Converged IP Communications: Improve Defense Collaboration

Challenge
In military operations, seamless communications and collaboration are paramount. More than ever, communications comprises not just voice and data, but a complex set of applications and tools that enable people to securely share important information over the network. Traditional TDM networks were not designed with these capabilities, and today, these limitations present many obstacles. Imagine working in an operational area and trying to communicate efficiently with ground forces, remote command stations, nongovernment agencies, and medical facilities while protecting the information requirements of each agency. A reliable, flexible, WAN communications service between and within fixed strategic areas and deployed forces is vital for effective command and control operations.

In the military environment, a network must transmit data, voice, and video to multiple participants, reliably and flexibly. It must support collaboration tools, video telephony and conferencing, radio over IP, chat, situational awareness, and GIS applications. It needs to be resilient and easy to manage, require little maintenance, and allow for mobility. A converged network meets these requirements.

Solution
Cisco® Unified Communications uses a converged network infrastructure to help defense forces communicate and collaborate more efficiently through flexible, standards-based interfaces and by interoperating with various systems, devices, and applications. By improving command and control, unified communications provides competitive advantage.

Unified Communications over IP: Better than TDM
Traditional TDM networks require separate equipment for data and voice and are complex and difficult to set up, deploy, and support. A well-designed converged network enables the flow of modern network-centric capabilities anywhere within and between the strategic and tactical boundaries, improving operational efficiency and collaboration among defense forces and other agencies.

Because the network carries data, voice, and video, staff can more quickly and easily deliver diverse services to users with less equipment, reducing the training burden and simplifying logistics support. Military commanders gain access to information and knowledge from dispersed forces more efficiently using collaborative network-based tools.

Cisco Unified Communications is built upon the intelligent Cisco Service-Oriented Network Architecture, which uses the network to provide the reliability and flexibility needed in a military environment. It empowers military forces to integrate different technologies and applications into as many platforms as mission requirements dictate.

Control and Collaboration from the Command Post
Military staff in the fixed, strategic command post who are responsible for provisioning services to the field can benefit from the operational simplicity, increased productivity, and ease of management of a well-designed network.
• **Operational capability:** Cisco Unified Communications addresses the technical and quality challenges associated with encrypted voice calls over analog circuits using TDM PBX and secure voice equipment, such as complex cryptography equipment for point-to-point calls. Through Voice over Secure IP (VoSIP), every call is transported and secured at the same classification level as the network. Defense operations use the inherent encryption of their own classical networks to maintain secure voice communications between users.

• **Productivity:** Cisco Unified Communications helps increase military staff productivity through a system that supports radio, video telephony, and video conferencing, as well as collaboration tools such as instant messaging.

• **Manageability:** Cisco Unified Communications is easier to manage and maintain and is more scalable and resilient than traditional TDM PBX equipment. New services are easy to add on an IP network and require little administrative effort. Also, unlike PBX networks, IP telephony networks can be managed centrally. Deployed systems can be managed from the base, eliminating the need to deploy extra support troops in the field.

### Reliable Communications in the Field
Cisco Unified Communications provides the flexibility, mobility, scalability, and resilience needed for users in the field to stay securely connected, from a fixed location or on the move.

• **Mobility:** Cisco Unified Communications is integrated into routing and switching platforms—reducing the amount of equipment while increasing its capability. A converged network enables data, voice, and collaborative applications to be delivered across the same medium, which speeds and simplifies deployment and eases movement.

• **Scalability:** When forces are deployed, advanced personnel often move first, followed by additional personnel and equipment. A Cisco Unified Communications network can expand easily to accommodate incoming users.

• **Resilience:** To minimize downtime, an IP network can reconnect a signal dynamically, while offering redundancy through alternative transmission paths and bearers such as satellite, fibre, and radio relay. Originally designed for military use, IP provides the resiliency and redundancy required for today’s operations.

### Innovative Global Government Solutions
The Cisco Global Government Solutions Group (GGSG) supports governments and defense agencies around the world by delivering innovative, integrated mission capabilities through thought leadership and advanced technologies and services.

The GGSG staff comprises top experts from space, military, homeland security and public safety, and the intelligence community from all levels of government around the world. They not only understand the unique challenges of government, but also bring years of personal experience to help meet mission requirements.

For More Information
Learn about Cisco global government solutions and services for defense at www.cisco.com/go/defense.

### Defense Applications
Cisco Unified Communications can improve operational capability in defense scenarios:

• **Next-generation command and control collaboration systems:** VoSIP uses the inherent encryption capabilities of the IP network to make communications secure in defense organizations and intelligence agencies.

• **Deployable small command-and-control IP package suites:** Transported by aircraft to a landing field, these packages are deployed by vehicle or mobile-based HQ communications to a static location for command-post communications.

• **Migration or replacement of TDM-based trunk communications systems:** Built in the 1980s, these older systems cannot support today’s operational scenarios and technologies. A packet-based architecture is preferable.

• **Radio and voice convergence over IP:** Cisco routers use Cisco IOS® Software and the Land Mobile Radio Gateway to create virtual radio networks over an IP backbone. Command-post staff without radios can use push-to-talk functionality to monitor and communicate with remote users.