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Structural Digital Twin for Integrity Monitoring

Our innovative digital twin technology allows us to create cloud-based digital replicas of offshore structures. Calibrated with physics-based models and trained with AI engineering algorithms, the structural digital twin eliminates the need for sensors on the physical structure subsea, but provides essential integrity monitoring data around the clock on all lines in the field.

Asset insight for a fraction of the cost

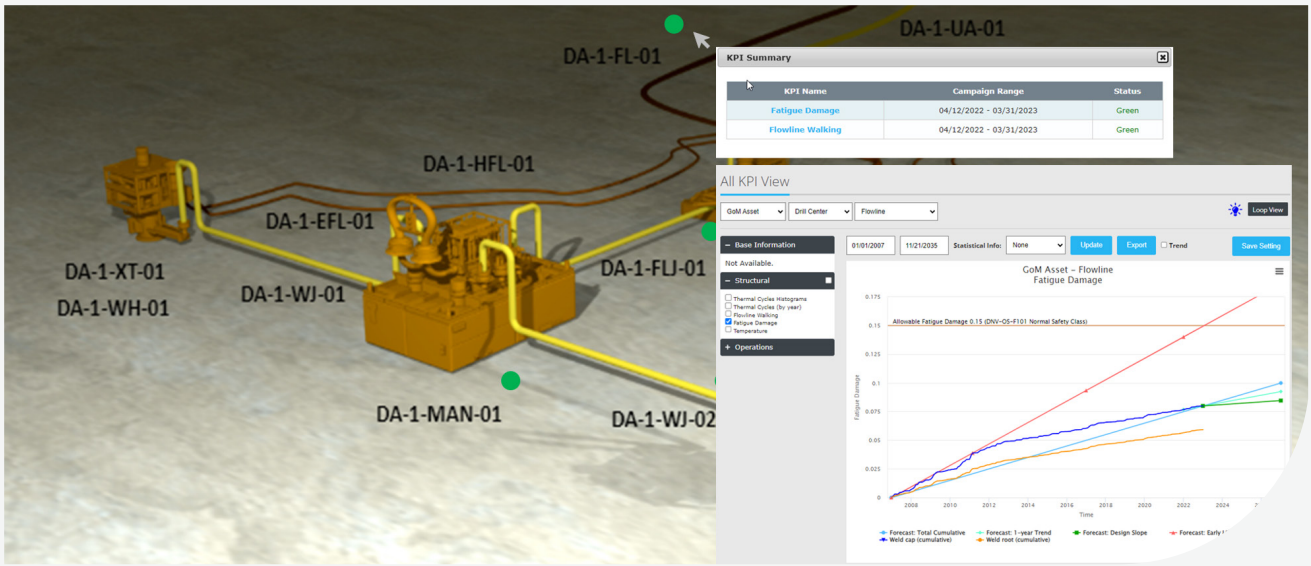
A structural digital twin significantly reduces the costs associated with designing, installing and operating a physical monitoring system yet provides comprehensive asset performance data to enable independent design validation, performance verification and operations optimisation.

Enables early intervention

The digital twin significantly improves early anomaly detection, enhancing decision-making and intervention. The technology not only extends the lifespan of an asset but also ensures continuous surveillance, reducing the operating costs associated with monitoring, inspection, maintenance, and repair.

Data integrated into iCUE IM platform

Our digital twins are seamlessly integrated into the iCUE software platform for integrity management provided by Clarus, our IM division. The intuitive platform provides independent access to and visualisation of data, simplified reporting, automated KPI tools and the ability to gain engineering insights.



HPHT flowline fatigue tracker

Our HPHT flowline fatigue tracker is a state-of-the-art solution for managing in-service stress and fatigue.

- Accurately calculates in-service stress and fatigue at buckle sites.
- Tracks in-service flowline walking, providing real-time updates on the movement and condition of the flowline.
- Uses measured temperature, pressure and flow rate data to provide accurate and reliable tracking.

Subsea jumper stress checker

Our subsea jumper stress checker is a cutting-edge tool designed for efficient and accurate stress analysis.

- Confirms the acceptance of in-service jumper stress where hub movements are beyond design limits.
- Ensures that subsea jumpers are always operating within safe parameters.
- Delivers results within minutes following the inspection of hub movements, enabling rapid decision-making.
- Eliminates the need for more expensive FEA work.

Virtual riser strain sensors

Our virtual strain sensors provide comprehensive structural monitoring of offshore risers.

- Track fatigue damage and forecast life and extreme stress response, providing valuable insights for maintenance and repair.
- Track global loads and local stresses in real-time.
- Cost effective solution to efficiently monitor every riser over the life of the field.
- Use real time input of measured vessel motions, position, and environmental loads.
- Updated with inspection data, accounting for factors such as corrosion wall loss and marine growth.

Working with our team

We are a team of highly skilled, multi-disciplinary engineers with a track record of solving complex offshore system challenges. We are independent with the knowledge, drive and creativity to deliver commercially feasible solutions.

Contact us to learn more or to speak to one of our experts.

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CLARUS

By Clarus Subsea Integrity, a division of 2H