

# TECHNOLOGY QUALIFICATION

Enabling innovation, mitigating risk and delivering new products safely to market faster

## OUR SERVICES



## What is technology qualification?

**Definition:** The process of providing evidence that the technology will function within specified limits with an acceptable level of confidence

Innovation tends to involve products that function differently from existing ones or that operate in an unknown service context so that existing standards and codes of practice are not applicable. This introduces uncertainty and risk that must be managed and reduced to an acceptable level, before that technology can be safely deployed.

**So how can you demonstrate an innovative product or use of an existing one in a different application is safe, reliable and fit for purpose?**

In the absence of a relevant standard for a new technology, or if the new technology is not fully covered by pre-existing standards, technology qualification can enable implementation, thereby helping to create new business opportunities

### DNV RP-A203 - Qualification procedures for new technology

DNV RP-A203 defines the systematics for qualification of new technology. An example may be a new high pressure polymeric composite pipeline or novel mechanical metallic pipe connecting system. The standard applies to any technological development in any industry sector.

DNV RP-A203 takes a risk-based approach to proactively identify the challenges and uncertainties of a new product. The process is a systematic goal based risk assessment generating traceable evidence that the product meets specified requirements for the intended use, and within an acceptable level of confidence.

The TQ process is a methodology developed with specific acceptance criteria for technology under review and can be applied during any stage of the development lifecycle of systems or technology.

TQ focuses primarily on:

- Safety
- Environmental
- Functionality
- Performance
- Reliability
- Availability.

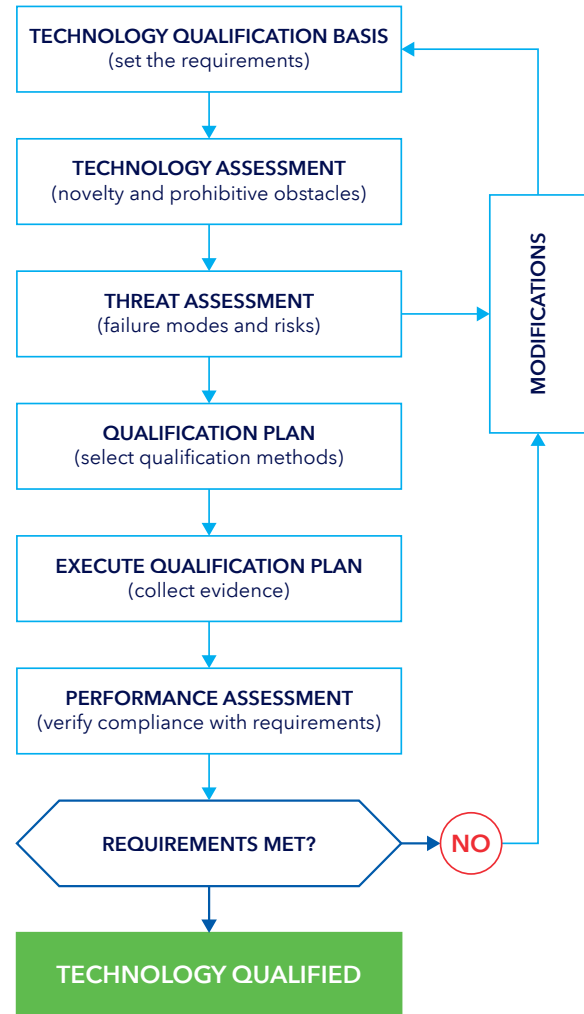
and includes the following activities:

- Identifying technology elements and their readiness levels
- Assessing risks posed by the elements (SWIFT, HAZID, HAZOD, FMECA)
- Establishing acceptance criteria and goals
- Collection of evidence
- Reliability analysis, technical analysis, laboratory testing; development of models for failure mechanisms
- Performance assessment, technology qualified, certified and deployment.

DNV RP-A203 provides a means for assurance of the processes for definition of evidence and how to provide that evidence in order to build confidence in the technology in its service context.



### DNV technology qualification process



### Benefits of independent technology qualification

Technology qualification builds confidence in products and services by carrying out a systematic risk-based qualification process that clearly documents the performance of the technology. The process helps to deliver new innovations to market, whilst giving confidence in their integrity.

- Improves confidence in the system
- Enhances opportunities for performance gains and cost cuts
- Acceptance by customers and authorities
- More efficient use of resources
- Systematically identifies failure modes
- Identifies necessary design changes at an early stage
- Reveals opportunities to improve system design
- Uncovers interface issues between manufacturer and sub-vendors
- Increases the likelihood of qualifying the technology on time; minimising the schedule risk
- Reduces the risk cost during operation by reducing uncertainties and increasing reliability
- Provides traceability of the qualification efforts and documentation
- Allows faster re-qualification for new operating conditions or after modifications.