

Background

Technology Qualification – Enabling the future of the industry.

Innovation and technology are considered key to success in industry, and technology acceptance can be a barrier to market. The subsea sector in particular has strived with the introduction of new technology; however, qualification is important for acceptance and there can be the perception of 'no one wants to be first'. The aim of this course is to address these concerns head on and identify how to overcome them.

The course will address recognised industry methods for qualification and provide a robust process for technical acceptance based on a range of industry developed best practice guidelines. These guidelines are key to understanding qualification issues and enabling commercialisation.

Course Overview

This two-day course is aimed at engineers, at any stage in their careers, who are involved in the development of new technology or need to accommodate existing technology in more challenging applications. It is equally applicable to operators, contractors, OEMs and technology developers.

The course will provide an overview of industry best practice for the qualification of technology and how to select and design appropriate testing regimes to demonstrate functionality, reliability and durability. A combination of presentations, discussions and individual/group exercises are used to convey the information in a dynamic and interactive way.

Our Instructors

Our dedicated team is an internationally recognised authority in the field of reliability engineering and have been providing training to industry for a number of years. We have considerable experience in the application of reliability techniques to manage technical risk and have worked with asset operators, design teams and equipment suppliers across a number of industries, including oil and gas production, energy and utilities distribution.

First and foremost we are highly experienced engineers, and we want to ensure that your company benefits from recognised technical expertise and experience.





Registration from 08:30

Welcome, Refreshments and Safety Briefing at 09:00

Session 1: Introduction to Risk, Reliability and Qualification

What is meant by the term “Qualification”?

Why qualification is needed to deliver reliable technology

Introduction to the TRL approach to qualification

Introduction to the qualification process

Related industry standards and recommended practices

Session 2: Defining Qualification Goals and Requirements

The difference between a technology development project and deployment of new technology within new asset developments

Qualification basis

Types of qualification goals and requirements

Allocation of goals and requirements

Break

Session 3: Interpreting TRL and Testing/Analysis to Support Qualification at each Stage

Interpreting TRL Ladders

Key test engineering and analysis methods for technology qualification including materials testing, accelerated life testing, stress screening, reliability testing, environmental testing, software testing, field testing and reliability growth

How TRL Ladders can be applied to different equipment types

Lunch

Session 3: Continued

Application of TRL Ladders to software

Break

Session 4: Application for Extended/Modified Technology

Assessment of existing technology to recognise changes in application or extrapolation of design

Identification of initial TRL at a preliminary high level for extended/modified technology

Review of Key Learning Points, Discussion and Questions

End of Day 1



Welcome and Refreshments from 08:30

Session 5: Applying the Technology Qualification Process Part 1

Planning for technology qualification

System breakdown

Use of FMECA to understand potential failure modes and identify current component TRLs and qualification tests to be implemented

Break

Session 6: Statistical Techniques for Reliability Demonstration

Key statistical distributions including Chi-squared and binomial

Reliability demonstration testing - estimation of testing duration and number of replicates

Accelerated life testing

Lunch

Session 6: Continued

Assessment of reliability performance including application of Weibull analysis

Session 7: Applying the Technology Qualification Process Part 2

Implementing successful and auditable qualification programmes

Estimating and managing residual technical risk

Qualification assurance and reporting

Break

Review of Key Learning Points, Discussion and Questions

End of Day 2



About Astrimar

Astrimar's consultants have worked with major operators and equipment suppliers to develop and align their company procedures with industry best practices for qualification, reliability and technical risk management of technology including implementation of the recommendations of API RP 17N, API RP 17Q and DNVGL RP A203. Astrimar have worked alongside technology developers helping them understand and implement effective technology qualification best practice to help them demonstrate technology readiness for deployment and have also supported clients wanting to validate qualification programmes implemented by their supply chain. Astrimar Technical Director Professor John Strutt was the lead technical author for the API recommended practice "Subsea Production System Reliability, Technical Risk, and Integrity Management" (API RP 17N). In addition, John has supported development of a completely revised API RP 17Q on Technology Qualification published in 2018 - this provides much greater guidance on the Technology Qualification process, activities to achieve each TRL and alignment between the TRL approach and DNVGL RP A203. Astrimar is currently supporting OGTC in providing further guidance for organisations qualifying new technology

Astrimar have been providing training to the industry for a number of years and are an Energy Institute approved training provider. This course is delivered by two experienced Astrimar consultants who have been involved in both the qualification of technology and the delivery of training to the industry.

Registration Information

To register please complete the online booking form at <http://www.astrimar.com/courses.aspx?type=1> or email training@astrimar.com

Registration Fees

The standard course fee is £650.00 + VAT per person with an early bird rate of £568.75 + VAT per person for bookings made at least 30 days in advance.

Discounts are also available for multiple course or group bookings. These should be booked directly with our training department (training@astrimar.com):

12.5% discount on standard rate for group bookings of 2 to 4 people: £568.75 + VAT per person

20% discount on standard rate for group bookings of 5 or more people: £520.00 + VAT per person

12.5% discount on standard rate for other courses booked at the same time

All refreshments, lunch and course materials included.

Payment Methods

Bank Transfer: (exclusive of transfer fees and currency exchange rates) – Details available on request

Cheque: Please make payable to "Astrimar Ltd". Sterling only drawn on a UK Bank Account. An international cheque can be obtained from all major overseas banks. Please ensure any charges are met at source.

Credit Card / PayPal: Available via our online booking facility

VAT

Our VAT No. is 990 1480 14. VAT must be paid on all registration fees, including those from overseas. All EC country organisations must provide their VAT number in accordance with EC VAT regulations. A VAT receipted invoice will be sent in acknowledgement of all pre-paid registrations.

Joining Instructions

Joining instructions will be sent direct to the delegate (unless otherwise advised) on receipt of completed registration form.

Cancellations

Refunds will be made on written cancellations received up to 10 working days in advance of the event but will be subject to a 15% handling charge. 50% will be deducted up to 5 working days in advance and 100% thereafter up to the start of the event. No refund will be given for nonattendance. Delegates may wish to nominate a substitute in their place.