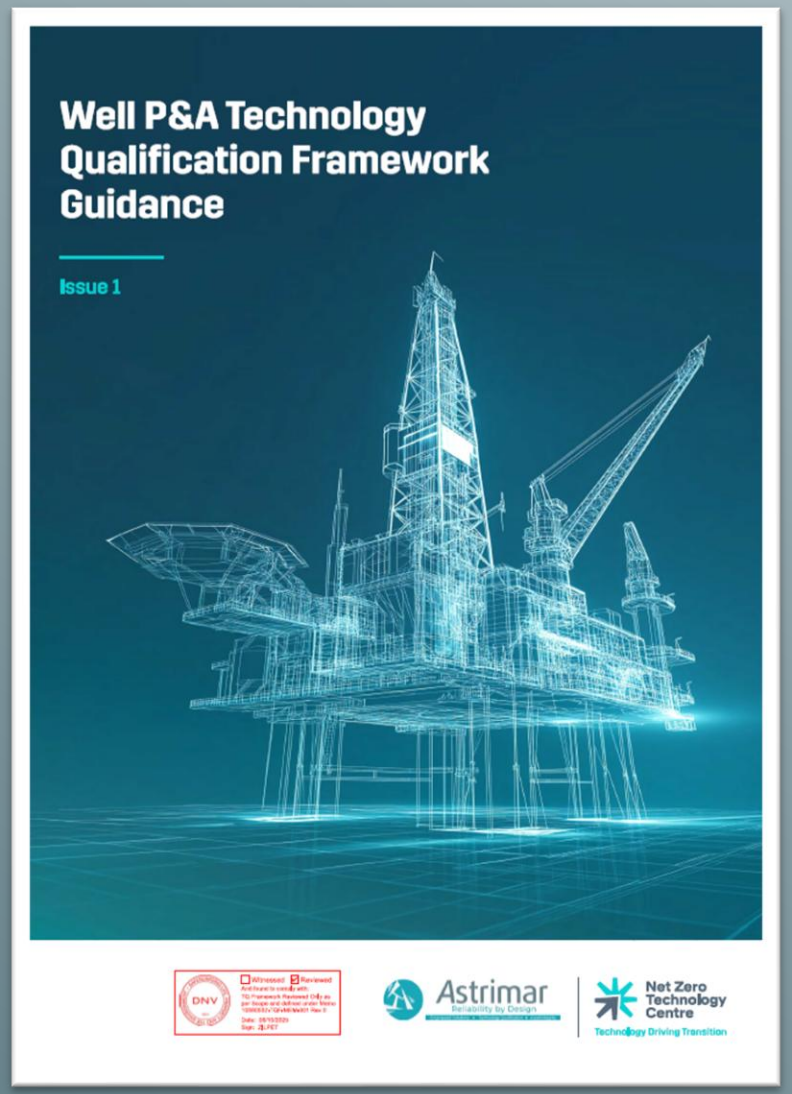
Astrimar
Reliability by Design

A Pathway to Qualified Well Barrier Technologies

NZTC Qualification Framework for Well P&A Technologies
1-year on …

SPE Well Decommissioning
3 June 2026

Technology Qualification Framework for Well P&A Technologies



- Developed in collaboration with operators, technology developers and regulators
- Intended to streamline the acceptance process
- Supports adoption of alternative materials for use in permanent P&A of oil and gas wells
- Technology Qualification Framework Roadmap
  - Based on industry accepted TQ Processes
  - Addresses requirements from regulations and standards
- Third Party Peer-Review by DNV for alignment with DNV-RP-A203

Net Zero Technology Centre
Technology Driving Transition

6 Wdc The Wells Decommissioning Collaboration 2022

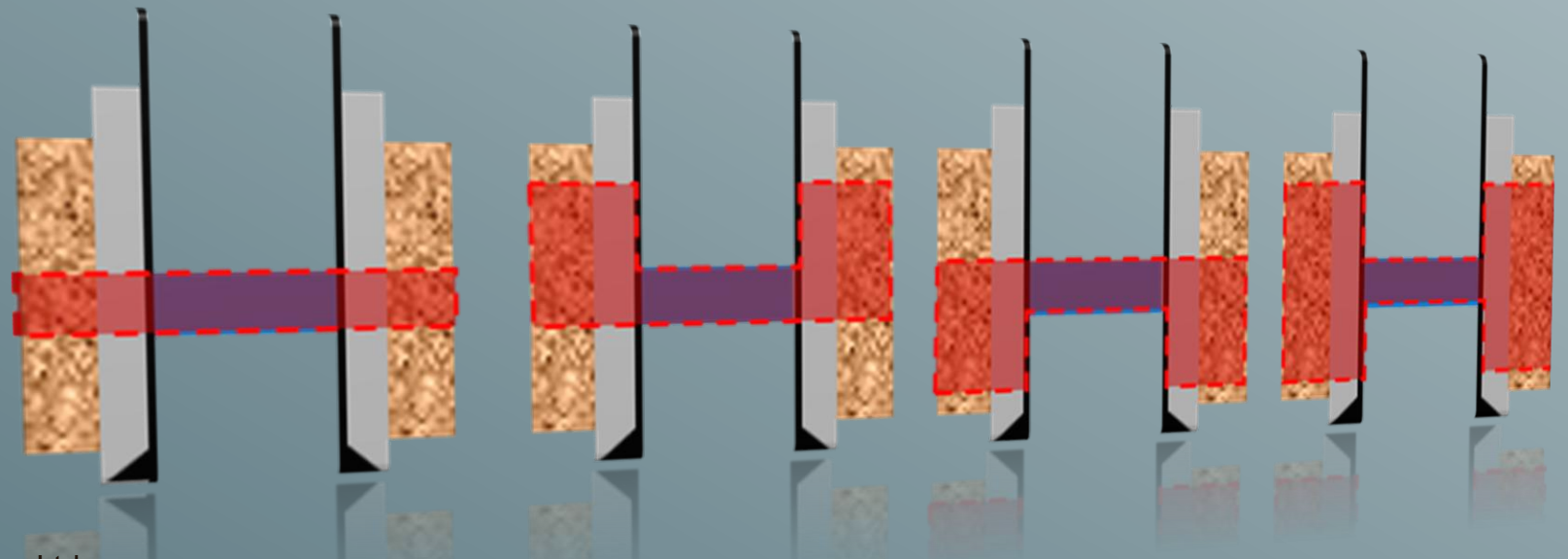
Framework Process – Streamlined Activities

Step 1

Candidate technology → Requirements Proforma

Step 2

Defining Requirements and Capabilities



Defining the Well Barrier Envelope

Framework Process – Streamlined Activities

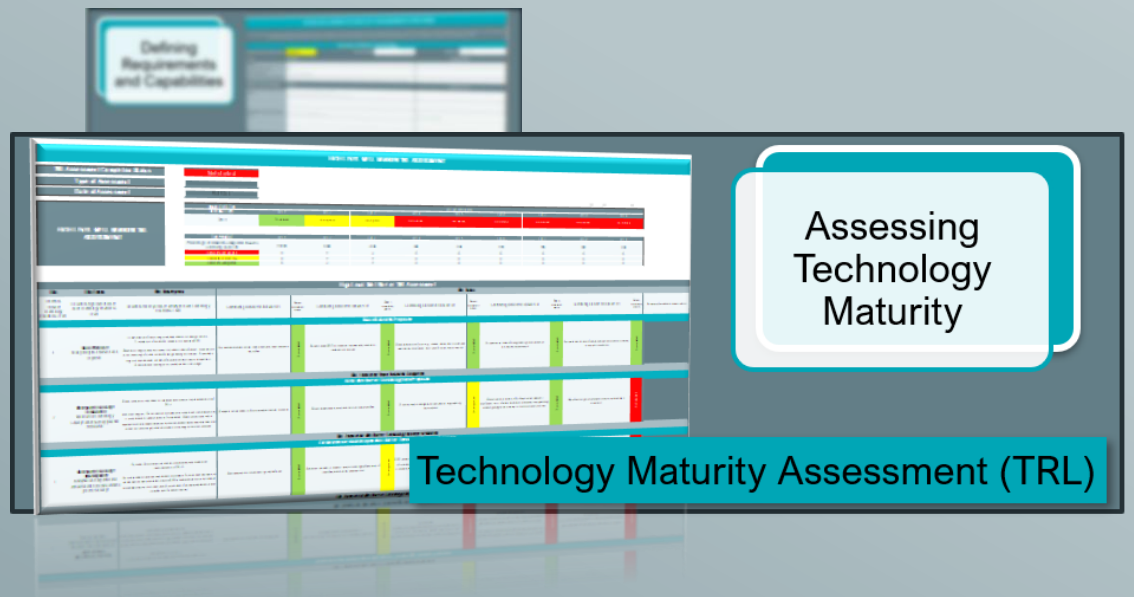
Step 1

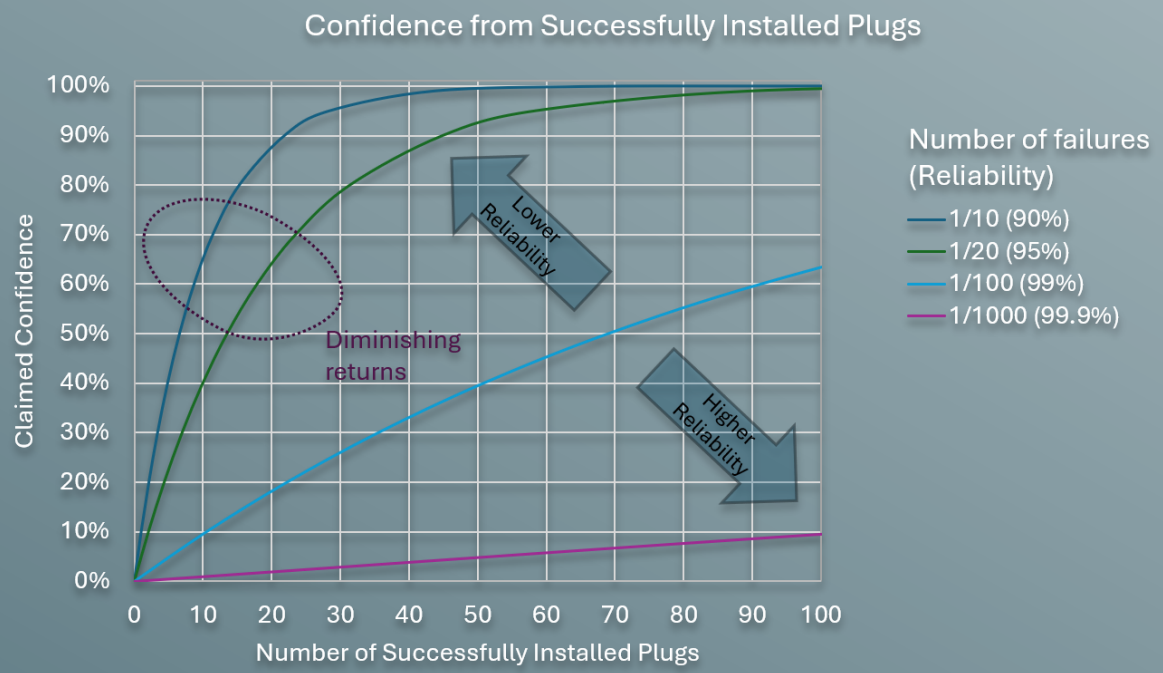
Candidate technology → Requirements Proforma

Step 2

Technology Maturity Assessment

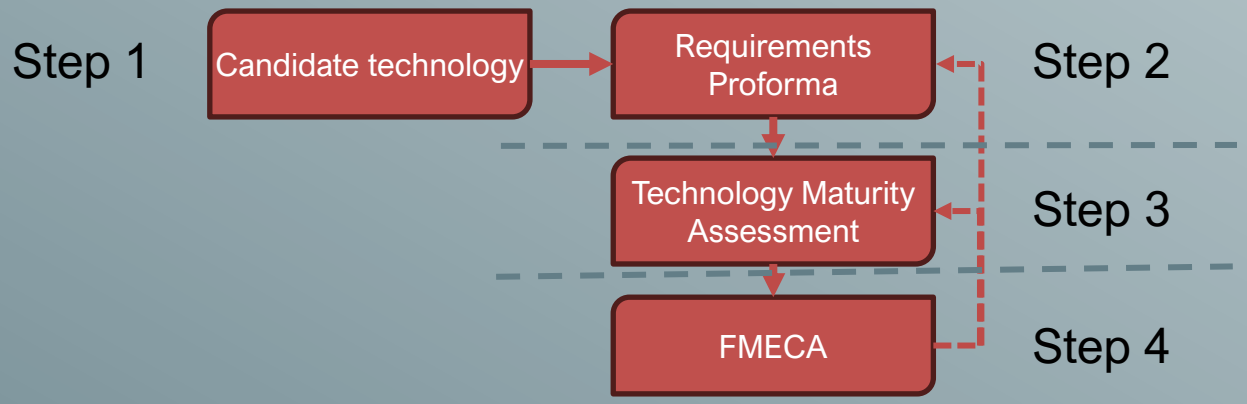
Step 3

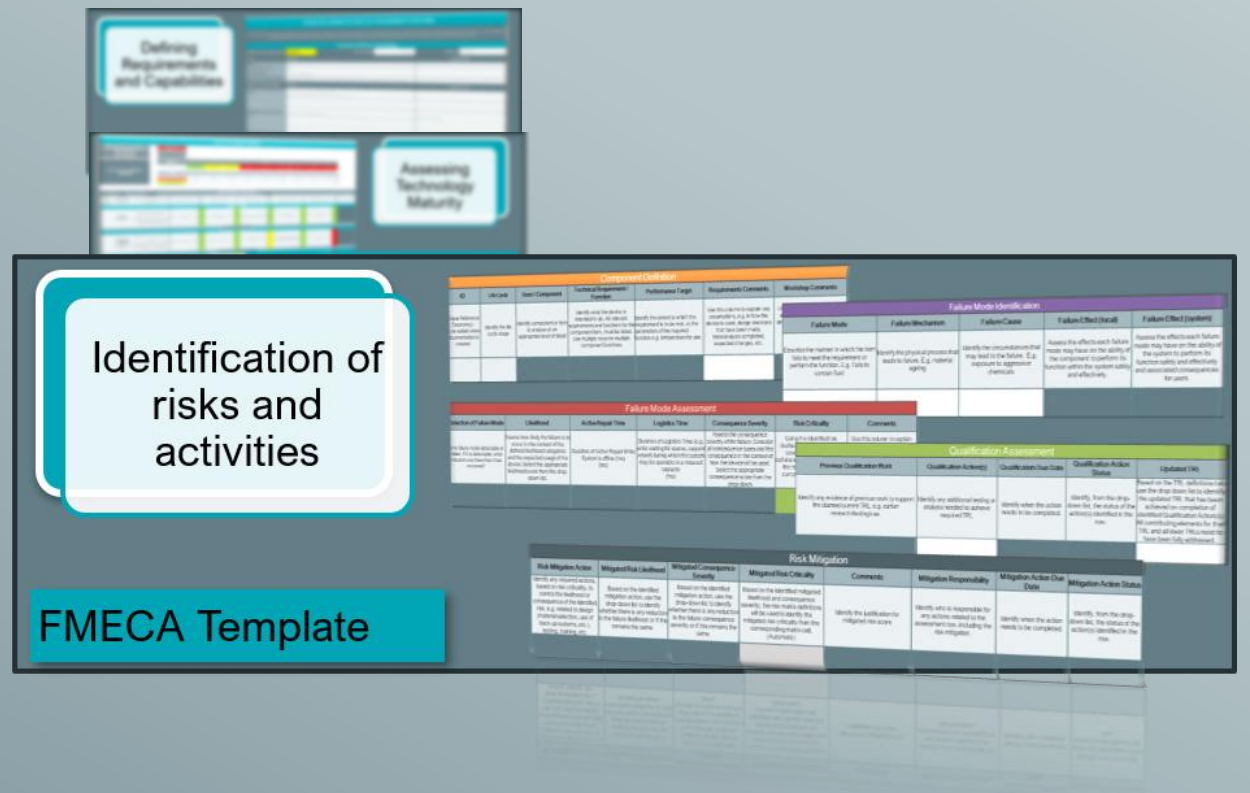




Guidance towards claiming TRL 9

Framework Process – Streamlined Activities





Framework Process – Streamlined Activities

Step 1

Candidate technology

Requirements Proforma

Step 2

Technology Maturity Assessment

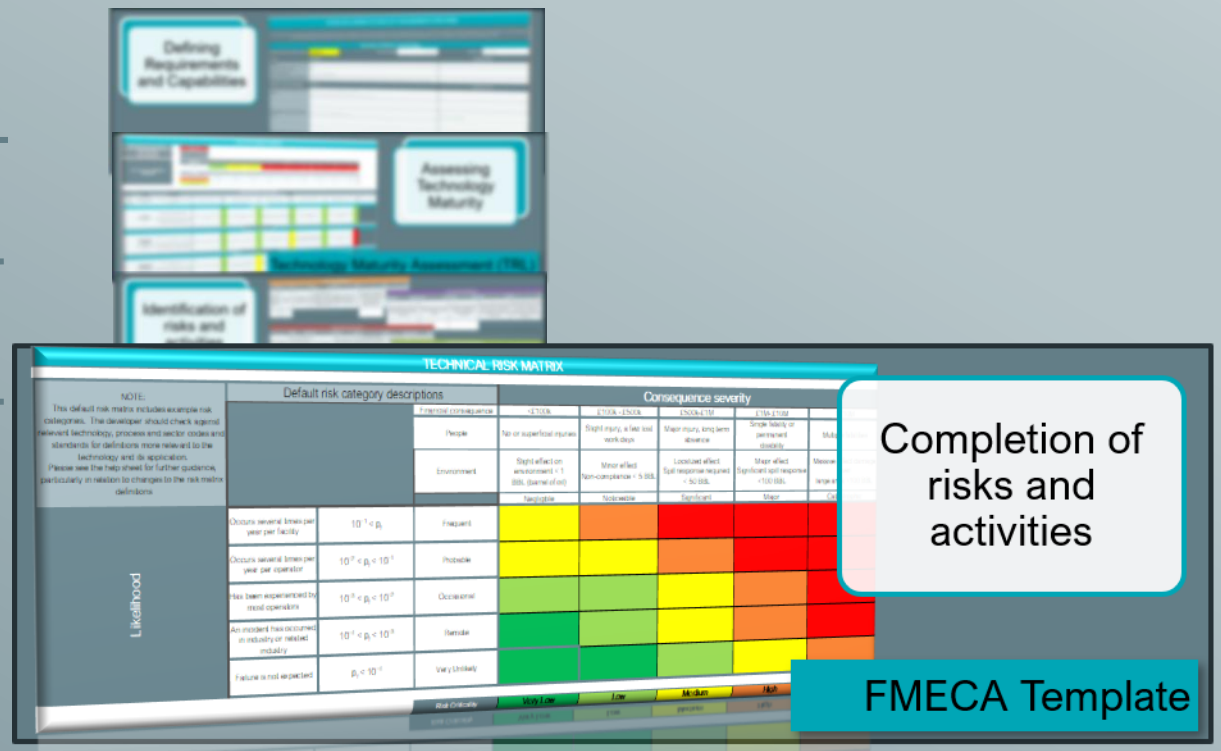
Step 3

FMECA

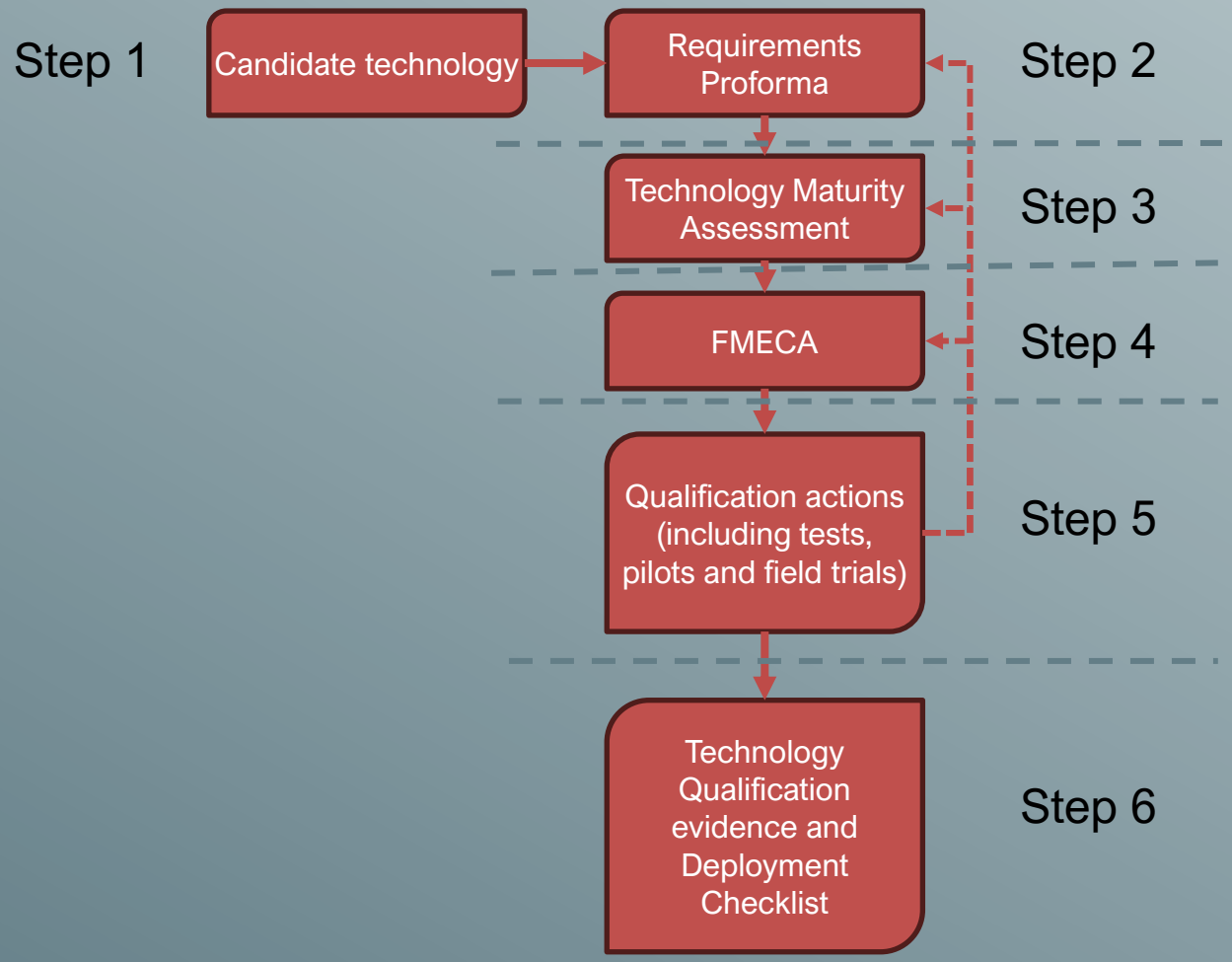
Step 4

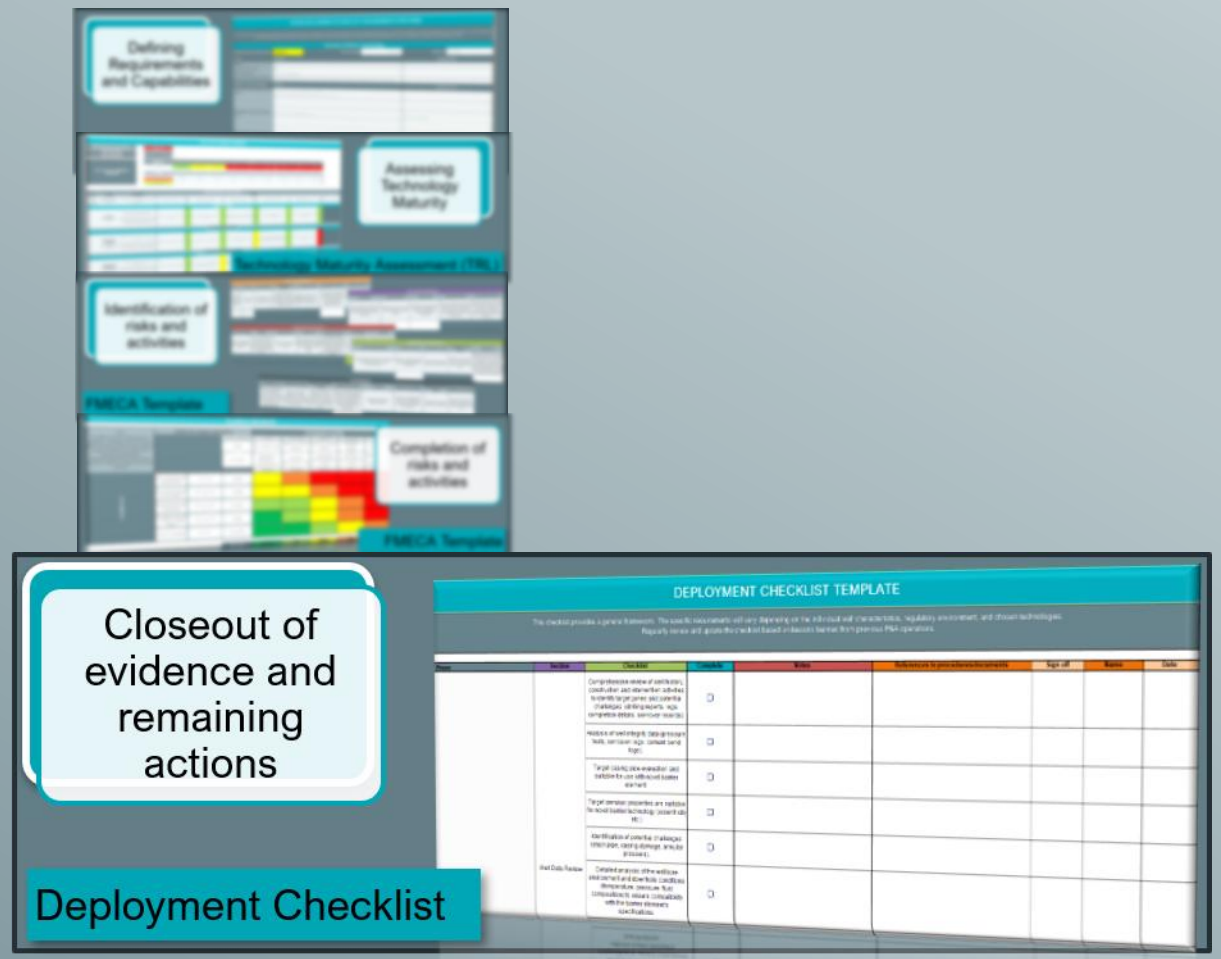
Qualification actions (including tests, pilots and field trials)

Step 5

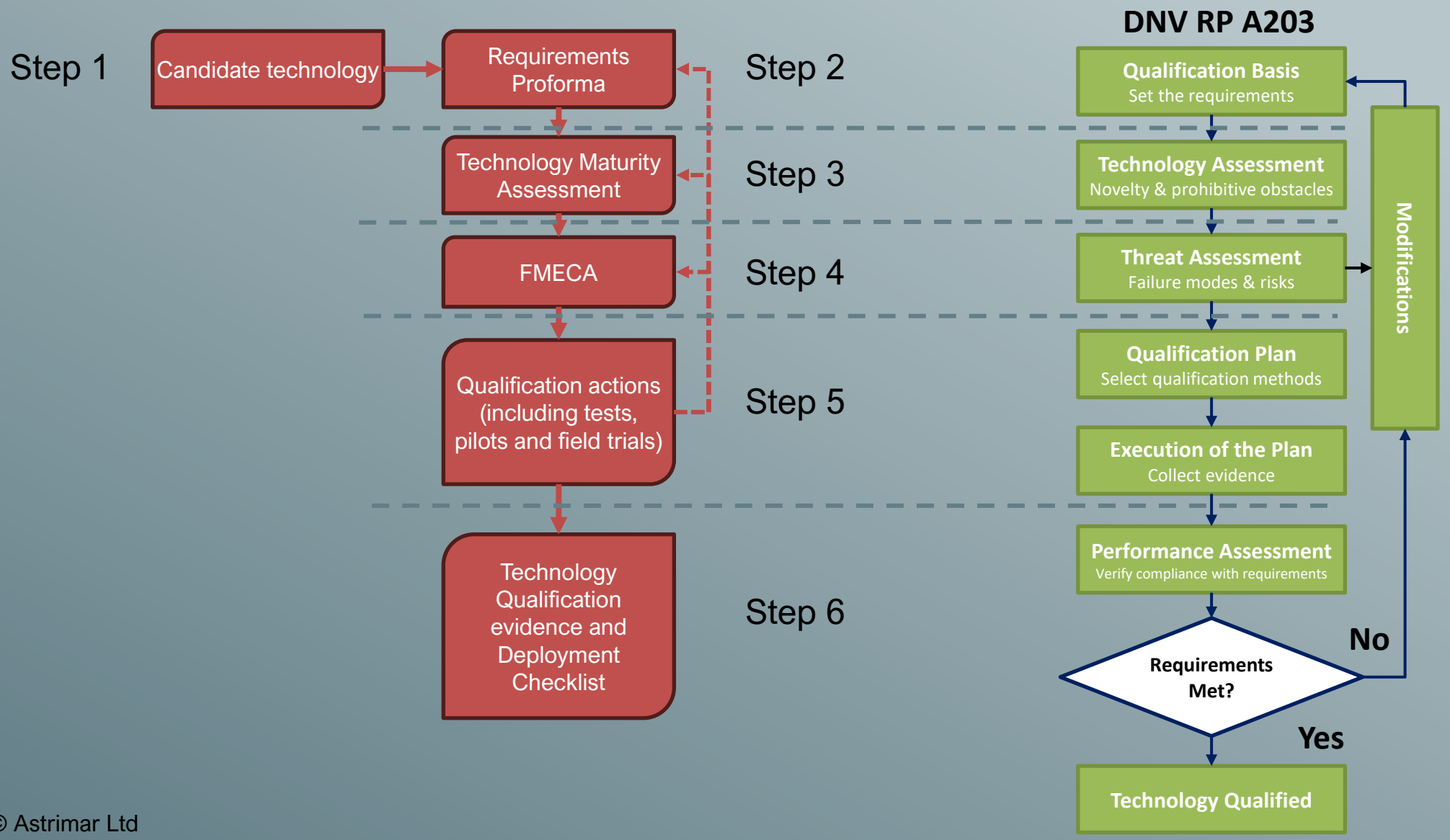


Framework Process – Streamlined Activities





Framework Process - Alignment with DNV RP A203



Witnessed ☑ Reviewed
And found to comply with:
TQ Framework Reviewed Only as per Scope and defined under Memo 10580532-TQF-MEM-001 Rev 0
Date: 06/10/2025
Sign: ZILPET

Lessons Learnt from Use Cases

- Pilot trials with NZTC Framework
  - Wellstrom T1000
  - Resolute Assure ® EPG
  - Isol8 Fusion Alloy
  - BiSN AB1 Tubing Seal
  - Local casing expander tool (Peer-review of DNV-RP-A203 document qualifying from Shell)
  - Proposed PWC
- Additional experience with DNV-RP-A203
  - Wellstrom T1000
  - Maturity assessment of bismuth plugging solutions
  - Barite as an annular barrier

Well Barrier Envelope

- ✓ Agree lengths of adjacent elements
- ✓ Assess all barrier elements

Requirements not well defined

- ✓ Well, environment and installation
- ✓ Communicate maturity

Detail of risk assessments

- ✓ Degradation mechanisms
- ✓ Installation risks
- ✓ Identify tests & activities

Challenging to apply in hindsight

- ✓ Initiate early e.g. TRL 2
- ✓ Document all evidence

Latest status

- NZTC TQ Framework is available at no cost via the NZTC website
- Support Developers and Operators to use Framework
- Ongoing collaboration with NZTC to support wider adoption
- Support to GRaPA for use in Norway
- Incorporation of feedback and continuous improvement
- Potential extension of framework for enabling technologies

Download Framework Document Pack

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Thank you

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Technology Driving Transition

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