

Subsea Wellhead Integrity Monitoring

For improved decision support and cost reduction



Subsea Wellhead Integrity Monitoring (SWIM™) measures the accumulated load and other critical parameters on the wellhead during drilling operations, providing KPIs and prediction analysis on a digital platform. No extra personell are required on the rig.

4Subsea offers drilling and well intervention services to extend the life of producing wells. We help operators perform offshore drilling, completion, and intervention operations safely and efficiently. The Well Intervention and Drilling range contains **Subsea Wellhead Integrity Monitoring (SWIM™)**, **WellTrack™** and **Conductor Analysis**, in addition to advanced **Engineering Services**.

KEY BENEFITS

- Monitors stability, load, fatigue, and structural integrity of the wellhead system
- Provides decision support to drilling teams during drilling operations, telling them when to disconnect when operating in bad weather
- Avoids unnecessary downtime due to moving BOP/conductors/wellheads
- Helps enable operations on wells with wellhead integrity concerns
- Presents status and results on a web application for rig crew and onshore organisation
- Can be configured to provide live readings at any depth without the need for an ROV
- Ensures functionality of wellhead after drilling operation is completed
- Can be used for exploration, greenfield, and brownfield wells



Proven Concept for Wellhead Integrity Monitoring

SWIM™ is a well documented and tested solution for monitoring the main barrier while drilling. We have performed wellhead monitoring services on more than 70 drilling and completion campaigns for the main oil and gas operators. The same system can be extended to provide live monitoring of drilling risers and conductors. SWIM™ uses machine learning to predict into the future and artificial intelligence to detect and manage shallow gas/shallow water, structural failures in the wellhead, and conductor instability issues.

Click [here](#) to watch SWIM™ demonstration video.

Award-winning Solution for Oil and Gas

4Subsea is awarded the 2018 Product Leadership Award from analyst company Frost & Sullivan for SWIM™.

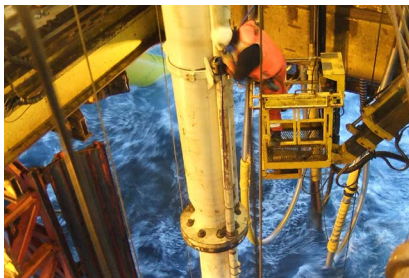
Integrated Operations

- Results are presented live on a web application accessible to the rig crew and the land organisation
- Onshore wellhead specialists can support decision making during the drilling campaign as requested
- Measured data are stored and can be re-used for model calibration
- The system can be attached to the rig pod umbilical



Installation and Data Transfer

- 3 high quality motion sensors installed on BOP
- Sensors are installed and retrieved by ROV or while BOP is on deck
- High speed data transfer to wireless ROV modem
- Compressed and full data series can be transferred during monitoring campaign
- Acoustic data transfer and alarms as required
- Live monitoring if required



Sensor Specifications

- 3-axis accelerometer and 3-axis rotational rates
- Logging frequency 10Hz
- Large capacity for data processing in sensor
- Battery data storage capacity for more than 9 months of continuous logging
- Height: 393mm - Diameter: 114mm - Weight: 9kg
- Water depth rating: 3000m
- Up to 4 communication ports for connection to other sensors or transmitters



4Subsea is a leading provider of technology and services that help operators maintain production from subsea oil and gas fields and offshore wind farms. By combining expert engineering competence, practical experience and a digital service, we ensure the integrity of assets all the way from reservoir to deck.

We deliver solutions on a unique digital platform, aiming to be in the forefront of digitising oil, gas and offshore wind operations worldwide. The company was established in 2007, and clients include all the major oil and gas operators as well as the large suppliers of subsea equipment.

Click [here](#) to view a short video of our solutions and offerings.

4Subsea - Share ideas, move forward

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