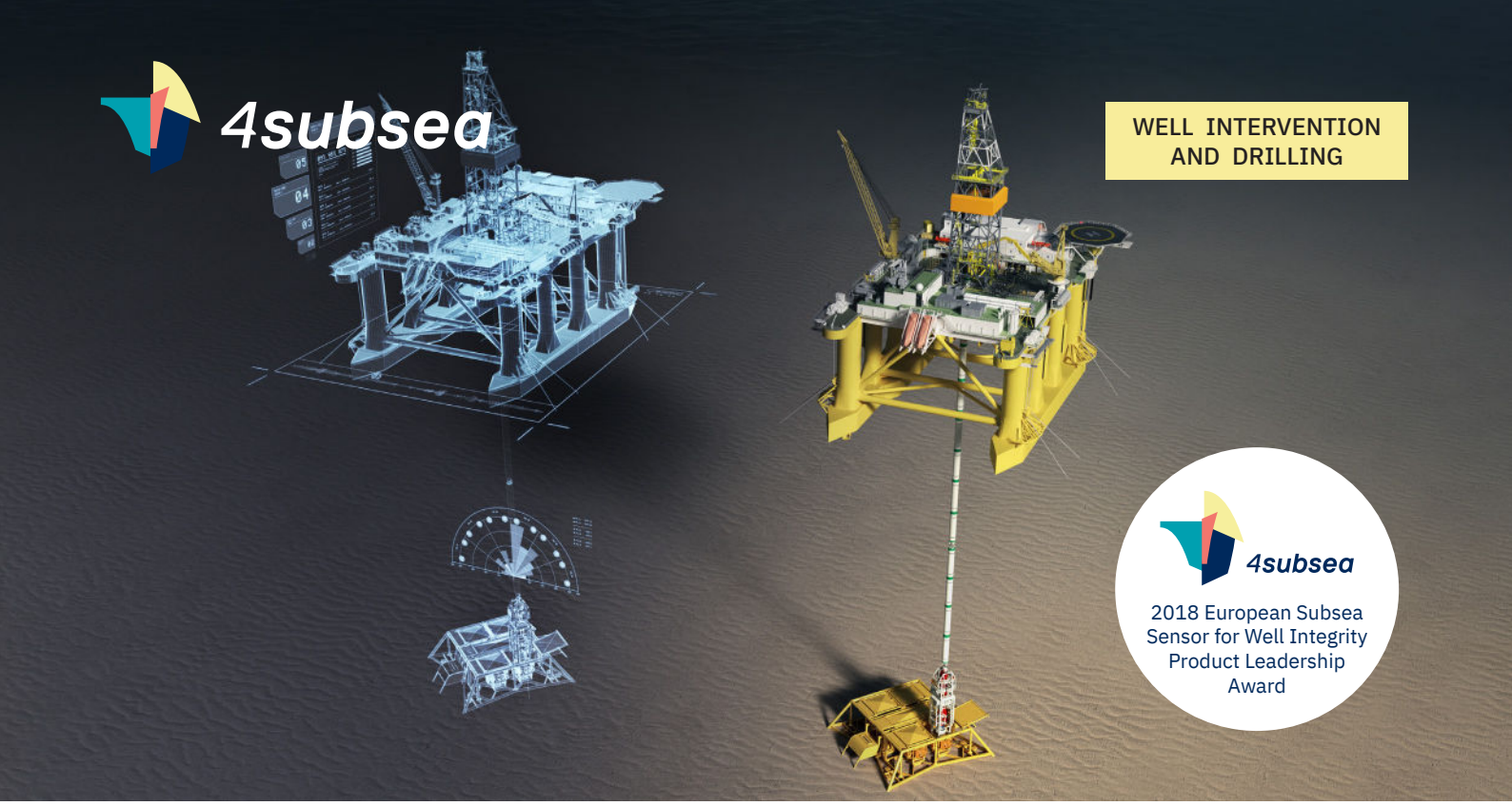


Subsea Wellhead Integrity Monitoring (SWIM™)

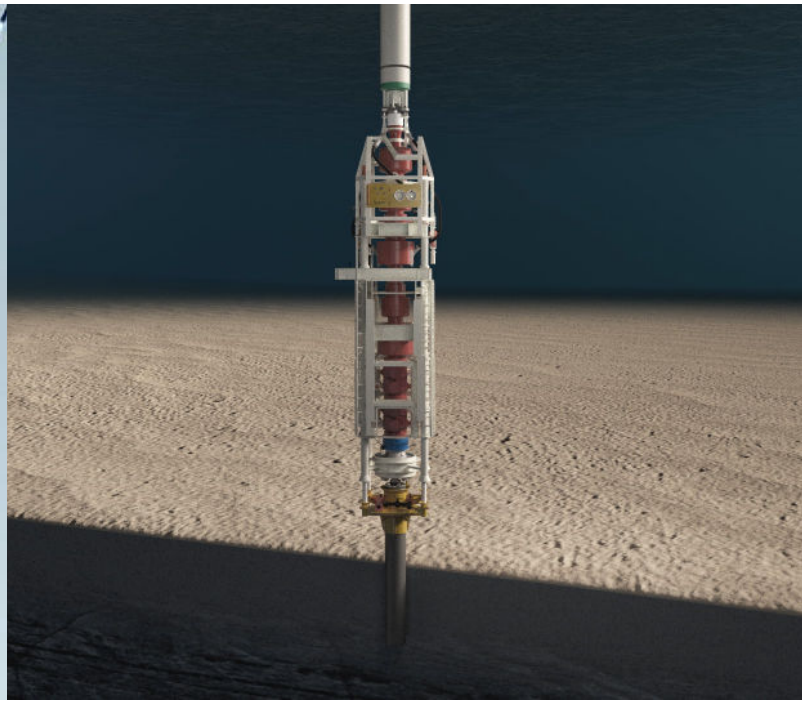
Digital twin for improved decision support and reduced cost

SWIM™ measures motion, strain, and other critical parameters on the wellhead during drilling operations. The system provides valuable data for rig contractors and operators through a digital service with predictive analysis and decision support. Results are displayed via a web application accessible to both rig crews and onshore teams, without requiring extra personnel on the rig.

4Subsea offers drilling and well intervention services to optimise drilling operations and extend the life of producing wells. We help operators perform offshore drilling, completion, and intervention operations safely and efficiently by combining domain expertise with data analytics and digital services.

KEY BENEFITS

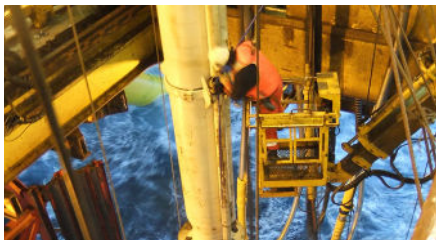
- → Monitors wellhead stability, load, fatigue, and structural integrity during drilling.
- → Reduces unnecessary downtime.
- → Provides decision support for safe disconnection in adverse weather.
- → Enables operations on wells with known wellhead integrity concerns.
- → Displays real-time data via a web application for rig crews and onshore teams.
- → Can be configured to provide live readings at any depth without the need for an ROV
- → Provides optimal rig positioning to minimize LFJ angle and monitors well-head and riser angles during ongoing operations
- → Applicable to exploration, greenfield, and brownfield wells.



PROVEN CONCEPT FOR WELLHEAD INTEGRITY MONITORING

SWIM™ is a proven, field-tested solution for monitoring the primary barrier during drilling. The system can also be expanded to monitor drilling risers and conductors. By combining domain expertise and advanced analytics, SWIM™ helps predict future wellhead conditions and detect issues such as structural failure, conductor instability, and loss of soil support.

With SWIM™, operators can reuse critical wells and extend the lifetime of wellheads by scheduling drilling operations based on well criticality and historically accumulated loads. The system incorporates expert analysis and operational data to assess expected load conditions from the next drilling operation, considering factors like weather forecast.



More product information ⟶

INTEGRATED OPERATIONS

- Live results via a web application for rig and onshore teams.
- Onshore wellhead specialists provide decision support as needed.
- Measured data are stored and can be re-used for model calibration
- Provides expert support for soil and foundation assessment, including prediction of potential loss of soil support.

INSTALLATION AND DATA TRANSFER

- Two high-quality motion sensors installed on the BOP Stack.
- Sensors are installed and retrieved by ROV or on deck.
- High-speed data transfer via wireless ROV modem or cable.
- Compressed and full data sets transferable during campaigns.
- Optional live monitoring with cable to surface.

SENSOR SPECIFICATIONS

- 3-axis accelerometer and 3-axis gyroscope.
- 10Hz logging frequency.
- Large capacity for data processing in sensor
- Battery supports over 9 months of continuous logging.
- Dimensions: 393 mm (height) x 114 mm (diameter), 9 kg.
- Rated for 3000 m water depth.
- Spare communication ports for external sensors and transmitters.

4Subsea is a leading provider of technology and services that help operators optimise energy production from subsea oil & gas fields and offshore wind farms. We combine domain expertise with data analytics and digital services to maximise lifetime of assets, reduce operational cost and optimise future projects through data-driven design.

The company was established in 2007 and clients include the major energy operators as well as the large suppliers of subsea equipment. 4Subsea is headquartered in Asker, Norway with additional offices in Bergen, Kristiansand, Stavanger, Rio de Janeiro, Kraków and Aberdeen. 4Subsea is a company in the Subsea 7 Group.

4Subsea - Share ideas, move forward

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