SENSU

Rig operations surveillance and instrumentation system

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Decrease the time and cost of daily rig operations with the SENSU* rig operations surveillance and instrumentation system. Featuring digital instrumentation and an advanced driller's console, the SENSU system provides the granular operations metrics and KPIs necessary to improve well construction efficiency and reduce nonproductive and invisible lost time.

Rig Operations Surveillance and Instrumentation System

Applications

- Land rigs and fixed platforms with minimal, unreliable, or no drilling instrumentation
- Real-time monitoring of drilling parameters and pit volumes—on the rig and in the office
- System uniformity independent of rig vendors
- Benchmarking the performance of your rig and crew
- 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 and intuitive driller displays (numerical and graphical) with Live Setting console
- Fast proactive and responsive 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-and-start system with automatic loading of sensor calibration
- WITSML™ data transmission

Remote, simple, and robust rig instrumentation

Remote services and multirig performance

The SENSU system leverages 60+ years of experience in surface acquisition systems.

- 24/7 global technical support and continual multirig monitoring and analysis
- Invisible lost time (ILT) and KPIs for rig and crew performance benchmarking (day versus night shift)
- Unique applications for safer, smarter, and faster drilling performance

Acquisition and Core

- Storage and backup
- Mirroring
- Automated start and stop
- Minimized footprint

Customer Stations

- Reporting
- Monitoring
- Maintenance
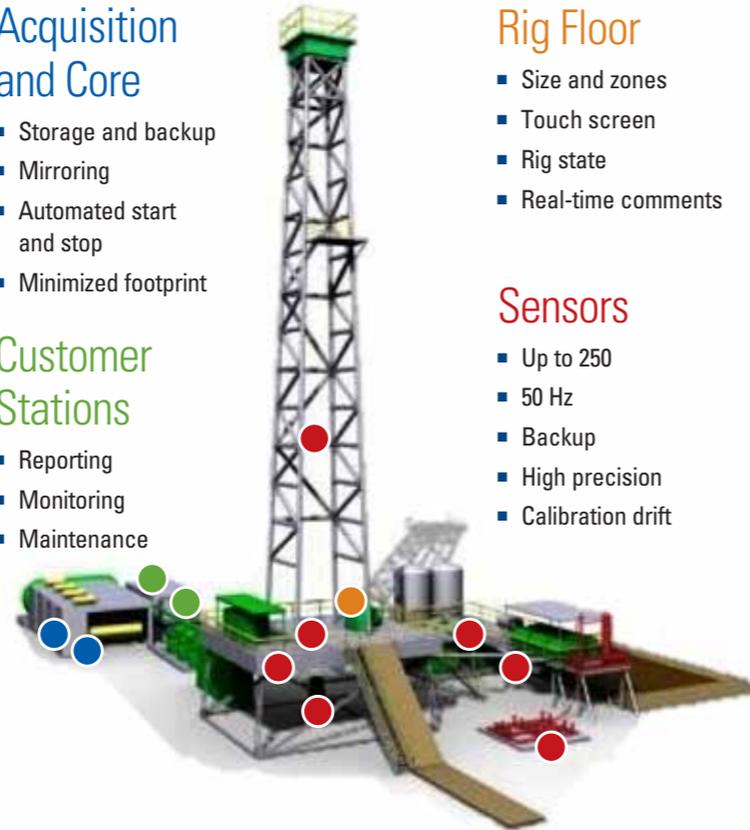
Rig Floor

- Size and zones
- Touch screen
- Rig state
- Real-time comments

Sensors

- Up to 250
- 50 Hz
- Backup
- High precision
- Calibration drift

Measure

Analyze and Improve

Rig-Centric Instrumentation System

Tier 3
Advanced rig instrumentation

Tier 2
Electronic drilling recorder and PVT
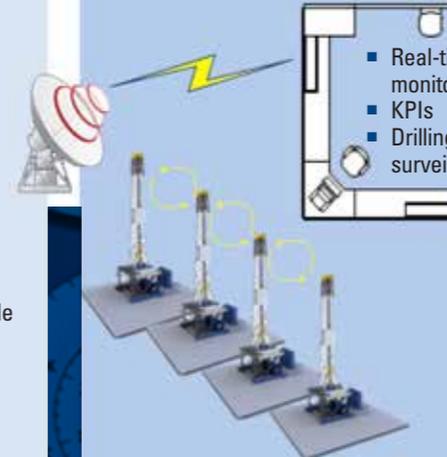
Tier 1
Basic rig instrumentation

Options are available at all levels.

Single rig

Information- and Customer-Centric Control Tower

- Real-time monitoring
- KPIs
- Drilling surveillance

Two or more rigs

Applications and Services

State-of-the-art displays

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Lean deployment at the well site

With a reduced footprint and automatic reloading of sensor calibrations, the SENSU system has true start-and-stop functionality. Noninvasive rig installation and quick configuration enables the rig crew to power up the system and immediately begin real-time monitoring. 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, and 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.

Identify ILT

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.

The SENSU system provides a unique platform with real-time operational metrics and KPIs, enabling the driller and wellsite team to deliver consistent performance in conventional and unconventional environments.

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Enhanced data backup, security, and reporting

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

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.

Every 24 hours, the SENSU system automatically generates a log that includes rig states, real-time comments, and vibration data.
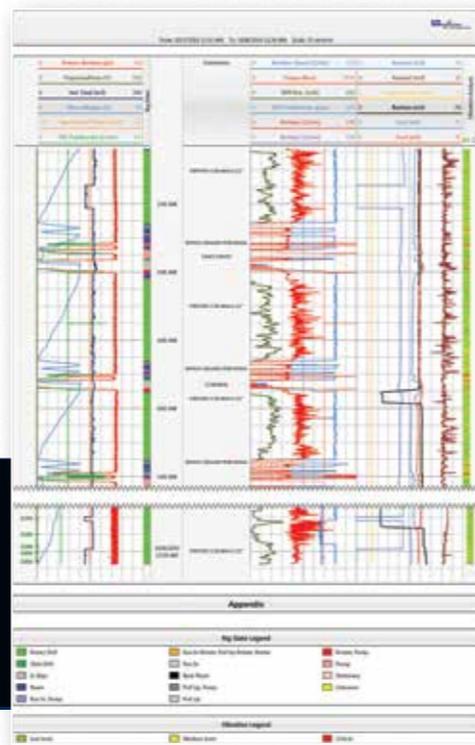
Extensive networking and connectivity

The SENSU system has the unique ability to connect to the majority of rig equipment, including all types of sensors, pit-volume totalizers, and hazardous gas detectors. 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 using the WITSML industry standard (HTML5 and specific iPhone® and iPad® applications are supported).

Rig Operations Surveillance and Instrumentation System

SENSU

We measure it.
You manage it.
Together, we improve it.

slb.com/SENSU

Schlumberger