



Communications on the Move (COTM) Application Brief

For military organizations, maintaining communication between headquarters, mobile units and individual soldiers is essential. When lives are on the line, real-time data leads to more accurate, informed decisions.

That militaries increasingly rely on Communications on the Move (COTM) is evidenced by the NSR 2011 Global Military report's prediction that the number of deployed COTM terminals will quadruple by 2020, with aeronautical vehicles representing the fastest growing segment.

With fully broadband-enabled aircraft, ground vehicles, deep-ocean vessels, and individual soldiers, a military can effectively communicate, share mission-critical information and support its armed forces.

Each of these applications offers unique challenges, from extending uniform broadband access across deployments; to crossing satellite footprints at high speeds; to staying connected in any weather or terrain; all while ensuring the highest security.

IP satellite technology can effectively overcome all of these challenges, providing a unified, always-available communications platform for military organizations with the reliability and security they require.

Mobile VSAT Applications

With IP-based satellite connectivity, militaries can extend broadband to aircraft, land vehicles, ships and even war fighters in the field.

UAV and Manned Aircraft

- ◆ Intelligence, Surveillance & Reconnaissance (ISR)

Comms-on-the-pause and Flyaway

- ◆ Border/outpost protection
- ◆ Emergency response
- ◆ Troop welfare
- ◆ Telemedicine

Vehicular and Man-portable

- ◆ Situational awareness
- ◆ Troop communications
- ◆ Search & rescue
- ◆ Convoy protection

Maritime

- ◆ Deep sea deployments
- ◆ Coastal defense

High-speed Global Networks

Advanced Mobility and Portability

With a VSAT platform from iDirect, militaries can realize the full benefits that a global COTM solution brings to strategic planning, intelligence, surveillance and reconnaissance.

iDirect's platform is a single, unified IP-based satellite communications architecture with ready-to-access mobility and portability functionality to deliver secure, high-quality broadband to vehicles, ships, aircraft, and even war fighters in the field.

UAVs and Manned Aircraft

With satellite broadband, UAVs can gather large amounts of intelligence and surveillance data in high definition and transmit it back to headquarters for analysis. Manned aircraft can transmit and receive tactical information to ground units.

iDirect's satellite remotes have overcome industry challenges for reliable broadband connectivity. As aircraft travel at high speeds, iDirect's built-in Doppler Compensation features handle satellite frequency shifts to ensure seamless availability and performance.

Ground Vehicles

With a satellite router in the rear and a small antenna on top, land-based vehicles become mobile command units during battlefield situations, peacekeeping missions or crisis management.

These mobile units can provide critical communications access for first responders, search and rescue, or field operations. Soldiers can use laptops and Voice over IP-enabled phones, while traveling at any speed, across any terrain and during any weather condition.

Vessels

High-speed broadband VSAT provides mission-critical connectivity to a military's deep-water fleet. Ship-to-shore voice, video and high-speed data communications are maintained no matter the location or weather condition.



True Mobility

The iDirect platform has several distinctive mobility features built in:

- ◆ **Automatic Beam Switching** to enable seamless connectivity across satellite footprints
- ◆ **Spread Spectrum Waveform Technology** to support very small antennas on mobile vehicles for mission-critical applications
- ◆ **Global Network Management** to monitor and manage each traveling remote as it passes through global networks
- ◆ **High-speed Doppler Compensation** to ensure consistent availability and performance

Consistent and Ubiquitous Connectivity

As a ship travels across multiple satellite footprints, embedded iDirect features such as Automatic Beam Switching maintain connectivity without the need for manual intervention to enable seamless global coverage.

Man-portable

Compact, lightweight satellite router boards and portable low-power terminals extend broadband connectivity to individual warfighters in the field. Slightly larger fly-away systems can be easily transported between sites and rapidly deployed to provide complete communication access for base camps and troops.

With ruggedized equipment that fits in a rucksack, soldiers behind enemy lines can exchange information with central command in a digital battlefield. Situational imagery helps identify immediate threats and provides a tactical advantage while telemedicine applications enable doctors to provide guidance on treatment and potentially save lives.

Mission-critical Availability and Reliability

When a military needs access to mission-critical applications, voice, high-speed data and video traffic requires guaranteed availability no matter the environment or conditions. At the same time, any site on the military's network must have the capacity it needs at a moment's notice to ensure the delivery of critical communications.

The iDirect network is built on the next generation satellite coding standard, DVB-S2, with Adaptive Coding and Modulation (ACM). ACM helps to ensure the reliability and availability that militaries require by enabling satellite links to automatically adjust signal strength during inclement weather to maintain high-quality connectivity. When weather isn't a factor, ACM helps improve network throughput performance by using more bandwidth-efficient coding and modulation schemes.

iDirect Intelligent Platform™

Delivers the highest quality broadband connectivity wherever and whenever it's needed.

- ◆ Maximum availability and performance in any environment or geography
- ◆ Military-grade encryption to protect sensitive traffic
- ◆ Supports multiple bands (X, Ka, C, Ku), frequencies and up to five satellites for extended coverage
- ◆ Industry-leading efficiency for large traffic volumes and high-bandwidth applications
- ◆ Adaptive links that preserve connectivity during severe weather
- ◆ Intuitive network management system that enables central monitoring of all sites



Efficient and Secure Communications

iDirect offers the efficiency of an organization-wide shared bandwidth pool without sacrificing the reliability that is crucial to military organizations. Data is prioritized based on Quality of Service rules such as application, traffic type and location so that a phone call to family back home will not take precedence over data transmissions on troop movements, for example.

Rigorous Security Standards

Security is a top priority for military operations. For mobile remotes on an IP satellite broadband network, this means secure channel activity, control channel information, unit validation and physical security.

Militaries choosing the iDirect Platform can rest assured that the content and size of all user and network link layer traffic is completely undetectable to adversaries and all hardware is protected and tamper-evident. iDirect is compliant with the highest level of security standards, including TRANSEC and STANAG, and iDirect's routers and line cards recently received Federal Information Processing Standards Publications (FIPS) 140-2 Level 2 validation.



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