Subsea Asset Integrity Management

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“Maximising existing technology ……”

“Through an innovation in service delivery”
Current Position

- Reactive approach
- Inefficiencies throughout the industry
- Lack of integration
- Lack of collaboration
- Aging infrastructure
Increased sensitivity to oil price movements

Impact

Resource Challenge

Reduction in new developments

Increasing and uncertain costs
A change is needed …….

“Sea Change” is needed ….. other industries have done this

Key points highlighted in: HSE KP3 and KP4 initiatives Wood report

Supply chain to take a greater ownership

Operators to support this approach
“No lay by in the sky” ........

“No service base on the sea bed” ........
Utilising existing installed technology

Integration throughout the supply chain

How to achieve this …..

Collaborative

Industry guidance / standard

Subsea integrity management service for subsea equipment
A new approach to subsea support services

Subsea integrity management service application

- Focused on Subsea Production Equipment
- Utilising existing installed technology
- Condition based approach
- Collaborative

Predictable subsea operations

Integrated supply chain

Proactive and predictive approach …
Even when reactive still able to be proactive …
Global Data
- Multiple Operator
- Multiple Location
- Onshore / Offshore Data / Activity
- Supply Chain Data / Information

Learning Machine
- Large processing capability
- Learning capability

Execution Model
- Model and Standard
- Integrated with CMMS
- Integrated with Supply Chain
- Integrated with Service Base
- Expert Analysis

Condition Based Solutions
- Proactive and Predictive Approach
- Condition / Behaviour
- Operator Offshore Activity
- Supply Chain
- Service Base

Feedback

Monthly Active Service
Complex Interconnected System Approach

- Anomaly Analysis
- Obsolescence
  - Preparation of spares
- Root Cause Analysis
- Documentation
  - Inspection, repair, test setup
- Scheme of Restoration
- Stocking, preservation and maintenance
  - Focused inspection and repair
- Prognosis and Diagnosis
- Procurement / Vendors
  - Onshore resource and capacity plan
- Engineering Support Scope
- Offshore Engineering Scope
  - Offshore activity planning

Subsea Integrity Management Service
Recent Case Study – Fault finding vessel campaign

Past:

- Issue: Subsea Trip
- Source: Operator
- Action 1: Prepare for full fault finding including replacement equipment (including modules), full fault finding vessel campaign to be planned and IRM engineering

Using the service:

- Issue: Subsea Trip (Electrical)
- Source: Active Integrity Execution Model / Operator
- Action 1: Analysis of multiple data sources, map all current condition, eliminated working components (topside / subsea)
- Action 2: Focused equipment / offshore faulting preparation (IRM engineering)
Equipment / service provider benefits

- Sustainable business model
- Innovative commercial approaches
- Significant efficiency opportunities
- Improved in service turnaround times
- Continuous improvement
- R&D – for example Subsea Factory
Operator benefits

Manageable aging and through life of subsea assets

- Utilise existing installed technology
- Integrated and collaborative approach
- Enhanced subsea asset stewardship
- Improved efficiency
- Predictable subsea operations
- Cost management and certainty

Operator benefits
Summary

Challenges exist

Inefficiencies in supply chain

A “Sea Change” required

New approach to Subsea Integrity Management

Greater ownership from service / equipment providers

Utilising existing installed technology

Provides efficiency and creates value

Significant range of benefits for Supply chain, Operators and Industry
Questions ...... ?

Thank you,

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