Validation of INSPIRE metadata, data and services

INSPIRE conference – 30 September 2016

Context

- Workshop about validation of INSPIRE technical components
  - Paris – 02-03 June 2016
  - Co-organised by
    - EuroGeographics (INSPIRE KEN)
    - EuroSDR
    - European Commission

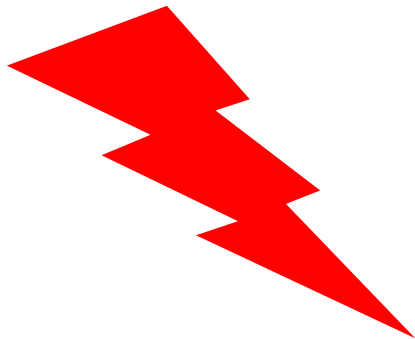*Presentations, videos, minutes available on:*

http://www.eurogeographics.org/content/validation-workshop-organised-eurogeographics-jrc-and-eurosdr

Why?

Why validation?

- To check if the technical requirements are met
=> to ensure that the infrastructure will work
  - binary results
    - Passed or not
    - Not conform => not usable
  - for implementers

Validation does not guarantee easy use; still remaining issues (lack of client applications, only the structure is checked not the content, e.g. voidable attributes not filled)

Why validation?

- To measure the conformance to INSPIRE

=> to assess the progress

- Indicator

  - Percentage of success

  - Rate

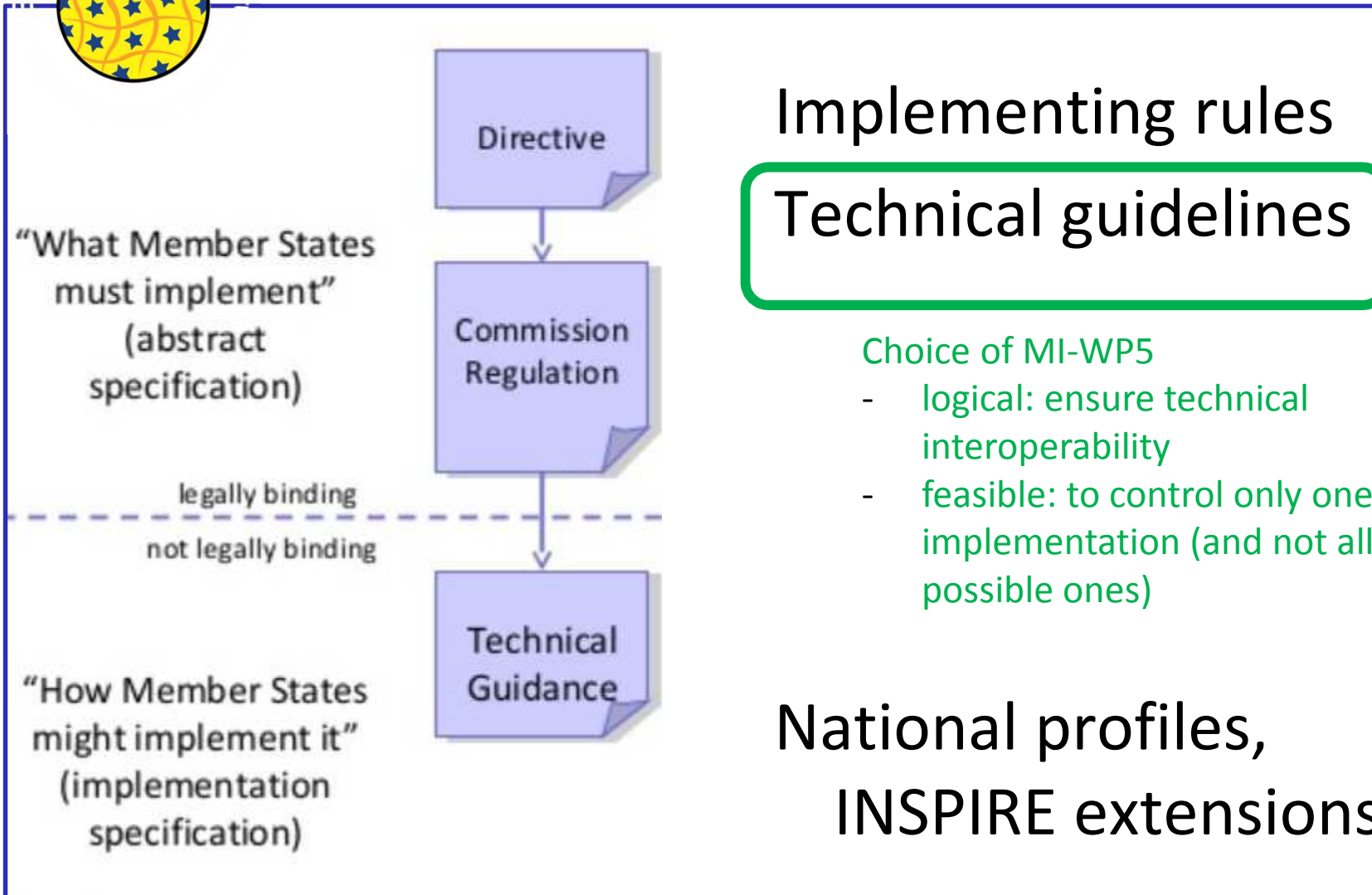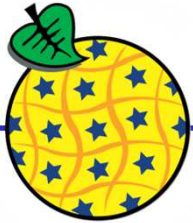- For deciders: encourage to do better

What's this?

50%

- Example: Commission metadata validator: from boolean (hardly no one conform) to indicator (significant progress)

Against what?

Against what?

Directive

"What Member States must implement" (abstract specification)

Commission Regulation

legally binding

not legally binding

Technical Guidance

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

Implementing rules

Technical guidelines

Choice of MI-WP5
- logical: ensure technical interoperability
- feasible: to control only one implementation (and not all possible ones)

National profiles, INSPIRE extensions

Who?

Who?

- ## Data producers

  – To get confident in what they provide

  – To fill the "conformity" element of metadata

  – To have their metadata, data and services accepted by …

- ## Brokers, integrators

  – European commission

  - Metadata validator (INSPIRE geoportal)

  – ELF project

  - Validation of data and services (ELF cascading services)

Who?

- Standardisation body

  – European Commission

    - Work under progress (MIWP-5)

    - Objective: to develop validation tools in agreement with MS

  – OGC

    – Services

- Users

    – No experience reported during workshop
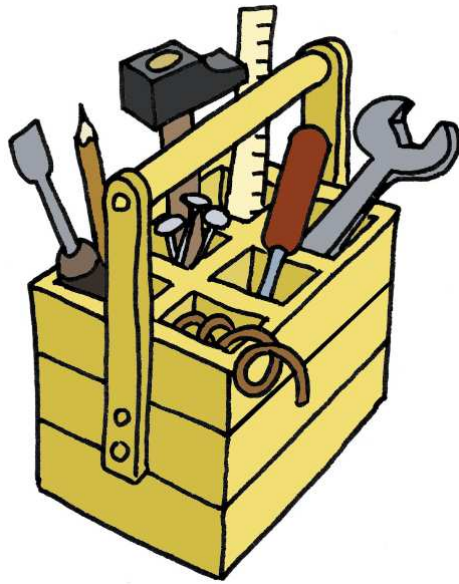
    – Not yet the case?

When?

When?

- As soon as possible, integrate validation in the production process:

  – Metadata editor

  – Data transformation

    - Snowflake

    - HALE (integrate the Web validation of eENV+ project)

- At the end of the process

  – Validation tool to be independent from the production ones

How?

How?

- General method

  – Automatically (tools)

  – Manually (inspections, …)

There are controls that can't be done automatically; it does not mean they are not executable
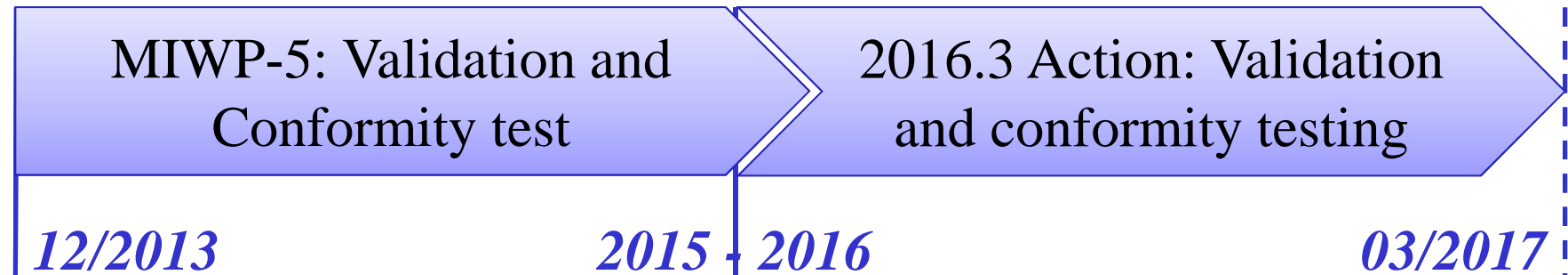
How?

- Wide variety of tools

  – Metadata

    • European / national validators

  – Data

    – XML validators (XML Spy, FME, …)

    – Other (Schematron for rules, CRS validator, …)

  – Services

    – OGC CITE

    – ETF (from ELF project)

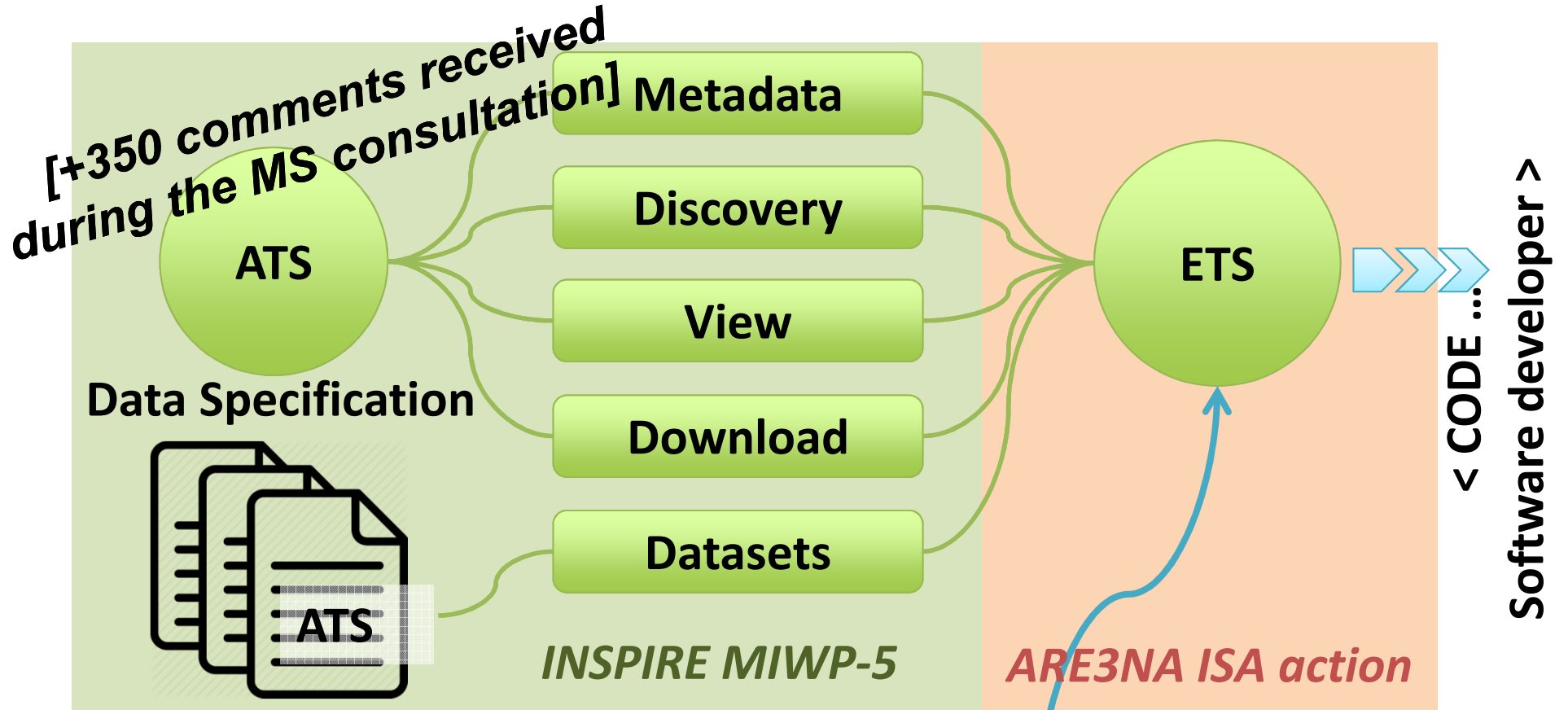   – Spatineo (performances)

Duplications, inconsistencies

How? **INSPIRE**
Maintanance Implementation Group

| MIWP-5: Validation and Conformity test | 2016.3 Action: Validation and conformity testing |

12/2013　　　　　　　*2015 | 2016*　　　　　　　*03/2017*

◆ Develop a commonly agreed European validator for data, metadata and network services (incl. performance testing) - the validation rules should be made explicit so that data providers in Members States know what is validated upon exactly and how is validated;

◆ Establish rule that all new TG need to ATS and executable tests;

◆ Discuss the possibilities for setting up a compliance certification facility and process similar to the OGC;

How?

[+350 comments received during the MS consultation]

ATS

Data Specification

ATS

Metadata

Discovery

View

Download

Datasets

ETS

< CODE ... >
Software developer >

INSPIRE MIWP-5

ARE3NA ISA action

Existing validation tools and solutions

Spatineo

géocatalogue

ELF EUROPEAN LOCATION FRAMEWORK

GDI-DE | Test-suite

eENVplus

geoportal.gov.pl

GOBIERNO DE ESPAÑA MINISTERIO DE FOMENTO

DATA.GOV.UK Beta
Opening up Government

GEONOVUM

Validador de Metadatos

IDEE

Which main difficulties?

Main difficulties

- Some tools are not mature enough

- Lack of knowledge

  - We are pioneers in validating big SDI as INSPIRE

Service category	Status indicator	Experiences, remarks
ELF Cascading View services(WMS and WMTS)		Tools ok, simple service complextity. Only 2 services!
ELF Cascaded Direct download services(WFS2.0-, GML3.2.1)		Only 2 services(will be only 1 when Inspire v3 expires). Problems inherited from National services.
ELF National Direct download services(WFS 2.0, GML3.2.1)		Validaton and test tools premature, Complex services, WFS service software issues , lack of skills
National view services(WMS 1.3)		Tools ok, easy/moderate service complexity

Main issues on download services (ELF project)

Main difficulties

- Analysis of errors

  - Takes time to analyse a new type of error

  - Reports not informative enough, error messages useful only for nerds

    - Difficult to find source of error (ETF)

  - However, once identified, errors may be easy to correct

Main difficulties

- And also

  - Different options when interpreting Technical Guidelines

  - Ensure conformity over time (if update in Technical Guidelines)

    - Ex: European Commission metadata validator

      - Nice policy for validator

      - But editor is not working on same version

  - Assess what is reasonable level of conformity

  - Need for cross-component validation

  - Issue with protected services (authentication, security)

What to be improved?

Research Conclusions

- <u>INSPIRE Test Framework</u> – Stage of Construction

  -> Challenging + Impressive what has been achieved so far

- <u>Abstract Test Suite</u> - Comprehensive topic
  Alignment with technological developments + User requirements matching

- <u>Executive Test Suite</u> – More straightforward topic - Still lots to do
  Alignment with ATS, Re-use existing test suites, Development new suites

- <u>Metadata Validation</u> – Advancement stage / Stage of refinement
  Automated metadata changes, multilingual issues, statistics tools

- <u>Services Validation</u> – Rather in an infancy stage
  Immature tools (functionalities, error reporting), authentication, certification

- <u>Data validation</u> – Full attention / Already lots has been achieved
  Schema validity, 'incorrect' files tests, usability, transformation workflow

- Most research issues are operational oriented and less conceptual

Potential improvements

- Data providers

  – Many errors due to broken links => resource can't be found

  – Most of these links (between services and data) in metadata

  – **Keep metadata updated**

- Software providers

  – More user friendly tools

    • Ex: messages written by domain experts

Potential improvements

- **From formal compliance to data usability**

  - Check content (not only conformity to schema)

  - "voidable" issue => provide statistics about what is filled

- Better knowledge exchange in whole INSPIRE community

  - FAQ , frequent errors

  - Registry for testing, monitoring