Validation and Verification Terminology

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Abstract

Brief explanation of the terms used in Validation adn Verification, e.g. validation, verification, qualification, and certification.

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Validation and Verification in the V-model

needs

validation does the system fit the needs and match expectations?

validation

specification

verification did we build what we specified and according the design?

verification

system design

system test

subsystem design

subsystem test

component design

component test

component realization

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Functional Model of Verification
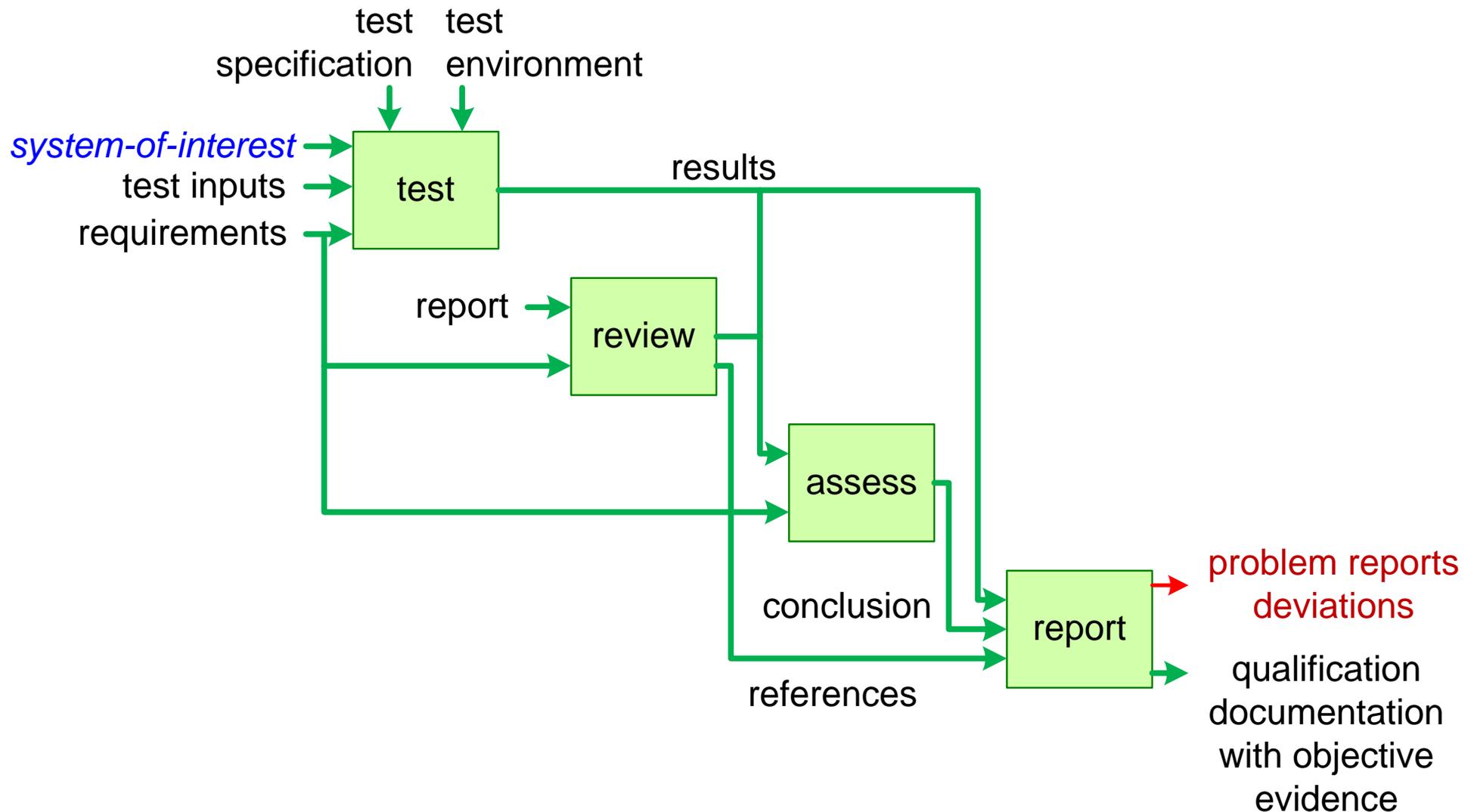
Certification

Certification: an independent agency (e.g. DNV-GL) certifies the quality of the system-of-interest, technology, or process

Self-certification: the company has been accredited by the agency to do the certification themselves.
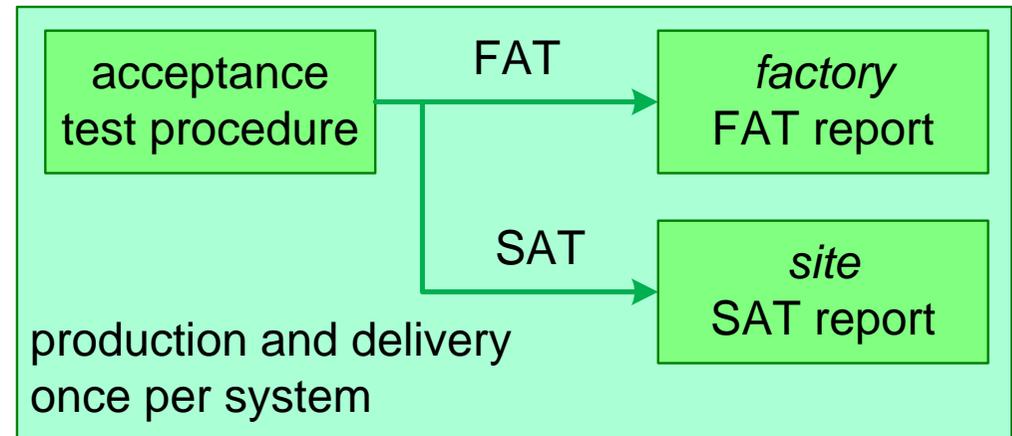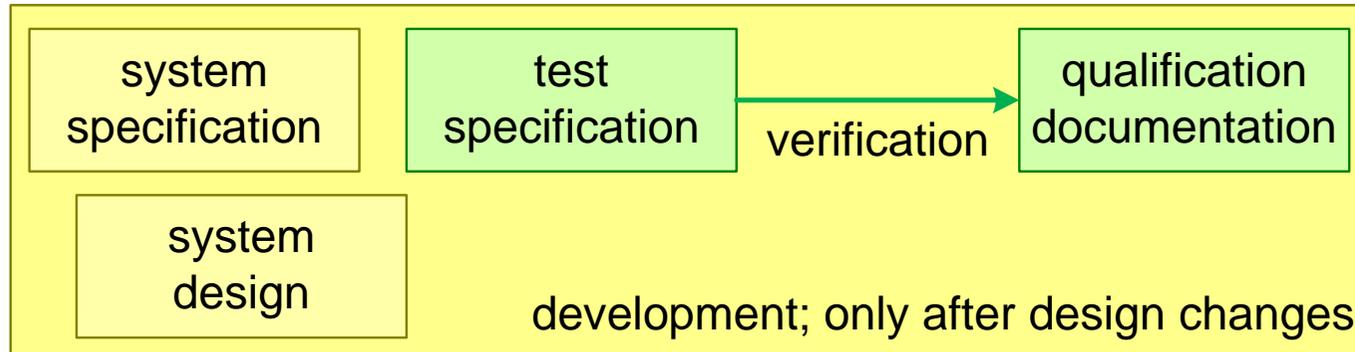
check
qualification data

check process
and organization

optional audit

certify

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Development and (repeated) Production

system specification

test specification → *verification* → qualification documentation

system design

development; only after design changes

acceptance test procedure → FAT → *factory* FAT report

→ SAT → *site* SAT report

production and delivery once per system

Can all down-stream stakeholders do their job?

engineering

- parts data base → procurement
- production procedures → production
- qualification procedures → installation
- system documentation → quality assurance
- → lifecycle support

CAD — mechanical electrical design database

SCM — source code management

ERP — resource planning, e.g. SAP

PDM — product data management

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