INSPIRE KEN workshop about validation

Validation quick scan

Objectives

- Introduce some terms around validation
- Bring common definitions
- Have an overview of the validation concept

- *Let every body wake up before next presentations*

Validation

(*countable* and *uncountable*, *plural* **validations**)

- The act of validating something.

- Something, such as a certificate, that validates something; attestation, authentication, confirmation, proof or verification.

- The process whereby others confirm the validity of one's emotions.

Validation (ISO 9001)

confirmation, through the provision of objective evidence (3.8.3), that the requirements (3.6.4) for a specific intended use or application have been fulfilled

Note 1 to entry: The objective evidence needed for a validation is the result of a test (3.11.8) or other form of determination (3.11.1) such as performing alternative calculations or reviewing documents (3.8.5).

Note 2 to entry: The word "validated" is used to designate the corresponding status.

Note 3 to entry: The use conditions for validation can be real or simulated.

Verification (ISO 9001)

confirmation, through the provision of objective evidence (3.8.3), that specified requirements (3.6.4) have been fulfilled

Note 1 to entry: The objective evidence needed for a verification can be the result of an inspection (3.11.7) or of other forms of determination (3.11.1) such as performing alternative calculations or reviewing documents (3.8.5).

Note 2 to entry: The activities carried out for verification are sometimes called a qualification process (3.4.1).

Note 3 to entry: The word "verified" is used to designate the corresponding status.

Validation vs Verification

- Software **Verification**: The process of evaluating software to determine whether the products of a given development phase satisfy the conditions imposed at the start of that phase. [IEEE-STD-610]

- Software **Validation**: The process of evaluating software during or at the end of the development process to determine whether it satisfies specified requirements. [IEEE-STD-610]

Against what ?

Requirements

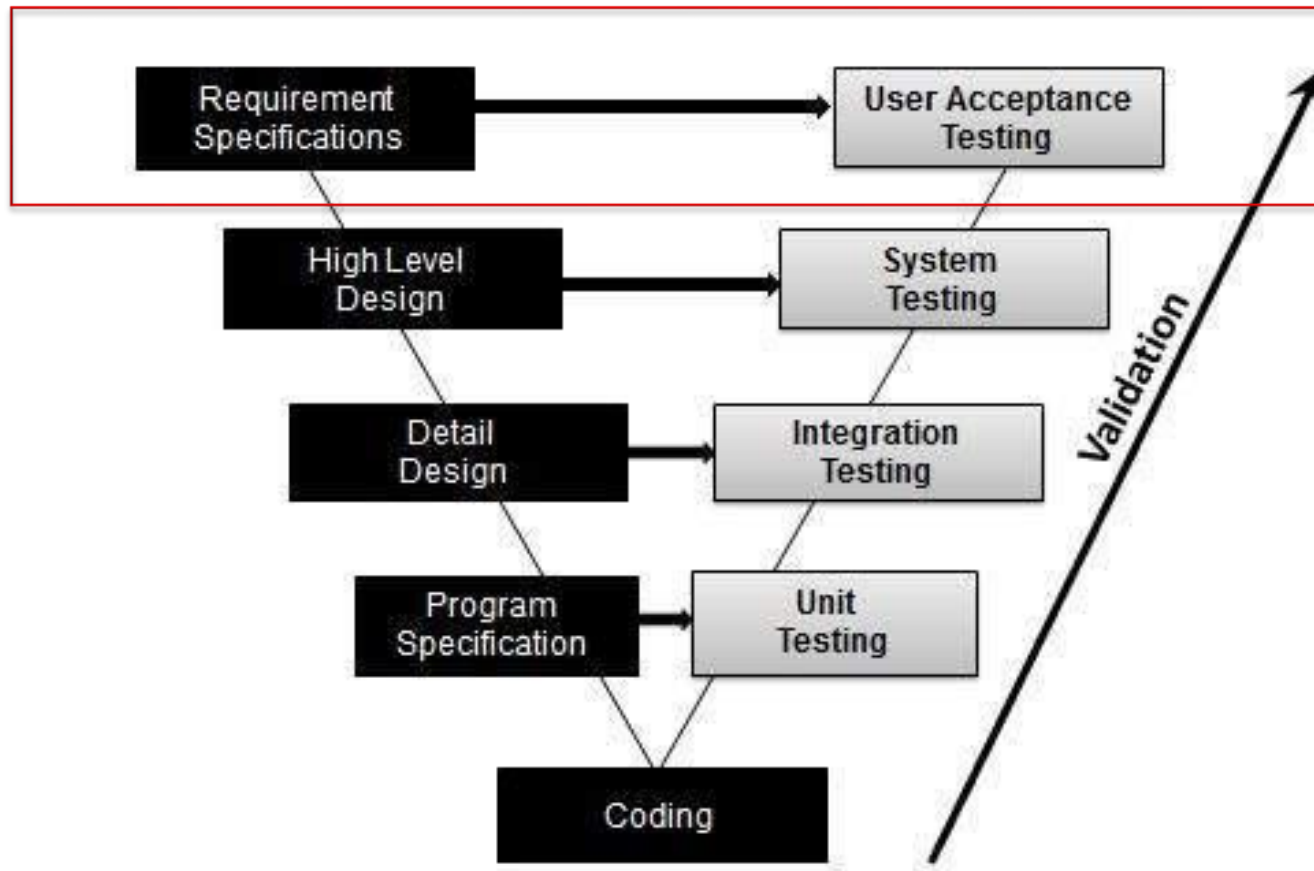need or expectation that is stated, generally implied or obligatory

Note 1 to entry: "Generally implied" means that it is custom or common practice for the organization (3.2.1) and interested parties (3.2.3) that the need or expectation under consideration is implied.

Note 2 to entry: A specified requirement is one that is stated, for example in documented information (3.8.6).

Note 3 to entry: A qualifier can be used to denote a specific type of requirement, e.g. product (3.7.6) requirement, quality management (3.3.4) requirement, customer (3.2.4) requirement, quality requirement (3.6.5).
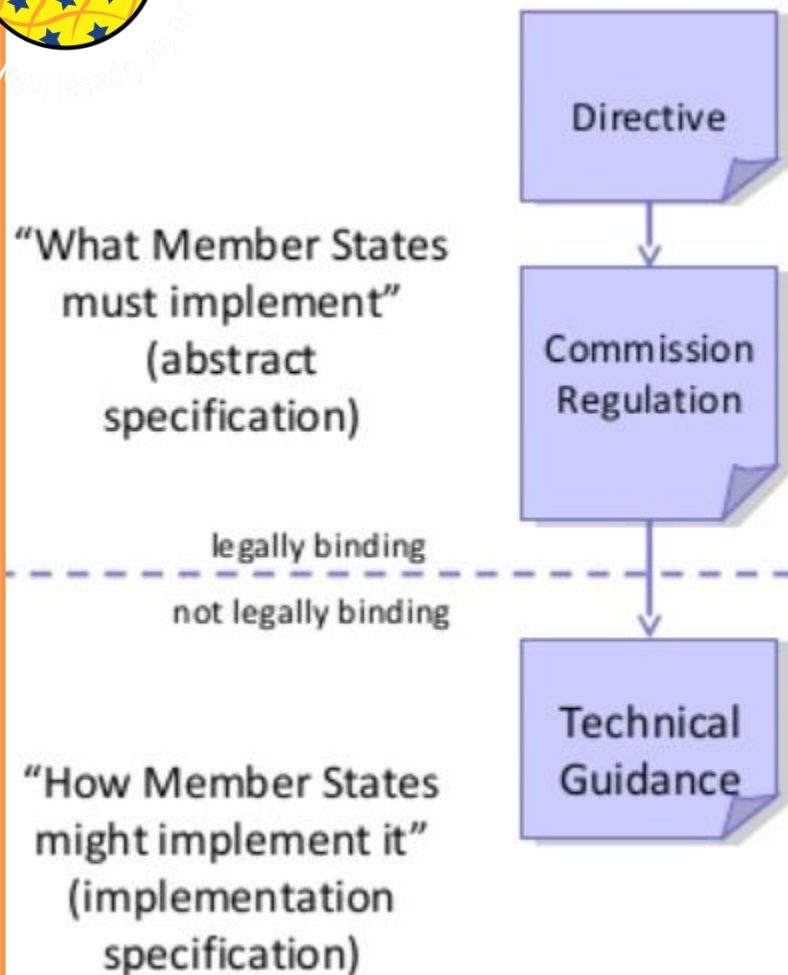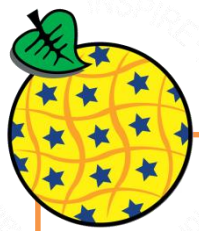
Note 4 to entry: Requirements can be generated by different interested parties or by the organization itself.

Against what ?

V-model in software development

Against what?

"What Member States must implement" (abstract specification)

Directive

Commission Regulation

legally binding

not legally binding

Technical Guidance

"How Member States might implement it" (implementation specification)

- Implementing rules
- Technical guidelines
- …

How ?

- Test cases : For each requirement
  - Method/List of actions
  - Expected result
  - Prerequists/Inputs
  - Reference to the requirement(s)
  - Method

- Test suite
  - List of test cases

How ?

- Automatically :
  - Abstract Tests Suite (ATS) derived in an Executable Test Suite (ETS)

  - E.g. INSPIRE Metadata Validator

- Manually :
  - Scenarios derived from the ATS
  - Inspections

Who ?

- Producer/provider
  - Check towards requirements defined at the beginning of process

- Certification
  - Check toward standards

- User/client
  - Check toward defined needs

- European commission
  - Check towards

Which result ?

- Binary
  - Passed or not

- Indicator
  - Percentage of success
  - Rate

What's this?

- Test report

re Validation Issues
- A keyword defining the INSPIRE Spatial Data Theme is required for Spatial Data Sets and Series but it could not be found
  Relevant documentation:
  - See [TG Requirement 14] in INSPIRE Metadata Implementing Rules: Technical Guidelines based on EN ISO 19115 and EN ISO 19119 (Version 1.3)
  - See [If a resource is a spatial data set or spatial data set series] in Commission Regulation (EC) No 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata
  Expert documentation
  - UML Requirement Diagram

- Information on the degree of conformity with the implementing rules on interoperability of spatial data sets and services is required
  Relevant documentation:
  - See [TG Requirement 28] in INSPIRE Metadata Implementing Rules: Technical Guidelines based on EN ISO 19115 and EN ISO 19119 (Version 1.3)
  - See [Metadata for spatial data sets and spatial data set series] in Commission Regulation (EC) No 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata
  Expert documentation
  - UML Requirement Diagram

Why ?

- Prove conformance
  - To a set of requirements
    - A conformance class

- Prove compliance to rules/standard

- Check INSPIRE-compliance

Compliance vs Conformance

Conform: The OGC Compliance Program uses as its foundation ISO 19105:2000 Geographic information - Conformance and testing. Section 3.8 defines conformance as **fulfillment of specified requirements**. For OGC this means that: 1) a specific software product has passed the test that evaluates the fulfillment of requirements of a standard and 2) the developer organization has acquired the license to use OGC certification marks.

Compliance: Same as Conformance.

Recommendations:

It is better to say that a product "complies with an OGC standard" than to say the product "conforms to an OGC standard".

If an organization doesn't have the OGC mark for a particular software product and particular OGC standard, the organization can say that their product "implements an OGC standard".

http://www.opengeospatial.org/ogc/faq

Not valid ?