



Report from the workshop on Use of INSPIRE data in November 2018

29 March 2019

Plan

- Workshop context and objectives
- Drivers – Current and potential users and use cases
- Barriers – how to remove them?
- Conclusions

Workshop context and objectives

Context

- **A long lasting demand: use of INSPIRE data (interoperability)**
- Benefits of INSPIRE are widely recognised regarding discovery, services, data sharing
- But it seems **there is (very) limited use of INSPIRE interoperable data**
 - “national users like national products; they don’t need INSPIRE”
 - “INSPIRE data models are too complex ; no GIS can consume INSPIRE data”
 - “Even the European Commission is not so keen to use INSPIRE data”
 -

Objectives

- Better understand which are the **main drivers**
 - Day 1 : users and use cases
- Make state-of-play about existing **barriers and how to remove them**
 - Day 2 : technical issues and existing or potential solutions
- Identify **what can be done** to improve the current situation
 - Discussion sessions

Workshop Agenda

Day 1

| Time | Topic | Presentation | Presenter |
|--|--------------------|--|--------------------------------------|
| 8 h 45 – 9h 00 | Registration | Registration | |
| 9h 00 – 9 h 10 | Introduction | Workshop welcome and introduction | Dominique Laurent Marcin Grudzien |
| 9 h 10 – 10 h 30 Chair: Nathalie Delattre | European examples | What do we know about users of pan-European services (20') | Abigail Page (EuroGeographics) |
| | | How INSPIRE could better support EU GIS analysts (20') | Julien Gaffuri (Eurostat) |
| | | What can OpenELS offer to pan-European users? (20') | Abigail Page (EuroGeographics) |
| | | The Potential of Coverage Services for Merging Data from INSPIRE with Statistical and Copernicus Data (20 ') | Katharina Schleidt |
| 10 h 30 – 11 h 00 | Coffee pause (30)' | | |
| 11 h 00 – 12 h 20 Chair : Marcin Grudzien | European examples | INSPIRE and ITS applications (20') | Christian Kleine |
| | | INSPIRE data for automatic driving (20 ') | Rudolf Heino Dawid Ludyga |
| | | Urban Climate Studies requirements and INSPIRE data (20') | Bénédicte Bucher |
| | | INSPIRE interoperability users and use cases (by those who could not come) -20 ' | Dominique Laurent |
| 12 h 20 – 13 h 20 | Lunch pause (1h) | | |

Summary of use cases collected in other events (mainly INSPIRE 2018 conference)

Workshop Agenda

Day 1

| | | | |
|--|--------------------|---|----------------------|
| 12 h 20 – 13 h 20 | Lunch pause (1h) | | |
| 13 h 20 – 15 h 00 Chair: Bénédicte Bucher | National examples | INSPIRE Data as base for the national transport planning – 20' | Cristina Calvo |
| | | Use of INSPIRE data in the Czech republic- 20' | Ivana Svata |
| | | swisstopo- A special Use Case for INSPIRE – 20' | Christine Najar |
| | | INSPIRE GML used as exchange format of CP in the real estate traffic in Spain- 20' | Amalia Velasco |
| | | INSPIRE Utility data to avoid digging accidents- 20' | Ad van Houtum |
| 15 h 00 – 15 h 30 | Coffee Pause (20') | | |
| 15 h 30 – 16 h 50 Chair: Paloma Abad | National examples | Report about ELF user event in Poland - 20' | Marcin Grudzien |
| | | IGN France experience about use of INSPIRE data - 20' | Dominique Laurent |
| | | Study how Dutch key role players think about INSPIRE beyond 2021- 20' | Ad van Houtum |
| | | Experiences in the Baltic LINES project and in building a marine SDI in the Baltic Sea region – 20' | Lena Hallin-Pihlatie |
| 16h 50 – 17h 10 | Pause (20') | | |
| 17 h 10 – 18 h Chair: Dominique Laurent | Discussion | Discussion session - Who need INSPIRE data? Who are the (potential) users? - How data producers “sell” or should sell their INSPIRE data? - What are the factors of success or of failure? | |

Workshop Agenda

Day 2

| Time | Topic | Presentation | Presenter |
|--|---------------------------------|---|------------------------------|
| 9h – 9h 40 Chair: Bénédicte Bucher | Finding/harvesting INSPIRE data | Copernicus experiences with harvesting/using INSPIRE data – 20' | Henrik Andersen |
| | | Prospects prototyping the new ELS architecture- 20' | Saulius Urbanas |
| 9h 40 – 10 h 20 Chair: Bénédicte Bucher | Dealing with INSPIRE complexity | German study about complexity of INSPIRE data models – 20' | Thorsten Reitz (speaker tbc) |
| | | ELF flattening tentative – 20' | Dominique Laurent |
| 10 h 20 – 10 h 50 | | Coffee pause 30' | Data simplification |
| 10h 50 - 12 h 15 Chair: Saulius Urbanas | Dealing with INSPIRE complexity | The Core Reference Data: a simplified view on INSPIRE – 20' | Sonja Werhanh |
| | | Get ready for INSPIRE Annex III with environmental data – 20' | Rudolf Heino |
| | | MIG proposal on alternative encodings- 20 ' | Nathalie Delattre |
| | | INSPIRE plug-in for INSPIRE: what it is supposed to do – 5' | Video (BRGM) |
| | | ELF cascading services and client applications - 20' | Henrik Gulliksen Schuller |
| 12 h 15 – 13 h 00 | | Lunch pause 45' | Client applications |

Workshop Agenda

Day 2

| | | | |
|--|--|---|---------------------|
| 12 h 15 – 13 h 00 | Lunch pause 45' | | |
| 13h 00 – 14 h 30 Chair: Nathalie Delattre | Better data, better tools, better laws | INSPIRE in 2018 - requirements, expectations and the actual state- 20' | Nicolas Hageman |
| | | Dealing with heterogeneity (within and outside INSPIRE) – 20' | Bénédicte Bucher |
| | | More harmonised data : the ELF levels of interoperability – 15 ' | Nathalie Delattre |
| | | More harmonised content driven by the UN-GGIM: Europe core data initiative – 15 ' | Dominique Laurent |
| | | Open SDI and the role of the user in INSPIRE processes – 20' | Bastiaan van Loenen |
| 14 h 30 – 15 h 30 Chair: Nathalie Delattre | Discussion (50') | Other ideas to remove the barriers? | |
| | Conclusions (10') | EuroSDR point of view EuroGeographics point of view | Dominique Laurent |

Workshop attendants



Around 40 persons

From data producers, research, European Commission, private sector

Workshop outcomes

- Outcomes
 - Power Point presentations
 - Video-recording
 - Minutes (mainly discussion sessions)

<https://eurogeographics.org/calendar-event/use-of-inspire-data-past-experiences-and-scenarios-for-the-future/>

Drivers

Current and Potential Users and
Use Cases

Use cases

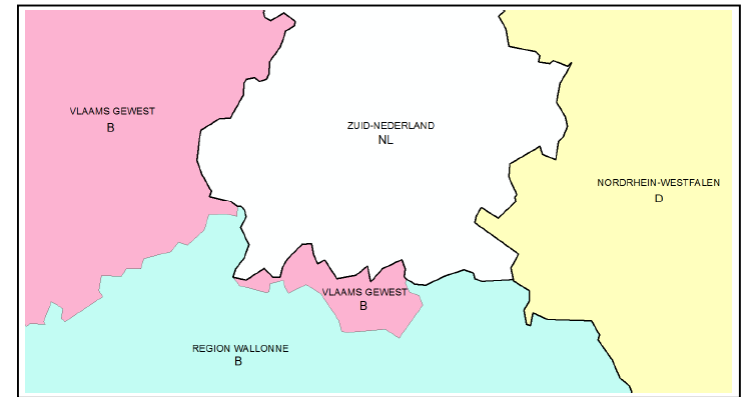
- **National use: 2 main examples**
 - **Mandatory by law :**
 - INSPIRE GML used as exchange format
 - between Cadastre and Land Registry in Spain
 - for themes CP and BU
 - **Mandatory as no alternative data**
 - In Czech Republic
 - For theme AD (new data around 2012)

In general, very limited use of INSPIRE data

Use cases

- **Cross-border use cases**

- Cartography
- Accessibility assessment (SDG)
- CAP subsidies for X-border farmers
- Planning
 - On land (e.g. Alpine convention)
 - On sea (e.g. Baltic Lines)
- Multipurpose database (e.g. Bodensee, Geneva ...)



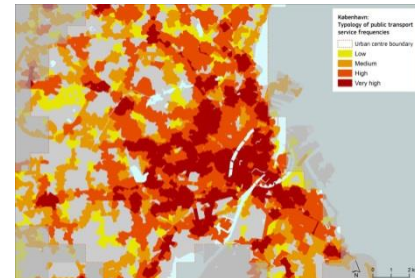
Data from neighbour countries necessary to assess accessibility in Netherlands

Use cases

- **Pan-European use cases**

- Source data
 - Other products (NUTS, Corinne Land Cover ...)
 - Copernicus services
 - GISCO database
- Geocoding (gazetteer) service
- European statistics
-

Mainly European Commission + EEA requiring whole European coverage



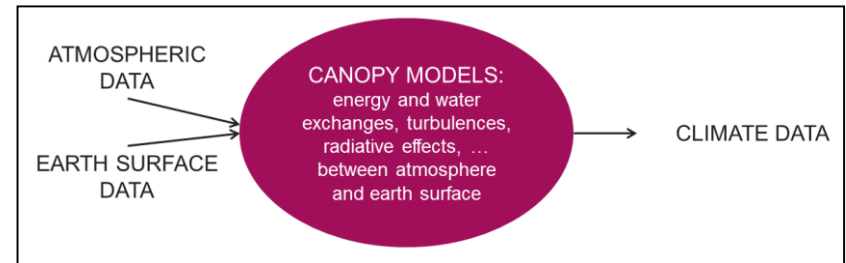
Accessibility assessment: stops and departures within walking distance
DG REGIO

Use cases

- **Potentially pan-European use**

- Research: Urban Climate project

- On several European cities
- Interest for standardised data



- INSPIRE data on BU would be of big interest (earth surface data)
- But researchers of meteorology only aware of and willing to use OSM

Methodology development => need for
reproducible results among space and
among time

Use cases

- **Potentially pan-European use**

- Application developers
 - Environmental purposes (solar potential of roofs, impact of wind turbines, energy consumption of buildings, ...)
- Car navigation (HERE)
- Games (Ecocraft)



Discussion topics

- **Is there any need for INSPIRE data?**
 - Not really: users don't care about INSPIRE data
 - They want data
 - Easy to access
 - **Standardised**
 - Well documented
 - Reproducible results across Europe
 - Reproducible results across time (sustainability)
- May be INSPIRE, pan-European products (EBM, ERM, EGM), CityGML, CRD ... **but also OSM**

INSPIRE principles

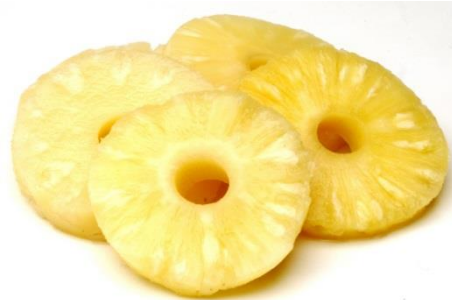
Benefits of interoperability

- Not limited to use of INSPIRE data
- **More vector data**
 - KLIC example about Utilities data
 - INSPIRE data not expected to be widely used
 - But INSPIRE interoperability rules pushed utility network managers to vectorise their data
 - Also mentioned about planned Land Use

Benefits of interoperability

- Also use of INSPIRE data models
 - **Good basis for national or X-border standards**
 - “**INSPIRE**” as magic word to get consensus between various stakeholders
 - Many examples
 - Spain (GML exchange format, production of TN data)
 - From the workshop about “extensions of INSPIRE”
 - New national products
 - European projects
 - Used in some **ontologies**
 - Lots of data expected to be attached to INSPIRE based ontologies
 - Examples : Artificial Intelligence, European Standards Organization (telecommunications)

Benefits of interoperability



More or less INSPIREd data

Barriers – User complaints

How to remove them?

Barriers: discovery level

- Are potential users aware of INSPIRE data?
 - Probably not enough e.g. research
 - Data producers don't fully know who are these potential users
 - Limited awareness raising by data producers
 - INSPIRE data not proudly advertised by NMCA's!

Place from improvement !

Discovery

- **What do you do to promote your INSPIRE data?**

We are rather hiding our INSPIRE data than promoting them

Almost nothing

We don't advertise so much INSPIRE but mainly our GeoPortal that is quite popular

Some producers are even reluctant to have their WFS used because it takes capacity and might breakdown the system.

Discovery

- **What do you do to promote your INSPIRE data?**

User training ; on-line courses
(but mainly about use of SDI)

We try to find best
practices and use cases

We have trained staff in
contact with users

Some meeting with
public agencies

We try to keep informed
about cross-border
projects and to make ad
hoc communication

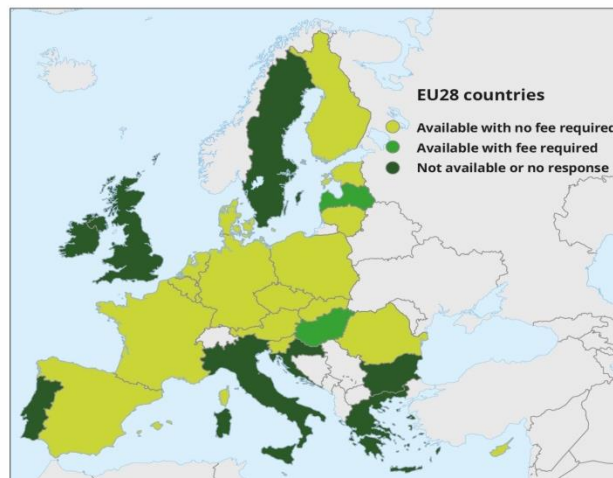
Some documentation in
national language

We have a community of
INSPIRE users; we get
feedback and we have to
react on it

We keep our users
informed when we
publish a new version of
data (e.g. social media)

User complaints: availability

- Whole European coverage required by pan-European users (EEA, Eurostat ...)
 - « Need for pan-European datasets » (Eurostat)
 - “At the time of the test (spring 2018) only datasets from 20 countries were available.” (EEA)



EEA integration test on
theme AU

User complaints: availability

Data available but
no findable

Solve remaining
technical issues
MIG – data
producers

Annex I data not
available

Push MS to
comply to INSPIRE
European
Commission

Make patchwork
product with
INSPIRE and 3rd
party data

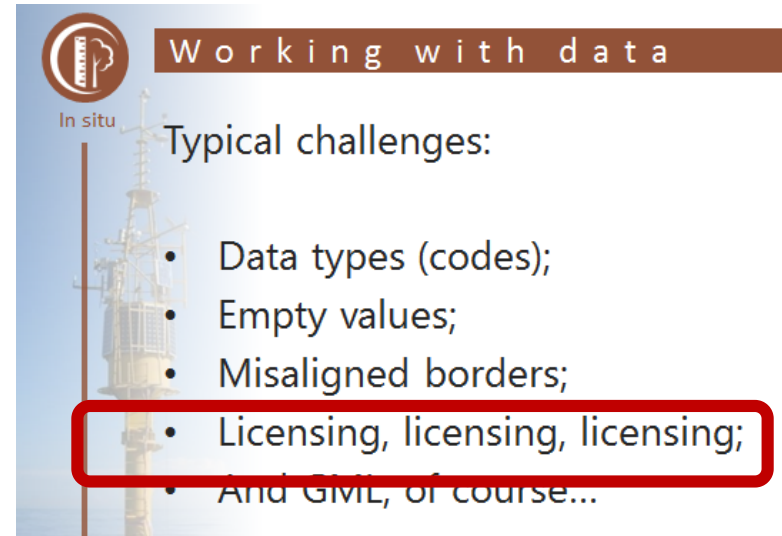
Annex II and III data
not available

INSPIRE future
(2021)?

User complaint: legal access (licensing)

- Is it easy to understand access conditions to INSPIRE data?

- Not enough according to users
- Potential solutions :
 - Open your data
 - (at least) use standardised licences



The slide features a background image of an offshore oil rig. At the top left is a circular logo with a stylized 'P' and the text 'INSPIRE'. Below the logo is the text 'In situ'. A dark brown horizontal bar at the top right contains the title 'Working with data' in white. The main content area lists 'Typical challenges:' followed by a bulleted list. The third item, 'Licensing, licensing, licensing;', is enclosed in a red rectangular box. The fourth item is 'And GML, of course...'. The background image shows a yellow and white oil rig against a blue sky.

Working with data

In situ

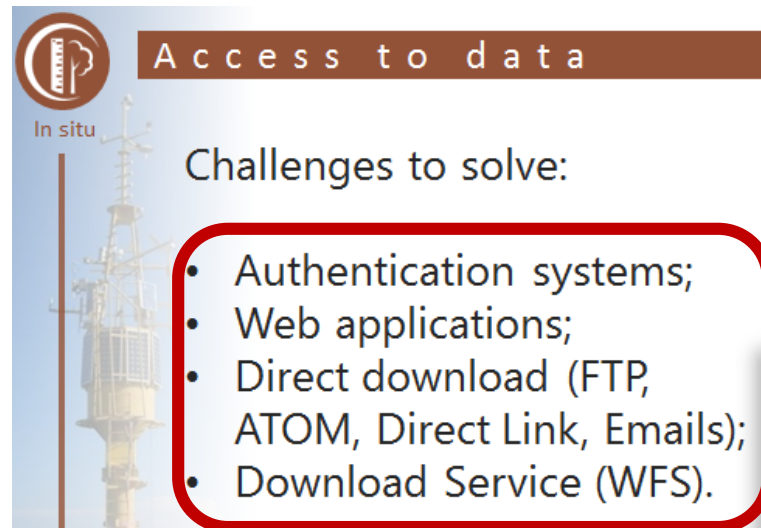
Typical challenges:

- Data types (codes);
- Empty values;
- Misaligned borders;
- Licensing, licensing, licensing;
- And GML, of course...

From EEA presentation

User complaints: physical access to data

- **Variety and limits of download services**



Access to data

In situ

Challenges to solve:

- Authentication systems;
- Web applications;
- Direct download (FTP, ATOM, Direct Link, Emails);
- Download Service (WFS).

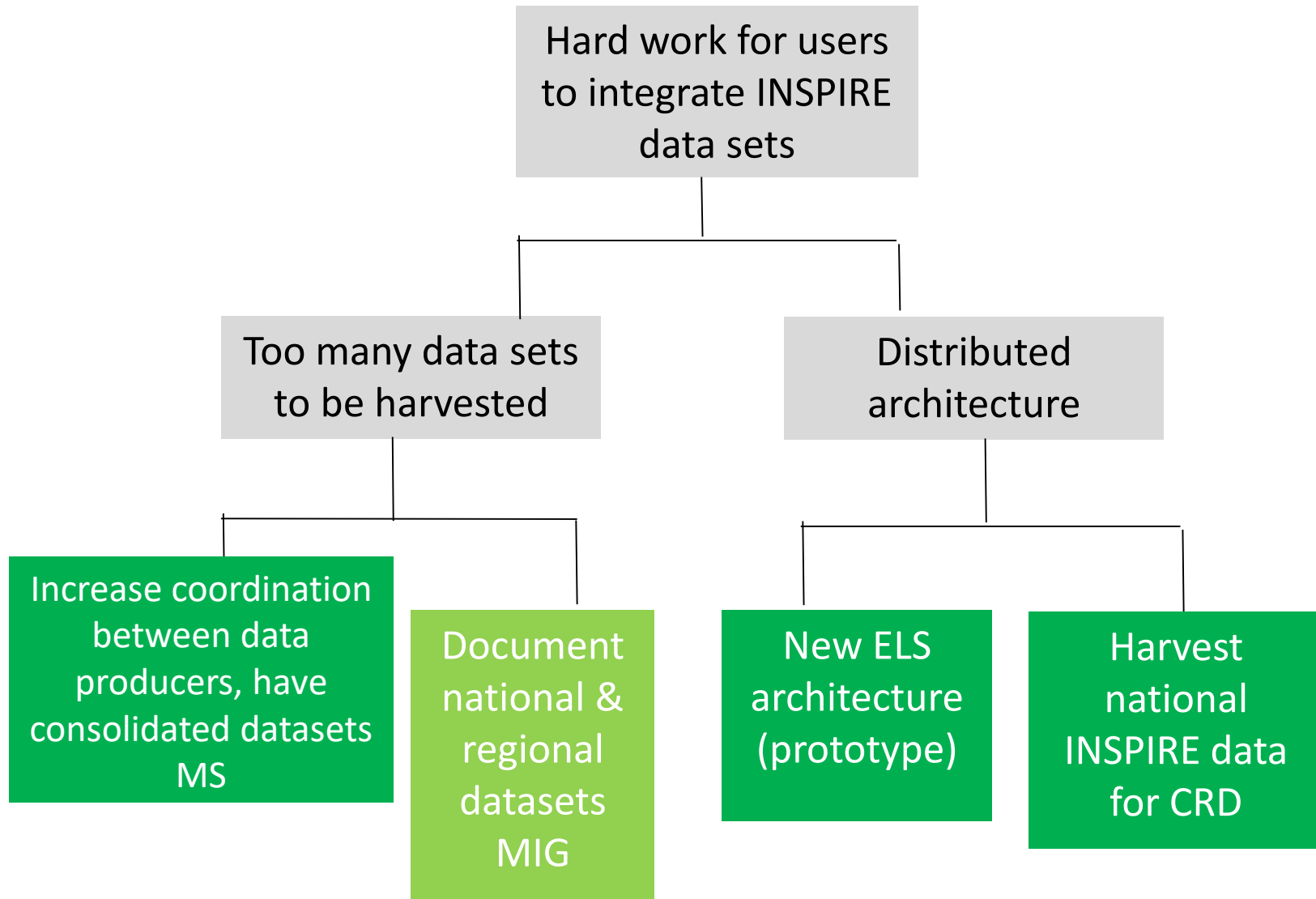
EEA integration test on theme AU

- “Most of our requirements cannot be met together in a **distributed SDI infrastructure** : Integration, edge-matching, generalisation »



Eurostat not so much interested by the INSPIRE puzzle

User complaints: physical access to data



User complaints: easy use

- Complex INSPIRE data models not easily usable in GIS
- Not everyone familiar with GML

Conclusions

- Harmonized complex features generally don't work in GIS-tools
- You need to be a GIS, OGC and INSPIRE expert to download data
- Retrieving cross border geodata is still troublesome and the Annex I deadline of November 2017 has not been reached, but 10 years ago, it was all much worse

Use of INSPIRE data for
X-border accessibility
assessment

What would be more useful for MSP?

WMS + INSPIRE portrayal rules already useful

To easily be able find out in which data a certain code list value is being used -> integrate that as a separate layer

Less scale restrictions in providing data overview through WMS

Provide distinctly different values as different layers in the WMS

Simple encoding with simple data content - the users are planners.



Use of INSPIRE data for
Marine Spatial Planning

User complaints: easy use (vector)

Complex INSPIRE data
models not usable by client
applications

Improve client
applications

Simplify INSPIRE

Develop
client
applications
BRGM

Test client
applications

Alternative encodings
and/or simplified,
flattened schemas

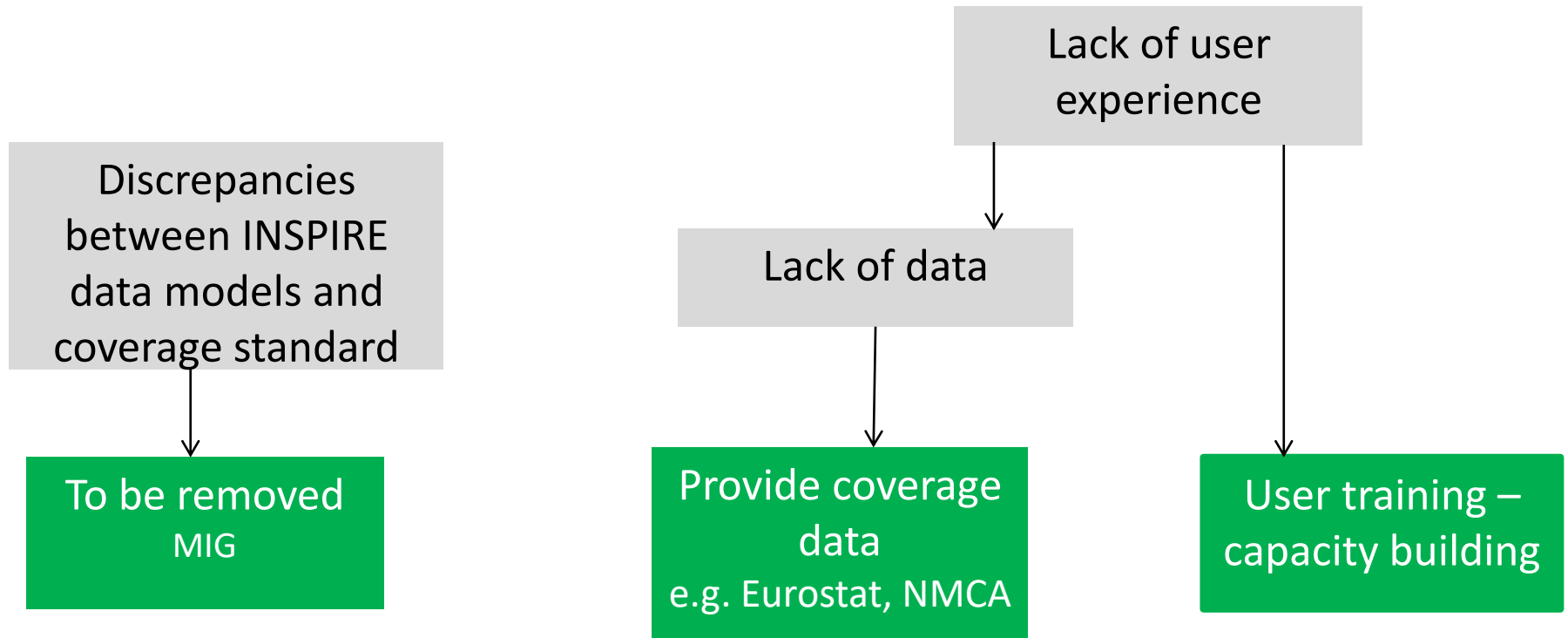
MIG

Core Reference
dataset
(EuroGeographics)

UN-GGIM:
Europe core
data

User complaints: easy use (coverage)

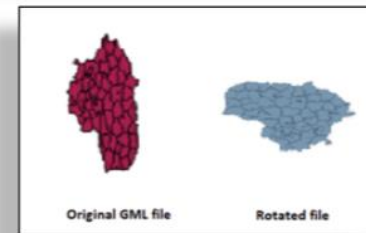
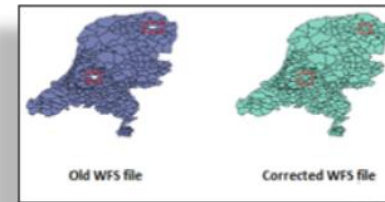
- Good tool for extracting & combining coverage data: Web Coverage Processing Service (WCPS)



User complaints: data quality

- Big errors in INSPIRE data such as missing features

EEA integration test on theme AU



- Need for pan-European datasets
 - Edge-matched
 - Geometrically and semantically harmonised



Need for cross-country comparability
« spatial interoperability »
Eurostat

User complaints: data quality

Quality of source data not kept for INSPIRE (missing features)

Validate INSPIRE data against source data data producers

INSPIRE data not harmonised enough

Ensure minimum common content
Un-GGIM : Europe core data

Make European product – ensure edge-matching
Core Reference Dataset
(EuroGeographics)

Reach the harmonisation degrees
ELF project

- Common core content
- Homogeneous LoD
- Common data models
- Edge-matching, geometry harmonisation

Conclusions

Comparing with outcomes of previous events

- Workshop about “Strategy to implement INSPIRE interoperability” – session on expected benefits - 2013

Users and use cases will come when a critical mass of data is available
(2013)

Critical mass of data is there for annex I (even if not perfect).

Users and use cases are coming slowly



Comparing with outcomes of previous events

Real benefit will come in long term with annex III data data available and interoperable => more applications => more use of annexes I and II data (2013)

Annex III data far from being interoperable.



Comparing with outcomes of previous events

INSPIRE is first step towards interoperability.
INSPIRE is not a product but just an exchange structure.
End-users orientated applications may /will be built on INSPIRE data (VAR,
ELF project, ...)
(2013)

Some initiatives to upgrade INSPIRE (e.g. CRD) .
Limited number of end user applications. INSPIRE data still for “users
in the middle” application developers – VAR



Comparing with outcomes of previous events

INSPIRE specifications are best practice and may be integrated / taken into account into data producers internal specifications => will improve data quality for users

(2013)

INSPIRE data models widely taken into account for new products, standards, projects.

Questions?