



OIS Demo Day

15 July

Live Demonstrations of
Subsea Monitoring Technologies



Lattice FMS

Fatigue Monitoring System



Lattice E-Field

E-field Gradient Sensor



Lattice WMS

Walking Monitoring System

Three live demonstrations showing how compact subsea sensors reveal hidden asset behaviour and turn it into actionable integrity insight.



Reduce Risk



Lower Cost



Extend Asset Life



Protect the Environment



Lattice FMS

Fatigue Monitoring System



What it is for

Lattice FMS monitors movement and fatigue-related behaviour in subsea cables, pipes and structures.



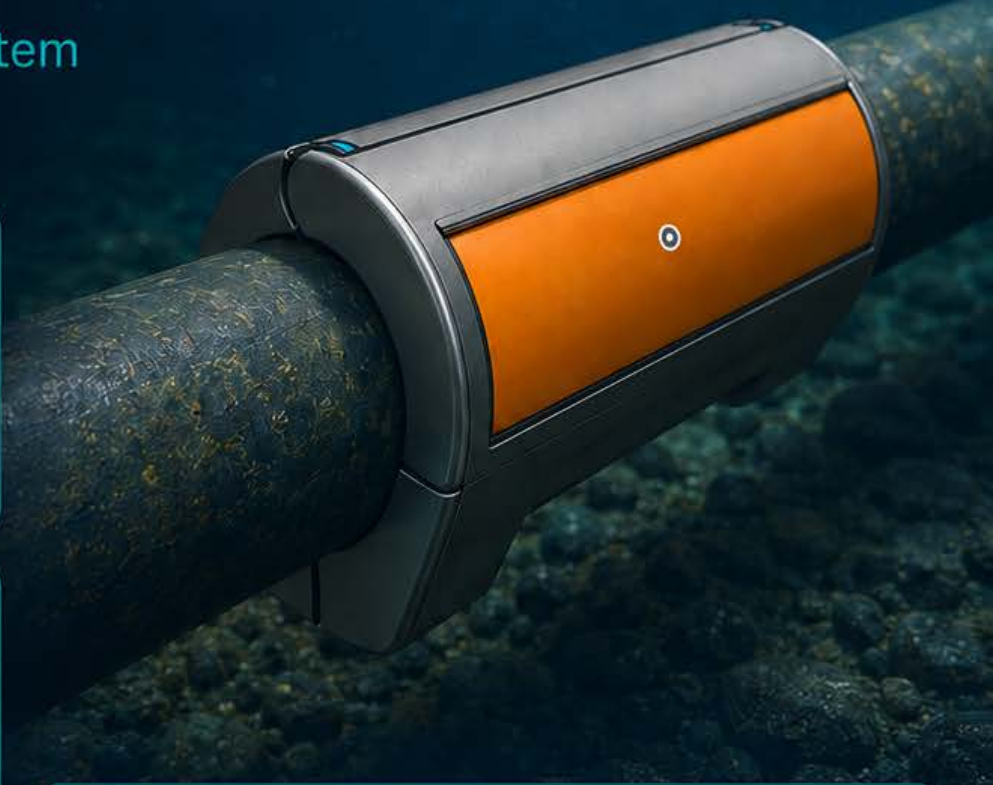
Real-world application

Installed subsea, Lattice FMS builds a motion histogram that helps distinguish lower-frequency wave action from higher-frequency vortex-induced vibration, VIV.

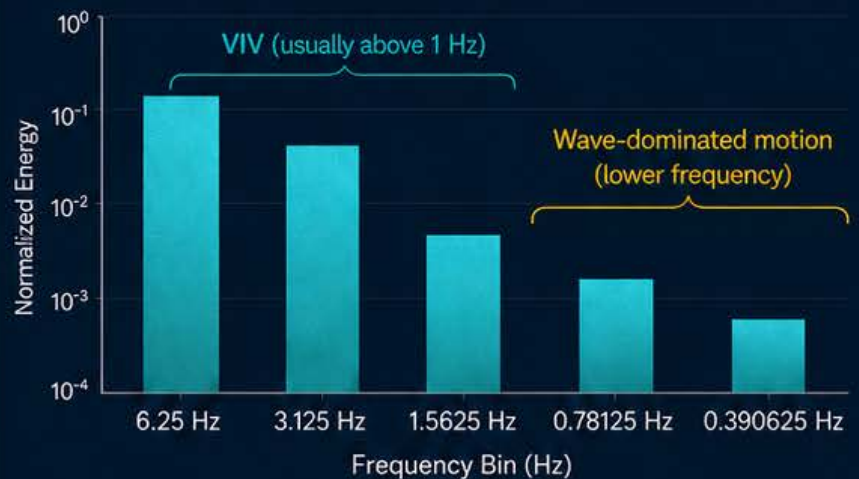


Why it matters

Understanding whether movement is wave-driven or VIV-driven helps target inspection, assess fatigue exposure and support condition-based integrity decisions.



Motion Histogram (Frequency Bins)



Demo view focuses on the upper 5 of 7 bins.



Lattice FMS turns hidden subsea motion into actionable fatigue insight.





Lattice FMS Demo

Fatigue Monitoring System



What the demo shows

The Lattice FMS enclosure is lashed to a fully submerged yellow pipe. The pipe is excited from topside while the sensor records acceleration and stores motion energy by frequency bin.



How to read the result

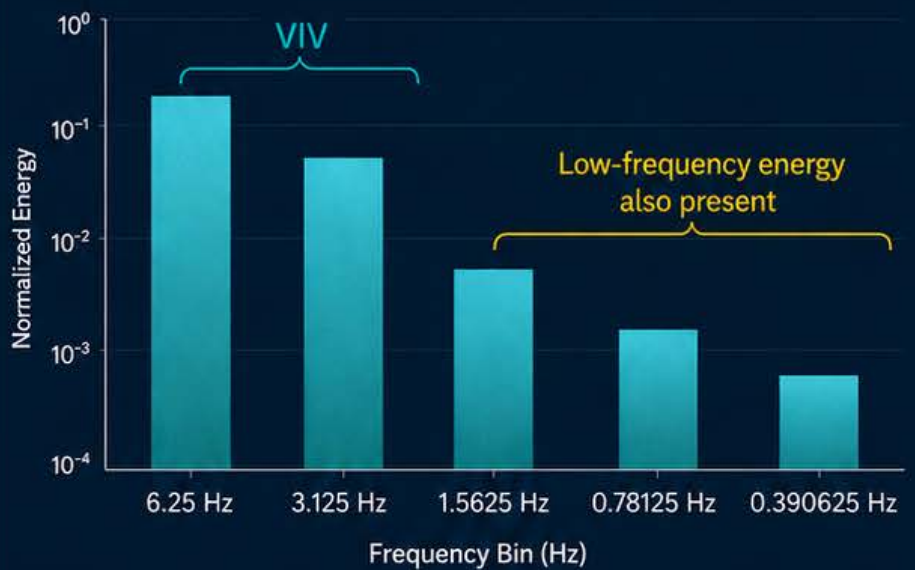
The demo focuses on movement above 2 Hz, so energy should rise in the upper bins. Some lower-frequency energy is expected because hand excitation is not perfectly controlled.



Real-world link

The same histogram helps distinguish lower-frequency wave-driven movement from higher-frequency VIV, supporting fatigue assessment and inspection planning.

Motion Histogram by Accelerometer Frequency Bin



The Lattice FMS demo shows the full chain from motion capture to remote data recovery.





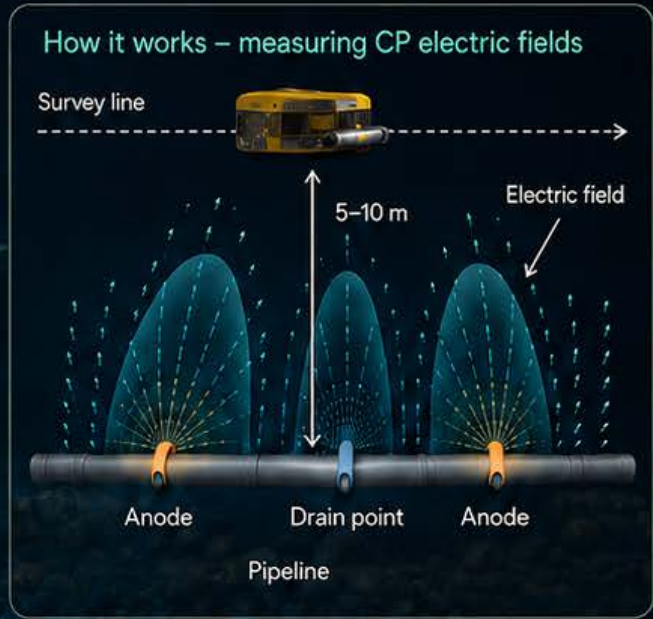
Lattice E-Field

E-field Gradient Sensor



What it is for

Lattice E-Field is a second-generation electric-field sensor designed for ROV deployment. It detects very small electric-field changes in seawater.



Reference electrode

ROV-deployable enclosure

Reference electrode



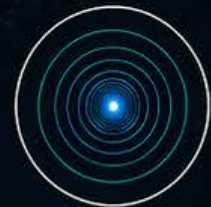
Real-world application

Used around subsea structures to support integrity assessment, corrosion-protection evaluation and investigation of subtle electrical signatures.



Why sensitivity matters

High sensitivity allows features to be detected further away from a structure, improving survey coverage, efficiency and situational awareness.



KEY MESSAGE

Lattice E-Field makes very small subsea electric-field changes visible.

Lattice E-Field



Ocean Information Services
Autonomy for the Environment

Live Demo

E-field Gradient Sensor



What the demo shows

Lattice E-Field sits in a narrow 1 m water-filled gutter. A small DC field is applied along the gutter length. Ripples and sloshing change the conductive path, and Lattice E-Field detects the change live.



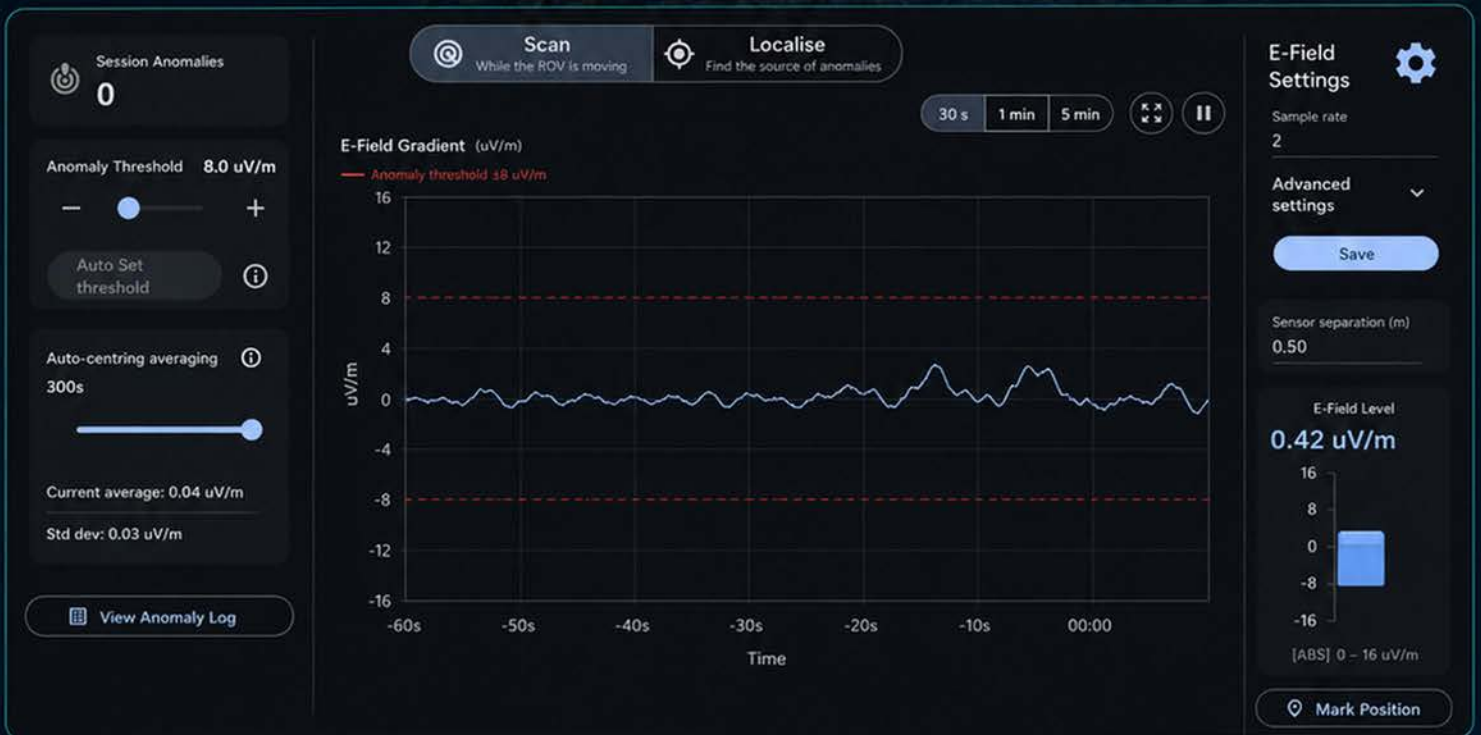
How to read the result

The UI trace shows small electric-field changes as they happen. The point is sensitivity: the sensor resolves subtle changes in a conductive water environment.



Real-world link

In the field, sensitivity allows features to be detected further away from subsea structures, improving survey coverage and anomaly localisation.



KEY MESSAGE

Lattice E-Field makes small electric-field changes visible in real time.



Lattice WMS

Walking Monitoring System

Fixed reference end

Sensor body

Moving carriage end



Based on deployed
Lattice WMS in Angola



What it is for

Lattice WMS measures relative pipe movement over time, providing drift-free visibility of pipeline walking.



Real-world application

Mounted parallel to the pipe between a fixed FLET reference and the moving carriage, the system uses a magnetic target and internal reed switches to determine position.



Why it matters

Pipe walking can build into a major integrity risk, threatening connections, supports and tie-ins. If unmanaged, failures can lead to major ecological damage and costly intervention.



Lattice WMS converts hidden pipe movement into clear, actionable integrity data.



Reduce Risk



Lower Cost



Extend Asset Life



Protect the Environment



Lattice WMS Demo

Walking Monitoring System



What the demo shows

The straight Lattice WMS tube is supported on trestles. The red protected magnetic collar is moved by hand along the middle sensitive section, triggering internal reed-switch sections.



How to read the result

The regression test compresses five simulated days into around two minutes. The graph shows position, daily maximum and daily minimum movement.



Real-world link

In service, Lattice WMS tracks pipelinewalking between a fixed FLET reference and the moving pipe carriage, revealing trends before they become integrity risks.

Pipe Movement Over 5 Simulated Days



5 simulated days in ~2 minutes



Lattice WMS demo turns pipe movement into clear trend data.