

NEW TECHNOLOGY QUALIFICATION

Partner with ABS, your trusted advisor in advancing innovative ideas from concept to reality.

The marine and offshore industries regularly develop new technologies with no service history in the proposed application or environment. Often, governing industry codes and regulations do not develop at the same pace as technology. These new technologies have little or no precedent and may be so different from existing designs that the requirements contained in class Rules may not be directly applicable.

The ABS *Guidance Notes on Qualifying New Technologies* outlines an approach for qualification of new technologies to confirm their ability to perform intended functions in accordance with defined performance requirements.

The guidance notes also provide details regarding the required submittals and key interaction points with ABS during the new technology development.



WHAT CONSTITUTES A NEW TECHNOLOGY?

The guidance notes define any new design (materials, components, equipment or systems), new process or procedures with no prior in-service experience and/or any classification rules, statutory regulations or industry standards directly applicable to them as a new technology.

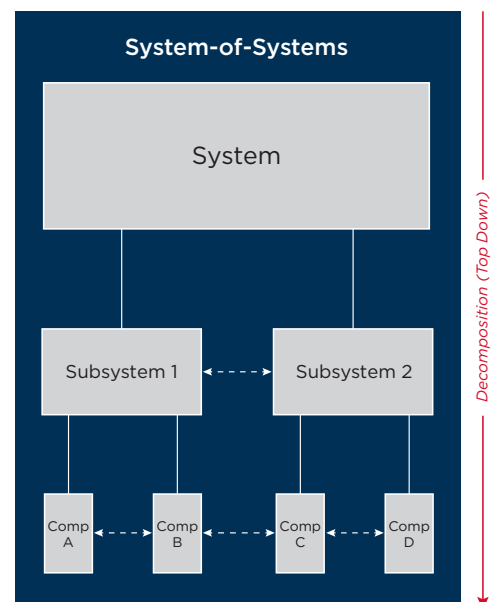
It is possible to categorize the type of “novelty” in one of four categories:

- I. Existing design/process/ procedures challenging the present boundaries/envelope of current offshore or marine applications
- II. Existing design/process/ procedures in new or novel applications

- III. New or novel design/process/ procedures in existing applications
- IV. New or novel design/process/ procedures in new or novel applications

An asset such as a marine vessel or an offshore unit becomes a novel concept if the incorporation of any new technologies appreciably alters its service scope, functional capability and/or risk profile.

ABS can class/certify novel concepts when requested by using the process in the *ABS Guidance Notes for Novel Concepts*.



SYSTEMS ENGINEERING APPROACH

The guidance notes introduce a systems engineering approach to qualification that allows for systematic and consistent evaluation of new technologies as they mature, all the way from a concept through to the intended application in operations.

A five-stage process is followed that aligns with the typical product development phases of a new technology:

- Feasibility Stage
- Concept Verification Stage
- Prototype Validation Stage
- System Integration Stage
- Operational Stage

The qualification activities within each stage revolve around risk assessments and engineering evaluations that build upon each other in order to determine if the new technology provides acceptable levels of safety in line with current offshore and marine industry practice.

The qualification efforts by all stakeholders such as the vendor, system integrator and end-user at each stage are recognized and captured within a new technology qualification plan.

STATEMENTS OF MATURITY AND TYPE APPROVAL

Through Statements of Maturity, issued at each stage in the qualification process, vendors are able to demonstrate feasibility and maturity levels to gain a competitive advantage with customers, partners

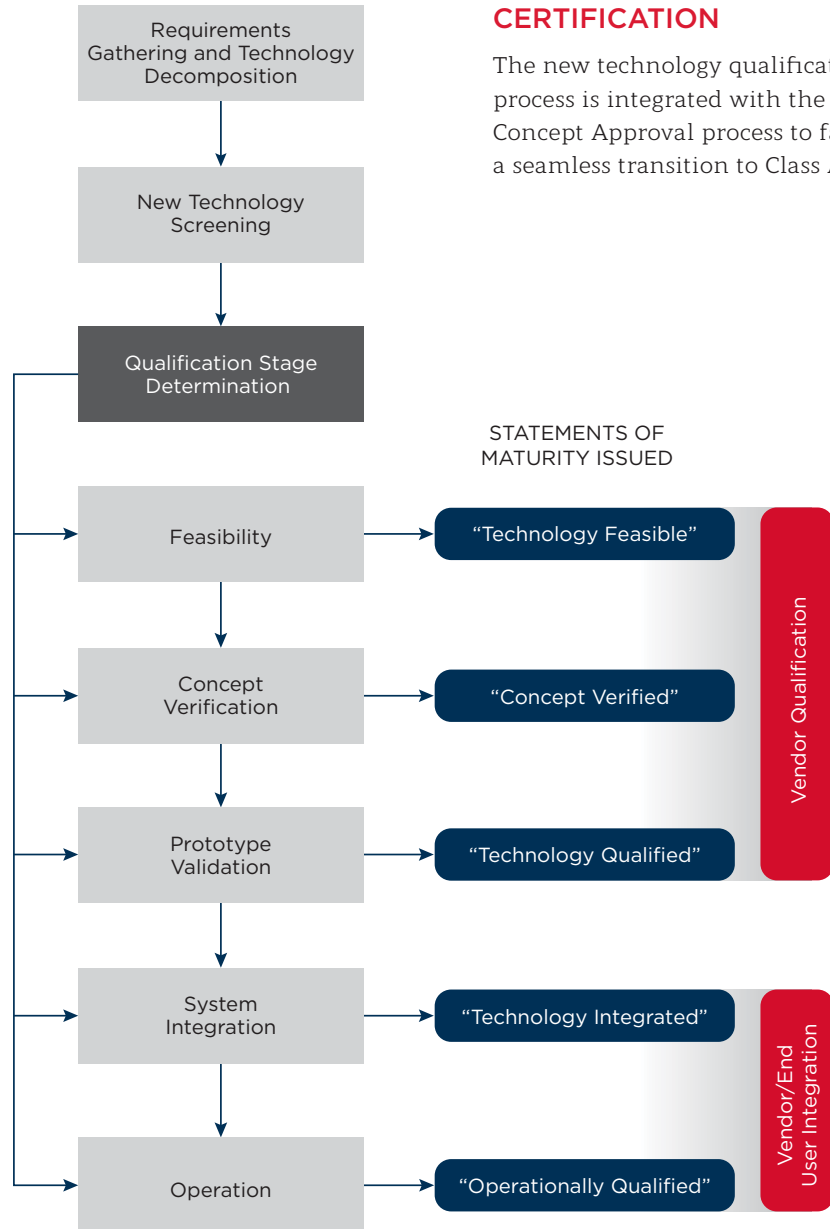
and potential investors. Additionally, regulatory agencies can be confident that foreseeable hazards associated with the introduction of the proposed new technology have been systematically reviewed.

Upon completion of the Prototype Validation Stage, eligible products

can be "Type Approved" under the ABS Type Approval Program to limit repeated evaluation of identical designs. When all engineering evaluations are complete in the Prototype Validation Stage, a Product Design Assessment (PDA) can be issued prior to further consideration for ABS Type Approval.

QUALIFICATION TO CLASSIFICATION/CERTIFICATION

The new technology qualification process is integrated with the Novel Concept Approval process to facilitate a seamless transition to Class Approval.



For additional assistance with New Technology Qualification, please contact innovate@eagle.org



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