

Concert well testing live performance

Equip wellsite personnel for real-time data access and communication

Applications

- Land and offshore well testing, cleanup, and production testing
- Exploration wells, flowback tests, and producing wells
- Real-time wellsite monitoring and continuous process monitoring

Benefits

- Greater wellsite efficiency through real-time data sharing
- Timely, informed communication for operational support and decision making
- Consistent data quality and confirmation whether test objectives are being met through real-time data diagnostics
- Safer handling of fluids at surface
- Minimized manual measurements by replacement with inline continuous monitoring
- Decreased environmental impact through continuous process monitoring

Features

- Real-time data, diagnostics, and efficiency metrics
- Flexible wireless sensor network based on the job requirements
- Connected digital data acquisition, display, and analysis
 - Encrypted and password-protected local WiFi network
 - Ruggedized tablets and wearable technology
 - Four video cameras with 20 days of high-definition (HD) video storage for monitoring burning operations
- ATEX Zone 1 rating (Ex II 2 G IIB T4, $-20 \text{ degC} < \text{ambient temperature } [T_a] < 50 \text{ degC}$) and CE marking
- Web-based dashboard providing the same data and video display for all, with focus customization
- Advanced diagnostics for the well testing crew to predict operational events

The collaborative, information-centric well testing system

Conducting well tests is critical for confirming a reservoir's capacity to produce oil and gas. The results affect the accuracy of reserve bookings and hydrocarbon recovery efficiency. However, conventional well tests pose numerous challenges, ranging from environmental and safety considerations to data quantity and quality, especially in ensuring that test objectives have been achieved.

Concert* well testing live performance digitally integrates all aspects of well testing to introduce information transparency through new levels of collaboration and accessibility. Sensors and cameras are deployed across all surface test operations for data acquisition, monitoring, and analysis via tablets and wearable technology. Robust software drives web dashboards and video displays to the tablets and customers' screens and devices, with everyone viewing the same data, diagnostics, and analysis. Data can be shared live—not only at the wellsite but also between the wellsite team, remote operation centers (ROC), and customers, enabling collaboration

with real-time communication to achieve successful test completion and increase operational safety and efficiency.

Heightened vigilance and awareness

Concert performance makes process data available everywhere at the wellsite. Personnel can see and monitor all process data and trends and are instantly notified when an alarm is raised or an event is predicted by the system.

Wireless sensors and cameras continually acquire data without human intervention across the operation. The sensors measure pressure and temperature, and radars enable monitoring liquid levels in vessels. Various level and pressure safety devices can be integrated into the process to trigger the emergency shutdown system: All triggers can be identified by the Concert performance ecosystem to display the online status of the electrical emergency shutdown system.

Cameras monitor burner combustion, providing video surveillance of fallout and emissions, and monitor the entire well test footprint to increase vigilance in process safety and the safety of crew members.



ATEX Zone 1

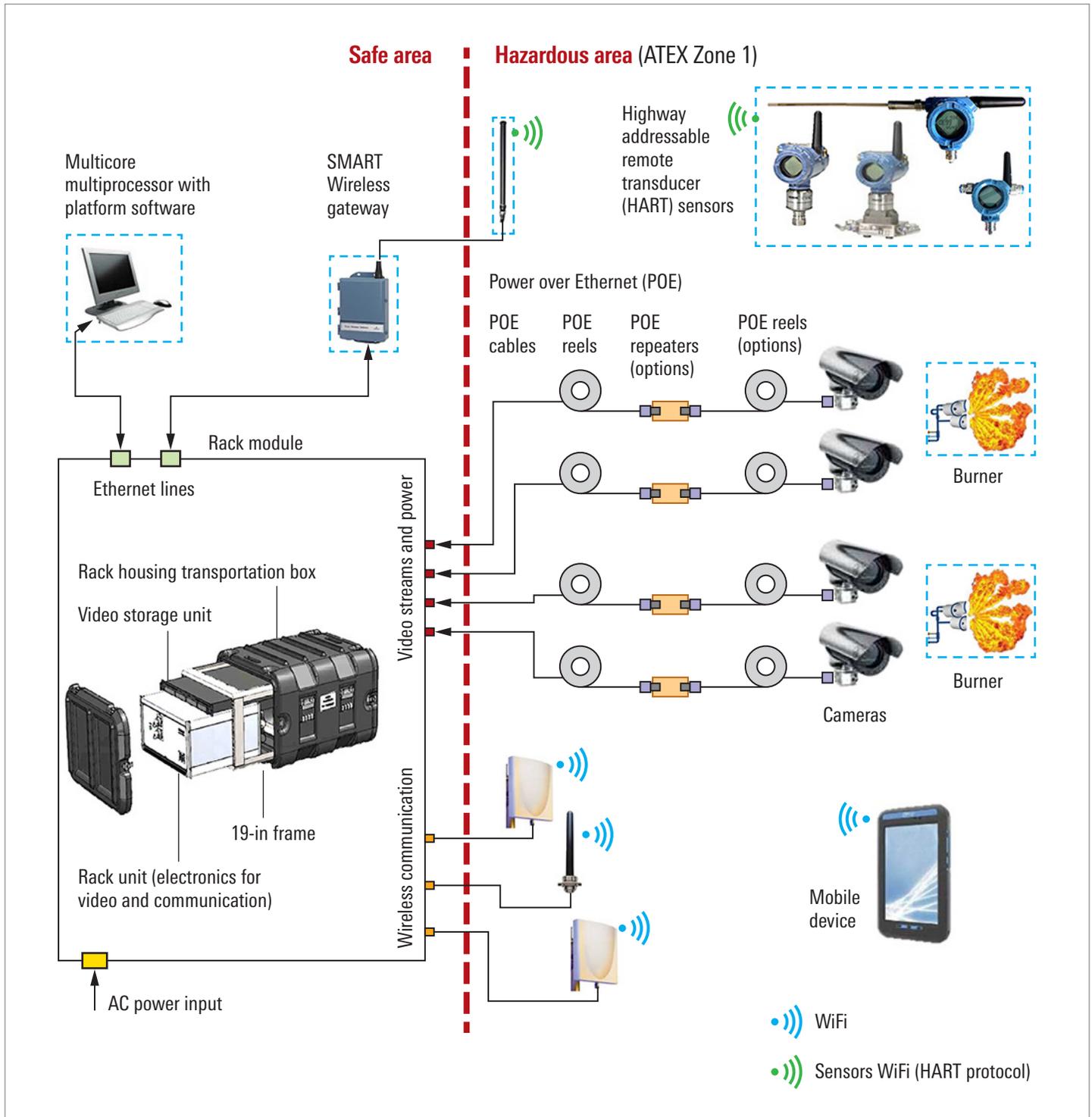
Wearable communication system

ATEX Zone 1

Tablet with chest holder

Concert performance equips wellsite personnel for real-time data access and communication.

Concert



Sensors and cameras are comprehensively employed for the automatic collection of testing data.

Focus on the process

Concert performance equips well test operators with instant access to process data. It supports performing manual fluid processing and increases efficient team communications, all while the system is directly fed data, events, and information.

The amount of time spent by personnel walking around the well test site to read sensors or request data from the central acquisition cabin is significantly reduced—along with their exposure. Essential real-time data about the status of the ongoing process is immediately available on the tablets and

shared from the wellsite to support taking the right decision in a timely manner. Concert gives enhanced confidence in process control and achievement of test results.

Concert

The driver behind Concert performance

Robust software in Concert performance enables smooth data integration of surface and downhole technologies and applications into the collaborative Concert performance ecosystem. The software enables

- independent acquisition, visualization, and reporting processes for crash recovery capabilities, eliminating any service disruptions and increasing reliability
- interfacing with CoilCAT* coiled tubing computer-aided treatment, FracCAT* fracturing computer-aided treatment system, and all Symphony* live downhole reservoir testing tools and processes
- acquisition of 500 data channels from 100 sensors with a frequency of 1 s for a 3-month duration using an embedded database
- computations from AvantGuard* advanced flowback services using an engine that calculates bottomhole pressures monitored in real time to ensure the well is being operated within a secure operating envelope in poststimulation operations



Concert performance transparently shares data, video, diagnostics, and analysis for informed decision making.

- seamless detection of hydrates formation with proactive diagnostics displayed on a dynamic envelope to enable the well test crew to quickly respond to an event
- smooth data transmission to InterACT* global connectivity, collaboration, and information service, Petrolink Platform™, Kongsberg Digital™, and WellLink Real Time™ technologies
- interfacing with the industry's widely used protocols of OPC DA, OPC UA, WITSML 1.3.1.1 and 1.4.1.1, Ethernet/IP, and Modbus® TCP/IP and RTU
- real-time transmission to ROCs and wherever customers specify, as well as data sharing at the wellsite using the web dashboard.

slb.com/Concert

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