



This material has been developed under Specific Contract 1 within the Framework Contract 08143.2017.003-2017.579 (JRC Ref. CCR.B.C934097.X1)

INSPIRE Validator Workshop

Day 1: Users



Introduction to the workshop

- In an effort to make the adoption of the INSPIRE Directive easier, the Joint Research Center of the European Commission has developed the INSPIRE validator, which implements a set of tests over data sets, services and metadata.
- This workshop covers all the relevant aspects of the validator from two perspectives:
 - **Users** of the validators: what are the main components, how to integrate the validator in their workflow and how to provide feedback;
 - **Developers** interested in the technology behind the validator, looking for deploying their own instance and/or add new functionalities.

Users' workshop

- Main **target users**:
 - Data providers
 - Maintainers of Spatial Data Infrastructures (SDIs)
- **Prerequisites**:
 - Background on OGC standards
 - Familiarity with XML/GML
 - Familiarity with the INSPIRE technical framework

Community space

- <https://github.com/inspire-eu-validation/community>

- This GitHub repository acts as a **main hub for all users of the validator**. Here you can find all the information related to its evolution, and you can contribute as well registering issues about new improvements, reporting bugs and participating in discussions with other colleagues.

inspire-eu-validation / community

Unwatch 35 Star 8 Fork 7

Code Issues 80 Pull requests 0 Projects 0 Wiki Security Insights

Community discussion forum for INSPIRE validation issues

118 commits 2 branches 0 releases 7 contributors

Branch: master New pull request Create new file Upload files Find File Clone or download

joemasensio	Update changelog.md	Latest commit cf8439e 8 days ago
.github/ISSUE_TEMPLATE	Update problem.md	last year
examples	Update NetworkService_WMS_metadata_2.0_example	2 months ago
README.md	Update README.md	20 days ago
changelog.md	Update changelog.md	8 days ago
code_of_conduct.adoc	Create code_of_conduct.adoc	20 days ago
contribution_guidelines.md	Add link to helpdesk issues	14 days ago
release_planning.md	Update release_planning.md	20 days ago

README.md

IMPORTANT - Please read carefully!

The old instance of the Validator has been just replaced by [the new cloud instance](#), where you can test additional resources (please refer to the [release planning](#) for details).

INSPIRE Validation Community

Community space


The information that you can find here is:

- *changelog*
 - List of fixed issues and added features on the latest releases of the validator
- *release_planning*
 - Roadmap for ongoing developments and expected release dates on the different validator instances.
- *contribution_guidelines*
 - Useful information for any contributor on: how to report an issue, suggest improvements, start a discussion; submit pull requests for any solution on the tests; explanation of the meaning of issue labels
- *code_of_conduct*
 - Guidelines on the expected behavior from the community.

Public validator instances

- **Staging instance** → <http://staging-inspire-validator.eu-west-1.elasticbeanstalk.com/etf-webapp>
 - This instance is intended to host early versions of new developments, such as new ETS or new developments on the app backend and frontend
 - Community members can try out new functionalities, and provide useful feedback in order to refine the solutions and finally migrate them to the production instance
- **Production instance** → <http://inspire.ec.europa.eu/validator>
 - This is the reference, consolidated version of the INSPIRE validator
 - Every feature found here is considered stable, since it will be added to this instance after being tested and agreed by the community in the staging instance

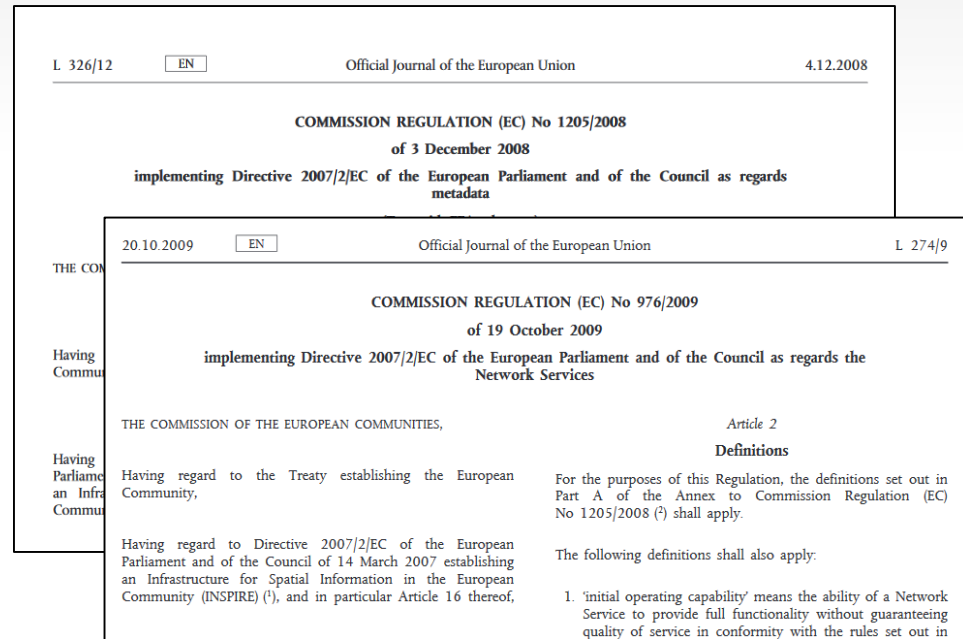
INSPIRE Directive

		ISSN 1725-2555		
Official Journal			L 108	
of the European Union				
				
English edition	Legislation		Volume 50	
			25 April 2007	
Contents	<i>I Acts adopted under the EC Treaty/Euratom Treaty whose publication is obligatory</i>	page	Official Journal of the European Union	
	DIRECTIVES		L 108/1	
	* Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)	1	I	
			<i>(Acts adopted under the EC Treaty/Euratom Treaty whose publication is obligatory)</i>	
			DIRECTIVES	
			DIRECTIVE 2007/2/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL	
			of 14 March 2007	
			establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)	
			THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,	
			integration, it is necessary to establish a measure of coordination between the users and providers of the information so that information and knowledge from different sectors can be combined.	

Implementing Rules (IR)

“What Member States must implement”


- Monitoring and Reporting
- Metadata
- Data Specifications
- Network Services
- Data and Service Sharing



Technical Guidance (TG)

“How Member States might implement it”


- Every TG provides of one or more Conformance Class(es)
- Every CC is composed of a set of requirements
- The conformity validation is against a CC (not a Specification)



INSPIRE
Infrastructure for Spatial Information in Europe

Technical Guidance for the implementation of INSPIRE dataset and service metadata based on ISO/TS 19139:2007

Title Technical Guidelines for implementing dataset and service metadata based on ISO/TS 19139:2007
Creator Temporary MIG subgroup for action MIWP-8
Date of publication 2017-03-02



INSPIRE
Infrastructure for Spatial Information in Europe

Technical Guidance for the implementation of INSPIRE View Services

Title Technical Guidance for the implementation of INSPIRE View Services
Creator Initial Operating Capability Task Force Network Services
Date 2013-04-04
Subject INSPIRE View Services
Status Version 3.11

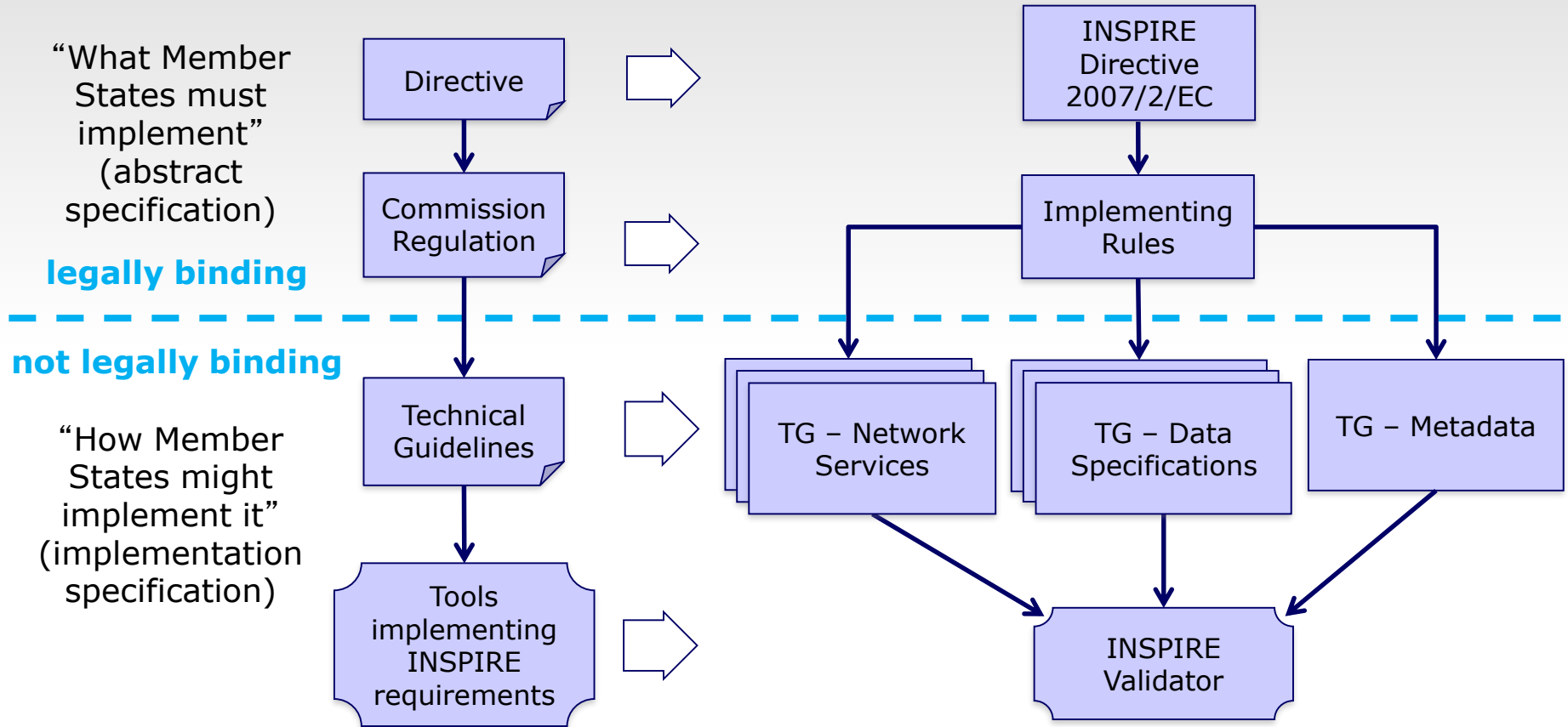


INSPIRE
Infrastructure for Spatial Information in Europe

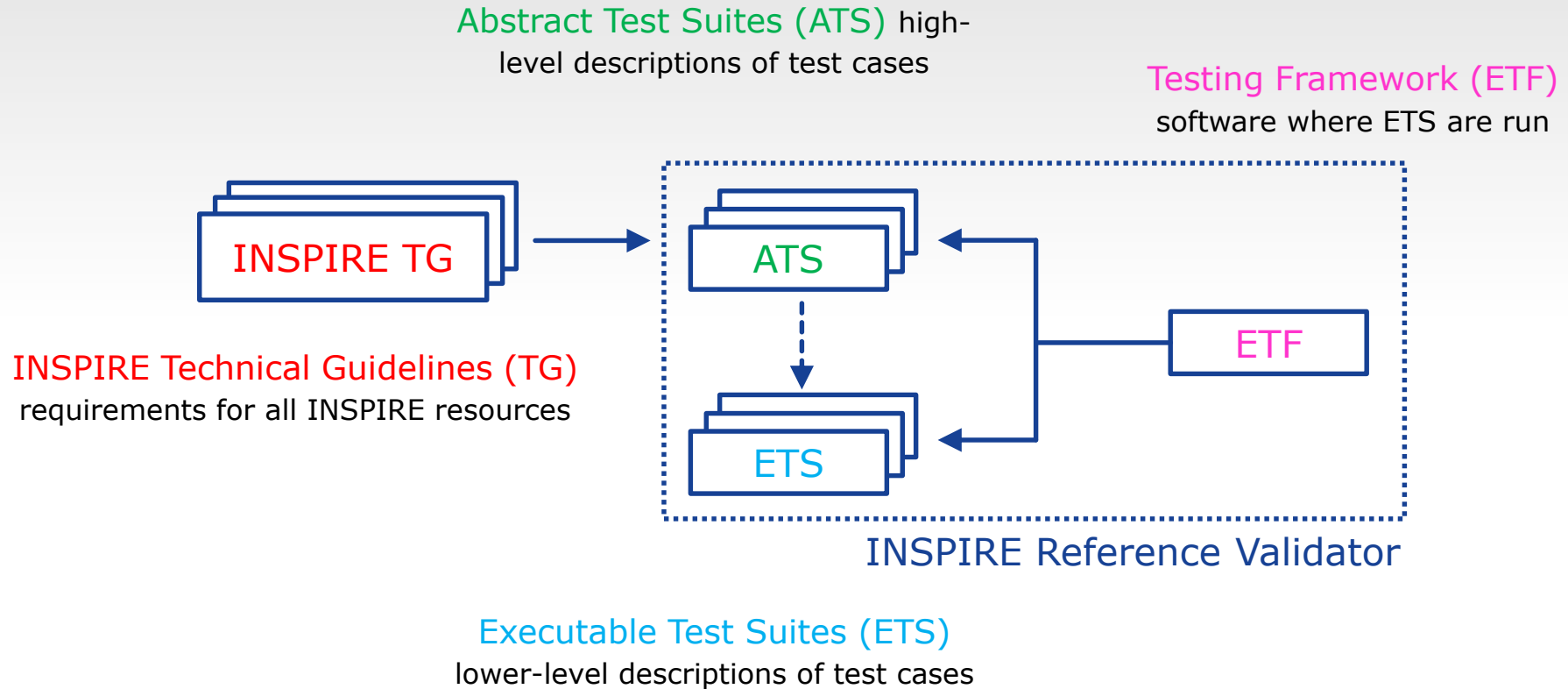
Technical Guidance for the implementation of INSPIRE Discovery Services

Title Technical Guidance for the implementation of INSPIRE Discovery Services
Creator Initial Operating Capability Task Force for Network Services
Date 2011-11-07

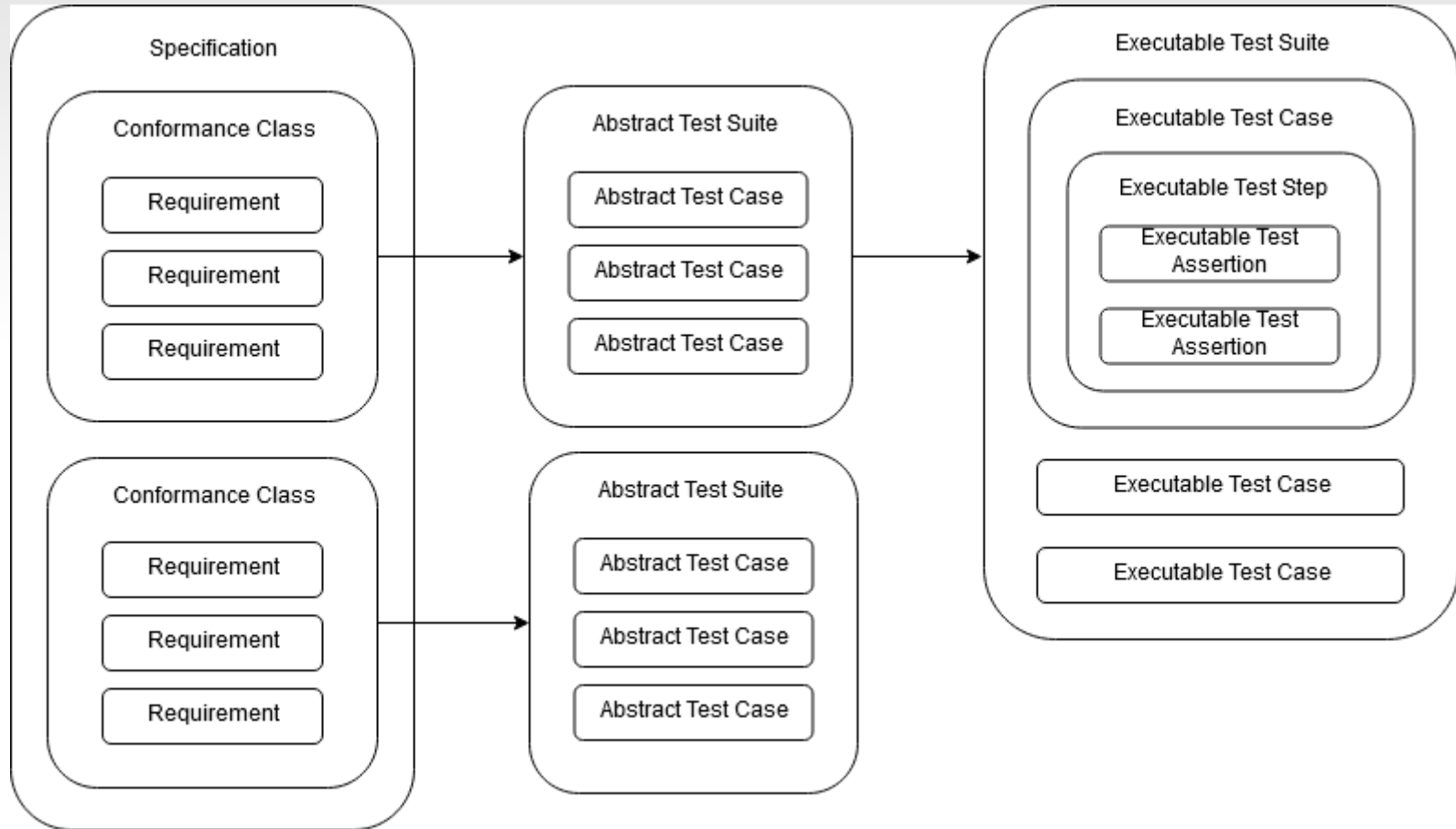
Relationship between IR and TG



INSPIRE Reference Validator Components



Relationship between TG, ATS and ETS



Abstract Test Suite (ATS)

- An ATS may be seen as an analytical step to go from the requirements of a CC to the specific implementation
- For every CC an ATS exists
- An ATS is composed of Abstract Test Cases (ATC)
- <https://github.com/inspire-eu-validation>

Abstract Test Case (ATC)

An ATC has unified format:

- Title
- Purpose
- Prerequisites
- Test method
- Reference(s)
- Test type
- Notes
- Contextual XPath references

38 lines (21 sloc) | 1.25 KB

RawBlameHistory

Resource Title

Purpose: Test that a non-empty title of the described data is provided.

Prerequisites

Test method

- If it is a Datasets or Series metadata
 - Check that exactly one [Title for Datasets and Series](#) element exists. If it does:
 - Check that its content is a non-empty free text element.
- Else if it is a Service metadata
 - Check that exactly one [Title for Services](#) element exists. If it does:
 - Check that its content is a non-empty free text element.

Reference(s)

- [TG MD](#), 2.3.1 , Req c.8

Test type: Automated

Notes

The multiplicity of [Title](#) is one.

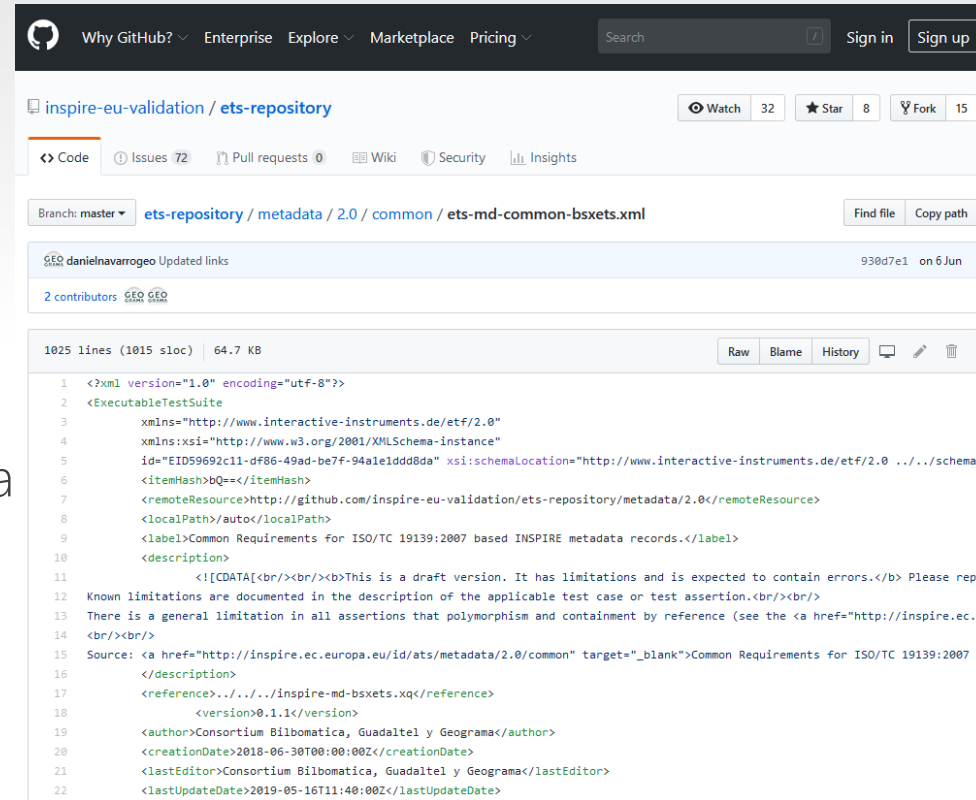
Contextual XPath references

The namespace prefixes used as described in [README](#).

Abbreviation	XPath expression (relative to /gmd:MD_Metadata/gmd:identificationInfo)
Title for Datasets and Series	gmd:MD_DataIdentification/gmd:citation/gmd:CI_Citation/gmd:title
Title for Services	srv:SV_ServiceIdentification/gmd:citation/gmd:CI_Citation/gmd:title

Executable Test Suite (ETS)

- It is the translation of the ATS into machine-readable language
- The programming language is XQuery for Metadata and Data sets, Groovy for Services.
- <https://github.com/inspire-eu-validation/ets-repository>



```
1 <?xml version="1.0" encoding="utf-8"?>
2 <ExecutableTestSuite
3   xmlns="http://www.interactive-instruments.de/etf/2.0"
4   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
5   id="EID59692c11-df86-49ad-be7f-94a1e1ddd8da" xsi:schemaLocation="http://www.interactive-instruments.de/etf/2.0 ../../schema
6   <itemHash>bQ==</itemHash>
7   <remoteResource>http://github.com/inspire-eu-validation/ets-repository/metadata/2.0</remoteResource>
8   <localPath>auto</localPath>
9   <label>Common Requirements for ISO/TC 19139:2007 based INSPIRE metadata records.</label>
10  <description>
11    <![CDATA[<br/><br/><b>This is a draft version. It has limitations and is expected to contain errors.</b> Please rep
12    Known limitations are documented in the description of the applicable test case or test assertion.<br/><br/>
13    There is a general limitation in all assertions that polymorphism and containment by reference (see the <a href="http://inspire.ec
14    <br/><br/>
15    Source: <a href="http://inspire.ec.europa.eu/id/ats/metadata/2.0/common" target="_blank">Common Requirements for ISO/TC 19139:2007
16    </description>
17    <reference>../../inspire-md-bsxets.xq</reference>
18    <version>0.1.1</version>
19    <author>Consortium Bilbomatica, Guadaltel y Geograma</author>
20    <creationDate>2018-06-30T00:00:00Z</creationDate>
21    <lastEditor>Consortium Bilbomatica, Guadaltel y Geograma</lastEditor>
22    <lastUpdateDate>2019-05-16T11:40:00Z</lastUpdateDate>
```

Resources covered

- Metadata
- Services
- Data sets

Resources covered - Metadata

- Metadata 1.3 <https://github.com/inspire-eu-validation/metadata/blob/1.3/README.md>
- Metadata 2.0 <https://github.com/inspire-eu-validation/metadata/blob/2.0/README.md>

Resources covered - Services

- WMS <https://github.com/inspire-eu-validation/view-service>
- WMTS <https://github.com/inspire-eu-validation/view-service>
- WFS <https://github.com/inspire-eu-validation/download-wfs>
- ATOM <https://github.com/inspire-eu-validation/download-atom>
- SOS <https://github.com/inspire-eu-validation/download-sos>
- WCS <https://github.com/inspire-eu-validation/download-wcs>
- CSW <https://github.com/inspire-eu-validation/discovery-service>

Resources covered - Data sets

- Interoperable Datasets (cross-cutting requirements)
- Addresses
- Administrative Units
- Cadastral Parcels
- Geographical Names
- Hydrography
- Protected Sites
- Transport Networks

ETF Testing Framework

- A **Test Framework** is a software to run ETS.
- **INSPIRE Test Framework** makes use and further extends **ETF**:
 - a test framework to validate spatial data, metadata & web services in SDIs
 - developed since 2010
 - open source under EUPL v1.2
 - current version: 2.0.0 (January 2019)
 - ETF design goals:
 - user-friendly
 - consistent with the **standards** (ISO/OGC)
 - capable of testing all resources in an SDI
 - manuals for users, developers and admins (<http://docs.etf-validator.net>)

ETF Testing Framework

- Any ETF deployment is composed of:
 - a **database**
 - one or more **test engines**
 - a **servlet container**
- Currently supported test engines to execute ETS are:
 - **SoapUI** for testing web services
 - **BaseX** for testing sets of XML documents
 - **TEAM Engine** – the tool used by the OGC CITE tests
- ETF can be used by:
 - a responsive web application (<https://github.com/etf-validator/etf-webapp>)
 - a REST API (http://docs.etf-validator.net/v2.0/Developer_manuals/WEB-API.html)
- The easiest way to deploy ETF is a **Docker** container, available on Docker Hub.

ETF Walkthrough

Start Test

ETF

Start test

Status

Test reports

Help

About

Executable Test Suites

To start a Test Run, select one or multiple Test Suites with a click on the flip switches on the right-hand side ("use") and press the "Start" button that appears once at least one Test Suite is selected. Please note that the Test Suites are only applicable to certain Test Object types and therefore not all Test Suites are combinable for a Test Run. Additional information about a Test Suite will be shown with a click on the plus button.

Filter items...

View Services - WMS and WMTS (TG version 3.11) - BETA

+ Conformance Class: View Service - WMS

use

+ Conformance Class: View Service - WMTS

use

Download Services - WFS and ATOM (TG version 3.1)

+ Conformance Class: Download Service - Direct WFS

use

+ Conformance Class: Download Service - Pre-defined Atom

use

+ Conformance Class: Download Service - Pre-defined WFS

use

Metadata (TG version 1.3)

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

use

+ Conformance class: Metadata for interoperability

use

ETF WebApp 2.0.0-b190624T1219 © 2017-2018 European Union, interactive Instruments GmbH

ETF Walkthrough

Start Test

- Here all the available tests are displayed, organized by resources (metadata, services, datasets) and by Conformance Class.
 - a conformance class may **depend** on other conformance classes, that are selected automatically when such a conformance class is selected
 - each Conformance Class has a **TestObject type** associated with it that restricts the selection to only test resources of that type.

ETF Walkthrough

Start Test

- Once you select the Conformance Classes to test, clicking on the *Start* button will display the dialog to configure the Test Run
 - *Label* -> The name of the test run, as it will appear in the test report page
 - *Tags* -> Set of keywords associated to the test run, useful to easily filter the test reports

ETF Walkthrough

Start Test

- **Metadata or Data sets**
 - The data supplied can be either a **ZIP or XML file** from the file system; or a URL that resolves to any of those resources.
 - The *Files to test* option allows users to filter with regexp which files they want to use and which to exclude
 - The *Optional parameters* button allows users to only include test assertions from the ETS having a matching label with the regexp entered
- **Services**
 - The *Service URL* option allows users to enter the service endpoint, in the form of host/context. It is not needed to include the GetCapabilities parameter for this to work

ETF Walkthrough

Start Test

✕

Configure Test Run

Label: ?

Tags

Data source:

File upload ▼

ZIP or XML path ?

Examinar...

No se han seleccionado archivos.

Test Suite parameters

Files to test ?

.*

Test Suites ⊙

Credentials ⚙

Optional Parameters ⚙

Start ➔

✕

Configure Test Run

Label: ?

Tags

Data source:

Remote file (URL) ▼

Remote file (URL) ?

Test Suite parameters

Files to test ?

.*

Test Suites ⊙

Credentials ⚙

Optional Parameters ⚙

Start ➔

ETF Walkthrough

Start Test

- Services
 - The *Service URL* option allows users to enter the service endpoint, in the form of host/context. It is not needed to include the GetCapabilities parameter for this to work
 - The *Credentials* option allows users to enter a username and password to access the service, in case this is required.

ETF Walkthrough

Start Test

✕

Configure Test Run

Label: ?

Tags

Service URL

http://

Credentials

Username

Password

Test Suites

Credentials

Optional Parameters

Start

ETF Walkthrough

Test Reports

- All the reports for the latest test runs are collected here. They are grouped by date and can be filtered by any string that appears on the report info.
- Opening a test run, several options are available:
 - Open report
 - Download a report
 - Open log
 - Delete report

ETF Walkthrough

Test Reports

Test reports

The test reports are kept for a limited time (8 days). After expiration of this time, test reports, log files, attachments and all test data are deleted automatically after midnight. Test reports can be saved using the 'Download test report' buttons.

Q Filter Test Reports...

26.09.2019

- + Test run on 14:11 - 26.09.2019 with test suite Conformance Class 1: INSPIRE data sets and data set series baseline metadata.
- + Test run on 14:09 - 26.09.2019 with test suite Conformance Class 1: INSPIRE data sets and data set series baseline metadata.
- + Test run on 13:57 - 26.09.2019 with test suite Conformance Class 1: INSPIRE data sets and data set series baseline metadata.
- + Test run on 11:29 - 26.09.2019 with test suite Conformance Class: Discovery Service - CSW Core
- + Test run on 13:49 - 26.09.2019 with test suite Conformance Class 1: INSPIRE data sets and data set series baseline metadata.
- Test run on 13:44 - 26.09.2019 with test suite Conformance Class 1: INSPIRE data sets and data set series baseline metadata.

Started: 12:24 - 26.09.2019

Status: At least one test failed

Used test object: AM.AglomerationsNoiseDirectiveAthens.xml

Used test suites:

- Common Requirements for ISO/TC 19139:2007 based INSPIRE metadata records.
- Conformance Class 1: INSPIRE data sets and data set series baseline metadata.

Open report Download report Open log Delete report

- + Test run on 11:47 - 26.09.2019 with test suite Conformance Class 4: INSPIRE Network Services metadata.

ETF Walkthrough

Test Reports

- Inside the report, the **results** of each test step are included.
- The **level of information** can be controlled, ranging from just the results to the internal logs of execution of each Conformance Class, the parameters set for that test run and the test object used (i.e. the service URL or the data uploaded).
- The **information displayed** can be set to only the tests that failed, or only the tests that need manual checks from the user.

ETF Walkthrough

Test Reports

⌂

Test run on 14:18 - 26.09.2019 with test suite Conformance class:
Data consistency, General requirements and 3 more test suites

Report URI [Link](#)

Status Failed

Started 26/09/2019 11:19:02 GMT

Duration 24 s

Report version 2.1.0-b181101

Log URI [Link](#)

Total Count Skipped Failed Warnings Manual

Test suites 5 0 1 0 1

Test cases 12 0 1 0 2

Assertions 34 0 1 0 4

Show

Level of detail

☒ All

☒ All details

☐ Only failed

☐ Less information

☐ Only manual

☐ Simplified

Parameters

Test object: EE_maaamet_HB_avalik_v40_260919.zip

Feature statistics

Type	Total Count
all	1000
Habitat	1000

Log path: Conformance class: INSPIRE GML encoding

Log path: Conformance class: Data consistency, General requirements

Log path: Conformance class: INSPIRE GML application schemas, General requirements

Log path: Conformance class: Information accessibility, General requirements

Log path: Conformance class: Reference systems, General requirements

+ Conformance class: INSPIRE GML encoding 1

+ Conformance class: Data consistency, General requirements 2

+ Conformance class: INSPIRE GML application schemas, General requirements Failed: 1 / 6

ETF Walkthrough

Test Reports

- *Help*
 - This tab redirects to the documentation from the ETF documentation page
- *About*
 - This tab redirects to the welcome page of the INSPIRE validator, including useful information on the validator itself, the API documentation, the ETF software and the link to the community space


ETF Walkthrough


API Usage

- In addition to the web interface, interaction with the validator can be achieved through an **API**. This API exposes all the operations from the validator using HTTP requests.
- The API is developed following the OpenAPI principles, and all the operations are documented and exposed through SwaggerUI:
<http://inspire.ec.europa.eu/validator/swagger-ui.html>

ETF Walkthrough

API Usage

 swagger

default (/v2/api-docs) 

Explore

ETF Web API

This is an interactive documentation and a web user interface for interacting with the Web API version 2 of the test framework [ETF](#). This semi-automatic generated documentation covers basic functionality, but consulting the [API Documentation](#) may be required to get a deeper understanding of the ETF model and further procedures. Issues can be reported in [GitHub](#).

Content negotiation is not supported and therefore JSON is always returned for endpoints without file extension. For most operations, a link to the XML response schema is provided in the Implementation nodes. JSON responses are derived from XML the response schema, based on this [stylesheet](#).

[Back to user interface](#)

Created by ETF Team
See more at <http://www.etf-validator.net>
[Contact the developer](#)
[European Public License 1.2](#)

1. Service Status : Monitor service workload and health	Show/Hide	List Operations	Expand Operations
2. Service Capabilities : Retrieve test framework metadata	Show/Hide	List Operations	Expand Operations
3. Manage Test Objects : Define Test Objects and upload test data	Show/Hide	List Operations	Expand Operations
4. Manage Test Runs : Start and control test runs	Show/Hide	List Operations	Expand Operations
5. Test Run Results : Retrieve test results	Show/Hide	List Operations	Expand Operations

[BASE URL: /validator , API VERSION: 2.0.0]


Using the INSPIRE Validator


- The usage of the validator is illustrated:
 - through the web application
 - through the API
- We will use a service URL as the example test object
 - <http://www.ign.es/wms-inspire/mapa-raster>


Using the INSPIRE Validator


- Through the webapp


ETF

Start test

Status

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Filter items...

View Services - WMS and WMTS (TG version 3.11) - BETA

+ Conformance Class: View Service - WMS

☒

+ Conformance Class: View Service - WMTS

☐ use

Download Services - WFS and ATOM (TG version 3.1)

+ Conformance Class: Download Service - Direct WFS

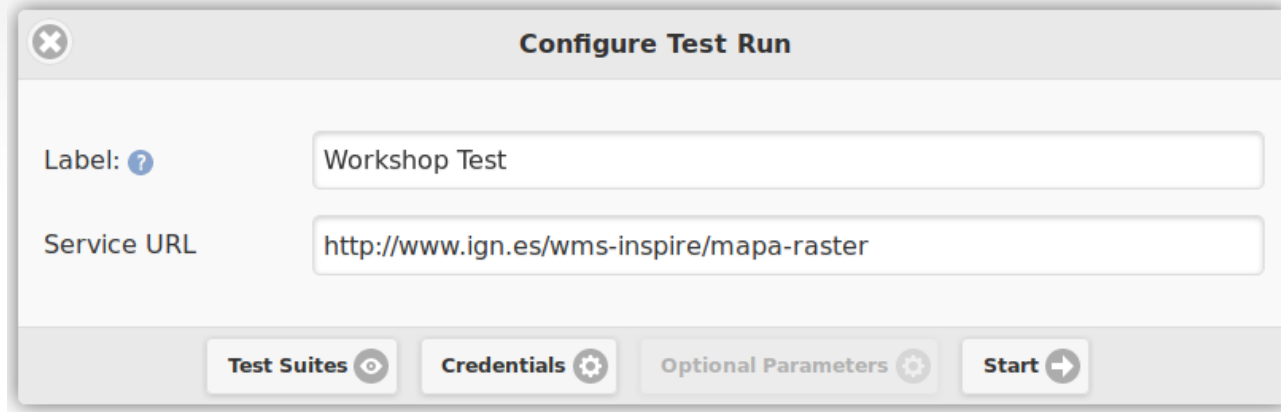
☐ use

+ Conformance Class: Download Service - Pre-defined Atom

☐ use

Using the INSPIRE Validator

- Through the webapp







The screenshot shows a 'Configure Test Run' dialog box with a close button (X) in the top-left corner. The dialog contains two text input fields: 'Label' with a help icon (?) and the value 'Workshop Test', and 'Service URL' with the value 'http://www.ign.es/wms-inspire/mapa-raster'. At the bottom, there are four buttons: 'Test Suites' with a play icon, 'Credentials' with a gear icon, 'Optional Parameters' with a gear icon, and 'Start' with a right arrow icon.

Configure Test Run

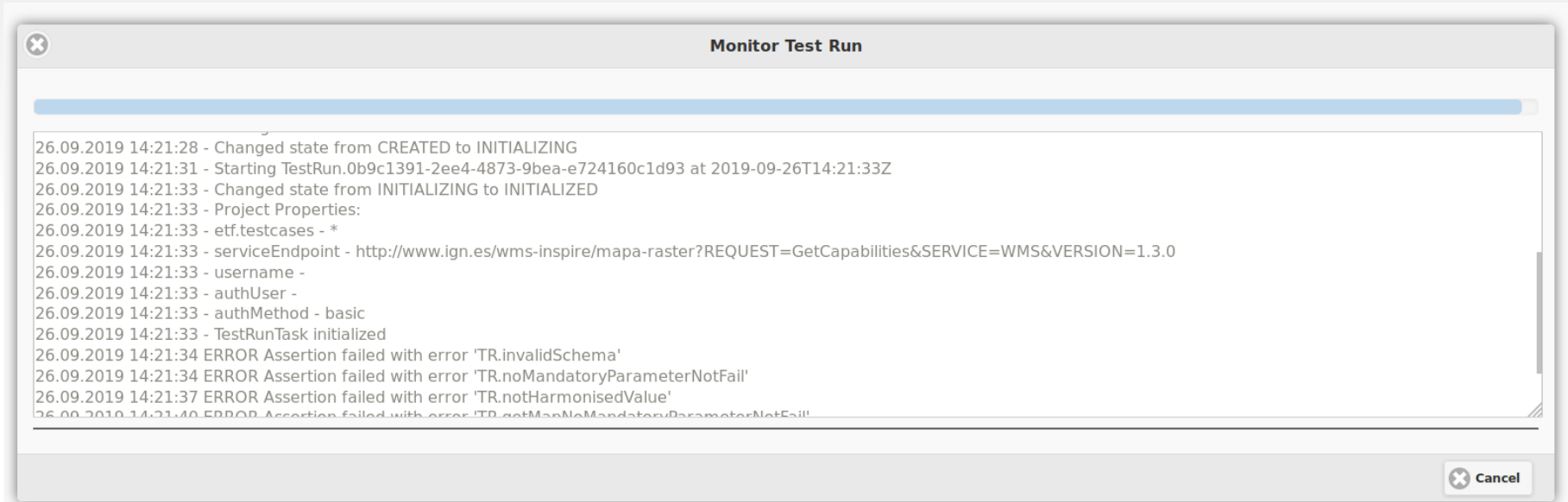
Label: ?

Service URL

Test Suites  **Credentials**  **Optional Parameters**  **Start** 

Using the INSPIRE Validator

- Through the webapp



Using the INSPIRE Validator

- Through the webapp

Test reports

The test reports are kept for a limited time (8 days). After expiration of this time, test reports, log files, attachments and all test data are deleted automatically after midnight. Test reports can be saved using the 'Download test report' buttons.

26.09.2019

+

Workshop Test

Using the INSPIRE Validator

- Through the API

We send a POST HTTP request to the endpoint

<http://inspire.ec.europa.eu/validator/v2/TestRuns>

Using as payload this data

```
{"label":"Workshop Test","executableTestSuiteIds":["EIDeec9d674-d94b-4d8d-b744-1309c6cae1d2"],"arguments":{},"testObject":{"resources":{"serviceEndpoint":"http://www.ign.es/wms-inspire/mapa-raster"}}}
```

Using the INSPIRE Validator

- **Through the API**

Checking the response of the last API call, we can get the TestRun EID to monitor the results, making a GET request

In this example:

<http://inspire.ec.europa.eu/validator/v2/TestRuns/EID47407575-105c-4bf3-8d8c-0643e2201bfe/progress>

Using the INSPIRE Validator

- **Through the API**

After the test run has finished, we can always get the test report in HTML, JSON or XML formats.

Using a GET request on the API:

`http://inspire.ec.europa.eu/validator/v2/EID47407575-105c-4bf3-8d8c-0643e2201bfe[.xml | html]`

Using the INSPIRE Validator

- **Through the API**
- The API can be also used to:
 - Check the status of the service
 - List all the ExecutableTestSuites available
 - Check the TestObjectTypes (services or data) available to test

<http://inspire.ec.europa.eu/validator/swagger-ui.html>

Practical Examples

- Examples of Metadata TG v.2.0 for Data sets
- Examples of Metadata TG v.2.0 for Services
- Examples of View Service WMS

ETF evolution

- **Improvements** currently planned:
 - Integration of WCS, SOS and CSW Conformance Classes
 - ETS dependencies on Conformance Classes selection
 - Add more filters on the Test Report page
 - Cloud deployment
 - Rerun button on Test Report

ETF evolution

- Ongoing issues
 - <https://github.com/inspire-eu-validation/community/issues>

User contribution

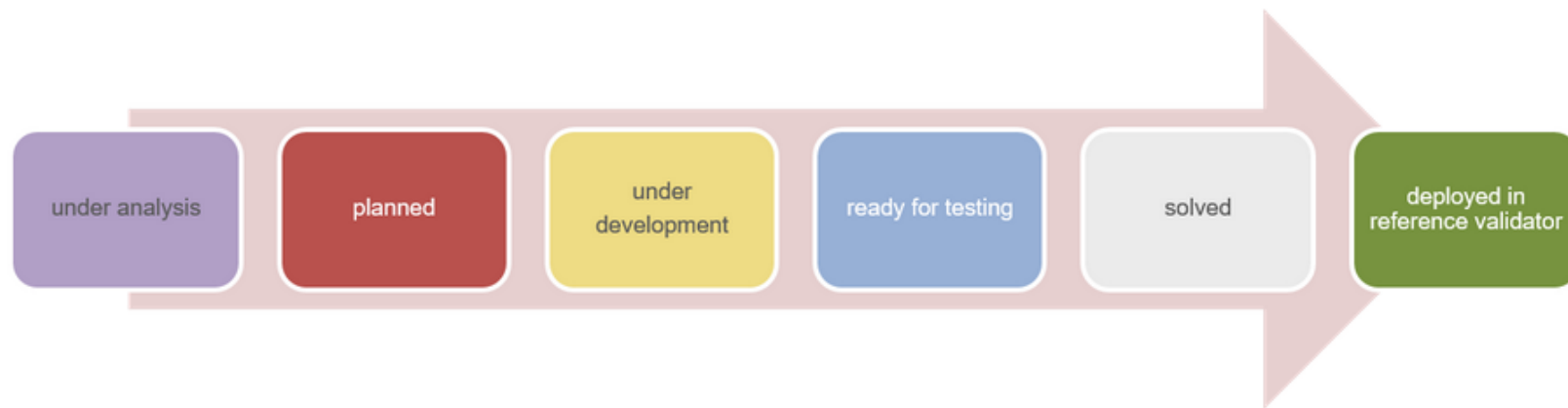
How to collaborate

- Users can **report issues** related to the INSPIRE validator on <https://github.com/inspire-eu-validation/community/issues>. Here they can explain issues and propose desired improvements, or open discussions on the validator.
- Any change on the validator will be notified on this space.
- Information about possible **maintenance & downtime** of the validator will be displayed in the community space.

User contribution

How to collaborate

- Users can check the contribution guidelines on how to create issues in the Community space.
- A set of labels is used to categorize the status of each issue.



THANK YOU

Daniel Navarro – daniel.navarro@geograma.com

Carlos Palma – carlospalma@guadaltel.com



Bilbomática

