### Subsea Engineering Competency

**Subsea Engineering Technologist**

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<th>ELEMENT OF COMPETENCE</th>
<th>WHAT THIS COMPETENCE MEANS IN PRACTICE</th>
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| 12. Knowledge of Technology | Means that you comprehend and apply the knowledge embodied in widely accepted procedures, processes, systems or methodologies to subsea engineering activities | - maintain a working knowledge of technical aids in the field of subsea engineering through in-house and/or industry training (e.g. CSWIP), operator and/or supervisor qualifications (e.g. IMCA, AODC) and on-the-job application  
- interpret and apply standards and codes of practice relating to subsea engineering, including IMCA, UKOOA, OGA etc.  
- use engineering knowledge and understanding to interpret subsea engineering task instructions, procedures, drawings or sketches  
- apply technical and practical skills using state-of-the-art tools, technologies and information systems e.g. application of dynamic positioning systems, experience in diving activities, ROV & AUV intervention, use of heavy and light lifting systems etc.  
- applied knowledge of above to undertake customer’s high-level and detailed scopes of work |
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| 13. Local Knowledge                            | Means that you demonstrate the application of knowledge of national and local regulations and guidelines, available resources, technologies and products, and awareness of local environmental conditions. | - select and apply appropriate local technical standards to subsea projects  
- apply company safety systems, standards and procedures  
- comply with local environmental regulations, standards and codes of practice  
- take account of and apply local conditions to design, planning and execution of operational and intervention activities, e.g. knowledge of local met-ocean conditions - weather, waves & currents, tides, water temperatures and marine growth  
- apply knowledge of first principles to link codes, standards and specifications to subsea engineering activities  
- apply established locally available resources, facilities and systems to subsea activities  
- performed engineering work in accordance with country and regional regulations - safety case, conformance, reporting, notice to dive etc.  
- applied above to the development and review of subsea procedures and processes  
- take account of legislative and regulatory requirements that affect subsea developments or existing subsea facilities |
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SELECT THESE OR OTHER INDICATORS OF ATTAINMENT TO DEMONSTRATE THE ELEMENT OF COMPETENCE |
|-----------------------------------------------|--------------------------------------|----------------------------------------------------------------------------------|
| 14. Problem Analysis                          | Means that you identify, investigate, analyse and problem-solve subsea engineering issues. | • accurately determine the main issues that require addressing for any identified subsea problems, develop and apply remediation  
• work with stakeholders to reach an agreed understanding of the expected capability, reliability, or functionality of the required subsea product, project or system  
• undertake performance management measurements, condition assessment or trend analysis leading to system availability, reliability or efficiency improvement  
• investigate and analyse subsea products, projects, processes or systems  
• application of performance standards and verification practices for subsea equipment, support and intervention systems, and/or processes  
• developed operation, maintenance and/or inspection programs for above.  
• developed remedial programs to address identified problems  
• describe at least one historical industry event, the lessons learnt and regulatory changes arising from this event |

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## Element of Competence

**Engineering Technologist**

### What this competence means in practice

15. Advanced Operation

Means that you develop and use subsea related technological resources skilfully, creatively and reliably.

### Typical Indicators of Attainment

Select these or other indicators of attainment to demonstrate the element of competence.

- Develop the necessary capacity to skilfully apply state-of-the-art subsea related tools, materials, resources and information systems.
- Develop and use new and emerging subsea related tools, equipment, engineering applications and systems to create value for customer.
- Provide feedback, suggestions and advice to others on the practical application and potential for improvement of subsea equipment, applications and systems.
- Stay up to date on new and emerging subsea-related technologies, techniques, products, materials and methods.
- Skillfully operate and maintain tools, resources and information systems to reliably produce, modify or repair subsea equipment or information.
- Predict time, human effort and equipment resources required to design, construct, install or maintain subsea assets or support systems.
- Plan, organise and supervise subsea projects.
- Has updated drawings, procedures, or processes following an approved Management of Change process, to take account of new developments, process changes, or identified problems.
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| 16. Evaluation                                   | Means that you evaluate the outcomes and impacts of subsea engineering activities. | • monitor and evaluate subsea product, project or system against whole of life criteria (cost, quality, safety, reliability, maintenance, aesthetics, fitness for purpose and social and environmental impact and decommissioning)
• determine criteria for evaluating a subsea design solution and address obligations for health, safety and environment
• clarify or adopt criteria for evaluation and review, and evaluate the effectiveness of subsea engineering activities
• evaluate subsea project or systems performance against the original specification or design intention
• assess and use technical information correctly to ensure that recommendations are based on reliable and repeatable data
• evaluate subsea project or systems constructability, availability and maintainability for application to future design improvement e.g. providing practical input to subsea project lessons learnt process
• has undertaken technical reporting on subsea project, to include workscope results, non-conformance and proposed actions |