### Subsea Asset Management Fundamentals

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| Knowledge of the operational threats to subsea equipment:  
- Environmental, Corrosion and External threats  
- Damage Mechanisms  
- Condition Assessments | Can identify typical issues that arise during long term operation of subsea equipment and define methods to limit the onset of damage.  
Capable of identifying typical threats and damage mechanisms that are acting on a system of subsea facilities. | Has interfaced with operations teams managing operating subsea equipment. |
| Knowledge of corrosion, inspection, monitoring and repair techniques including:  
- Non-destructive testing, inspection and monitoring methods  
- Corrosion assessment and measurement methods  
- Relative merits of various inspection and monitoring techniques | Capable of interpreting fitness for service assessments on subsea equipment.  
The subsea engineer understands the relative advantages and disadvantages of different intervention methods | Applies the principles of ongoing fitness for purpose assessments of installed equipment in an operational environment. |
# Subsea Engineering Competency Profile

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| Knowledge of risk-based techniques including:  
  - Quantitative and qualitative risk assessment  
  - Fitness for purpose assessments  
  - Engineering assessment  
  - Technical risk assessment  
  - Consequence modelling  
  - Root cause analysis | Capable of determining the risk level of subsea equipment and the priorities for inspection utilising risk-based inspection techniques.  
Capable of managing the root cause analysis process.  
Understands the principles of ongoing fitness for purpose assessments of installed equipment  
Understands the principles of risk-based strategies and methods to support operations with inspection, maintenance and repair activities | Applies the principles of risk-based strategies and methods to support operations with inspection, maintenance and repair activities. |
| Knowledge of subsea intervention operations:  
  - Vessel operations  
  - ROV and diving operations  
  - Equipment, intervention tooling and the operation of same  
  - Pigging operations  
  - Decommissioning | Capable of the contributing to inspection, monitoring, repair, intervention and/or decommissioning engineering work scopes. | Has applied different intervention methods and understands their relative advantages and disadvantages. |
| Knowledge of Asset Management impact on design including:  
  - life cycle costing / CAPEX and OPEX balance  
  - incorporation of lessons learned from operations into the design phase | Capable of contributing to a life cycle cost analysis of subsea equipment. | Has participated in the development of CAPEX and OPEX models to support asset management strategies. |