Updating INSPIRE Data Specifications for Statistical Data Themes

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INSPIRE

EU-wide **SDI perspective** on data

Ultimate goal is to **unlock spatial data** and lay down foundations of European SDI

INSPIRE is a **Framework Directive**

- Into force since 15\(^{th}\) of May 2007

Detailed technical provisions are laid down in:

**Implementing Rules** on (INSPIRE Components)

- Metadata
- Spatial Data
- Network services
- Data and Service sharing (policy)
## INSPIRE Data Themes and Statistics

### Annex I
- Administrative Units
- Cadastral Parcels
- Geographical grid systems
- Hydrography
- Protected Sites
- Transport Networks
- Addresses
- Coordinate reference systems
- Geographical Names

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

### Annex III
- Atmospheric Conditions
- Bio-geographical Regions
- Buildings
- Environmental Monitoring Facilities
- Human Health and Safety
- Population Distribution - Demography
- Production and Industrial Facilities
- Sea Regions
- Soil
- Species Distribution
- Statistical Units
- Agricultural and Aquaculture Facilities
- Area Management Restriction Regulation Zones and Reporting units
- Meteorological geographical features
- Energy Resources
- Habitats and Biotopes
- Natural Risk Zones
- Utility and Governmental Services
**INSPIRE**

- **Statistical Units (SU)** - Units for dissemination or use of statistical information
  - Spatial feature (Polygon, Line, Point or Grid cell) that can be used to attach statistical information
  - Statistical information is not considered as part of the statistical unit
- **Population distribution — demography (PD)** - Geographical distribution of people, including population characteristics and activity levels, aggregated by grid, region, administrative unit or other analytical unit
  - Datasets of statistical information describing how some phenomenon regarding human population is spread within some part of the space
Statistical Units (SU)

**Definition:** Unit for dissemination or use of statistical information.

- **In:** The unit + the way to refer to it
- **Out:** The statistical data

Grids and vector units

Statistical unit

5400 inhabitants

345,324 km

True

"weak"
Population distribution (PD)

Statistical distributions composed of statistical values

Hypercube structure

Dimensions proposed:
- Spatial: Statistical units (→ SU)
- Thematic: Age groups, gender, activity (NACE codes)

Measurement method

Temporality representation:
- period of measurement
- period of reference
- period of validity
- object life span
Population distribution (PD)

• The benefits from this data theme in the context of INSPIRE should primarily be the access to existing statistics which are not already published in regional databases provided by Eurostat or the Member States.
• The statistics provided according to this INSPIRE theme should rather be a complement to statistics already being published based on legislation and gentlemen’s agreements.
• Statistics in national or European regional databases are often multidimensional in a way that the INSPIRE services could never match, and existing databases should therefore be considered as the best source of information on demography.
Human Health and Safety (HH)

Health statistical data
Based on statistical units (→ SU)
- Diseases
- General health status
- Biomarker
- Health services
Implementation Roadmap

**INSPIRE Requirements:**
- metadata
- view services
- download services
- transformation services
- data interoperability
Data Availability – INSPIRE Geoportal (17/05/2019)

- Human health and safety
  Def.: Geographical distribution of dominance of pathologies...
  📘 1051 | 🌐 85 | 👀 149

- Population distribution - demography
  Def.: Geographical distribution of people, including popul...
  📘 706 | 🌐 160 | 👀 330

- Statistical units
  Def.: Units for dissemination or use of statistical inform...
  📘 698 | 🌐 69 | 👀 208

http://inspire-geoportal.ec.europa.eu/
Data Availability – INSPIRE Geoportal
(17/05/2019)

Data Sets - Population distribution — demography of Europe

Select a COUNTRY

Austria  160  ▼  12
Belgium  210  ▼  2
Bulgaria  170  ▼  0
Croatia  210  ▼  0
Cyprus  210  ▼  0
Czech Republic  10  ▼  1
Denmark  240  ▼  0
Estonia  10  ▼  0
Finland  10  ▼  0
France  240  ▼  0
Germany  280  ▼  0
Greece  240  ▼  0
Hungary  240  ▼  0
Iceland  240  ▼  0
Ireland  240  ▼  0
Italy  680  ▼  0
Latvia  10  ▼  0
Liechtenstein  10  ▼  0
Lithuania  10  ▼  0
Luxembourg  10  ▼  0
Malta  10  ▼  0
Netherlands  240  ▼  0
Norway  10  ▼  0
Poland  240  ▼  0
Portugal  10  ▼  0
Romania  240  ▼  0
Slovakia  10  ▼  0
Slovenia  10  ▼  0
Spain  240  ▼  0
Sweden  10  ▼  0
Switzerland  10  ▼  0
United Kingdom  240  ▼  0

Show:

Downloadable  ▶  Viewable

INSPIRE Geoportal Data Set Statistics

706 Metadata records
160 Downloadable Data Sets

http://inspire-geoportal.ec.europa.eu/
INSPIRE - Encodings

- Flexibility/adaptability to any domain specific encoding
- The proposed default encoding for statistical data in INSPIRE data specifications is Geography Markup Language (GML).
- NSPIRE implementation of statistical data themes should be based as much as possible on existing data sharing arrangements between Member States with DG ESTAT, in order to avoid duplication of effort.

IR Requirement
Article 7
Encoding

1. Every encoding rule used to encode spatial data shall conform to EN ISO 19118. In particular, it shall specify schema conversion rules for all spatial object types and all attributes and association roles and the output data structure used.
2. Every encoding rule used to encode spatial data shall be made available.
INSPIRE - Encodings

- Update of INSPIRE data specifications for PD and HH to allow also SDMX encoding and JSON-stat as alternative encodings
- INSPIRE – SDMX Mapping
  - Already done for the 2021 population and housing census
  - Data Structure Definitions (DSD) and Metadata Structure Definitions (MSD) prototypes and examples
- INSPIRE – JSON-stat Mapping (tbd)
Summary

• INSPIRE implementation is on-going and important deadlines for data themes in Annex II and III are approaching
• INSPIRE data specifications for PD and HH will be updated to allow SDMX encoding and JSON-stat as alternative encodings
• Updated data specifications together with related Data Structure Definitions and good practices will be published in the INSPIRE Knowledge Base
Thank you!

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