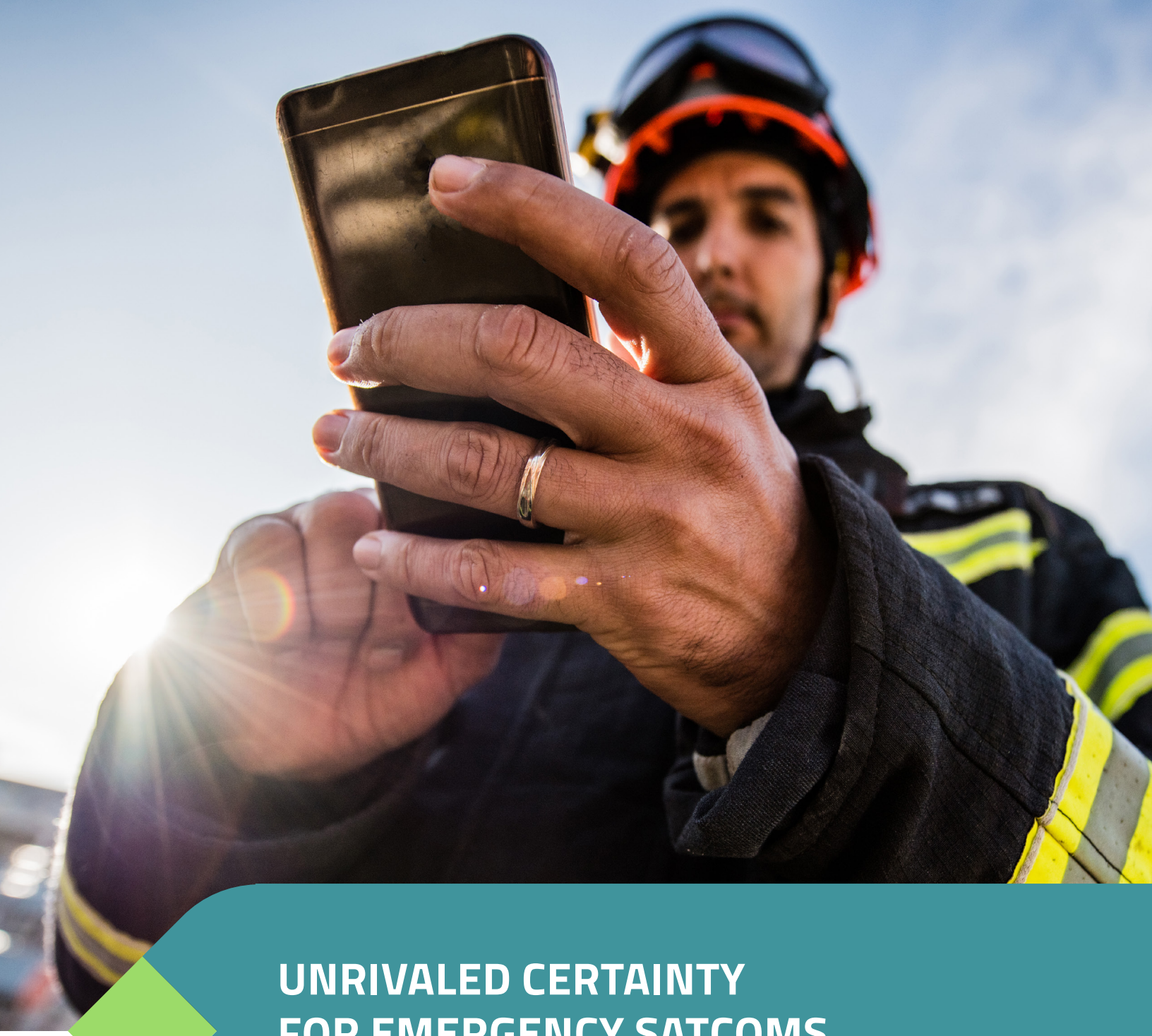

UNRIVALED CERTAINTY FOR EMERGENCY SATCOMS

An Isotropic Networks, Inc. Client Resource

Isotropic™

Read On: What's Inside

The world is constantly under threat from myriad global events. Perhaps it's because our world feels so much smaller and we are much more aware due to social media and rolling news, but the frequency of disastrous events seems to be increasing. From week to week, we are experiencing extreme weather and events, both natural and human-made — from cyclones and tsunamis to droughts and earthquakes to war and terrorism.

These events pose massive challenges for governments and NGOs across the globe. They can cause destruction of infrastructure, homes and businesses. They pull families apart and displace people, and it seems often the most poverty-stricken and least-developed areas of the planet are hit.

The past months have seen a seismic change in our lives. It's completely unprecedented and affects every one of us. It's something that has been the subject of many movies, but sadly we are now actually living through it. We have found ourselves in the midst of a pandemic, and all our lives have changed as our governments struggle to control the coronavirus.

The coronavirus spread has meant every country has been forced to mobilize its health care sector and NGOs as never before, literally building new hospitals in days to accommodate the influx of patients. For the first responder community and those deployed in the emergency services, this has meant a huge spike in activity. The people carrying out this critical work need the communications that enable them to do their jobs as effectively as possible. They require the voice connectivity to communicate instantly with their colleagues. They require data so they can transmit files, images and video to local hospitals and clinics, and they need two-way connectivity to coordinate and save lives. This is all taking place when the majority of the workforce has been asked to remain and work at home, creating excessive demands on bandwidth and communications infrastructure.

Communications are essential. Without them, these teams cannot operate effectively. In this white paper, we explore the importance of emergency communications and how Isotropic works to connect the teams who are on the front lines — and on whom we all rely.

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What Are Emergency Communications?

Emergency communications are essential in the immediate aftermath of any disruptive event. They are rapidly deployable and can create an instant network that is up and running in minutes.

When first responders arrive on the scene, they must have robust, easy-to-deploy communications so they can assess and evaluate the situation. Infrastructure is often badly damaged or completely wiped out, making it extremely difficult to communicate at a time when communications can mean the difference between life and death.

These agencies face their own unique challenges in terms of communications, and there is no one-size-fits-all solution. Communications for the disaster response community depend heavily on what is available in any given area, and NGOs work with local communications providers to try to find the best way around the problem. For example, some Wi-Fi or cellular coverage may be available but only in certain areas; in areas where coverage is unavailable, satellite becomes the de facto solution, providing the emergency response community with an instant solution that can bridge gaps in infrastructure.

In the immediate aftermath of a disaster, access to voice communications and the internet is absolutely critical. The internet has become a necessary communications medium for NGOs and first responders, and it is used to collect and send data from collaborative cloud platforms that relief agencies have specially developed for use. The internet is also used to communicate between headquarters and the team in the field via email and instant messaging, and it lets teams keep in touch with international news and developments.

For individuals and families affected by a disaster, access to satellite connectivity enables them to make the most important communications of their lives. It allows them to contact family and loved ones to let them know where they are and what medical condition they are in.

But it's not only communications that are critical in these times. Staying informed during and after an event is just as important, and TV and radio play critical parts in keeping communities updated on the event itself and the relief efforts that will help them and their families. Local TV and radio shows can help people have a shared experience and feel less alone during unnerving times. During a crisis, satellite technology lets TV signals get through where cable may have been destroyed, thus providing an invaluable source of local information.

BUSINESS CONTINUITY

Emergency satellite connectivity is not solely for use in the event of a disaster; it is also used as a backup solution when terrestrial networks fail. In the event of a power outage or network disruption, satellite technology can simply take over and provide seamless connectivity whenever required. Satellite has an important role to play in both scenarios.

Emergency Communications From Isotropic

Isotropic has been serving the emergency response community with its highly reliable connectivity solutions for many years. We operate the most technically advanced diverse routed teleport operation in the Americas. We understand the importance of emergency satellite communications.

Our experience in numerous emergency situations has caused us to develop an unparalleled breadth of satellite emergency services. Countless municipalities and state governments have been forced to reduce budgets and sacrifice certain communications contingency plans. With Isotropic's continuity plans, customers can subscribe to minimum service levels that keep satellite emergency equipment active on the network and, when required, can go to full throughput with one simple phone call. We have focused on creating low-cost, reliable solutions for many emergency responders, and these solutions are tailored to their precise requirements.

Isotropic's satellite links are completely independent of the terrestrial communications infrastructure, ensuring there are no single points of failure in your network. Isotropic engineers build in the reliability required based on business needs, including low monthly service plans and a large variety of bandwidth on demand options. This equals a cost-effective solution for enterprises, local governments or emergency services to deploy.

Isotropic serves clients from multiple verticals. We have deployed at numerous past natural disasters and organized public gatherings, including hurricanes in Puerto Rico, the Bahamas, Florida, Texas and the Eastern Seaboard. We have served assemblies in Nevada, wildfires in California, flooding and tornadoes in Wisconsin, tornadoes in the Midwest and many more. Our services allowed residents and citizens affected by these disasters to communicate with loved ones, and these services allowed for the dispatch of resources and emergency response, communication between responders and relief aid to those affected.

We have experienced increased demand for emergency connectivity, largely because of the higher number of users on existing local cellular networks as well as the desire to partition secure voice and data communications onto a separate network that is unavailable to the general public. By using satellite communications through Isotropic Networks, emergency responders operate on a different, isolated "pipe" of bandwidth, which provides unrivaled certainty that they can operate as effectively and efficiently as possible.

Isotropic owns two mobile units that can be made available when required. The units are fully equipped and can act as mobile command centers in the event of an emergency; these units can be simply driven to where they are needed to create an instant network. We have recently upgraded our capabilities, enabling communications on-the-move and on-the-pause.

EMERGENCY COMMUNICATIONS PLATFORM

Isotropic's Emergency Communications Platform (ECP) is designed to give first responders unrivaled certainty in their communications solution. The ECP combines state-of-the-art technologies into a single, easy-to-use, compact solution that includes an iDirect iQ 200 modem board integrated in a Kymeta u8 terminal — all enhanced by Isotropic's Datadragon bandwidth monitoring and management platform.

The ECP is supported by Isotropic's customizable flat-rate flexible service plans, designed to scale and work not only with the ECP but also with preexisting technology configurations.

Using the ECP, first response teams can deploy communications on the way to a scene, switch effortlessly and instantly between VSAT and LTE, and monitor and manage available streams of bandwidth to ensure connectivity when and where it matters. We can help emergency responders partition secure voice and data communications onto a separate network unavailable to the general public, so they can operate efficiently and effectively even when local cellular networks become strained.

Isotropic offers several options that ensure seamless interoperability, such as a scalable platform that can connect land mobile radios with cellular phones, laptop computers and desktop computers. Our interoperative platform allows users to livestream drone video in real time to any location in the world, regardless of how each viewer is connected to the internet.

We have created low-cost, reliable solutions tailored to emergency responders' precise requirements. We offer low monthly service plans with a large variety of bandwidth on demand options. This is a cost-effective solution for enterprises, local governments and emergency services.

With our continuity plans, customers can subscribe to minimum service levels that keep satellite emergency equipment active on the network and, when required, can switch to full throughput with one simple phone call.

EMERGENCY COMMUNICATIONS LTE

Isotropic's Emergency Communications LTE (ECLTE) offers you the ability to expand your existing VSAT system to work with terrestrial-based LTE networks without the expense of installing a completely new communications system.

With the ECLTE, you can add an iDirect iQ200 LTE modem with dual SIM cards and customizable, failover redundancy to any existing VSAT platform. This gives you the ability to switch seamlessly between VSAT and LTE networks to ensure the unrivaled certainty you expect and need when it matters most.

The ECLTE is supported by Isotropic's customizable service plans, which are designed to fit each user's unique needs.

The iQ LTE is part of ST Engineering iDirect's DVB-S2/S2X modem series, with a software-defined architecture for maximum flexibility and expansion. Combined with an internal 4G-LTE modem, this first-in-class modem delivers reliable and persistent communications across a wide range of use cases. Featuring an integrated Cradlepoint LTE cellular modem, the solution offers fully automated VSAT/LTE failover and failback, WAN link affinity steering, advanced VPN connectivity and an available SD-WAN option for robust enterprise-grade communications.

Key Features

WORKS WITH ANY EXISTING VSAT SYSTEM: The ECLTE is designed to enhance and expand the capabilities of any existing VSAT system.

DESIGNED FOR MOBILITY: The ECLTE offers a single-box, converged solution combining high-performance VSAT features with an integrated LTE cellular modem, making it an ideal mobile solution.

VSAT/LTE FAILOVER: The ECLTE allows any VSAT system to move seamlessly and automatically between satellite and terrestrial networks to ensure uninterrupted connectivity.

INSIGHTS-DRIVEN: All Isotropic products work with Datadragon, an intuitive bandwidth management platform offering application-level transparency and bandwidth allocation capabilities.

FLEXIBLE SERVICE PLANS: Isotropic offers flat-rate service plans designed to scale and work with any VSAT or hybrid system.

Isotropic™

Datadragon — Taking Control of Bandwidth

Datadragon™

Datadragon is an award-winning bandwidth management and service platform from Isotropic that enables never-before-possible, detailed, application-level transparency, optimization, and personalization across any single or hybrid network.

Through Datadragon's proprietary bandwidth monitoring platform, Isotropic's clients can now provide their customers or end users with real-time visibility into their internet usage so they can proactively analyze and address everything from service requests to billing issues.

Datadragon's patented algorithm, paired with state-of-the-art AI technology, offers detailed insights into day-to-day user activities and gives clients the ability to optimize and prioritize bandwidth allocation according to their end users' needs.

Our goal with Datadragon is to provide clients with a deep understanding of their bandwidth usage patterns and user trends as well as with tools to help them more efficiently deliver high quality of service and better user experience. Strategic insights into end-user bandwidth usage can provide opportunities to create new revenue streams and increase network profitability. Datadragon operates on three core principles:

HOW DATADRAGON WORKS

I. **INCREASE VISIBILITY** by providing users with a real-time picture of bandwidth utilization, down to the application level, across any single, multi-use and hybrid network.
II. **OPTIMIZE ACCESS** by giving users control. Let them see, allocate and purchase bandwidth based on their unique needs.
III. **REDUCE FRICTION** through Datadragon's analytics and AI. Provide Internet access that simply works by automatically allocating bandwidth based on user history and demand.

With flow data based on NetFlow and IPFIX, Datadragon solves inherent issues found when scaling network visibility solutions. Datadragon's learning classification engine reclassifies a flow at a minimum rate of once per second through a patented solution. This provides unprecedented network visibility in terms of scale, cost, flexibility, accuracy and real-time usability.

The Datadragon platform operates in a fully software-based virtual appliance that can be integrated via API/PCRF and deployed across different points in a network, so users can apply automatic assurances of capacity to every network flow dynamically based on real-time usage.

VoIP and Interoperability

VoIP and interoperability are essential to the emergency responder community. Data via satellite are critical to ensure emergency responders can access their software applications while performing urban search and rescue (USAR) operations and other types of response. These software applications are critical in maintaining personnel accountability, asset allocation and environmental monitoring. Isotropic's emergency communications plans also provide VoIP, which allows for reliable voice communications where cellular service may be unreliable.

Interoperability is an important buzzword in mission-critical communications. No matter how a user is connected to the internet, they must be able to communicate seamlessly, with no interruptions to service. Isotropic offers several options that ensure seamless interoperability, such as a scalable platform that can connect land mobile radios (LMR) with cellular phones, laptop computers and desktop computers. Our interop platform allows users to livestream drone video in real time to anywhere in the world, regardless of how each viewer is connected to the internet. Drone video can capture real-time search and rescue operations, natural disaster assessments and aerial monitoring during large-scale public gatherings — all seamlessly streamed to on-site and/or off-site command and control facilities.

Knowledge and Experience Where It Counts

Building a team with deep knowledge and experience is an important part of Isotropic Networks' philosophy. Having a nuanced understanding of a particular situation creates empathy and rapport with customers. This is especially important in the emergency communications sector, where understanding and expertise are essential when dealing with unexpected and often harrowing events and, ultimately, people's lives.

Ryan Zbierski, director of Mission Assurance at Isotropic, exemplifies Isotropic's approach to this. With 15 years experience as a firefighter and paramedic, he knows firsthand what it takes to react in an emergency and fully appreciates the critical role that communication plays.

"The complexity and the scale of emergency response efforts inherently increase with the number of agencies and amount of resources needed," Zbierski says. "The one thing that really determines the outcome of a successful operation is the ability to communicate. Inherently, we want to work quickly and smoothly to lessen the loss of life and shorten the duration of the incident."

This kind of hands-on experience enables the Isotropic team to understand and appropriately respond to the needs of those affected by an emergency.

OVER AND ABOVE — ALWAYS

For the Isotropic team, it's more than simply providing a service. We consistently go beyond to ensure our clients, some of which have been with Isotropic since its beginning, get the very best service possible (in the event of any problems with service, the team does not hesitate to use the corporate jet to troubleshoot in person).

We consistently invest in our infrastructure to ensure we can deliver the highest quality of service in the most efficient manner possible. We don't just sell our clients a product and service — we invest the time up front to make sure they get the best hardware for their applications, resulting in the highest reliability and service levels in the industry.

Satellite may be viewed as an expensive communications medium, but putting a price on knowing your service will simply work every time, no matter the situation, is priceless. Because satellite technology can connect anywhere, it is placed firmly at the top of many emergency responders' connectivity checklist.

We see emergency satcom as the primary source of communications for emergency responders. With the ability to interoperate between satellite and terrestrial networks simultaneously, it can reshape how agencies communicate at events of any size.

To find out more about our emergency satellite communications services, please complete our contact form at https://isotropic.network/contact-isotropic-networks/ or call us at +1.262.248.9600.

ABOUT ISOTROPIC

Isotropic Networks, Inc. (Isotropic) is a global provider of satellite Internet services and network management solutions. With the best uptime in the satellite industry, we deliver unrivaled certainty for high-risk, high-pressure operations for diverse industries including Oil and Gas, Maritime and Enterprise Solutions.

Isotropic is built on high standards for troubleshooting and solving technically complex problems with the latest technologies. Our team of highly trained hardware and software engineers delivers personalized services and solutions that support our clients when and where they need it most — now and into the future.

Isotropic is connecting the planet and continually raising the bar for what satellite connectivity can be.

Isotropic™

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