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UN-GGIM: Europe core data to complement the INSPIRE framework – second step

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Introduction

What is UN-GGIM?

- United Nations initiative on Global Geographic Information Management

- Since 2011

- Strong implication of the statistical community

- Activities at :
  - Global level
  - Regional level: Europe, Africa, …

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What is core data?

- Core data is priority data

  - Geographic data

  - The most useful to analyse, achieve or monitor the SDG (Sustainable Development Goals)

  - Directly or indirectly

How is core data complementing INSPIRE?

- INSPIRE is about harmonisation of existing data

  – Common model

  – Still heterogeneous content (no LoD, voidable attributes)

- Core data is about encouraging production of new data (or upgrade of existing data)

INSPIRE:
STRUCTURE

CORE DATA:
CONTENT

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What was first step?

Selection of 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

What was first step?

Last slide of 2016

presentation

Second step

Objectives

- Work out 'Recommendations for Content' for the selected themes

- Based on

  - Existing standards: mainly INSPIRE

  - User requirements with focus on SDG related use cases

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Principles

- Use INSPIRE specification as starting point

  - => common terminology

- Investigate user requirements

  - Bibliography

  - User interviews

  - Questionnaires

  - WG members expertise

Principles

- Decide on recommended levels of detail

- Decide on core content

  – Scope

  – Data model   By restricting and/or by extending INSPIRE

- Propose quality rules

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First results

- Recommendations for content (almost) ready for themes CP, AD, GN

- On-going work on remaining themes

First results

- Different focus / added value according to INSPIRE themes:

    - "well-defined themes" : CP, AD, AU, …

        - Mainly quality criteria

    - "rich themes" with lots of features of attributes : TN, HY

        - Mainly extracting core information

    - "empty themes": EL, OI, LC

        - Levels of detail

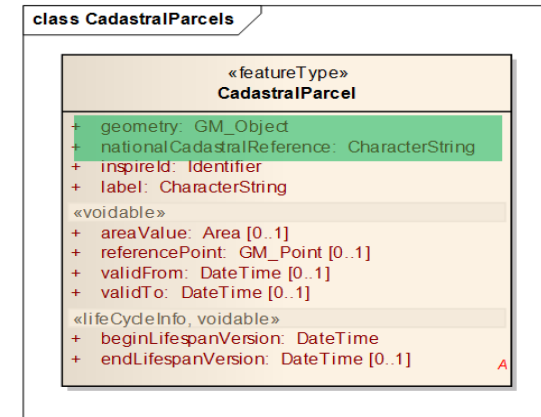   - Content (DTM+DSM or just DTM, infra-red or just RGB, …)

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First results: examples (CP)

- Encourage cadastral parcels forming a partition of territory
  - Geographic extent: whole (land) territory
    - Cadastration of public domain encouraged
  - Completeness
  - Topology (no gaps or overlaps)
  - Cadastral parcels as single areas

- Encouraging efficient link with land registry
  - Model focus on national cadastral reference
  - Temporal consistency between cadastral map and land registry

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]

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First results: examples (GN)

«codeList»
NamedPlaceTypeValue

+ administrativeUnit
+ building
+ hydrography
+ landcover
+ landform
+ populatedPlace
+ protectedSite
+ transportNetwork
+ other

- Restricting INSPIRE

  - Core data recommendation are for production

  - To avoid duplication of efforts, scope is limited to GN not in other themes

  - But to facilitate use, in delivery phase, it is of interest to combine all the Geographical Names of various themes : AU, HY, TN, …

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First results: examples (GN)

- Extending INSPIRE

  – For mapping use case, need of information on the "importance" of a named place

    - Selection according the scale / level of zoom

    - Relevant font for the label

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First results: examples (GN)

- Extending / improving INSPIRE

  - INSPIRE data model has some information but as **subjective** criteria

  - Core data recommends to focus on **objective** criteria

    - Population (for named places)

    - Area (by representing named place with true geometry not just by a point)

«featureType»
NamedPlace

+	geometry :GM_Object
+	inspireId :Identifier
+	name :GeographicalName [1..*]
«voidable, lifeCycleInfo»	
+	beginLifespanVersion :DateTime
+	endLifespanVersion :DateTime [0..1]
«voidable»	
+	leastDetailedViewingResolution :MD_Resolution [0..1]
+	mostDetailedViewingResolution :MD_Resolution [0..1]
+	relatedSpatialObject :Identifier [0..]
+	type :NamedPlaceTypeValue [1..*]

First results: examples (AD)

- Production of true addresses
  - AD mainly used for geocoding
  - An AD should enable to find the related building
  - But in rural areas, the AD may be limited to the village name
  - Core data recommendation: create "true" AD (e.g. with street name + house number everywhere)

«codeList»
GeometrySpecificationValue

+ postalDelivery
+ utilityService
+ thoroughfareAccess
+ entrance
+ building
+ parcel
+ segment
+ postalDescriptor
+ addressArea
+ adminUnit1stOrder
+ adminUnit2ndOrder
+ adminUnit3rdOrder
+ adminUnit4thOrder
+ adminUnit5thOrder
+ adminUnit6thOrder

On-going discussions: examples

- Theme BU:

    – geometric representation: should 3D data be core? Is it key requirement?

- Theme US

    – Name of corresponding core theme: Basic Services

    – Restrict INSPIRE scope: only key features of Utility Network (power plants) and of Environmental Management Facilities (e.g. landfill)

    – Extend INSPIRE scope: all Governmental Services, including leisure ones

On-going discussions: examples

- Theme AM

  - Extend INSPIRE scope

    - Not only environment related AM

    - But also the AM related to economy and society (other SDG components)

  - Focus on specific areas

    - Generic areas (e.g. applying to all rivers or all buildings) not first priority

  - Add attribute to inform if geometry has legal value or not

  - Manage regulation texts and responsible authorities in other databases

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Conclusions

Core data and INSPIRE

- INSPIRE :

  - (in theory) driven by pan-European or X-border use cases

  - interoperability of existing data => Common data models

- Core data:

  - Driven by the SDG => Mainly national or even local use cases (to achieve the SDG)

  - But common requirements => Common content
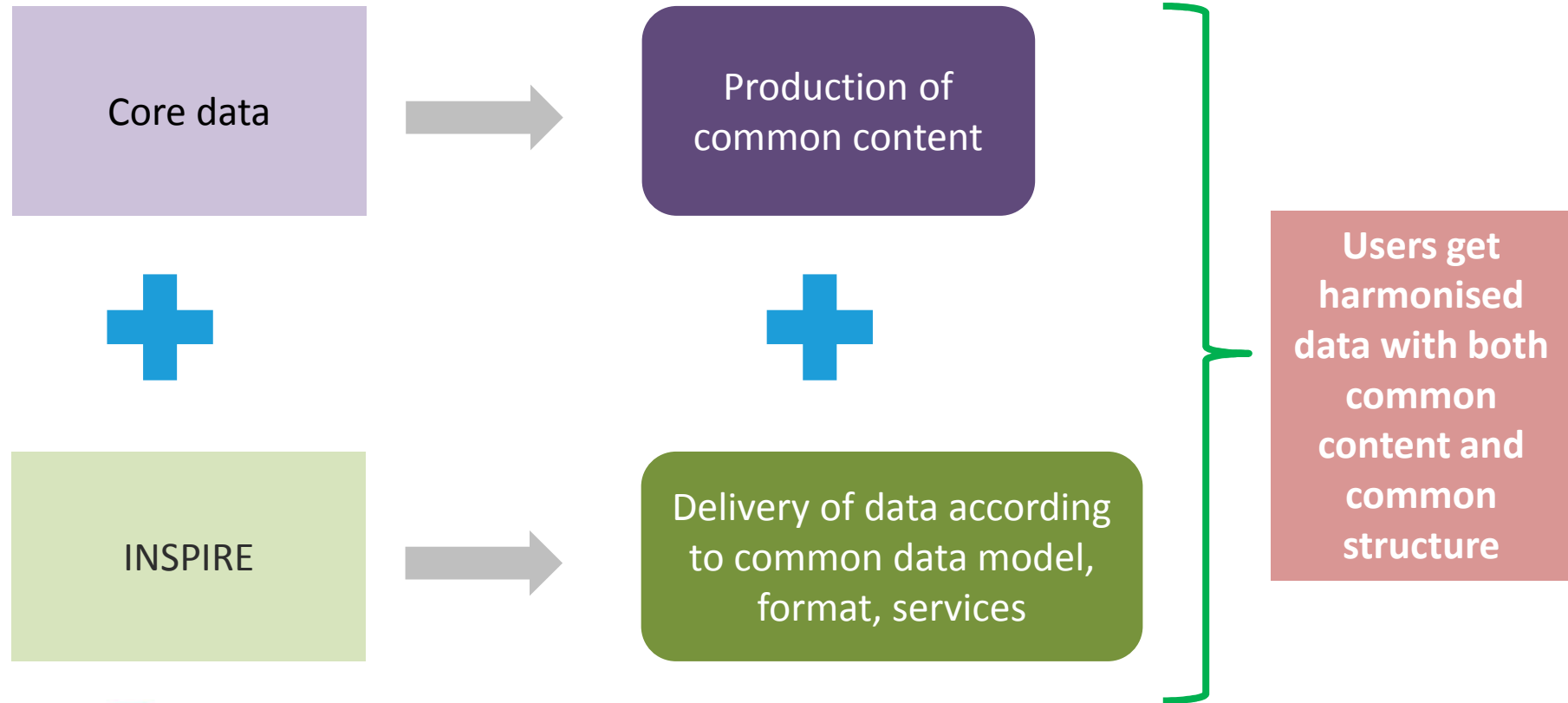
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Core data and INSPIRE

Core data → Production of common content

+

INSPIRE → Delivery of data according to common data model, format, services

Users get harmonised data with both common content and common structure

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Core data and SDG indicators

- Core data : the most useful data to analyse, achieve or monitor the SDG (Sustainable Development Goals)

- Indicators require mainly statistical data but also geographic data

  - To display the results: AU, SU

  - To compute some indicators

    - Accessibility : TN, US, SU/PD, …

    - Areas of interest and their protection: LC/LU, PS, AM, …

Several core/INSPIRE themes involved

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