



BGAN M2M FOR ARTIFICIAL LIFT

BGAN M2M

Minimise costly downtime and provide preventative maintenance for artificial lifts with satellite connectivity

ARTIFICIAL LIFT MONITORING

YOUR CHALLENGE

Oil and gas companies are under increasing pressure to reduce costs, lower safety risk, increase production and increase efficiency. The artificial lift process is used to increase pressure within the oil well reservoir, thereby forcing oil to the surface.

This is a common problem due the natural decrease in pressure that occurs in each reservoir over time, which leads to the well's natural flow rate becoming inadequate. Artificial lift processes are implemented to increase or maintain flow rate, enabling higher levels of production by applying additional pressure.

To ensure optimal production levels, oil and gas companies need to monitor artificial lift performance data, so equipment adjustments can be made and any required maintenance can be predicted and carefully planned. This helps to avoid revenue losses, and minimises safety risks to the integrity of the wellbore and surface facilities, which can lead to accidents such as explosions and leaks, in turn creating environmental damage, like water and air contamination.

It's easy to see why oil and gas companies desire constant connectivity when operating artificial

lift equipment, which are located on remote reservoir stations that cannot be easily reached.

The remote locations of many reservoirs means that they are often badly served by cellular services, which results in the need to install costly infrastructure to gain connectivity at these sites. Where it has been too costly to install connectivity, monitoring is done manually, requiring engineers to physically visit the site and assess conditions. This process is inefficient and risky, as it requires travel time and risk.

OUR SOLUTION

Inmarsat's satellite communications make connectivity in even the remotest of locations possible. This means that sensing and monitoring devices can be put in place, enabling command and control technologies that allow two-way high-speed communications between the artificial lift and central headquarters.

Our Inmarsat BGAN M2M service operates on our L-band network, which provides military-grade safety and security. It is the most reliable satellite network available, and is the ideal satellite network for artificial lift monitoring, as it provides up to 99.9%

uptime, in any continental location aside from the far poles. Its robust capabilities operate even in adverse weather conditions, such as heavy rain, where other satcom networks may struggle.

Inmarsat customers can install these robust and compact connected terminals, such as the Hughes BGAN 9502 to artificial lift equipment, which then use our BGAN M2M service to transmit critical data. These specifically-designed small terminals require no human intervention after the initial installation, thereby making them ideal for isolated and difficult to reach locations. They are designed to be energy efficient (including solar powered) and managed remotely.

The terminals can be configured to connect to a customer monitoring system that can automatically report equipment data, or data can be manually requested over the Internet or the company's network, enabling the gathering and analysis of valuable information. Anomalies can also be detected, if they occur. In the rare instances that connectivity is temporally lost terminals are designed to automatically re-establish connection with the network, so that they can continue providing service without physical intervention.

Ensuring reliable data collection means that operators can be assured that optimum operation and production of the asset. It also means that regular reporting on safety systems is possible, and the asset is constantly monitored for any issues. If any major problems are detected, and production is automatically shut down, connectivity allows insight to confirm safety systems are operating as expected, offering robust safety procedures.

Additional advantages of detailed data collection include the assessment of performance against trend data, allowing operations

to be adjusted, ensuring optimal performance throughout the life of the well. Finally, the insight provided through complex data collection allows for the implementation of predictive analytics to deliver insights on upcoming maintenance requirements.

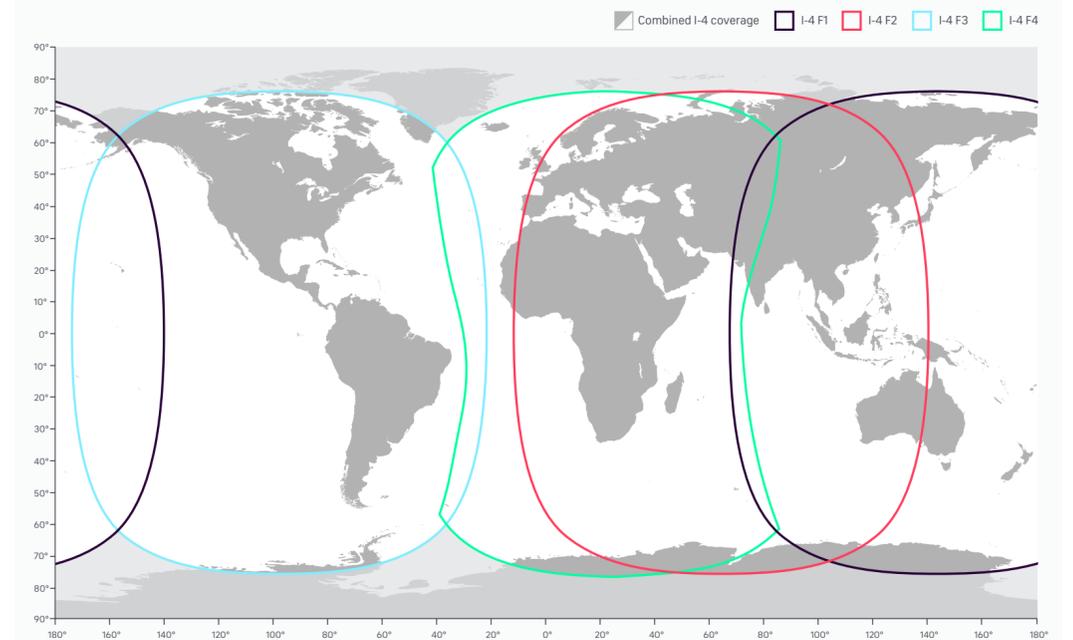
Suitable for the safety standards imposed on oil fields, Inmarsat terminals are robust and compact. The Hughes BGAN 9502 terminal for instance, is about the size of a small laptop/tablet and is easy to install. It has Class 1 Division 2 certifications for hazardous locations and can withstand hostile environmental

conditions with a lifespan up to ten years or greater.

With low monthly data pricing and the long lifespan of the hardware, the total cost of ownership (TCO) for the Inmarsat service is substantially lower when compared to the cost of dispatching technicians to resolve issues. It also achieves a higher continuity of service, increasing productivity.

BGAN M2M COVERAGE

This map is for general information purposes only and no guarantee is given of accuracy or fitness for a particular use. Coverage is subject to change at any time.



While the information in this document has been prepared in good faith, no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability (howsoever arising) is or will be accepted by the Inmarsat group or any of its officers, employees or agents in relation to the adequacy, accuracy, completeness, reasonableness or fitness for purpose of the information in this document. All and any such responsibility and liability is expressly disclaimed and excluded to the maximum extent permitted by applicable law. Coverage as shown on maps is subject to change at any time. INMARSAT is a trademark owned by the International Mobile Satellite Organization, licensed to Inmarsat Global Limited. The Inmarsat LOGO and all other Inmarsat trademarks in this document are owned by Inmarsat Global Limited. © Inmarsat Global Limited. All rights reserved. Artificial Lift Solution Sheet. May 2021.

CONTACT US

Get in touch with an Inmarsat sales representative.

E enterprisemarketing@inmarsat.com

W inmarsat.com/enterprise/energy