WellLink Performance Service
Identify performance opportunity in real-time

In today’s cost-sensitive drilling environment, Operators are looking at every possible opportunity to improve their drilling efficiency and reduce their financial exposure. Identify issues affecting that efficiency and remediate the problem which can ultimately lead to improved drilling economics. The Baker Hughes WellLink™ Performance real-time drilling performance analysis service can provide that identification.

Detect invisible lost time
Most drilling performance initiatives focus primarily on eliminating downtime caused by wellbore problems and equipment failures. What many operators can’t see is the invisible lost time (ILT) that can add up to an additional 30% to the bottom line and so detecting this is crucial to improving efficiency.

Manual analysis is timely and cumbersome but with the WellLink Performance service you can automatically detect ILT by comparing multiple rigs, wells, and crews through advanced dashboards.

The WellLink Performance service applies Big Data analytics to historic and real-time wellsite data to create a comprehensive and easy-to-use drilling performance solution. Web-based dashboards interpret complex data buried inside legacy applications and drilling reporting systems to provide instantly accessible and actionable information including crew plan adherence.

You can proactively identify reasons for drilling inefficiencies and performance gaps, enabling decision-makers to identify performance opportunity time (POT) in real-time, and define mitigating actions for current or future wells.

Measure and understand drilling crew performance
Drilling related non-productive time (NPT) can account for up to 25% of total operating costs. It is important to effectively identify and measure drilling inefficiencies, including crew-plan deviations, NPT, and cost reduction actions.

The WellLink Performance service measures connection times while drilling and also while tripping, providing detailed key performance indicator (KPI) analyses, such as tripping speed in open- and cased-hole situations. This allows you to track crew schedule and drilling performance in real time, and to identify areas of ILT accumulation. The service also measures surface data to calculate KPIs such as rate of penetration (ROP)

Applications
- All well-construction phases with main focus on Drilling
- All markets, from deep-water to land rigs

Features and benefits
- Real-time analysis and visualization
  - Proactively identify POT
  - Maximize efficiency and reduce ILT
  - Measure connection times and flat time
  - DvD cost tracking including visualization of flat time and NPT events
  - Identify optimal tripping speeds
- Historical KPI monitoring, performance comparison and benchmarking between: crews, rigs, wells, contractors and service providers; includes a crew scheduler
- Automated, interactive, and customizable displays
  - Time-depth curve, actual vs. planned (benchmark)
  - KPI, activity distribution, and management/engineering
- Maximizes remote monitoring capabilities
  - Individual or multiple wells
  - Automated reports engine
  - Updates KPI and drilling curve displays in real time
  - Hierarchical tree view for well and wellbore selection
  - Real-time activity distribution charts
- High-end alarms and alarm escalation utilizing KPIs with email and pop-up notifications
- Utilizes knowledge management and ‘lessons learned’ to implement performance improvement programs through managed services
- Supports efficient decision-making and team collaboration
(sliding and rotation), tripping circulation, reaming and drilling times, which can be used as benchmarks for future wells.

The elimination of time-consuming manual tasks includes the automation of: measuring flat time, analysing POT and identifying causes of inefficiencies and performance gaps. Daily KPI reports provide individual rig performance information enabling decision-makers to take proactive actions to improve tripping times, connection times, gross ROP, and flat time on low-performing rigs.

Identify areas of improvement, learn from past experiences, and set performance expectations

You can improve drilling and rig performance, and reduce well construction cost by immediate detection and rectification of drilling problems through comparisons of drilling times against plans and benchmarks.

The software differentiates and compares crews from different shifts by measuring times per stand. It also looks at trends in weight-to-weight times or drilling ROP per stand in real time. This helps you identify best practices for benchmarks and improvements of future crews. Tripping speeds from previous shifts can also be used to create benchmarks that help drillers approximate optimal trip speeds and total tripping times – an automated practice not currently tracked by drilling performance services.

All KPI values are stored in the WellLink Data Hub as WITSML logs for use in combination with the WellLink drilling suite applications such as the WellLink Alarm Manager service.

Rectify drilling inefficiencies in real time

The main challenge with drilling optimization is that, despite the real-time information generated, it is delivered to the customer at the end of the day or at the end of the well’s operations, limiting immediate corrective action. The WellLink Performance service delivers real-time alerts, enhanced support and on-demand reports highlighting stand based and time-stamped KPIs visualizations (including moving average curves, histograms) for performance trending in real-time to identify where corrective or mitigation actions should be taken. Features include Performance Gap Index (PGI) days behind-ahead and POT reports, providing figures to evaluate the performance of the project compared to the drilling plan and related benchmarks. This information is invaluable to rapidly identify performance issues.

For contracts where Baker Hughes provides drilling services, full-time or ad-hoc field and remote operations personnel share expertise through the WellLink Performance service providing immediate advice for areas of concern where KPIs show reduced operational performance.

Create optimized reports and customizable dashboards

The WellLink Performance service allows you to track, compare, and display the breakdown of operational activities, visualizing and comparing KPIs from multiple wells and rigs, to identify inefficiencies during the well construction process. Activity reports, monthly and quarterly KPI overviews can be generated and configured to operator preferences using customizable templates and filters that provide a hierarchical tree view of selected wells and wellbores. This software solution allows you to visualize information through a variety of intuitive, multilevel drilldown dashboards, plots, charts, and alarm monitor displays, including:

- **Connection and tripping speed graphical views** - Innovative real-time displays for visualization of immediate performance challenges and trends
- **Crew KPI view** - User-configurable, crew-performance KPI comparisons including support for setting up crew schedules
- **KPI monitor** - Displays in real-time advanced KPI metrics, visualizations with alarm status
- **POT** - Provides instant identification of areas needing performance improvement
- **Wells (grid, map and dashboard views)** - Displays all user-entitled wells with necessary drilling data and KPI information
- **Days vs. Depth** - Plots current well against well plan, offset, or benchmarked well
- **Activity analysis** - Displays detailed breakdown of rig activity from real-time data and the daily drilling report
- **Performance reporting** - Configurable performance report distribution, Single click publish to Well Journal and data export

The multi-language capability makes the WellLink Performance service a globally accessible solution. It can be used from any web browser and device and offers a comprehensive work area where team members can upload and share any type of file.

Service delivery options

- **Hosting**
  - On-premises: at field site or at customers’ office
  - Private cloud: applications are hosted in dedicated private cloud in a Baker Hughes managed data center
  - Public cloud: lower-cost option under contract terms offered by the public cloud provider

- **Licensing**
  - Proof of concept: provides customers with the opportunity to experiment, demonstrate value and feasibility of custom solutions
  - Software as a Service: allows various forms of pay-per-use
  - License and maintenance: conventional approach of software licensing

- **Services**
  - Customer supported: applications and associated services are the responsibility of personnel in the customer organization
  - Baker Hughes-supported: support services are performed by Baker Hughes personnel
  - Managed service: Baker Hughes takes full responsibility for applications and support activities

Contact your Baker Hughes representative today, or visit [www.bakerhughes.com/WLP](http://www.bakerhughes.com/WLP) to find out how the WellLink Performance service can maximize drilling performance, improve operational efficiencies, and minimize ILT.

System requirements

- **Software**
  - Any web browser supporting HTML5
  - Operating system: PC and Mobile Windows, Mac OS, iOS, Linux, Android

- **Hardware**
  - 32 or 64 bit CPU 1Ghz, 2G memory or greater