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.
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]
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?

- Implementing rules
- Technical guidelines
- …
How?

- Test cases: For each requirement
  - Method/List of actions
  - Expected result
  - Prerequisites/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
- Test report
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?