Compliance tools in INSPIRE: The Reference Validator

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The European Commission's science and knowledge service

Joint Research Centre

European Commission

INSPIRE Directive

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)

- Aims to create a European SDI for the purposes of EU environmental policies
- Provides a comprehensive framework for interoperability of spatial data:
  - inventory (monitoring of implementation)
  - data & service sharing
  - data & service discovery (metadata)
  - network services
  - data interoperability
- based on the SDIs established and operated by the EU Member States

https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32007L0002

INSPIRE Directive – Spatial focus

- INSPIRE addresses 34 spatial data themes for environmental applications:

ANNEX: 1

Addresses	Administrative units
Cadastral parcels	Coordinate reference systems
Geographical grid systems	Geographical names
Hydrography	Protected sites
Transport networks	

ANNEX: 2

Elevation	Geology
Land cover	Orthoimagery

ANNEX: 3

Agricultural and aquaculture facilities	Area management / restriction / regulation zones & reporting units
Atmospheric conditions	Bio-geographical regions
Buildings	Energy resources
Environmental monitoring facilities	Habitats and biotopes
Human health and safety	Land use
Meteorological geographical features	Mineral resources
Natural risk zones	Oceanographic geographical features
Population distribution and demography	Production and industrial facilities
Sea regions	Soil
Species distribution	Statistical units
	Utility and governmental services

https://inspire.ec.europa.eu/Themes/Data-Specifications/2892

Implementing Rules (IR), Technical Guidelines (TG) and tools

"What Member States must implement" (abstract specification)

legally binding

not legally binding

"How Member States might implement it" (implementation specification)

Directive

Commission Regulation

Technical Guidelines

Tools implementing INSPIRE requirements

INSPIRE Directive 2007/2/EC

Implementing Rules

TG – Network Services

TG – Data Specifications

TG – Metadata

INSPIRE Validator

INSPIRE Reference Validator

- Reasons to develop an INSPIRE validator:

    - help Member States data providers test resources (metadata, data sets and network services) against INSPIRE requirements

    - help INSPIRE coordinators (DG ENV, JRC & EEA) and national coordinators check INSPIRE implementation progress in Member States & across Europe

        - support Monitoring and Reporting

    - help solution providers check their software solutions against INSPIRE requirements

- Supported by ARE3NA & ELISE actions under ISA/ISA^2 programmes

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INSPIRE Reference Validator – Components

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INSPIRE TG

INSPIRE Technical Guidelines (TG)
requirements for all INSPIRE resources

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INSPIRE Reference Validator – Components

Abstract Test Suites (ATS)

high-level descriptions of test cases

INSPIRE Technical Guidelines (TG)

requirements for all INSPIRE resources

INSPIRE Reference Validator – Components

Abstract Test Suites (ATS)

high-level descriptions of test cases
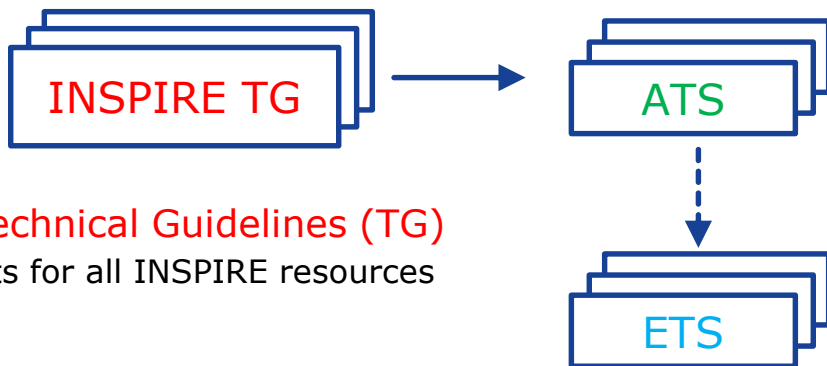
INSPIRE Technical Guidelines (TG)

requirements for all INSPIRE resources

Executable Test Suites (ETS)

lower-level descriptions of test cases

INSPIRE Reference Validator – Components

Abstract Test Suites (ATS)
high-level descriptions of test cases

Testing Framework (ETF)
software where ETS are run

INSPIRE TG

ATS

ETF

ETS

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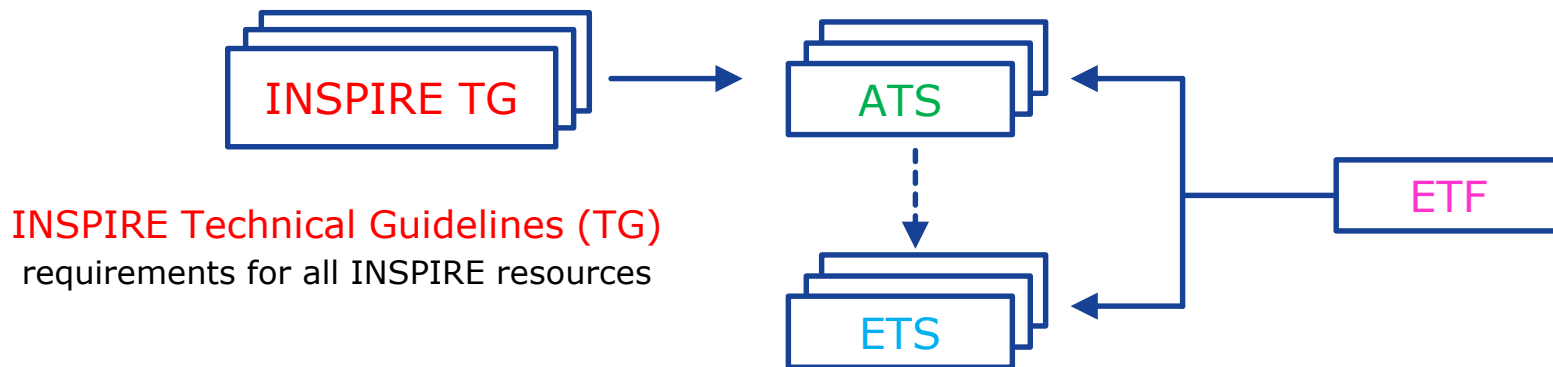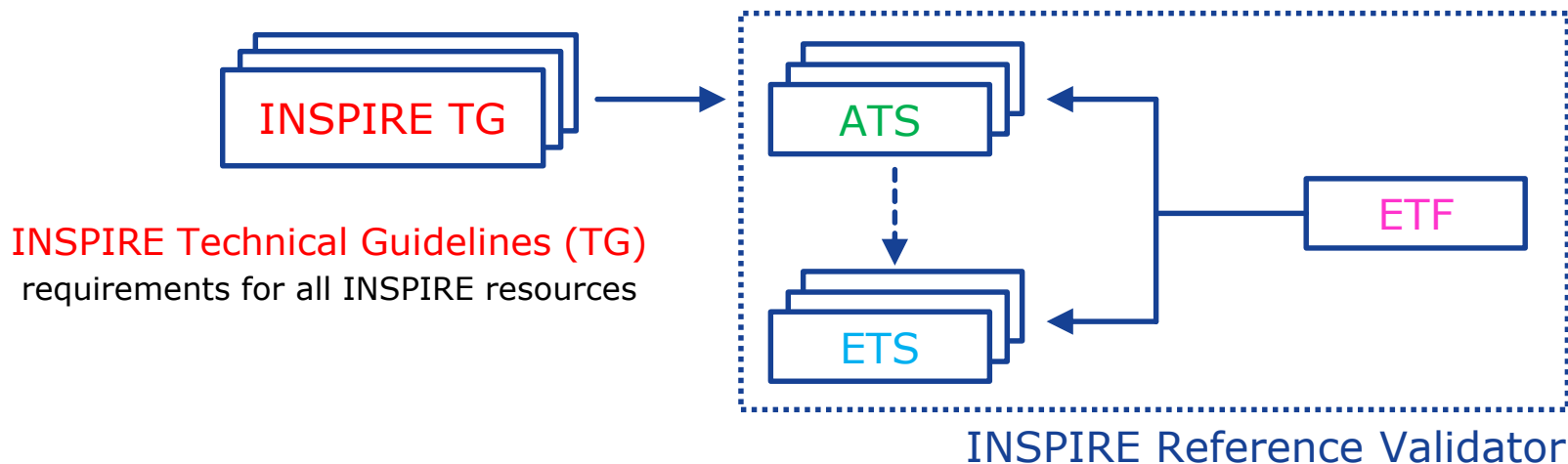
Abstract & Executable Test Suites (ATS & ETS)

- Agreed with the MIG sub-group 2017.4 on validation and conformity testing

- Maintained on GitHub:

  - Metadata (TG v.1.3 & 2.0)

  - Discovery Services (CSW)

  - View Services (WMS, WMTS)

  - Download Services (Atom, WFS, WCS, SOS)

  - Cross-cutting Data Specifications

  - Annex I Data Specifications

https://github.com/inspire-eu-validation

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Testing Framework (ETF)

- INSPIRE Validator makes use and further extends ETF:
    - a testing framework to validate data, metadata & web services in SDIs
    - developed since 2010, open source under EUPL v1.2
- 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 through a responsive web application and a REST API
- The easiest way to deploy ETF is a Docker container, available on Docker Hub.

https://etf-validator.net | https://github.com/etf-validator

INSPIRE Validator – Web application
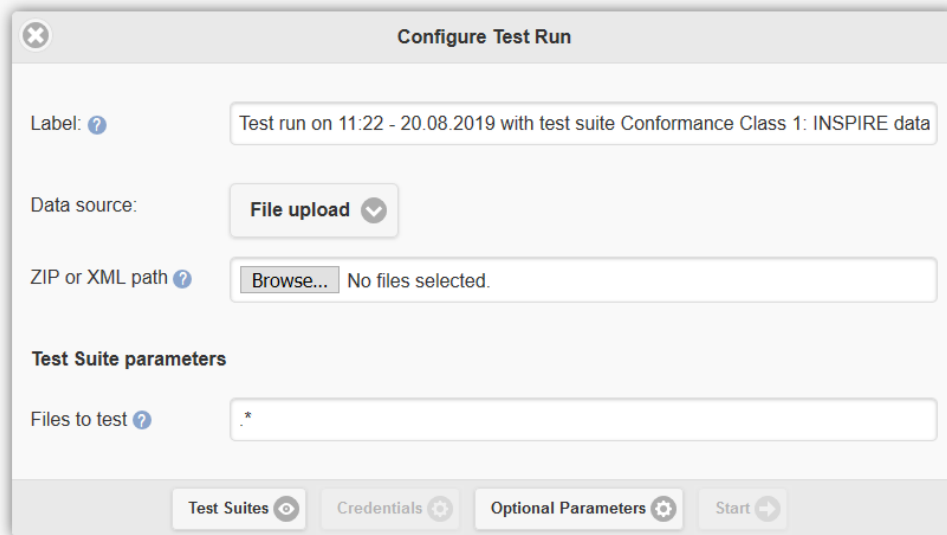
- Select the Conformance Class(es) to test:

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

INSPIRE Validator – Web application

- Upload/link the resource to test:

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

INSPIRE Test Framework – Web application

- Access the HTML test report:

INSPIRE Testing Validator – Web application

- Access the HTML test report:

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

INSPIRE Validator – REST API

- Documented using OpenAPI:

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

Testing Framework (ETF) – Governance

- Steering Group (SG): Project Governance
  - very significant contributions: Organizations and Developers
  - voting system: consensus of all members (where possible)
- Technical Committee (TC): Technical management
  - proven technical capacity over time
  - TC analyzes and propose candidates
  - SG assesses and accepts/rejects new TC members proposal
- Developers: Project Contributions
  - regulated by EUPL & Developer Certificate of Origin (DCO)

https://github.com/etf-validator/governance

Testing Framework (ETF) – Governance

https://github.com/orgs/etf-validator/projects/2

INSPIRE Validation Community

- The central place of interaction for the INSPIRE community:
  - **changelog** & **release planning**
  - **helpdesk** to
    - report problems
    - propose new features
    - open discussions

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

INSPIRE Validator – Current & future work

- Use of the INSPIRE Validator to test metadata conformity within Monitoring and Reporting

- Development of new ATS/ETS on:

  - Annex II/III Data Specifications

    - coverage data sets

  - new validation requirements emerging from INSPIRE MIWP

    - alternative encodings (GeoJSON)

    - simplification of data-service linking

- Workshop on the INSPIRE Validator:

  - October 1-2, 2019 with separate sessions for users & developers

  - material available at
    https://github.com/inspire-eu-validation/community/tree/master/training%20material

Thank you!

Questions?

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Stay in touch

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