Remote Operations Services
Keeping you connected with your reservoir
Managing today’s oil and gas operations effectively has become increasingly complex, especially when challenged by remote geographies, globally disbursed infrastructure and expertise, and budget. As a result, the demand for real-time data to improve decision making and operational performance continues to grow.

Today’s digital revolution has inspired the development of technologies that are transforming data into better, faster decisions—resulting in reduced risk, increased efficiency, and greater productivity.

As your intelligent oilfield partner, our goal is to keep you connected with your investment. And through our Remote Operations Services (ROS), Baker Hughes brings a new level of information technology to the wellsite that helps you monitor reservoir performance, manage remote operations, and collaborate in the quickest, most direct way possible.

Through BEACON™, our enterprise platform for real-time remote operations, we optimize field development by combining real-time technologies with information management services, remote visualization services, field communication services, remote advisory services, and managed customer solutions. This platform serves as an extension of your wellsite to optimize connectivity, response times, process efficiency, and knowledge transfer from frontline personnel to management, no matter the location. BEACON collaboration centers, located around the world, are staffed with cross-functional expertise and supported by our knowledge network.
Baker Hughes Remote Operations Services can optimize your wellsite operations by using a combination of:

- Field communication services
- Information management services
- Remote visualization services
- Remote advisory services
- Managed-customer solutions

The global BEACON infrastructure comprises numerous centers strategically located around the world. BEACON is the service-delivery platform for real-time data aggregation, transmission, hosting and storage, information management, visualization, and decision support—operated 24/7 by the BEACON service operations management team. Through BEACON, data flows in real time from rigs and wellheads across the world to various data centers, and is then distributed securely to Baker Hughes experts and customers.
Remote Visualization Services

Optimize wellsite operations and decision making

Our remote visualization services optimize real-time delivery of wellsite data, graphically integrating any type of WITSML data from diverse sources such as measurement-while-drilling (MWD)/logging-while-drilling (LWD), mud logging, wireline, casing, cementing, completion, weather, position, anchor, drilling instrumentation, and drilling equipment.

Secure access to information independent of geographical location is delivered by our web-based remote visualization services, increasing awareness of wellsite operations and allowing collaboration among the wellsite, shore-based subject matter experts, and Baker Hughes personnel to expedite the decision-making process.

Additional mobility is provided by the WellLink™ RT Mobile native iPad® application, which delivers a complementary solution for the standard browser-based service. This allows personnel to work remotely to reduce personnel at the wellsite; reducing health, safety, and environmental (HSE) risks; decreasing costs; and simplifying rig logistics.
Easy-to-use and configurable web interfaces mean that users can select standard display formats from the extensive global libraries or use the versatile toolkit to modify or create their own personal formats combining multiple components such as log widgets, bar and circular gauges, numeric widgets, data tables, steering rose, radar widget, cross plots, wellbore schematic, directional survey plot, and rig activity widget. All data is displayed in the user-selected unit conversions set.

The interfaces support preset time and depth scales as well as full zoom functions. The displays can be sent directly to the printer or data can be exported over any interval to standard formats including CSV, ASCII, LAS, or WITSML. Offset well data can be imported to view beside the real-time well data. Additional monitoring and collaborative support is provided by alarms, real-time annotations, and chat.

Remote visualization services are supported by the robust, reliable BEACON service delivery platform, providing encrypted data transmission from the wellsite to our secure, scalable, high-availability, global hosting and storage facilities, or where regulatory or customer policy dictate, to our local in-country and in-company solutions. All services are backed by the BEACON Global Services team, providing remote monitoring from our BEACON operations centers for data quality assurance and 24/7 service operations management support.

Benefits
- Manages data for the life cycle of the well
- Integrates data across disciplines
- Continuous data quality assurance
- Reduces time and cost of decision-making
- Enables global collaboration
- Reduced personnel on board (remanned operations)

Features
- Global infrastructure with easy access through the internet or dedicated systems
- Customizable displays, dashboards, and widgets
- Mobile visualization application (mWLRT)
- WITSML-compliant, web-based application
- Secure data-delivery system
- 24/7 customer service
Information Management Services
Secure, high-availability, reliable data management, and automated delivery from a trusted partner

Our information management services provide standards-based data aggregation from other third-party sources, wellsite data store capability, and encrypted delivery to our secure, high-availability, geographically distributed global hosting and storage facilities.

Quick, reliable access to your data for analysis, collaboration, and decision making is made possible when well data files are automatically delivered directly to entitled users’ desktops, whenever and wherever users are.

To ensure there is no loss of data during unforeseen data communication outages, the WellLink™ wellsite data aggregation service incorporates data buffering and automatic recovery and retransmission. Data is aggregated from third-party, standard protocol data feeds, (WITS, WITSML and OPC), and transmitted as a single encrypted data feed to the customers’, or Baker Hughes, data centers. Secure data feeds can be distributed to multiple data center locations when necessary.

To ensure data is up to date and available to all members of the decision making team, the WellLink Field Store service keeps wellsite data synchronized with the shore-based data center. The service provides wellsite data storage of Baker Hughes and third-party data with WITSML store capability for access by customers with WITSML-compliant applications.

WellLink Data Services manages the collection and retrieval of static well data files. Simple drag-and-drop functionality and automated data file delivery to entitled end users’ computers allow easy distribution of well data files up to 3 GB in size for timely integration of all necessary data into the customers’ specific formation evaluation workflows for comprehensive analysis and collaboration.

Our information management services standard provides managed hosting and storage in secure, high-availability global data centers with five-year, renewable long-term storage and retrieval. Where regulatory or customer policy compliance prohibits use of our global data centers, Baker Hughes will deliver standardized, local in-country or in-customer secure, high-availability hosting and storage solutions.

Benefits
- Automated data loading to end-user computer
- 40% faster than standard browser uploads and downloads
- Distribute well data files up to 3 GB in size
- Access data simultaneously from a high-speed database
- Comprehensive decision making

Features
- Tier 3 data center and secure data is storage
- Static file data server polled every two minutes
- Configurable notifications, sub-well folder structures and file types
- WITSML-compliant web-based application
- 5-year renewable archive of data storage and security
- Crash recovery and a robust resume capability
Remote Advisory Services

Detect, diagnose, and avoid potential threats
Our remote advisory services include capabilities such as remote monitoring, situational awareness, trusted operations, performance management solutions, decision support, and 24/7 surveillance and interpretation from Baker Hughes remote service engineers.

Gain visibility into areas of improvement
The WellLink™ Performance service provides dynamic event and exception management, KPI monitoring, predictive analytics, and proactive reporting of critical business information in oil and gas drilling operations.

The web-based application takes complex data commonly buried inside legacy applications, drilling reporting systems, and real-time data streams and instantly transforms it into accessible information. This information facilitates proactive identification of performance gaps, allowing decision-making teams and management to address barriers and reasons for nonproductive time (NPT), invisible lost time (ILT), or performance opportunity time (POT).

The service provides KPI monitoring to optimize your ability to track, compare, and display a breakdown of operational activities while identifying inefficiencies during the well-construction process.
Rely on remote engineering support

Leveraging their experience and a knowledge base of best practices, our remote service engineers collaborate with you to interpret downhole activity and to offer potential solutions to mitigate NPT and risk. When they identify a potential problem, they investigate, validate, and collaborate to determine the best course of action. Then, through clearly defined communications protocols, the remote service engineers inform necessary personnel of recommendations for proactive options to avoid the problem.

Monitor artificial lift wells remotely to maximize production

The WellLink Vision™ real-time monitoring service allows operators to monitor and control artificial lift production systems to prevent premature failures, optimize efficiency, and increase production. This real-time production monitoring solution provides a secure web based interface to intuitively visualize electrical submersible pump (ESP) data and to remotely optimize ESP operations.

With user-defined, customizable alarms ensure operations personnel are immediately notified via cellular phone, pager, or email. The system also provides an integrated approach to data management and engineering analysis.

Vision control and trending features allow operators to remotely control electrical submersible pumping (ESP) systems and customize their on-screen views. And, for operators who require more advanced remote monitoring services, we also offer SPVision™ and XPVision™ monitoring.

Get the answers and the engineering support you need in order to take corrective action today, and avoid operational problems tomorrow.

Benefits

- Identify Performance Opportunity Time
- Maximize efficiency and reduce NPT/ILT
- Remote monitoring of single or multiple well(s)
- Minimizes HSE risk
- Knowledge management and lessons learned
- Supports efficient decision making and team collaboration
- Promotes standardization of operations and process improvement

Features

- Real-time analysis and visualization
- Real-time KPI and drilling curve displays
- Automated interactive displays
- Time/depth curve benchmark
- Activity distribution dashboards
- Flexible/customizable displays
- Management and engineering dashboards
- Automated reports engine and multiple language support
- Performance benchmarking of crews, rigs, wells, contractors, and service providers
Field Communication Services
Stay securely and reliably connected with field communications

Our Field Communication Services deliver cost-effective connectivity to keep you linked to your field operations locations and meet your bandwidth needs with a full suite of secure, fault-tolerant services. Confidential customer data is protected from unauthorized access by data encryption and rigorous security standards while electronically in transit.

The Field Communication Services portfolio includes a variety of VSAT, BGAN, and Cell Modem solutions, including:

- **BEACON Field VSAT Skid**: A fully stabilized, self-contained VSAT system in a DNV-offshore certified container with wireless connection to the cabin, remote out-of-band access and satphone handheld for troubleshooting and repair.

- **BEACON Field VSAT Auto-point**: A motorized auto-pointing VSAT with a 3.93-ft (1.2-m) dish finds the satellite automatically in minutes to ensure maximum signal strength every time. This solution can be packaged for rooftop installation or set in a container as a standalone system.

- **BEACON Field VSAT Lite**: A portable pedestal-mounted 3.93-ft (1.2-m) dish and radio in a suitcase with electronics that are typically permanently rack-mounted in the service cabin or truck.

- **BEACON Field BGAN**: A global satellite terminal, router, and traffic accelerator built in a suitcase for highly mobile operations. It operates outdoors under all weather conditions and can be set up in approximately 5 to 10 minutes. The Field BGAN terminal connects the Baker Hughes field unit or mobile employee to the corporate network through the Inmarsat BGAN Internet service. The terminal provides encrypted and accelerated access globally through three geostationary satellites at up to 400 kbps.

- **BEACON Field Cellular Modem**: A cellular modem transmitting data over the 3G/4G cellphone network through a contracted private network for additional encryption. This solution is typically used for lower bandwidth applications such as artificial lift monitoring and control, tank monitoring, and chemical automation.

All Field Communication Services are backed by the Baker Hughes 24/7 BEACON Service Operations Management support team.

**Benefits**
- Information available on-demand
- Field-to-office collaboration
- Enables real-time data delivery and monitoring
- Crew morale applications
- Enables remote operations and re-manning
- Provides customer network support and internet access

**Features**
- Global coverage
- Fault tolerant
- Highly secure
- Field operation surveillance
- Plug-and-play and pick-and-go systems
- 24/7 ROS support
Depend on the right solution to enhance operational performance

Our Managed Customer Solutions provide a collaborative environment that enhances operational performance and decision making between you and the Baker Hughes decision team. We have 30 years of experience in data communications and remote monitoring, and more than a decade of real-time operations center development and management. So you can rely on the Baker Hughes team to deliver the right solution to meet and exceed your expectations.

Reducing costs by driving down NPT and improving operational performance throughout the lifecycle of the well are core functions of our remote operations and decision support DSCs. Using the proven BEACON service delivery platform for prejob planning, real-time monitoring and post job analysis and reporting, the remote operations Centers and DSCs become an integral part of your continuous improvement process. Standard operating procedures based on best practices can be implemented and supported remotely across the global operations arena.
Maximize the value you get from Remote Operations Centers by employing Baker Hughes dedicated experts and remote advisory services. Services include KPI monitoring and reporting, vibration analysis, drilling engineering and optimization, drilling surveillance and NPT avoidance, reservoir navigation, and pore pressure analysis.

Reduce HSE exposure, travel time, and costs by removing the need for your experts to travel to the field operations locations. Our Remote Operations Centers enable your experts to work remotely to support your global operations.

Maximize your subject matter experts’ efficiency, so they can focus on planning, analysis, and decision making by relying on the dedicated 24/7 BEACON service operations management team to perform real-time data quality assurance and quality control, service request management, and operations reporting. The team ensures right-time delivery of data from our secure, high-availability hosting and storage information management platform. For extended reliability, we can provide site failover capability to our global operations and advisory centers network.

Benefits:
- Standardized workflows
- Supports industrial standards for data exchange
- Move from effective to efficient operations
- Remote services for geosteering and pore pressure monitoring
- Provider agnostic, vendor neutral
- Automated quality assurance and quality control

Features:
- Exception-based, industry leading monitoring and alarming
- Customized services, including well control and optimization
- Built-in alarm console, standardized workflow and best practices guide
- Built-in support for well control prevention
- Customizable remote operations displays
- Proven alarm system developed in collaboration with major operator
- Customizable algorithms
- Robust and redundant decision support and remote operation center
Optimize business decisions and remote operations with real-time business intelligence

Our Remote Operations Services teams collaborate with yours to understand business objectives, processes, and infrastructure. They use this knowledge to customize intelligent oilfield solutions that leverage our technology, global network of expertise, and real-time remote operations platform.

Operate with confidence. Baker Hughes can transform your digital oilfield vision into an efficient, optimized reality. Contact your local ROS representative or visit us at www.bakerhughes.com/ROS to learn more.