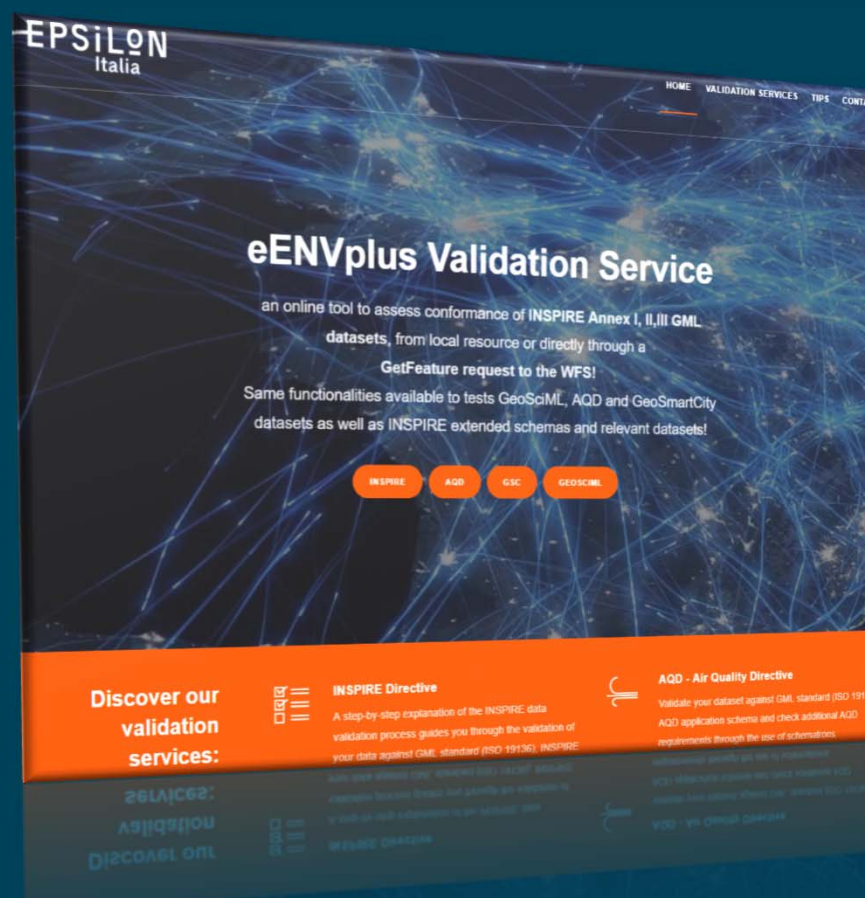


INSPIRE Conference - 06/09/ 2017



The eENVplus Validation Service: a complete solution to validate INSPIRE Annex I, II , III datasets and INSPIRE extended schemas & datasets

Overview

Side with the implementers

- step by step guide
- helpful tips
- What you can validate
- How you can address resources

Not only 'core'

- Validation of INSPIRE extended schemas
- Validation of INSPIRE extended datasets
- GeoSciML schematrons online

Two different test suites

- Light Validation – BIG data
- Full Validation – SMALL data

... And more ...

Side with the implementers

EPSILON
Italia

HOME VALIDATION SERVICES TIPS CONTACT

ATS

Against what requirements are you validating your dataset?

Before undertaking a dataset validation task, it's crucial to understand against what you are validating your dataset i.e. to understand what the validation process will assess and what you can declare about your dataset once you get the validation report. Most validation tools only perform a so called "schema" validation. This means that the dataset is tested against those requirements that can be expressed by means of XML schema grammar (i.e. xsd requirements) assessing whereas all the elements in the dataset adhere to the structure defined in the addressed application schema. The eENVplus Validation Service goes deeper into validation, since it performs:

- ➔ Schema validation : every dataset is validated against all referenced application schemas. Moreover, the referenced schemas themselves are validated as well.
- ➔ GML 3.2.1 validation: the dataset is validated against requirements of the ISO 19136:2007 which defines the GML standard. This means that not only the gml.xsd schema requirements are addressed, but, for example, that also the constraints concerned with dataset geometries and coordinate reference system are considered.
- ➔ Supplementary constraint validation: whether a schematron file is directly addressed in the dataset or it is selected from available eENVplus schematron library drop down list, the dataset content is validated against the constraints specified therein.

Part 1 (normative)

ETS

Well known issue: GML files size

INSPIRE datasets can sometimes turn into huge GML files (several GB). Poor performances of the Validator are experienced when file size > 80 MB. Our suggestion: split the huge file into subsets of limited size, to be validated one by one. Note: The issue related to filesize has been reported to OGC CITE developers and they're looking for a suitable solution. To get better performances, in your GML dataset file, get rid of unneeded application schema i.e. schemas which are not referenced in the dataset. That because the OGC GML Test Suite performs a validation of all the schemas mentioned in the GML dataset and keeps them (as well as the results of their validation) in memory.


Disclaimer: Currently the OGC Test Suite seems to have a bug which may cause reporting of the messages 'validSurfaceBoundary: Exterior boundary is not simple' and/or 'validSurfaceOrientation: Ring has fewer than 3 points, so orientation cannot be determined' even for correct geometries.

Most frequently encountered failures

Here follows a list of major issues / failures encountered by users and some helpful tips suggested by our experience as validators:

- pointHasValidPosition test (+)
- validSurfaceBoundary test (+)
- validSurfaceOrientation test (x)

This test is related to respect of the GML requirement (ref. ISO19107) stating that the orientation of the surface boundary is consistent with the upward normal i.e. exterior boundary is counterclockwise and interior boundaries are clockwise. Most INSPIRE GML files fail this test, above all if source data comes from shapefiles. This validation issue is linked to the difference between the ESRI shapefile format, which prescribes clockwise outer polygons, and the ISO 19107 which prescribes they should be counterclockwise.



Part 2 (informative)

What You Can Validate

GML Conformance Test Suite

The conformance of the GML resource (XSD application schema or GML dataset) will be checked against the following specifications:

- [ISO 19136:2007](#), Geographic information - Geography Markup Language (GML)
- [XML Schema Part 1: Structures](#), Second Edition

More specifically, the GML datasets conformance will be evaluated with respect to:

- all the XSD application schemas declared in the GML file '*xsi:schemalocation*' attribute
- all the XSD application schemas imported in turn by the schemas declared in the '*xsi:schemalocation*' attribute
- INSPIRE constraints common to all data themes (default option in the underlying schematron drop down list)
- supplementary theme-specific constraints, whether a related schematron is available and selected from drop down list. INSPIRE theme-specific schematrons include also the INSPIRE Common schematron rules.

WARNING : To avoid *Out of Memory issue* in the OGC Test Suite, datasets exceeding 50 MB should be split into smaller subsets and WFS Getfeature should specify a limited number of features.

GML resource

Location of the GML resource (http URL / WFS GetFeature request / WFS DescribeFeatureType request)

Upload GML resource

Nessun file selezionato.

Schematron rules defining supplementary data constraints (INSPIRE/ GeoSciML/ AQD)

|

How you can address resources

GML Conformance Test Suite

The conformance of the GML resource (XSD application schema or GML dataset) will be checked against the following specifications:

- [ISO 19136:2007](#), Geographic information - Geography Markup Language (GML)
- [XML Schema Part 1: Structures](#), Second Edition

More specifically, the GML datasets conformance will be evaluated with respect to:

- all the XSD application schemas declared in the GML file '*xsi:schemalocation*' attribute
- all the XSD application schemas imported in turn by the schemas declared in the '*xsi:schemalocation*' attribute
- INSPIRE constraints common to all data themes (default option in the underlying schematron drop down list)
- supplementary theme-specific constraints, whether a related schematron is available and selected from drop down list. INSPIRE theme-specific schematrons include also the INSPIRE Common schematron rules.

WARNING : To avoid *Out of Memory issue* in the OGC Test Suite, datasets exceeding 50 MB should be split into smaller subsets and WFS Getfeature should specify a limited number of features.

GML resource

Location of the GML resource (http URL / WFS GetFeature request / WFS DescribeFeatureType request)

Upload GML resource

Nessun file selezionato.

Schematron rules defining supplementary data constraints (INSPIRE/ GeoSciML/ AQD)

|

Schematron rules

GML Conformance Test Suite

The conformance of the GML resource (XSD application schema or GML dataset) will be checked against the following specifications:

- [ISO 19136:2007](#), Geographic information - Geography Markup Language (GML)
- [XML Schema Part 1: Structures](#), Second Edition

More specifically, the GML datasets conformance will be evaluated with respect to:

INSPIRE Common	GML file ' <i>xsi:schemalocation</i> ' attribute
INSPIRE Protected Sites v4.0	defined by the schemas declared in the ' <i>xsi:schemalocation</i> ' attribute
INSPIRE Land Cover v4.0	(default option in the underlying schematron drop down list)
GSML4 INSPIRE mandatory elements	where a related schematron is available and selected from drop down list. INSPIRE theme-specific schematrons include also the INSPIRE Common schematron rules.
GSML4 INSPIRE URI	
GSML4.1 Lite - Simple Feature profile SF0	For the INSPIRE Common Test Suite, datasets exceeding 50 MB should be split into smaller subsets and WFS Getfeature should specify a limited number of features.
GSML4.1 Basic - Complex Feature INSPIRE profile SF1	
GSML4.1 Borehole - Borehole complex Feature profile	
GSML4.1 Extension -Complex Feature profile SF2	
AQD DataFlow-B Zones	
AQD DataFlow-C Assessment	
AQD DataFlow-D	
AQD DataFlow-E Observation	
AQD DataFlow-E ObservationQuality	
AQD DataFlow-G Attainment	
AQD DataFlow-G ExceedanceDescription	
Skip schematron tests	
INSPIRE Common	

GetFeature request / WFS DescribeFeatureType request

&version=2.0.0&request=GetFeature&typeName=ps:ProtectedSite&count=1&SRSName=urn:ogc:def:crs:EPSG::4258

Constraints (INSPIRE/ GeoSciML/ AQD)

Start | Clear

Not only INSPIRE 'core'

GML Conformance Test Suite

The conformance of the GML resource (XSD application schema or GML dataset) will be checked against the following specifications:

- [ISO 19136:2007](#), Geographic information - Geography Markup Language (GML)
- [XML Schema Part 1: Structures](#), Second Edition

More specifically, the GML datasets conformance will be evaluated with respect to:

INSPIRE Common	
INSPIRE Protected Sites v4.0	GML file ' <i>xsi:schemalocation</i> ' attribute
INSPIRE Land Cover v4.0	defined by the schemas declared in the ' <i>xsi:schemalocation</i> ' attribute
GSML4 INSPIRE mandatory elements	(default option in the underlying schematron drop down list)
GSML4 INSPIRE URI	after a related schematron is available and selected from drop down list. INSPIRE theme-specific schematrons include also the INSPIRE Common schematron rules.
GSML4.1 Lite - Simple Feature profile SF0	For the INSPIRE Core Test Suite, datasets exceeding 50 MB should be split into smaller subsets and WFS Getfeature should specify a limited number of features.
GSML4.1 Basic - Complex Feature INSPIRE profile SF1	
GSML4.1 Borehole - Borehole complex Feature profile	
GSML4.1 Extension -Complex Feature profile SF2	
AQD DataFlow-B Zones	
AQD DataFlow-C Assessment	
AQD DataFlow-D	
AQD DataFlow-E Observation	
AQD DataFlow-E ObservationQuality	
AQD DataFlow-G Attainment	
AQD DataFlow-G ExceedanceDescription	
Skip schematron tests	
INSPIRE Common	

GetFeature request / WFS DescribeFeatureType request

```
&version=2.0.0&request=GetFeature&typeName=ps:ProtectedSite&count=1&SRSName=urn:ogc:def:crs:EPSG::4258
```

Constraints (INSPIRE/ GeoSciML/ AQD)

Start | Clear

Two different test suites



E.1 Test : Automated Validation for GML Datasets

The E.1 Test makes available the following free testing facilities developed as part of the [OGC Compliance Program \(CITE\)](#):

1. **GML 3.2 (ISO 19136:2007) - Conformance Test Suite** which verifies the conformance of GML data with respect to
 - o ISO 19136:2007 (GML 3.2.1)
 - o Supplementary data constraints by means of user-defined schematron rules.

Be aware that

The E.1 Test makes use of schematron files - developed by eENVplus team - to implement some of the abstract tests contained in the ATS (those marked by "*" in the table contained in the previous page) which therefore will be covered only if the user selects the relevant schematron from the dropdown list.

Should not yet the theme-specific schematron be available, the *"INSPIRE Common"* schematron (default option in the drop down list) validates INSPIRE requirements common to all data themes.

Should *"Skip schematron tests"* option be selected, only application schema and GML encoding requirements will be tested.

2. **GML Documents - Conformance Test Suite** which verifies the conformance of BIG GML datasets (several GBs) **only** to the referenced application schema structure.

Differently from the GML 3.2 (ISO 19136:2007) Conformance Test Suite, this GML Documents Test Suite does not verify any constraint concerned with the validity of geometry representations, and does not allow the use of schematrons.

To execute an in-depth conformance test, therefore, the GML 3.2 (ISO 19136:2007) - Conformance Test Suite must be selected. In this case, however, be aware that, due to Out of Memory issues, only datasets up to few tens of MB can be validated. Datasets exceeding this size, should be splitted into smaller pieces to be validated one by one.

[Sign in](#) OR [Create an account](#)

... and more ...

- Guidelines for manual tests that cannot be automated
- Users' feedback
- Continuous interactions with OGC since 2015
- Invocable though REST API
- Additional schematron files coming soon
- Let's try it and visit our INSPIRE Helpdesk corner at stand B2

THANK YOU

s.morrone@epsilon-italia.it

www.inspire-helpdesk.eu

s.morrone@epsilon-italia.it

