INSPIRE Workshop on validation and conformity testing

eENVplus Validation Service

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eENVplus

Summary

- eENVplus
- Dataset validation
- eENVplus Validation Service
- From ATS to ETS

- eENVplus is 3-years ICT-PSP project (pilot “A”) started in January 2013, developing eEnvironmental services for advanced applications within INSPIRE, to be implemented and tested in 10 pilots-scenarios

- 21 Annex I, II and III INSPIRE Data Specifications (AU, HY, PS, TN, LC, GE, EL, EF, AM, LU, HB, SD, NZ, US, SO, CP, AC, HH, PF, SU, OI)
- EEA AQD e-reporting schema
- www.eenvplus.eu

Data-centric validation

- Abstract Test Suite (ATS) included in the Annex A of the INSPIRE Data Specifications is the starting point for the conformance testing process of datasets.
- Annex A - Part 1: includes tests aiming at assessing the conformity of GML datasets to "COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services" and its successive amendment "COMMISSION REGULATION (EU) No 1253/2013 of 21 October 2013".

Data-centric validation

- Annex A - Part 2: includes tests aiming at assessing conformity of GML datasets to relevant INSPIRE Data Specifications - Technical Guidelines (TG) requirements.

ATS – Part 1

Conformance Class	Tests
A.1 Application Schema Conformance Class	A.1.1 Schema element denomination test
	A.1.2 Value type test
	A.1.3 Value test
	A.1.4 Attributes/associations completeness test
	A.1.5 Abstract spatial object test
	A.1.6 Constraints test
	A.1.7 Geometry representation test
A.2 Reference Systems Conformance Class	A.2.1 Datum test
	A.2.2 Coordinate reference system test
	A.2.3 Grid test
	A.2.4 View service coordinate reference system test
	A.2.5 Temporal reference system test
	A.2.6 Units of measurements test
A.3 Data Consistency Conformance Class	A.3.1 Unique identifier persistency test
	A.3.2 Version consistency test
	A.3.3 Life cycle time sequence test
	A.3.4 Validity time sequence test
	A.3.5 Update frequency test
A.4 Data Quality Conformance Class	A.4.1 Data quality target results test
A.5 Metadata IR Conformance Class	A.5.1 Metadata for interoperability test
A.6 Information Accessibility Conformance Class	A.6.1 Code list publication test
	A.6.2 CRS publication test
	A.6.3 CRS identification test
	A.6.4 Grid identification test
A.7 Data Delivery Conformance Class	A.7.1 Encoding compliance test
A.8 Portrayal Conformance Class	A.8.1 Layer designation test

ATS – Part 2

Conformance Class	Tests
A.9 Technical Guideline Conformance Class	A.9.1 Multiplicity test
	A.9.1 CRS http URI test
	A.9.2 Metadata encoding schema validation test
	A.9.3 Metadata occurrence test
	A.9.4 Metadata consistency test
	A.9.5 Encoding schema validation test
	A.9.6 Coverage multipart representation test
	A.9.7 Coverage domain consistency test
	A.9.8 Style test

The Validation Service: an overview

- Some tests contained in the ATS can be automated using xml schema validation tools and/or rule languages (e.g. Schematron).
- Tests that cannot be automated shall be executed manually.
- The Validation Service is an executable test suite (ETS) that implements the ATS.
- Final version of the Validation Service will be implemented as web application through the use of the OGC TEAM Engine tool.

OGC TEAM Engine

- The Test, Evaluation, And Measurement (TEAM) Engine is an Open Source Java application.
- It provides command-line and web interfaces to execute test suites written using the OGC CTL test grammar or the TestNG framework.
- It is used to verify specification compliance and is the official test tool of the OGC Compliance Testing Program (CITE), where it is used to certify implementations of OGC and ISO geomatics standards.

  http://cite.opengeospatial.org/teamengine/

- It is also a tool being setup by other organizations to help community involved in compliance testing.

The Validation Service features

- Verifies the conformance of GML data with respect to ISO 19136:2007 (GML 3.2.1) and to relevant GML application schema (XSD file declared in xsi:schemaLocation attribute of the GML data), in an automated way.
- Allows to verify additional constraints on GML data through the selection of Schematron rules from a predefined list (related to INSPIRE theme) or inserted as URI.
- Helps manual execution of tests that cannot be automated and/or for which no code is available.

The Validation Service: initial test implementation

- An initial test implementation of the Validation Service makes use of the OGC free testing facility

  GML 3.2 (ISO 19136:2007) Conformance Test Suite

  that verifies the conformance of GML data and application schemas with respect to ISO 19136:2007.
- All mandatory conformance requirements are checked and every GML file is validated against all referenced application schemas.
- The Validation Service is accessing the test run controller of the GML Conformance Test Suite via REST APIs.

http://www.epsilon-italia.it/EN/cat.asp?Pag=28

Validation Service: initial test version

The eEnvPlus Validation Service makes use of the OGC® free "self-service" testing facility **GML 3.2 (ISO 19136:2007) Conformance Test Suite.** - version 3.2.1-r15 is being used.
This executable test suite (ETS) verifies the conformance of GML data and application schemas with respect to ISO 19136:2007 (GML 3.2.1) more details

Insert the **GML dataset file** to validate as a link to web resource (http:\\) or link to WFS Get Feature request:

Optionally

Select the INSPIRE Theme from the dropdown list to validate the GML file also against the relevant schematron defining supplementary data constraints for theme selected.
No Theme-specific schematron file available

OR

Insert a URI referring to a Schematron schema defining supplementary data constraints:

Submit form Reset form

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ATS – Part 2

Conformance Class (Part2)	Tests
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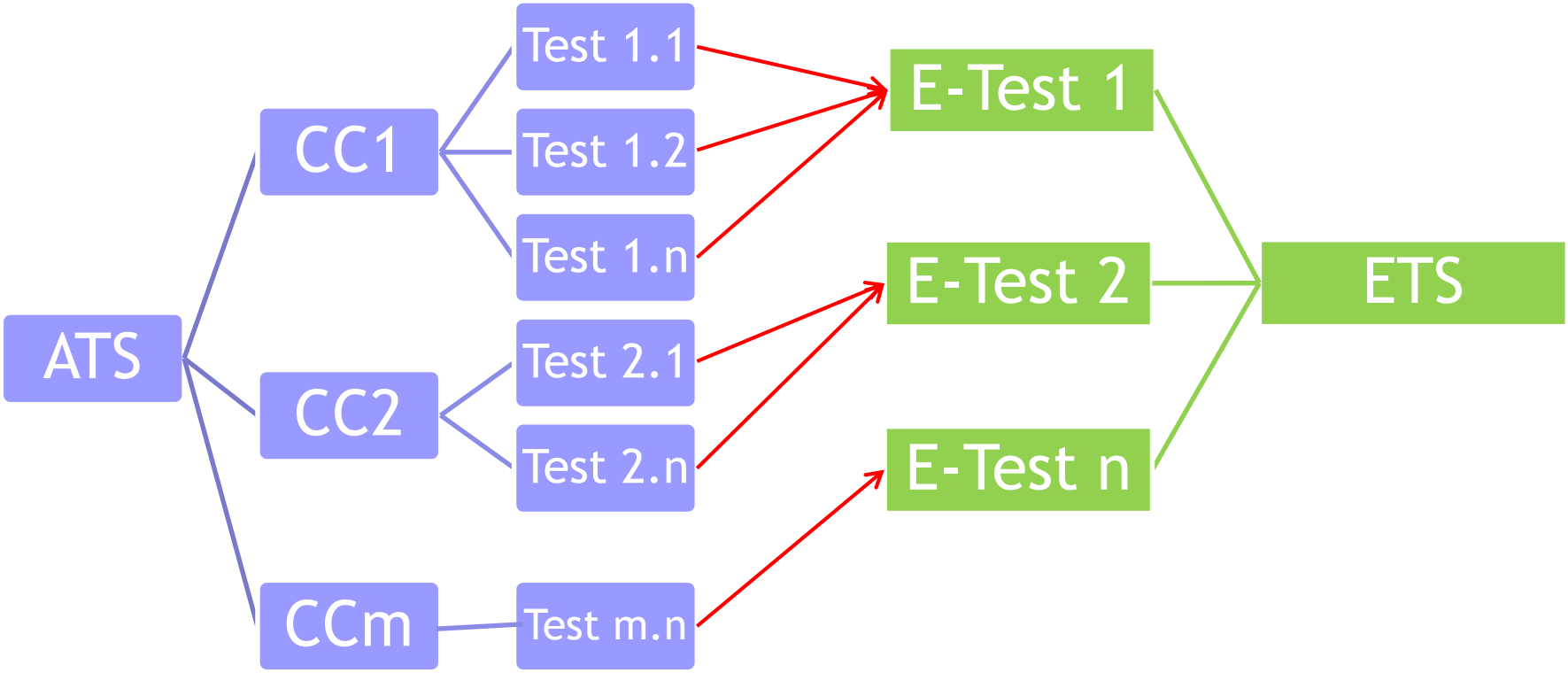
Validation Service: ongoing developments

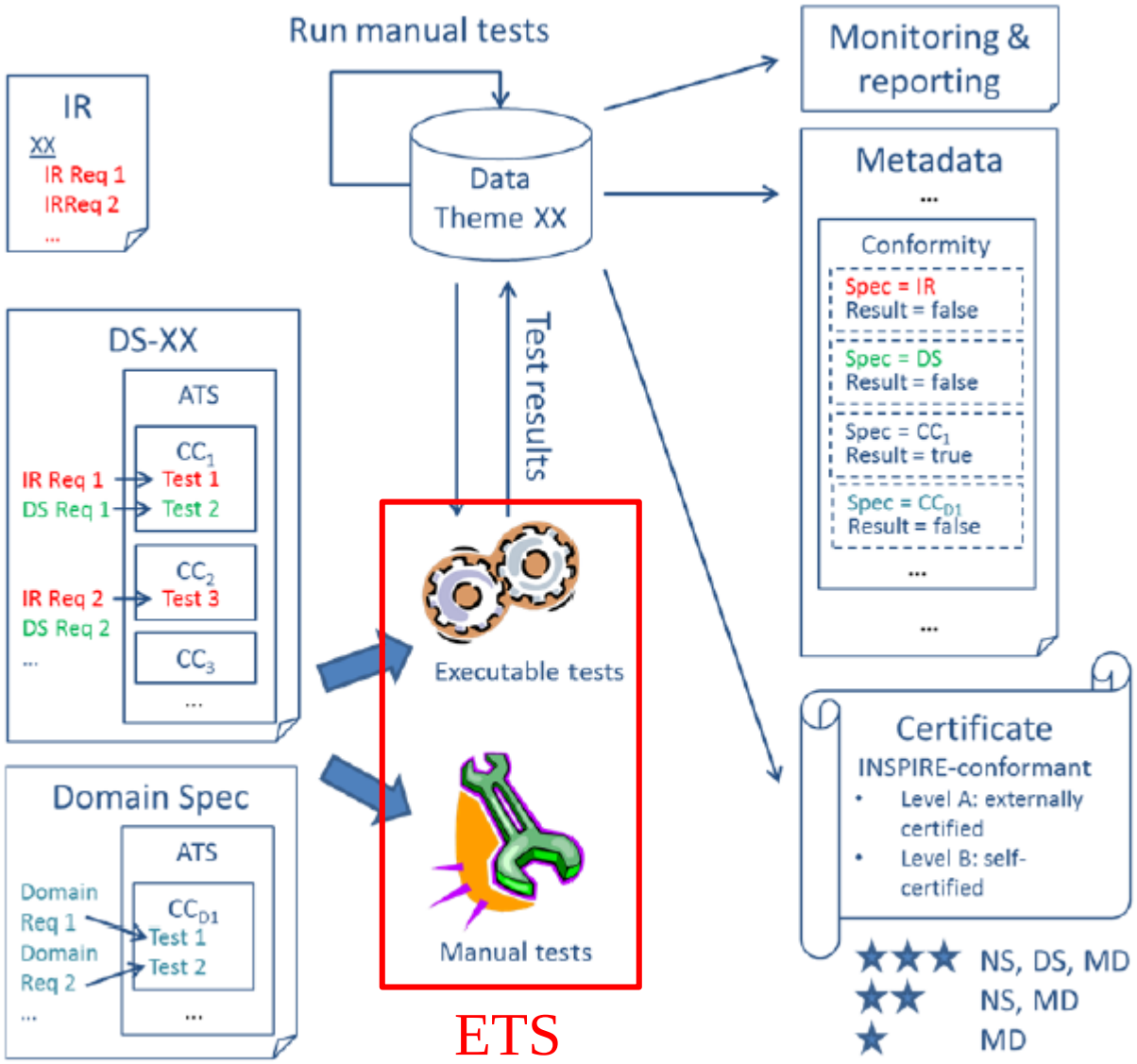
- Customization of TEAM Engine web interface:
  - ✓ creation of access page prompting the user for the INSPIRE Data Theme of gml dataset to be tested.
  - ✓ creation of the «after selection» page showing the ETS with the tests related to the conformance classes of the ATS.

- Development of ETS:
  - ✓ creation of theme-specific schematron libraries
  - ✓ guidelines to manual execution of tests

- Customization of the validation report

From ATS to ETS





Abstract Test Suite for INSPIRE Data Specifications

Vlado Cetl, Katalin Tóth, Tomas Reznik, Robert Tomas

INSPIRE conference 2012

Thank you!

Questions?

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