhancements to Joint Integrated Air Defense System (JIADS) in a cruise missile defense role. JCMD provided warfighters with an evaluation of current JIADS capabilities, and reported the effects of concept of operations

Benefits to the Warfighter

JMACA JT&E made critical improvements to joint interoperability through an architecture-based assessment methodology that:

- Provided a systematic means of focusing interoperability assessments to potential deficiencies, which includes mapping assigned combat units to JTF operational facilities; providing automated collection of combat unit-related C4ISR systems;

generating communication paths supporting mission-required information flow; and focusing planners on interoperability risks and C4ISR performance in an operational context

- Established a joint C4ISR architecture assessment team at the JT&E facility in Suffolk, Virginia, to conduct future joint DoD C4ISR assessment requirements
- Established an assessment team at USJFCOM Joint Battle Management Command and Control (JBMC2) J89 directorate in Norfolk, Virginia, to support engineering-level systems assessment with C4ISR architecture data access, architecture development, and system interoperability evaluation

JOINT UNMANNED AERIAL VEHICLE IN TIME-SENSITIVE OPERATIONS (JUAV-TSO)

Test Description

JUAV-TSO was chartered in August 2001 to develop and document JTTP for current and proposed tactical Unmanned

Aerial Vehicles (UAV) and to expand UAV tactical employment during dynamic, time-sensitive, joint operations. JUAV-TSO evaluated the ability of tactical leaders to effectively and efficiently utilize UAVs in a tactical role using three C2 architectures and an operational UAV. These C2 architectures established weapon engagement decisions at various C2 nodes throughout JUAV planned test events. The JUAV-TSO JT&E completed in April 2005.

Benefits to the Warfighter

JUAV-TSO developed joint, platform-independent TTPs to improve UAV employment in time-sensitive joint operations, with emphasis on air interdiction, fire support, and personnel recovery missions. They produced the JUAV-TSO Handbook, which includes a UAV guide, UAV integration checklist, JTTP, and C2 communications architectures.

QUICK REACTION TESTS COMPLETED IN FISCAL YEAR 2005

JOINT SHIPBOARD WEAPONS AND ORDNANCE (JSWORD)

Test Description

Joint Shipboard Weapons and Ordnance (JSWORD) developed a process to certify existing non-naval weapons systems for shipboard use. JSWORD established, documented, and published a standard joint procedure for tube loading the 2.75-inch Folding Fin Aerial Rocket (2.75" FFAR) on U.S. Army and USSOCOM helicopters with engines running and blades turning. JSWORD's tests were developed in conjunction with a System Safety Risk Assessment conducted by government organizations throughout

all the Services. JSWORD was directed in May 2004, conducted both land-based and shipboard tests during FY05, and completed in March 2005.

Benefits to the Warfighter

JSWORD provided procedures to mitigate the risks associated with the transportation, storage, handling, loading and unloading of the 2.75" FFAR during joint shipboard operations.