# Military Defence Solutions Overview

Today's military and defence organizations face the challenge of extending high-speed broadband access from strategic command centers to the front line, while maintaining the highest possible level of security to protect communications and deployed units. The more data a military can share real time between headquarters, mobile units and individual soldiers, the better equipped it is to make more accurate, informed decisions when lives are on the line.

Maintaining connectivity in a military enviroment requires a network that can be rapidly set up and scaled without distance or terrain restrictions, and managed from a centralized location. From a state-of-the-art mobile operations center, commanders can utilize advanced IP Satellite networks to monitor troop locations, gather intelligence, communicate tactical plans and advantageously allocate resources in the field.

The iDirect Satellite Solution

iDirect's defence product line and ready-to-access functionality delivers a reliable, efficient and highly secure solution for any application, in any environment, fixed and mobile, across land, sea and air. The iDirect Intelligent Platform™ is a single, unified, IP-based satellite communications architecture that enables seamless integration with existing infrastructure and allows for interoperability and communication with all IP-based devices and friendly forces' networks.

The product line consists of a flexible, universal hub and line card system that can support Ku-, C-, Ka- and X-bands, as well as multiple topologies and applications, and can connect to up to five satellites. iDirect satellite remotes are engineered with versatile functionality and varying form factors to meet unique military application needs and industry-specific industrialized and security requirements. And fully integrated operating and management software allows military and defense organizations to centrally monitor, configure and control the entire satellite network.
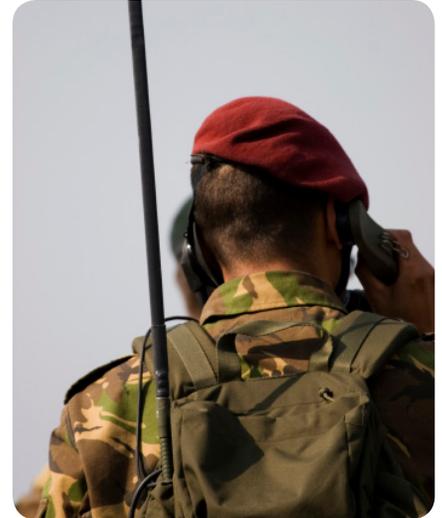
iDirect's Intelligent Platform is a single, unified, IP-based satellite architecture with built-in flexibility and functionality. It features:

- Fast, efficient and reliable broadband connectivity solutions for critical applications
- Universal hubs and line cards for operating on multiple satellites in C-, Ku-, Ka- or X-band
- Quickly deployable, robust and lightweight remotes for field operations anywhere
- Enhanced capabilities for IP system interoperability
- Industry leading capabilities for high-speed COTM
- Compliance with TRANSEC, FIPS 140-2 and STANAG security standards
- Fully integrated operating and management software

iDirect's broadband capabilities provide secure connectivity for all voice, video and data communications and specialized applications for assured access in even the most challenging environments.

◢◆iDIRECT

Mission Critical Reliability and Efficiency

iDirect's Evolution® DVB-S2 platform is designed for large outbound channels and produces major gains in data throughput. It's combined with Adaptive Coding and Modulation (ACM), which enables each satellite remote to maximize efficiency and availability by continually evaluating signal strength based on local weather and spectrum conditions to preserve throughput.

In addition, iDirect's modular hub architecture offers multi-channel demodulation line cards, which can be software activated to support up to sixteen return channels. This reduces hardware costs and maximizes chassis space, both of which are important to militaries with tight operating budgets and the need for flexible communications solutions.

As militaries share mission critical information, it's imperative that any site on a network has sufficient bandwidth at every moment. The iDirect platform is a shared, two-way Time Division Multiple Access (TDMA) system built to dynamically allocate bandwidth from a shared pool based on real-time usage requirements.

To guarantee military organizations assured access to critical information, iDirect's Group Quality of Service (GQoS) technology prioritizes bandwidth efficiently across different needs, ranging from welfare services to intelligence data to real-time tactical updates in the field, all over one network.

For more bandwidth intensive applications that require constant traffic volumes, such as might occur for a military base during a time of mission-critical transmissions, the iDirect platform offers the unique ability to switch to a dedicated Single Channel Per Carrier (SCPC) link on the return channel for a more efficient use of bandwidth.

iDirect Network Architecture
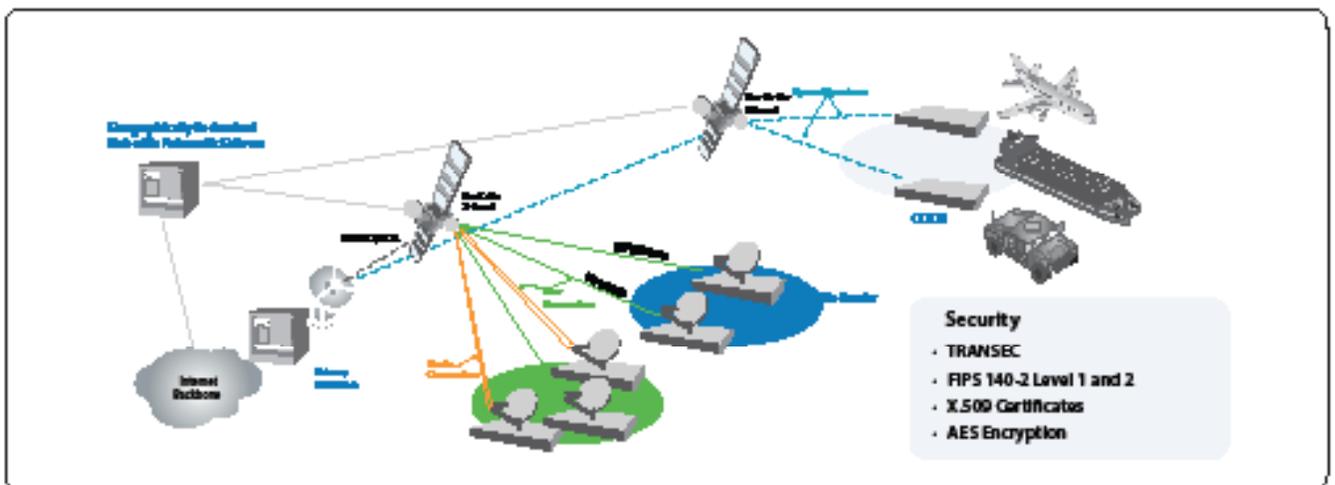
A single iDirect hub can support a diverse range of secure defence applications, spanning multiple satellites, topologies and geographies.

iDirect's platform provides increased reliability and maximum redundancy to the critical components of the communications network. With its redundant hub and line card configurations and geo-redundant operations options, the iDirect system can enable critical failover should an incident occur at the teleport or hub. In the case of an outage, iDirect's Global Network Management System (GNMS) can automatically perform a seamless switchover to a backup network within minutes.

Military-Grade Security

Network security is always a top priority for military operations, requiring the content, location, type and amount of information sent to be highly protected. The iDirect platform is compliant with the highest security standards such as TRANSEC, FIPS, and STANAG, and can operate at multiple security levels from welfare to intelligence information exchange.

Using FIPS 140-2 Level 3 certified encryption, 256-bit keyed AES encryption and built in security features, iDirect ensures that the content and size of all user and network link layer traffic is completely undetectable to adversaries.

Mobility and Portability

Militaries operate in multiple and diverse locations for indefinite periods of time. As units move between deployments, their communications networks must follow them. Vehicles must be fully broadband-enabled in order to provide effective communications between central command and deployed units. On an individual level, soldiers who stay connected while on the move behind enemy lines have access to updated threat analysis, receive critical command data and troop updates, and benefit from telemedicine applications that can help save lives.

Mobility Applications
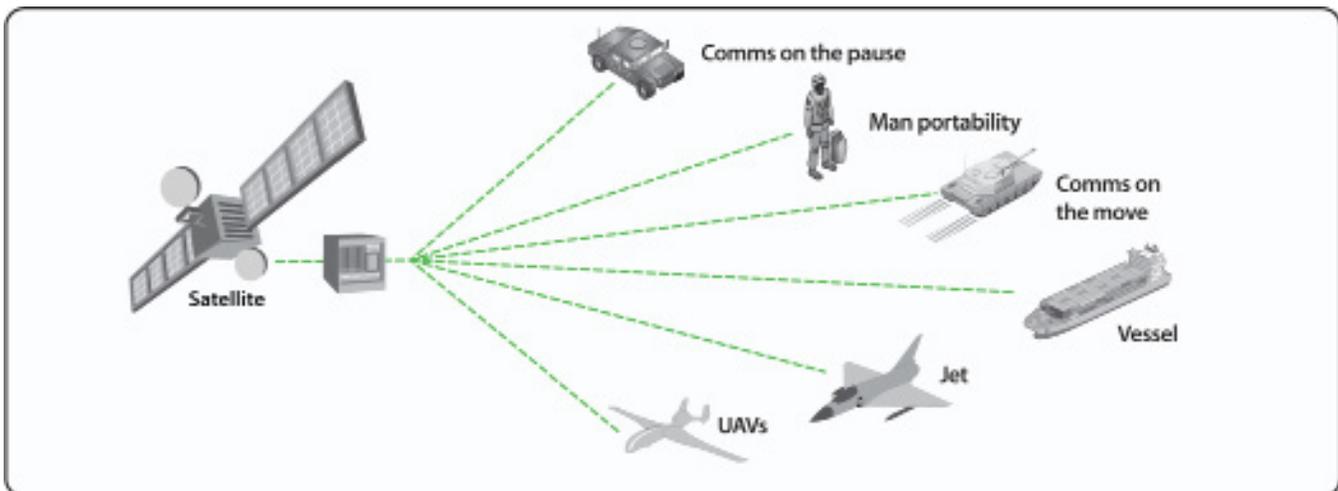
The iDirect Platform has ready-to-access mobility and portability functionality that enables service providers to expand broadband to vehicles, ships, aircraft, and even war fighters in the field.

For unmanned aeronautical vehicles (UAVs) and other highly mobile platforms, traffic must transfer from one network to another as remotes move across satellite footprints without the need for manual intervention. iDirect's Automatic Beam Switching (ABS) technology determines the appropriate time and location for redirecting antennas and allowing the proper beam to assume control of connectivity at high speeds.

iDirect's defence product line can extend a broadband platform to vehicles, aircraft or maritime vessels. iDirect utilizes a spread spectrum waveform technology that enables the use of small antennas necessary for COTM applications, and reduces the risk of interference to adjacent satellites by spreading out bandwidth and power.

Hardened hubs, line cards and remotes are designed for transport and deployment in harsh conditions. Specialized satellite router boards incorporate the advanced features of iDirect's platform into a portable communications system compact enough to be carried into the field by an individual soldier or installed on aeronautical vehicles. Power-saving features ensure a long battery life by turning on the amplifier only when the unit is transmitting.

Network Management

To ensure that militaries can easily configure and manage all of their fixed and mobile network deployments, iDirect's iVantage (NMS) allows centralized control from a single location and makes it easy for non-technical personnel to quickly deploy new sites in the field.

As mobile remotes move between networks on various transponders and satellites, iDirect's Global NMS enables military organizations to monitor the health and location of all their deployed remotes, identify and fix performance degradation, and troubleshoot any situation that may arise.
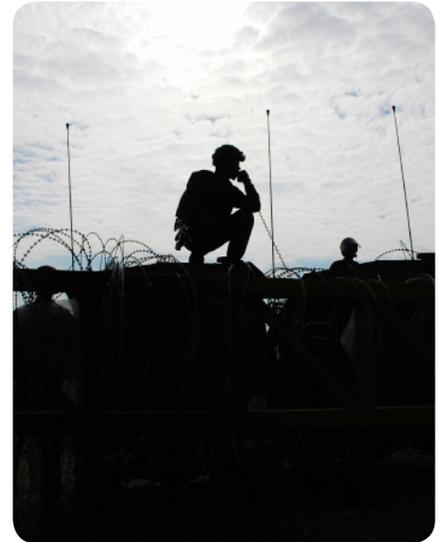
With iDirect, military organizations can deploy secure, high-speed networks anywhere, delivering immediate access to mission-critical applications.