Oil and gas

Case study

British Gas Tunisia boosts offshore capacity with point-to-point link from 4RF

Security and continuity of gas supply from BG Tunisia's Miskar offshore platform are strategically vital, so reliable voice, data and video communications between the platform and its onshore operations are essential. However, with 125 kilometres of sea, highly variable atmospheric conditions and large, moving structures to contend with, providing a reliable connection cost-effectively is no easy task.

BG Tunisia turned to 4RF to solve the problem. 4RF's robust, efficient radio transmission solution means that BG Tunisia can monitor and manage production at the Miskar platform closely. Production can be precisely matched with demand, ensuring targets and commitments are met accurately. Safety, accessibility and quality of life are also improved for those who work on the platform.

APPLICATION

Sixty-two metres under the sea, and 125 kilometres out in the Gulf of Gabès, the Miskar gas field covers an area of 352 square kilometres. Sour gas from ten wells is sent through a sub-sea pipeline and processed at the Hannibal plant 20 kilometres south of Sfax. Gas production parameters at the Miskar platform need to be continuously monitored. This is not only to ensure successful co-ordination between the offshore platform and the onshore storage and processing plant, but also to ensure that production targets and contract terms are being met.

Prior to working with 4RF, BG Tunisia was using an analogue radio connection between the Miskar platform and the coast. This had a maximum data throughput of 9.6 kbit/s, and frequently the dialup connection would go down, meaning data would not only travel very slowly, it would frequently have to be resent. BG Tunisia knew it needed more capacity to provide faster, more reliable data connectivity for email, web access and applications like enterprise resource planning (ERP), as well as telemetry, and to handle real-time PBX telephony and video communications.

DEPLOYMENT REQUIREMENTS

There were several tough challenges to overcome in BG Tunisia's deployment:

- Continuous flexing of the gas platform itself meant that any radio solution would have to be able to cope with the continual movement of the sea
- Unusual atmospheric conditions: the Gulf of Gabès is extremely hot during summer days, with much lower temperatures during the night and in winter. These conditions alter the curvature effect over the sea and cause significant fading
- Dealing with the issues presented by long distances and limits on the height of metal structures because of safety regulations

British Gas

TUNISIA

"The distances involved and the system installation here presented a tough challenge for any transmission system. This region in the south Mediterranean sea also typifies the most difficult atmospheric conditions in the world."

— Chief Systems Engineer

4RF Limited

ABOUT BRITISH GAS TUNISIA

BG Group is the largest producer of gas in Tunisia. The Miskar gas field in the Gulf of Gabès supplies around 40% of Tunisia's gas requirements, and it is estimated to have enough reserves to meet the country's needs for around ten years.

BG Tunisia has a 100 per cent interest in the offshore Miskar gas and condensate field, as well as interests in two exploration permits in the area. Its gas sales contract with the Tunisian State electricity and gas company, Societé Tunisienne de l'Electricité et du Gaz (STEG), gives it the right to supply over 230 million standard cubic feet of gas per day.

During its lifetime, it is estimated that the Miskar field will produce more than 20 billion cubic feet of sales gas.

WHY 4RF?

BG Tunisia selected 4RF because of its combination of superior radio technology and its in depth radio engineering expertise, essential to provide BG Tunisia with a solution that would meet all its requirements reliably and cost-effectively. An experienced team from 4RF advised on path engineering, systems design, integration, and frequency planning. As well as delivering the technical solution, 4RF provided commissioning, technical support and optimization services to ensure that BG Tunisia's solution delivers the best possible performance.

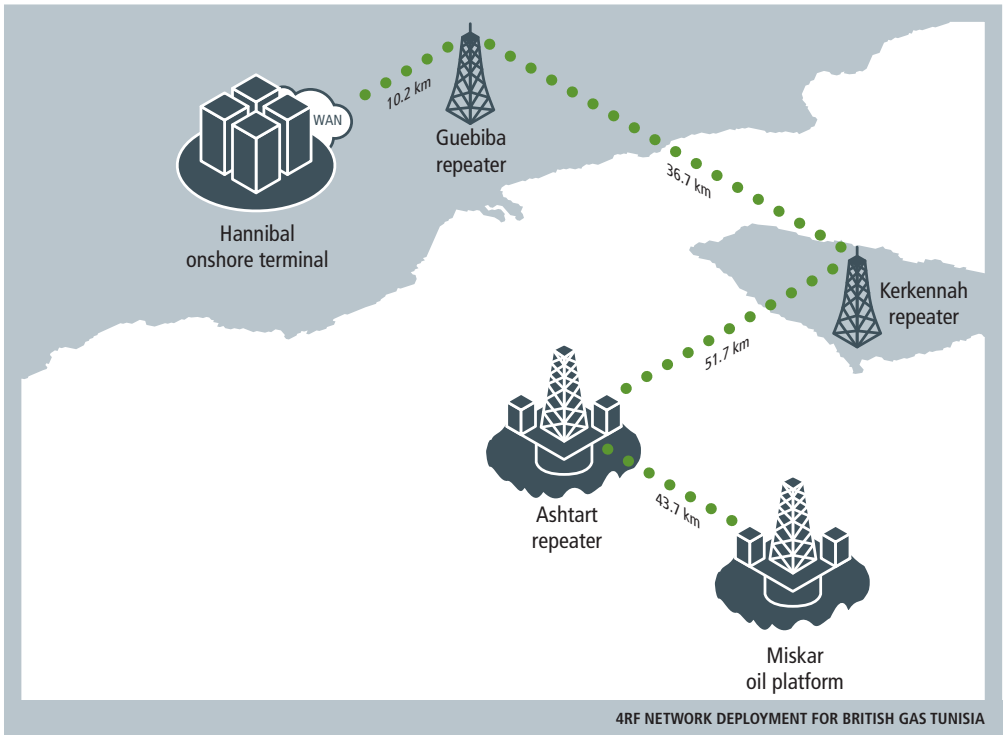
NETWORK DEPLOYMENT

To simplify the engineering task, 4RF deployed a three-hop sea path solution to Miskar, using the Ashtart platform and the Isles of Kerkennah for repeater points. Aprisa point-to-point digital microwave radio transmission systems provide these three maritime hops and connect the onshore station at Guebiba Tower to the Hannibal plant and to the public telephone exchange at Sfax.

RESULTS

Thanks to the Aprisa's carrier-class performance and in-built flexible interfaces, BG Tunisia is able to combine its voice, data and video traffic efficiently into a common narrowband RF channel. Telephony and video traffic is carried using fractional E1 interfaces, while the data traffic is carried over a 256 kbit/s Ethernet interface. The Ethernet interface can be easily upgraded to 512 kbit/s, or higher, capacity.

BG Tunisia now has a robust, high-capacity link to carry all its voice, data and video traffic between the Miskar platform and it onshore facilities. Traffic is not only handled faster and more efficiently, it is also less prone to errors – thanks to high-gain antennas, transversal adaptive equalizers that combat multipath interference, and smart forward error correction (FEC) procedures – as well as having 1+1 monitored hot standby.



4RF NETWORK DEPLOYMENT FOR BRITISH GAS TUNISIA

4RF's Aprisa provided the ideal solution for British Gas

INTERFACES USED

- Ethernet
- E1

TRAFFIC SUPPORTED

- Data
- Video

ABOUT 4RF

Operating in more than 130 countries, 4RF solutions are deployed by international aid organisations, public safety, military and security organisations, transport and utilities companies oil and gas companies, broadcasters, enterprises, and telecommunications operators.

All 4RF products are optimised for performance in harsh climates and difficult terrain, and support legacy analogue, serial data, PDH and IP applications.

4RF

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