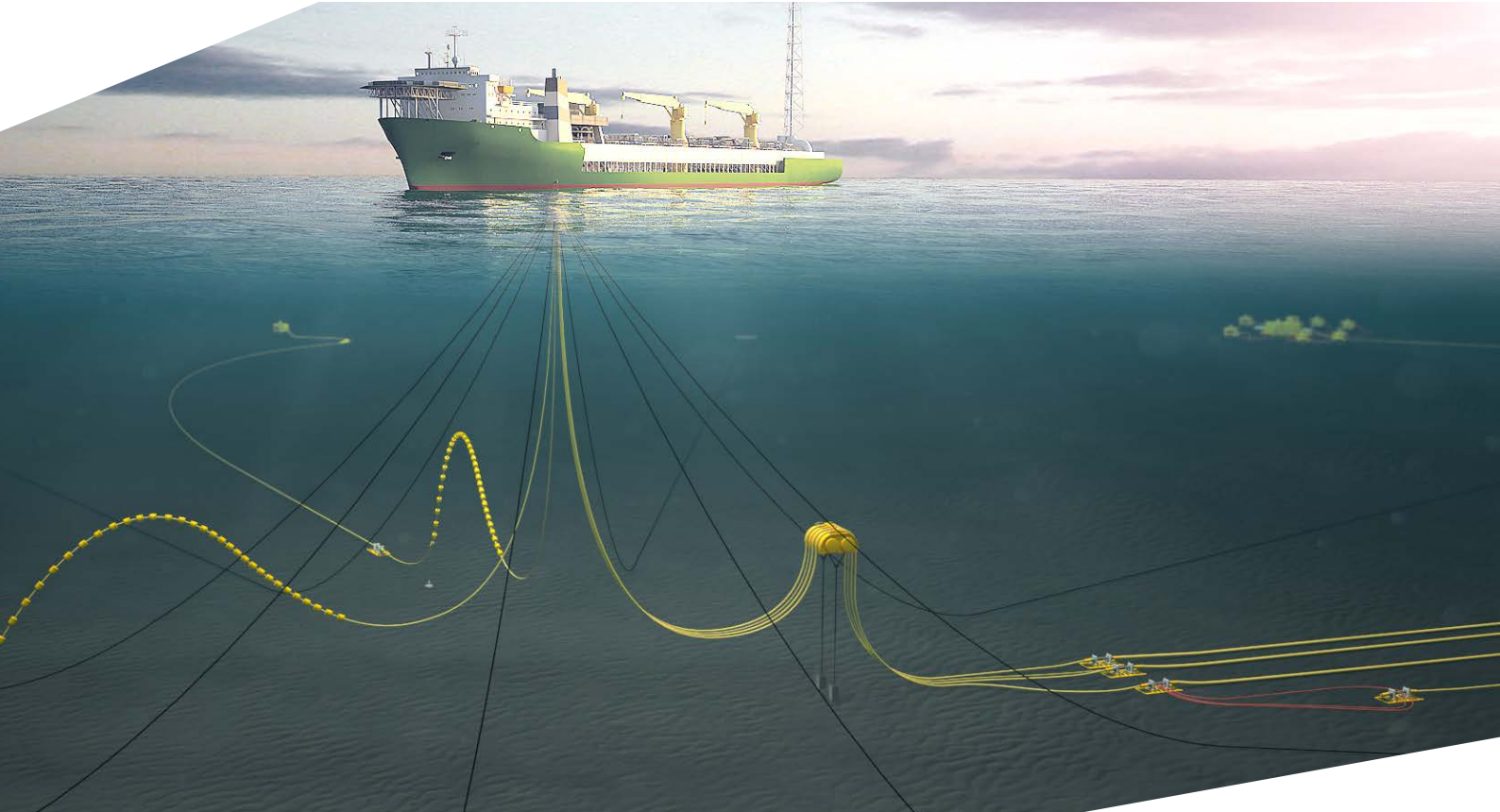


# Mooring Line Monitoring

*Reduce costs and simplify operations*

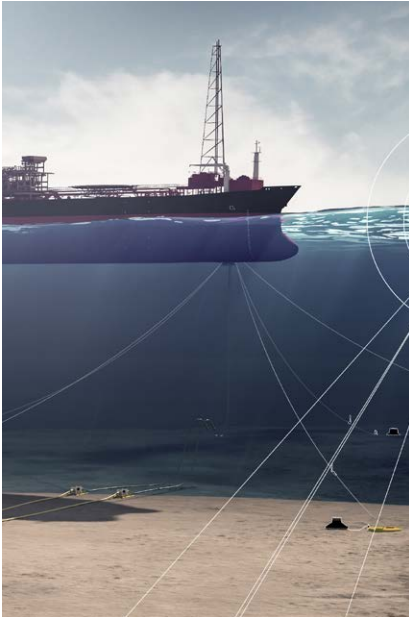


*Mooring Line Monitoring is a “set and forget” system that helps operators reduce the need for costly inspections. Neither maintenance nor personnel is required, as the autonomous sensor system immediately transfers data through a satellite alarm if a mooring line failure is detected.*

4Subsea helps operators reduce operational cost and maximise life of assets using autonomous sensors in combination with data analytics and specialist engineering competence. Products in the Smart Monitoring Sensors (SMS) range are **SMS Gyro™**, **SMS Vibration™**, **SMS Strain™**, **SMS Magic Hand™**, **SMS Gateway™**, **SMS Pressure™**, and **SMS Satellite™**. Technological applications include monitoring of wellhead integrity, risers, mooring lines, subsea spools and manifolds, as well as monitoring of pipelines and subsea structures.

## KEY BENEFITS

- Monitors integrity of mooring lines at all times
- Provides immediate response on mooring line failure
- Requires no extra personnel during installation
- Leaves no equipment on the vessel
- Has retrofit capability, meaning no interface with existing control system is required
- Needs fewer inspections, as the system allows to extend inspection intervals based on knowledge of system state at all times
- Provides 25 years of service life and 5 years of battery life

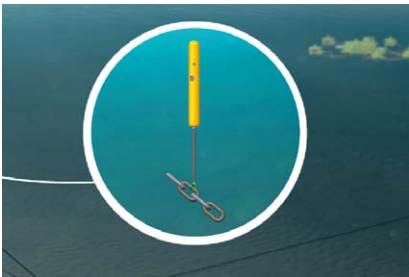


## Reliable Technology with 4Subsea

The 4Subsea mooring line monitoring system was developed to detect failures in mooring lines immediately and without the need for costly inspections. The system consists of a sensor that detects abnormal effects and an autonomous floating satellite communication modem. The sensor can release the modem to transmit information to all required units once a predefined condition is met. 4Subsea has provided monitoring services on more than 50 drilling and completion campaigns. The same system with additional sensors is also being used for integrity monitoring of wellheads, drilling risers, and conductors.

### Features

- Short installation time and no interfaces (<24 hours for 12 lines)
- Satellite alarm if line breaks
- High resolution data series continuously stored in sensors
- Optional acoustic communication
- 25 years of service life
- “Set and forget” system with 5 years of battery life
- No interface to FPSO



### Installation and Data Transfer

- Sensor can be installed and retrieved by ROV
- Low power motion sensor installed on mooring line
- Sensor equipped with satellite pop-up tag
- Failure of mooring line is detected and pop up tag released
- High speed data transfer to wireless ROV modem if required
- Compressed and full data series can be transferred during monitoring



### Sensor Specification

- 3-axis accelerometer
- Nominal logging frequency 10 Hz
- Large capacity for data processing in sensor
- Internal storage capacity of 5 years' continuous logging
- Water depth rating: 3000m
- 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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