Supporting the Global Statistical Geospatial Framework

Experiences from Eurostat

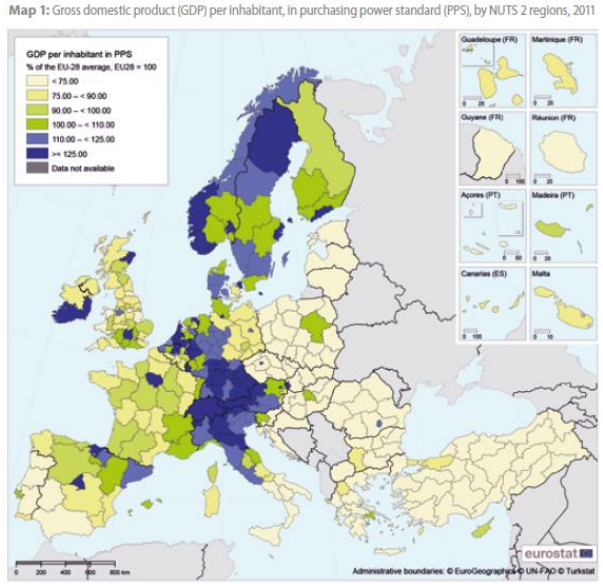
ESTAT – E4 – GISCO

Eurostat – statistical office of the EU

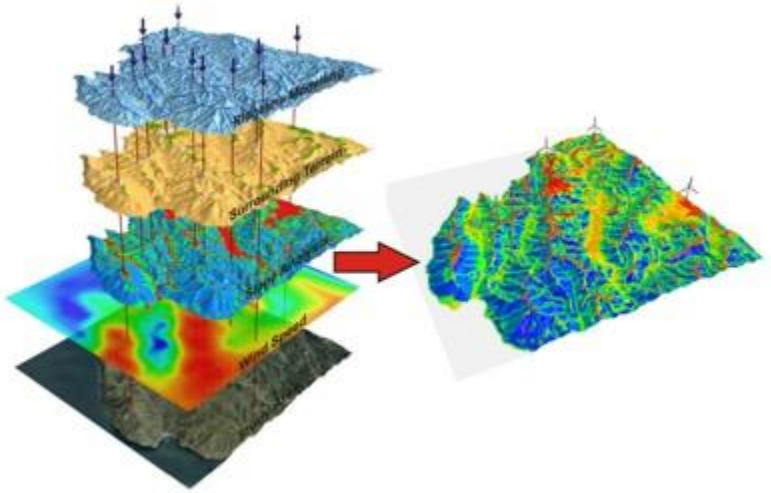
- Statistical office of the European Union and part of the European Commission
- Chairs the European Statistical System (ESS)
- Prepares legislation on European statistics
- ~ 800 staff, located in Luxembourg

GISCO - the **G**eographic **I**nformation **S**ystem of the **CO**mmission

visualise



analyse



localise

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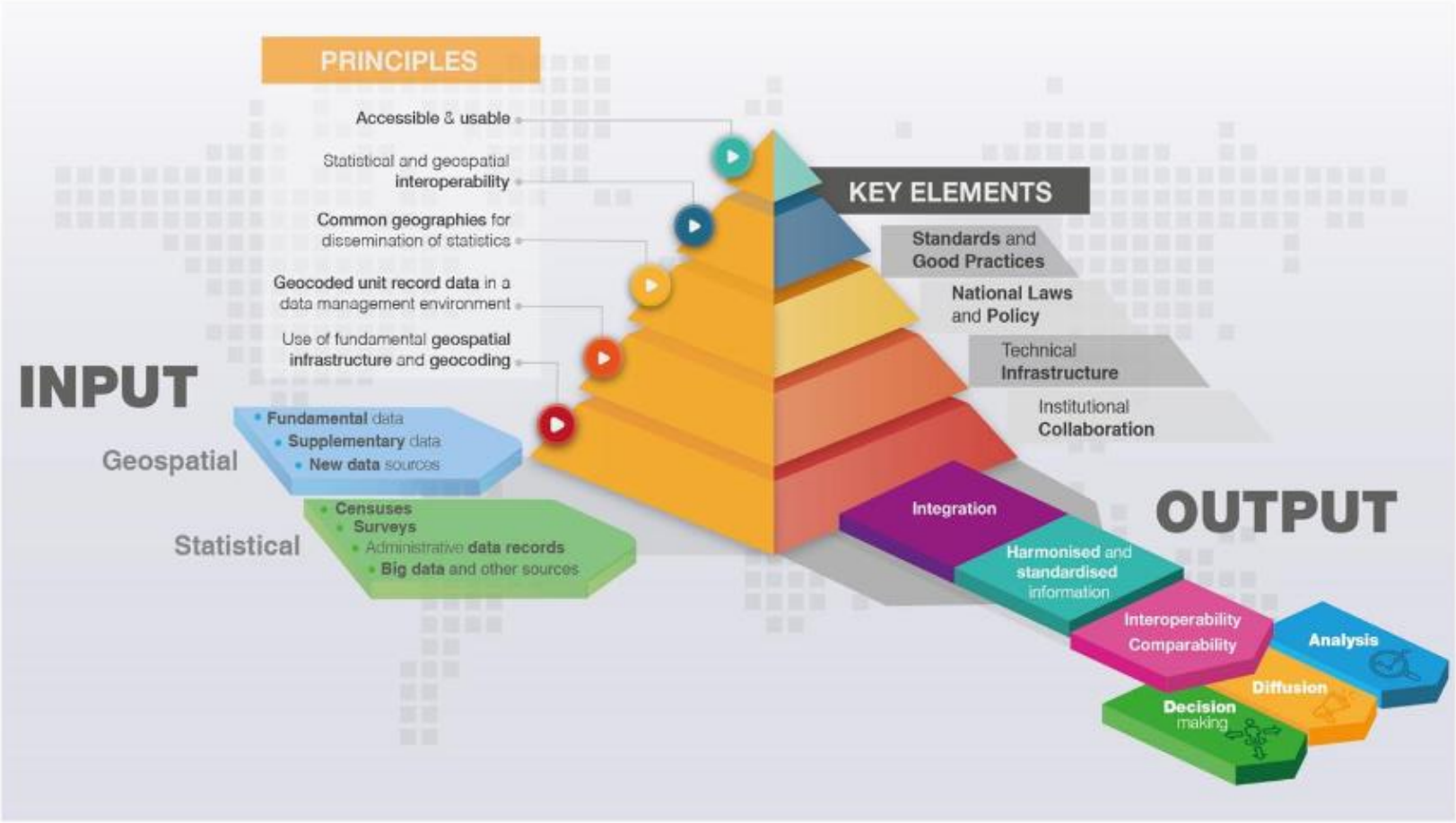
What is GISCO ? - triple role

"GISCO is a permanent service of Eurostat that answers the needs of Eurostat and the European Commission for geographical information at the level of the European Union (EU), its Member States and regions."

- Service provider for Eurostat
- Service provider for the EC (and the EU)
- Coordination and partnership with MS

Global Statistical Geospatial Framework



http://ggim.un.org/meetings/GGIM-committee/9th-Session/documents/The_GSGF.pdf

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Supporting instruments in the ESS

GEOSTAT projects (overarching issues)

GeoStat

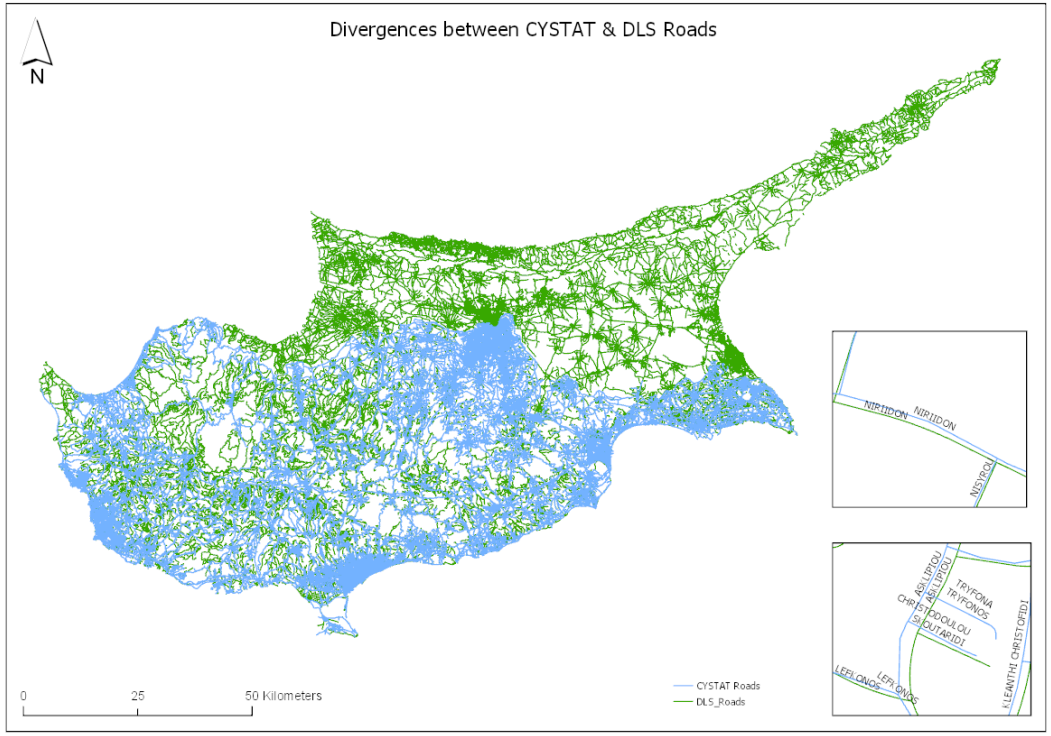
GEOS Grants (individual MS specific issues)

European Commission

Statistics Cyprus

Updating of the digitized road network and of the digitized enumeration blocks

- To improve the integration of geospatial and statistical information.
- To establish internal and external processes required for a continuous (semi) automated regular update of geospatial data for statistics especially under the aspect of unique national identifier systems.
- To adapt, develop and improve data collection and data processing.



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Statistics Cyprus

The ***results*** accomplished from this action are:

- The ***creation of the bases for successful integration of geographic information and statistics.*** This will facilitate the production of the required data items at the 1 km^2 grid level in accordance with the Commission Implementing Regulation (EU) 2018/1799.

- The ***updated database of the digital enumeration blocks*** that will be used during the 2021 Population Census for organizational purposes, as well as, the integration of the statistical data with the geospatial data of the enumeration blocks for further statistical analysis purposes (e.g. production of small area statistics).

- The development and integration of a geocoding infrastructure for statistical production processes based on address and dwelling registers using INSPIRE Annex I data.

Statistics Austria

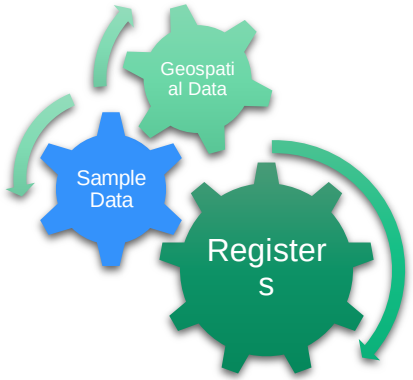
17 UN Sustainable Development Goals (SDGs)

=> Variety of statistical domains,

=> based on sample surveys
(e.g. poverty, health, education)

=> sufficient sample size for “leaving no one behind”?

=> Especially: spatial disaggregation, GIS applications?

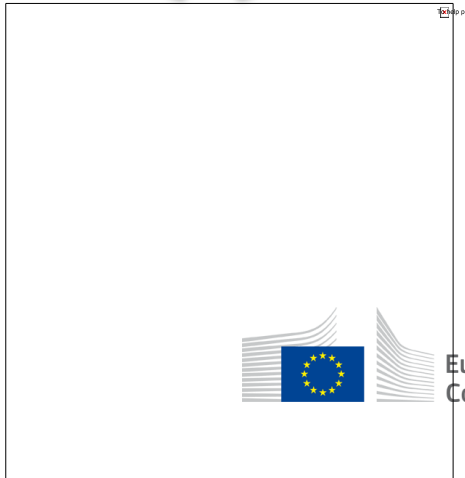


Borrowing Strength from Auxiliary Information

=> registers, geospatial information

=> Experts for each domain required?

Machine Learning as a Generalised Approach to Enhance Spatial Resolution of Sample Estimates?



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Statistics Austria

Feasibility for 5 national SDG-indicators

✓Poverty

- Below 60% of Median Household Income
  (At-Risk-Of-Poverty, 60% of median, AROP, based on EU-SILC)
- Europe 2020 target group (income, deprivation, work intensity)
  (At-Risk-Of-Poverty-or-social Exclusion, AROPE , based on EU-SILC)

✓Education

- Severe Material Deprivation
  (SMD, based on EU-SILC)
- Persons with educational activity in last 4 weeks
  (Lifelong Learning indicator from LFS)

✓Health

- Persons with subjectively bad or very bad health
  (derived from EU-SILC)

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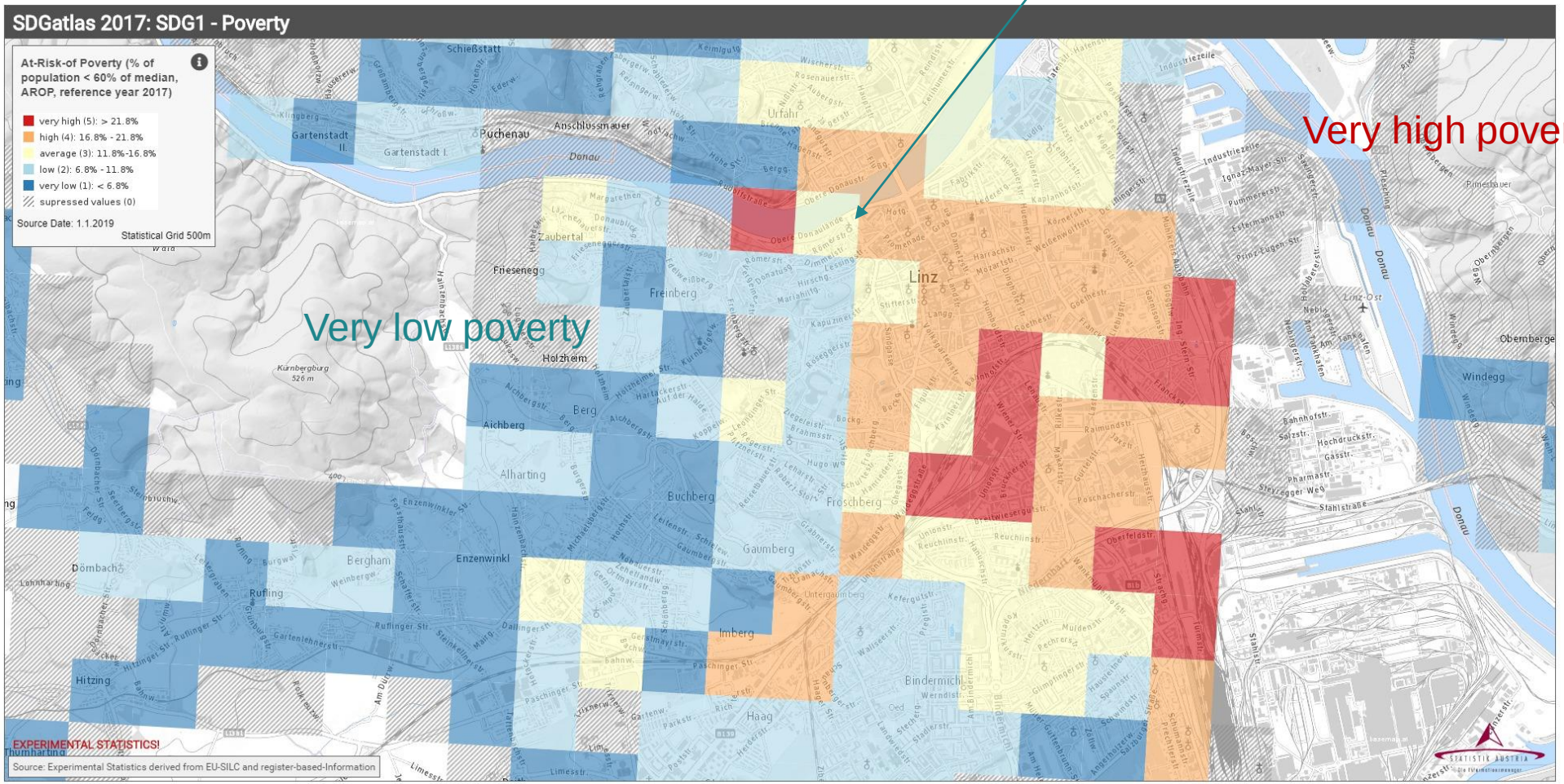

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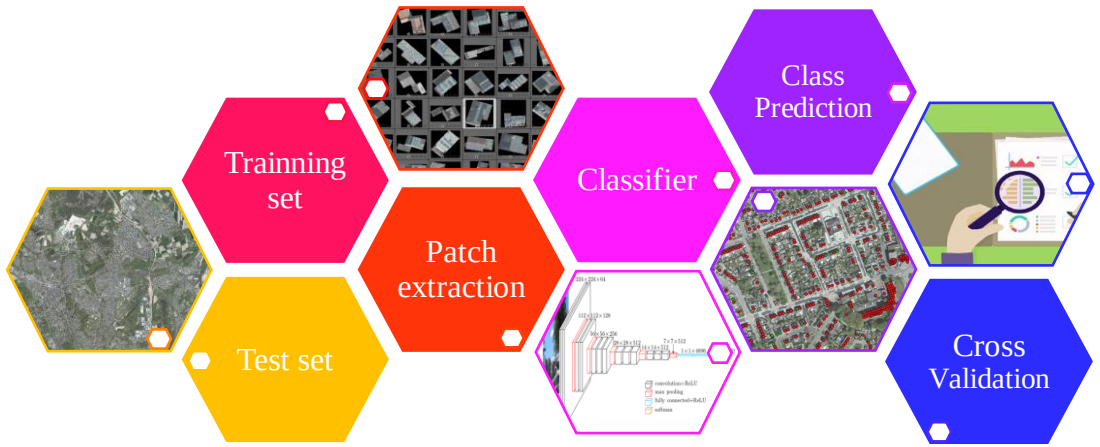
Statistics Netherlands

DEEPSOLARIS: Monitoring spatial sustainable development: (Semi-)Automated analysis of satellite and aerial images for energy transition and sustainable indicators".

Study objectives:

1. automate the process to extract the location of solar panels from aerial or satellite images.
2. Produce a map of solar panels along with statics on the number of solar panels



Outcomes:

- ❑ A trained machine learning algorithm which identify solar panels from aerial pictures.
- ❑ A map with the solar panel location for Flanders, North Rhine-Westphalia and South Limburg.
- ❑ Recommendations to harmonized method across EU members states

Statistisk sentralbyrå
Statistics Norway

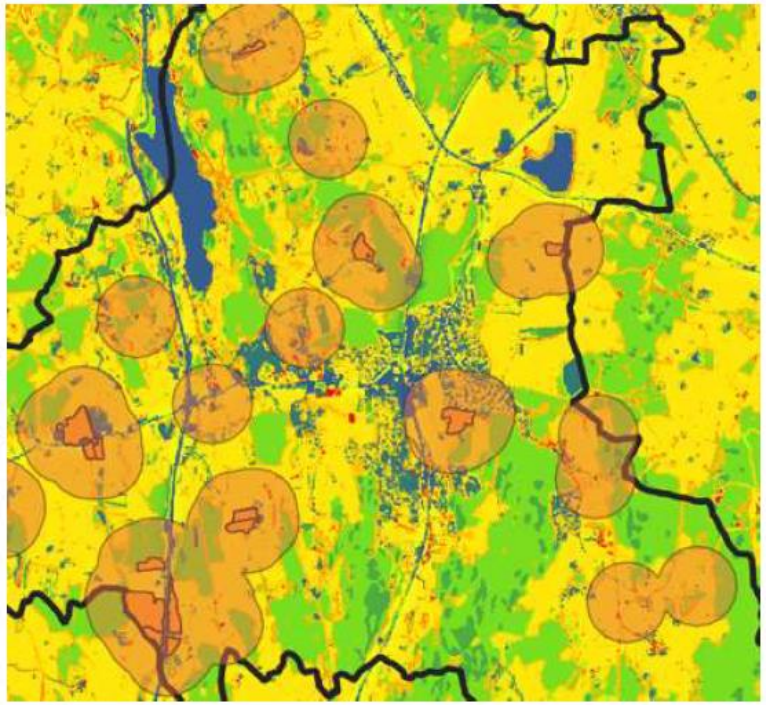
Statistics Norway

Spatial overlap analyses- wild bee pollinator habitat to crop locations

- Estimates of the monetary value

Table 1. Estimates of the monetary value provided by wild pollinators to production of crops in Ås municipality, Norway. Pollinator impact is a categorical classification based on a review of pollinator contributions to increased seed set (Klein et al. 2007). Pollination demand reflects the estimated loss in production from a total absence of wild pollinators (Remme et al. 2018). Total pollinator contribution reflects the market price of avoided production losses for Ås, based on the pollination demand and total volume for all crop types for this study area.

Crop name	Pollinator impact	Pollination demand (%)	Total area (kg/1000 m²)	Production	Price (NOK/ kg)	Total pollinator contribution (NOK)
Potatoes	Moderate	25	169	2102	6,05	727 875.01
Rapeseed	Great	65	866	446	11,92	1 374 121.78
Cabbage	Moderate	25	22	3789	5,92	124 530.11
Strawberries	Moderate	25	61	502	47,45	366 173.37
Vegetables	Great	65	58	2102	11,92	949 743.43
Carrots	Moderate	25	16	2627	8,38	86 168.28
Leeks and onions	Moderate	25	33	237	17,22	33 983.94
Fruit and berries	Great	65	79	275	47,36	672 456.71
Total						**4 335 052.63**



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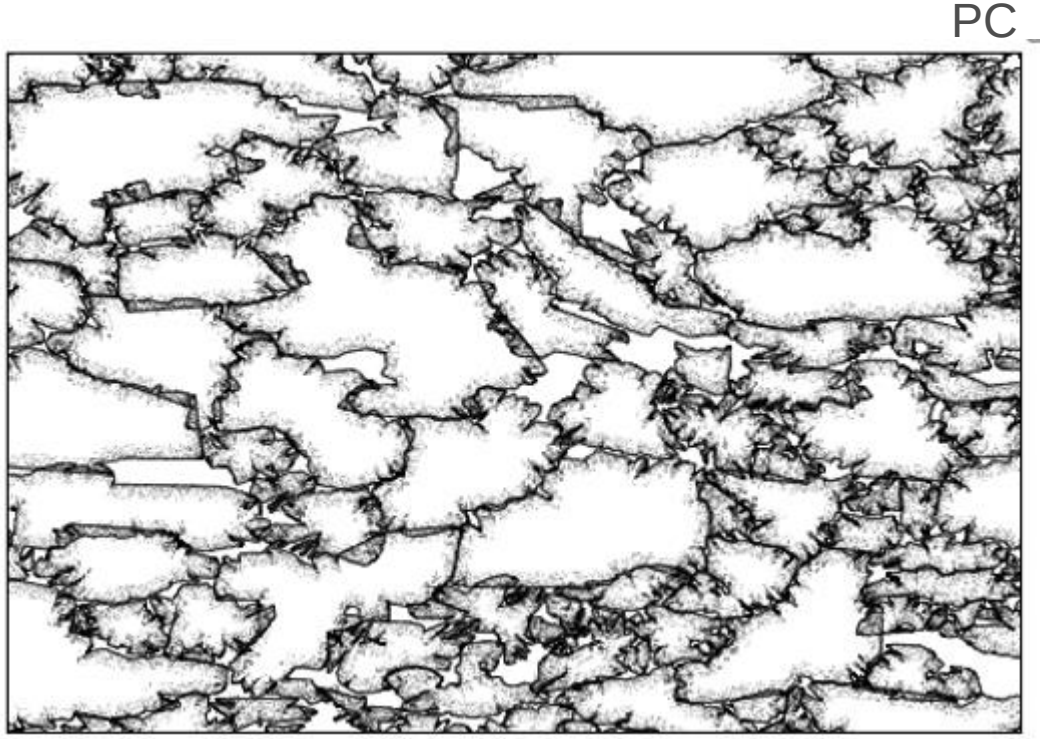
EC Geospatial Data Requirements (II)

- Buildings (BU),
- Cadastral Parcels (CP),
- Addresses (AD),
- Administrative units (AU),
- Statistical Units (SU),
- Transport Networks (TN),
- Land Parcel Information System (LPIS)
- Postal Codes (PC)
- Utility and governmental services (US)



Objective

- Provide a consolidated and consistent overview of Commission needs
- Set out cross-cutting and domain specific requirements of the European Commission for EU wide geospatial information from Member States
- To support to Sustainable Development and other EU policies.
- Seek support from Member States to obtain more and better quality data

General Requirements for data themes

- Unique and persistent identifier
- full geographic extent of the territory
- at the scale ~1: 5000-10.000
- update frequency (incremental) should be once a year or better
- INSPIRE mechanism of life-cycle attributes and versioning.

IN, AG , QA, DI

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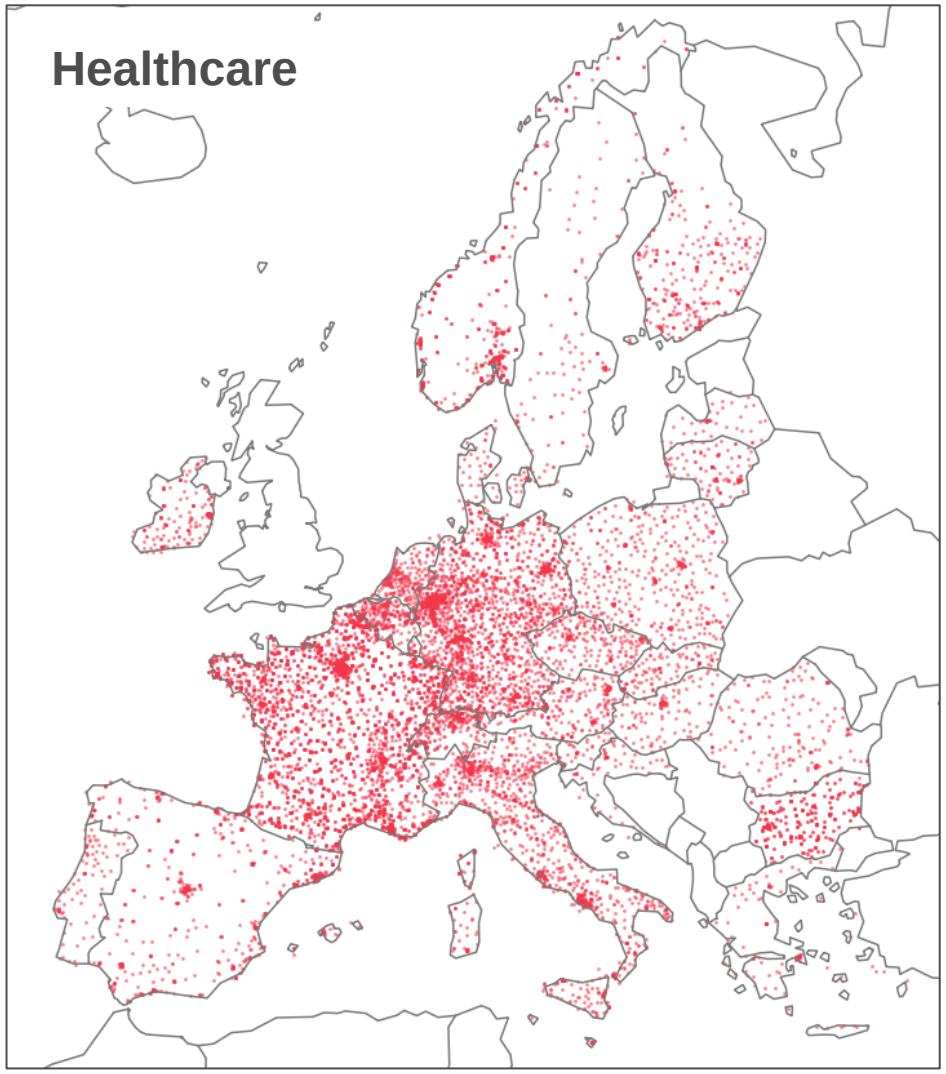
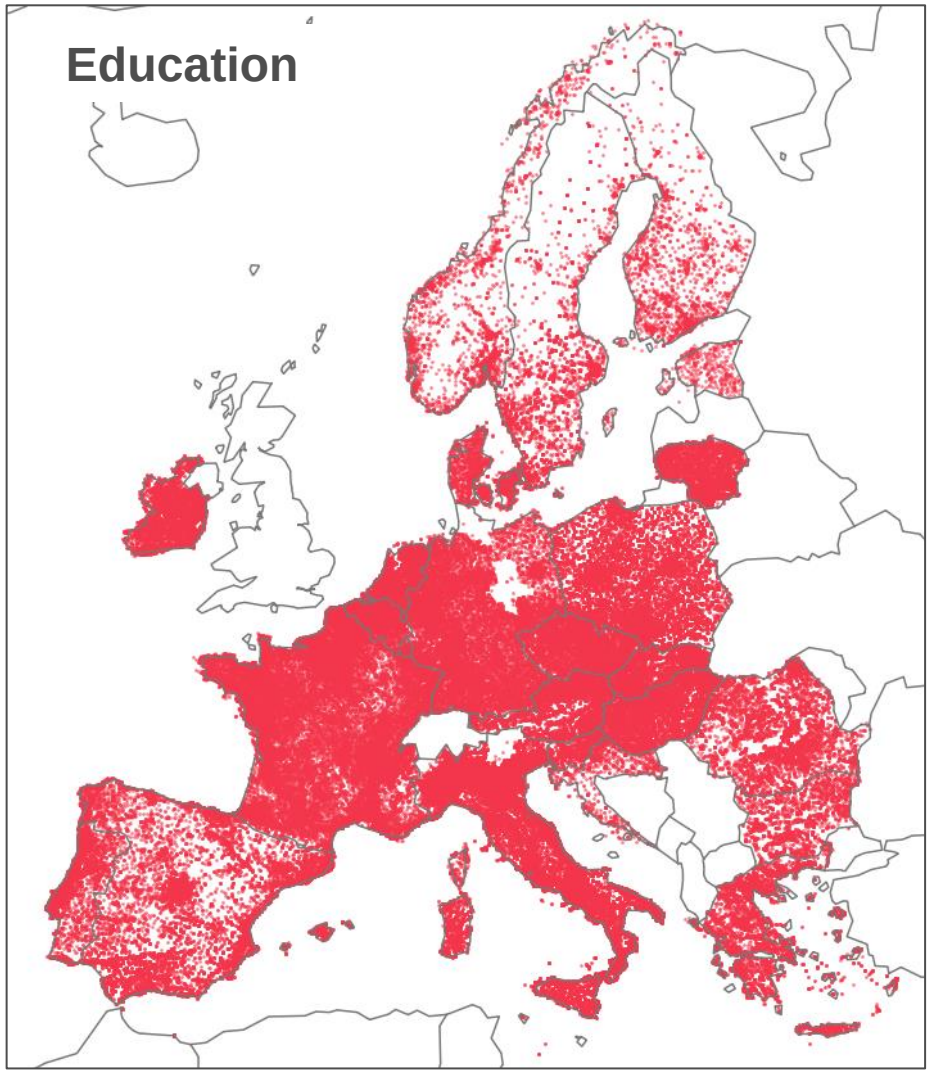
EC Geospatial Data – (I)





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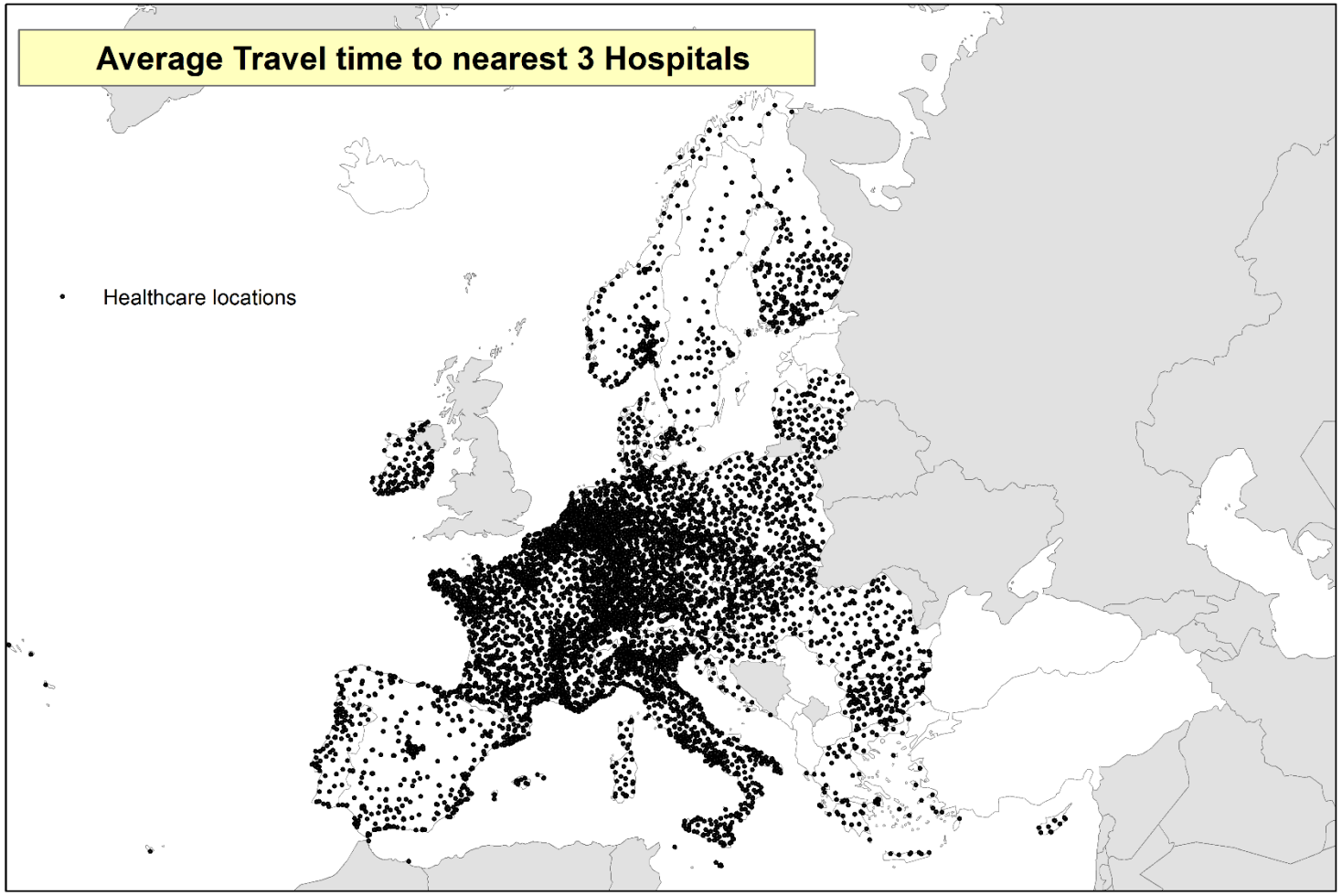
EC Geospatial Data – (III) – Health



preliminary data and first calculations – validation in progress

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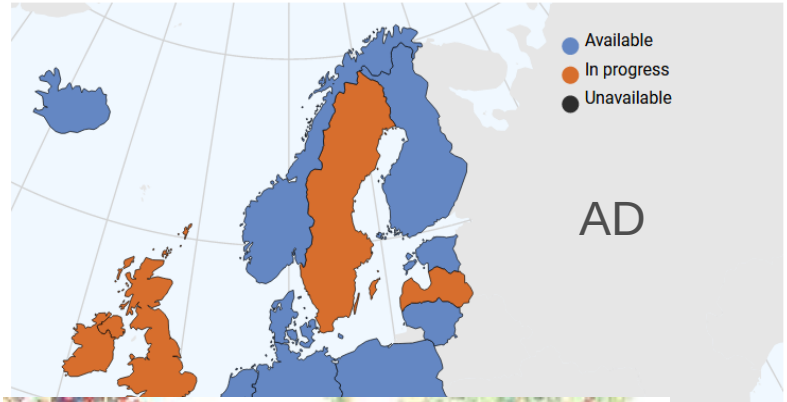
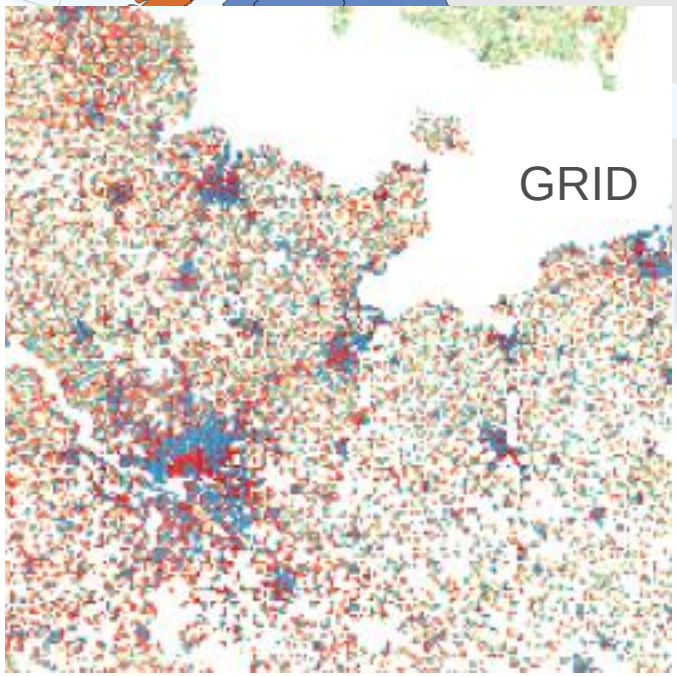
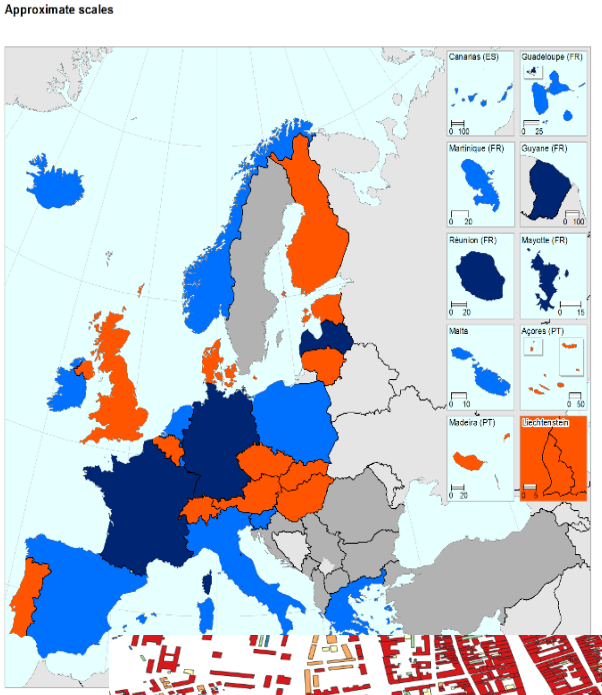
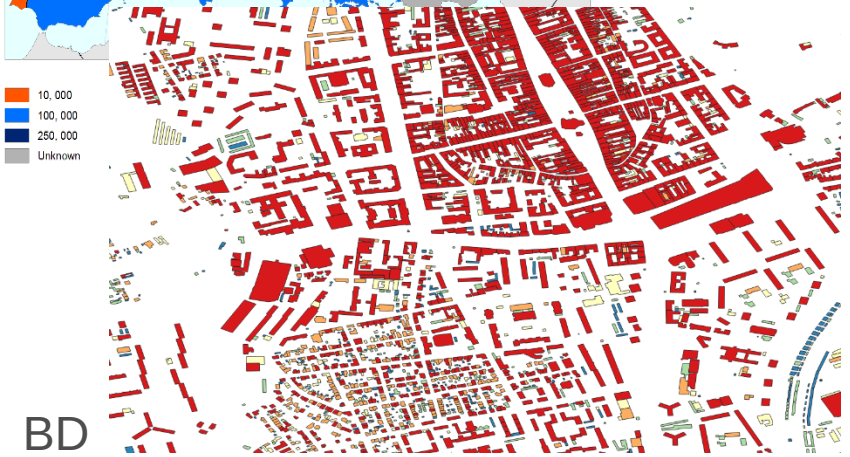
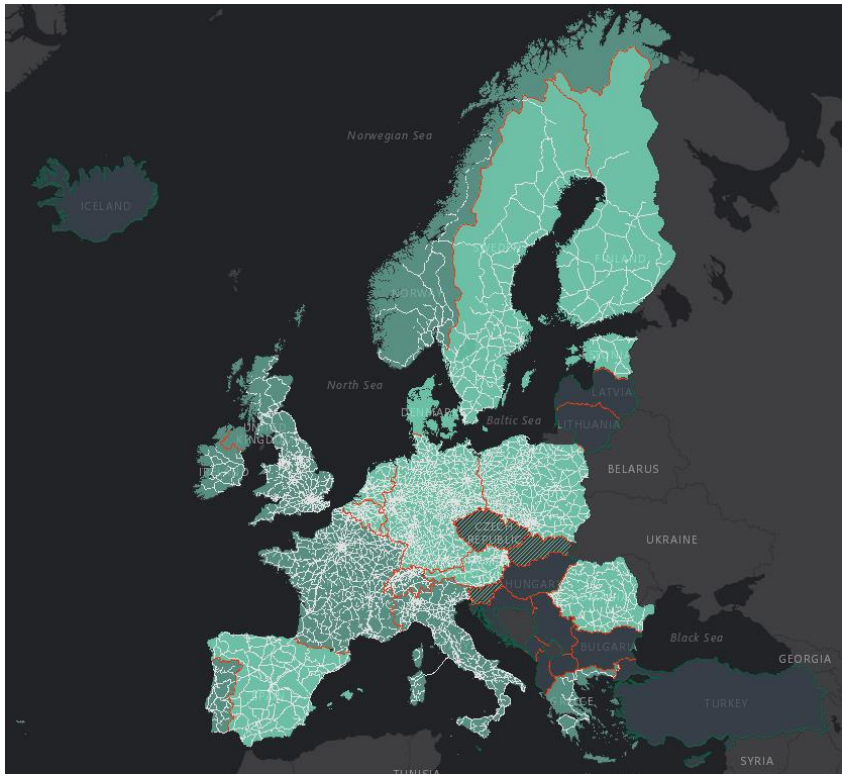
EC Geospatial Data – (II)











ESTAT Grant for Green Deal

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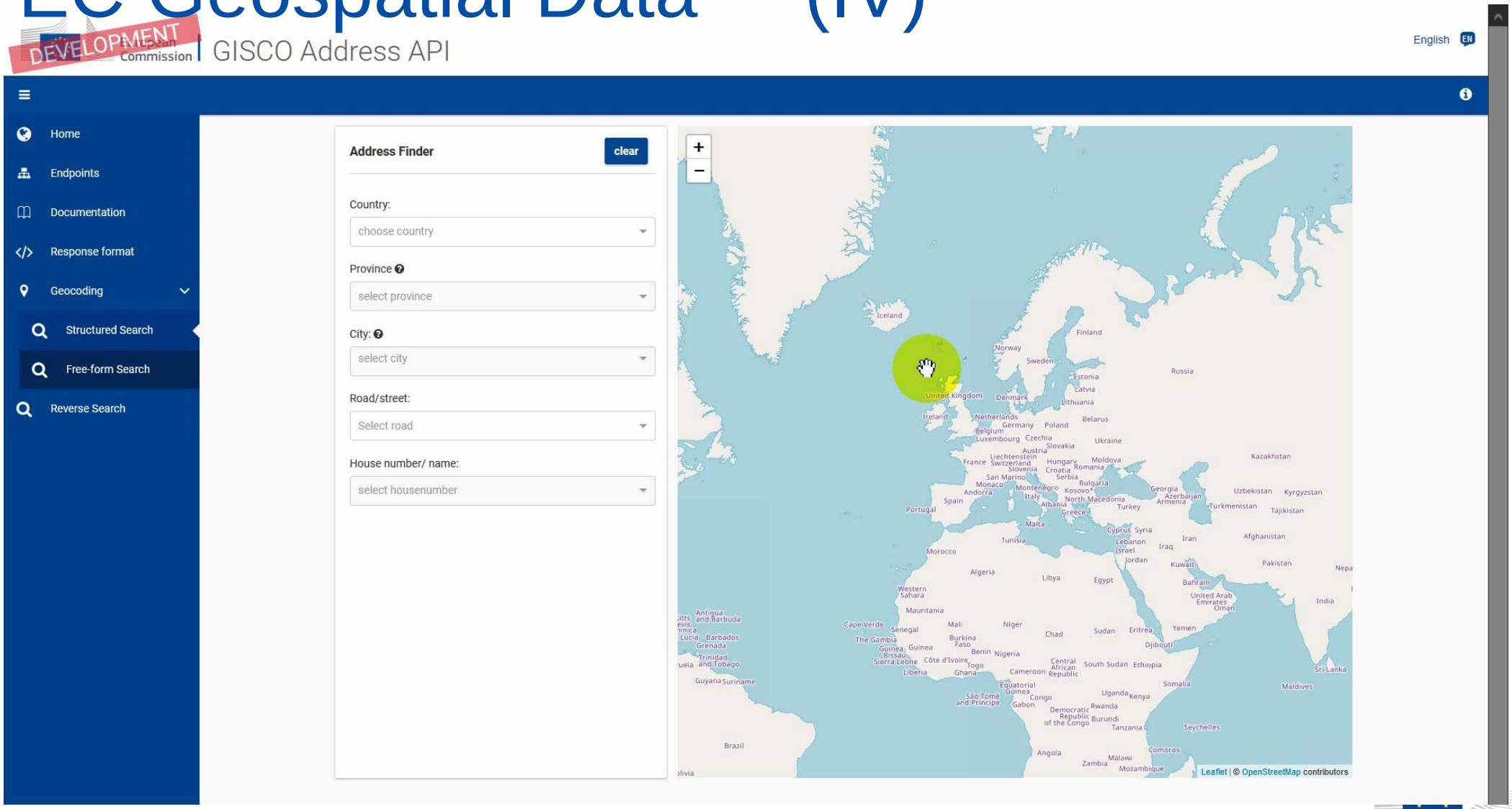
EC Geospatial Data – (IV)

QA

DEVELOPMENT

GISCO Address API



API + Graphical User Interface based on eUI

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How can YOU contribute?

- Enhance Quality beyond INSPIRE requirements: scale, thematic coverage, temporal coherence;
- Favourable Access and use conditions: open data, reasonable fees and rights to re-disseminate;
- Increase Reactivity: speed at which new data requirements from EU services can be met (INSPIRE/UNGGIM:Europe);
- Better Harmonisation: differences in the implementation and interpretation of INSPIRE make the compilation of pan-EU products difficult without further harmonisation work;
- Ensure Availability/Stability of download services in as-is/INSPIRE format. Please ensure communication if you see a white spot…

Thank you

Contact: estat-gisco@ec.europa.eu

European Commission