

# Validation of INSPIRE metadata, data and services

## National experience from Belgium

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# Validation of transformed data

Our key experience

# Which theme's?



## ■ Annex I

- Administrative Units
- Cadastral Parcels
- Hydrography
- Transport Network

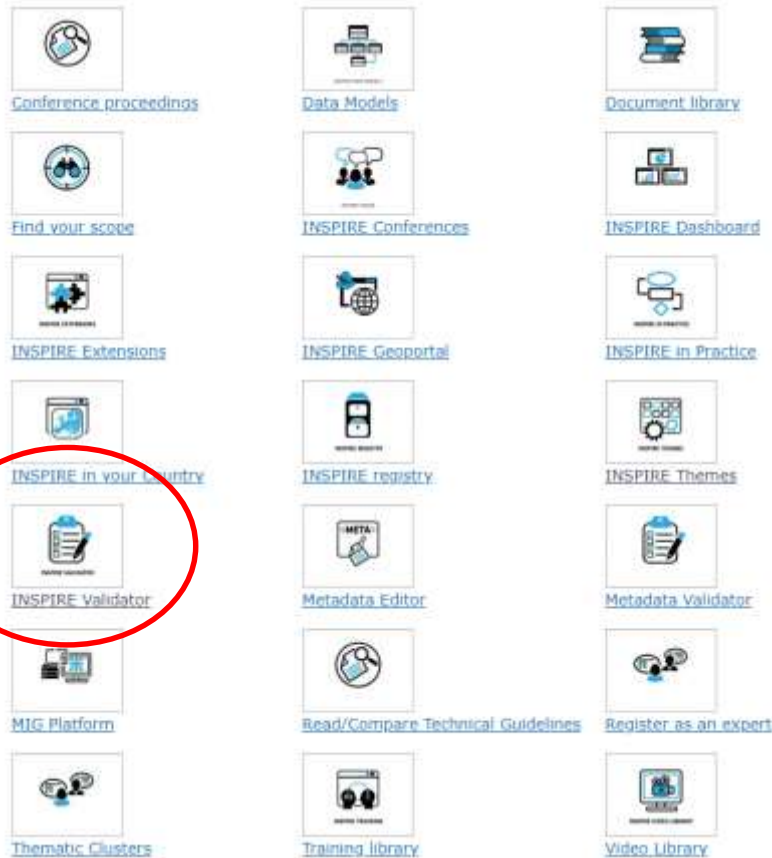
## ■ Annex III

- Buildings
- Statistical Units

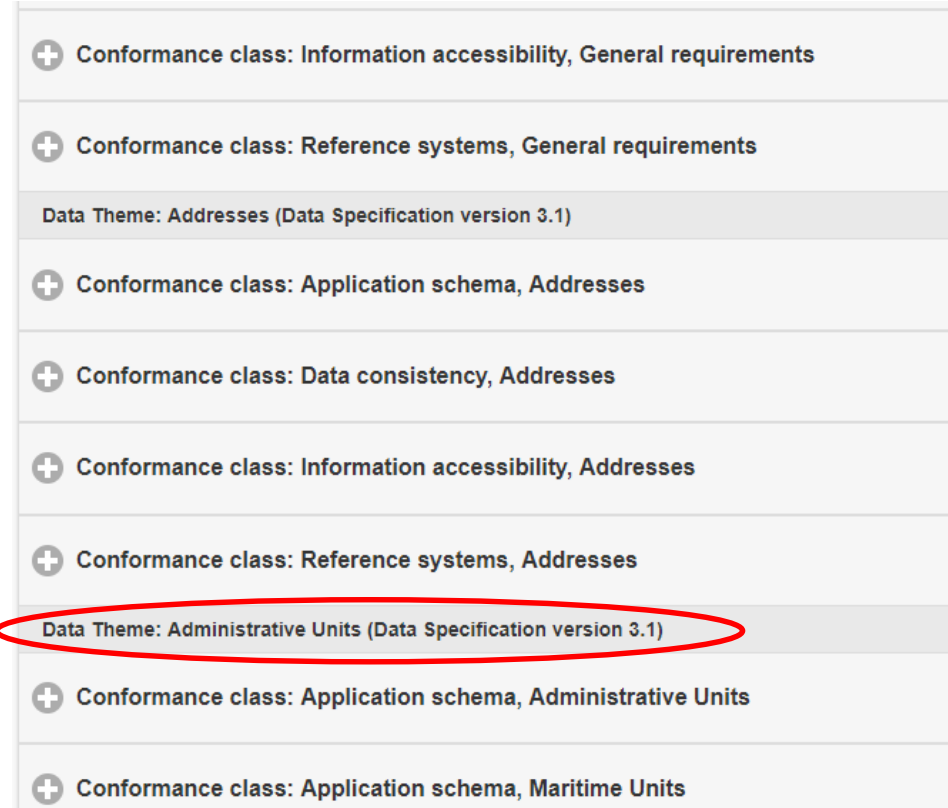
# Getting started is easy enough...



## ■ Find the tool



## ■ Find your scope



# But then...



## ■ Abstract Test Suite: Conformance Classes

- Application Schema

- Reference
- Data
- Metadata

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	Constraints test .....
A.1.6	Geometry representation test .....

- Information Accessibility

- Data Delivery

- Portrayal

- Technical Guideline

## ■ Executable Test Suite

- Other conformance classes?
- Which test are included?

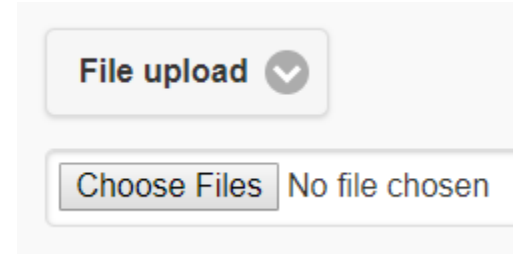
Data Theme: Administrative Units (Data Specification version 3.1)

+	Conformance class: Application schema, Administrative Units	<input checked="" type="checkbox"/>
+	Conformance class: Application schema, Maritime Units	<input type="checkbox"/> use
+	Conformance class: Data consistency, Administrative Units	<input checked="" type="checkbox"/>
+	Conformance class: Information accessibility, Administrative Units	<input checked="" type="checkbox"/>
+	Conformance class: Reference systems, Administrative Units	<input checked="" type="checkbox"/>

# Uploading a file

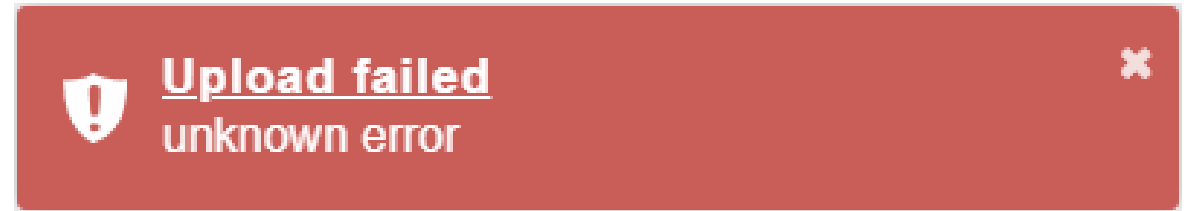


- Upload failed: happens often, but why?



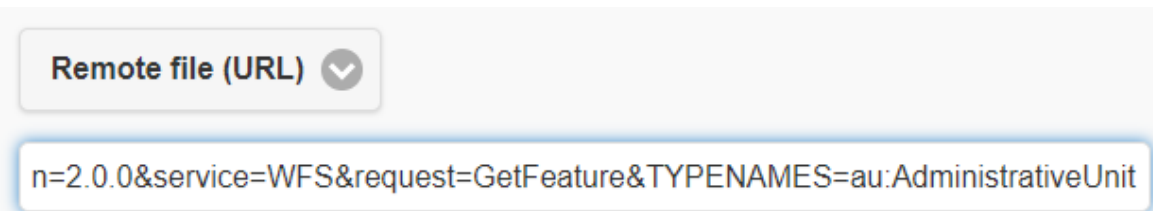
- “Unknown error”

- Data set too big? > 100 MB
- Server too busy? No warnings
- Sometimes it helps to try it the next day...



Select one or multiple XML/GML files or ZIP files containing XML/GML files. The Maximum size of each uploaded file is 772 MB. The upload starts immediately after selecting the files. The 'Start' button is unlocked when the upload has been successfully completed.

- Alternative: WFS (if available...)



# Result output looks user friendly, however...



- + Conformance class: INSPIRE GML encoding 1
- + Conformance class: INSPIRE GML application schemas, General requirements 6
- + Conformance class: GML application schemas, Administrative Units 1
- + Conformance class: Application schema, Administrative Units 2
- + Conformance class: Data consistency, General requirements 2
- + Conformance class: Data consistency, Administrative Units 7
- + Conformance class: Information accessibility, General requirements Failed: 1 / 1
- + Conformance class: Information accessibility, Administrative Units 2
- + Conformance class: Reference systems, General requirements Failed: 1 / 2
- + Conformance class: Reference systems, Administrative Units 1

# ... the link between tests is not always clear



**Conformance class: Application schema, Administrative Units** 2

This test suite examines requirements associated with the application schema.

**This is a draft version. It has limitations and is expected to contain errors.** Please report any issues or problems [in GitHub](#).

Known limitations are documented in the description of the applicable test case or test assertion. There is a general limitation in all assertions that extensions in additional application schemas are only supported, if the unqualified name of the feature type in the extension is the same as the name of the feature type in the INSPIRE application schema.

Source: [Conformance Class 'Application schema, Administrative Units'](#)

Pre-requisite conformance classes:

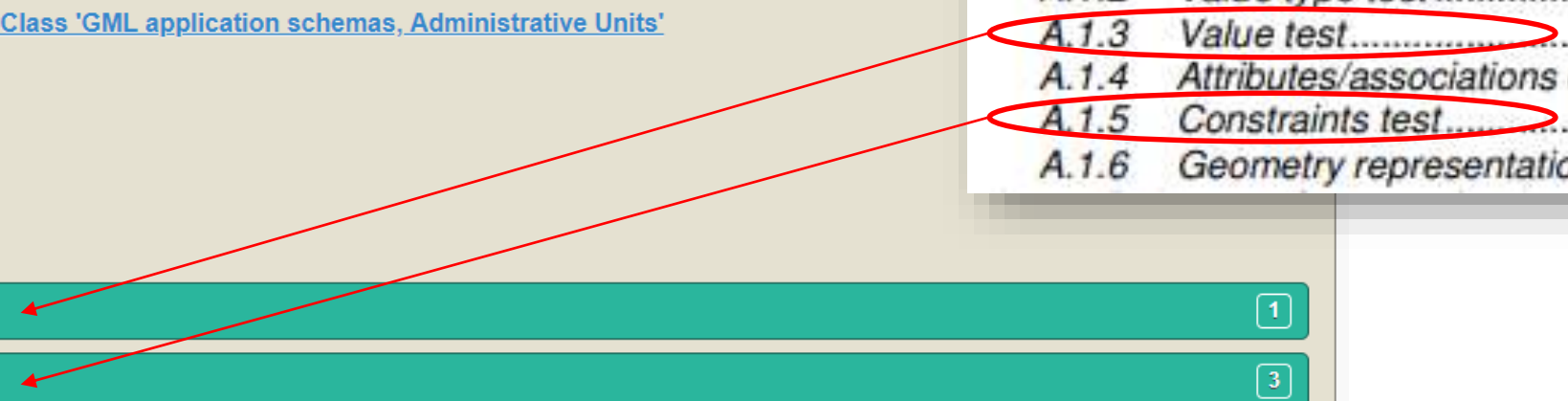
- [Conformance Class 'GML application schemas, Administrative Units'](#)

**Status** Passed  
**Duration** 0.056 s  
**Version** 0.2.1

**+ Code list values** 1

**+ Constraints** 3

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	Constraints test .....
A.1.6	Geometry representation test .....





# ... or one-to-one



- A.5 Information Accessibility Conformance Class...
- A.5.1 CRS publication test .....
- A.5.2 CRS identification test .....

**Coordinate reference systems (CRS)**

Verify that referenced coordinate reference systems can be accessed.

**Status** Failed  
**Duration** 0.063 s

**+ ia.a.1: CRS publicly accessible via HTTP**

**Code lists**

Verify that code lists extensions can be accessed.

**Status** Passed  
**Duration** 0.001 s

**✓ au-ia.a.1: Code list extensions accessible**

**Feature references**

Verify that referenced features can be retrieved.

**Status** Passed  
**Duration** 0.032 s

- ✓ au-ia.b.1: AdministrativeUnit.NUTS**
- ✓ au-ia.b.2: AdministrativeUnit.Condominium**
- ✓ au-ia.b.3: AdministrativeUnit.upperLevelUnit**
- ✓ au-ia.b.4: AdministrativeUnit.lowerLevelUnit**
- ✓ au-ia.b.5: AdministrativeUnit.administeredBy**
- ✓ au-ia.b.6: AdministrativeUnit.coAdminister**
- ✓ au-ia.b.7: AdministrativeUnit.boundary**
- ✓ au-ia.b.8: AdministrativeBoundary.admUnit and Condominium.admUnit**
- ✓ au-ia.b.9: MaritimeZone.boundary**
- ✓ au-ia.b.10: MaritimeZone.seaArea**
- ✓ au-ia.b.11: MaritimeZone.baseline**



# Service testing?

No experience

# METADATA: which validator?

Geoportal Resource Browser vs.  
Geoportal Metadata Validator vs.  
INSPIRE Validator



Conference proceedings

Data Models

Document library

Find your score

INSPIRE Conferences

INSPIRE Dashboard

INSPIRE Extensions

INSPIRE Geoportal

INSPIRE in Practice

INSPIRE in your Country

INSPIRE registry

INSPIRE Themes

INSPIRE Validator

Metadata Editor

Metadata Validator

MIG Platform

Read/Compare Technical Guidelines

Register as an expert

Thematic Clusters

Training library

Video Library

Geoportal  
Resource  
Browser

INSPIRE GEOPORTAL  
Enhancing access to European spatial data

EUROPEAN COMMISSION > INSPIRE > INSPIRE GEOPORTAL > Resource Browser

Resource Browser - INSPIRE Full Operating Capability

Filter

All resources
  errors
  warnings, no errors
  no issue

Only metadata resources
  Hide metadata resources

Search

(press ESC to close suggestions)

Add selection Criteria

MD	HS	DS	Country	Non-normative

Elements relevant to the INSPIRE Metadata Regulation:

- Resource Type
  - dataset[149672]
    - name[3074]
      - service[100889]
- Declared Conformity
- Spatial Data Themes Annex

INSPIRE GEOPORTAL  
Enhancing access to European spatial data

EUROPEAN COMMISSION > INSPIRE > INSPIRE GEOPORTAL > Evaluator

INSPIRE Geoportal Evaluator - what's new - change feed - documentation - about

This Evaluator replaces the former *schematron validator* and implements the same evaluation criteria applied during the INSPIRE Geoportal Discovery process.

It is possible to use this Evaluator as a Web Service (instructions available [here](#)).

Paste your resource in the text field below  
(ISO 19139 Metadata or OGC Service Endpoint or CSW GetRecords or GetRecordById GET Request or URL to metadata)

You can also upload a file to test  
Select the file to be tested:  No file chosen

INSPIRE  
Validator

Geoportal  
Metadata  
Validator

Metadata (Technical Guidance version 1.3)

Conformance class: INSPIRE Profile based on EN ISO 19115 and EN ISO 19119

Conformance class: Metadata for interoperability

# Example: “Orthophoto”, a dataset of the NGI



## (dataset) Orthophoto (National Geographic Institute)

[Inspire Metadata](#)

[Original metadata](#)

[Validation report](#)

*Orthophotophotographs are digital aerial photographs that have been adjusted for lens distortion, topographic relief and camera tilt. The orthophotographs are metrically more accurate than common aerial photographs. They are very valuable as reference information and also, for instance, for surveyin...[more](#)*



- Geoportals Resource Browser
- Geoportals Metadata Validator



Average degree of conformity of INSPIRE Metadata: 100.00%

#### INSPIRE Evaluation Potential Warning

- **Missing or wrong Originating Controlled Vocabulary URI - URI needs to be 'http://www.eionet.europa.eu/gemet/inspire\_themes'**
- This recommendation has to be taken into consideration by 19/12/2019

##### *Relevant documentation:*

- See [TG Recommendation 1.9:](#) in *Technical Guidelines for implementing dataset and service metadata based on ISO/TS 19139:2007*
- See *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*

- **Missing or wrong Keyword URI - URI needs to be 'http://inspire.ec.europa.eu/theme/oi'**
- This recommendation has to be taken into consideration by 19/12/2019

##### *Relevant documentation:*

- See [TG Recommendation C.8:](#) in *Technical Guidelines for implementing dataset and service metadata based on ISO/TS 19139:2007*
- See *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*

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Average degree of interoperability of INSPIRE Resources: 57.14%



Verified	Missing
<ul style="list-style-type: none"> <li>• ALL_LAYERS_MATCHING_DATA_HAVE_COMPLETE_METADATA</li> <li>• LAYER_MATCHING_DATA_IS_AVAILABLE</li> <li>• RESOURCE_PREVIEW_IMAGE_IS_AVAILABLE</li> <li>• RESOURCE_METADATA_IS_COMPLETE</li> </ul>	<ul style="list-style-type: none"> <li>• DOWNLOAD_MATCHING_DATA_IS_AVAILABLE</li> <li>• ALL_DOWNLOADS_MATCHING_DATA_HAVE_COMPLETE_METADATA</li> <li>• INSPIRE_SPATIAL_OBJECT_IS_AVAILABLE</li> </ul>



Average degree of interoperability of INSPIRE Resources: 14.29%

Verified	Unverified (reason)
<ul style="list-style-type: none"> <li>• RESOURCE_METADATA_IS_COMPLETE</li> </ul>	<ul style="list-style-type: none"> <li>• DOWNLOAD_MATCHING_DATA_IS_AVAILABLE (ONLY_DURING_PULL_OPERATION)</li> <li>• ALL_LAYERS_MATCHING_DATA_HAVE_COMPLETE_METADATA (ONLY_DURING_PULL_OPERATION)</li> <li>• LAYER_MATCHING_DATA_IS_AVAILABLE (ONLY_DURING_PULL_OPERATION)</li> <li>• ALL_DOWNLOADS_MATCHING_DATA_HAVE_COMPLETE_METADATA (ONLY_DURING_PULL_OPERATION)</li> <li>• RESOURCE_PREVIEW_IMAGE_IS_AVAILABLE (ONLY_DURING_PULL_OPERATION)</li> <li>• INSPIRE_SPATIAL_OBJECT_IS_AVAILABLE (ONLY_DURING_PULL_OPERATION)</li> </ul>

## INSPIRE VALIDATOR

Metadata (Technical Guidance version 1.3) **Start**

Conformance class: INSPIRE Profile based on EN ISO 19115 and EN ISO 19119

Conformance class: Metadata for interoperability

Test run on 13:24 - 19.06.2018 with test suite  
Conformance class: INSPIRE Profile based on EN ISO 19115 and EN ISO 19119 and one more test suite

Status	Failed	Total	Skipped	Failed	Warnings	Manual	Show	Level of detail
Started	19/06/2018 13:24:37 GMT	Count					<input checked="" type="radio"/> All	<input type="radio"/> All details
Duration	3 s						<input type="radio"/> Only failed	<input type="radio"/> Less information
<b>Test suites</b>		3	0	3	0	0	<input type="radio"/> Only manual	<input checked="" type="radio"/> Simplified
<b>Test cases</b>		10	0	3	0	2		
<b>Assertions</b>		36	0	4	0	5		

- + Conformance class: XML encoding of ISO 19115/19119 metadata
Failed: 1 / 1
- + Conformance class: INSPIRE Profile based on EN ISO 19115 and EN ISO 19119
Failed: 1 / 8
- + Conformance class: Metadata for interoperability
Failed: 1 / 1



Cannot find the declaration of element 'gmd:MD\_Metadata'.

```
▼<gmd:MD_Metadata xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns
```

Cannot resolve 'gmd:PT\_FreeText\_PropertyType' to a type definition for element 'gmd:deliveryPoint'.

```
▼<gmd:deliveryPoint xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="gmd:PT_FreeText_PropertyType">  
  <gco:CharacterString>Abdij ter Kameren 13</gco:CharacterString>  
  ▼<gmd:PT_FreeText>  
    ▼<gmd:textGroup>  
      <gmd:LocalisedCharacterString locale="#EN">Abdij ter Kameren 13</gmd:LocalisedCharacterString>
```

The metadata record has a date of publication, creation, or revision that is invalid

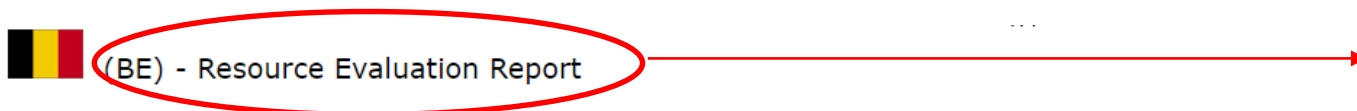
```
▼<gmd:date>  
  ▼<gmd:CI_Date>  
    ▼<gmd:date>  
      <gco>Date>2015</gco>Date>  
    </gmd:date>  
    ▼<gmd:dateType>  
      <gmd:CI_DateTypeCode codeList  
      </gmd:dateType>  
    </gmd:CI_Date>  
  </gmd:date>
```

## *Metadata for interoperability errors*

The metadata record references none of the expected coordinate reference systems.

```
▼<gmd:referenceSystemIdentifier>
  ▼<gmd:RS_Identifier>
    ▼<gmd:code>
      <gco:CharacterString>http://www.opengis.net/def/crs/EPSSG/0/3812</gco:CharacterString>
    </gmd:code>
    ▼<gmd:codeSpace>
      <gco:CharacterString>EPSSG</gco:CharacterString>
    </gmd:codeSpace>
  </gmd:RS_Identifier>
</gmd:referenceSystemIdentifier>
```

Every metadata record must document the encoding in which the dataset is available



To which metadata record does this report belong?

[Previous Resource In This Group](#) [Next Resource In This Group](#) - [Go Back To Group Report](#)  
[Click here to see the INSPIRE metadata of the resource \(media type: application/vnd.europa.ec.inspire.geoportal.resource+xml\)](#)

**INSPIRE Evaluation Potential Warning**

- **Missing or wrong Originating Controlled Vocabulary URI - URI needs to be 'http://www.eionet.europa.eu/gemet/inspire\_themes'**
- This recommendation has to be taken into consideration by 19/12/2019

*Relevant documentation:*

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*Expert documentation*

- [UML Requirement Diagram](#)

- **Missing or wrong Keyword URI - URI needs to be 'http://inspire.ec.europa.eu/theme/oi'**
- This recommendation has to be taken into consideration by 19/12/2019

*Relevant documentation:*

- See [TG Recommendation C.8:](#) in *Technical Guidelines for implementing dataset and service metadata based on ISO/TS 19139:2007*
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*Expert documentation*

- [UML Requirement Diagram](#)

[A copy of the original source file is available here \(Media Type application/vnd.iso.19139+xml\)](#)

Original metadata record can only be accessed in case there is an error. Impossible to compare with 'good' metadata records...

# Multilingualism: an issue with no guidelines



```
▼<gmd:CI_ResponsibleParty>
  ▼<gmd:organisationName xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="gmd:PT_FreeText_PropertyType">
    <gco:CharacterString>National Geographic Institute</gco:CharacterString>
    ▼<gmd:PT_FreeText>
      ▼<gmd:textGroup>
        <gmd:LocalisedCharacterString locale="#EN">National Geographic Institute</gmd:LocalisedCharacterString>
      </gmd:textGroup>
      ▼<gmd:textGroup>
        <gmd:LocalisedCharacterString locale="#FR">Institut géographique national</gmd:LocalisedCharacterString>
      </gmd:textGroup>
      ▼<gmd:textGroup>
        <gmd:LocalisedCharacterString locale="#NL">Nationaal Geografisch Instituut</gmd:LocalisedCharacterString>
      </gmd:textGroup>
      ▼<gmd:textGroup>
        <gmd:LocalisedCharacterString locale="#DE">Nationales geographisches Institut</gmd:LocalisedCharacterString>
      </gmd:textGroup>
    </gmd:PT_FreeText>
  </gmd:organisationName>
```

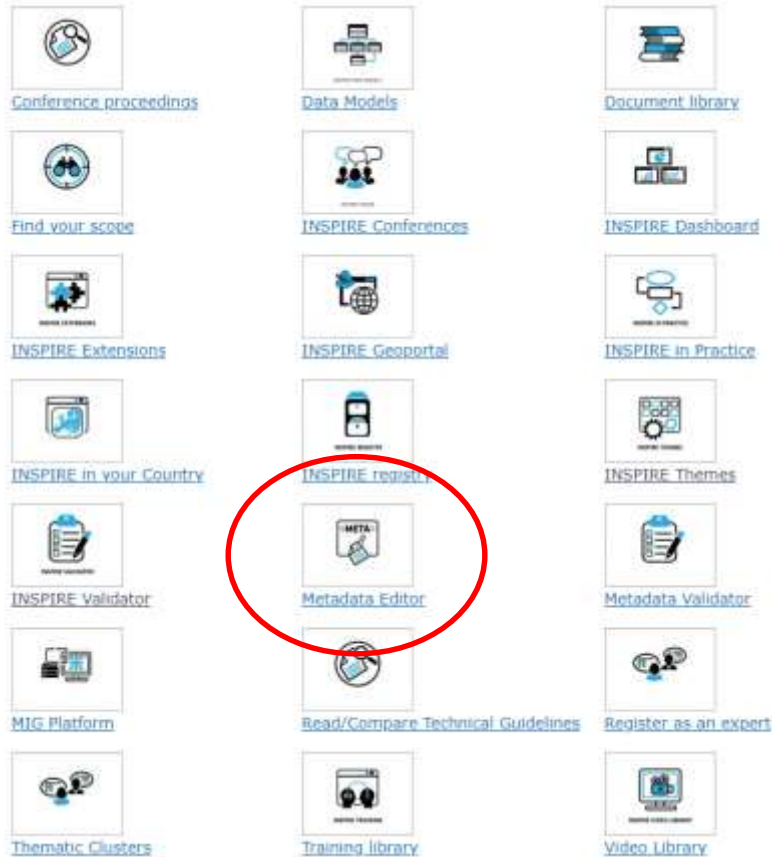
- Guesswork – getting rid of ‘red flags’ in validator – does not guarantee a correct implementation.



# METADATA Editor Side Notes

Out of use?

# Is the Editor still supposed to be in use?



## EUOSME (version 1.0.3)

The European Open Source Metadata Editor (EUOSME) is a web application to create INSPIRE-compliant metadata in any of 22 European languages. It has been developed by the Joint Research Centre as part of the EuroGEOSS project ([www.eurogeoss.eu](http://www.eurogeoss.eu)). It is therefore a research outcome and not a production tool.

For User Guide see: [http://www.eurogeoss.eu/Documents/EuroGEOSS\\_D\\_2\\_2\\_3.pdf](http://www.eurogeoss.eu/Documents/EuroGEOSS_D_2_2_3.pdf)

For Developer's Guide:  
[http://www.eurogeoss.eu/Documents/EuroGEOSS\\_D\\_2\\_2\\_3A.pdf](http://www.eurogeoss.eu/Documents/EuroGEOSS_D_2_2_3A.pdf)

To download the Open Source code:  
<https://joinup.ec.europa.eu/software/euosme/description>

For any Questions and Answers go to: <http://inspire-forum.jrc.ec.europa.eu/pg/groups/7232/metadata-and-xml-schema-related-issues/>

## Release notes:

**2012-11-29**

### Changes:

- Now the "Validate" button calls the new [INSPIRE Geoportal Metadata Validator](#) instead of the previous one, Schematron based (you can still access the old validator [here](#))

**2012-01-04 (V 1.0.3)**

### Changes:

Upload problems (error 10004: unable to load the selected file)

The newest specs of 2017 have not been updated

**Needs a 'deprecated' label**

# Thank you

