EC action to better use official Member State’s data for pan-European data for the commission

Julien Gaffuri – Eurostat GISCO
Joint UN-GGIM: Europe – ESS – UNECE meeting on the integration of statistical and geospatial information
Luxembourg, 29/03/2019
GISCO role

• Answer needs of the EC+ for geographical information at EU/national/regional levels with:
  • **Provision of GIS reference data, services and software to support EC+ GIS analysts**
  • Support to cartographic and spatial analysis activities
  • **Coordination of commission-wide GI activities**
  • **Stimulation of the use of GIS to support commission activities**
  • **Support to Eurostat activities on the integration of statistical and geographical information**
Objective

• Fill the gap for data need on various themes for large scale data
• Based on MS data sources
  • No restriction to INSPIRE format/services
• For EC+ internal use

• COGI 4/10/2018 decision: Eurostat-GISCO action on Member states’ data combination for pan-European data for the commission
Main challenge
Need for pan-European datasets

- Need for central infrastructure
- Need for edge-matching
- Need for cross-country comparability « spatial interoperability »
Progressive approach

- **Step 1**: MS data sources inventory
- **Step 2**: MS data retrieval
- **Step 3**: Initial data combination
- **Step 4**: Incremental update and maintenance
Progressive approach

- **Step 1:** MS data sources inventory  
  *Output:* Data sources per MS and per theme

- **Step 2:** MS data retrieval  
  *Output:* Raw MS data

- **Step 3:** Initial data combination  
  *Output:* Pan-European datasets, by theme

- **Step 4:** Incremental update and maintenance  
  *Output:* Update processes
Step 1: MS data sources inventory

MS data sources inventory by theme

- Administrative units
- Addresses and postal codes zones
- Buildings and constructions
- Cadstral parcels
- Elevation
- Geographical names
- Hydrography
- Land cover - land use
- Transport - Air
- Transport - Cable
- Transport - Energy
- Transport - Rail
- Transport - Road
- Transport - Telecommunication
- Transport - Water

https://webgate.ec.europa.eu/fpfis/wikis/display/GISCO/MS+data+sources+inventory+by+theme
Step 2: MS data retrieval

- Automated download processes of raw MS data
- Based on operational download services (if any)
Step 3: Initial data combination

• **Union (projection, format, structure)**
• **Generalisation & Edge-matching**
## Railways

Data structure based on UN-GGIM:Europe core specs.

<table>
<thead>
<tr>
<th>Type</th>
<th>Attribute</th>
<th>Values / enumeration</th>
</tr>
</thead>
<tbody>
<tr>
<td>RailwayLink (priority 1)</td>
<td>Geometry</td>
<td>GM_Curve</td>
</tr>
<tr>
<td></td>
<td>Type</td>
<td>RailwayTypeValue</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* cogRailway</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* funicular</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* magneticLevitation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* metro</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* monorail</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* suspendedRail</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* train</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* tramway</td>
</tr>
<tr>
<td></td>
<td>numberOfTracks</td>
<td>Integer</td>
</tr>
<tr>
<td></td>
<td>verticalPosition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>TransEuropean Transport Network</td>
<td></td>
</tr>
<tr>
<td></td>
<td>electrified</td>
<td></td>
</tr>
<tr>
<td>RailwayLine (priority 1)</td>
<td>definition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>railwayLineCode</td>
<td></td>
</tr>
<tr>
<td></td>
<td>name</td>
<td></td>
</tr>
<tr>
<td>RailwayStation (priority 1)</td>
<td>Geometry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>geographicalName</td>
<td></td>
</tr>
<tr>
<td></td>
<td>stationCode</td>
<td></td>
</tr>
<tr>
<td></td>
<td>railwayUse</td>
<td></td>
</tr>
</tbody>
</table>
Administrative units (LAUs)
Building – Belgium
Edge-matching & Generalisation
Need for multi-resolution data

1:10k 1:1M
Step 4: Incremental update and maintenance

• Need for sustainable data provision and proper maintenance. Stop with one-shot project.
• Update:
  • From snapshot to incremental update model
  • Need for differential datasets
• Maintenance:
  • Follow progressive evolution/improvements of MS data
Next

ES FI FR HR HU IE IT LT LU LV MT NL ...

More themes?

More countries? Beyond EU?
Improved combination?

More scales?

Better updating?

Better licensing conditions?

Administrative units
Postal codes zones
Cadastral parcels
Elevation
Geographical names
Hydrography
Land cover - land use
Health care and education services
Transport - Air
Transport - Cable
Transport - Energy
Transport - Rail
Transport - Road
Transport - Telecommunication
Transport - Water

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k

1:10k
1:50k
1:100k
Next

- **On railways:**
  - Fill missing gaps
  - Routable and multi-scale
  - Integrate other data sources (RINF, UIC, OpenStreetMap, ERM, Eurostat stats, ERA-ERTMS, etc.)

- **Automation, automation, automation**

- **Extend thematic scope**
  - Health care and education services
  - Other transport networks
Next

- Governance
- Collaboration
- Resources
Thanks !