

Safeguarding Offshore Wind Assets: Smarter Integrity Management

As offshore wind farms expand globally, maintaining the health of turbines, offshore substations and cables is essential. Long-term asset performance can be improved by adopting **data-driven integrity management**.

Why Asset Integrity Matters

Offshore infrastructure faces extreme environmental conditions, challenging seabed terrain and high access costs. Proactive integrity strategies reduce:

- **Downtime** from avoidable failures.
- **Risk** of catastrophic cable or structural faults.
- **Costs** from over-inspection or late intervention.

Smarter Inspections: Tools & Techniques

Core Inspection Types

- **GVI (Visual)**: Detect structural damage or deformation via ROVs and sonar.
- **CP (Cathodic Protection)**: Verify corrosion control.
- **Scour Surveys**: Map seabed shifts around foundations and along cable routes.

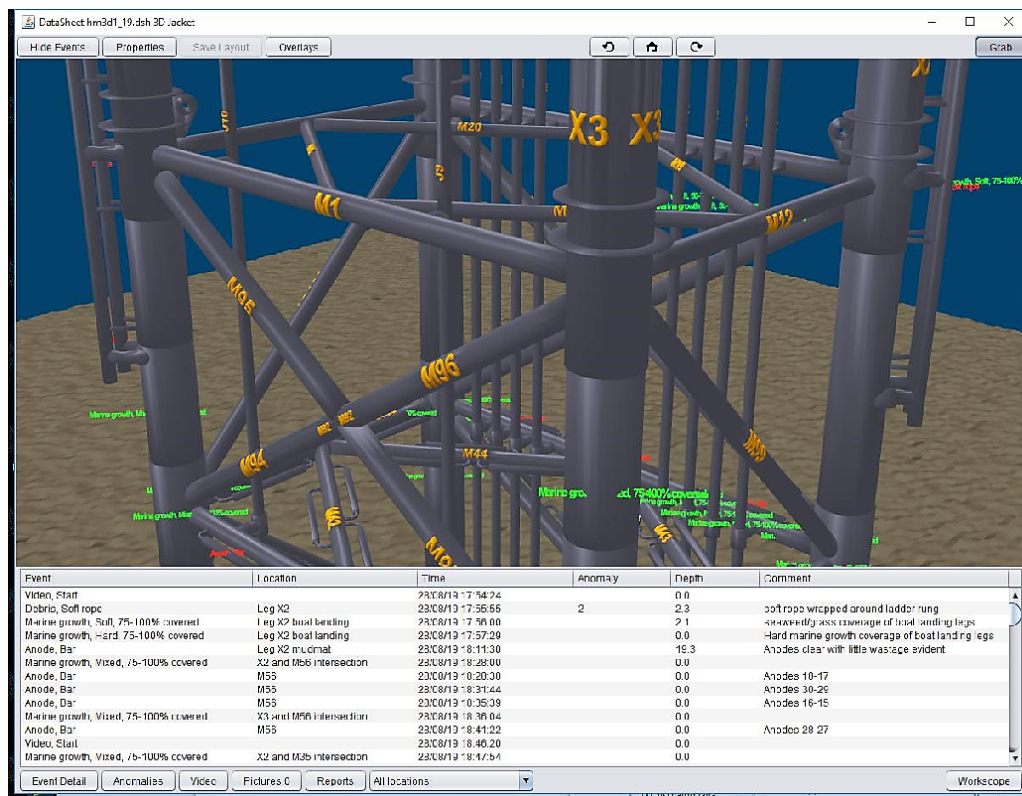
The Digital Advantage: Dataverse Software

Dataverse consolidates asset data into a single platform:

- 3D models of substations, turbines and seabed.
- Tagged anomalies with risk levels identified.
- Condition change tracking over years.

Result? Fewer surprises, faster decision-making, smarter maintenance.





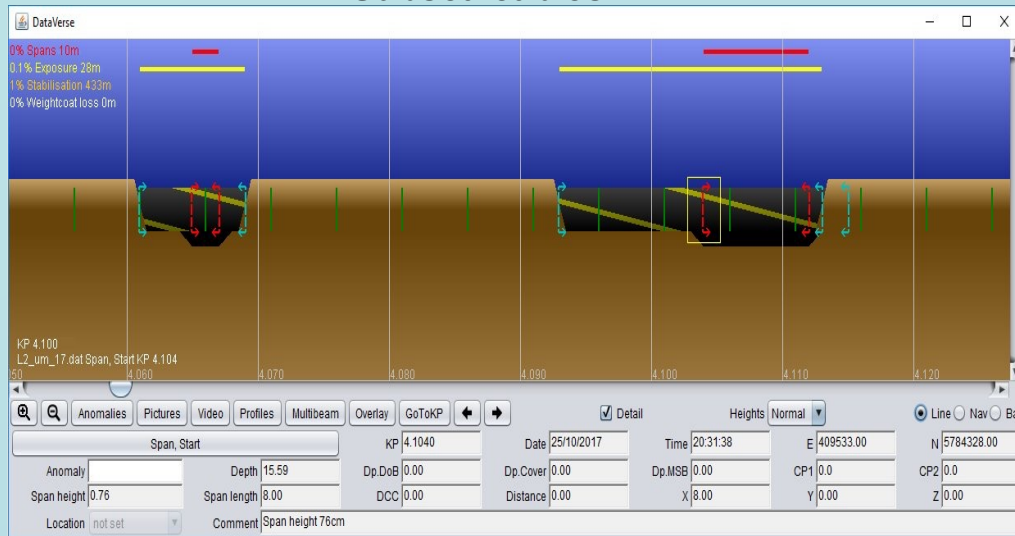
Subsea Cable Integrity: The Hidden Risk

Subsea cables are the hidden risk, mostly unseen but can be vulnerable due to poor burial or seabed movement, which can lead to exposure, damage and lost transmission.

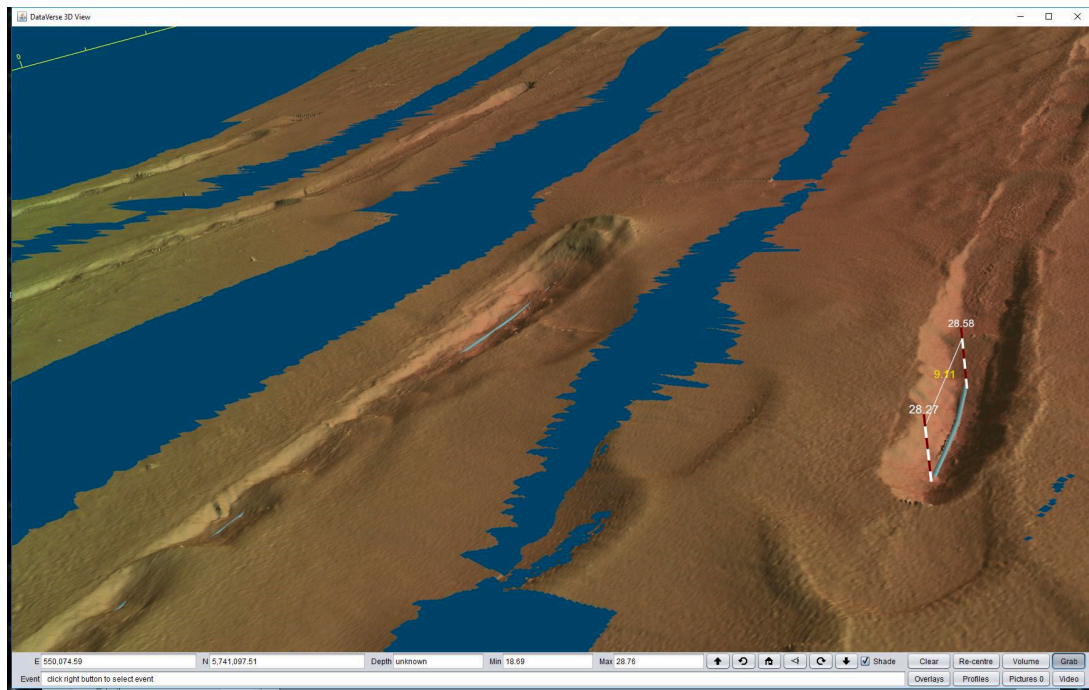
Key Activities:

- Depth of Burial (DOB) surveys
- Bathymetry and route condition surveillance
- Visualisations from straight-line diagrams to 3D seabed maps
- DTS/DAS surveillance

Subsea cables



Subsea cables can be displayed as a SLD. Events can be seen graphically and in text.



DataVerse is able to load digital terrain models and can pan, tilt and zoom to show assets in their local 3D environment.



Dataverse can massively compress DTS (Distributed Temperature Sensing) data allowing easier viewing and assessment alongside route events.

Impactful O&M: From Data to Action

Integrated platforms like Dataverse let you:

- Compare inspection campaigns over time
- Pinpoint high-risk zones visually
- Share findings instantly with OEMs, surveyors, and engineers

Outcome: Safer assets, optimized inspections, and extended infrastructure life.

Final Thought

Offshore renewables promise clean energy — but only if the physical assets stay healthy. By pairing **standards, smart inspections, and digital tools**, operators can stay ahead of degradation, reduce O&M costs, and power a more reliable future.

To find out more about Dataverse or to arrange a demonstration please email:
info@dataverse-aim.com