

The Distributed Tactical Communications System

1 Overview

The Distributed Tactical Communication System (DTCS) provides Beyond Line-Of-Sight (BLOS), Over-The-Horizon (OTH), and On-The-Move (OTM) one-to-many tactical voice and data communications without the need for any local ground-based infrastructure. DTCS is managed by the DTCS Program Management Office (PMO), within the Enhanced Mobile Satellite Services (EMSS) Division under the Commercial Satellite Communications (COMSATCOM) Center in the Defense Information Systems Agency's (DISA) Network Services (NS) Directorate.

DTCS capabilities include:

- Regional one-to-many push-to-talk encrypted voice and data transmission
- Regional broadcast and global Position Location Information (PLI)
- Broadcast and point-to-point regional text messaging

DTCS is an evolving service and additional capabilities may be added to the DTCS system in the future.

2 A Scalable Solution for Real World Scenarios

Missions today require units to operate as smaller, more agile forces across widely distributed geographic areas, in often rugged terrain. These dismounted units frequently cannot maintain line-of-sight communications with headquarters (HQ), let alone with other units operating even a few miles away. This not only limits HQ's ability to track dismounted Warfighters, but also imposes severe limitations on the Warfighter's situational awareness that is vital to both safety and mission success. Attempts to solve these problems with traditional SATCOM solutions are impractical, as these solutions require large and/or stationary antennas, high power radios, and line-of-sight to the satellites involved. DTCS was designed specifically to address these capability gaps. To use the DTCS service, all that is required is a DTCS service account and a DTCS compatible radio with a view of the sky. DTCS radio configurations are also available for vehicle installations and for use in Tactical Operations Centers (TOCs).



DTCS is a highly scalable system consisting of thousands of independent user communities or "Nets." The DTCS Radio-Only (RO) Tactical Radio™ will only transmit and receive information on the Nets to which it has been assigned, allowing for endless configurations that can be customized to any mission. DTCS also supports the ability for Position Location Information (PLI) and text messages to be broadcast within a Net and for tracking Net member locations on a map-based display.

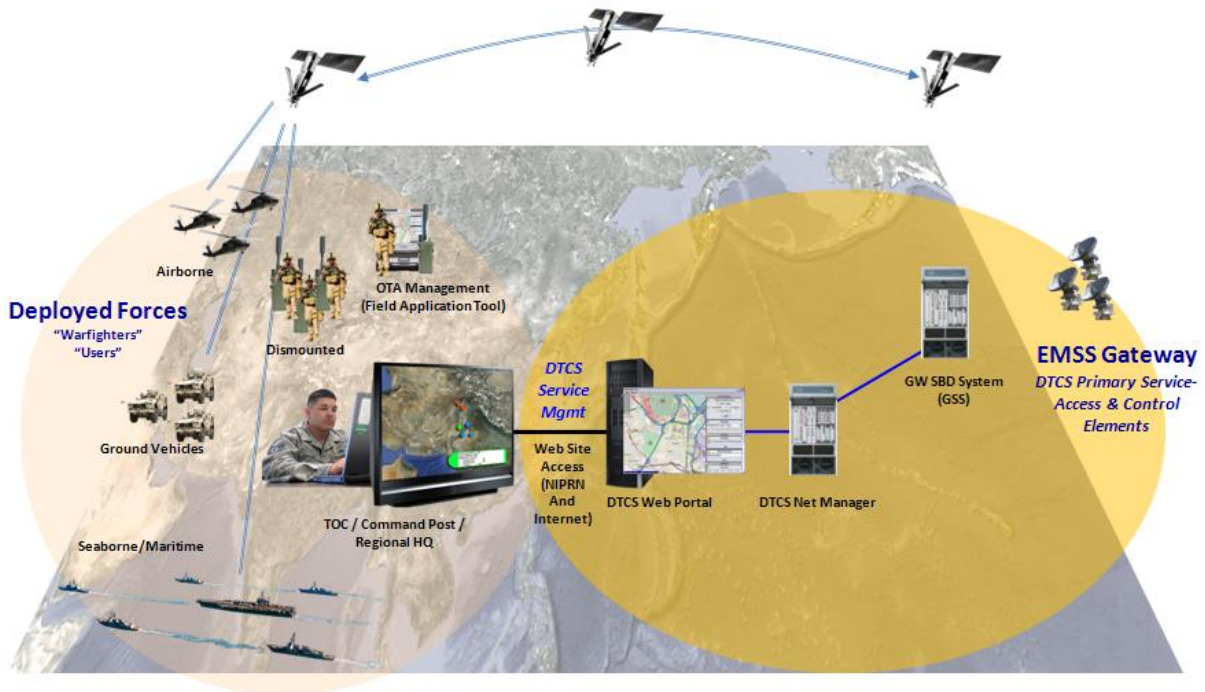
DTCS provides a complete set of tools that allow organizations to manage and configure their own DTCS assets in the field. This includes the DTCS Net Manager Web Portal, a secure web-based interface that allows configuration, monitoring, and control of an organization's radios and Nets.

DTCS Capabilities Summary

- Secure one-to-many voice and data communications
- Dependable tactical satellite communications in a classic Push-to-Talk (PTT), handheld tactical radio.
- OTH and OTM tactical operation enables units operating at extended distances to maintain communications with higher, adjacent and subordinate units, enhancing mission planning and execution
- PTT capability anywhere in the world provides reliable BLOS communications without requiring establishment of more traditional SATCOM infrastructure
- Real-time situational awareness with ability to transmit Position Location Information back to the Mission Management Center or other location
- Centralized and distributed radio configuration, maintenance and control - highly scalable
- Automatic over-the-air management of encryption keys

3 The DTCS Architecture

DTCS utilizes the Iridium™ constellation of satellites, as well as, DISA's EMSS earth terminals and gateway. Iridium's constellation provides satellite coverage everywhere on earth as long as the user's radio has a view of the sky. Further, by using DISA's EMSS earth terminals and gateway, all ground-based DTCS services and communications are controlled by DISA. DTCS information does not pass through Iridium's commercial gateway.



Each DTCS user can communicate with other DTCS users configured on the same Net, and DTCS radios can participate in up to 15 Nets at the same time. Each Net typically spans a geographic region of about 100 miles, with expanded Nets of approximately 250 miles available with approval from the DTCS Program Management Office.

- DTCS voice traffic stays within a Net. Using the Push-to-Talk (PTT) capability of the DTCS RO Tactical Radio, voice traffic is transmitted to the Iridium satellite and instantaneously broadcasted to other radios on the same Net as the transmitting radio. Voice traffic is not transmitted back to the gateway.
- DTCS data traffic stays within a Net. Data traffic is transmitted to the Iridium satellite and instantaneously sent to one or all other radios on the same Net as the transmitting radio. Data traffic is not transmitted back to the gateway.
- DTCS PLI can be configured for broadcast and/or global distribution.
 - With Broadcast PLI, the location information is sent to all other radios on the same Net.
 - With Global PLI, the location information is sent back to the Mission Management System (MMC) or other back-office system for further distribution.

The main tool used to manage an organization's DTCS services and devices is the DTCS Net Manager Web Portal. This Internet and NIPRnet accessible secure web site provides complete control over an organization's Nets and radios in a real-world mirroring hierarchical manner. DTCS also provides a field tool that uses the DTCS system to provide management features for disadvantaged users who do not have any other network access.

4 Getting Started

To get started using the DTCS service requires DTCS compatible radios and accessories and satellite air-time for those radios (which is priced at a flat rate per month). Service and equipment can be ordered from the DISA Direct Order Entry (DDOE) web site at <https://www.disadirect.disa.mil/>. For more information, email the DTCS PMO at disa.meade.ns.mbx.dtcs-program-office@mail.mil.