Schlumberger

Schlumberger Subsea Surveillance

Field-proven, robust, and reliable fiber-optic-enabled sensors
and technologies for deepwater subsea developments

Schlumberger subsea surveillance

- Field-proven, reliable fiber-optic technologies providing integrated subsea systems from pore to process
- Integrity surveillance of subsea infrastructure for life-of-field integrity assurance
- Production surveillance in support of flow assurance management and production optimization
- Process surveillance of critical subsea equipment for optimized control and production

FROM PORE TO PROCESS

Maximizing production from deepwater fields means optimizing flow conditions from pore to process and minimizing production downtime. Increased surveillance is key to overcoming the challenges presented in deepwater subsea developments:

- low temperatures
- long tiebacks
- commingled production
- complex infrastructure

EXPANDED SERVICES

Schlumberger provides industry-leading downhole and surface measurement technologies. Now, our range of offerings has been expanded to include comprehensive subsea surveillance products and services. These offerings integrate seamlessly with Schlumberger measurement-to-information services and downhole monitoring and control technology to deliver optimized recovery with increased efficiency and reduced risk.

The Schlumberger subsea surveillance offering includes a range of field-proven fiber-optic sensor technologies from Schlumberger companies Sensa and Insensys Oil & Gas. The conventional Schlumberger surface and downhole pressure gauges, flowmeters, and sensors complement these technologies to give operators an unprecedented understanding of their production systems.

Field-proven, expandable, and upgradeable communications modules provide seamless integration between Schlumberger and multiple-vendor subsea and downhole monitoring and control devices.

The combination of reliable fiber-optic-enabled measurements, and communications and control technologies provides a real-time surveillance capability for integrity, production, and process assurance. Operators now have a greater scope for remote centralized surveillance and optimization than with conventional subsea monitoring and control systems.

INTEGRITY SURVEILLANCE

Infrastructure can be monitored using fiber-optic sensors to provide an integrity assurance capability that reduces technical risks in deepwater subsea developments. Sensors may utilize either discrete or distributed fiber-optic measurement principles, depending on the application. Distributed-measurement applications may include leak detection through temperature monitoring and impact surveillance through vibration monitoring.

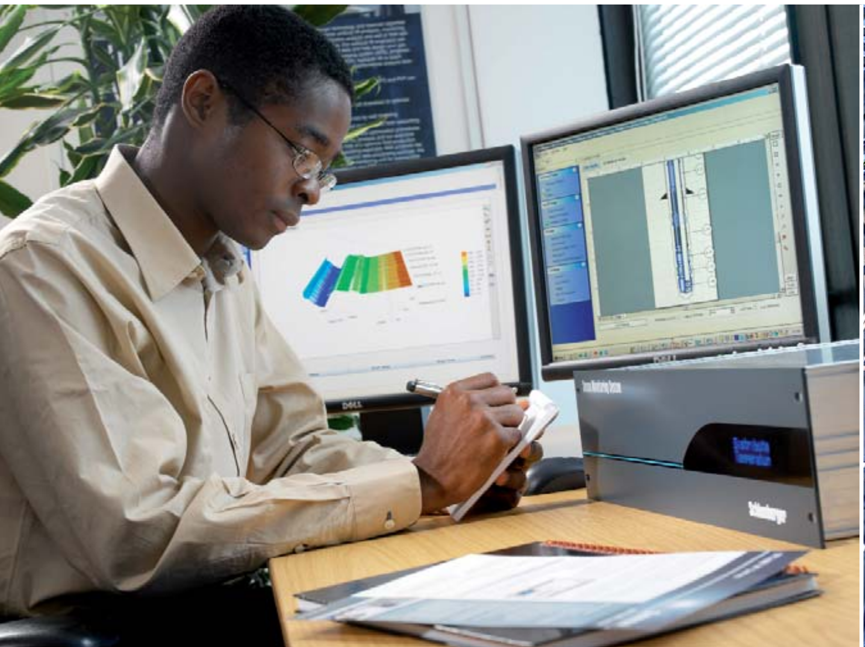
Discrete sensors can be used to monitor the integrity of specific parts of the subsea infrastructure. For example, vortex-induced vibrations in risers can be monitored using sensors that provide direct strain measurements. Pressure, shape, and buckle monitoring are also possible with the discrete fiber-optic sensor system.

PRODUCTION SURVEILLANCE

The effectiveness of flow-assurance systems can be improved by monitoring flowline and riser temperatures and pressures using both real-time distributed and discrete sensors. These measurements can also help operators to optimize the quantity of chemical inhibitors and reduce heating time and production downtime.

PROCESS SURVEILLANCE

Subsea equipment, for example, booster pumps, separators, and gas compressors, can be monitored and controlled using subsea communications modules. These modules provide additional local input/output functions that help to reliably integrate monitoring and control processes in deepwater subsea developments.

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