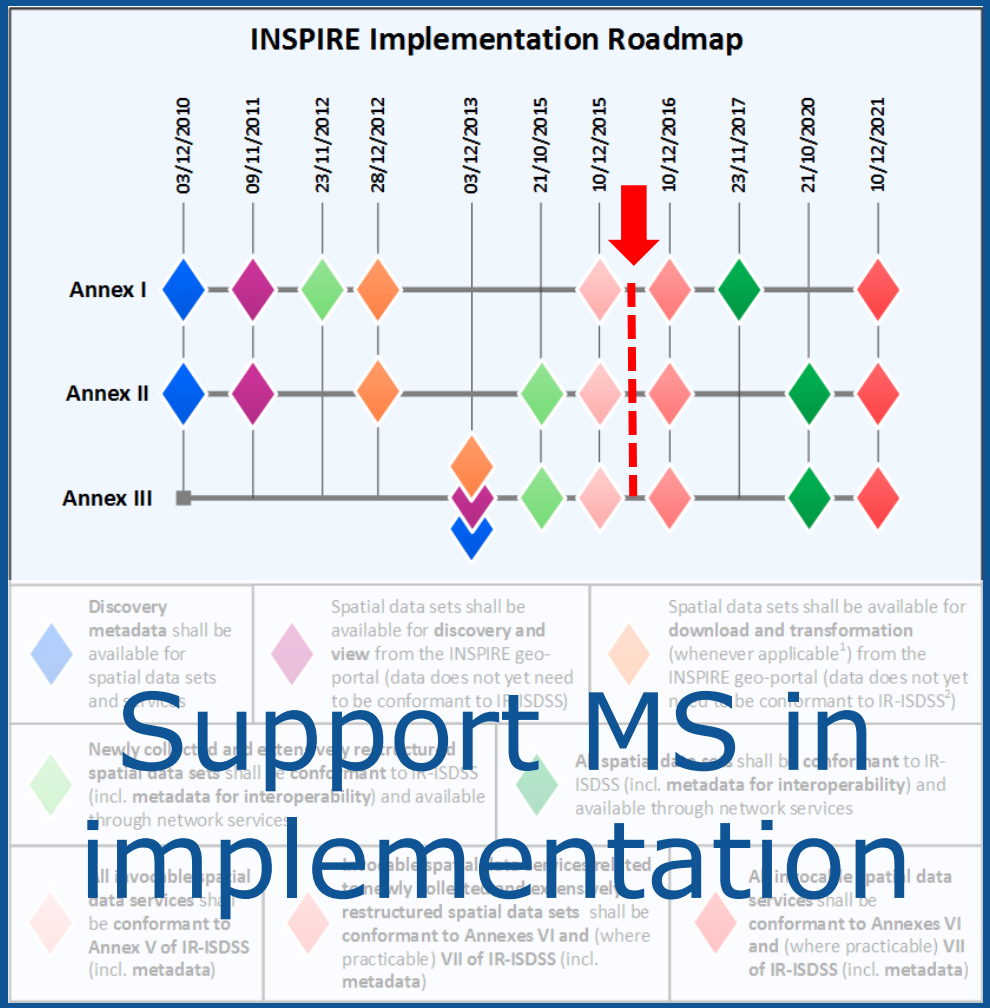
From the INSPIRE Engine Room

Michael Lutz

ENiiG Conference, Lisbon
9 November 2016

The JRC's role in INSPIRE

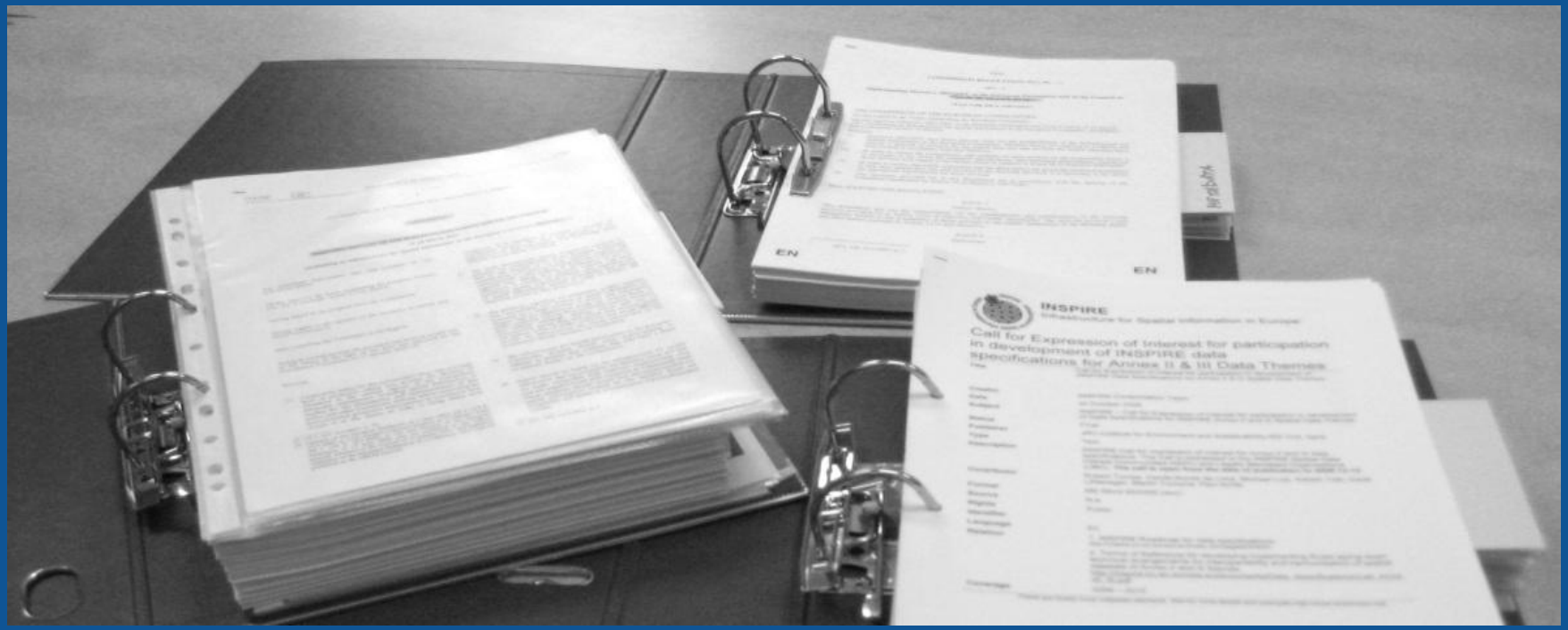


Support MS in implementation

Joint Research Centre

http://inspire.ec.europa.eu/inspire-roadmap/61

The JRC's role in INSPIRE



Maintain 6 legal acts and
40+ Technical Guidelines

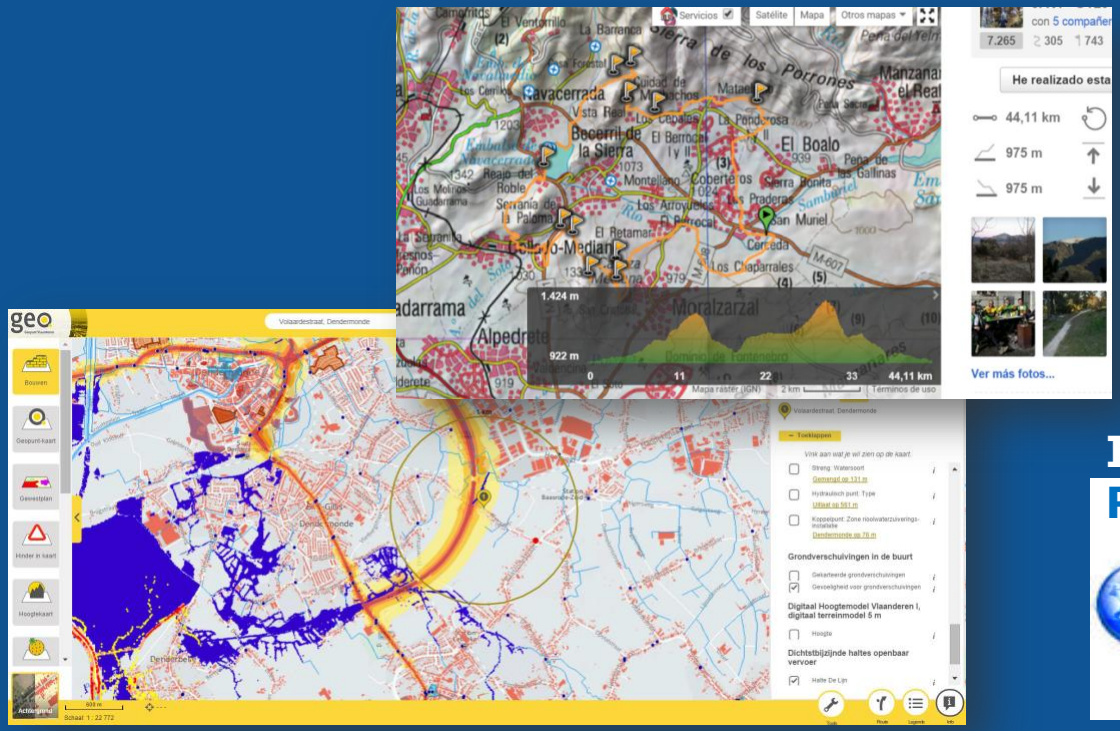
Joint
Research
Centre

The JRC's role in INSPIRE

Develop and maintain central infrastructure components & tools

Joint Research Centre

The JRC's role in INSPIRE



INSPIRE RDF

GEO-DCAT APPLICATION PROFILE FOR EUROPEAN DATA PORTALS

Support technical evolution and use of INSPIRE data & services

Joint Research Centre

The JRC's role in INSPIRE

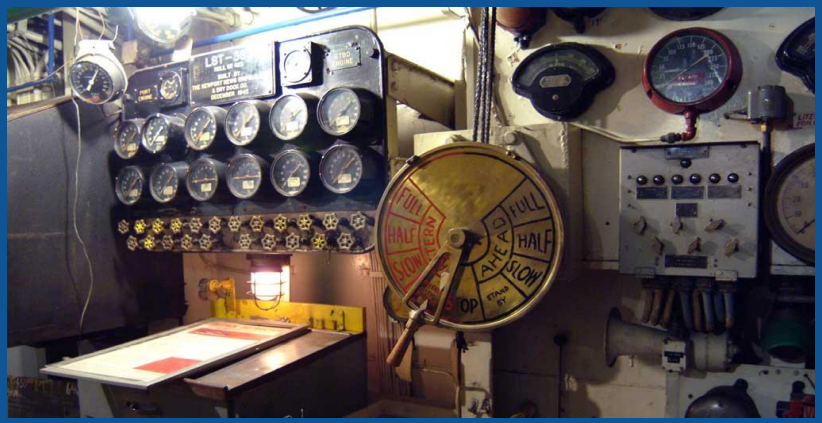
Coordinate with other policies and discuss strategic direction

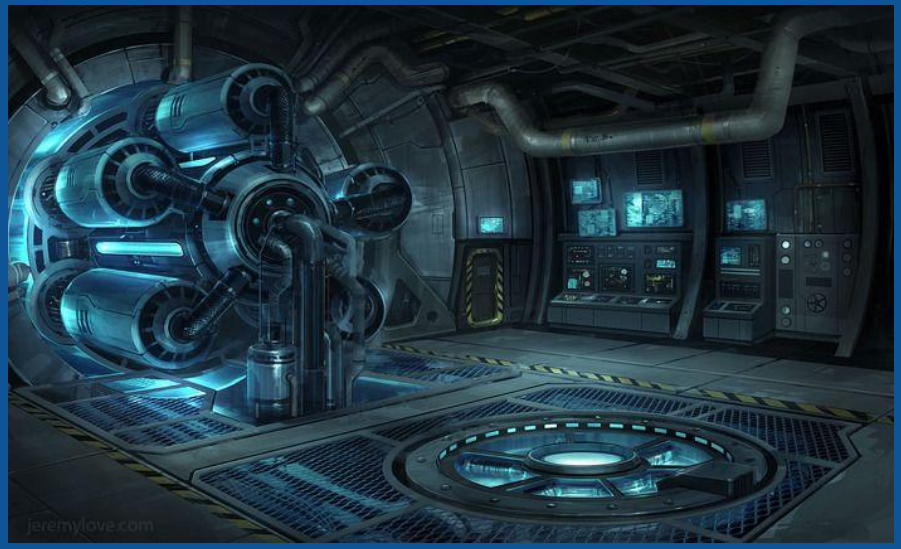
Joint Research Centre

The JRC's role in INSPIRE

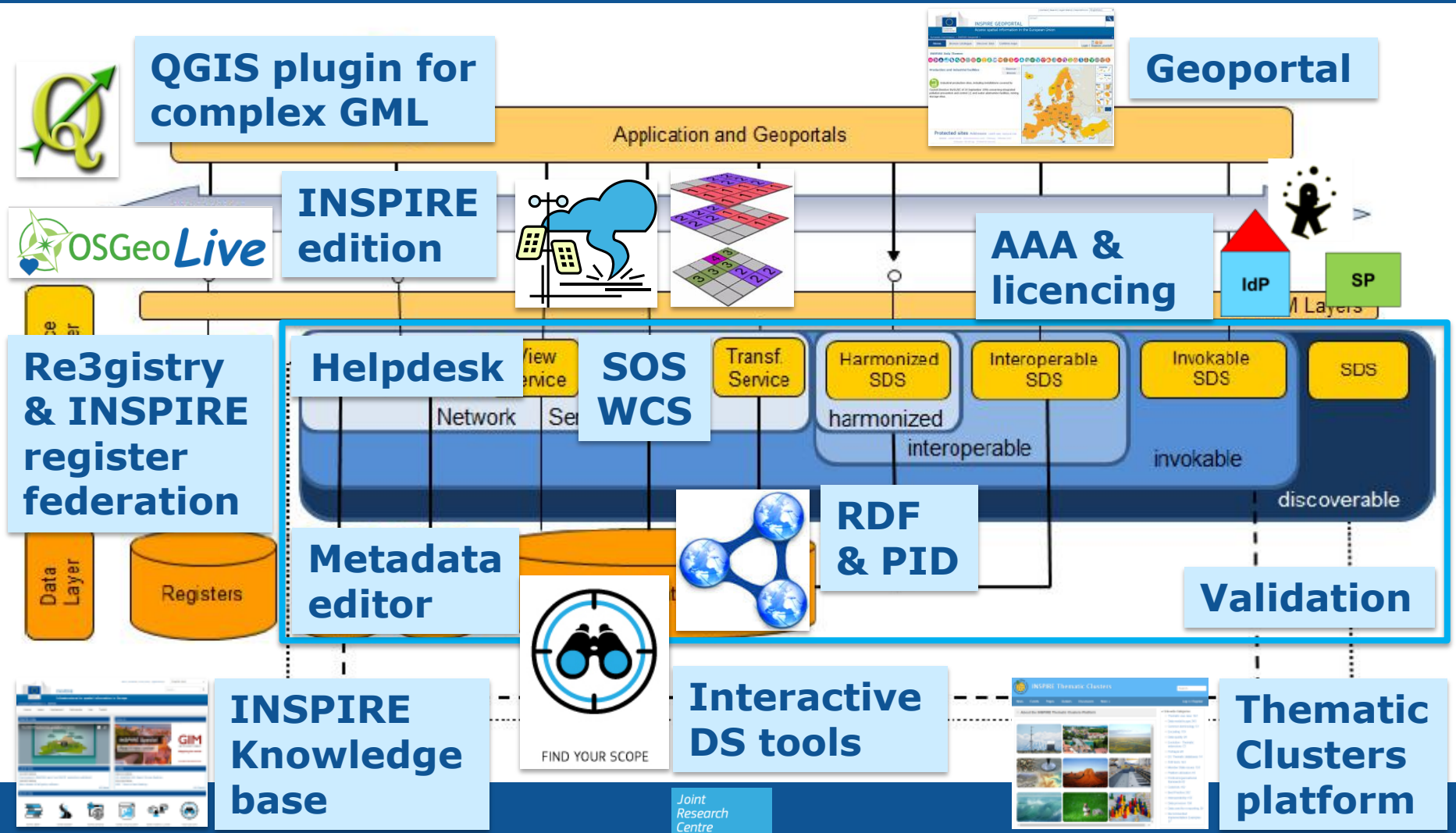
- Coordination of the permanent technical sub-group (MIG-T) of the Commission Expert Group on INSPIRE Maintenance & Implementation (MIG)
  - Members nominated by Member States
  - Multi-annual rolling work programme (MIWP) agreed by EC, EEA and MS
- Coordination of and participation in technical actions / sub-groups for specific tasks
  - Members from a “pool of experts” (proposed by SDICs and LMOs)

The engine room – an overview





The engine room – an overview



Overview

- Common validator
- The INSPIRE registry & register federation
- TGs & tools for observation & coverage data
- Best practices for data model extensions
- INSPIRE knowledge base
  - Interactive data specification tool kit
  - INSPIRE in practice
  - Thematic Clusters platform
- OSGeoLive – INSPIRE edition
- QGIS plugin for complex GML features

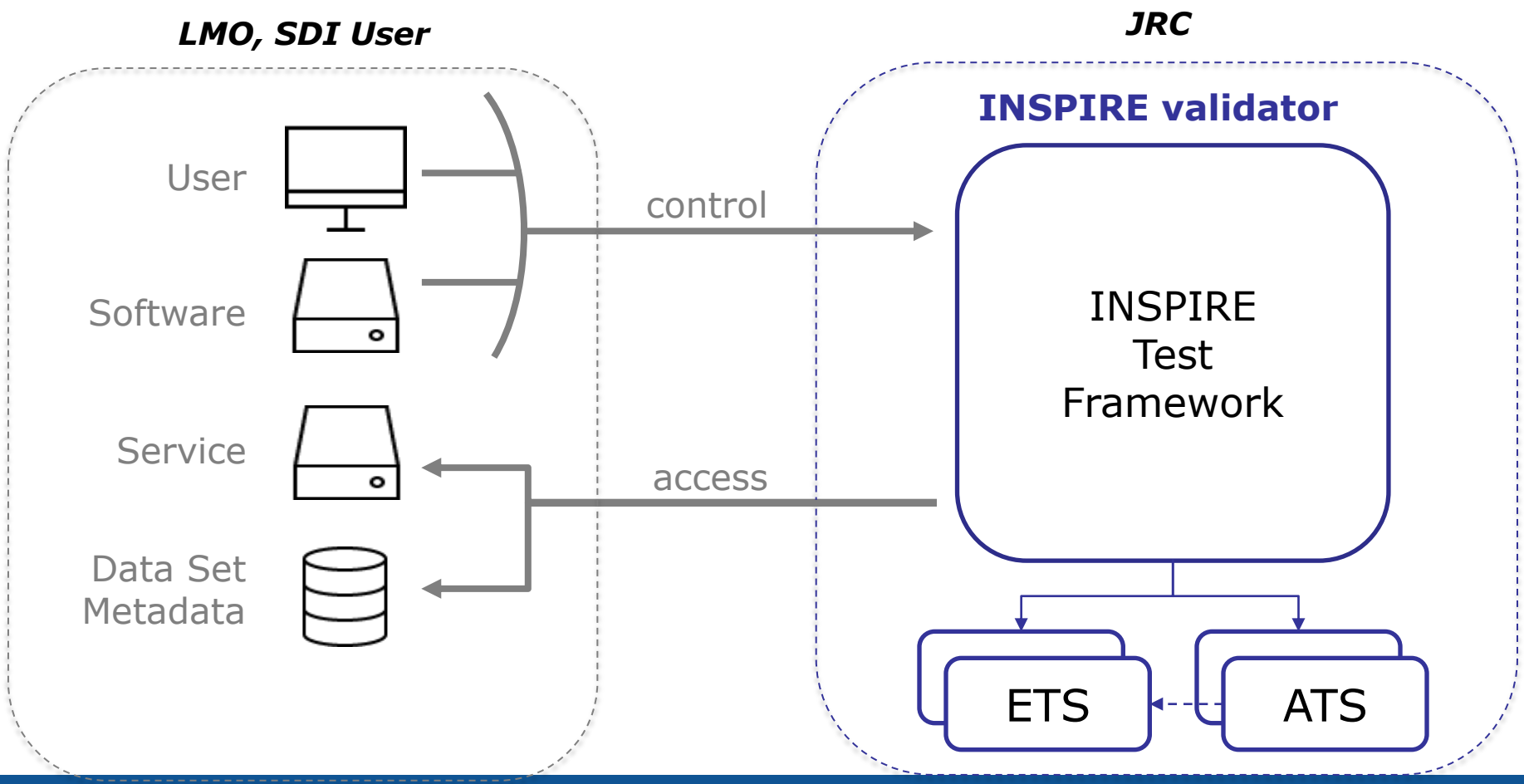
Common INSPIRE validator – Why?

- In the implementation phase there is a need for tools for validation (of metadata, services, data)
  - for implementers to understand where they are with their implementation & where there are gaps
  - for national coordinators for monitoring the implementation in their countries
  - for DG ENV/JRC/EEA to monitor the implementation across Europe
  - for solution providers to check their software solutions against the INSPIRE requirements
- Validation service available from JRC and in some Member States and projects
  - → duplication of effort
  - → potentially inconsistent results

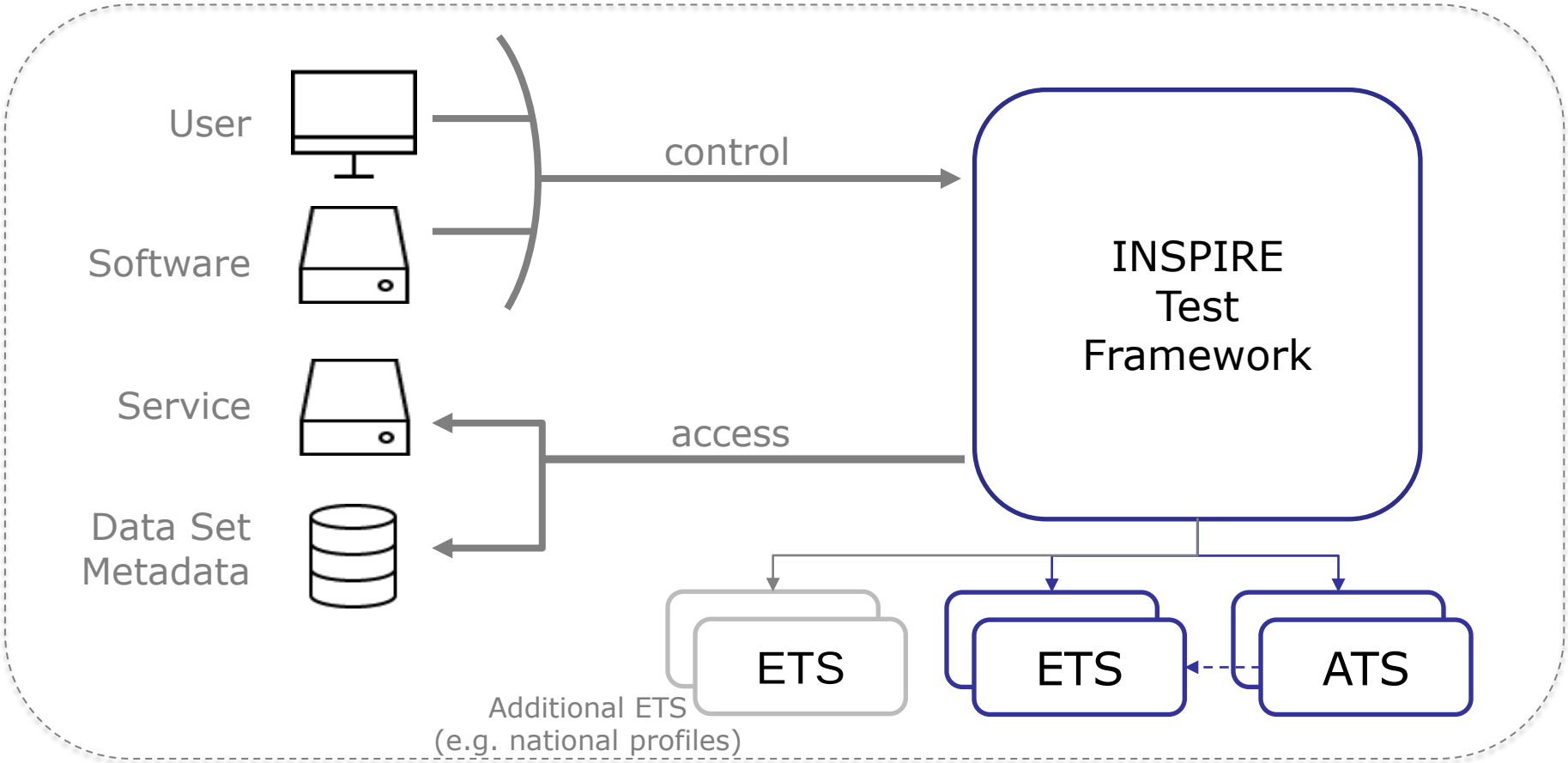
Common INSPIRE validator – Status

- Supported by ARE3NA ISA action
  - Contractors: PwC and interactive instruments
  - Support and accelerate ongoing work in the MIG-T (MIWP-5)
- Scope: Conformance testing of INSPIRE Metadata, Network Services and Data Sets based on an agreed set of abstract tests
- Aims
  - Development of a reusable, open source, reference validator
  - Build upon existing solutions
  - Offering configurable software and test rules for organisations to test conformance
  - Create a 'reusable' testing infrastructure for INSPIRE

Central deployment

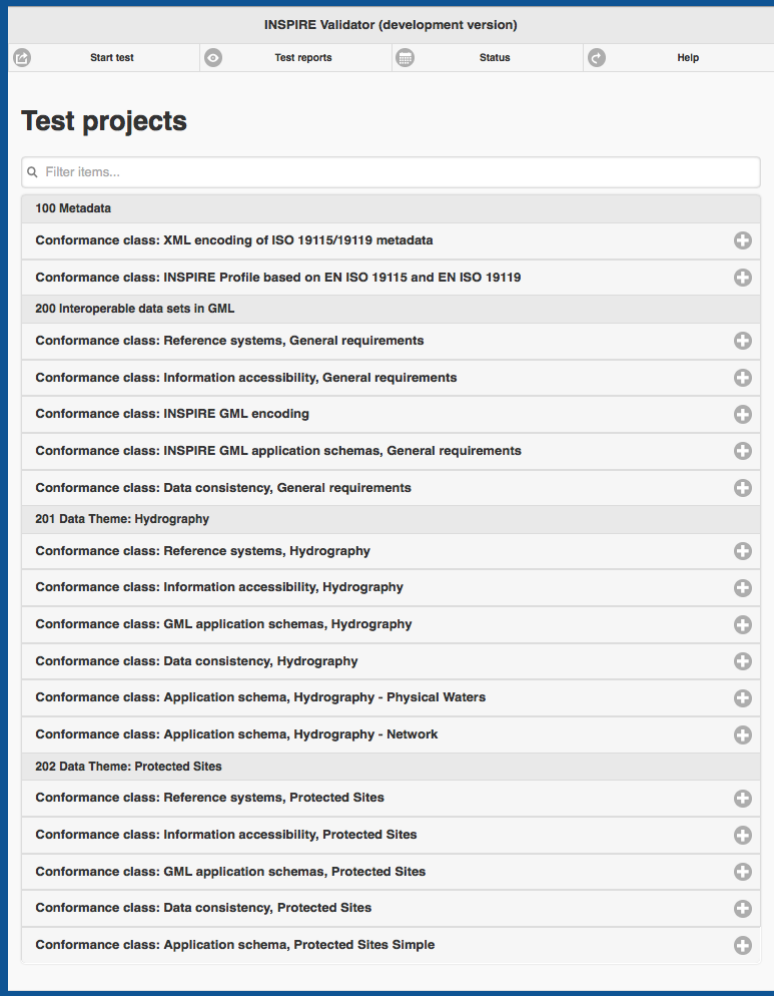


Reusable, e.g. by an LMO

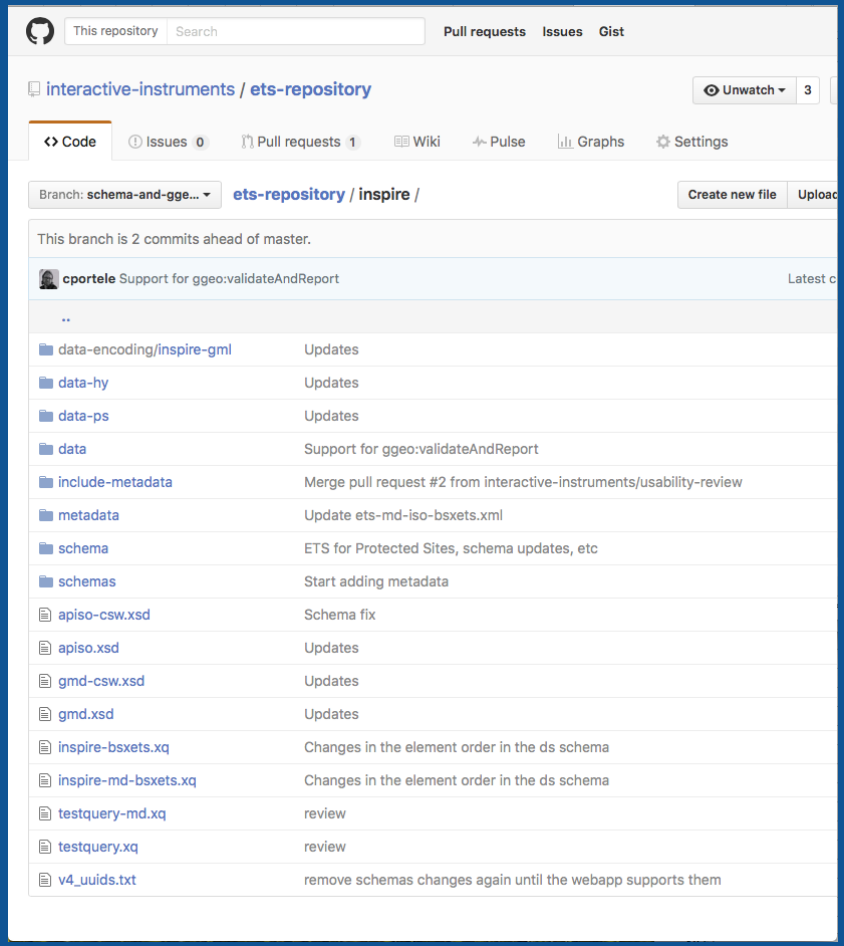


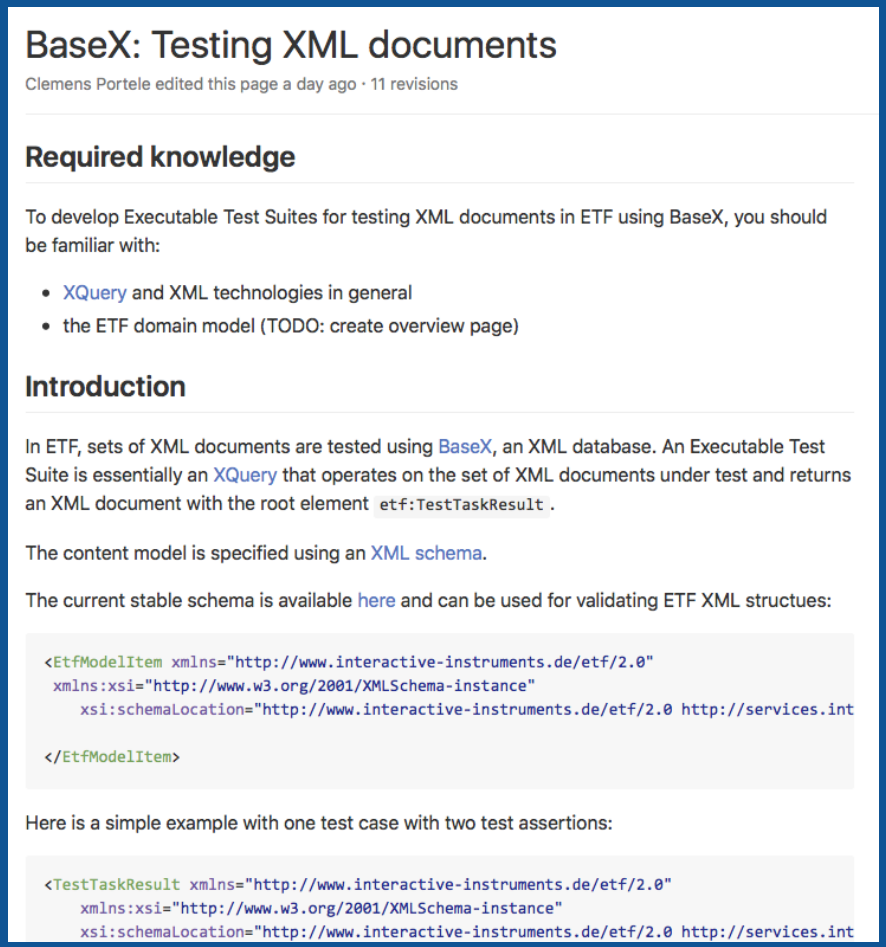
ETS development – current status

- Available draft test suites
  - Metadata (ISO 19115/19119)
  - Data Specification Template
  - Data Specification – Hydrography
  - Data Specification – Protected Sites
- Under development
  - Other Annex I data specifications
- Next
  - Download services



ETS development – on GitHub





BaseX: Testing XML documents

Clemens Portele edited this page a day ago · 11 revisions

Required knowledge

To develop Executable Test Suites for testing XML documents in ETF using BaseX, you should be familiar with:

- XQuery and XML technologies in general
- the ETF domain model (TODO: create overview page)

Introduction

In ETF, sets of XML documents are tested using BaseX, an XML database. An Executable Test Suite is essentially an XQuery that operates on the set of XML documents under test and returns an XML document with the root element `etf:TestTaskResult`.

The content model is specified using an XML schema.

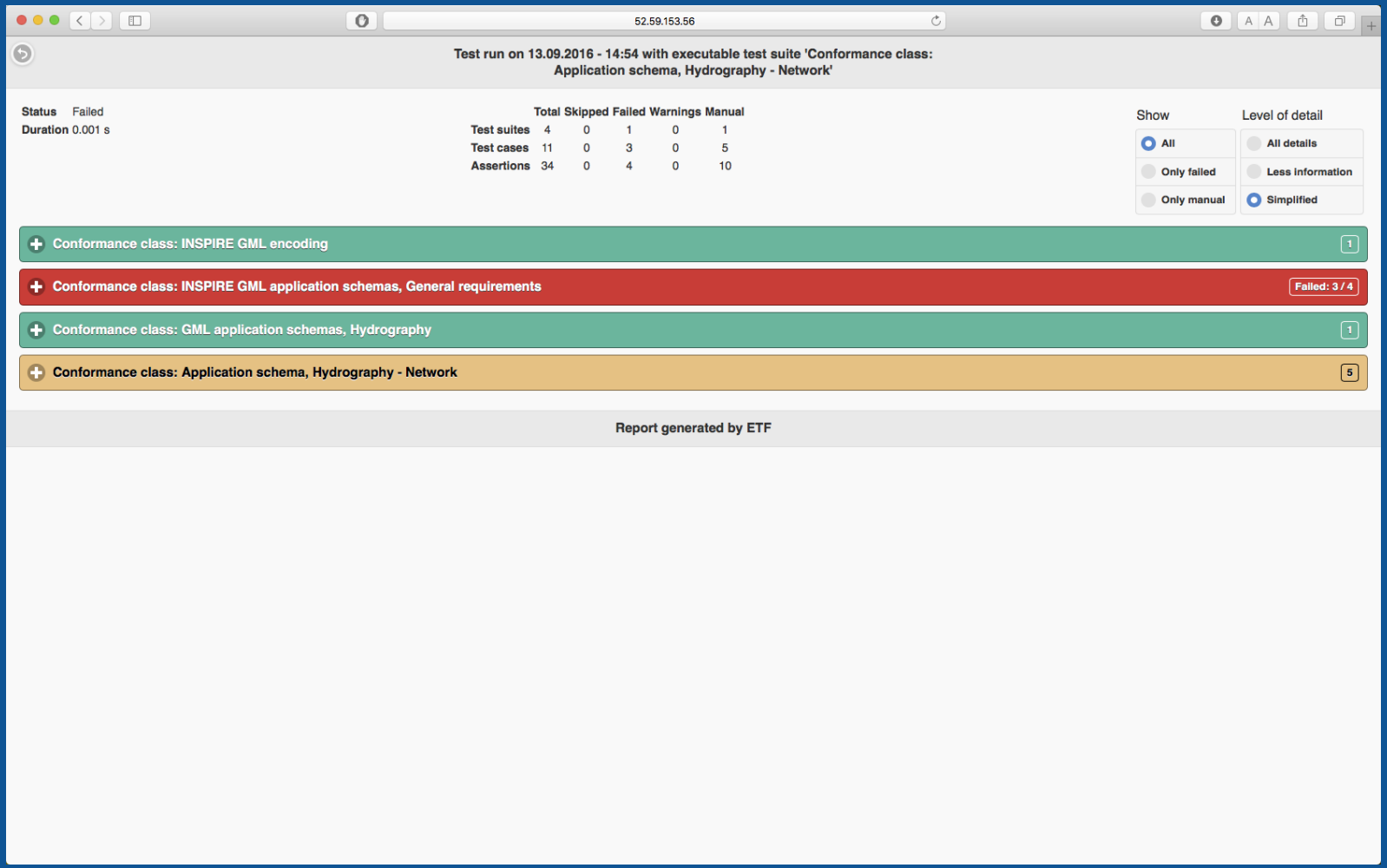
The current stable schema is available here and can be used for validating ETF XML structues:

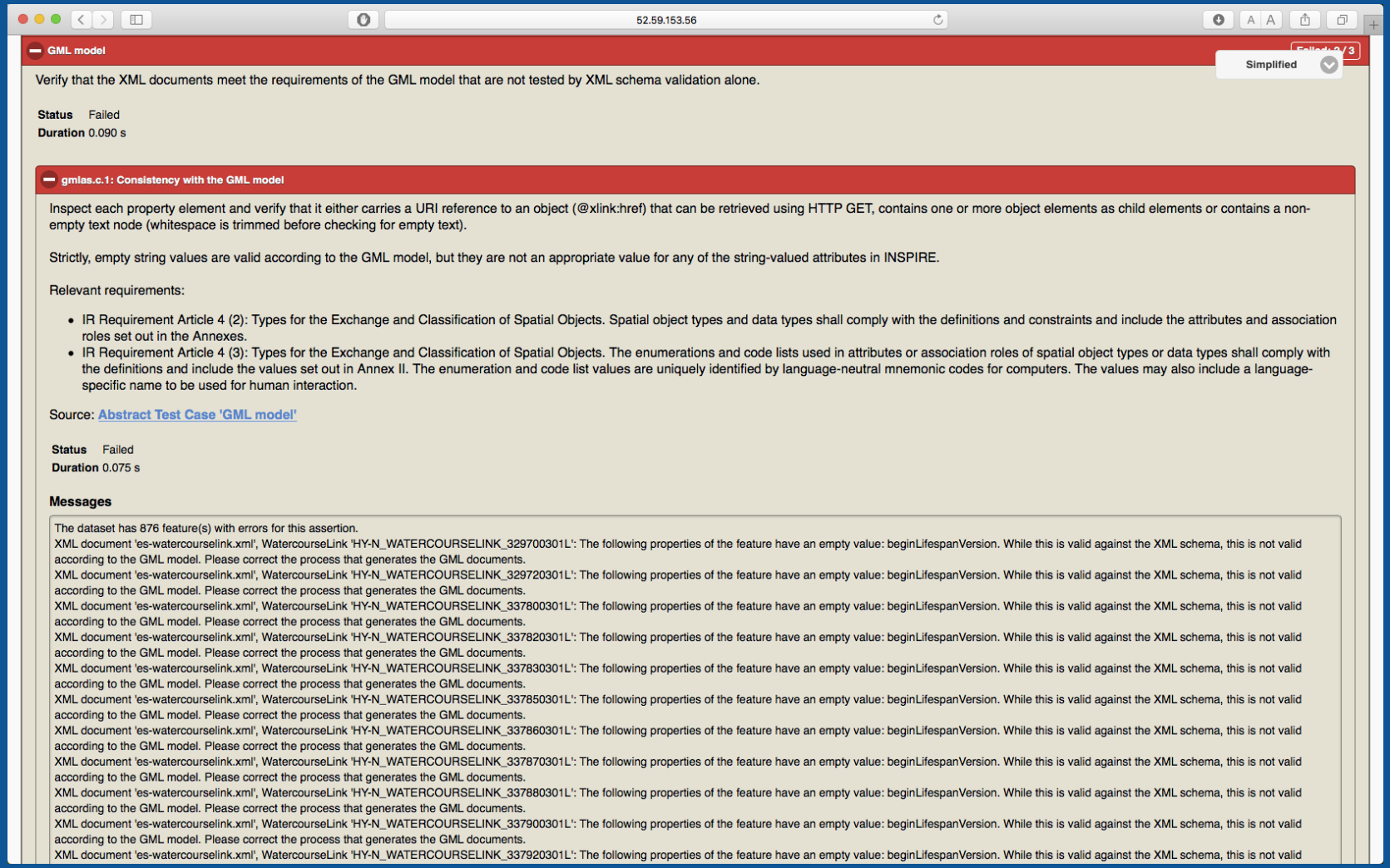
```
<EtfModelItem xmlns="http://www.interactive-instruments.de/etf/2.0"
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.interactive-instruments.de/etf/2.0 http://services.int

</EtfModelItem>
```

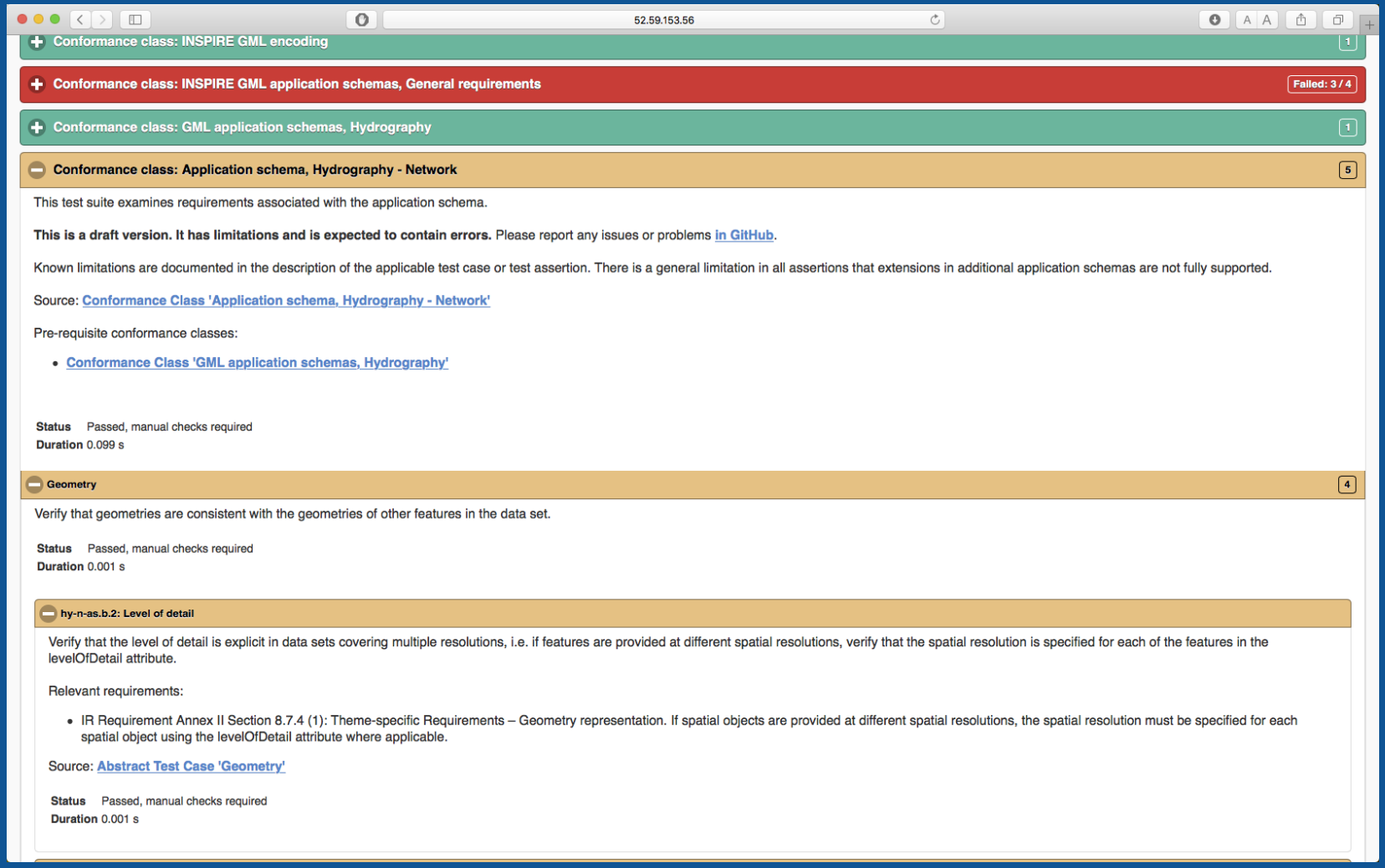
Here is a simple example with one test case with two test assertions:

```
<TestTaskResult xmlns="http://www.interactive-instruments.de/etf/2.0"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:schemaLocation="http://www.interactive-instruments.de/etf/2.0 http://services.int
```

Sample test report




52.59.153.56
GML model
Simplified
Verify that the XML documents meet the requirements of the GML model that are not tested by XML schema validation alone.
Status Failed
Duration 0.090 s
gmlas.c.1: Consistency with the GML model
Inspect each property element and verify that it either carries a URI reference to an object (@xlink:href) that can be retrieved using HTTP GET, contains one or more object elements as child elements or contains a non-empty text node (whitespace is trimmed before checking for empty text).
Strictly, empty string values are valid according to the GML model, but they are not an appropriate value for any of the string-valued attributes in INSPIRE.
Relevant requirements:
IR Requirement Article 4 (2): Types for the Exchange and Classification of Spatial Objects. Spatial object types and data types shall comply with the definitions and constraints and include the attributes and association roles set out in the Annexes.
IR Requirement Article 4 (3): Types for the Exchange and Classification of Spatial Objects. The enumerations and code lists used in attributes or association roles of spatial object types or data types shall comply with the definitions and include the values set out in Annex II. The enumeration and code list values are uniquely identified by language-neutral mnemonic codes for computers. The values may also include a language-specific name to be used for human interaction.
Source: Abstract Test Case 'GML model'
Status Failed
Duration 0.075 s
Messages
The dataset has 876 feature(s) with errors for this assertion.
XML document 'es-watercourselink.xml', WatercourseLink 'HY-N_WATERCOURSELINK_329700301L': The following properties of the feature have an empty value: beginLifespanVersion. While this is valid against the XML schema, this is not valid according to the GML model. Please correct the process that generates the GML documents.
XML document 'es-watercourselink.xml', WatercourseLink 'HY-N_WATERCOURSELINK_329720301L': The following properties of the feature have an empty value: beginLifespanVersion. While this is valid against the XML schema, this is not valid according to the GML model. Please correct the process that generates the GML documents.
XML document 'es-watercourselink.xml', WatercourseLink 'HY-N_WATERCOURSELINK_337800301L': The following properties of the feature have an empty value: beginLifespanVersion. While this is valid against the XML schema, this is not valid according to the GML model. Please correct the process that generates the GML documents.
XML document 'es-watercourselink.xml', WatercourseLink 'HY-N_WATERCOURSELINK_337820301L': The following properties of the feature have an empty value: beginLifespanVersion. While this is valid against the XML schema, this is not valid according to the GML model. Please correct the process that generates the GML documents.
XML document 'es-watercourselink.xml', WatercourseLink 'HY-N_WATERCOURSELINK_337830301L': The following properties of the feature have an empty value: beginLifespanVersion. While this is valid against the XML schema, this is not valid according to the GML model. Please correct the process that generates the GML documents.
XML document 'es-watercourselink.xml', WatercourseLink 'HY-N_WATERCOURSELINK_337850301L': The following properties of the feature have an empty value: beginLifespanVersion. While this is valid against the XML schema, this is not valid according to the GML model. Please correct the process that generates the GML documents.
XML document 'es-watercourselink.xml', WatercourseLink 'HY-N_WATERCOURSELINK_337860301L': The following properties of the feature have an empty value: beginLifespanVersion. While this is valid against the XML schema, this is not valid according to the GML model. Please correct the process that generates the GML documents.
XML document 'es-watercourselink.xml', WatercourseLink 'HY-N_WATERCOURSELINK_337870301L': The following properties of the feature have an empty value: beginLifespanVersion. While this is valid against the XML schema, this is not valid according to the GML model. Please correct the process that generates the GML documents.
XML document 'es-watercourselink.xml', WatercourseLink 'HY-N_WATERCOURSELINK_337880301L': The following properties of the feature have an empty value: beginLifespanVersion. While this is valid against the XML schema, this is not valid according to the GML model. Please correct the process that generates the GML documents.
XML document 'es-watercourselink.xml', WatercourseLink 'HY-N_WATERCOURSELINK_337900301L': The following properties of the feature have an empty value: beginLifespanVersion. While this is valid against the XML schema, this is not valid according to the GML model. Please correct the process that generates the GML documents.
XML document 'es-watercourselink.xml', WatercourseLink 'HY-N_WATERCOURSELINK_337920301L': The following properties of the feature have an empty value: beginLifespanVersion. While this is valid against the XML schema, this is not valid

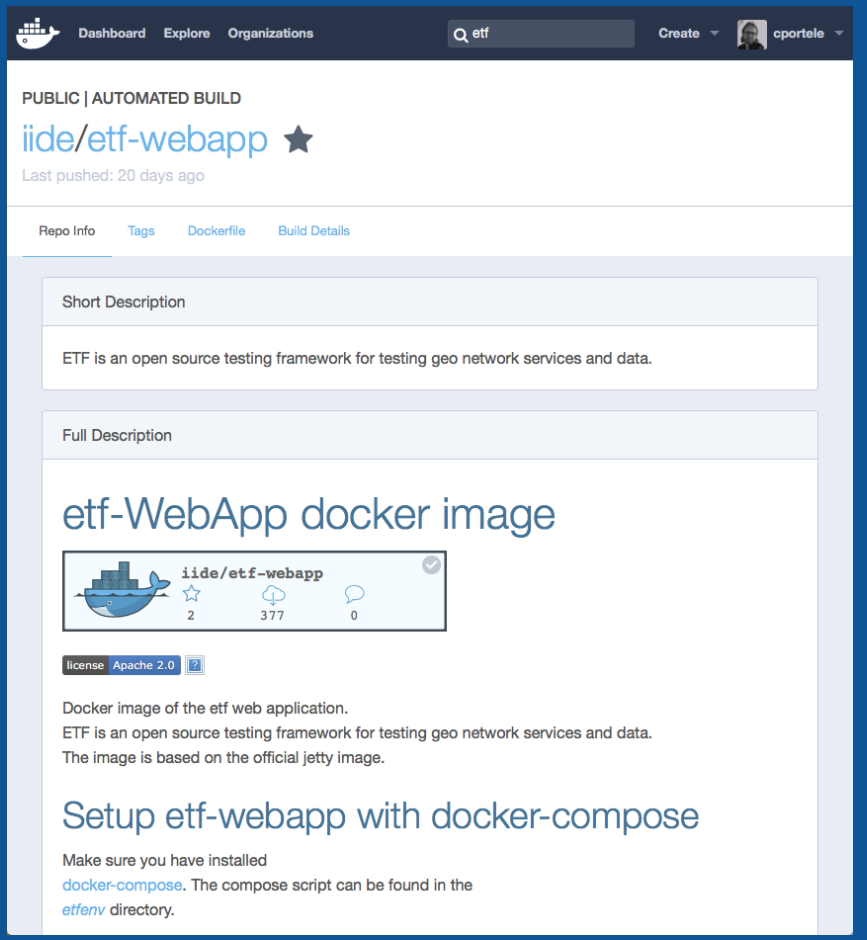

52.59.153.56
Conformance class: INSPIRE GML encoding
1
Conformance class: INSPIRE GML application schemas, General requirements
Failed: 3 / 4
Conformance class: GML application schemas, Hydrography
1
Conformance class: Application schema, Hydrography - Network
5
This test suite examines requirements 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 not fully supported.
Source: Conformance Class 'Application schema, Hydrography - Network'
Pre-requisite conformance classes:
Conformance Class 'GML application schemas, Hydrography'
Status Passed, manual checks required
Duration 0.099 s
Geometry
4
Verify that geometries are consistent with the geometries of other features in the data set.
Status Passed, manual checks required
Duration 0.001 s
hy-n-as.b.2: Level of detail
Verify that the level of detail is explicit in data sets covering multiple resolutions, i.e. if features are provided at different spatial resolutions, verify that the spatial resolution is specified for each of the features in the levelOfDetail attribute.
Relevant requirements:
IR Requirement Annex II Section 8.7.4 (1): Theme-specific Requirements – Geometry representation. If spatial objects are provided at different spatial resolutions, the spatial resolution must be specified for each spatial object using the levelOfDetail attribute where applicable.
Source: Abstract Test Case 'Geometry'
Status Passed, manual checks required
Duration 0.001 s

ETS development – planned reuse

- Use ETF tests for DLS + VS as starting point
  - WMS 1.3 / INSPIRE View Service
  - WFS 2.0 Pre-defined / INSPIRE Download Service
  - WFS 2.0 Direct Access / INSPIRE Download Service
  - ATOM INSPIRE Download Service
  - Updates needed based on the Abstract Test Suites and to improve usability
- Integrate OGC CITE Tests

Local deployment

- Easiest option will be using the Docker image of ETF
  - [note: needs to be updated to the latest software version]
- Adding the Executable Test Suites from the repository on GitHub
- Steps to be documented soon



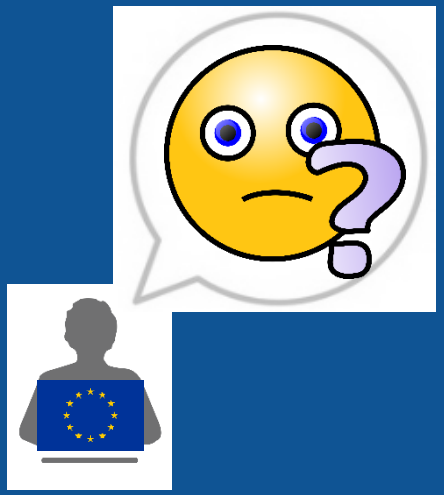
Why do we need reference codes?

Country: **Italia**
Theme: **Suolo**

Country: **Deutschland**
Theme: **Boden**

Country: **Ελλάδα**
Theme: **έδαφος**

Country: **DE**
Theme: **Boden**



Joint Research Centre

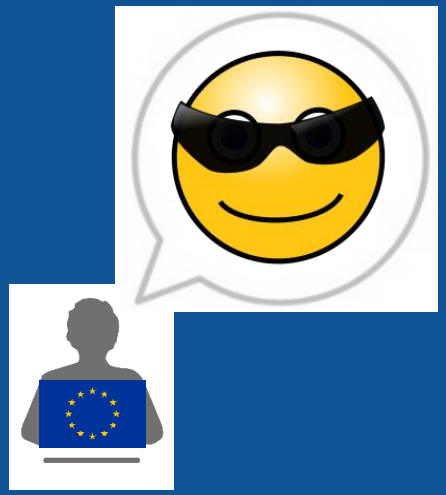
Why do we need reference codes?

Country: **countryCode/it**
Theme: **theme/so**

Country: **countryCode/de**
Theme: **theme/so**

Country: **countryCode/el**
Theme: **theme/so**

Country: **countryCode/de**
Theme: **theme/so**



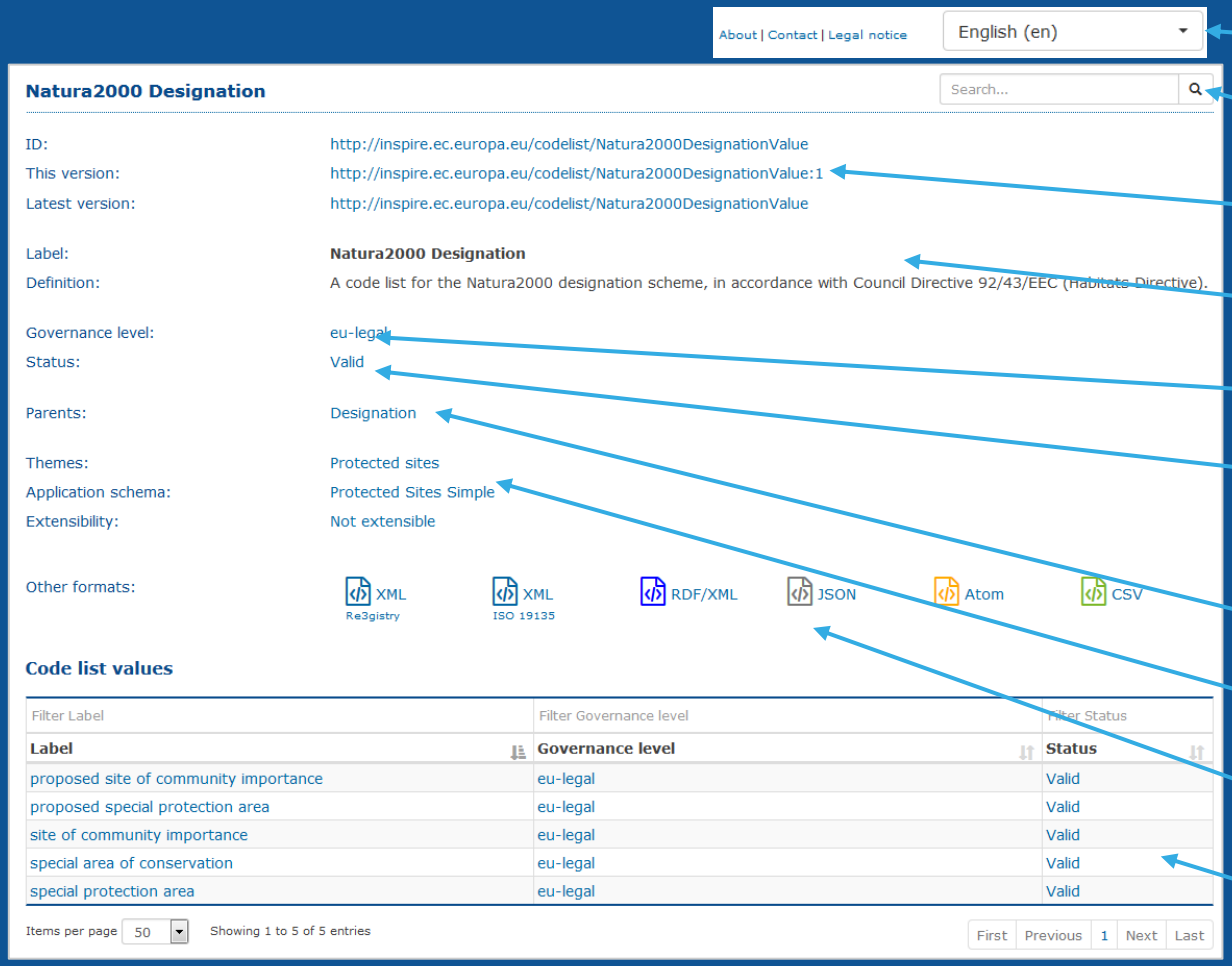
Joint Research Centre

Why do we need registries in INSPIRE?

- **Key infrastructure components to**
  - allow unambiguous references to items
  - provide unique and persistent identifiers for resources
  - allow their consistent management and versioning

- **Central INSPIRE registry contains registers for**
  - themes
  - code lists and values
  - enumerations and values
  - feature concepts
  - Metadata code lists and values
  - application schemas
  - glossary
  - reference documents
  - layers

Re3gistry Software – Features (v1.2)



- Multi-lingual
- Search
- Versioning
- Common data
- Custom data
- Status (valid, superseded, ...)
- Parent-child hierarchy
- Linked items
- Multiple formats
- Hierarchical registers (collections)

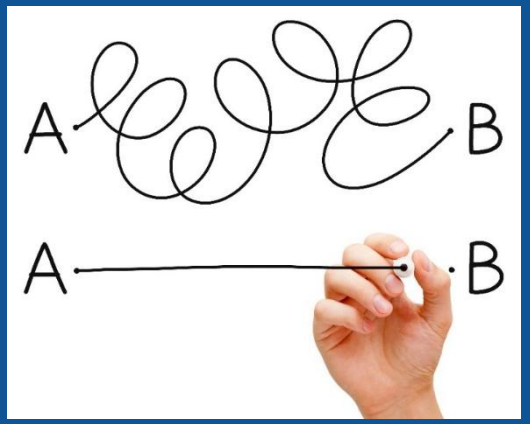
Outlook: Future Re3gistry versions

Version 1.3 (pre-release testing)

- Reference to externally defined values
- Register Federation support (MIWP-6)

Version 2.0 – Planned improvements

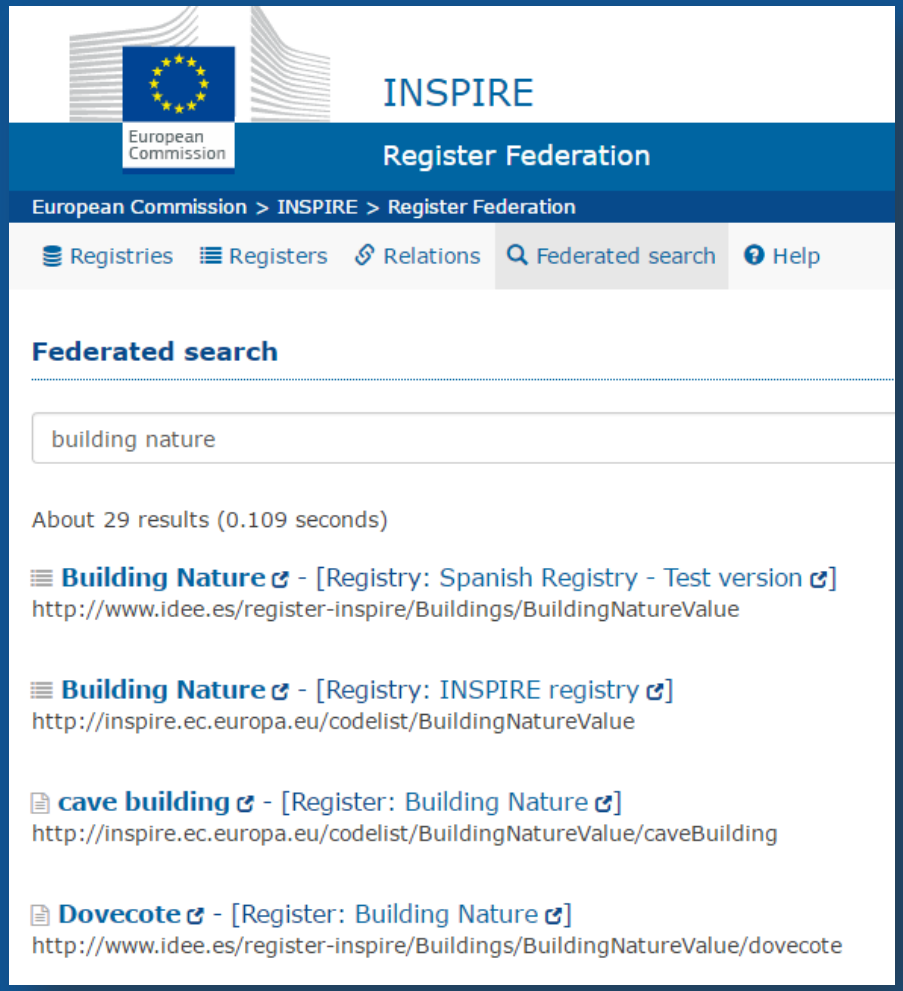
- Editing user interface
- Guided software installation
- API (direct calls)
- Re3gistry software as a service (SaaS)
- Other suggestions?



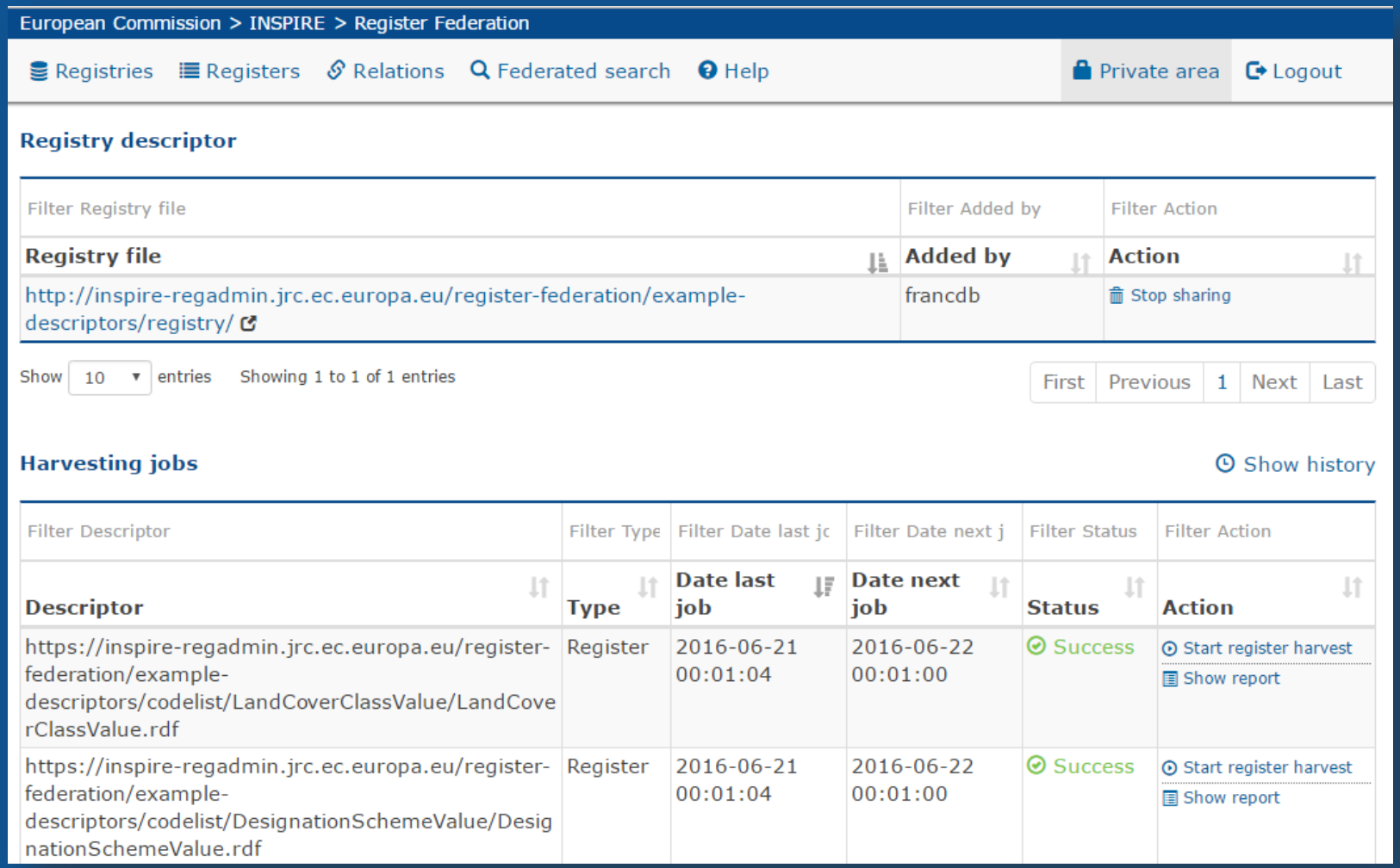
INSPIRE register federation – Status

- Guidance / best practices document finalised
  - Best practices for setting up registers / registries
    - for register managers & users
  - INSPIRE Register Federation – Overview
  - How to join the INSPIRE register federation
    - for register managers
  - How to use the INSPIRE register federation
    - for register users
  - Annexes (examples of descriptors, validation stylesheet)
- Register of Registers (RoR) prototype
  - http://inspire-regadmin.jrc.ec.europa.eu/ror
- Support of Register federation exchange format in central INSPIRE registry service

Registries and registers – Status

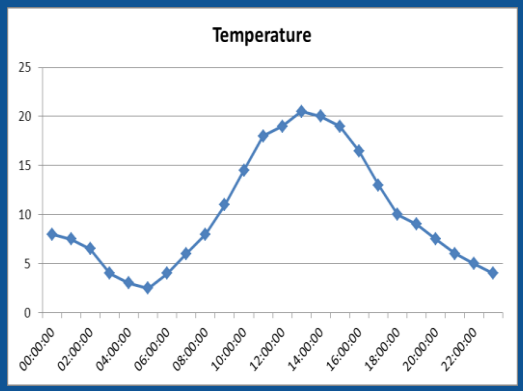


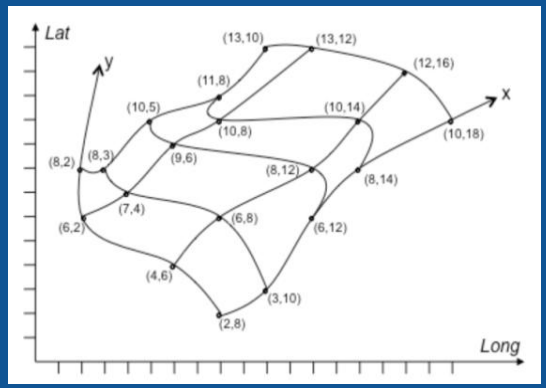
Registries and registers – Status



TGs & tools for observation & coverage data – Why?

- Many Annex II+III data sets are based on observations or coverages
- Available solutions in TGs for Download services (WFS and Atom) not suited for providing direct access to observation or coverage data
- Additional opportunities by sharing data using SOS/WCS





TGs & tools for observation & coverage data – Status

- Technical Guidelines for Download Services based on SOS and WCS (INSPIRE SOS/WCS profiles) → MIG-T review completed
- Update of D2.9 Guidelines for the use of O&M and SWE → MIG-T review completed
  - Focus on implementers
  - Guidance tailored to INSPIRE
  - Previously existing content as Annexes
  - Simpler and shorter document
  - Alignment with TG for download services
- SOS Open Source Implementation (52North) with support for additional observation types (e.g. PointObservation, ProfileObservation, TrajectoryObservation, …)

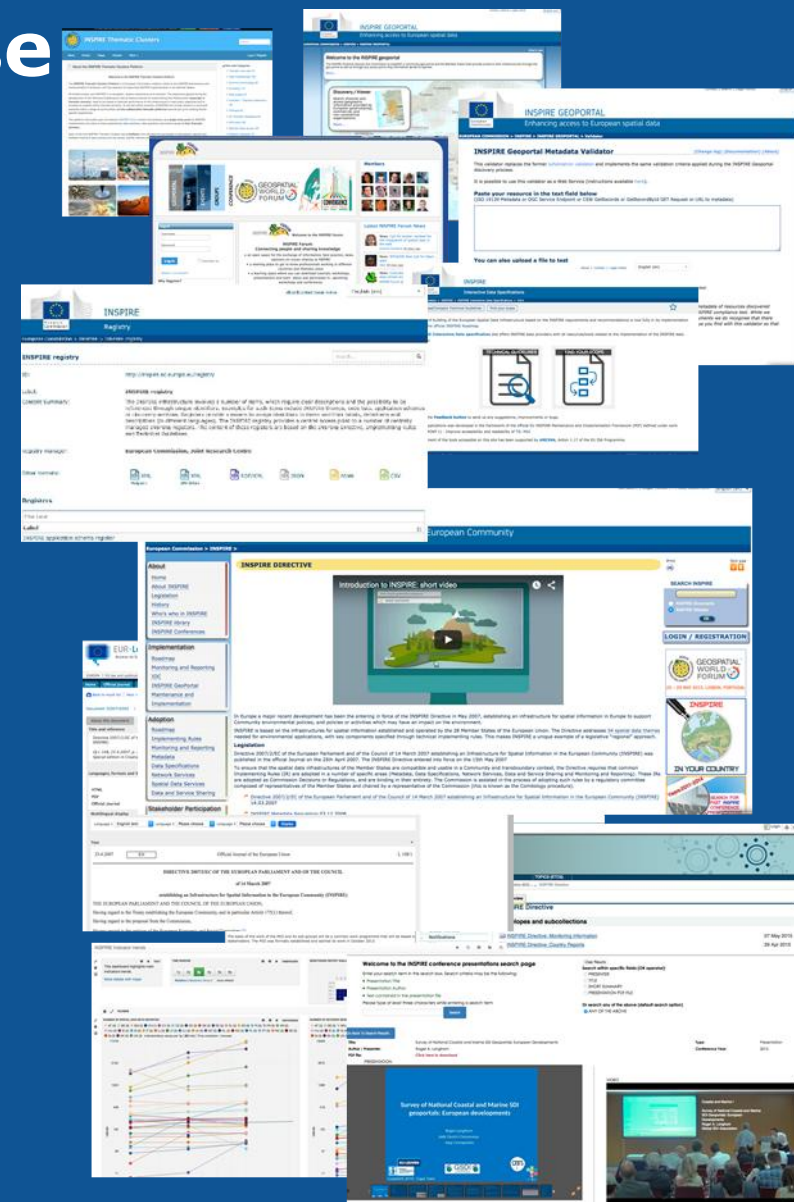
INSPIRE knowledge base

Joint Research Centre

http://inspire.ec.europa.eu/

INSPIRE knowledge base - Why?

- Moving into implementation phase
- Many disconnected components
- Difficulty for new users to find their way through INSPIRE
- Need for additional tools and guidance to support implementers
- Sustainability of solution
- Rationalise use of resources (people, funding)
- Opportunity to add value by using resources across components.
- Much of the INSPIRE Knowledge lives outside (projects, MS…)



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INSPIRE

Infrastructure for spatial information in Europe

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INSPIRE Video

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19/07/2016
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24/08/2016
FOSS4G 2016

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Metadata
MIG Workprogramme
Monitoring and Reporting
Network Services
Spatial Data Services
Use

SPIRE

Directive aims to create a European Union spatial data infrastructure for the EU environmental policies and policies or activities which may have an impact onment. This European Spatial Data Infrastructure will enable the sharing of al spatial information among public sector organisations, facilitate public tial information across Europe and assist in policy-making across boundaries.

ased on the infrastructures for spatial information established and operated ber States of the European Union. The Directive addresses 34 spatial data ed for environmental applications.

came into force on 15 May 2007 and will be implemented in various stages, with full implementation required by 2021.

This video provides an overview of why INSPIRE is needed and what types of spatial are covered by INSPIRE.

Category:
INSPIRE
Learn

European Commission

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Implement

- Guide for implementers
- Roadmap
- Data Specifications
- Monitoring & Reporting
- Metadata
- Network Services
- Data and Service Sharing
- Spatial Data Services
- Maintenance and Implementation Framework

Guide for implementers

Roadmap

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for implementers

me into force on 15 May 2007 and will be implemented in implementation required by 2019.

nd the policy background leading to its adoption can be found in

my country?

bliged to ensure that appropiate structures and mechanisms are designated for coordinationg, across the different levels of government, the contributions of all thoose with an interest in their infrastructures for spatial information.

The INSPIRE in your country section provides information for the individual countries.

What do we have to do to implement INSPIRE?

To ensure that the spatial data infrastructures of the Member States are compatible and usable in a Community and transboundary context, the INSPIRE Directive requires that common Implementing Rules (IR) are adopted in a number of specific areas

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

Which data?

One of the major goals of INSPIRE is to create harmonised spatial data sets that can be used seamlessly in cross-border applications. In order to reach this goal it is necessary to agree on common definitions for the 34 themes covered by INSPIRE.

What are the deadlines?

The INSPIRE Roadmap sets out the deadlines for INSPIRE implementation.

Are there any step by step guides for implementers?

INSPIRE in Practice collects implementation examples from implementers. The examples can be either full or partial descriptions of implementations that illustrate step by step the procedure to follow in order to generate INSPIRE resources.

Tools and resources

The tools and resources repository provides access to resources developed by the INSPIRE EC/EEA team.

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Data Specifications

- Overview
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Data Specifications > Themes > Cadastral parcels

Areas defined by cadastral registers or equivalent.
Annex 1

Description

INSPIRE Data Specification on Cadastral Parcels – Technical Guidelines 3.1

Read/Compare Technical Guidelines

Registry entry for [Cadastral parcels]

Thematic Clusters Links

Topographic and Cadastral Reference Data
Cadastral parcels

[Cadastral parcels] Data on INSPIRE Geoportal

Find Your Scope

Implemenations

Data Models

Data Schema

Experts

News

European Commission

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- Register as an expert
- Join in discussions
- INSPIRE Conference
- INSPIRE in your country

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...enting Rules and Technical Guidance documents and the maintenance and implementation framework have been based on a participatory process, involving experts from stakeholder organisations in the Member States.

Pool of experts

The MIG is complemented by a pool of experts drawn from the stakeholder community. The experts in this pool are called upon when MIG sub-groups are formed to address specific implementation or maintenance issues, but will also provide the opportunity to reach out to experts involved or interested in particular aspects of INSPIRE implementation or maintenance.

The call is open to all individuals with a high level of expertise in one or several of the aspects relevant for INSPIRE implementation and maintenance.

- Call text
- List of registered experts

Open discussions

Each year a European INSPIRE Conference is held to provides a forum for stakeholders from government, academia and industry to hear about and discuss the latest developments of the INSPIRE Directive.

In addition the INSPIRE Thematic Clusters is a single entry point for INSPIRE implementers and users to share experiences, best practices, raise questions and resolve issues in their thematic domains.

INSPIRE in your country

Each Member State is required to ensure that coordinating structures are set up in their country. Learn anout INSPIRE in your country here.

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- INSPIRE Geoportal
- INSPIRE Pilots

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Guide for

About INS

The INSPIRE directive came into force on 15 May 2007 and will be implemented in various stages, with full implementation required by 2019.Details of the Directive and the policy background leading to its adoption can be found in the background section.

Which data is covered by INSPIRE?

One of the major goals of INSPIRE is to create harmonised spatial data sets that can be used seamlessly in cross-border applications. In order to reach this goal it is necessary to agree on common definitions for the 34 themes covered by INSPIRE.

How can I use INSPIRE Data and Services

INSPIRE data and services can be used for a large variety of applicitions to support e.g.

- the implemention and monitoring of enviromental policies including environmental reporting and easy access of environmental information for the public,
- eGovernment strategies,
- other policy areas (e.g. disaster management, energy, intelligent transport systems, Copernicus), and
- the data economy.

Where do I fnd the INSPIRE data?

The INSPIRE Geoportal provides the central access point into the INSPIRE infrastructure.

Are there any examples of INSPIRE being used?

This INSPIRE Pilots section provides examples of where INSPIRE data and services are already used and additional resources for users of the infrastructure.

What tools and resouces are available?

The tools and resources repository provides access to resources developed by the INSPIRE EC/EEA team.

Who do I talk to in my country?

Each member state is obliged to ensure that appropiate structures and mechanisms are designated for coordinationg, across the differenct levels of government, the contributions of all thoose with an interest in their infrastructures for spatial information.

The INSPIRE in your country section provides information for the individual countries.

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INSPIRE tools

Category

- Any -

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Read/Compare Technical Guidelines

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INSPIRE

Infrastructure for spatial information in Europe

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INSPIRE Video

Focus on

Latest News

21/07/2016
Commission's INSPIRE report and REFIT evaluation published!
19/07/2016
New release of Re3gistry software
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INSPIRE Conference 2016: "INSPIRing a sustainable environment"
24/08/2016
FOSS4G 2016
All Events

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INSPIRE knowledge base

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- INSPIRE knowledge base
- INSPIRE Legislation
- INSPIRE Library
- INSPIRE Thematic clusters

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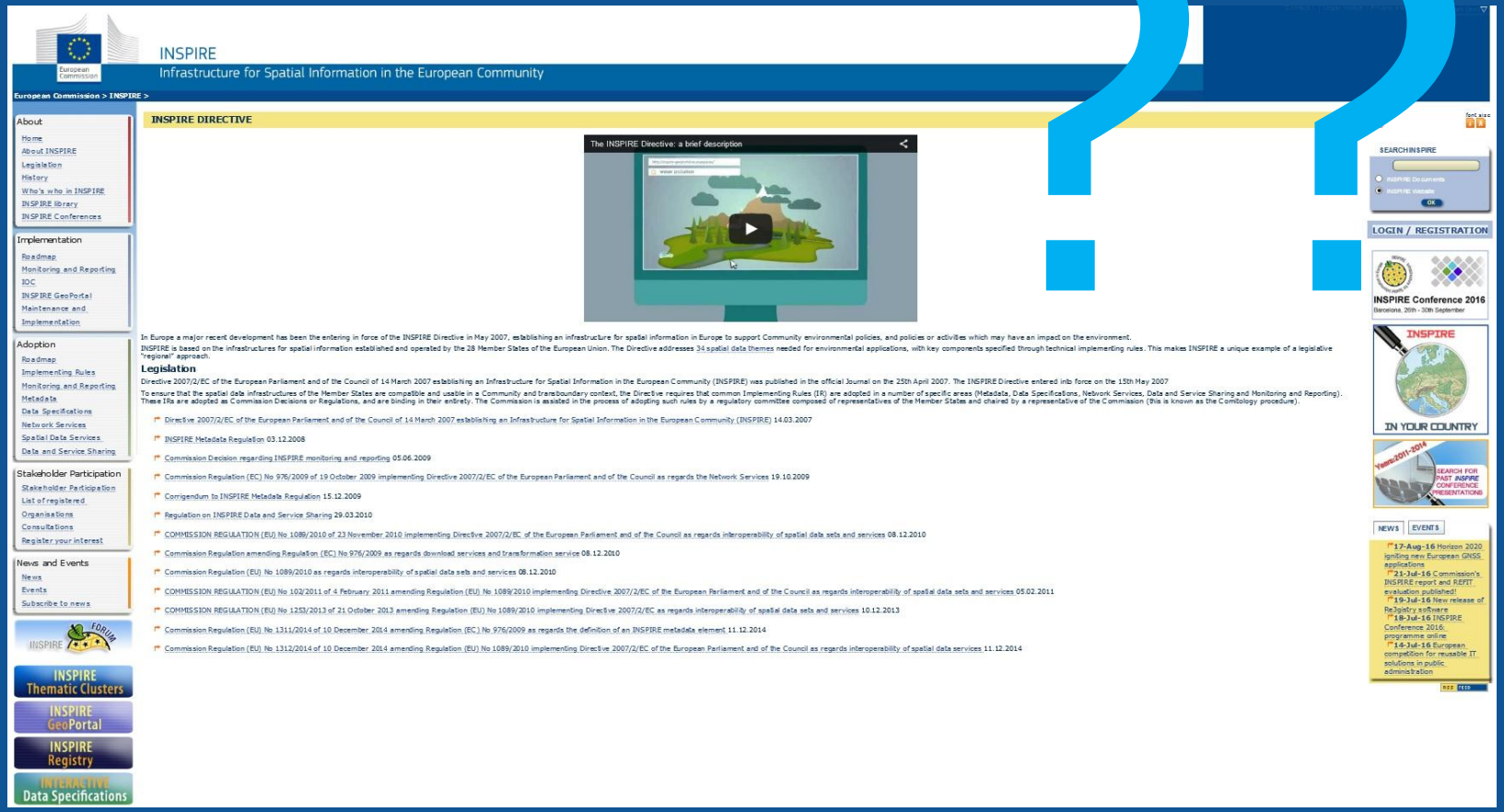
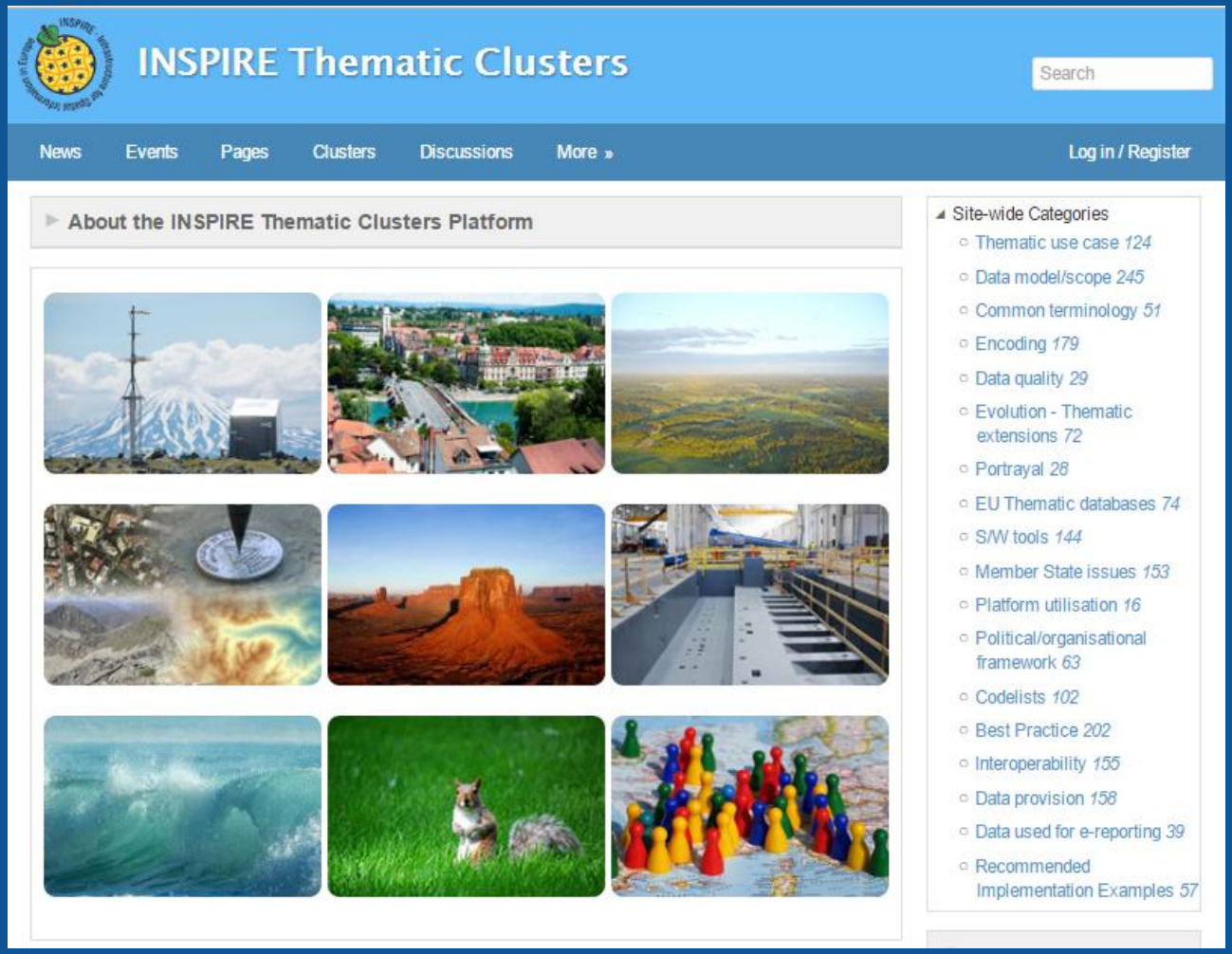


Archive

http://inspire.ec.europa.eu/webarchive/

Thematic Clusters platform



Thematic Clusters platform – Why?

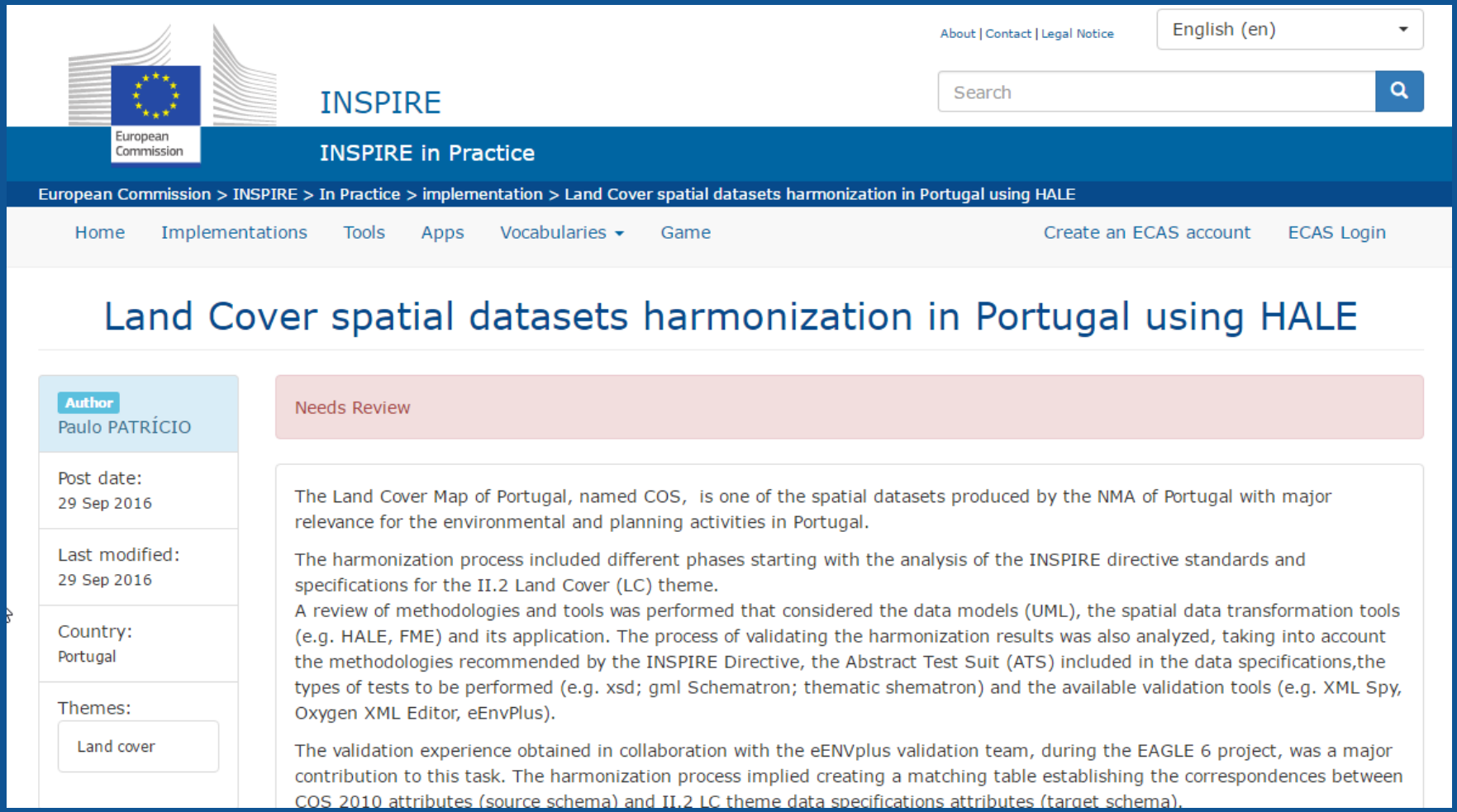
- Many implementation questions, approaches, best practices and planned extensions are theme-specific
- A number of theme-specific issues have been raised for several data specification TGs
- TGs still allow some degrees of freedom for implementing the IRs → develop "harmonised" approaches for implementation.
- Discuss links to other environmental policies and reporting obligations

Thematic Clusters platform – Status

- Discussion of concrete theme-specific implementation issues & questions
- Important source for identifying implementation issues
  - Simplification / bug-fixing of TGs
- Community implementation knowledge base
  - Exchanging implementation practices
- Dedicated thematic webinars, e.g.
  - Coverages, GeoSciML, land cover / land use

Some stats (Sep 2016) …
- 705 registered members
- 50 groups & sub-groups
- 441 discussion topics
- 1000+ responses
- 76 pages on specific topics

INSPIRE in practice



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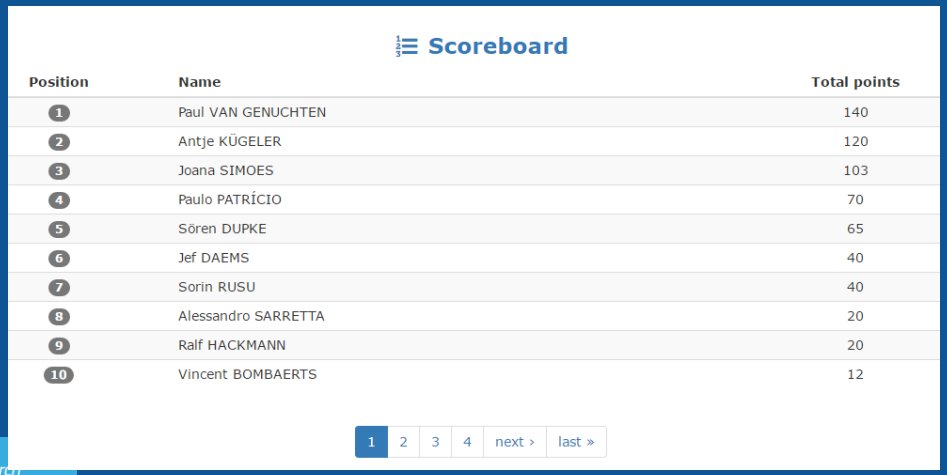
https://inspire-reference.jrc.ec.europa.eu

INSPIRE in practice

- Collaborative platform for sharing (and looking up)
  - implementation examples
  - usage examples
  - tools
  - applications
- Structured using vocabularies for
  - assets
  - actors
  - implementation tasks
- Help us improve the platform – play the game

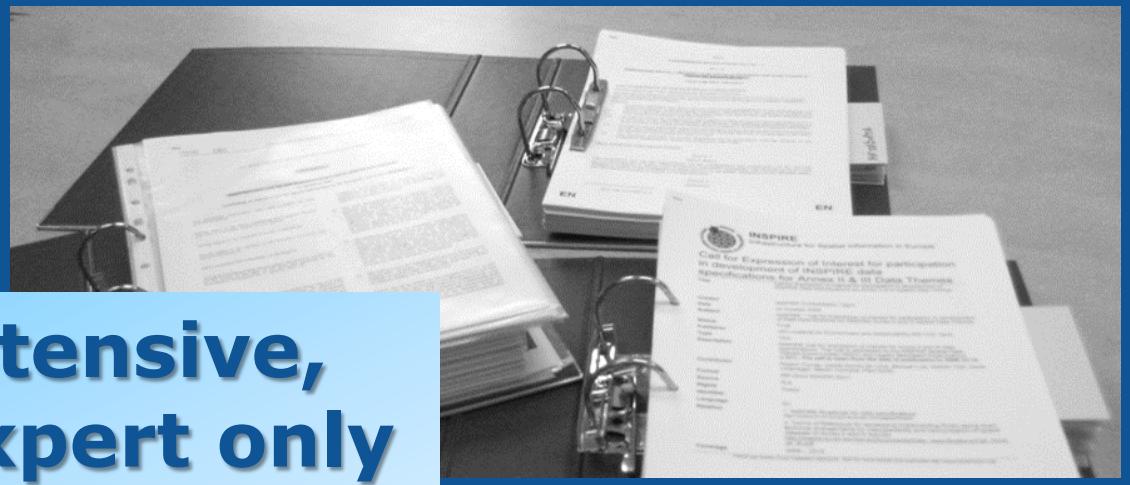


Scoreboard

Position	Name	Total points
1	Paul VAN GENUCHTEN	140
2	Antje KÜGELER	120
3	Joana SIMOES	103
4	Paulo PATRÍCIO	70
5	Sören DUPKE	65
6	Jef DAEMS	40
7	Sorin RUSU	40
8	Alessandro SARRETTA	20
9	Ralf HACKMANN	20
10	Vincent BOMBAERTS	12

1 2 3 4 next › last »

INSPIRE legal & technical documentation



Extensive,
+ expert only reading

INSPIRE Thematic Scope

Annex I

1. **Coordinate reference systems**
2. **Geographical grid systems**
3. Geographical names
4. Administrative units
5. Addresses
6. Cadastral parcels
7. Transport networks
8. **Hydrography**
9. Protected sites

Annex II

1. **Elevation**
2. **Land cover**
3. **Ortho-imagery**
4. Geology

Annex III

1. Statistical units
2. **Buildings**
3. Soil
4. **Land use**
5. Human health and safety
6. Utility and governmental services
7. **Environmental monitoring facilities**
8. Production and industrial facilities
9. Agricultural and aquaculture facilities
10. Population distribution – demography
11. Area management/ restriction/regulation zones & reporting units
12. **Natural risk zones**
13. **Atmospheric conditions**
14. **Meteorological geographical features**
15. **Oceanographic geographical features**
16. **Sea regions**
17. **Bio-geographical regions**
18. **Habitats and biotopes**
19. **Species distribution**
20. Energy Resources
21. Mineral resources

INSPIRE Interactive Data Specifications

Set of tools/applications to make the **INSPIRE Data specifications more accessible and usable**

Target user groups

- INSPIRE data providers
- INSPIRE newcomers
- Thematic policy makers
- Service / Solution providers

http://inspire-regadmin.jrc.ec.europa.eu/dataspecification

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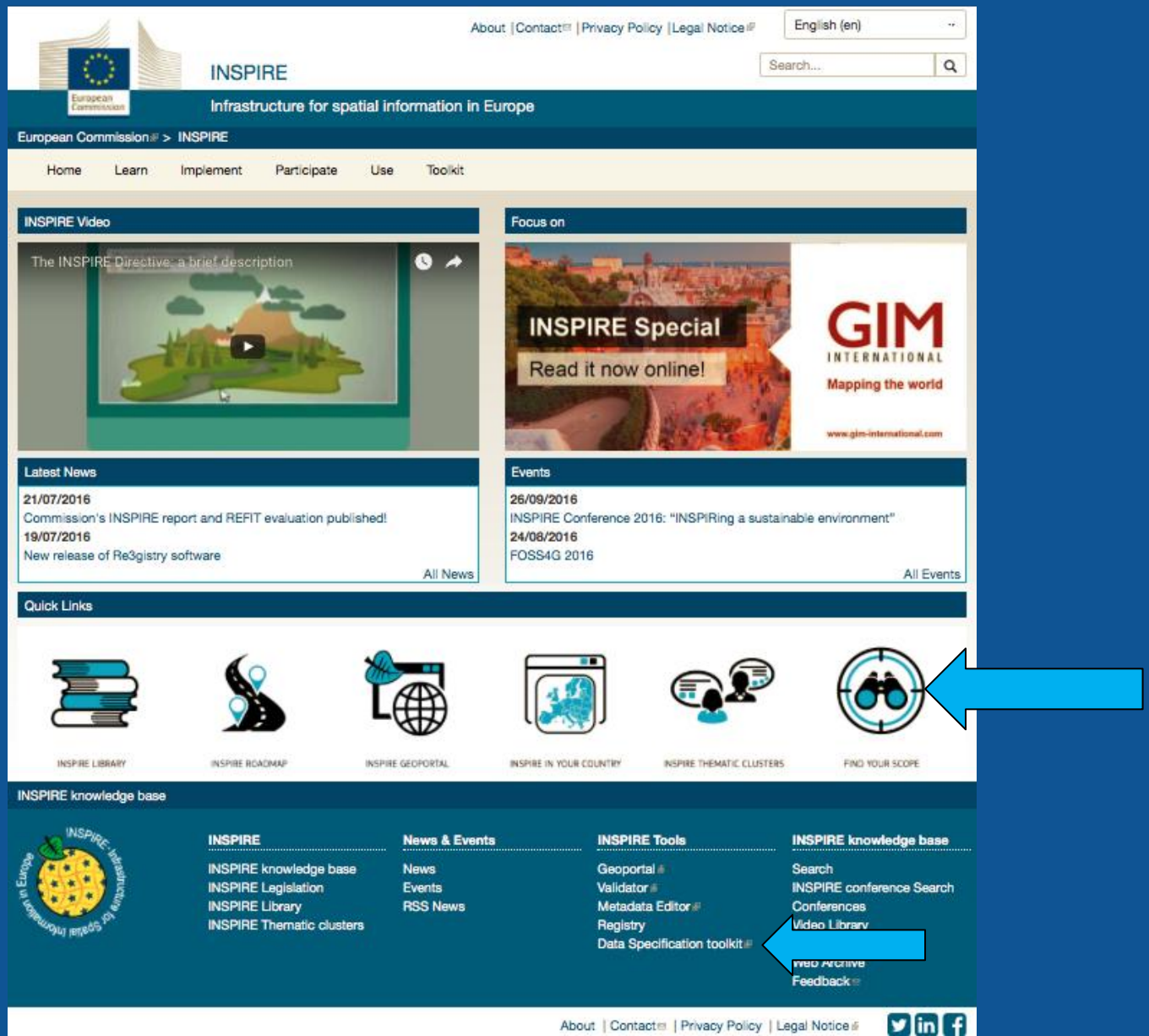
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Find your scope

- helps you with data transformation tasks by selecting the INSPIRE spatial object type(s) and their properties relevant to your datasets using the following tools:

Interactive Workflow

offers with an intuitive selection of INSPIRE data theme followed by the selection of relevant application schema(s). The next step is about selecting concrete spatial objects based on their definitions.

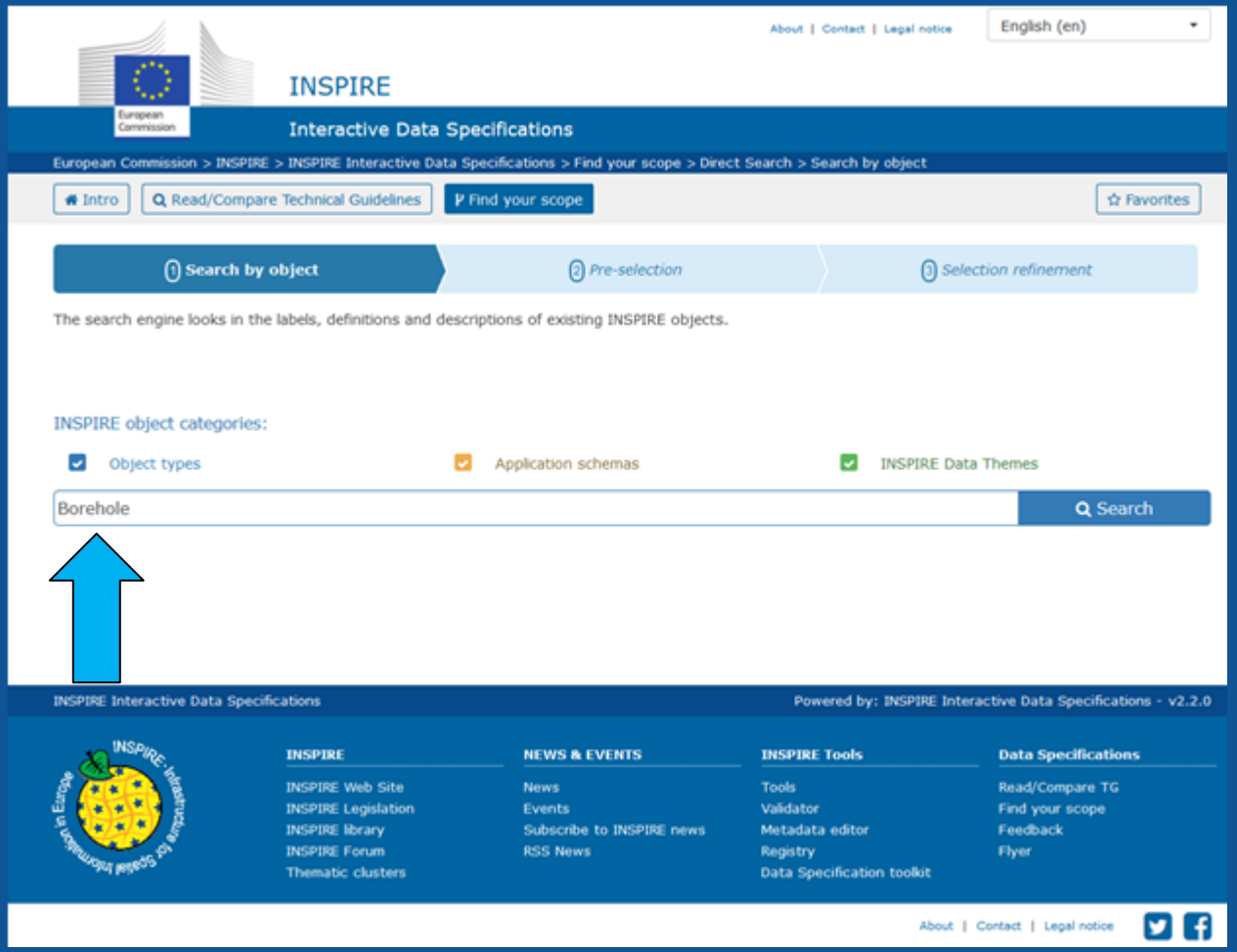
Direct Search

helps you to iteratively search for INSPIRE objects. The search engine looks in the labels, definitions and descriptions of all existing/defined INSPIRE spatial objects, application schemas and data themes.

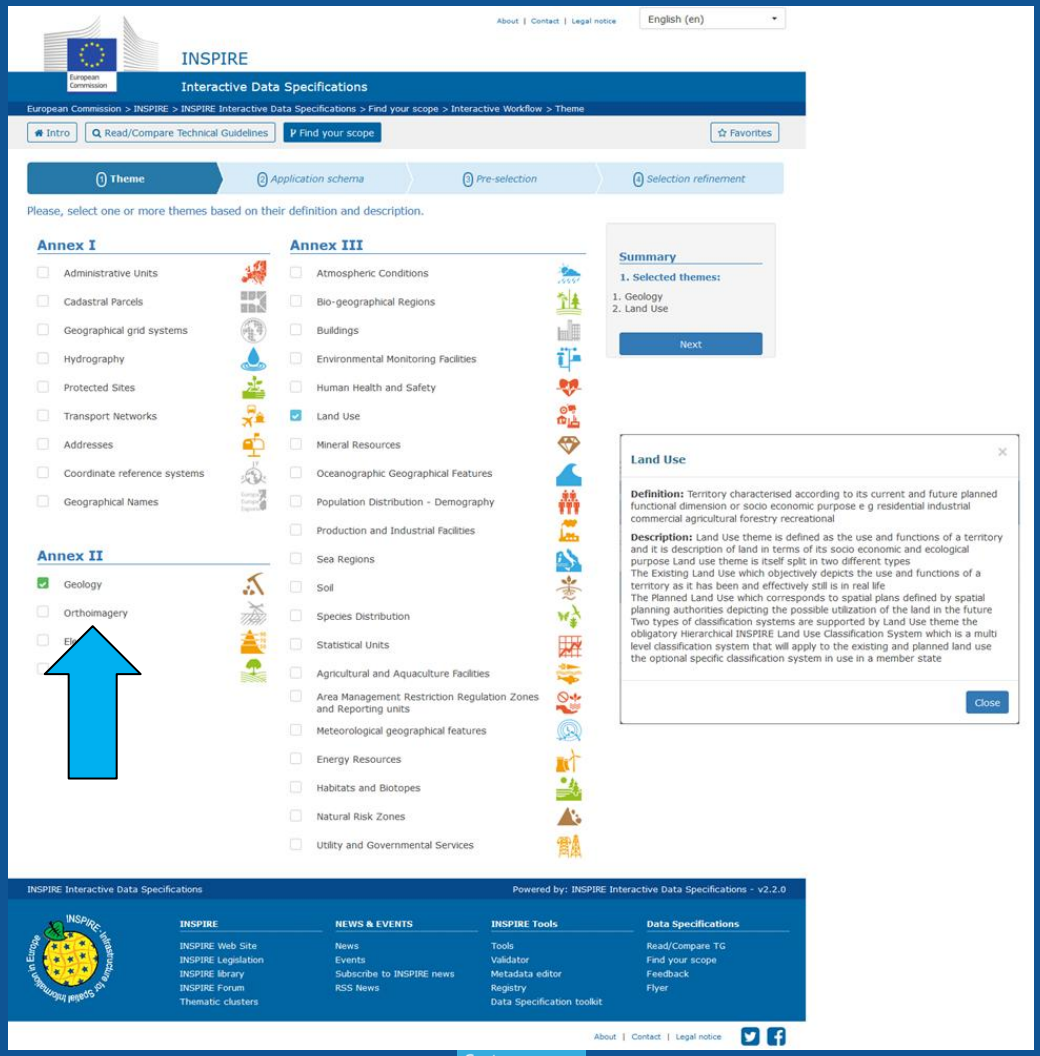
Catalogue of INSPIRE objects

presents a Catalogue of all spatial objects defined by INSPIRE. The Catalogue allows you to search for objects in alphabetical order. The Catalogue can also be filtered to show only spatial object types, data types or code lists / enumerations.

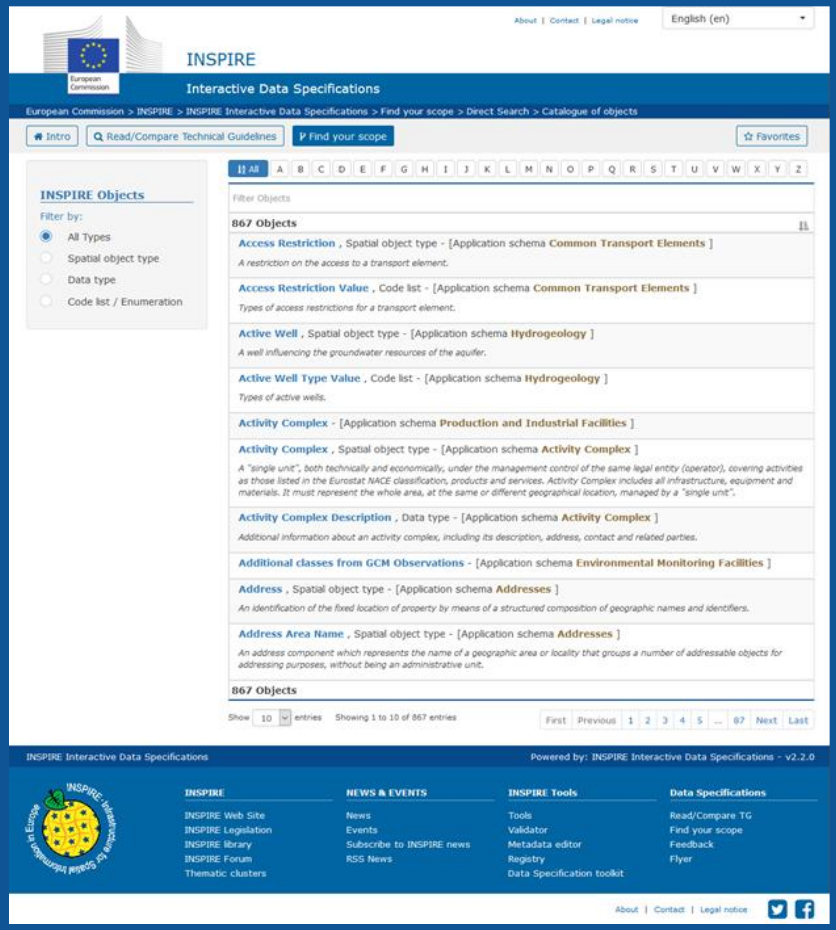
Find your scope – direct search



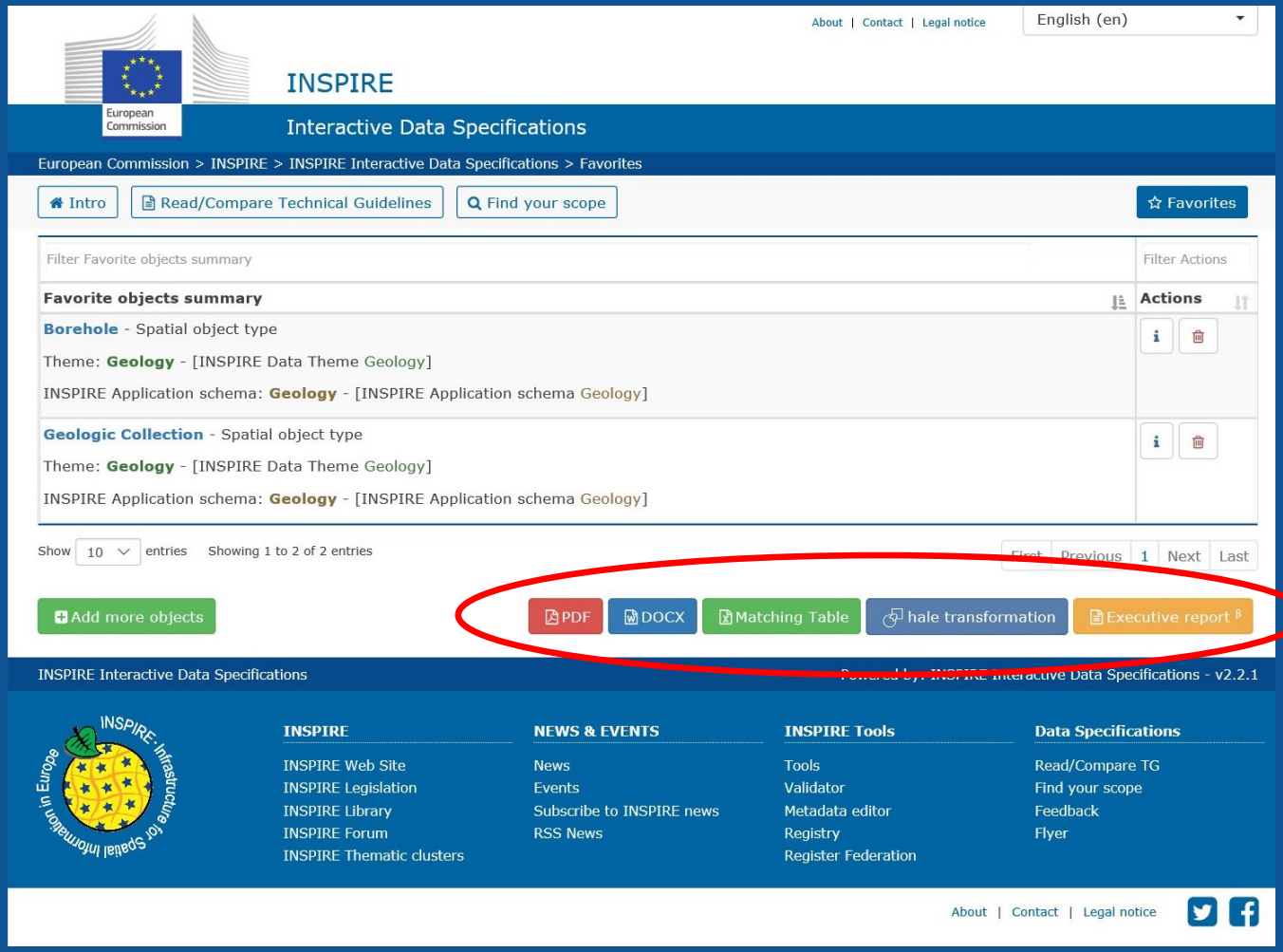
Find your scope – interactive workflow



Find your scope – catalogue of INSPIRE object types

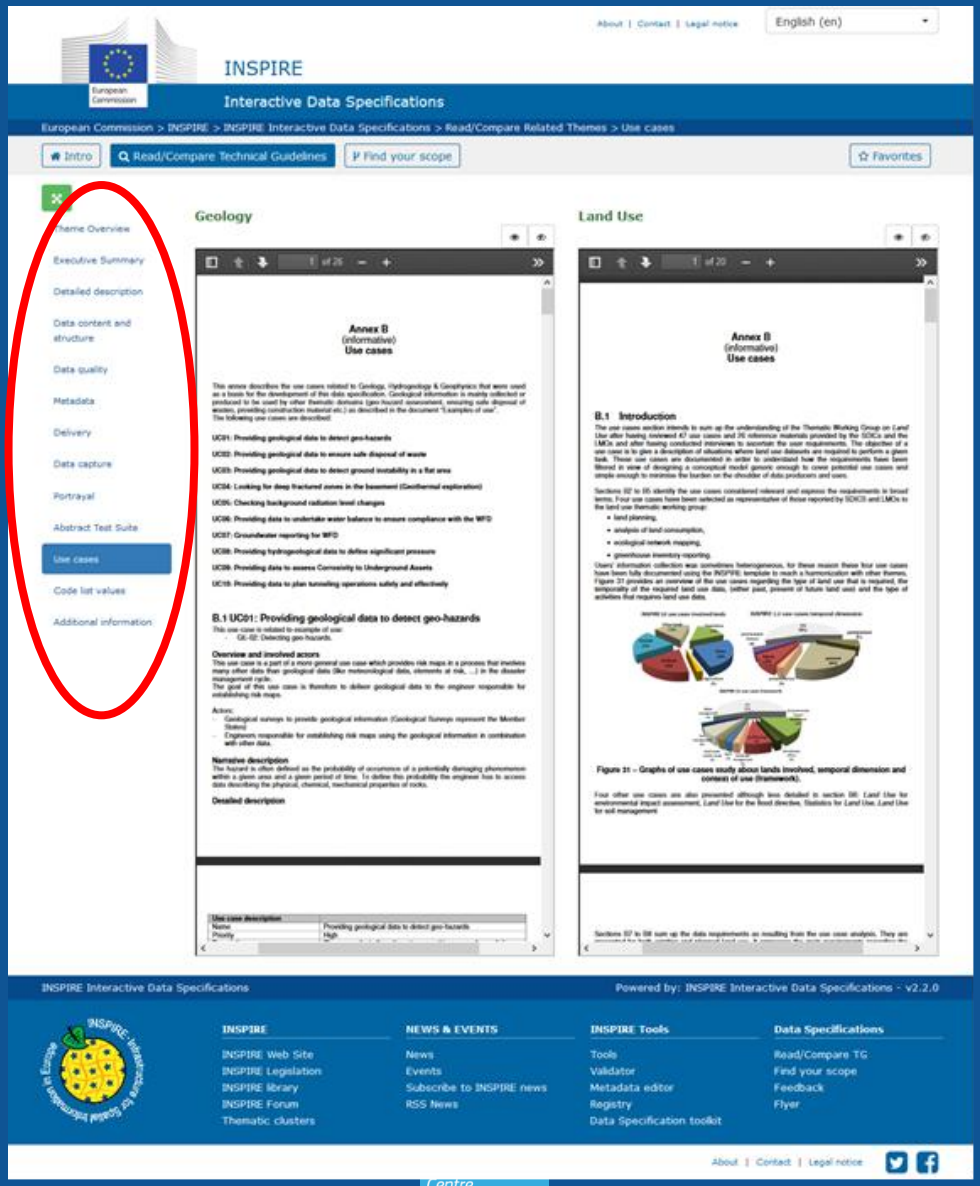


Find your scope – output



Data specifications Technical guidelines

- simplifies on-line reading of selected parts of the INSPIRE Data Specifications
- compares sections of two different data themes (e.g. The Use case descriptions or recommended Portrayal rules).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Abstract Test Suite
Use cases
Code list values
Additional information
Geology
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(informative)
Use cases
B.1 UC01: Providing geological data to detect geo-hazards
Land Use
Annex B
(informative)
Use cases
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Summary

INSPIRE Interactive Data Specifications

- Simplifies the use of INSPIRE data interoperability documentation
- Understand whether your datasets need to be transformed and which parts
- Direct entry (Target schema) to the transformation SW tool HALE
- Find quickly information (e.g. definition and data properties) about each INSPIRE object type
- Facilitates data interoperability in the environmental and other domains.

Data model extensions – Why?

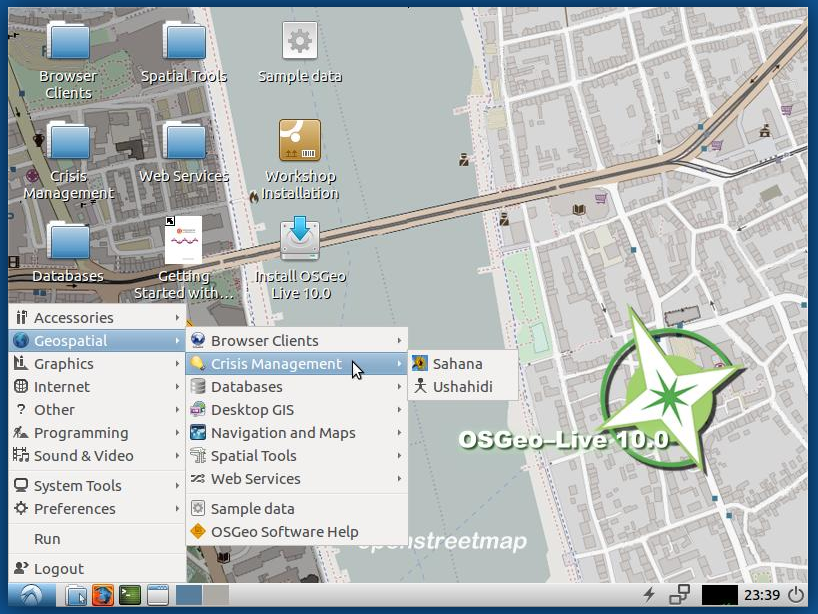
- Data sets in MS are often much richer (and thus more valuable/useful for many applications) than the data models in the data interoperability IRs and TGs
- To preserve this richness and value specifications have to be extended.
- Extensions can be done in many different ways, and data providers often don't know where/how to start or which approaches are recommended under which conditions
- Aim: Collect, analyse and document *patterns* for extending INSPIRE data models

Data model extensions – Status

- 2 workshops to collect existing examples and discuss patterns with community experts
- Outcomes:
  - Inventory of existing Model Extensions
  - Extension Methodology and MDA Summary
  - Pattern Catalogue
  - End-to-End Tutorial Project
  - Documentation – http://inspire-extensions.wetransform.to/

OSGEO-Live

- Open source bundle of the OSGEO foundation
- Many FOSS solutions, e.g.
  - GeoNetwork
  - Geoserver
  - Deegree
  - 52N SOS
  - Quantum GIS
- *.vmdk / Docker (soon)
- Full control over DB/Services/etc.
- US flavour (datasets)

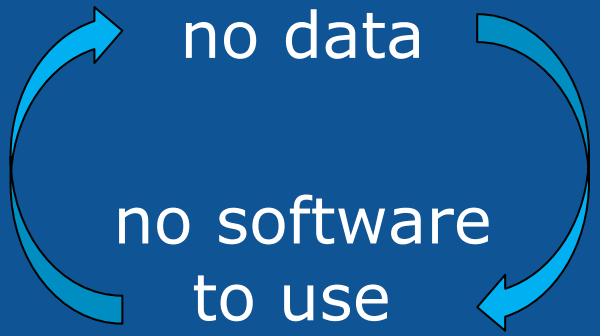


OSGEO-Live (European edition)

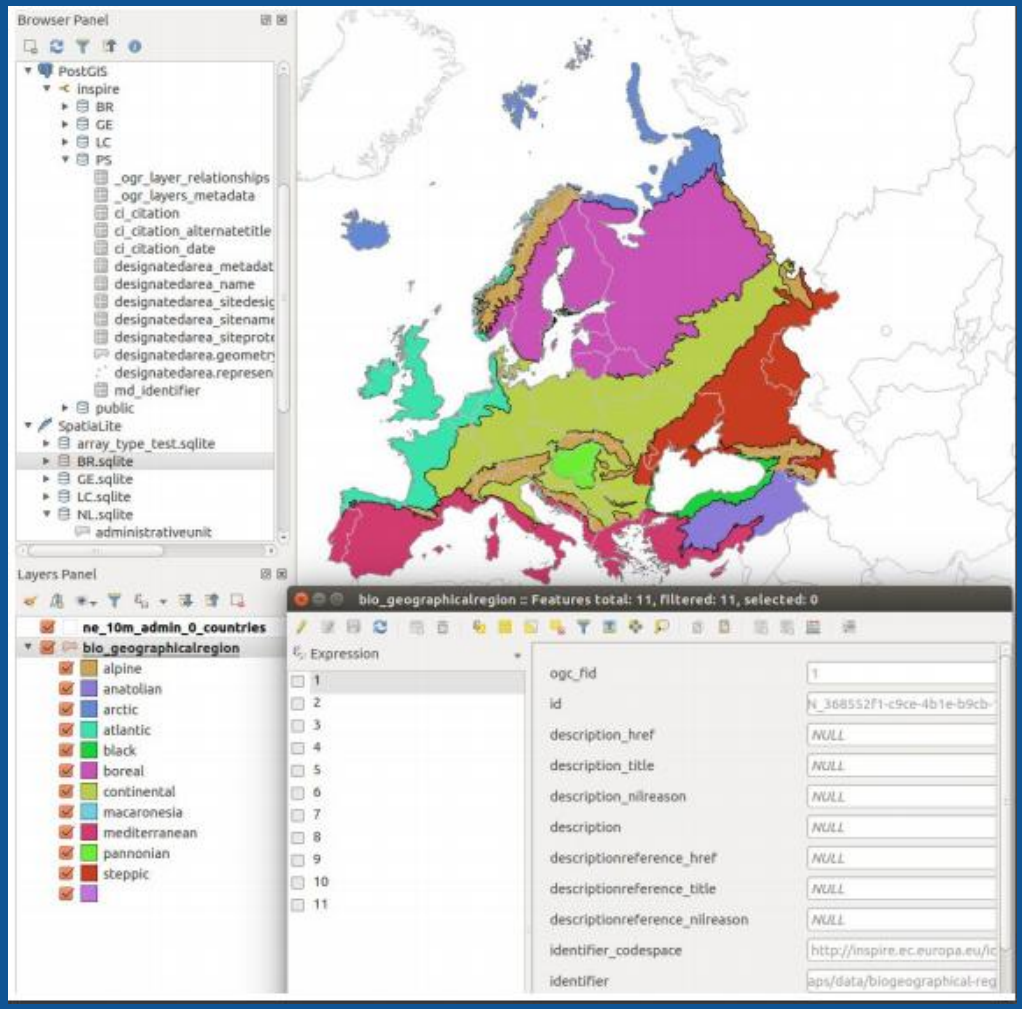
- Finetune existing OSGEO tools for INSPIRE
- Work with
  - The main OSGEO-Live version (not a branch!)
  - Communities behind the projects
  - MIG-T
- Add missing tools (e.g. HALE)
- Add European services/data
  - We count on you ;-)
- Wikify the whole approach

QGIS plugin for complex GML features

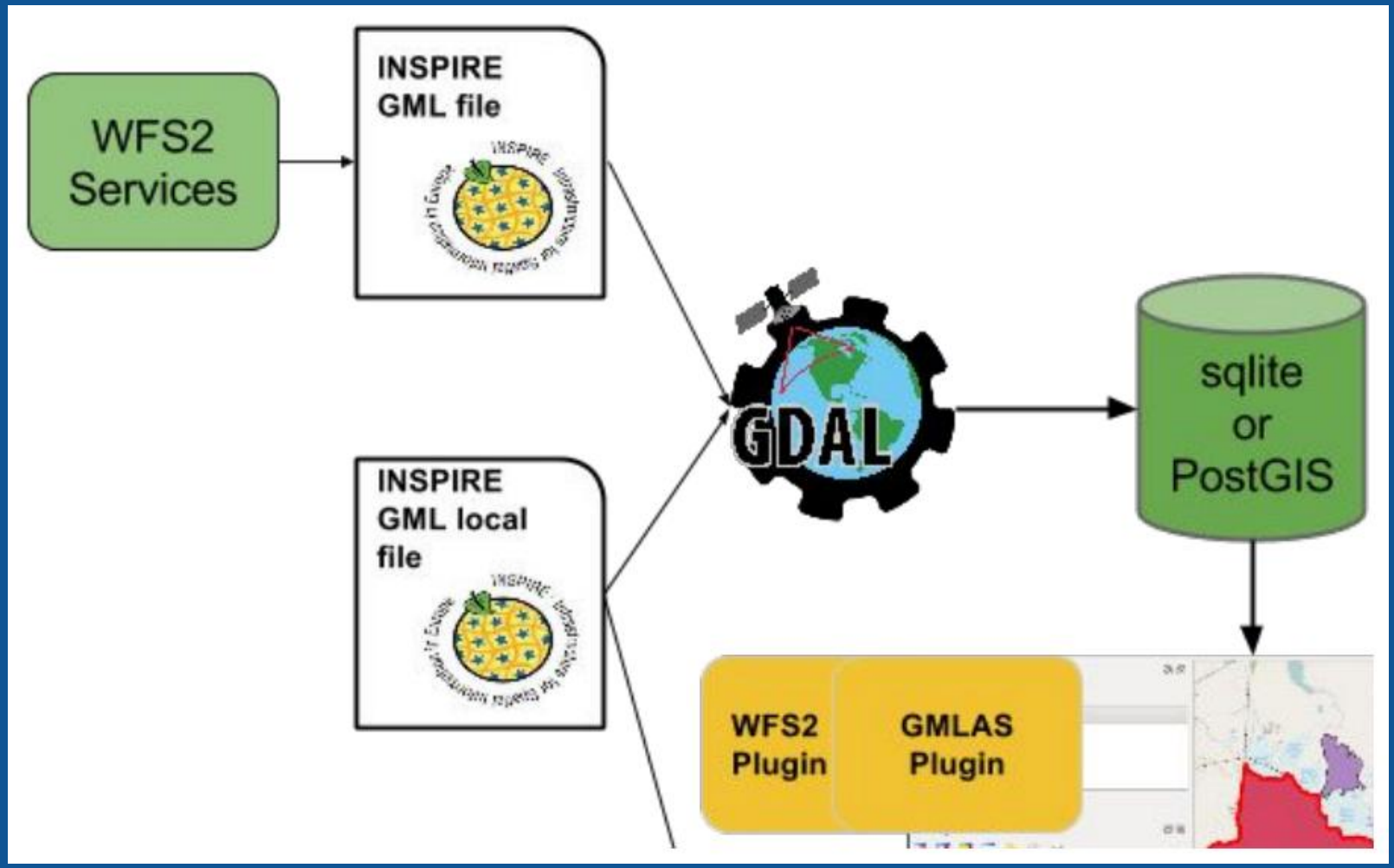
- Break the circle



- funded by Copernicus / EEA



QGIS plugin for complex GML features



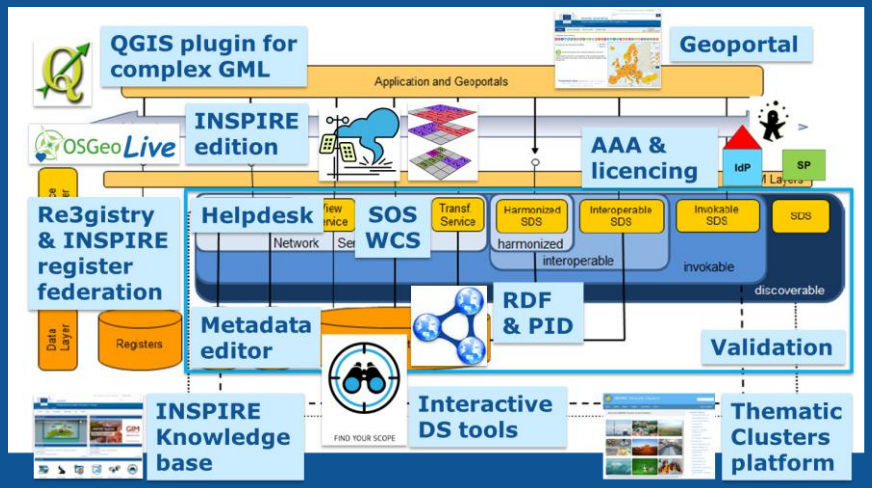
http://files.titellus.net/vbox/qgisgmlas.pdf

Outlook – Spatial data on the web

- W3C/OGC SDW working group
  - https://www.w3.org/2015/spatial/
  - SDW Use Cases & Requirements: https://www.w3.org/TR/sdw-ucr/
  - SDW Best Practices: https://www.w3.org/TR/sdw-bp/
- Geonovum testbed
  - https://github.com/geo4web-testbed/general/blob/master/README.md
  - follow-up in ELISE ISA2 action
- Work on INSPIRE linked data in ARE3NA action
  - https://joinup.ec.europa.eu/asset/are3na-reuse

Summary

- Many tools are available to implement and use INSPIRE – from JRC, EEA, open source and commercial vendors
- The INSPIRE knowledge base is a rich source of knowledge
- Use the interactive platforms to ask, share and provide feedback on what's not working or missing
- Talk to your national INSPIRE team



Find out more! Get involved!

- Check out the **INSPIRE knowledge base**
  - http://inspire.ec.europa.eu
- Register in the **pool of experts**
  - http://europa.eu/!yP87VM
- Participate in the **thematic clusters**
  - https://themes.jrc.ec.europa.eu
- Join a **temporary sub-group**
  - http://europa.eu/!Hy67Fu

- Get in touch

✉ michael.lutz@jrc.ec.europa.eu

@michellutz

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