Webinar "Use of INSPIRE data"

25 January 2018

Webinar purpose

- Provide the context and main learnings from previous workshop

  - Use of INSPIRE data: past experiences and scenarios for the future

  - Warsaw – 27 – 28 November 2018

  - Co-organised by INSPIRE KEN (EuroGeographics) and EuroSDR

=> Provide an opportunity for those who could not come

- Initiate discussion on potential actions

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"

  - …..

Reminder

- Until 2018, very few INSPIRE KEN events on this topic

    - Workshop about "Strategy to implement INSPIRE interoperability"

        - 2013

        - A session about expected benefits

    - Webinar about "How to make INSPIRE useful?"

        - December 2015

    - Workshop about extensions of INSPIRE data models

        - June 2017

        - Benefits of INSPIRE data models

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 attendants

Workshop attendants

Benefiting of the warm hospitality and excellent logistic provided by Gugik

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
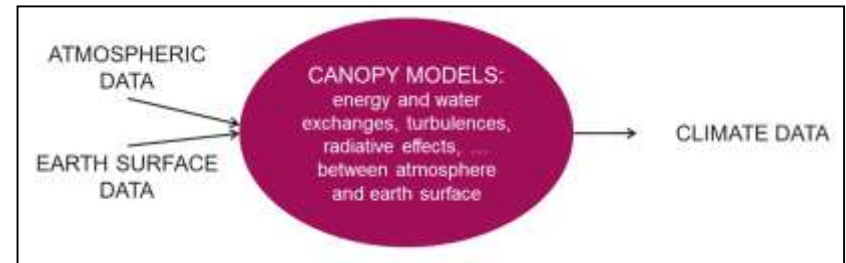
    - INSPIRE data on BU would be of big interest (earth surface data)

    - 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)

Potential users

- Official global or European key players

  - United Nations

  - World Bank

  - European Commission (EEA, Eurostat, …)

  Provide data credibility

- Private companies

  - Big companies in Transport sector: HERE, …

  - Start-up (in Sun we Trust)

  - IT companies : intermediate actors, resellers,

  - …

  Application developers

Potential users

- **National public bodies**

  - NMCAs (X-border cartography)

  - Transport and Utility managers

  - Ministry of Foreign Affairs

  - State Forest Administration

  - .....

- **X-border organisations or initiatives**

  - Geneva area, Bodensee area

  - "Grande région": BE, LX, FR, GE

- **Research, Universities, academic sector**

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
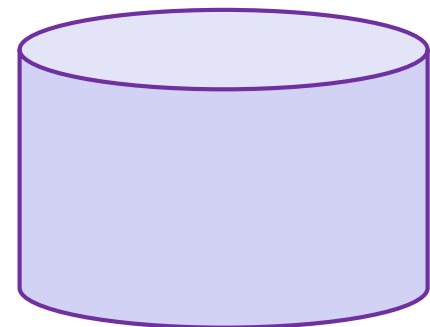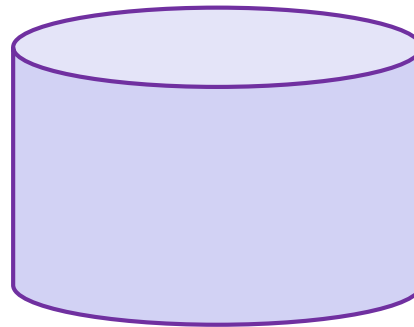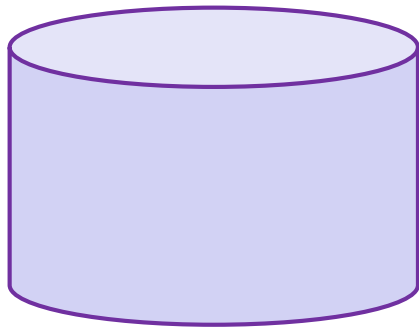
More or less INSPIREd data

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**   INSPIRE principles

      - 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

Discussion topics

- **Do data producers know potential INSPIRE data users?**

    - Good knowledge of national users

        - But not main target for INSPIRE

    - In general, **limited prospection for INSPIRE users**

Discussion topics

- **Who are the potential INSPIRE data users? Do data producers know them ?**

We don't know end users

Our INSPIRE services serve mainly open data => we don't know who use them

Identify the users: likely, not end users but "users in the middle" for INSPIRE There is need for intermediate actors, resellers

Some research on users of national SDI using the IP address; we have discovered new types of users (e.g. groups of citizens)

Surveys may be a good way. We should also integrate more users in the data processing negociation cycle, make step by step improvements

Discussion topics

- **Are potential INSPIRE data users aware of INSPIRE?**

  - Not so much

  - Examples:

    - Urban Climate project : not aware at all

    - European Standards Organization (telecommunications): finding INSPIRE models by "chance"

Discussion topics

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

We a**re** 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.

Discussion topics

- **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)

Barriers

How to remove them?

Barriers: discovery level

- Are potential users aware of INSPIRE data?

  - Probably not enough e.g. research

  - We don't fully know who are these potential users

  - Limited awareness raising by data producers
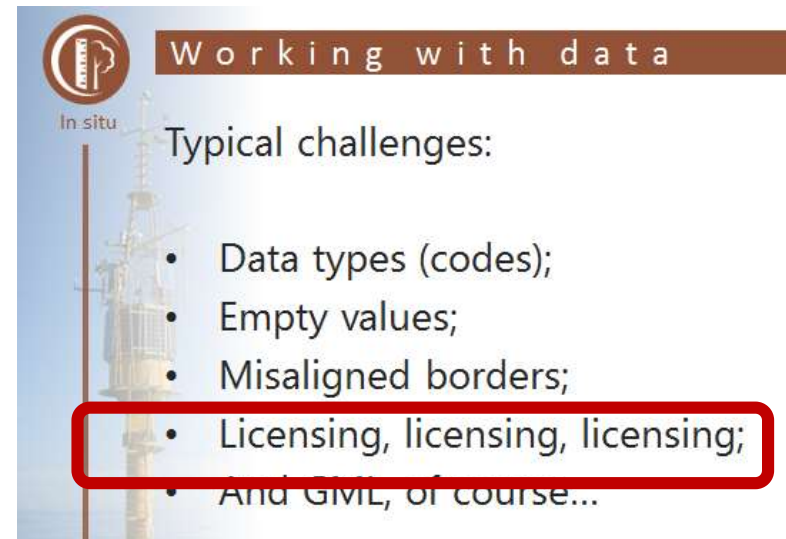
    - INSPIRE data not proudly advertised by NMCAs!

Place from improvement !

Barriers: physical access (download)

- Is it easy to harvest INSPIRE data?

  - Probably not enough

    - Issues to download "big" volume of data with WFS

    - Need for products rather than services

    - Fully distributed architecture not suitable for all purposes

  - Appears as relatively new issue

    - WFS and distributed architecture have been promoted and widely adopted for INSPIRE

Barriers: 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

Working with data

In situ

Typical challenges:

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

From EEA presentation

Barriers: use

- Is it possible / easy to use INSPIRE data?

  - Difficulties

    - INSPIRE data models considered as complex

    - Not all client applications able to consume INSPIRE data

  - but some success

    - ELF event in Poland

    - Some use of Czech INSPIRE services

    - Tools developed in Spain to deal with INSPIRE GML on CP

    - EEA integration exercise for Copernicus services on AU

User complaints

- Next slides

  - focus on some user complaints

    - Requirements not yet fully met by INSPIRE data

  - potential solutions

    - From the workshop   XX

    - Other proposals   XX

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)
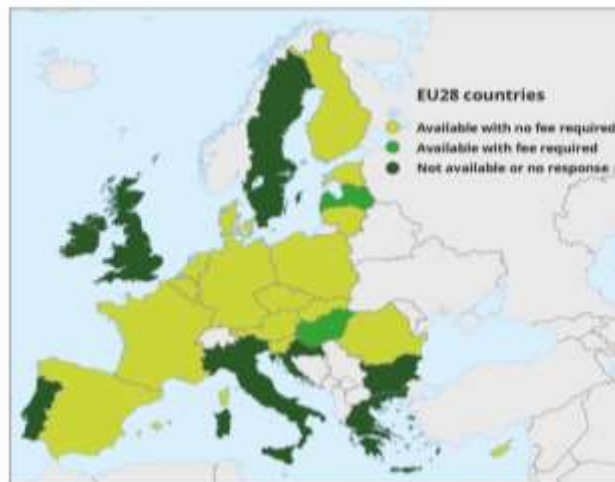
EEA integration test on theme AU

User complaints: availability

Data available but no findable	Annex I data not available	Annex II and III data not available

Solve remaining technical issues
MIG – data producers

Push MS to comply to INSPIRE
European Commission

Make patchwork product with INSPIRE and 3rd party data

INSPIRE future (2021)?

User complaints: easy 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);
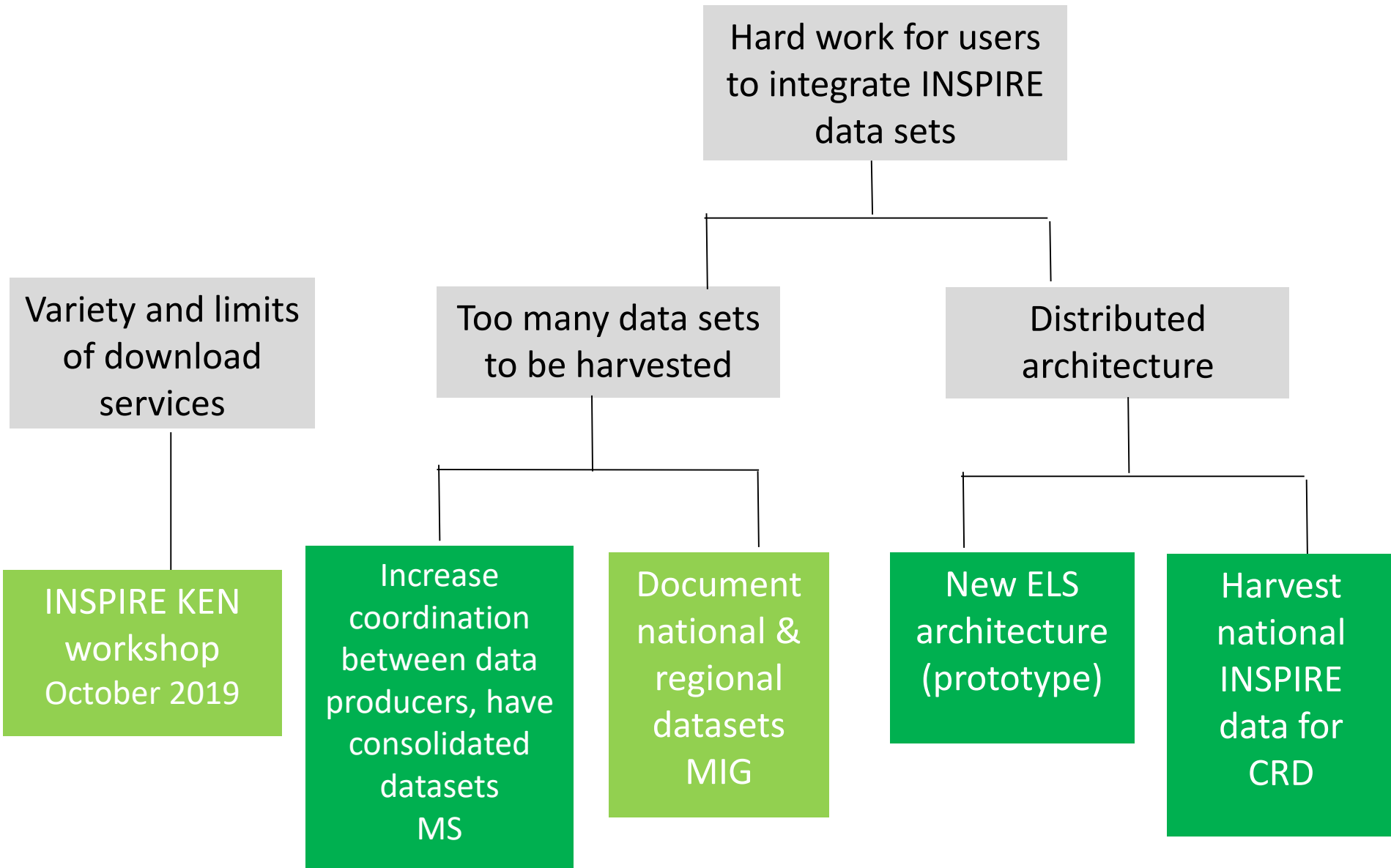- Download Service (WFS).

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: easy access to data

Hard work for users to integrate INSPIRE data sets

Variety and limits of download services

Too many data sets to be harvested

Distributed architecture

INSPIRE KEN workshop October 2019

Increase coordination between data producers, have consolidated datasets MS

Document national & regional datasets MIG

New ELS architecture (prototype)

Harvest national INSPIRE data for CRD

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 INSPRE export 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

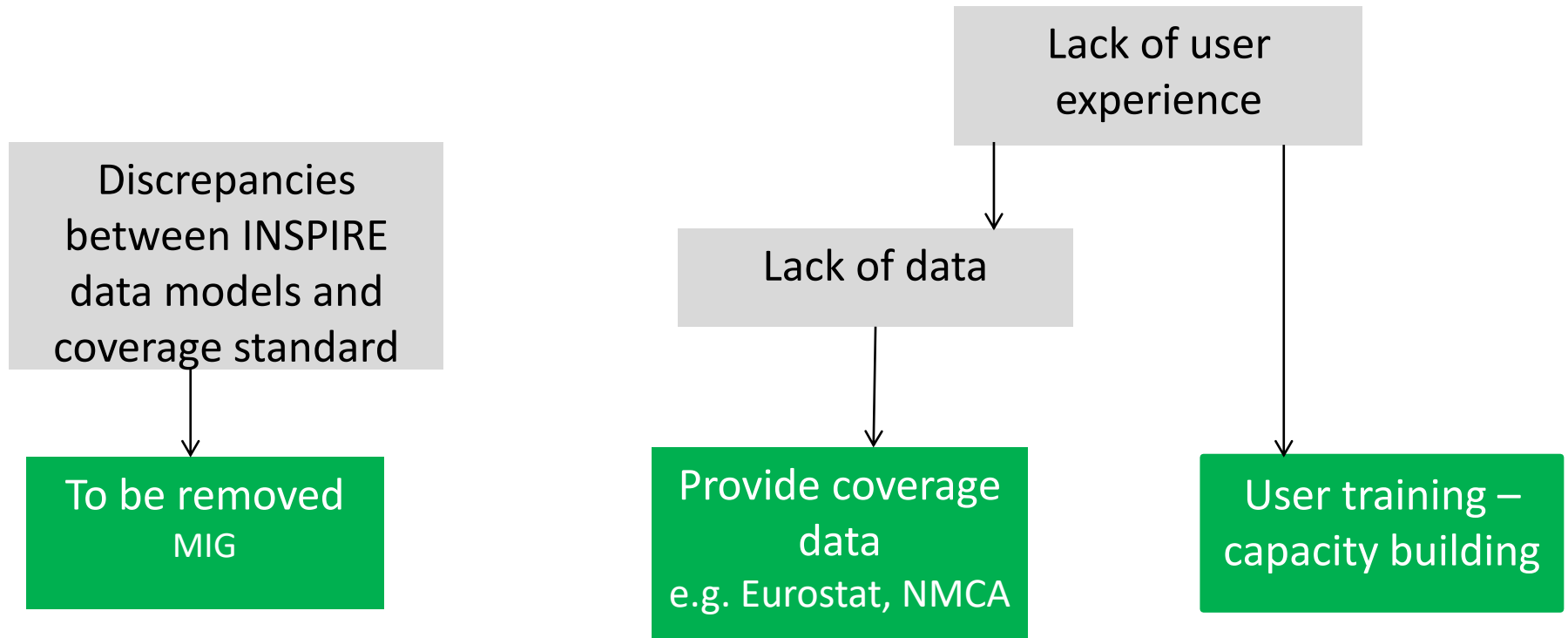Alternative encodings and/or simplified, flattened schemas

MIG

Core Reference dataset (EuroGeographics)

UN-GGIM: Europe core data

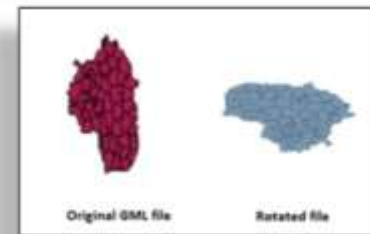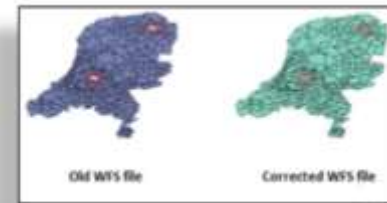# User complaints: easy use (coverage)

– 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)

INSPIRE data not harmonised enough

Validate INSPIRE data against source data
data producers

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

Theme specific difficulties

- Theme TN

  - Interested users (e.g. car navigation)

  - Linear referencing too complex for basic applications (mapping, …)

  - NMCAS not always responsible for this theme – issue for building pan-European dataset (EuroGeographics)

- Themes with generic data models

  - main information is a value in a code list (AM, O&M, OF, ….)

    - Difficult to find relevant information

    - = > Have a layer for each value?

Conclusions

Clarifying a missing brokering process on the European SDI

What solutions could bridge the gap between:

- A user need for specific application

  (eg : CLC backbone, EuroStat need)

- And a multisources workflow that use the 'most

  appropriate' national data available

Licenses

What licenses can be supported/promoted by the Commission in a consistent way?

Get (more) scientists and developers work on our problems

Design 1-year challenges based on our data:

- ➢ Schema alignment,
- ➢ A QGIS plugin that connect to national data portals
- ➢ Buildings data interconnection/comparison,
- ➢ Interconnecting our portals with web content (Wikidata)
- ➢ Place-oriented models for gazetteers
- ➢ Generating multilingual data cards
- ➢ From linear coordinates to geographical coordinates
- ➢ Consistent building segmentation and identification
- ➢ ….

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.

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.

Comparing with outcomes of previous events
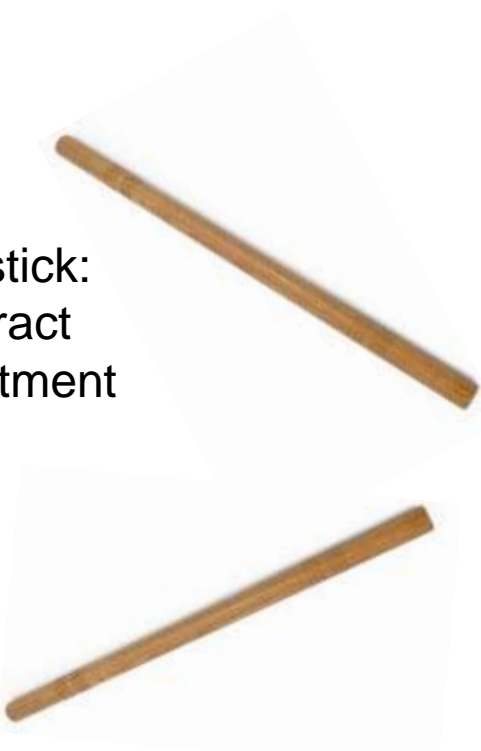
- Webinar "How to make INSPIRE I useful? " - 2015

INSPIRE gives us International approved standards & Data in a

common "language"

(2015)

Benefits of standardised data recognized by users.

Work Package leader
encourging and pushing

ELF stick:
contract
commitment

The ELF carrot:
hope that services
will be used due to
single access point

INSPIRE stick:
legal obligation

Technical
difficulties

INSPIRE
target – data
used at
European
level

Data producer
(NMCA)

Work Package leader
encouraging and pushing
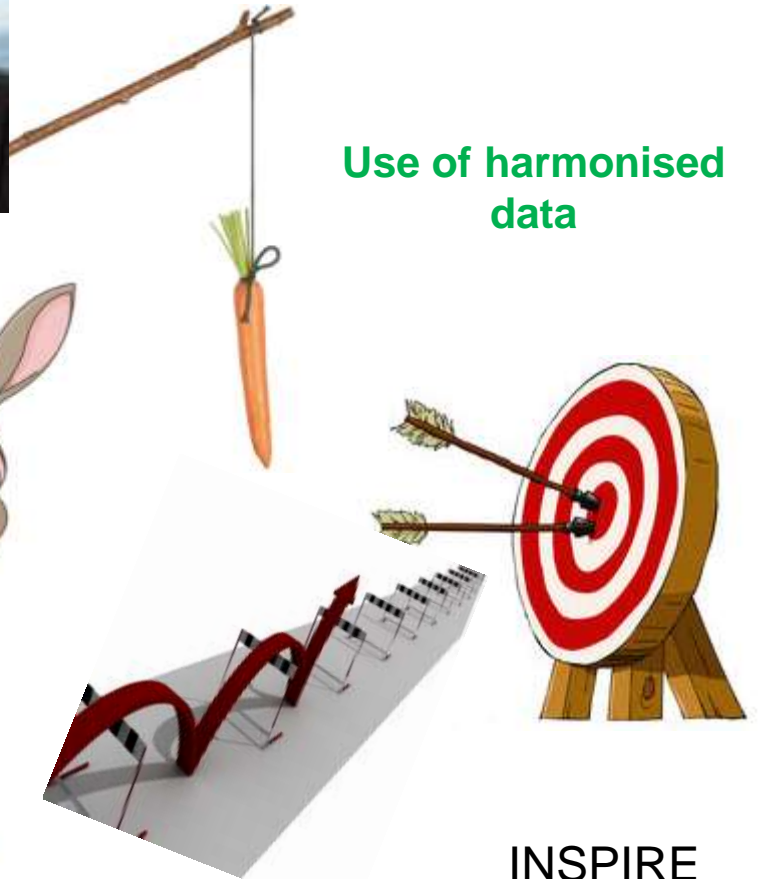

ELF stick:
contract
commitment

**Use of harmonised
data**

INSPIRE stick:
legal obligation

Data User

Technical
difficulties

INSPIRE
target – data
used at
European
level

Questions