Mission - The Digital Age

Delivering increased safety and visibility of assets, processes and infrastructure whilst reducing cost/risk and increasing efficiency

Providing innovative real-time monitoring of subsea and pipeline infrastructure utilising IoT and data analytics with intuitive dashboard visualisations
Pipeline Monitoring Innovation

Cutting Edge Computing and IoT Solutions for Pipeline Monitoring

• Subsea of today - successes progress and challenges
• The future - the possibility & vision
• The journey - how big are the steps
• The importance of DATA
• Opportunities - Operational and Safety Advantages
• Challenges
• Conclusion - Embrace Technology
Subsea Challenges Today

- Aging existing infrastructure, un-connected, data poor
- Manpower intensive with associated HSE, risk & cost impacts
- Large manned vessels, divers, slow ROVs
- Slow off-line, data assessment
- Retrospective, expensive data gathering
- Operationally responsive, not pro-active
Subsea Vision - A Digital Future

- ‘Intelligent‘ Un-manned offshore facilities and production systems
- ‘Intelligent’ Interactive systems - wells, operations, pipelines, inspection, data rich
- Cost effective retro-fit Intelligence to enhance facilities of today
- Real-time visualisation of production - pipelines & subsea systems/ multi-phase
- Reservoir /subsea production - fully unmanned and automated systems
- Fully autonomous Underwater Vehicles and robots
- Autonomous FPSOs and Floating LPG
- Digital twins for underwater systems
- Advanced visualisation for topside and subsea systems
Subsea Pipeline Monitoring

Satellites

Buoy + Comms

External Data Multiples
Water Depth
Chemical Injection Rate
SCADA

DASHBOARD
CLOUD PLATFORM

Diagnostic & Predictive Analysis

LIMPET
Sub Sea Sensor

LIMPET
Sub Sea Sensor

Data Feeds

Multiple Device Delivery via Browser
The Journey

- Design for the future - New Projects, connectivity and deployment of sensors
- Build digital twins of existing developments - ‘old’ informs ‘new’
- Field trial new sensor technologies / inspection technologies
- Deployment of sensors on existing infrastructure
- Data management, data analytics, Cloud systems, Visualisation
- Establish key contractual relationships, nimble, agile, first thinkers
- Develop in-house skill base
Methods/ Opportunities

• Integrate data silos
• Validate data integrity
• Acquire IIoT data
• Employ advanced analytics
• Real-time visualisations
• Embed predictive analytics
Be Holistic - An end to end Solution
Challenges

- Achieving that Holistic Vision and autonomy
- Safety Efficiency Reliability Security and Longevity are key
- Overcoming internal reluctance and IT expert systems/ firewalls
- Access to skills and expertise - a new age with new skills needed
- Data analysis, storage and security
- Interfacing with third parties/ other operators/ system integration.
- Emergency response - this is where you often need people.
- What about the old infrastructure - an opportunity to trial ‘New’
Real time access and visibility of the right datasets presented in an intuitive way can bring greater levels of intelligence to subsea and pipeline Operations and to decision making.

Provides:

- Enhanced visibility, and more efficient operations
- Greater efficiencies & enhanced safety
- Data analytics and machine learning can be used to recognise patterns, give early warning and enable pro-active interventions
- Efficient, less man intensive, cost effective and safer operations
- Visibility of the whole = Holistic Operations

The technology is here - embrace it!
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