

# FlexGround

## High-speed Broadband for Remote Government Operations

WHITE PAPER

# FlexGround

## Overview

The nature of U.S. and allied military operations has changed dramatically in the past decade, shifting from large-scale urban warfare involving hundreds of ground troops and vehicles to more surgical strikes using a few specialized forces in remote mountains, jungles and deserts.

Rapid-response ground forces are increasingly deployed in areas far from any kind of communications infrastructure. Yet at the same time, the high data rate requirements for voice, data, video, as well as intelligence, surveillance, and reconnaissance (ISR) applications continue to increase and are far beyond the capabilities of push-to-talk radios and low-bandwidth satellite communications available today.

In an ideal world, according to one top U.S. Air Force official, "Warfighters should be able to use SATCOM technology as easily as most people use smartphones when they are on the move." But the goal is far from the reality. The U.S. military has more than 130 different types of satellite ground terminals in its inventory; many are compatible with only a narrow range of the satellites operated by the U.S. Government and only a handful are small enough to be carried and deployed by quick-entry ground forces.

These operational challenges are exacerbated by several issues: 1) current antenna systems that are easily transportable (small Size, Weight and Power (SwaP) and easy to use in the field are limited by low data throughput; 2) high speed broadband to enable all the applications (data, voice, video) required for today's advanced communications typically require larger, less wieldy antennas; and 3) operating a "Do-It-Yourself" satellite network where you have to buy, build, operate and maintain an entire global satellite services infrastructure can be very expensive, when what is really needed is a SATCOM service.

As a result, some organizations cannot afford to provide a truly optimal solution. What is truly expected is something similar to a cell phone plan that provides connectivity when and where it's needed and at an affordable price.



# FlexGround Use Cases

## Early Entry

Organizations are particularly challenged in early-entry or surge situations in austere locations. In these cases, the infrastructure is simply not there – often, there is no cell phone coverage because there are no cell phone towers. Yet, these operators, even early on, require broadband connectivity for data, voice, and video – both for operational requirements and force protection.

## HADR (Humanitarian Assistance Disaster Relief)

HADR (Humanitarian Assistance Disaster Relief). Similarly, natural disasters destroy infrastructure such as terrestrial lines and cell phone towers. In this instance, a top requirement is restoring communications to help coordinate first-responder activities and to allow people affected by the disaster to communicate with loved ones.

## Continuity of Operations (COOP)

Organizations have to continue critical operations under a broad range of circumstances that almost always involve communications. However, some of these critical sites often do not have adequate bandwidth available or are vulnerable to terrestrial line cuts and have to depend on other communications options.

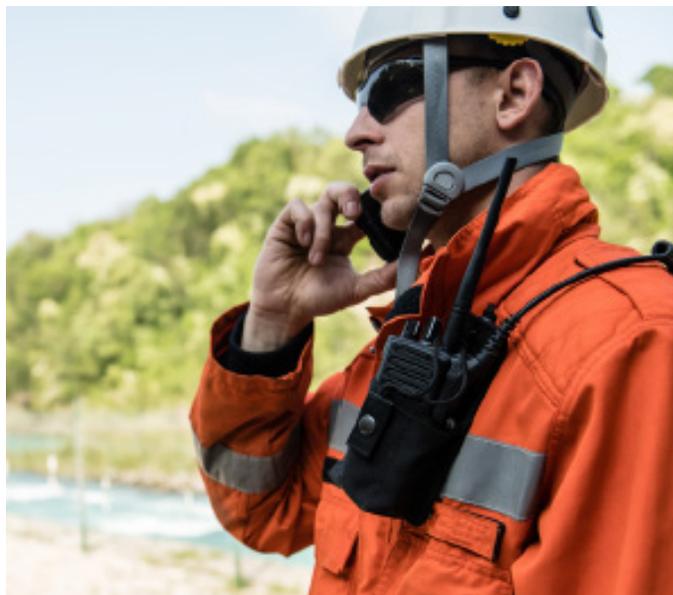
## Comms-on-the-move/pause (COTM/COTP)

DISA has rightly stated, “To maintain their tactical edge on the battlefield, today’s warfighters need the ability to access and share information from anywhere. Whether using a mobile device or a laptop computer, end users must have a secure, reliable way to access data and collaborate with other users.”

When we consider that both manned and unmanned COTM platforms in austere locations need to access data, voice, and video applications, there is no question that the only way to satisfy this broadband requirement is through SATCOM.

The military’s land-mobile ecosystem has changed dramatically. Previously, radio line-of-sight, and push-to-talk radio was adequate, yet that is no longer the case.

Now the requirement is to access and share information from anywhere, anytime, and that includes land mobile systems. While Comms-on-the-Pause (COTP) is still a requirement, increasingly COTM is demanded; there is no time to pause.



# Introducing FlexGround

To fill this void, Intelsat General has developed FlexGround, a managed end-to-end service that provides cost-effective, high-performance broadband connectivity to support a wide range of military operations in remote locations around the world. The service will enable first-entry military units to quickly establish communications in austere environments far from the connectivity provided by radio communications. FlexGround supports COTM, COTP and small units carrying Manpack systems for data, voice and video communications in support of ISR operations.

FlexGround provides users with critical broadband capacity in a manner that is both less expensive and offers a higher data throughput than competing commercial constellations. The on-demand service is available virtually anywhere in the world on either a pay-as-you-go basis or as a gigabyte subscription package. This makes it ideal for both occasional first-responder missions and round-the-clock military operations.

FlexGround's broadband service integrates layers of high-throughput satellite (HTS) coverage from the company's proven Intelsat Epic HTS platform with the Intelsat fleet of wide-beam satellites to deliver the added redundancy and security needed for the most critical missions throughout the globe. The high power of Intelsat's Epic satellites allows military units and first responders on the ground to use small, quickly deployable antennas as small as 60cm. FlexGround offers committed capacity for applications such as sensor data collection, video transmission and communications relay to deliver immediate access at 3 Mbps with optional scalability to 10 Mbps.



# Military Units and First Responders

FlexGround is specifically designed for military units involved in early entry into hostile areas in remote and austere locations. These include Special Operations Forces as well as small-element, initial-entry applications such as reconnaissance, quick-reaction, crisis-response and advise-and-assist missions. These units often require quick access to communications networks to report changing conditions on the ground and to transmit ISR videos and data to distant commanders. In the absence of any existing network infrastructure such as cell towers, the military units must have access to satellite communications for data, voice and video for both operational requirements and force protection. Non-technical users can connect to the FlexGround service at an advance operating base, a safe house or a forward staging area where the ability to quickly re-locate and sustain communications connectivity in minutes is required.

FlexGround is also ideally suited to humanitarian assistance and disaster relief. In a natural disaster such as a hurricane, wildfire or earthquake, ground infrastructure is often destroyed over large areas, requiring first responders to connect via satellite with high-speed broadband networks that can help in coordinating the response. FlexGround can also be used for continuity of operations by businesses and other organizations affected by a disaster, serving as an interim broadband solution until terrestrial service is restored.



# How FlexGround Works

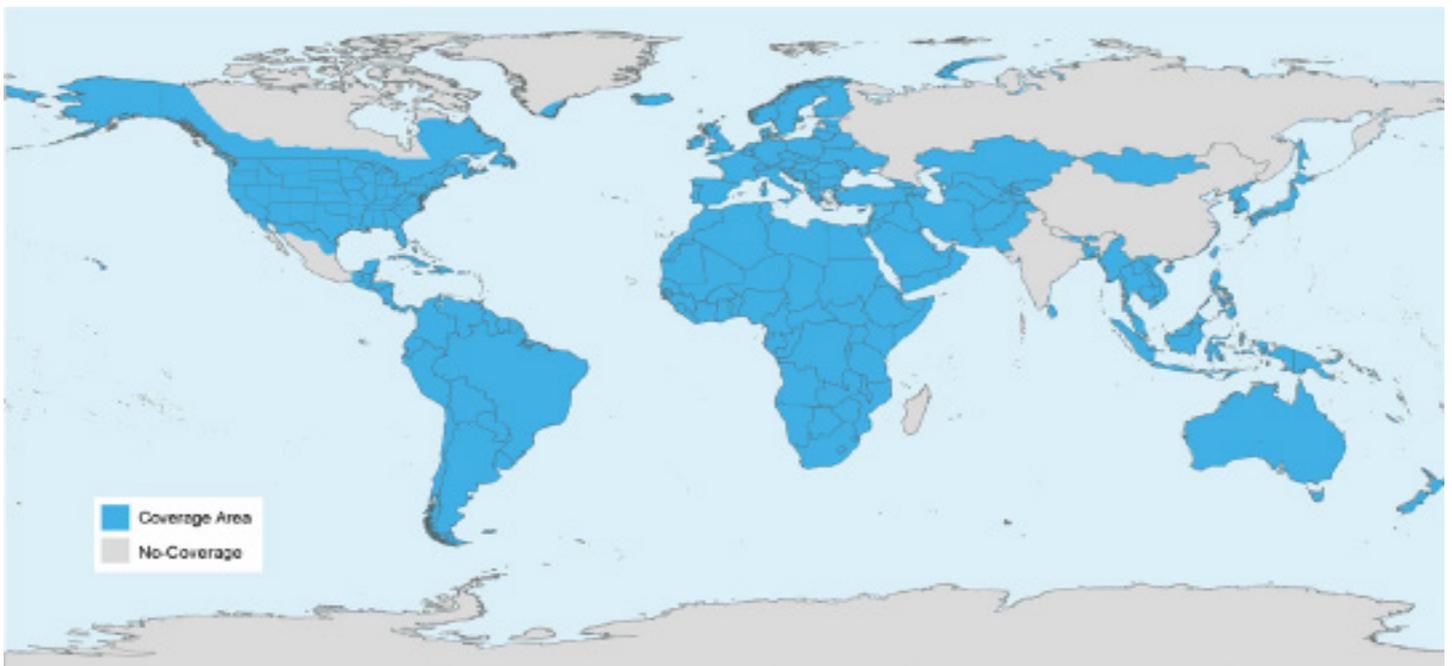
FlexGround changes the way remote military units and first-responders can communicate. Previous commercial offerings have relied on either satellite telephones or portable briefcase-sized terminals that use the low-power L-band of the satellite spectrum. While these are sufficient for voice communications, neither provides the throughput necessary for intensive video and data transmission. With the launch of the Intelsat Epic constellation using the Ku-band, FlexGround is able to deliver true high-speed and high-throughput broadband service, with download speeds of 10 Mbps and upload of 3 Mbps – more than 20 times the speed of similar offerings from other commercial networks.

FlexGround can be used with a variety of existing transportable terminals for COTP and with a flat-panel antenna the size of a laptop for Manpack applications. The service is designed for non-technical users to be able to connect to the nearest satellite with as much ease as using a hand-held radio. Once connected, the user can send and receive voice, video and data simultaneously, allowing for quick setup, transmission and take down in the rush of an operation. In addition, up to five users are able to share dedicated bandwidth simultaneously, giving geographically separated military units the communications tools they require for mission success.

For the procurement team at headquarters, FlexGround eases the decision making by offering a turnkey service as uncomplicated as a cell phone plan that delivers the service where and when it is wanted at an affordable price. The customer can choose subscription plans that are either pay-as-you-go for bandwidth used, a fixed monthly data amount, or a pooled plan for multiple users in different parts of the world. This makes FlexGround work well for both occasional first-responder missions and round-the-clock military operations involving multiple units using different satellites.

Because it operates entirely within the Intelsat network, FlexGround offers the highest level of information protection and cybersecurity. We comply with the U.S. Government's strict information cyber security standards under the Risk Management Framework and we are the only satellite operator with independent third-party Service Organizational Control 3 (SOC 3) accreditation, confirming that we protect our global satellite and terrestrial network against unauthorized access.

## FlexGround Coverage Map



# Meeting The Customer's Needs

FlexGround provides access to Intelsat's 50+ Epic and widebeam satellites covering nearly all of the world's populated regions. Government users can access the network from virtually anywhere, with bandwidth available on a moment's notice. Accessing an Intelsat satellite plugs the user into the triple redundant IntelsatOne fiber network that ensures global resilience for critical missions. In addition, the multi-spot-beam technology on our high-throughput Epic satellites adds enhanced jamming mitigation to the networks. Added resiliency is delivered with multiple layers of capacity covering conflict zones around the world.

With traffic tracked and monitored around-the-clock through our Intelsat Secure Operations Center (ISOC) in Atlanta, users are assured of both high security and on-demand technical support. At the ISOC, highly-trained satellite network engineers and technicians use state-of-the-art tools and technology to monitor and trouble-shoot connectivity across Intelsat's fleet of 50+ satellites. The center's engineers, many of them from government and military backgrounds, work with users around the globe to provide new site activations, trouble notification, data recording and configuration-change management.

The staff responds instantly to incoming trouble reports and advises customers of critical events by phone and e-mail. The ISOC is isolated within Intelsat's Atlanta operations center and backed up through our headquarters control center in McLean, VA.

As satellite technologies have rapidly evolved over the past decade, governments involved in combat operations and disaster relief have spent millions on the ground terminals and modems needed to connect users to various satellite constellations. This has often led to frustration that networks sometimes don't work as smoothly as advertised and to continuous learning curves to adapt to new equipment and changing network protocols. FlexGround is designed to provide a seamless service for the user on the ground so that remote military units and first responders can quickly connect to a broadband network offering the power and throughput needed for voice, video and data communications.

With both pay-as-you-go and monthly subscription plans, FlexGround offers agencies the pricing flexibility needed to deliver secure high-speed broadband to support remote operations anywhere in the world.

## About Network Innovations

Since 1989, Network Innovations (NI) has grown to be a global leader in connecting people, places, and things with always available solutions. Network Innovations headquarters from Calgary, Canada with regional offices in Tampa/Fort Lauderdale/Houston/San Diego/Seattle/Kodiak/Dutch Harbor-USA, the Netherlands, /Sweden-EU, England-UK, Singapore & Australia (Sydney, Perth). NI also maintains an extensive network of more than 200 partners operating globally throughout the Americas, Asia Pacific, Europe, the Middle East and Africa.

Our dedicated specialists have the depth of training and experience to design, build, and execute the most successful technology solutions for the unique needs of government and defense, public safety, oil and gas, media, mining, utilities, maritime and recreation and leisure. We are a trusted consultant empowering our clients to *Succeed. Anywhere.*

## About Intelsat General

Intelsat General Communications (IGC) is a wholly owned subsidiary of Intelsat, the foundational architects of satellite technology. IGC provides government customers with mission-critical mobility communications solutions that include managed services with flexible pricing plans.

From remote military outposts and disaster recovery sites to U.S. embassies and homeland-security agencies, IGC solutions support and enable some of the most complex government applications. As the only commercial satellite operator with an independent third-party Service Organization Control (SOC 3) cybersecurity accreditation, Intelsat is uniquely positioned to help its government customers build a secure, connected future.