

# Connect BHA

## high-efficiency data streaming service

Integrates downhole and surface data and improves signal robustness for real-time streaming that enables decision making anytime and anywhere

### Where it is used

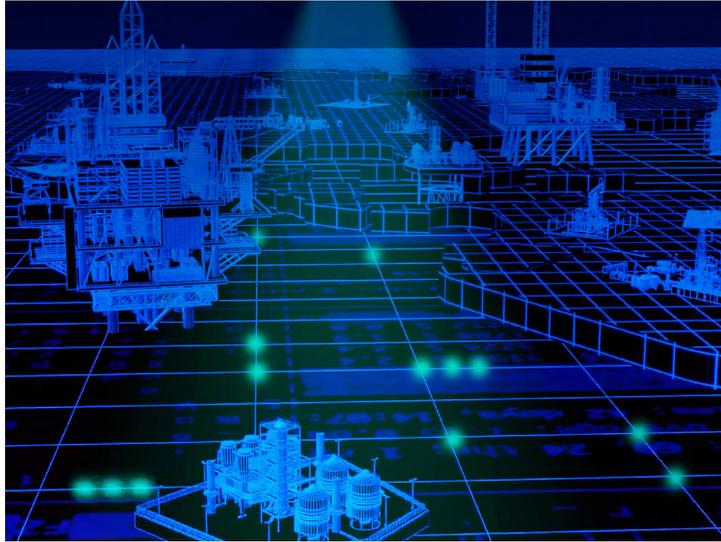
Connect BHA\* high-efficiency data streaming service is surface and downhole data acquisition and execution software. It provides an integrated solution to support MWD and directional drilling workflows, both on the rig and in town. Essentially, Connect BHA service coordinates the collection of data from multiple surface and downhole sources while drilling, and homogenizes their signals for distribution to a network of users. Enabling such operation within a single environment for Schlumberger legacy MWD tools avoids redundant surface systems deployment, as well as the additional competency required to handle multiple systems. Automated operations workflows and user-specific considerations help to optimize and reduce the overall crew, not only in the field, but also in the operational control center.

### How it improves wells

Connect BHA service improves collaboration and coordination among multiple users while drilling because relevant information is directed to the right people, at the right time, and always in the right context. Onsite locations are synchronized and securely connected regardless of geography.

Intelligent advisory systems guide the crew to stay within operating windows and safety thresholds, while ensuring that all company standard operating procedures are enforced. Performance is continuously tracked against the agreed drilling plan so that deviations during operations generate real-time alerts for approval, as well as documented and highlighted for learning. Data is analyzed and knowledge captured for subsequent sharing, resulting in the drilling of consistently higher quality and more compliant wells.

Additionally, the single software platform reduces HSE exposure by improving people efficiency and overall logistic requirements.



*Connect BHA service coordinates data collection from multiple surface and downhole sources while drilling and streams their signals for distribution to a network of users.*

Connect BHA service improves service quality and reliability due to ease of use, automation of tasks, and the single common system for engineers. This system is accessible at any time and from anywhere, which improves collaboration with technical experts in town and enables the next generation of service delivery.

### How it works

Connect BHA service has four integrated systems

- **Rig floor acquisition system:** This system encapsulates three current hardware elements in one comprehensive system (signal processor, CPU, and rig floor display). Each rig is equipped with an electronic data recorder and therefore the measurements for other surface sensors; only dynamic pressure sensors are needed. It also works with wireless connectivity, enabling the crew to access this server from any computer in the same network.
- **Electromagnetic (EM) receiver and downlinker:** The EM receiver combines within the same acquisition box the functions of the receiver, filter, and splitter box. Additionally, new advancements in EM signal decoding have increased reliability, and the hardware improvements increase power generation and compatibility with different systems. A downlink can be performed in as little as four seconds.
- **Wellsite LAN kit (WSLK):** To provide a reliable and secure wireless and internet connectivity with the server, a customized plug-and-play WSLK enables the user to avoid IT connectivity setups and facilitate the overall deployment at the wellsite. At the same time, connection is made with the remote operations center.

### What's the takeaway

Connect BHA service directly enables new levels of instrumentation, automation, and cognition for existing drilling operations. With this consistent implementation, operators support autonomous drilling while achieving their goals for drilling efficiency and more productive wells.