



OneWeb



Brdy

USE CASE

The connected offshore field
Connectivity for complex offshore energy activities

Connection everywhere changes everything



OneWeb



LEO connectivity is used for building stronger data-driven foundations.

The connected offshore field

Connectivity for complex offshore energy activities

Offshore operations for oil & gas and wind farms, consist of a vast array of different activities and requirements. This high value complex work takes place in what can be harsh and remote offshore environments with potentially hazardous conditions. Consequently, these activities have critical and unique connectivity requirements for safety and efficiency. Not only do primary facilities such as drilling rigs, production platforms and wind turbines need connectivity, so do support vessels used for intervention, diving, lifting, anchor handling, logistics and accommodation.

Reliable high-performance connectivity is one of the keys to safe and successful operations in these environments. For example, energy companies can increase their remote surveillance of critical operations, equipment and facilities using Internet of Things (IoT), video streams, robotics, and remotely operated vehicles (ROV) to monitor, inspect and address conditions to in field personnel to improve safety and production. Often these critical data points are not readily available to limited field personnel and remote resources help expand the data analysis and decision making capability. With more information readily available for decision making, operating companies can be safer and more efficient.



Connectivity for complex offshore energy activities (continued)

OneWeb's Low Earth Orbit (LEO) satellite connectivity delivers industrial-grade connectivity primary and backup connections that meet the unique requirements of offshore operators and support organizations. It empowers digital solutions and enhanced business processes to improve operational safety and increase efficiency to drive a step change in business performance. LEO satellite can be used as the backbone for local wireless solutions such as WiFi and 5G.

The benefits of reliable, high-speed and low-latency connectivity include support for reliable process automation, information and data sharing, onsite and remote analytics, personnel safety, increased surveillance and monitoring, robotics, document management, work management and collaboration. In addition, high-performance connectivity allows the implementation of new use cases relying on artificial intelligence (AI), machine learning (ML), and virtual/augmented reality (VR/AR) to revolutionize traditional offshore working practices and enhance process and worker safety.



Connectivity challenges

Offshore field and platform operations are increasingly benefiting from digital tools that make them more productive, more efficient and safer. These tools generate large amount of data to improve working processes and practices. In addition, workers need access to cloud-based work management systems, facility documentation and process historians.

The data generated by the field along with the stored documentation is used by personnel onshore and offshore through numerous digital tools to monitor, review, analyze, make recommendations as well as to safely control work. Ensuring there is real-time consistent access to this data is crucial for decision making. When data is not available, decisions and work is delayed, deferring the benefits and increasing risk. This becomes even more critical as the use of real-time tools such as AI, AR/VR, robotics and autonomous vehicles becomes more prominent and further increasing data feeds.

Providing the underlying connectivity to the offshore environment has been difficult. Due to their offshore locations, which can be over 100 miles from shore, connectivity has been limited to low-performance satellite or high capital investments in fibre. Microwave has distance and atmospheric limitations. As such, connectivity capability region by region has varied region by region, causing significant challenges in day-to-day digital needs, as well as the deployment of new digital tools, leading to many underutilized digital investments.



Connectivity solutions (continued)

The ideal connectivity solution is one that can provide a high performance and consistent capability across the globe, and do so while minimizing energy company investments while they focus on core business activities. The connectivity solution integrates with other infrastructure and digital systems to enable a high-quality experience to the end users while delivering data across a diverse set of detailed use cases and business processes.

Our with it's global network including coverage above 60^o degrees latitude and fibre-like connectivity, OneWeb provides an opportunity to deliver critical high-performance connectivity to energy exploration and production assets regardless of location. With this, companies can adopt new and more efficient digital tools and business processes to deliver safe and efficient operations depending upon big data, real-time data and remote data. OneWeb's LEO solution integrates with field networks such as those using SD-WAN, fibre, microwave and satellite networks to provide a robust field solution that connects the field with corporate data centre and cloud.

Enhanced opportunities

Making field network more robust

OneWeb's connectivity can work with other transmission systems such as fibre and satellite when integrated together using technologies such as SD-WAN to create maximize availability, prioritize the most critical traffic and securely segregate traffic based on use cases. Third parties can use SD-WAN to create additional virtual networks to gain access to the equipment they manage and monitor offshore such as rotating equipment. LEO solutions can work as primary, backup, and alternate routes based on traffic and reliability needs of the field network.

Making offshore platforms and fields safer

OneWeb satellite connectivity assists worker and process safety by readily making critical data available to engineers and tools to identify and mitigate adverse conditions prior to them impacting safety. Engineers have access to the data from their onshore facilities which minimizes the need for offshore travel to research potential issues. Through the use of enhanced monitoring such as wearable technology, IoT, detection systems and AI, machine learning, and other state-of-the-art digital tools, conditions can be quickly analysed and actions taken including pre-planned or auto-initiated to bring conditions into a safe state and or with early detection, provide additional time for other measures and actions to be implemented to minimize risk to people and plant.



Enhanced opportunities (continued)

Bringing the right skills to the work

OneWeb connectivity solutions allow engineering and expert support to see what is happening offshore before, while and after work has been performed. With this, they can assist the on-facility personnel to efficiently complete their work. Using collaboration tools such as industrial helmet cameras and tables, personnel can get immediate guidance to ensure they are getting the job done right. Likewise, with the use of autonomous vehicles, drones and robots, onshore personnel can complete inspections using subject matter experts without having to bring them offshore to improve response time while ensuring the right information is available.

Industry digitalisation

LEO satellite connectivity can empower technologies that enable offshore field operators and owners to increase safety and efficiency. With the low latency and high bandwidth, numerous sensors, video streams, documents, a full suite of digital tools can be used as part of breakthrough operational processes. With early detection of malfunctions and other equipment and piping issues, work overs can be planned to optimize uptime and production efficiency thereby reducing lifting costs and increasing margin and profitability. It also reduces the risk of unplanned outages. All in, connectivity can help owners and operators maximize offshore field potential and revolutionize their operations.





Real-time control and visual monitoring will enhance safety and management onsite.

Enhanced and new applications

Predictive maintenance

The ability to support more sensors and IoT to monitor equipment continuously allows problems and issues to be detected and assessed to optimize repairs and maintenance planning and when needed make immediate mitigations.

Real-time data analytics

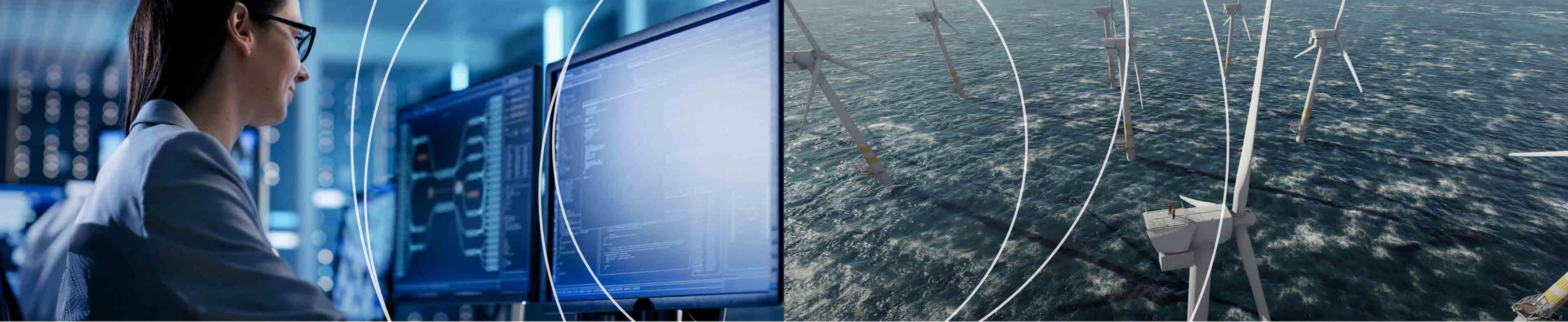
Having field production data available to onshore experts and big data analytics to make faster and better-informed decisions based on actionable insights from data gathered.

Real-time control and visual monitoring

With real-time video feeds and low latency control capabilities, personnel onshore can safely manage the process and facilities. In addition, they can safely operate inspection and surveillance systems including autonomous underwater vehicles (AUV), ROV and robots to inspect and complete work activities in a timely manner. Remote control can be extremely beneficial during startup and restarts such as initial start, after a shutdown and following a turn-around. Remote control and visual monitoring are also critical when regulations require onshore monitoring off offshore activities such as drilling.

Remote inspection and assessment

Maintaining knowledge and of people, plant and process is critical to safe and efficient operations. Numerous digital tools and sensor networks can be monitored and interrogated to understand and trend the plant and people. When necessary, video tools such as cameras and robots can be used to provide visual assessment.



Enhanced and new applications (continued)

Onshore & field collaboration

Connected field workers using industrial collaboration tools can collaborate with audio and point of work video to complete work safely, timely and effectively with real-time guidance and feedback.

Access to the cloud

LEO connectivity with high bandwidth and low latency, allows companies to store the applications and data in the cloud so that onshore and field personal can use the same tools and same data the way they were designed and maximize the investment in digital tools such as HR, training, work management, document management, ERP and general internet.



Global space-based connectivity made easy

OneWeb LEO satellite connectivity can enable the connected fields and maritime operations in new and safer ways. Offshore field, platforms, drilling rigs and ships, support vessels, work vessels can utilize data, automation, robotics AI and other cutting edge digital solutions to streamline and optimize operations and improve worker and operational safety.

OneWeb products and plans deliver the data speed, reliability and low latency for primary, backup, and hybrid network solutions that enable the latest operational applications, and digital and AI tools. Our user terminals are simple to order, deliver, install, and maintain for the requirements of modern maritime companies.



For all enquiries please contact

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