



Giving green-field sites **the green light**

➤ Inmarsat explains how the latest advances in mobile satellite communications can help the energy sector realise the development value of greenfield sites more quickly

Introduction

While oil, gas and other hydrocarbons continue as the mainstays of the world's energy market, all are becoming increasingly difficult and expensive to exploit as many of the world's proved, untapped reserves lie in remote and inaccessible regions. Despite the growing popularity of alternative energy sources, demand for crude oil and natural gas has never been greater and whether on-shore or off-shore, new field developments bring their own set of challenges, and equally, opportunities.

As the search for new finds drives operators into ever more remote conditions, companies seeking to develop these fields must overcome the many technical and logistical problems presented by local geography and climate, and none more so than the pressing need for reliable communications.

Within the energy sector, satellite communications is continuing to meet the needs for data connectivity and collaboration across multi-disciplinary teams. Meeting this challenge, mobile satellite services lend themselves to use in areas where traditional fixed line or GSM telecoms infrastructure is either thin on the ground or non-existent, particularly at new ventures and green-field exploration sites.

Mobile Satellite Services

Mobile satellite services have long been an established part of the communications mix for energy sector personnel operating in areas that are remote from fixed-line and wireless networks. From hydrocarbon exploration through to development and production, new solutions are required to help them work more efficiently and cost-effectively. Supporting large-scale field operations, Inmarsat's services have been deployed by many oil and gas companies in order to bring oil and gas fields on-stream quicker and at lower cost.

With many greenfield operations typically found in remote and inhospitable places – swamps, equatorial forests, deserts or deep-water fields – and all sorts of climate, the equipment needs to be not only rugged but lightweight and portable. And where site management typically spans exploration, development, operation and site closure, the choice of communications equipment needs to be balanced against the varying requirements of the workforce, including Health, Safety & Environment (HS&E) compliance.

Rapid deployment

The complete absence of infra-structure at new ventures means setting up from scratch, with only limited support, require meticulous planning and a high degree of onsite co-ordination. Difficulties with terrain, climate and communications can often lead to delays and over-runs, putting pressure on budgets and schedules, but today's mobile satellite equipment and services can make communicating from a remote site comparable to that of a modern office.

Being first on the scene, and requiring no specialist training, mobile satellite services from Inmarsat are ideally suited to this early stage; particularly when there is the greatest need for establishing communications, quickly and effortlessly with colleagues at head office half a world away.

Mobile satellite communications technology – providing not only phone services but broadband data connectivity – now fits into a backpack and weighs less than two kilos. Inmarsat's BGAN (Broadband Global Area Network) is robust, highly affordable and operates from almost anywhere in the world. It can be set up in minutes by exploration teams with little or no experience of communications equipment, providing a guaranteed broadband data capability.

Compact and lightweight, BGAN is an all-in-one voice and high-speed IP data solution that anyone can carry with them and use wherever they go. It provides immediate mobile field force connectivity during field and site exploration and first phase construction. Terminals can be configured as mobile offices at basecamps, with connectivity support for most standard office applications. The small form-factor terminals



allow site engineers and geologists to send pictures to HQ for analysis; project managers to send reports and chase suppliers; remote monitoring of oil well and pipelines; and running remote diagnostics. In addition, BGAN can interface with third-party hardware and software and is part of a tailored solution for the energy sector. The combination of real-time communications, portability and office applications ensures test results are reported immediately which reduces 'find time' and by helps aid decision making and contingency response, all of which contributes towards reduced capital and operating costs.

BGAN is only the beginning

Highly versatile, the BGAN platform can be extended to support operations as new sites develop. BGAN Link provides broadband services that can send and receive large amounts of real-time critical data from a fixed location. Designed specifically for those working in remote areas for sustained periods of time, and who require high volumes of standard IP data, the system can transmit field data in a low cost, low powered and low maintenance system that rivals VSAT (which can often take a week or two to set up by technical specialists). BGAN Link combines the power and convenience of the BGAN platform with a fixed rate 'all-you-can eat' data package at an affordable price.



BGAN Link
Designed for fixed locations and/or for operations where infrequent movement of the terminal is the norm. Very high data allowances make this the ideal solution for customers needing to transmit a large amount of data and with a requirement for predictable monthly charges.

As exploration teams typically cover great distances, the need to communicate constantly with the basecamp, sending status updates and data from every drill-hole, becomes paramount. Geological engineers, geologists and industry consultants working together need to evaluate geological information and conduct surveys and mapping in order to identify the potential resource areas. With all the various teams needing fast data transfer for transmitting imagery, maps and plots, an assured method of broadband data connectivity is needed, and one that is genuinely portable as they are likely to be continually on the move as they explore blocks of several hectares.

Inmarsat's push-to-talk (PTT) provides a rugged PTT capability for voice dispatch and communications. A vehicular-based BGAN is used with a roof-mounted antenna, base station and hand-held microphone in the cabin. Inmarsat's cost-effective, IP-based, voice and data PTT communication system can readily replace VHF/UHF-based trunk radio systems in use within the oil & gas sector. It routes voice and data traffic, providing communication between base camp, remote drill sites, crew vehicles, HQ and any site in the world – all at the touch of a button.



Protecting staff and equipment

HS&E is increasingly becoming a critical priority within the sector, with insurance premiums typically reflecting this. In some cases, the operation's management are rigidly measured by the number of HS&E incidents, so complying with the strict regulations by ensuring base camps and remote sites have guaranteed voice and data links is paramount.

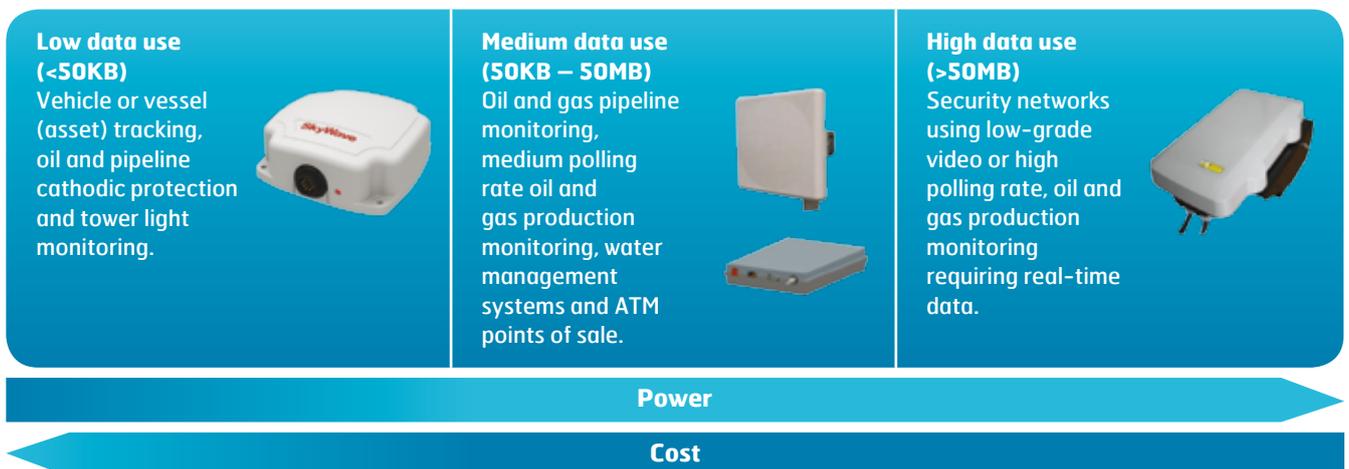
When only voice is needed, especially for field workers moving quickly from site to site, or where a back-up system to BGAN is needed, Inmarsat's global, low-cost, handheld satellite phone offers high quality voice as well as support for SMS text messaging, Twitter and email. Designed for rugged use in remote locations, IsatPhone Pro features a GSM-style interface with a high-visibility colour screen and keypad that allows for easy dialling. Providing up to 8 hours talk time and up to 100 hours on standby, the hand-held has the market's longest battery life. The handset is also among the most robust available and is dust, splash and shock-resistant.



Remote Management

To track and monitor fixed or mobile assets, satellite-based machine to machine (M2M) applications are also supported by the Inmarsat network, with a range of integrated M2M services that give operators increased visibility of their business operations. For assets that need continuous monitoring, such as remote pipelines and oil wellheads providing pressure, flow rates and other essential metrics, M2M provides an automated telemetry service to ensure the control of critical applications in remote, unmanned locations.

In today's connected or 'digital' field operations, energy companies want and expect to be able to manage their sites in real-time, to enable faster decision-making, increased efficiencies, reduced cost, and enhanced security of staff. By providing a full image of assets across an entire operational area should an incident occur, for example, a security threat or mechanical failure, experts can rapidly assess the situation from their own office or deploy an onsite team to investigate, boosting productivity and reducing downtime. Satisfying a key HS&E requirement, the benefits of M2M can also extend to journey management for maintaining the highest standard of crew welfare.



Ultimate one-stop-shop

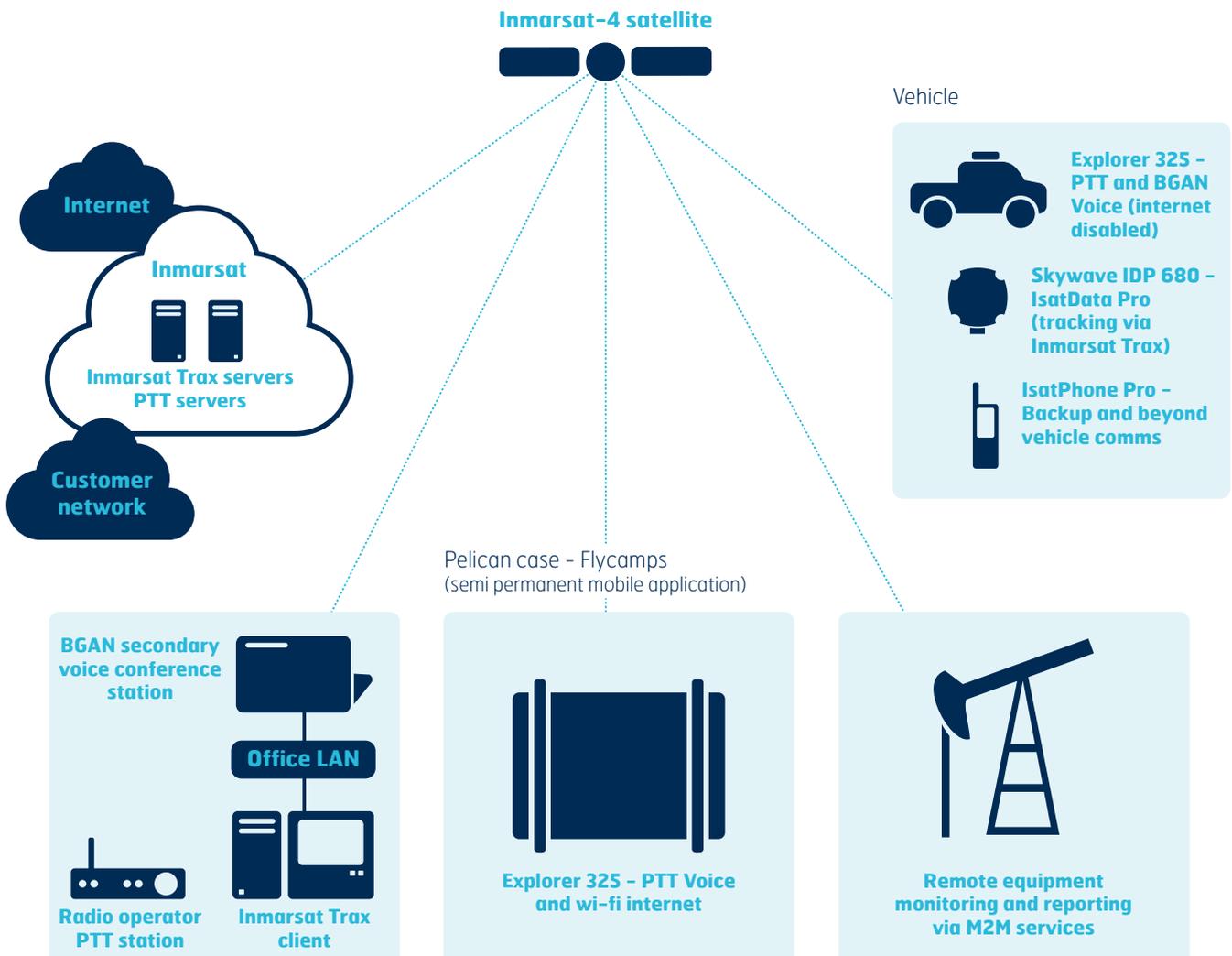
Managing operations in remote locations poses many challenges – ensuring crew safety, maximising onsite efficiency and maintaining reliable communications to name just a few. Complementing the connectivity portfolio, Inmarsat provides professional consultancy services to ensure the best-fit, end-to-end communication solutions to support either on-shore or off-shore operations, no matter how isolated or how greenfield.

With expertise across a broad selection of technologies and applications, and the most extensive portfolio of remote communication solutions, the Engineering & Integration Services (EIS) team can design and implement a custom solution to meet the critical communication needs of each project.

Support is provided across multiple technologies including structured cabling, public address and general alarm, video surveillance, intrusion detection, site security, telephony, satellite, wireless, and local and wide area networks. Services include:

- > Design and build-up
- > Installation, set-up, and testing of all equipment on-site
- > Integration of on-site IT and business systems
- > Provisioning and training

In addition to traditional Engineering, Procurement, and Construction (EPC) services, Inmarsat specialises in providing temporary facilities with communications and security packages. Remote surveillance units provide 24/7 monitoring from any location in the world, with voice, data or video surveillance, and intrusion detection, transported across Inmarsat’s network to the administrative centre.



Local presence, global leadership

Utilizing Inmarsat's mobile voice and data capabilities in the field have been proven time and again to help improve critical decision-making, increase productivity, and reduce time to operation. The full portfolio of products and services from Inmarsat, each a powerful tool in their own right, is powered by a constellation of advanced L-band satellites, the largest and most sophisticated commercial communication satellites ever built, and which support the global delivery of Inmarsat's advanced network services.

As one of the most trusted brands in the industry, Inmarsat is a leader in the field of mobile satellite services, providing reliable, global services for the energy sector and beyond. Inmarsat's mobile services portfolio solves all remote HDR (High Data Rate) and LDR (Low Data Rate) communication needs as field sites are set up, as workers arrive on site, and also later when teams are established on site.

Many organisations in the energy sector have come to recognise that satellite communications have evolved, and that Inmarsat is leading the way with a range of mobile broadband technologies. And with a full range of communications services that can be easily and cost-effectively deployed, especially in discovered but completely undeveloped sites, nothing else is required.

How to buy

Inmarsat works with partners around the globe that resell our voice, data and IP communications solutions. Contact us today to find the right solution for you.

Email: sales@ocens.com

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