



# Subsea Engineering Competency Profile

<b>SUBSEA ASSET MANAGEMENT FUNDAMENTALS</b>	<b>SAM-001</b>
<p>This competency demonstrates a subsea engineer has a broad understanding of:</p> <ul style="list-style-type: none"> <li>• The issues arising from the degradation of subsea facilities due to the application of damage mechanisms from the environment, the process streams and corrosion</li> <li>• The methods of monitoring and inspecting equipment</li> <li>• The methods for determination of fitness for purpose and ongoing management of integrity and operational limits throughout the lifecycle of the facilities</li> <li>• The methods of intervention for the purposes of inspection, maintenance and repair of subsea equipment and the relative merits of different intervention platforms</li> <li>• The range of operations that can be conducted on subsea equipment, throughout the life of the field into decommissioning and removal of the equipment</li> </ul>	

<b>ELEMENT OF COMPETENCE</b>	<b>WHAT THIS COMPETENCE MEANS IN PRACTICE</b>	<b>TYPICAL EXAMPLES OF EVIDENCE</b>
<p>Knowledge of the operational threats to subsea equipment:</p> <ul style="list-style-type: none"> <li>• Environmental, Corrosion and External threats</li> <li>• Damage Mechanisms</li> <li>• Condition Assessments</li> </ul>	<p>Can identify typical issues that arise during long term operation of subsea equipment and define methods to limit the onset of damage.</p> <p>Capable of identifying typical threats and damage mechanisms that are acting on a system of subsea facilities.</p>	<p>Refer to only as many Indicators of Attainment as you need to demonstrate the Element of Competence</p> <p>Has interfaced with operations teams managing operating subsea equipment.</p>
<p>Knowledge of corrosion, inspection, monitoring and repair techniques including:</p> <ul style="list-style-type: none"> <li>• Non-destructive testing, inspection and monitoring methods</li> <li>• Corrosion assessment and measurement methods</li> <li>• Relative merits of various inspection and monitoring techniques</li> </ul>	<p>Capable of interpreting fitness for service assessments on subsea equipment.</p> <p>The subsea engineer understands the relative advantages and disadvantages of different intervention methods</p>	<p>Applies the principles of ongoing fitness for purpose assessments of installed equipment in an operational environment.</p>



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<b>ELEMENT OF COMPETENCE</b>	<b>WHAT THIS COMPETENCE MEANS IN PRACTICE</b>	<b>TYPICAL EXAMPLES OF EVIDENCE</b>
<p>Knowledge of risk-based techniques including:</p> <ul style="list-style-type: none"> <li>● Quantitative and qualitative risk assessment</li> <li>● Fitness for purpose assessments</li> <li>● Engineering assessment</li> <li>● Technical risk assessment</li> <li>● Consequence modelling</li> <li>● Root cause analysis</li> </ul>	<p>Capable of determining the risk level of subsea equipment and the priorities for inspection utilising risk-based inspection techniques.</p> <p>Capable of managing the root cause analysis process.</p> <p>Understands the principles of ongoing fitness for purpose assessments of installed equipment</p> <p>Understands the principles of risk-based strategies and methods to support operations with inspection, maintenance and repair activities</p>	<p>Refer to only as many Indicators of Attainment as you need to demonstrate the Element of Competence</p> <p>Applies the principles of risk-based strategies and methods to support operations with inspection, maintenance and repair activities.</p>
<p>Knowledge of subsea intervention operations:</p> <ul style="list-style-type: none"> <li>● Vessel operations</li> <li>● ROV and diving operations</li> <li>● Equipment, intervention tooling and the operation of same</li> <li>● Pigging operations</li> <li>● Decommissioning</li> </ul>	<p>Capable of contributing to inspection, monitoring, repair, intervention and/or decommissioning engineering work scopes.</p>	<p>Has applied different intervention methods and understands their relative advantages and disadvantages.</p>
<p>Knowledge of Asset Management impact on design including:</p> <ul style="list-style-type: none"> <li>● life cycle costing / CAPEX and OPEX balance</li> <li>● incorporation of lessons learned from operations into the design phase</li> </ul>	<p>Capable of contributing to a life cycle cost analysis of subsea equipment.</p>	<p>Has participated in the development of CAPEX and OPEX models to support asset management strategies.</p>