

SENSU

Rig operations surveillance and instrumentation system

APPLICATIONS

- Real-time monitoring of drilling parameters and pit volumes on the rig and in the office
- Uniform system independent of rig vendors
- Benchmarking rig and crew performance
- Automated reporting for rig maintenance and for tracking operation metrics and drilling KPIs

BENEFITS

- Optimize well construction performance using daily, automated KPI dashboard; detailed performance benchmarking; and gap analysis
- Obtain decision-ready information precisely where and when you need it
- Improve critical activities through constant, comprehensive access to rig and drilling information
- Modernize data acquisition systems on existing rigs cost effectively
- Achieve accurate, consistent, and timely reporting through automated IADC reports and daily drilling logs

FEATURES

- Easy-to-install, unmanned system
- Customizable intuitive driller displays (numerical and graphical) with Live Setting console
- Fast, responsive, and proactive control of rig instrumentation and drilling processes
- Redundancy and mirroring to minimize lost data and NPT
- High-frequency data acquisition and processing
- Automatic rig-state detection
- Stop/start system with automatic loading of sensor calibration
- Simultaneous display of drilling and mud pit data
- Ability to detect deviation of parameters (e.g., standpipe pressure, vibration) from preset limits

Featuring digital instrumentation and an advanced driller's console, the SENSU* rig operations surveillance and instrumentation system provides the granular operations metrics and KPIs to deliver a step change in well construction efficiency. By reducing nonproductive time (NPT) and invisible lost time (ILT), the SENSU system enables cost reduction of daily rig operations.

Lean deployment at the well site

With a reduced footprint and automatic reloading of sensor calibrations, the SENSU system has true start/stop functionality. Noninvasive rig installation and quick configuration enable the rig crew to power up the system and begin real-time monitoring immediately. Data from more than 200 sensors can be processed at 1 Hz—with the ability to acquire data up to 50 Hz—enabling instantaneous event detection, while high-resolution processing enables in-depth trend analysis.

Customizable interface

With its intuitive and customizable interface, the SENSU system provides continuous, decision-ready rig and drilling information. The driller can adjust parameters, set alarms, and reset counters in the Live Setting mode while real-time data remains visible. Low- and high-level alarms can be assigned to each parameter, and alarm states are indicated by visible and audible cues.

Automatic rig-state detection

The embedded Schlumberger rig-state engine—unique to the SENSU system—automatically detects 17 individual rig activities and states, enabling real-time calculation of 18 event metrics, including

- backreaming, on-slip, and off-bottom time
- maintenance measurements for critical rig component parts
- operations metrics, calculating various drilling and tripping KPIs in real time at the rig site.



The SENSU system provides a unique platform with real-time operational metrics and KPIs, empowering the driller and wellsite team to deliver consistent, superior performance.



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Identify invisible lost time

The rig-state engine enables the SENSU system to identify ILT through real-time data analysis and statistical comparison of activities on a single rig or across a rig fleet, enabling the setup and achievement of desired efficiency targets. Continuous real-time updates enable an entire rig fleet's performance to be benchmarked and corrective actions taken, minimizing the time and cost of operations.

Enhanced data backup, security, and reporting

Full data redundancy is assured by a second core computer running in parallel to the primary system. Live sensor backups can also be installed on critical measurements, while real-time monitoring of acquired data quality and proactive detection of anomalies is provided by the embedded diagnostic tool.

Automated reporting

The SENSU system provides automated reporting applications, enabling the driller to spend more time focusing on operations and optimizing rig performance and less time on everyday reporting tasks. Key reporting applications include automated daily logs and reports in IADC-approved format.

Extensive networking and connectivity

The SENSU system has the unique ability to connect to the majority of rig equipment, including all types of sensors, pit volume totalizers, and detectors for hazardous gas. The system also connects the rig with office-based personnel, enabling the sharing of wellsite information—such as real-time drilling data—via the InterACT Visualization* modular real-time data display.

Data can be viewed on a wide range of devices, including tablets and mobiles (HTML5 and specific Apple iPhone and iPad applications are supported) using the WITSML industry standard.