

## **The Joint National Training Capability “The Cornerstone of Training Transformation”**

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### **ABSTRACT**

*NATO, in a manner similar to the United States, has embarked on a journey to transform the ways in which NATO forces are manned, organized, equipped, and employed. The vehicle upon which we travel that journey is training. Training provides the integrating environment for transformation. As concepts in tactics, techniques, procedures, and doctrine are developed or as new weapons are developed, they cannot be employed until the soldiers, sailors, airmen, and Marines are trained in their use and become proficient in employing them in a realistic battlespace. Transformation of NATO calls for an accompanying transformation of NATO training.*

*In January 2003 US Secretary of Defense Donald Rumsfeld, recognizing the relationship between transformation and training transformation, assigned Joint Forces Command a critical new role: transform training through the establishment of a Joint National Training Capability. This capability is significantly improving joint training by embedding joint tactical tasks in Service training events, closing horizontal gaps between Service training programs, establishing broader joint interoperability training events, and configuring exercises to improve vertical exercise linkages; all in a globally distributed training environment.*

*The first transformation of training was the establishment and improvement of Service national training centers. These sites provided the Services with robust, dynamic training in a realistic, albeit Service-centric, combat environment. The JNTC is producing a second transformation in training by extending the Service-centric focus to encompass joint and combined operations. The JNTC is improving joint training in four critical areas: **combat realism** in a joint context, **adaptive and credible opposition forces**, **common ground truth** through improved instrumentation and data sharing, and **high quality feedback** through assessments of joint training events. The JNTC reaches beyond the essentials of training event planning and execution. JNTC coalesces Service, allied, and coalition investments in training systems and infrastructure such that the tools of training are joint and combined tools. JNTC ensures that all elements of joint command and control systems, processes, and techniques are employed in Service, joint, and multinational training. JNTC provides oversight and management for diverse, unique, and expensive Service OPFOR investments such that critical OPFOR tools can be shared across Service and national boundaries. JNTC provides incentives to the Services and our coalition partners to ensure that investments in training are joint, interoperable, and support multinational operations. Finally, JNTC provides the resources, coordination, focus, and a test bed for the development and implementation of advanced training technologies including a live, virtual, constructive simulation laboratory. The JNTC is the cornerstone of training transformation creating a persistent joint training environment that enables US and multinational forces to train like they fight; at an affordable cost. JNTC is playing a major role in transforming training and operational effectiveness of our allied and coalition partners.*

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## **JOINT NATIONAL TRAINING CAPABILITY - BACKGROUND**

**“Effectiveness in combat will depend heavily on jointness, and how well the different branches of the military can communicate and coordinate their efforts on the battlefield...achieving jointness in wartime requires building that jointness in peacetime. *We need to train like we fight and fight like we train and, too often, we don’t.*” - Donald H. Rumsfeld, Secretary of Defense**

### **Service-centric Training for Joint Warfighting**

The Marines are planning to conduct a routine, live training event designed to exercise operational forces and command and control elements. The mission is to rescue a downed Harrier pilot trapped behind enemy lines. With the exception of the Navy assets from which the mission is to be launched, this could be a Service-centric training mission using all USMC assets: the personnel; the equipment; the command and control systems; and the doctrine, tactics, techniques, and procedures. But this scenario denies the present reality, that all major combat operations will probably be Joint or combined missions utilizing assets from all the Services and very likely assets provided by allies and coalition partners. The downed pilot could be a British Royal Air Force fighter pilot. The mission may require coordination with Polish Army ground forces that could potentially provide artillery support. The enemy may have air and ground opposition forces to be engaged. Finally, the command and control organization and systems may be US Joint forces or a NATO staffed headquarters. The challenge presented to the Marine commanders is to train their personnel in Joint and combined tactics, techniques, and procedures, with or without the availability of additional Service or coalition support. It is a daunting task.

Beyond the problems of inter-Service and international equipment interoperability where do the Marines get a Royal Air Force pilot to rescue? How can they obtain high demand, low-density support assets such as US or NATO AWACS aircraft and crews? Where can they get Predator or Global Hawk support? Is it possible to insert live artillery support into their scenario using assets from a foreign country? The AWACS will need refueling; is it possible to obtain the services of German Air Force Airbus 310 refueling aircraft? And, finally, is it possible to stand up a qualified NATO Joint Headquarters (JHQ) staff to provide the realistic higher-level headquarters that such a mission would demand? This is a complex task.



**NATO Airborne Warning and Control System Aircraft (AWACS)**

But this began as a rather simple training event...to plan and execute a rescue mission using live assets. The training audience is the search and rescue team and their immediate command and control element. Is it possible to raise the level of complexity for this Joint or combined mission without the involvement of

hundreds of additional troops and the expenditure of hundreds of thousands of dollars? This is the question that the Joint National Training Capability (JNTC) seeks to answer. By working with the Services and Allied forces to align training requirements, equipment and personnel resources, opposition force assets, a standing higher headquarters, and executing events in the proper Joint or combined context the JNTC will transform Joint training and create training capabilities that will improve Joint and combined warfighting capabilities for US Armed Forces and the military forces of allied and partner nations.

### The Joint National Training Capability

The goal of establishing the JNTC is to improve the ability of U.S. and allied forces to fight effectively as a joint and combined team by extending joint training to a much broader audience. There can be no question that Joint and combined operations are essential for future success of U.S. and allied military forces. In the past decade, considerable experience has been gained in joint and combined operations, in particular the first Gulf War and the operations in Bosnia and Kosovo. We have seen extraordinary successes in the field, accomplished mostly through ad hoc innovations enabled by superb tactical competence of US and Allied forces. We have also seen breakdowns in the capability to put joint and combined operations together quickly, thus, operational effectiveness has often been inhibited by the lack of joint and combined training. The results clearly suggest the need for more intricate interoperability and mission coherence in the field.

Despite the acknowledged dependence on joint and combined operations, training of operational US forces and staffs is still accomplished almost entirely along Service lines. While the requirement for individual Services to train their units in core competencies will never go away, the need for a more extensive joint training experience, with the attendant supporting infrastructure, is clearly evident. If U.S. forces must be ready to fight jointly, with little or no notice, and in a complex and challenging situation presented by the 21st century security environment, joint training must be institutionalized to a degree not

seen before. The JNTC will provide a setting in which we can improve the readiness of U.S. and allied forces to fight effectively as a joint and combined team. Such improvement requires a new set of capabilities to augment our existing training structure. These new capabilities must be built firmly upon, and integrated with, the already capable Service training centers and facilities, such as the National Training Center. Existing facilities not only represent a considerable investment, but they have also excelled at training units in Service tactical competencies. As shown in figure 1, the JNTC envisions a networked, worldwide

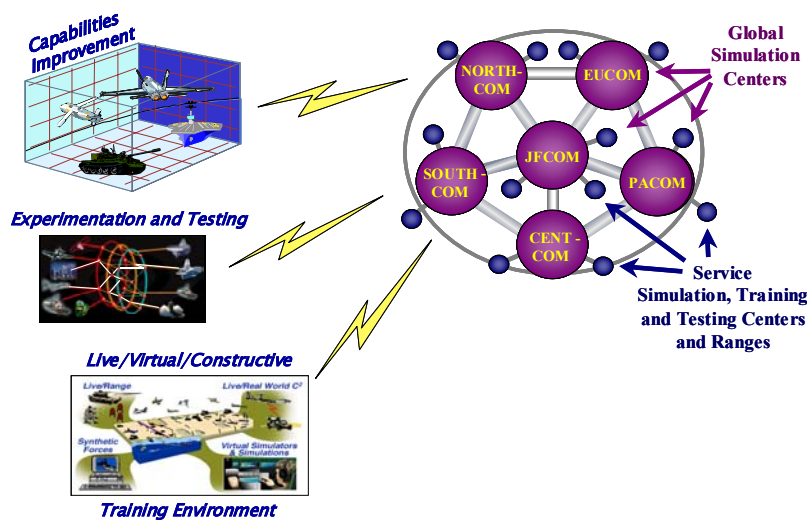


Figure 1 – A Global Network of Live, Virtual, and

constructive simulation to the joint user at all echelons. This integration of training sites and facilities must be extended to overseas sites to enable the injection of live and constructive multinational and coalition forces. An example of such a site is the Joint Force Training Center in Bydgoszcz, Poland.

Achievement of the JNTC vision requires a careful transition that must be accomplished without interrupting force readiness. With this requirement in mind, the implementation of the JNTC plan is composed of two parallel efforts. The first is an integration of existing Service and joint training events to steadily increase the joint dimension of the training environment. This has been accomplished with four JNTC events in 2004 that minimized the disruption to schedules and the impact on PERSTEMPO and OPSTEMPO while achieving significant improvements in joint training. This pace will increase as techniques are improved and as time for more thorough planning is available with a goal of supporting 35 to 40 events per year by 2009. Over the five-year period many of these events will include multinational participants. Specifically, the JNTC goal is to conduct a major multinational exercise outside of the Continental US in FY 2007.

The second effort is to increase the degree of interoperability between Service and joint training facilities and training resources owned by our Allies. This will be done initially in accordance with priorities established by the Commander, Joint Forces Command in consultation with the DoD Executive Steering Group. The goal is to create a joint, worldwide network of training capabilities using the full spectrum of live, virtual, and constructive environments.

As the JNTC matures, it will be available to serve additional purposes. The capabilities being built will prove useful for experimentation, concept development, testing and evaluation, rapid prototyping, mission rehearsal, and the melding of all elements of national power. However, joint, combined, and interagency training essential to success in future conflicts is the primary purpose for investing in this capability.

## **JNTC – THE CONCEPT**

### **Six Functional Areas**

JNTC is significantly more complex than simply a capability to plan and execute Joint training events. While execution of the four phase Joint Training System (JTS)(Requirements, Planning, Execution, and Assessment) is key, the JNTC seeks to bring greater economy and efficiency to all facets of Joint training. JNTC respects the traditional Title 10 role of the Services while providing an organizational structure and management construct that enhances their ability to conduct training and provides the resources, and momentum, necessary to ensure that Service training assets can be more effectively used for Joint training tasks. Working with Allied forces, primarily in support of the multinational training requirements of the Regional Combatant Commanders and NATO, JNTC provides a wider range of training opportunities and improves multinational training by enhancing the combat realism of training events, providing a more robust and agile opposing forces (OPFOR), and providing a comprehensive communications, data, and instrumentations infrastructure. The implementation of the JNTC has six focal areas organized primarily by function (figure 2, next page). They include the Joint Management Office, Joint Training System Applications, Joint Command and Control, Opposition Forces (OPFOR), Global Joint Training Infrastructure, and Advanced Training Technologies.

### **Joint Management Office (JMO)**

As directed in the Defense Planning Guidance 04-09, Joint Forces Command has established a joint management office to develop the programs and processes necessary to implement the JNTC. The Joint Forces Command JNTC JMO collects, merges, and validates operational and technical training requirements, and is planning DoD-wide JNTC implementation. The Initial Operational Capability (IOC) was achieved on 1 October 2004 and the Full Operational Capability (FOC) goal is October 2009. Operating with guidance of the DoD Training Transformation (T2) Executive Steering Group (ESG), Joint Forces Command has final authority on all JNTC funding, scheduling, and program-related activities. The JNTC JMO analyzes Combatant Command requirements and warfighter capabilities to establish training

methods and technologies that enable forces to train like we fight across the full spectrum of warfighter tasks.

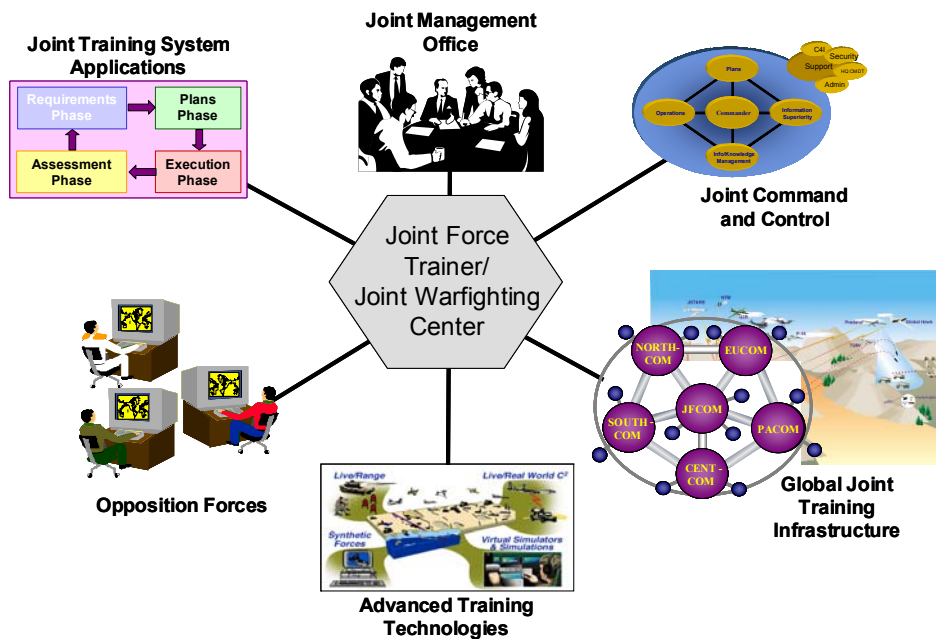


Figure 2 – The JNTC Work Breakdown Structure

### Joint Training System Applications (JTSA)

Through the application of the JTS, exercises are being designed to ensure Combatant Commanders' and Service requirements are mutually developed through a detailed planning, execution, and assessment process. Furthermore, standards and conditions have been developed for the joint tactical tasks ensuring exercises are more focused on operational mission needs. Finally, a capability improvement process has been implemented and is developing and incorporating joint tactical tasks into training events and assessments.

### Joint Command and Control (JC2)

JFCOM will create a battle staff at the Joint Task Force level and below to provide appropriate levels of higher headquarters functionality to individual JNTC events. The core staff will lead the concept development effort and will eventually provide standardized training for Standing Joint Force Headquarters (SJFHQ) by supplying a distributed training capability immersed in a multi-level security environment. A joint command-and-control concept of operations has been developed to ensure that the appropriate headquarters is represented in joint and combined events. Command and control equipment, as well as joint and combined doctrine, tactics, techniques, and procedures enable the continuous development of transformational concepts for export to Service, allied, and coalition training ranges and events.

### Opposing Forces (OPFOR)

Planning and execution of fully coordinated live and virtual opposing forces in support of joint events has been centralized under Joint Forces Command. A standing OPFOR headquarters has been created to

provide the core organization to plan, schedule, and integrate opposing forces for JNTC-supported events. Funding for threat systems used in joint events has been programmed so that existing Service training ranges can provide the appropriate threat representation to the training audience. Lessons learned from Operations Enduring Freedom and Iraqi Freedom have been rapidly assimilated in OPFOR tactics, techniques, and procedures. The asymmetric nature of current enemy forces has been successfully implemented in recent JNTC events. In addition to procuring threat systems, funding has been provided to transport OPFOR equipment and personnel to support events at other venues, supporting other Services.

### **Global Joint Training Infrastructure (GJTI)**

JFCOM is leading the effort to integrate test and training networks into a single common architecture that not only resolves interoperability issues among Service training systems, but also creates an environment that will resolve interoperability issues among operational warfighting systems. Such an integrated training network leads to greater training efficiency and enables new methods for distributed network-centric warfare training. The Joint Training and Experimentation Network (JTEN) is a dedicated community of interest network within the Global Information Grid (GIG) infrastructure that links existing DoD/Service training and research networks and provides selected transmission to and from real world operational networks via gateways. This approach enables JNTC to leverage existing capabilities and evaluate transformational concepts without impacting real world operations. JTEN has enabled the integration of US test and training ranges providing significantly larger geographic areas in which forces can conduct training operations. Geographically aligned they are referred to as the Western, Eastern, and Gulf Coast Range Complexes. Ranges outside of the continental United States, such as the training range complex in Australia and the Combat Maneuver Training Center at Hohenfels, Germany, enable a truly global training infrastructure. By connecting live training venues to virtual training centers and major simulation centers, the JTEN creates a powerful live, virtual, constructive (L-V-C) training environment. JTEN adheres to common industrial standards to ensure interoperability and compatibility among JNTC locations. It is persistent and rapidly reconfigurable to establish the necessary links to support JNTC events.

The US Joint Warfighting Center will integrate and test systems to be used at JNTC-supported events. Research and development will support the analysis and development of advanced communications systems, image generation systems, range instrumentation systems, and new technologies in data and video transfer. Command-and-control systems; communications; audio, visual, simulation, and knowledge management systems; and range instrumentation have been procured to implement the JNTC infrastructure. All instrumentation and systems comply with the Test and Training Enabling Architecture (TENA), an architecture and interoperability standard that share information among instrumentation systems, simulations, and real-world command-and-control systems.

### **Advanced Training Technologies**

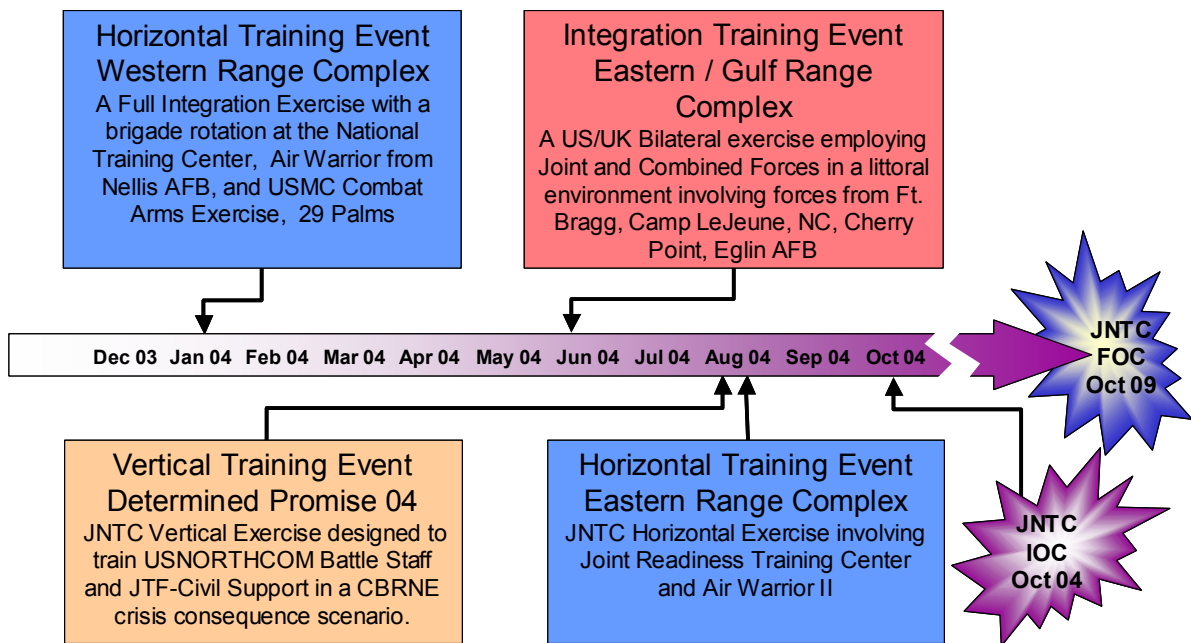
Advanced training technologies are being developed to effectively integrate live, virtual, and constructive elements into a seamless joint environment. Available commercial off-the-shelf information technologies and collaborative planning tools provide improved business practices. As advanced training technologies are developed, they are being integrated into JNTC-supported events. The Joint Advanced Training Technologies Laboratory has been established by Joint Forces Command to validate live, virtual, and constructive interoperability across a distributed network of ranges and facilities.

In addition, a robust research, development, and demonstration program has been established to ensure that the latest science and technology initiatives are incorporated quickly into defense knowledge superiority capabilities, as well as into globally distributed mission rehearsal and joint training systems. The test and evaluation community has already exploited the JNTC to support its events. For example,

Foundation Initiative 2010 is a project that enables the interoperability necessary to create synthetic battlespaces consisting of fielded and developmental weapon systems at multiple ranges, system components at hardware-in-the-loop facilities, and simulations of weapon systems. It uses a common architecture to integrate live, virtual, and constructive events quickly. Furthermore, Foundation Initiative 2010 fosters the reuse and interoperability of range assets to reduce range development, operations, and maintenance costs.

**JNTC – IMPLEMENTATION**

Joint Forces Command, in coordination with the Services, U.S. Special Operations Command, the Joint Staff, the Office of the Secretary of Defense for Personnel and Readiness, and the Defense Information Systems Agency (DISA), is executing a JNTC implementation plan to meet the needs of Combatant Commanders. The IOC of JNTC is defined as “the ability to conduct Horizontal, Vertical, and Integration events.” Figure 3 shows the event timeline executed to achieve IOC this past October.



**Figure 3 – JNTC Pre-IOC Event Plan**

**Operational Implementation**

The four pre-IOC events clearly demonstrated the ability of the JNTC to close the gaps and eliminate the seams in joint and combined training as well as prepare sites for certification and accreditation.

The January 2004 Horizontal Training Exercise was the first event conducted on the integrated “Western Range Complex.” This event successfully demonstrated how JNTC could improve the value of the already superb training being conducted by the Services through live, virtual, and constructive enhancements to the joint operational environment. The January event was the first tactical exercise of Joint close air support (JCAS) with all Service participation assessed to defined JCAS Joint Tactical Task (JTT) conditions and standards. It represented the first integration of live, virtual, and constructive simulations in a post-Millennium Challenge 02 federation that enabled broader battlefield play, including participation of live and distributed virtual special operations force resources. It provided an adaptive and

credible opposing force through a fixed and rotary wing threats, unmanned aerial vehicles, threat emitters, threat targets, decoys, and civilian play. Instrumentation improvements to Marine Corps facilities improved data collection and sharing. Four focused assessment teams from several joint organizations provided assessment.

Combined Joint Task Force Exercise 04-2 2 (CJTTFEX 04-2) was an Integration Exercise that included multinational elements. JNTC enabled improved joint context and combat realism through virtual enhancements to Joint Close Air Support missions executed by AC-130 aircraft and the Army's Dismounted Battle Lab. Common ground truth and joint command and control was improved through the creation of a deployable Blue Force Tracking network with a Joint Data Translator in the target area. This provided live feeds to an internet-based 2D/3D Common Operational Picture. Opposition forces operated against a multi-national amphibious assault and provided dissimilar air assets against fleet and Joint Tactical Air and Missile Defense units. Multinational training is an integral part of the JNTC implementation. CJTTFEX 04-2 included forces from Canada, France, Germany, the Netherlands, Norway, Peru, and the United Kingdom.

Determined Promise 04 (DP 04) was a Vertical Training Exercise conducted by NORTHCOM that featured a consequence management scenario. Joint context was improved through the interaction of NORTHCOM, the Department of Homeland Defense, Joint Task Force-Civil Support and a host of local fire and emergency response organizations. DP 04 featured the first use of the Joint Multi-Resolution Model (JMRM), a JNTC sponsored M&S enhancement that federated two models, the Joint Theater Level Simulation (JTLS) and the Joint Conflict and Tactical Simulation (JCATS). This provided improved fidelity and enabled NORTHCOM to extend the vertical training thread (Strategic National to Tactical vice Strategic Theater to Operational). Increased efficiency in exercise planning and management was achieved through the use of Information Workspace, an SJFHQ developed capability that provides a web-based collaborative planning tool. In this exercise the Capabilities Group employed the CBRNE (chem., bio, radiological and nuclear) Capabilities Initiative Improvement Team. Their analysis will be used to feed the development of DOTMLPF transformation packages.

The Joint Readiness Training Center (JRTC) August event was a second Horizontal Training Event that benefited from the application of lessons learned in the January HTE. The addition of joint virtual and constructive capabilities enabled us to expand close air support (CAS) to 24-hour availability (vice the usual 8 hours) – for the first time. The fidelity of Joint Close Air Support training was improved by providing additional emulated tactical communications, fire markers, and the linkage of virtual AC-130 aircraft. The joint training environment was improved by adding distributed Marine, Special Operations, and Air Force units to this traditionally Army training exercise. The integration of virtual forces (25<sup>th</sup> Marine Regiment and 4<sup>th</sup> Light Armored Reconnaissance Battalion, B-52, JSTARS, and AC-130) and constructive forces (B-52, 25<sup>th</sup> Marine Regiment, 4<sup>th</sup> Light Armored Reconnaissance Battalion) with the live forces at the JRTC, Barksdale Air Force Base, and Little Rock Air Force Base improved the joint context. In the JRTC event we introduced the analysis of Joint Close Air Support, maneuver and firepower, tactical information operations, and tactical airlift in a live venue.

These exercises established a methodology for first-time events that sets the conditions for successful execution of similar JNTC supported events in the future.

### **Technical Implementation**

As part of the implementation plan, operational, system, and technical architectures have been developed to create a roadmap for the evolution of the JNTC as well as to establish standards to ensure interoperability with legacy and future systems. Technical requirements for the JNTC have been derived from the operational requirements defined by other functional areas and from current DoD operational and technical guidelines, policies, and standards. The enterprise architecture for the JNTC is being achieved:



(1) by establishing a long-term “to be” architecture that can evolve with changing technology and requirements, (2) by initiating a small-scale prototype, and (3) by growing and evolving toward the “to be” architecture in 2004-2009.

To define, build, implement, and maintain the system and technical architectures that support the operational training concepts of the JNTC, a well-structured and defined systems engineering and configuration management process has been created. The JNTC system and technical architectures are composed of models and simulations, stimulators, communications infrastructure, command-and-control systems, range instrumentation systems, and emerging training technology systems. Research, design, development, integration, test and operation of the technical infrastructure are being accomplished through the technical management of various activities with Joint Forces Command, the Services, and contractor support organizations.

The certification of sites is an important part of the JNTC technical implementation. A set of standards equipment, systems, and protocols has been developed and matched to the requirements for conducting joint training to specific joint tactical tasks. Site surveys identify the technology shortfalls at candidate sites. Using a combination of Service and JFCOM resources, candidate sites are brought up to the JNTC standard. Configuration management ensures the site remains at the certified level. This combination of certification and configuration management simplifies the planner’s ability to verify event sites can technically support event requirements. Site certification employs the Joint Technical Architecture, Test and Training Enabling Architecture, and thousands of government and industry standards and protocols.

A technical implementation process is being used to develop and to deploy JNTC technical capabilities. This process establishes a disciplined methodology that uses a domain perspective to move from validated requirements to architecture development and systems engineering, to product and capabilities development, to systems integration and testing, and finally to deployment in JNTC training exercises. The process enables:

- Clear traceability from requirements to deployed capability
- Configuration management of requirements and system design
- A system architecture approach to move from requirements to design
- Delineation of responsibilities within a systems engineering cycle
- Identification of documentation and product deliverable requirements
- Consistent product development and integration approach across disparate and distributed services, sites, and products
- Managed sequencing, synchronization, and insertion of JNTC capabilities into joint events

An incremental development process is being used to release JNTC capabilities. JNTC technology and capability releases are synchronized with JNTC requirements and program considerations. Joint events provide opportunities to demonstrate, test, and use new capabilities as part of the JNTC.

#### Program Implementation - Identifying Requirements and Allocating Resources

JNTC, as an element of DoD’s Strategic Plan for Training Transformation, is being implemented in accordance with the Training Transformation Implementation Plan (T2 I-Plan). The T2 I-Plan provides the overarching tasks and milestones ensuring that the development of training requirements, program and budget planning, and program execution are accomplished in full transparency of OSD, the Services, Combatant Commanders, and Defense Agencies. Additionally, the T2 I-Plan is the broad-based blueprint for the JNTC program and is the master plan to which all other planning and programming documents must respond. Required activities, programs, projects, and tasks that OSD, the Services, Combatant Commanders, and Defense Agencies must execute are more specifically delineated in the Future Years Defense Plan (FYDP) DoD T2 Program Plan, and the execution year JNTC Program Execution Plans.

Joint Forces Command's JNTC Joint Management Office (JMO) has created a formal management structure that ensures open representation from OSD, the Services, Combatant Commanders (including Special Operations Command), and Defense Agencies. Using a process that is aligned with the President's Planning, Programming, and Budget Execution process and the development of the five year Program Objective Memorandum (POM), OSD, the Services, Combatant Commanders, and Defense Agencies submit training requirements to the JNTC JMO as the front end of the program development effort. The execution year Program Vectors and Assumptions, collaboratively developed with OSD, the Services, Combatant Commanders, and Defense Agencies, provides specific investment strategies ensuring that submitted requirements form a coordinated and integrated, cost-effective package. The JMO management team, composed of the JMO director, program manager, operations manager, and technical director, works closely with representatives from OSD, the Services, Combatant Commanders, and Defense Agencies to review and prioritize the requirements. Through this effort they ensure that the requirements fulfill the goals and objectives identified in the T2 Implementation Plan, the current FYDP-based T2 Program Plan, the execution year Program Guidance and Assumptions, and specific roadmaps. Additionally, each requirement is assessed in terms of operational need, affordability, and technical feasibility. The program management team works closely with OSD, the Services, Combatant Commanders, and Defense Agencies to develop trade space for priority requirements.

JNTC resources are categorized into three broad groups: JNTC resources provided to and controlled by the Services for Service-specific JNTC program obligations; JNTC resources provided to and controlled by JFCOM for JNTC program obligations; and JNTC resources provided to and controlled by JFCOM for distribution to the Services for Service-specific JNTC program obligations. This latter category of resources allows the JNTC program manager wide latitude and year of execution flexibility to support Service requirements that are critical for the JNTC program enabling further integration of program requirements.

Once the JMO management team has vetted the requirements, the JNTC JMO director produces the program execution plan for the next fiscal year. This document details all the requirements to be executed in the coming year with complete budget data. It is given a final review by OSD, the Services, Combatant Commanders, and Defense Agencies before being submitted for approval. The components are given the opportunity to rebut program management decisions with the rebuttals being given careful consideration by the JNTC JMO director and program manager, openly discussing those issues with senior Service representatives. The JFCOM Joint Force Trainer (Commander, Joint Warfighting Center) and the Deputy Undersecretary of Defense for Readiness formally approve the program execution plan.

The processes that have been put in place to collect, merge, and validate the joint training requirements of OSD, the Services, Combatant Commanders, and DoD Agencies ensure a close relationship between Service training investments and the needs of the JNTC program. The linkages between the program execution plan, roadmaps, FYDP T2 Program Plan, the T2 I-Plan and the Strategic Plan for Training Transformation provide a high level of confidence that the joint training program is fully integrated and training investments lead to improved interoperability. Additionally, because it works very closely with the Services, the JNTC JMO is able to ensure that the Services are investing in systems and equipment that are fully integrated and interoperable with the JNTC systems and equipment.

## JNTC – ENHANCING SERVICE AND MULTINATIONAL TRAINING EVENTS TO IMPROVE JOINT AND COMBINED TRAINING

In the introduction we postulated a scenario whereby a Service training exercise, combat search and rescue by the Marine Corps, can be expanded and enhanced by the JNTC to provide broad-based Joint and combined training for a variety of services representing a variety of nations, at diverse venues within the United States and abroad. This exercise, while a complex combination of live, virtual, and constructive simulations, leads to significantly improved readiness and Joint and combined warfighting capabilities of the participants.

In executing such a JNTC training scenario the Marines will provide live search and rescue teams conducting a real time rescue mission. They will provide command and control for the mission force. Event support and participation could be derived from a “Chinese menu” of forces. Royal Navy crews aboard an in-port amphibious assault ship could “launch” the rescue team using a combination of virtual and constructive simulations. Other events, such as aircraft casualties, could be inserted into the shipboard training event, in total transparency to the remaining training audience.



**SAR Launch from British Royal Navy Assault Ship**

Supporting assets from the German Air Force and the US Navy could be inserted into the mission using a blend of live, virtual, and constructive entities. The Royal Dutch Air Force or Norwegian Navy could fly both live and virtual close air support sorties during the mission.



**German Air Force Airbus A-310 Multi-Role Tanker Transport**

NATO AWACS aircrews flying simulated missions in virtual trainers could execute airborne command and control support. Similarly, German Air Force in-flight refueling teams could provide support from flight simulators. The receiving aircraft could be a combination of live and virtual aircraft. Live Polish Army units could provide artillery support geographically remote from the rescue site. Battery crews could conduct their mission as a combination of live firing using constructive simulations for both targeting and target damage assessment activities.

The entire operation could be “controlled” by a NATO Joint headquarters staff operating out of the Joint Warfare Centre in Stavanger, Norway. This ensures an active and accredited higher headquarters providing the proper joint and combined context for the event. Finally, a mix of live, virtual, and constructive OPFOR assets controlled by an accredited OPFOR headquarters, operating from the Joint Warfighting Center in Suffolk, Virginia, could support the opposing forces.

The JNTC provides all facets of support for this effort. The JMO ensures that resources are programmed to support the unique requirements of such a Joint event. Event execution is followed by a robust training assessment effort to identify gaps and seams in capabilities. Capability Improvement Initiative Teams work to identify and develop new capabilities to fill the gaps in either operational or training capabilities. Both a higher headquarters and a qualified standing OPFOR headquarters significantly improve the training value of the exercise. None of this is possible without an infrastructure that ensures rapid, high bandwidth data and communications networks and a robust live, virtual, and constructive simulation environment. These are the elements provided by the Joint National Training Capability.

## **SUMMARY**

The JNTC concept offers a seamless joint training environment through a global network of live, virtual, and constructive enablers. The objective is to provide a training venue that enhances our ability to improve Joint and combined warfighting capabilities. Today we can operate jointly, but only with great effort to overcome the warfighting gaps and seams created by a Service-centric approach to training. As the force transforms, we must achieve jointness in peacetime so that we can achieve full spectrum dominance in times of conflict. In other words, the force of the future must be born Joint – our doctrine, organizations, training, material, leaders, personnel and facilities must all be interoperable.

JNTC provides broad-based management for DoD training transformation resources. It provides a JMO that:

- Collects, merges, and validates requirements.
- Synchronizes and coordinates training efforts among Combatant Commands, Services, and Agencies.
- Provides Joint training management activities.
- Supports engineering and technology improvements.
- Manages and conducts programming functions.

JNTC provides standardized Joint command and control support to ensure consistent, doctrine driven higher headquarters for Joint training events. JNTC provides improved combat realism.

JNTC provides consistent, robust, adaptive and credible opposition forces that are:

- Multidimensional to portray any threat in any environment.
- Able to be integrated into a globally distributed, world-class constructive OPFOR with live, multi-Service, asymmetric OPFOR.
- Able to support any combination of live, virtual, constructive OPFOR during same event.
- Supported by a permanent OPFOR headquarters.

JNTC includes a Global Joint Training Infrastructure that provides:

- A distributed joint training network providing end-to-end connectivity for Combatant Commands, training and simulation centers, and test and training ranges.
- Bandwidth on demand.
- Global accessibility to simulation and scenario resources.
- Gateways to other agencies and coalition partners.
- Improved instrumentation and data sharing capabilities that provide common ground truth.

The JNTC significantly improves the execution of the JTS, analysis and assessment of training, and provides the proper Joint context for Service-centric training. It enhances the implementation of capabilities improvement initiatives:

- JNTC is organized to improve joint force capability development in joint interoperability areas.
- It provides a robust assessment capability
- It resolves interoperability issues.

JNTC provides high quality feedback.

JNTC will enable JFCOM to pursue advanced training technologies including:

- A live, virtual, and constructive simulation test bed.
- Advanced range instrumentation packages.
- Knowledge management and collaboration tools.

Finally, JNTC serves as the conduit for Service-wide Joint training requirements and ensures the most efficient use of available resources to meet the needs of all the services. It offers opportunities for allied and coalition forces to train alongside US forces and the forces of other nations. This significantly enhances our ability to fight together to maintain peace and stability in an ever more dangerous world.

“Effectiveness in combat will depend heavily on jointness, and how well the different branches of the military can communicate and coordinate their efforts on the battlefield...achieving jointness in wartime requires building that jointness in peacetime.” As the “centerpiece of training transformation,” the JNTC will ensure that we can train like we fight and fight like we train.

