M2M and Tracking
for Government
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Inmarsat at a glance

The leading provider of global mobile satellite services

We deliver seamless voice, broadband data and IP communications solutions across the globe, so customers can make phone calls and access the internet – from anywhere, at any time. This global accessibility is available now for all M2M and tracking applications.

We ensure you’re never beyond reach

Inmarsat was set up in 1979 to enable ships to stay in constant touch with shore, no matter how far out to sea.

Today our customers are found in many different sectors – but they are typically businesses and organisations that need to communicate where terrestrial telecom networks are unreliable or simply cannot reach.

As well as Defence forces and shipping, our customers include governments, airlines, the broadcast media, the oil and gas industry, mining, construction, and humanitarian aid agencies – to name just a few.

They connect to our fleet of 10 L-Band satellites using a range of equipment, including handheld satellite phones and notebook-size broadband internet devices, as well as specialist terminals and antennas fitted to ships, aircraft and road vehicles.

In fact, we offer the largest portfolio of global satellite communications solutions and value-added services on the market.

Our business has grown strongly since 1999 when we became the first intergovernmental organisation to transform into a private company. In 2005, we floated on the London Stock Exchange.

With offices in more than 60 locations across every continent, our world-class products, services and solutions and 24/7/365 customer support facilities are available directly from Inmarsat, or you can choose to deal with our worldwide network of independent Distribution Partners and Service Providers.
M2M Services for Government

- Critical Infrastructure protection
- Environmental monitoring
- Tracking of personnel and assets
- Tsunami and seismic activity detection
- Remote border protection

Inmarst’s M2M services provide government departments with a reliable, secure, global service which is delivered independent of local terrestrial networks. With a range of small, mobile and static terminals which connect to industry standard sensors and controllers, Inmarsat’s M2M services can be integrated with a range of value-add control and reporting applications. Service operation and price plans are optimised for low volume data and cost efficient performance.

Inmarsat M2M services deliver global satellite solutions designed for two way text, data communications and GPS tracking for users who need high levels of data availability and performance in permanently unmanned environments. Inmarsat M2M services are optimised for SCADA traffic profiles, providing low latency, global, data reporting out-of-the-box and delivered within a secure network environment.

Satellite M2M platforms that provide regional or global coverage in isolated areas are becoming increasingly important to end users. These reliable platforms offer the key benefit of a single-network implementation that does not rely upon existing cellular terrestrial infrastructures which have proven vulnerable in extreme weather conditions and in cases of cellular congestion.

M2M requirements can best be categorised by the amount of data that needs to be transferred to or from the site:

**Low Data Range**

IsatData Pro (periodic data volume per terminal of <50KB)
A low data rate, next generation satellite service. It is ideal for GPS tracking, monitoring and security solutions for land transportation, maritime, pipelines, security and environmental management sectors. It features low power consumption, and a compact and rugged IP67 rated terminal delivering seamless global coverage.

**Mid Data Range**

BGAN M2M (50KB – 50MB)
Redefining BGAN for the M2M environment has brought us a streamlined IP based service offering data speed in excess of 100kb/s designed specifically to fill the mid data rate gap, making it ideal for SCADA applications. The BGAN M2M is a low power terminal that has been enhanced with remote management features such as IP watchdog and remote SMS control.

**High Data Range**

BGAN SABRE Ranger (>50MB)
A BGAN terminal built for permanent, high bandwidth, remote, unmanned SCADA applications. Its rugged design allows it to withstand all weather and environmental challenges.

The term SCADA (Supervisory Control and Data Acquisition) refers to a networked machine to machine (M2M) system that collects data from various sensors on mobile, or unmanned fixed sites. Critical information is transmitted from these sites to a centralized computer for analysis, management and control.

SCADA communications are generally low bandwidth to support small (<100) to large scale (>1000) terminal deployments.
Typical M2M Architecture

M2M antenna

M2M satcom transciever

Datalogger

Temp, Water Level, Wind Speed, Other

Machine Control

Pump Control

Control - outputs

Eco friendly power compatible low power requirements enabled via intelligent power control

Solar pwr, Batt

Ground station network

Inmarsat Global network

Inmarsat Meet-Me Point

Private MPLS or Internet

Display of sensor information from all sites in real time
Automated actions based on applications intelligence
Remote control of site functions via reliable and secure satellite link

Client Monitor Portal on server

Inmarsat Global network

Inmarsat Meet-Me Point

Inmarsat Meet-Me Point

Inmarsat Meet-Me Point
Case Study: Sirens remain vital to Hawaii’s emergency alert system

Hawaii is in the midst of a $25.6 million overhaul of its statewide warning siren network. Once the project is complete, 490 sirens will be spread throughout the state, including 205 on Oahu, the most populous of the Hawaiian islands.

The sirens will operate on a state-of-the-art satellite-cellular communications system.

Tom Simon, systems engineer of Hawaii State Civil Defense, said sirens are absolutely needed in the state. He explained that tourists and residents aren’t always carrying a smartphone to receive geolocated emergency notifications and even if they are, signal strength may be suspect in a mountainous or elevated region.

“Because of the amount of time people here in Hawaii spend outdoors and the potential for tsunamis, we are putting a lot of emphasis on our siren system,” Simon said. “If you’re on the beach and you don’t happen to have your cellphone, you still need to know that it’s time to get away from the beach.”

Satellite System
The siren network modernization project consists of two parts. The first step is replacing the old radio-based technology at each siren site with the satellite-cellular control system. The second consists of replacing the sirens themselves. The sirens and control system are provided by Federal Signal.

Hawaii’s old siren control system ran through VHF wideband radio. All four counties used different types of control systems, which was a drain on state resources.

George Burnett, telecommunications branch chief of Hawaii State Civil Defense, said one of the main reasons the state opted to upgrade to satellite-cellular technology was because the separate county control systems were incompatible.

He added that most of the mechanical sirens in operation around Hawaii are 25 to 30 years old and well past their usable life cycle, which was a critical factor in moving forward on the upgrade project.

According to Simon, the radio system’s transmitters also needed constant alignment adjustments to give a clean signal. Technicians were spending an inordinate amount of time on the task.

That will no longer be a problem with the new control technology called IsatData Pro jointly offered by Inmarsat and SkyWave. The new satellite-cellular system allows the state to standardize siren control and provides redundancy. If the satellite signal has interference, it immediately jumps to the cellular signal as a backup, ensuring that downtime is virtually nonexistent.

Efficiency Gains
In addition to increased redundancy, workers can now access informative data on the status of each siren’s condition.

With two-way communication, technicians can more efficiently track and address maintenance issues as they arise. The sirens are solar powered and each use four deep-cycle batteries. Technicians can now be miles away and check items such as battery voltage, whether the charger is working and even receive notifications from the siren if someone tries to break into it.

The satellite-cellular connection also lets the state test the system without disturbing residents. Simon said “quiet tests” can be conducted during which the siren is given instructions to activate at a frequency that’s too high for anyone to hear, but give the state a reading on the amplifiers’ output. Once complete, the results can be reviewed to determine if the sirens are working properly.

“In the few months we’ve had this working on Oahu, we’ve found this additional information has really helped the technicians go out and get more of the sirens fixed more quickly,” Simon said. “They’re working almost immediately after we find a problem, instead of not knowing.”

The U.S. military has also taken note of Hawaii’s siren upgrade. The Army, Navy, Air Force and Marines all have bases in Hawaii and depending on the branch, either work in conjunction with the state to issue emergency warnings or use their own system.

Simon said Joint Base Pearl Harbor-Hickam has its own radio control system, but one of the siren sites activates automatically off the state’s signal. The Army, he said, is in the process of doing something similar.
Case Study: Track24 Integrates IsatData Pro with BFT Mission Data Unit

Commercial-off-the-shelf blue force and blue personnel tracking (BFT / BPT) specialist Track24 Defense has integrated SkyWave’s IsatData Pro service to its SCC Titan solution to allow its clients to broadcast mission critical data and collapse time scales.

SCC Titan is designed to provide beyond-line-of-sight command and control via satellite devices specifically designed for military use. IsatData Pro is a joint offering from SkyWave and MSS operator Inmarsat.

When combined with Track24’s Titan solution, the IsatData Pro integration aims to allow customers to simultaneously transmit critical data to all units in a specified region and provide situational awareness to multiple assets while reducing signal latency.

“The benefit of a commercial-off-the-shelf solution like ours is the speed at which we can integrate new services to suit the needs of our clients. The IsatData Pro is crucial for modern-day conflict theatres, as it can simultaneously broadcast data to multiple assets in the field, minimising costs and timescales as a consequence,” Track24 Defense Director Giles Peeters said in a statement.

Case Study: Bureau of Meteorology

The Australian Bureau of Meteorology has a series of data collection points throughout a vast territory that are used for weather and environmental monitoring.

Inmarsat Global Government designed and developed a client-focused end-to-end solution incorporating a dual band, fully redundant network interconnection between remote data loggers and the core infrastructure at HQ. This allows the hitherto unavailable collection of data from the most remote and hostile of environments in real time and at regular intervals.

Using the BGAN network and M2M capabilities, the solution allows the meteorological department the capability to remotely monitor and manage all data collection points and have access to all information simultaneously for the purpose of detailed analysis of the collected data.
Portable and fixed M2M terminals

Inmarsat’s machine-to-machine (M2M) services are accessible via small, lightweight, satellite terminals, which are quick to set up, easy to use and integrate seamlessly with bespoke applications.

A range of certified terminals are available for mobile and fixed use, providing remote management and performance options to suit different operational needs in the most extreme environmental conditions.
# M2M terminals

## A quick reference guide

A range of certified terminals are available for mobile and fixed use, providing remote management and performance options to suit different operational needs in the most extreme environmental conditions.

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### Service Specifications

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### Usage

| Fixed | Fixed | Fixed and mobile | Fixed and mobile |

### Typical Performance

- BGAN M2M: Up to 448/464kbps* (send/receive)
- IsatData Pro: Up to 384kbps (IP Rx)* Up to 240kbps (IP Tx)
- Store and forward messages; all messages acknowledged

### Conformity

- 95% relative humidity IP 65 (antenna) IP 40 (modem) Class 1, Div. 2 certified
- 95% relative humidity IP 67 Class 1, Div. 2 certified

### Typical Applications

- BGAN M2M: Remote fixed asset monitoring for telemetry and surveillance, real-time monitoring and control, small and large data transfer
- IsatData Pro: Asset tracking, fleet management, event notification, remote monitoring, text messaging

### Accessories

- BGAN M2M: Basic fixed mount kit, IDU strap, 1.5 and 2” Az/El bracket, solar panels
- IsatData Pro: Basic fixed mount kit, 1.5 and 2” Az/El bracket, solar panels

### Acknowledgements

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Hughes 9502

The world’s most cost-effective, all-IP BGAN machine-to-machine satellite terminal with exceptionally low power consumption

The Hughes 9502 IP satellite terminal provides reliable connectivity over the Inmarsat Broadband Global Area Network (BGAN) for IP SCADA and machine-to-machine (M2M) applications. The Hughes terminal delivers affordable, global, end-to-end IP data connectivity enabling applications in industry sectors such as environmental monitoring, SmartGrid, pipeline monitoring, compressor monitoring, well site automation, video surveillance, and out-of-band management to primary site communications.

The exceptional low power consumption (<1 W idle) of the Hughes 9502 makes it possible to provide end-to-end IP connectivity to sites that are off the grid. This breakthrough provides end-to-end IP connectivity to power-challenged locations that rely upon solar- battery arrays involving sensitive power budgets.

The Hughes 9502 includes 10 metres of RF cabling, granting the user freedom to position the antenna remotely and away from the transceiver in complex installations while securing the SIM card inside a premise or enclosure to better protect against unauthorized use, theft and vandalism.

Whilst future firmware releases would be uncommon, any such modem update will qualify for no charge, over-the-air (OTA) upgrades saving customers time and money.

Main Features

- No connection charge with BGAN M2M(normal BGAN charge is 100 Kbytes)
- Minimum CDRs only 1 Kbyte (normal BGAN charge is 10 Kbytes)
- No charge over-the-air modem software upgrades
- Integrated IP Watchdog to ensure "always-on" network connectivity. No manual intervention required to recover from an outage
- Auto-on / auto-context activation automatically restores power and PDP connection to itself following loss of power and/or IP connection
- Remote control via SMS provides remote management platform for command and control to the terminal using SMS, including configuration, debugging, and access to Web interface
- Ultra-low power consumption

- Transmit: < 20 W
- Narrow beam w/o transmit: 3 W
- Idle (regional beam): < 1 W
- Off (wake on packet): < 10 mW (@ 12 Vdc)
- Off (wake on packet): < 30 mW (@ 24 Vdc)
- Off (GPIO control): 0 W
- Relay mode passes WAN IP address to the connected RTU
- Security enhancements with extended layers of embedded security options
- Basic installation; no PC required
- Outdoor unit (ODU) can be pole mounted
- Indoor unit (IDU) is housed inside building or the remote terminal unit (RTU)
- Built-in GPS receiver
Hughes 9502 Integrated
M2M Satellite Terminal

The world’s most advanced, all-IP, BGAN machine-to-machine satellite terminal with integrated antenna and highest IP-66 ingress protection industry rating for outdoor installation.

Introduced as an alternative to the external antenna version of the 9502, this product integrates the 9502 modem with a compact antenna to create a single-piece, integrated, rugged terminal to withstand the most extreme weather conditions.

Providing reliable IP connectivity over the Inmarsat Broadband Global Area Network (BGAN), it includes backup and out-of-band management to primary site communications—ideal for SCADA and unattended sites equipped for machine-to-machine (M2M) applications such as environmental monitoring, SmartGrid, pipeline monitoring/control, compressor monitoring/control, well site automation and surveillance.

Its exceptional low power consumption (<1W idle) makes it possible to provide end-to-end IP connectivity to sites “off-the-grid”. This breakthrough enables “always-on” IP connectivity to power challenged locations which rely upon solar-battery arrays with limited power budgets.

Installation is simplified as there is no need to remotely package the transceiver inside a standalone NEMA enclosure.

The Hughes M2M terminal qualifies for no charge over-the-air (OTA) upgrades, saving customers time and money.

Main Features

- No minimum connection charge
- Minimum billing increment of 1 kbyte
- No usage charge for over-the-air modem software upgrades
- Integrated IP Watchdog ensures “always-on” network connectivity. No manual intervention required to recover from an outage
- Auto-on/auto-context activation automatically restores the PDP context following restoration of power and/or loss of the IP connection
- Remote control via SMS provides management platform for command and control to the terminal using SMS, including configuration, debugging, and remote access to the Web interface
- Ultra-low power consumption
  - Idle: < 1W
  - Transmit: < 20W
  - Receive: < 3W
- Relay mode passes WAN IP address to the RTU
- Security enhancements with extended layers of embedded security options
- Basic installation; no PC required
- Built-in GPS receiver

The Hughes M2M terminal is BGAN M2M Certified.
Low Profile BGAN
A deployable, hidden BGAN terminal designed for discreet surveillance operations

Successful surveillance maximises your situational awareness whilst minimising your use of resources, allowing you to maintain your distance yet still be able to interpret, deter and control illegal immigration, smuggling and trafficking in drugs and arms. Borders that are not effectively secured make a country more vulnerable to terrorism and organised crime. However, many countries have land borders that extend thousands of miles, through remote and inhospitable terrain.

Combining Inmarsat’s BGAN service with a lay-flat rapidly deployable antenna delivers an innovative, remote capability allowing unmanned, concealed surveillance.

A government’s desire to keep up-to-date with how a situation is unfolding is often held back by its inability to get close to the events on the ground. Manned surveillance is sometimes the best solution. However, deploying someone is often not a possibility, making how to remotely stay on top of events on the ground a major issue. It is not possible for governments to be omnipresent and sometimes the area of operation is too sensitive to send personnel. This results in the need to stay up-to-date being overcome by the physical inability to be everywhere at once.

Inmarsat has developed the Low Profile BGAN as a solution to this operational problem. It allows governments to maintain their proximity to events, even in the most challenging of environments. Inmarsat understands that a robust surveillance solution needs to be able to accommodate the most demanding requirements whilst maintaining a reliable, high-performance communications link. The combination of a toughened BGAN with a discreet high performing antenna provides a highly robust, versatile and mobile connectivity that can meet a variety of low impact, subtle operational demands. The solution is compatible with a wide range of currently available surveillance hardware and adds another dimension of connectivity into existing systems.

The BGAN global satellite communications network is delivered using the Inmarsat 4 constellation of satellites and a comprehensive terrestrial network. BGAN delivers standard and streaming IP and ISDN through a range of small, rugged and easy-to-operate terminals. BGAN provides coverage everywhere in the world except for the poles and is ideally suited to remote surveillance operating in tough environments.

Key Features
>
> Government level environmental and ingress protection.
> High speed data rates capable of securely streaming real time video, audio and data to a variety of end users throughout the world
> Multi phased array antenna, no need for complex pointing
> Excellent coverage in all types of terrain
> Covert, silent solution prevents detection
> Compatible with a range of tamper alarms
> Highly reliable
> Field-proven
> Lightweight and compact
IsatData Pro
A global satellite data service designed for two-way text and data communications with your assets anywhere, anytime.

Using Inmarsat’s satellite constellation, IsatData Pro is a data communication service specifically designed to provide visibility and communications with people and equipment anywhere, anytime.

Whether used for managing vehicles, vessels or equipment, IsatData Pro increases efficiency, lowers operation costs and enables compliance with government regulations. Applications include transferring electronic documents and vehicle telemetry information, text-messaging remote workers and maintaining up-to-date driver logs and many more.

The IsatData Pro service is designed for mission-critical applications. All messages are delivered within seconds, making IsatData Pro ideal for sending information to people operating in high-risk areas, reporting alarm conditions and retrieving logs from remote equipment during an emergency.

Smart data terminals
Customers looking to use the IsatData Pro satellite service have a choice of using field-ready terminals or embedding the modem (IDP-100) into existing systems. Within the terminal family of products, customers can choose between terminals designed for land-based (IDP-680) or maritime (IDP-690) applications.

IsatData Pro Hardware Features

- Integrated GPS for location-based services
- Environmentally-sealed enclosure for outdoor installations
- Low-power modes for battery-powered applications
- Peripheral interfaces for connecting to analogue, digital and serial devices
- Serial interfaces for connectivity to RS485/J1708 and Modbus interfaces
- Programming capability and user tools for quick customization to meet business needs

Key Benefits
High messaging capability
- Send and receive more data to allow better visibility of operations and risk management
- Communicate information to remote workers and assets where previously not affordable or available

Best value
- Equip fleets and asset groups of all sizes with competitive hardware and airtime pricing
- Accurately budget communication costs without roaming charges

Robust and reliable service
- Receive notification of events within seconds
- Install customisable, environmentally-sealed terminals anywhere, even in harsh environments

Applications
- Send electronic documents including logistics, forms and billing signatures
- Text-message drivers and remote workers
- Collect and send logs required to meet transportation and government regulations
- Collect and transmit telemetry information from vehicles and heavy equipment
- Download report logs from environmental data logging equipment
- Send pressure, volume and other sensor information from remote well sites
- Aggregate, monitor and communicate information from smart grid sensors in near real-time
**IDP 600 Series satellite communication terminals**

Satellite Communications for Tracking Fixed and Mobile Assets Over Land and Sea

The IDP 600 series terminals use the two-way Inmarsat IsatData Pro satellite service for remotely managing fixed and mobile assets anywhere in the world. Whether used for managing trucks, vessels or equipment, the IDP-680 increases productivity, lowers operating costs and enables compliance with government regulations.

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**IDP-680**: For general remote asset management and communications

**IDP-690**: Engineered for maritime and low elevation-angle applications

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**IDP-780 Dual satellite-cellular communication terminals**

Satellite-Cellular Technology to Track, Monitor and Control Vehicles, Vessels and More

The IDP-780 is the first dual satellite-cellular terminal that supports the IsatData Pro satellite service, allowing fleet managers to locate, communicate and remotely manage their trucks and other mobile assets anytime, anywhere. SkyWave’s premier dual-mode solution enables cost savings and guaranteed communication by offering the best of both worlds—cellular coverage in urban areas and satellite in remote areas.
**IDP-800 Series satellite communication terminals**

*Battery-Powered Satellite Terminal for Tracking Trailers, Containers, Vehicles and Vessels*

Track trailers, containers, vehicles and vessels with IDP-800, the first low-profile IsatData Pro terminal with an integrated battery compartment. The IDP-800 series of satellite communication terminals uses the two-way IsatData Pro satellite data service for remotely tracking and managing fixed and mobile assets anywhere in the world.

**IDP 100 Series satellite modems**

*Satellite Modems for Tracking Vehicle Fleets, Containers and Railcars*

The IDP 100 series of satellite modems is the ideal solution for monitoring and updating near-real time status on everything from containers to trucks and ships. Designed to be embedded into larger systems, the IDP 100 modems make it possible to exchange data between remote fixed and mobile assets and enterprise systems. IDP 100 series satellite modems allow you to increase operational efficiency and safety of assets located in remote areas where there is no access to cellular communication.
Wideye Sabre Ranger M2M

The SABRE™ Ranger is a BGAN terminal with a ruggedized mechanical enclosure that is built for long term outdoor all weather installation. It is specifically designed for remote unmanned SCADA applications. The firmware is designed reliable and continuous machine to machine communication without manual user intervention. The IP connection of the Ranger can be remotely activated or deactivated via SMS.

Features

Standard BGAN features
- Simultaneous voice & data communications
- Data rate of up to 384 kbps
- Built-in Ethernet and Analog Phone interfaces
- Controllable via 3GPP AT commands
- IP watchdog

SCADA features
- Enhanced firmware for reliable continuous long term BGAN network connection
- PDP activation/deactivation via SMS
- Reboot terminal via SMS
- Ruggedized (IP65) mechanical enclosure for prolonged outdoor harsh weather installation
- NEMA Type 4X Corrosion Resistance
- Enhanced Vibration and Shock Resistance
- 24/7 Always-on capability
BGAN M2M Gateway

Connect your legacy serial and IP SCADA devices to the BGAN M2M Gateway

The BMG provides a user friendly, flexible and cost efficient way to manage your remote machine to machine devices.

- Allows local and remote web configuration.
- Gives you the flexibility to select whether to allow remote access for monitoring and control of your devices.
- Gives you the option of static or dynamic IP addressing on WAN port.
- Provides a SSH server option for password protected access.
- Allows you to set address and configure the DHCP server on the LAN port.

Serial Interface Features
- Configurable for local echo
- “Keep Alive” function for end-to-end connection management
- Provides a “Sleep” interval, which shuts down all communications to the WAN port to allow the BGAN/BGAN M2M satellite terminal to go into idle and sleep modes. This minimises cost and power consumption.
- Gives you the ability to override SIM APN.
- Allows you to set username and password with APN
- Allows the user to optimise data transfer timeout and buffering in order to minimise the IP overheads.

> Network Gateway
Terminal control and IP traffic management

> Port Forwarding
All remote devices accessible via one PDP

> Serial Interface
Optimised serial to IP converter for legacy devices
Site Guard Solution

Telemetry of readings from a remote site has always been an important business tool and the use of satellite networks to facilitate the communication link between remote sites and HQ have exponentially increased the efficiency and cost effectiveness of these M2M readings.

However, remote sites, by their very nature, are very hard to monitor for unusual events or site conditions - a log or other debris affecting the measurement environment, a flash flood sweeping through the site, or vandalism.

With the SITE GUARD™ Camera System, a high definition photograph of the measurement site can be taken daily, hourly or on demand and sent back to the operator to view as required. With a regular photograph – or even video if required – the local conditions around the site can be observed to help assess the readings, site visits to investigate any anomalies can be reduced. By helping you keep an eye on your remote sites, the SITE GUARD™ Camera System will save time and money. Whilst regular data readings are important and site visits are necessary, a picture can paint a thousand words as to the local conditions on your remote sites, saving you time and money.

Central Server

Regardless of how remote your site, you can now access visual images of what is actually going on from the comfort of your office. Still pictures and even video, will be transferred at user-assigned intervals using the Inmarsat BGAN M2M service. This data and images can be accessed online through the user-friendly SiteGuard web interface – giving you a direct eye on your remote sites.

Remote Site

The Site Guard system is housed in a ruggedized enclosure with an IP 66 (NMEA4X) rating. This rating will protect personnel from incidental contact with the enclosed equipment and will provide protection from environmental exposure including dust, rain, dirt, sleet, snow, strong jets of water, and the formation of ice on the enclosure.

The Site Guard system can be AC or 12VDC powered and comes complete with tripod and mounting brackets.
Inmarsat Remote Terminal Manager Application

A web-based service to monitor, control, update and configure BGAN terminals

Keep BGAN M2M operations running

- Remotely access unmanned or manned equipment in the field
- Ensure that BGAN terminals stay connected by sending alerts when a data connection is lost
- Retrieve information from the terminal that is not available by other means, including signal strength, spot beam, and firmware version
- Enhance support, reduce downtime and avoid costly field visits with remote trouble-shooting

Know that your equipment is online

You rely on being able to contact your equipment in the field or reporters on location when you need them. With Remote Terminal Manager, you can monitor that connection and receive alerts when the status the data connection should change. Each time a data connection is created, disconnected or lost, an email will inform you.

Dedicated channel for connection control

Remote Terminal Manager uses a separate communication channel to send commands and retrieve information to and from the terminal. Even if the IP data channel, Background IP or Streaming, is not available, this dedicated control channel remains using the lowest signal levels. A direct connection between the Remote Terminal Manager platform and the Inmarsat network ensures the highest reliability to exchange control and information.

Immediate maintenance and support

Use Remote Terminal Manager to remotely control connection set-up, disconnect, firmware upgrades and terminal resets. This, in combination with retrieving terminal status and the GPS position (if necessary), Remote Terminal Manager allows you to remotely support and trouble-shoot, thus avoiding costly IT support field visits.

Key features

- Display the online status of all terminals and devices in your network – such as SCADA or cameras
- Alert notices when a data connection is set-up, disconnected or lost
- Automatic or manual (re)activation of lost data connections
- Remotely activate or deactivate an IP or streaming session
- Provision position reports for an individual site or all sites combined on one map/screen

Note: the extent of remote control depends on the terminal make and model.
GSat Track Application

Reliably tracks personnel, equipment or vehicles anywhere in the world

What is GSat Track?
GSat Track is an industry leading asset management and GPS tracking and mapping solution. GSat Track reliably tracks personnel, equipment or vehicles anywhere in the world by integrating GSM and satellite tracking into one product.

How It Works
By using GPS satellites with the latest hardware and technology, you can now track any asset on earth, whether it's people, vehicles, containers, or any moving object.

Our technology allows you to merge together all types of tracking equipment into one easy to use platform.

The tracking equipment determines its location by triangulating a position using GPS (Global Positioning System) and then transmits this information via GSM, Satellite, or VHF to a central server for processing.

Any operator can view and control any number of real time assets simultaneously.

Features

- Utilize almost any available tracking hardware
- Multilingual & Multi-Platform
- Geo-Fencing
- Over the air firmware updates
- Track by position, speed, altitude and heading
- Remote Configuration
- Alerts based on speed, IO changes, start, stop, and power on and off
- White label packages for resellers and distributors

- Seamless ongoing software upgrades to include the latest technology as soon as it is available

Reports
GSAT Track collates a wealth of data into user-friendly and easy to understand reports and graphs, which can be configured individually or into groups of assets according to specific needs and reported remotely under a unified web interface.

Reports can be scheduled to run at predefined times and sent to an unlimited list of e-mail addresses and cell phones, via an SMS message. Reports can also be requested online in real-time and downloaded at your own convenience.

Detailed reports can be sorted and displayed according to various selected criteria or as a graph highlighting areas of importance.
# Price Plans Overview

## BGAN M2M Plans

### Global Plans

<table>
<thead>
<tr>
<th>Monthly Data Allowance Options per Site</th>
<th>2MB</th>
<th>5MB</th>
<th>10MB</th>
<th>20MB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td>Contract Duration Options</td>
<td>12 Months</td>
<td>24 Months</td>
<td>36 Months</td>
<td></td>
</tr>
</tbody>
</table>

### Call types

- Standard IP (In Bundle)
- Standard IP (Out of Bundle)
- SMS

### Geographic Plans

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<td>Contract Duration</td>
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</tbody>
</table>

### Call types

- Standard IP - In Region (In Bundle)
- Standard IP - In Region (Out of Bundle)
- Standard IP - Out of Region
- SMS

In Region countries include: China, Southern Africa region, South America countries & Mexico

## Shared Corporate Allowance Plans (SCAP’s)

### Global Plans

<table>
<thead>
<tr>
<th>SCAP’s of 50 to 25,000 SIMs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared Monthly Allowances</td>
</tr>
<tr>
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<tr>
<td>Contract Duration</td>
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<tr>
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### Call types

- Standard IP - In Region (In Bundle)
- Standard IP - In Region (Out of Bundle)
- Standard IP - Out of Region
- SMS

### Geographic Plans

<table>
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<th>SCAP’s of 50 to 1,000 SIM’s</th>
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<td>Contract Period</td>
</tr>
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</tbody>
</table>

### IsatData Pro

#### Pricing Options

Two plan types: Pooled Plans and Broadcast Plans, both 12 month contract commitment.

#### Pooled Plans

Designed to efficiently spread usage across a complete SCADA network.
Four data plan options: 0.5, 10, 25, 100 Kbytes per Month

#### Grouped Broadcast Plans

Designed to help minimize grouped terminal charges across large networks
Three data plan options 10, 25, 100 Kbytes per Month
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