Progress of UN-GGIM: Europe Working Group A on Core Data

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Plan

• Introduction

• Objectives of the working group with respect to INSPIRE
  
  • Phase 1: select core data themes
  
  • Phase 2: specify core data
  
• FAQ
Introduction
Background and purpose

• Aim of Work Group A
  – to propose core geospatial data for Europe

• Definition of ‘Core Data’
  – the minimum set of authoritative geospatial data needed to meet requirements common to member states
Organisation

• 15 European countries
  – Austria - Germany
  – Belgium - Greece
  – Finland - Poland
  – France (chair) - Spain
  – Netherland - Sweden
  – Switzerland - UK
  – Turkey

• Observers
  – JRC, EEA, EuroSDR
WG A work plan

Political and financial framework
- Additional measures
- Good practices Case studies

Economic model for production and diffusion of core data
- Licensing
- Open data
- Input from existing initiatives and projects
- Production or upgrade processes

Specification of core data
- Core data scope
- Technical specifications

Later activities
2016 – 2017 activities
Objectives of the working group with respect to INSPIRE
User Requirements for European Core Data

• Authoritative geospatial data are used to support
  – the implementation of public policies
  – the development of downstream services by the industry

• Geospatial data are required to be harmonised between countries
User Requirements for Geospatial Data
Harmonised between countries

• To enable the implementation of public policies in a coherent and coordinated way among countries*

• To enable the industry to exploit their services without requiring country specific adaptation*

*Report by the preparatory committee on the establishment of UN-GGIM:Europe, 8 May 2014
Benefit of INSPIRE

- European frame for sharing existing data

- Common structure (format, data model)
Outside INSPIRE scope

• Data content (semantics) is outside INSPIRE scope
• Reason
  – Most feature classes & attributes are voidable in INSPIRE
• Example
  – Attributes filled for INSPIRE theme ‘Building’ in ELF*

*GB&PL: enquiry not up-to-date
**Outside INSPIRE scope**

- **Data content (geometry) is outside INSPIRE scope**

  - **Reason**
    - No requirement in INSPIRE about level of detail

  - **Consequence**
    - Level of detail is not consistent between INSPIRE datasets
Impact of INSPIRE: Summary

- INSPIRE aims to harmonise existing data

- INSPIRE supplies first level of interoperability (common data model)

- But INSPIRE data will remain heterogeneous
  - Geometry: No requirements about levels of detail
  - Semantics: Most concepts are « voidable »
Objectives of the working group

• Define recommendations for content of core data

• Propose priorities for improvement of existing data or for production of new data in member states

• Structure of core data
  – Based on INSPIRE

• Content of core data
  – Harmonised between countries

→ WGA aim: complementing INSPIRE – not repeating it
Objectives of the working group

Example

Attribute “Date of Construction” of INSPIRE theme ‘Building’*

* This is an example, still to be decided by the WG

Current situation

Harmonised filled content

Recommendation
Objectives of the working group (cont.)

- Go over to higher harmonisation levels
- Selecting a **core content** from INSPIRE
- Defining quality criteria to ensure core data **homogeneity**
- Get ★★★★ data
## Comparison INSPIRE / Core Data

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<tr>
<th></th>
<th>INSPIRE</th>
<th>UN-GGIM: Europe  WG core data</th>
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</thead>
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<tr>
<td>Driver</td>
<td>European Commission (DG ENV, JRC, Eurostat, EEA)</td>
<td>United Nations (UN-GGIM: Europe Executive Committee)</td>
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<tr>
<td>Geographic scope</td>
<td>European Union Political Europe</td>
<td>Geographical Europe</td>
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<td>Objective</td>
<td>Harmonise existing data, ensure common structure</td>
<td>Ensure common similar content</td>
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<td>Expected mean</td>
<td>Data transformation</td>
<td>Data improvement, or production of new data.</td>
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<td>Status</td>
<td>European Directive Legal obligation for MS</td>
<td>UN Recommendation Encouragement to MS</td>
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Comparison with INSPIRE

The INSPIRE big cheese with lots of holes

Users begin to complain: not so much to eat!

The core data cheese: smaller but compact and really filled
Core data theme selection
(January 2016)
Approach: user requirements

- Sustainable Development Goals
Approach: user requirements

• Sustainable Development Goals
  – Identify the targets consuming geographic information
  – Identify the actions enabling to reach these targets
  – Identify the required data
  – Make summary by « use case maps » for each theme
Forecast propagation of physical phenomena (risk, water, sun, pollution, winds...)

Understand influence on ecosystems and climate change

Influence city spreading

Find relevant place for project (slope, sun, visibility, ...)

Find relevant activity on given area (species...)

Background 2D map

3D models (risk, projects...)

Protection of landscapes (visibility)
Approach: user requirements

• Selection criteria
  – Pertain to **geospatial data** (with mandatory geometric representation);
  – Be widely used: it should be the most necessary, most common, priority data required to **analyse, monitor and achieve the SDGs**, either directly or indirectly;
  – Meet requirements common to many countries.
Themes Selection

Core data
# Final list of selected core data themes

## Annex I
- Coordinate Reference Systems
- Geographical Grid Systems
- Geographical Names
- Administrative Units
- Addresses
- Cadastral Parcels
- Transport Networks
- Hydrography
- Protected Sites

## Annex II
- Elevation
- Land Cover
- OrthoImagery
- Geology

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

• On-going work

• 3 themes to be specified soon (January 2017)
  – Cadastral Parcels
  – Geographical Names
  – Addresses

• All themes to be specified before end 2017
Principles

• Use INSPIRE specification and SDG user requirements as starting points

• Define priorities, extract core data:
  – From data model
  – From theme scope

• Decide on levels of detail, quality criteria
Principles

• Replace “Data specification” by “Core spatial data theme XX – Recommendation for content”
  – Make short document easy to read (deciders - politicians)
  – Technical details in separate annexes
Principles

• 3 types of recommendations:

  – **Core recommendation**: highly required, achievable => ideally, short term action
  
  – **Good practice**: bring added value to core data => to be encouraged
  
  – **Further considerations**: data for innovative applications => long term
Theme Cadastral Parcels
Geographic extent

• **Core recommendation:** have core CP (vector) data on whole territory, according to national law

• Potential impact:
  – Encourage achievement of cadastre under elaboration (Romania ...)
  – Encourage vectorisation of remaining raster CP (France ...)

UN-GGIM

**GLOBAL GEOSPATIAL INFORMATION MANAGEMENT**
Geographic extent

• **Good practice**: have CP data on whole land territory, including public domain

• Potential impact:
  – Possible change in national legislation
  – Need to survey missing parts
Geographic extent

- **Further consideration**: have marine cadastre

- Present in few countries

- Not yet mature (e.g. what has to be surveyed?)
Data model

Core recommendation: Cadastral Parcel with its geometry and national cadastral reference

```
class CadastralParcels

«featureType»
CadastralParcel

+ geometry: GM_Object
+ nationalCadastralReference: CharacterString
+ inspireId: Identifier
+ label: CharacterString

«voidable»
+ areaValue: Area [0..1]
+ referencePoint: GM_Point [0..1]
+ validFrom: DateTime [0..1]
+ validTo: DateTime [0..1]

«lifeCycleInfo, voidable»
+ beginLifespanVersion: DateTime
+ endLifespanVersion: DateTime [0..1]
```
Quality rules

• Core recommendations
  – completeness
  – continuous update (weekly or better)
  – accuracy: keep INSPIRE as general target (1m in urban - 2.5 m in rural) + recommend more accurate data for new surveys (50 cm or better)
  – Topological consistency
Frequently asked questions
Will core data put obligations on data providers in addition to the INSPIRE ones?

- WG A deliverables only include recommendations
- WG A will entail no legal obligation further than existing INSPIRE obligations (for EU member states)
Will there be funding for core data?

• Political and financial framework is within WG A work plan (to be addressed in 2018)

• WG A recommendations aims at helping data producers
  – to define their strategy related to core data
  – to convince European Commission and/or National Governments about importance of GI and so about the relevance of bringing political and financial support (weight of UN recommendations)
Is core data meant for UN or for Member States?

• Core data is primarily meant for fulfilling the common user requirements related to SDGs in Member States and European institutions.

• However, some SDG indicators require GI and it is interesting for UN to have these indicators computed in same way from similar (core) data.
It is a UN initiative. Why is small scale data not enough?

Main purpose is to achieve the SDGs and many actions related to SDGs take place at local level → there is also **need for large scale data.**

In practice, for themes AU, GN, HY and TN, candidates levels of detail are:

- Global
- Regional
- Master level 1

From ELF experience
Who are the expected readers of WG A deliverables?

• Governments and data producers

- High level deciders (Executive Committee, governments)
- Medium level deciders (data producer hierarchy)
- Implementers (technicians)

Executive summary
Recommendation for content
Technical explanations
There are 14 selected themes. Do you have enough knowledge within WG A?

- Not totally (mainly NMCA members)
- Need for investigation
  - New surveys or questionnaires might be launched
  - Your good will would be appreciated
    - By answering WG A questionnaires
    - By contacting other stakeholders in your country
    - Would you be interested to get regular news about core data? (Basecamp, webinars, etc.)
• Thank you for your attention

• More information:
  – Selection of core data themes
  – Next data content recommendations

http://un-ggim-europe.org/content/wg-a-core-data