

Updating INSPIRE Data Specifications for Statistical Data Themes

Vlado CETL

Workshop on Data Integration
Belgrade, 21-23 May 2019

Joint Research Centre

the European Commission's
in-house science service

INSPIRE

EU-wide SDI perspective on data

Ultimate goal is to **unlock spatial data** and lay down

foundations of European SDI

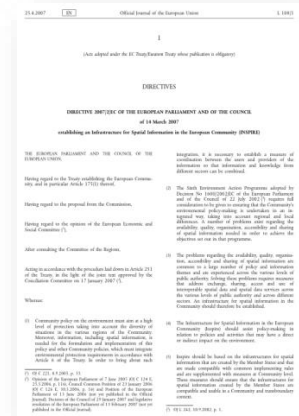
INSPIRE is a **Framework Directive**

- Into force since 15th 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
- ☐ Land Use
- ☐ Mineral Resources
- ☐ Oceanographic Geographical Features
- ☐ 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

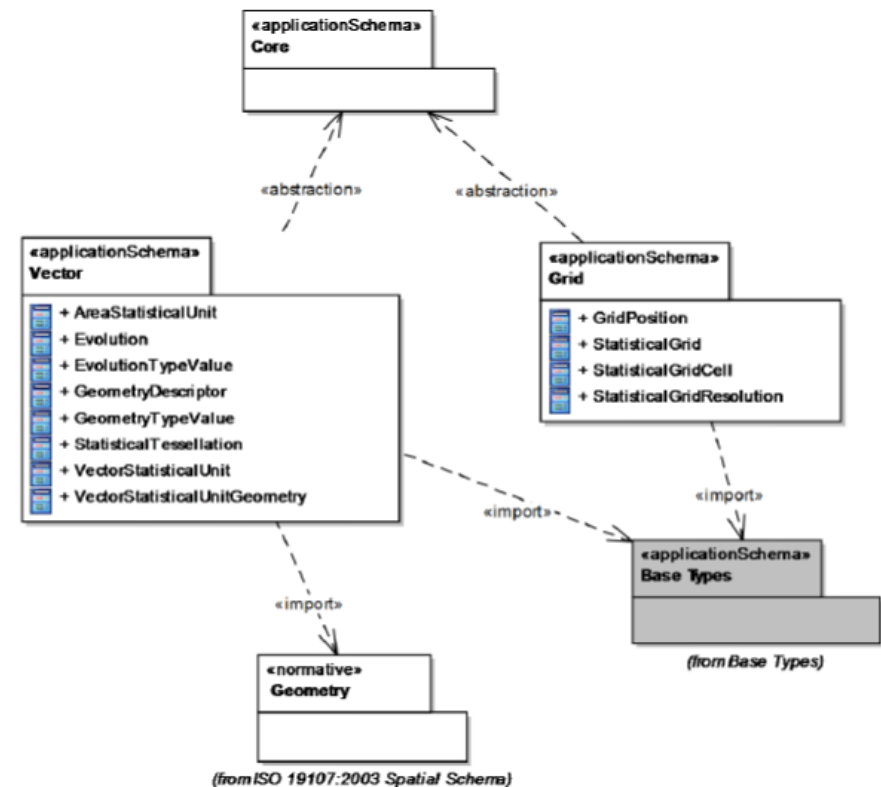
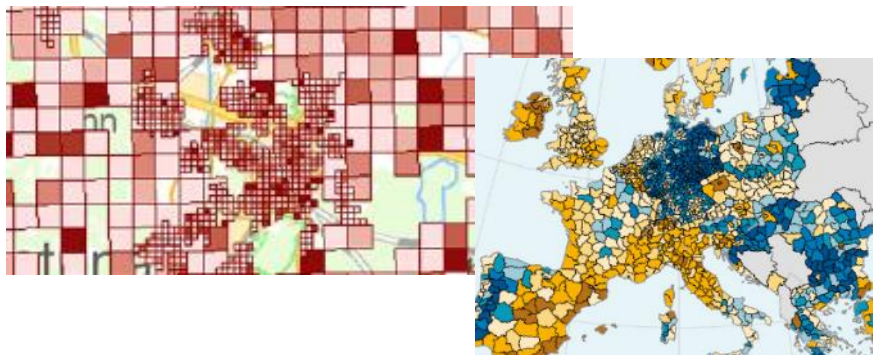
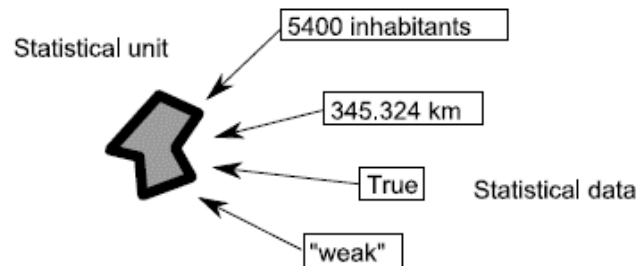
- **Statistical Units (SU)** - Units for dissemination or use of statistical information
 - Spatial feature (Polygon, Line, Point or Grid cell) that can be used to attach statistical information
 - Statistical information is not considered as part of the statistical unit
- **Population distribution — 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



Population distribution (PD)

Statistical distributions composed of statistical values

Hypercube structure

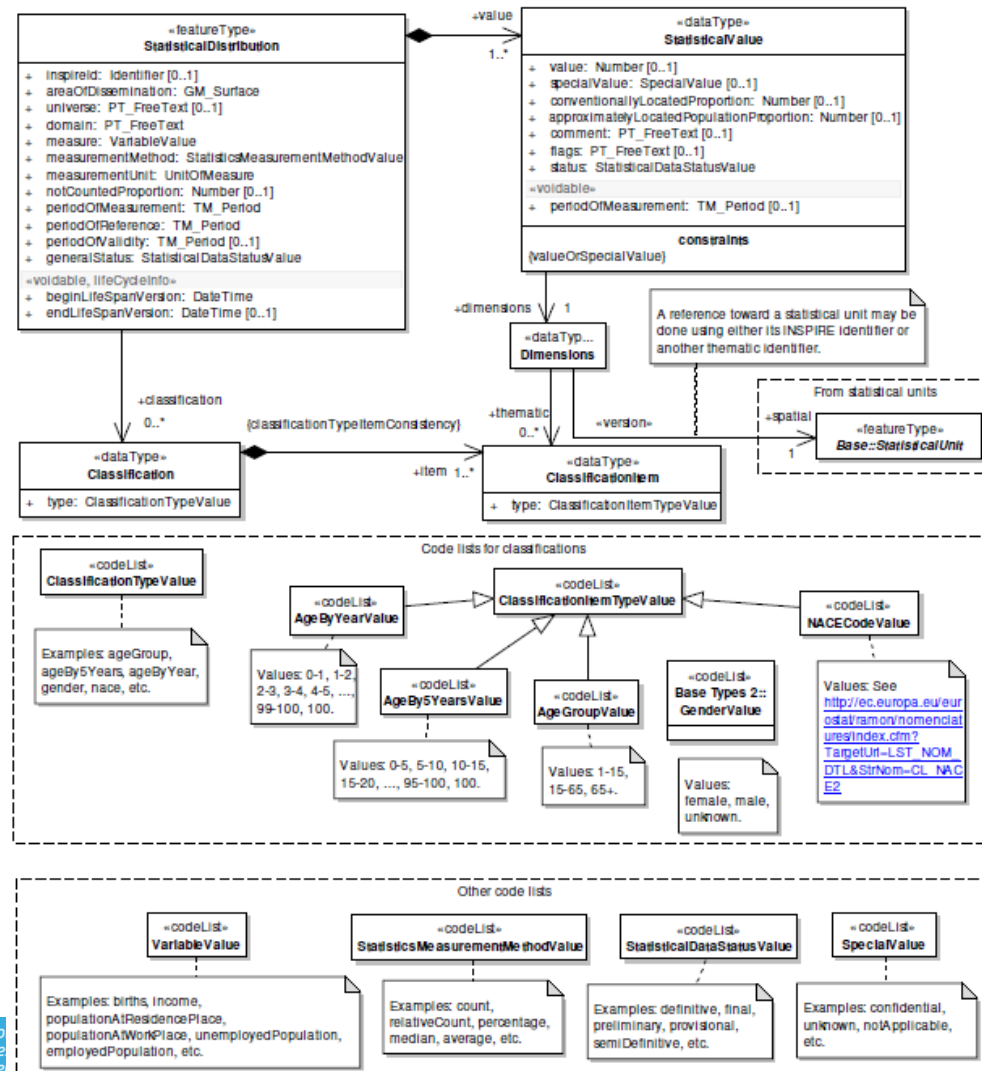
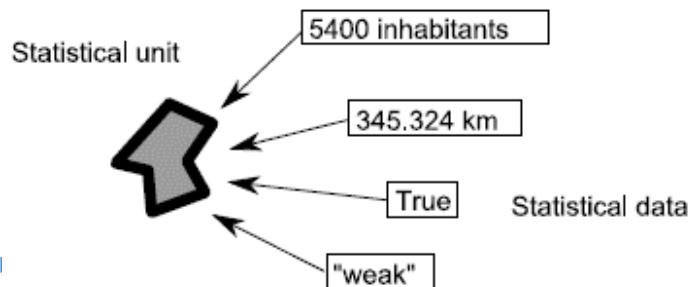
Dimensions proposed:

- 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



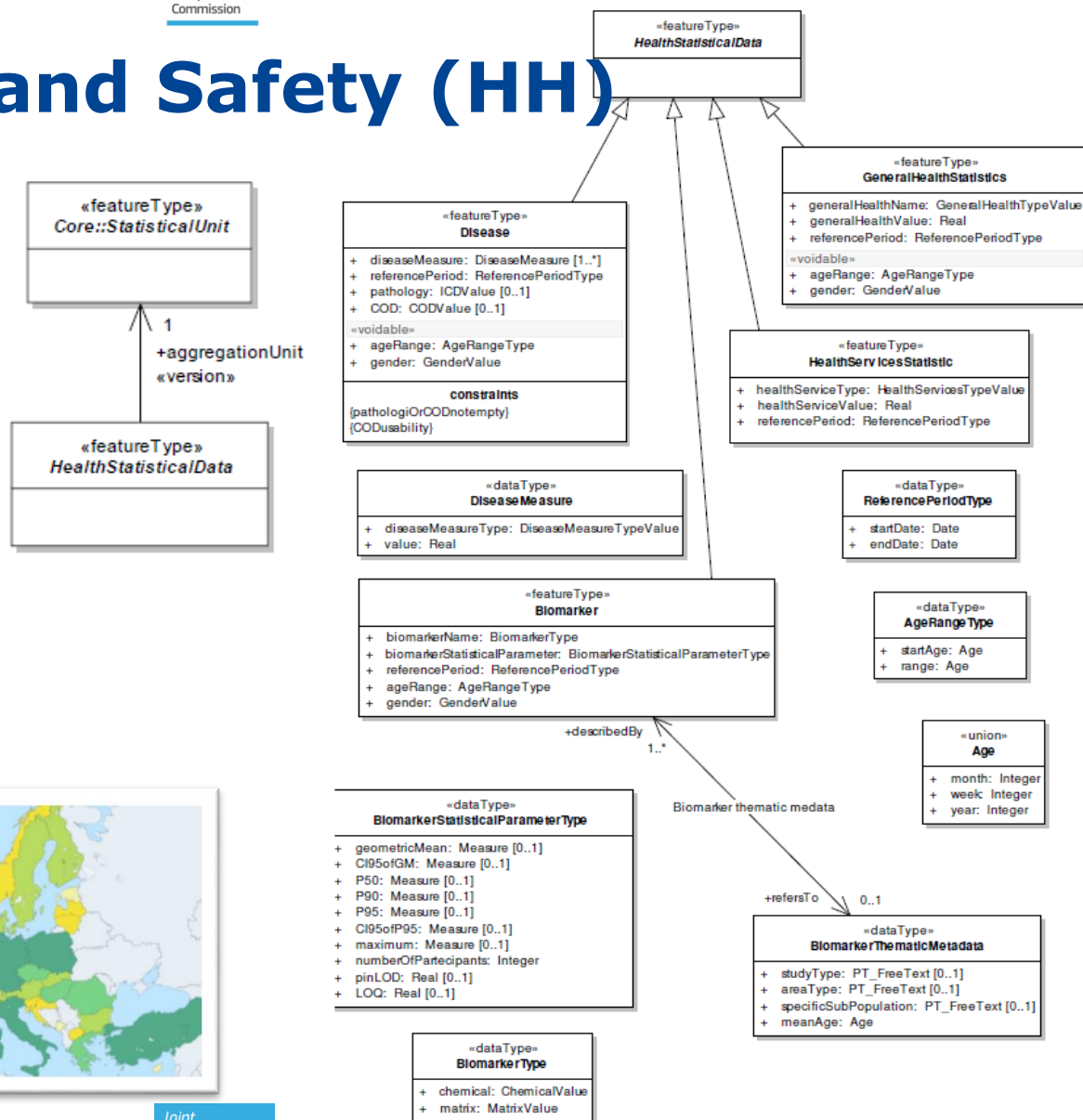
Population distribution (PD)

- 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

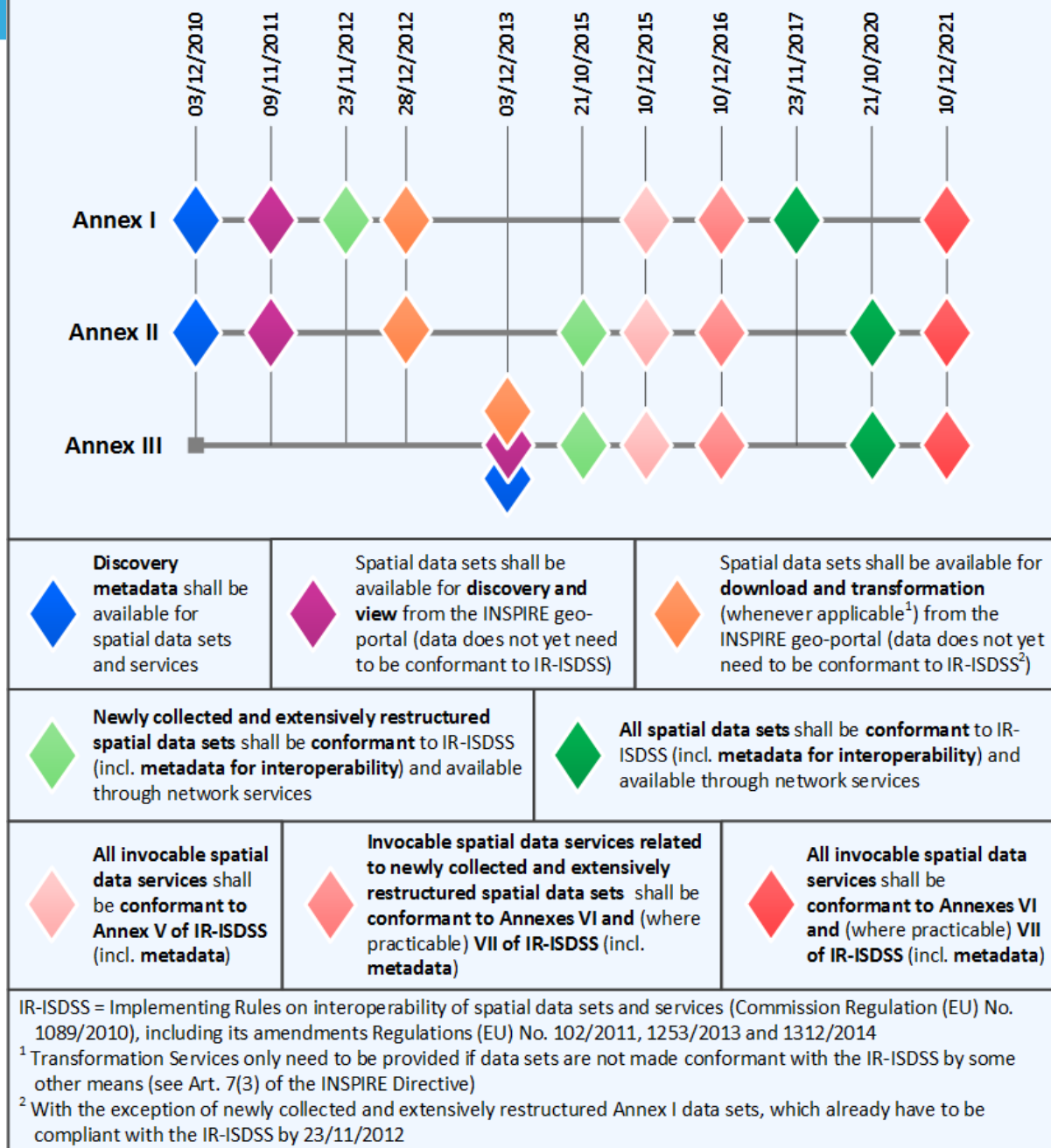


Implementation Roadmap

INSPIRE Requirements:

- metadata
- view services
- download services
- transformation services
- data interoperability

INSPIRE Implementation Roadmap



Data Availability – INSPIRE Geoportal

(17/05/2019)

Human health and safety

Def.: *Geographical distribution of dominance of pathologie...*



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

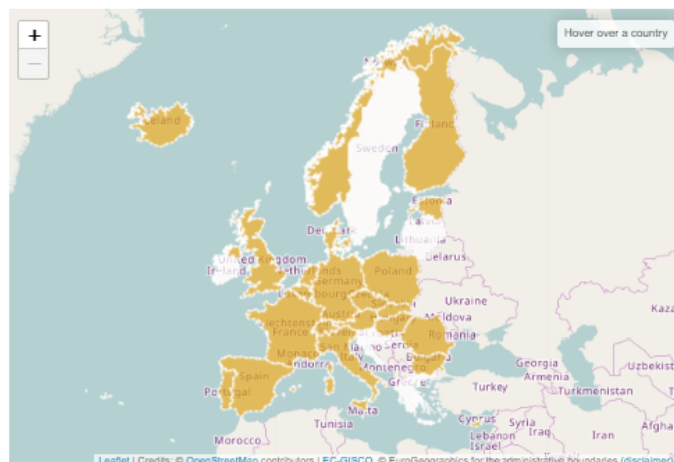
<http://inspire-geoportal.ec.europa.eu/>

Data Availability – INSPIRE Geoportal

(17/05/2019)



Data Sets - Population distribution — demography of Europe 




Show:




























































 Downloadable  Viewable

INSPIRE Geoportal Data Set Statistics

 **706**
Metadata records

 **160**
Downloadable Data Sets

Select a COUNTRY

 Austria	 60  26  12	 Finland	 3  0  0	 Latvia	 0  0  0	 Portugal	 16  0  0
 Belgium	 2  2  2	 France	 249  20  16	 Liechtenstein	 0  0  0	 Romania	 4  0  0
 Bulgaria	 2  0  0	 Germany	 283  86  279	 Lithuania	 0  0  0	 Slovakia	 4  0  0
 Croatia	 0  0  0	 Greece	 0  0  0	 Luxembourg	 2  2  2	 Slovenia	 0  0  0
 Cyprus	 1  1  0	 Hungary	 2  0  0	 Malta	 13  6  12	 Spain	 1  0  0
 Czech Republic	 1  0  1	 Iceland	 2  0  0	 Netherlands	 8  5  6	 Sweden	 0  0  0
 Denmark	 7  0  0	 Ireland	 0  0  0	 Norway	 4  0  0	 Switzerland	 2  0  0
 Estonia	 2  0  0	 Italy	 28  0  0	 Poland	 7  7  0	 United Kingdom	 9  5  0

<http://inspire-geoportal.ec.europa.eu/>

INSPIRE - Encodings

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.

- Flexibility/adaptability to any domain specific encoding
- The proposed default encoding for statistical data in INSPIRE data specifications is Geography Markup Language (GML).
- INSPIRE 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

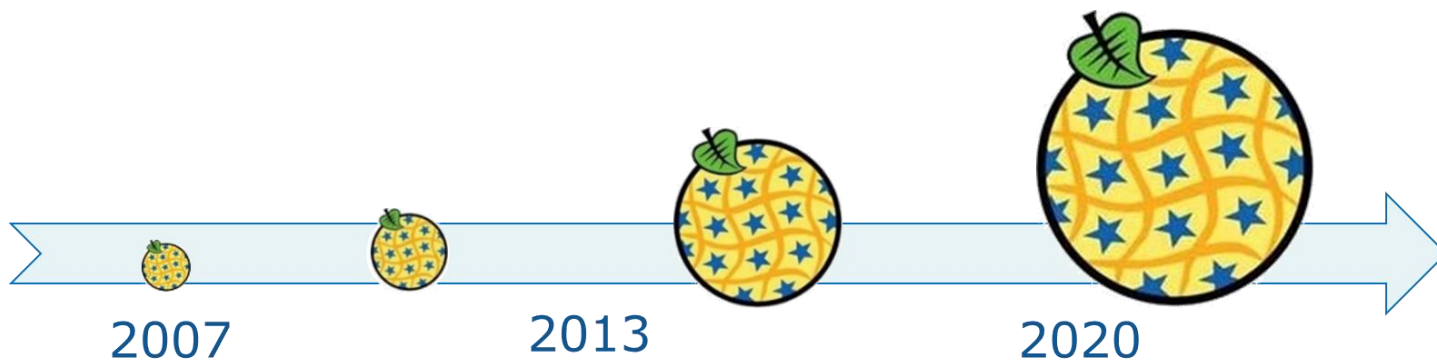
INSPIRE - Encodings

- 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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INSPIRE
CONFERENCE
2020



DUBROVNIK - CROATIA

University North | University of Dubrovnik

12-15 May 2020