INSPIRE Community Forum
on Statistics and Health
Phase 2 - 2020 final report (Deliverable – D3)

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1. State of play in the thematic domain

1.1. Overview / list of relevant EU Projects/technology/SW activities

1.1.1. *European Forum for Geography and Statistics (EFGS)* – an organization comprising experts from National Statistical Institutes who work in the field of geostatistics. EFGS bonds European efforts in presenting spatially referenced statistics and organizes projects for development of harmonized pan-European datasets as well as fosters guidelines for creation and publishing georeferenced statistical data. More information: https://www.efgs.info/

1.1.2. *GEOSTAT projects:* The first GEOSTAT project was launched at the beginning of 2010 by Eurostat in cooperation with the European Forum for Geography and Statistics (EFGS), to promote grid-based statistics and more generally to work towards the integration of statistical and geospatial information in a common information infrastructure for the EU. Three stages of the GEOSTAT project have already been completed (GEOSTAT1 was carried out in three phases). GEOSTAT4 project is foreseen to be launched next year and its main focus is to prepare detailed guidelines for publishing statistics on grids in Europe. More information: https://www.efgs.info/geostat/

1.1.3. *Table Joining Services* – since 2013 Statistics Netherlands is working on implementing a Table Joining Service which would enable on-the-fly connection between statistical data (related to the *population distribution [demography]* (PD) theme) with geometry from the *statistical units* (SU) theme. The effort is aimed to solve the problem of the PD theme having no geometry assigned to statistical values. So far an Impact Analysis has been prepared and it is available for download from the Thematic Clusters platform. The activity is being followed and further information / results will be posted as they appear. The Table Joining Service (TJS) will also be one of the main scopes of work for the UN:GGIM Europe working group on data integration methods in the upcoming years. More information: https://inspire.ec.europa.eu/forum/discussion/view/119218/ogc-tjs-table-joining-service ; https://inspire.ec.europa.eu/forum/file/view/113290/impact-analysis-of-a-table-joining-service

1.1.4. *INSPIRE Good Practice: SDMX for Human Health and Population Distribution:* a work in progress being a result of a collaboration between Eurostat, Joint Research Centre and the community (represented by the Statistics and Health cluster facilitator). It is planned to integrate the SDMX and INSPIRE data infrastructures to enable fulfilment of INSPIRE requirements by publishing data in SDMX. The upcoming population and housing census 2021 is an opportunity to test this solution. More information: https://inspire.ec.europa.eu/forum/discussion/view/261536/inspire-good-practice-sdmx-for-human-health-and-population-distribution

1.1.5. *Demography Things: using API4INSPIRE to present population data:* a case for using the OGC SensorThings API created to model observation data for representing Population Distribution (demography) data. The topic was presented during the online INSPIRE Conference 2020 in June and during the INSPIRE Community Forum webinar on December 11th 2020. More information: https://datacoveeu.github.io/API4INSPIRE/,

https://www.linkedin.com/pulse/demographythings-further-creative-use-ogc-api-kathi-schleidt/

1.2. Overview / list of selected good / highly visited / highly replied Forum contributions

1.2.1. *European population grid from the GEOSTAT project* – initiated by the EFGS, the GEOSTAT project is a standout example of pan-European cooperation for purposes of creating georeferenced statistics. Various stages of the project produced datasets with population distribution data in a 1km^2 grid for a huge part of Europe's territory – data that is harmonized and uses the above mentioned ETRS89-LAEA grid. The second and final version of the dataset published in 2015 contains the harmonized population grid for 31 countries: 29 EU/EFTA countries plus Kosovo and Albania. More information: https://inspire.ec.europa.eu/forum/pages/view/5034/european-population-grid-from-the-geostat-project

1.2.2. *UN:GGIM Europe Core Spatial Data Theme Statistical Units (SU) Recommendation for Content* – a document prepared by UN:GGIM Europe and the community (represented by the Statistics and Health cluster facilitator). The Core Spatial Data Theme "Statistical Units" Recommendation for content includes a step wise approach for its adoption by the countries:

a) core recommendations, like including 1 Km Grid, NUTS and Urban Statistical units and some temporal attributes as core,

b) good practices, like recommend smaller grids and enumeration districts units

c) considerations for future, like the importance of a global grid, units harmonisation for the whole geographic Europe, better tracking of statistical units across time, correspondence between INSPIRE and Statistical classification.

More information: https://inspire.ec.europa.eu/forum/file/view/261580/core-spatial-data-theme-statistical-units-su-recommendation-for-content

1.2.3. *Discussion on the Statistical Units model implementation* – a discussion topic regarding the conceptual and technical details of the Statistical Units (SU) theme implementation. More information: https://inspire.ec.europa.eu/forum/discussion/view/224403/questions-about-uml-model-of-statistical-units

1.2.4. *Discussion on layer naming in the Population Distribution theme* – a discussion topic regarding the rules and experiences for layer naming conventions in the Population Distribution (demography) theme. More information: https://inspire.ec.europa.eu/forum/discussion/view/269148/layer-names-in-view-services-for-population-distribution

1.2.5. *Discussion on the Population Distribution model implementation* – a discussion topic regarding encoding the unit of measure in the Population Distribution (demography) theme. More information: https://inspire.ec.europa.eu/forum/discussion/view/269486/question-about-unitofmeasure

1.2.6. *Discussion on the Human Health and Safety model implementation* – a discussion topic regarding representing noise in the Human Health and Safety theme along with a relevant change in the Implementing rules. More information:

https://inspire.ec.europa.eu/forum/discussion/view/261192/envhealthdeterminantmeasure-how-to-express-the-type-of-noise-measure?offset=10#group-replies

1.2.7.*Discussion on referencing the European ETRS89-LAEA grid* – a discussion topic regarding referencing Population Distribution data to the European grid recommended by the Geographical Grid Systems theme and extended by the Statistical Unit theme. More information: https://inspire.ec.europa.eu/forum/discussion/view/267153/referencing-laea-km-grid

1.3. <u>Overview / list of relevant existing applications, services</u>

1.3.1. *Statistical Units INSPIRE compliant GML examples*:

1.3.1.1.   Statistical Units GML example: NTS 1 (2014), Poland – territorial units for statistical purposes, https://inspire.ec.europa.eu/forum/file/view/68036/statistical-units-gml-example-nts-1-2014-poland

1.3.1.2.   Statistical Units GML example: Statistical Grid, Poland – INSPIRE grid encoded in the SU model, https://inspire.ec.europa.eu/forum/file/view/68436/statistical-units-gml-example-statistical-grid-poland

1.3.1.3.   Census tracts in GML, Italy – census tract layers encoded in the SU model, https://inspire.ec.europa.eu/forum/file/view/73725/statistical-unit-vector-example-gml

1.3.1.4.   Vector statistical unit in GML, Germany – an example of vector SU encoding: https://inspire.ec.europa.eu/forum/file/view/188352/gml-example-vectorstatisticalunit-su-vector

1.3.2. *Population Distribution (Demography) INSPIRE compliant GML examples*:

1.3.2.1.   Population Distribution GML example: population in NTS level 1 (2014), Poland – population in NUTS macroregions, https://inspire.ec.europa.eu/forum/file/view/68456/population-distribution-gml-example-population-in-nts-level-1-2014-poland

1.3.2.2.   Population Distribution GML example: population in 1km x 1km grid (2011), Poland – population in the INSPIRE 1km x 1km grid: https://inspire.ec.europa.eu/forum/file/view/68483/population-distribution-gml-example-population-in-1km-x-1km-grid-2011-poland

1.3.2.3.   Example of GML file with the population distribution per statistical district in Brussels Region, Belgium – population data encoded in the PD model: https://inspire.ec.europa.eu/forum/file/view/101671/example-of-gml-file-with-the-population-distribution-per-statistical-district-in-brussels-region-belgium

1.3.2.4.   Population distribution in GML, Germany – population data encoded in the PD model: https://inspire.ec.europa.eu/forum/file/view/212543/gml-example-statisticaldistribution-pd

1.3.3. *Human Health and Safety INSPIRE compliant GML examples*:

1.3.3.1.   Noise GML file – an example providing noise data including a proposed fix for provision of the noise source: https://inspire.ec.europa.eu/forum/file/view/69621/example-noise-gml-file

1.4. Overview and assessment of the availability of thematic domain data sets in the EU Geoportal (as of December 31st 2020)

1.4.1. Statistical Units

The following table presents availability of datasets by country:

Country	Metadata records	Downloadable Data Sets	Viewable Data Sets
Austria	10	10	10
Belgium	5	5	5
Bulgaria	0	0	0
Switzerland	0	0	0
Cyprus	2	2	2
Czechia	2	0	1
Germany	109	69	88
Denmark	1	0	1
Estonia	3	2	2
Greece	0	0	0
Spain	4	0	0
Finland	3	0	1
France	294	51	20
Croatia	2	0	1
Hungary	4	0	0
Ireland	7	0	0
Iceland	4	0	0
Italy	123	0	0
Liechtenstein	2	1	1
Lithuania	1	1	1
Luxembourg	3	3	3
Latvia	11	3	4
Malta	4	4	4
Netherlands	10	8	10
Norway	3	3	0
Poland	13	13	1
Portugal	40	38	39
Romania	1	0	0
Sweden	1	1	1
Slovenia	1	1	1

Slovakia	8	0	0
TOTAL	**726**	**224**	**206**

1.4.2. Population distribution (demography)

The following table presents availability of datasets by country:

Country	Metadata records	Downloadable Data Sets	Viewable Data Sets
Austria	18	18	18
Belgium	2	2	2
Bulgaria	0	0	0
Switzerland	2	0	0
Cyprus	1	1	1
Czechia	1	0	1
Germany	80	1	0
Denmark	5	5	0
Estonia	2	0	0
Greece	0	0	0
Spain	1	0	0
Finland	3	0	3
France	253	38	10
Croatia	1	0	0
Hungary	1	0	0
Ireland	1	0	0
Iceland	2	0	0
Italy	20	0	0
Liechtenstein	0	0	0
Lithuania	1	1	1
Luxembourg	2	2	2
Latvia	2	1	1
Malta	23	23	23
Netherlands	7	7	7
Norway	3	3	0
Poland	2	2	0
Portugal	16	0	5
Romania	4	0	0

Sweden	3	3	3
Slovenia	0	0	0
Slovakia	2	0	0
TOTAL	467	107	77

1.4.3. Human Health and Safety

The following table presents availability of datasets by country:

Country	Metadata records	Downloadable Data Sets	Viewable Data Sets
Austria	12	12	12
Belgium	14	10	9
Bulgaria	92	43	43
Switzerland	8	0	0
Cyprus	0	0	0
Czechia	5	3	4
Germany	197	59	76
Denmark	16	12	12
Estonia	3	0	0
Greece	0	0	0
Spain	2	2	2
Finland	7	1	1
France	684	43	19
Croatia	10	0	5
Hungary	0	0	0
Ireland	13	0	0
Iceland	0	0	0
Italy	65	0	9
Liechtenstein	2	0	0
Lithuania	37	37	1
Luxembourg	16	12	14
Latvia	14	6	6
Malta	10	9	9
Netherlands	21	8	8
Norway	0	0	0
Poland	13	13	13

Portugal	17	1	13
Romania	0	0	0
Sweden	10	6	3
Slovenia	2	0	0
Slovakia	11	1	1
TOTAL	**1434**	**281**	**260**

2. Overview of the facilitator's activity

Amongst users participating in the Statistics and Health forum the strongest user group are members of National Statistical Institutes (NSIs) – producers of data related to themes: Statistical Units (SU), Population Distribution [Demography] (PD) and in some cases Human Health and Safety (HH). In most Member States, the NSIs are responsible for INSPIRE implementation of SU & PD themes. Aside from NSIs, people from European Commission agencies and related organizations and communities are present as well as independent public sector experts involved in development of the European SDI in the field of statistics.

The most popular tags are: TC-Statistics_Health, TC-PD, TC-SU, TC-Question, TC-Good-practice, TC-HH, TC-Encoding, TC-Implementation-example.

Relevant topics and activities in the field of Statistics & Health are posted regularly by the facilitator on the forum. Discussion topics created by other users are addressed by the facilitator directly or replied to by members of the community.

During the INSPIRE Helsinki 2019 technical event the Statistics & Health was only represented by delegates from Finland. The facilitator used the opportunity of being in Helsinki to organize a meeting at Statistics Finland to discuss various topics regarding geospatial aspects of statistical data, including INSPIRE implementation.
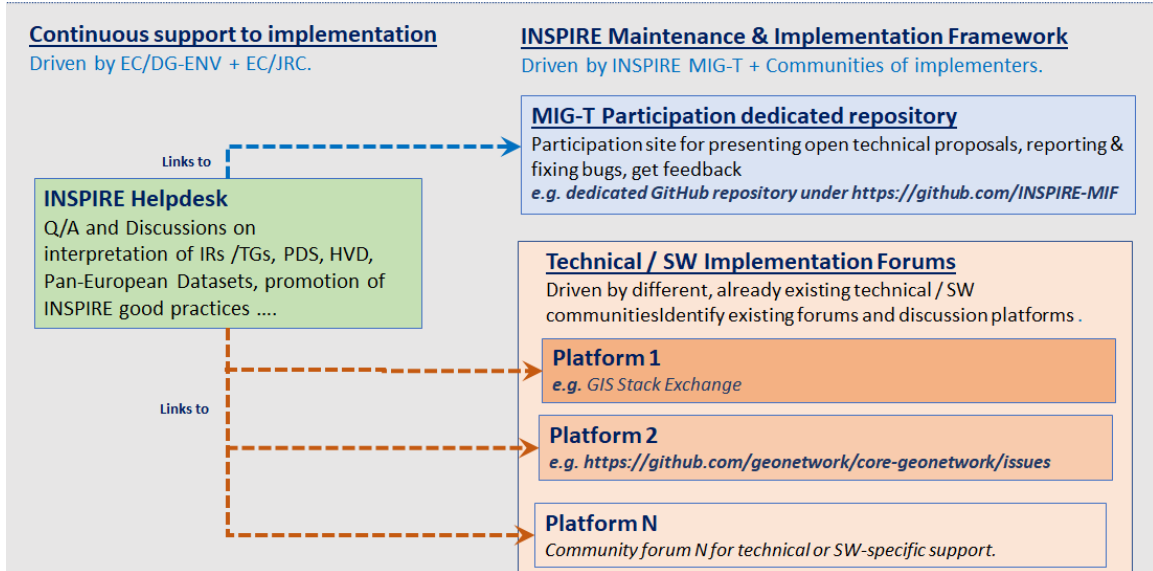
During the online INSPIRE Conference 2020 a Eurostat-curated and co-chaired by UN-GGIM: Europe session regarding statistics has been organized. The session covered 6 presentations on following topics:

- UNGGIM:Europe Work Group on Data Integration – Status and Outlook
- LEARN4SDGis–A Machine Learning based Poverty Mapping Exercise in Austria
- ELISE EU gazetteer evaluation project
- INSPIRE Implementation for Population Distribution and Human Health
- SDMX as a good practice for statistical data sharing under INSPIRE
- API4INSPIRE - an alternative API based approach for Spatial Population Data

On December 11th an INSPIRE Community Forum webinar was organized. During the webinar the facilitator gave a presentation on *Demography Things: using API4INSPIRE to present population data* followed by a demo of this solution done by Kathi Schleidt.

3. Facilitator's suggestions for improvements

The INSPIRE Community Forum will retire with the end of year 2020. The facilitators discussed the possible scenarios of the way forward after closing the forum and agreed on a migration scenario presented on the diagram below:

The activity will continue as the INSPIRE Helpdesk, which will work closely with the INSPIRE MIG-T. Technical issues will be addressed on the already existing communication platforms like GIS Stack Exchange or Github.

One recent issue from the Statistics and Health part of the INSPIRE Community Forum has been replicated to the INSPIRE Helpdesk on Github: https://github.com/INSPIRE-MIF/helpdesk/issues/2

4. Concluding remarks

The October 2020 deadline for providing harmonized INSPIRE datasets and services resulted in increased activity on the INSPIRE Community Forum in the second half of 2020. This shows that a support / helpdesk service is needed by the community of implementers.