

UN-GGIM: Europe Line of Work (LoW) Data Integration (DI)

Setting the scene:
Linked Data in the
European spatial data infrastructure – an operational view



UN-GGIM
EUROPE

UNITED NATIONS
COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

Markus Jobst, BEV Austria

Nathalie Delattre, IGN Belgium

Pier-Giorgio Zaccheddu & Sabine Afflerbach-Thom, BKG - Germany

07 November 2023



Linked Data in the European SDI - Agenda

- Introduction to UN-GGIM:Europe LoW DI and linked data
- Preparing data integration and the common data spaces using OGC API's
[Jari Reini, NLS and ISO subgroup on data spaces]
- Enabling data linkage on pseudonymised address data
[Justin McGurk, CSO Ireland and EFGS]
- A pragmatic example for Linked Data: the Kadaster Knowledge Graph
[Lexi Rowland, Kadaster NL]
- Q&A / SLIDO Session
- Resume

Join at
slido.com
#UNGGIME-2023-7

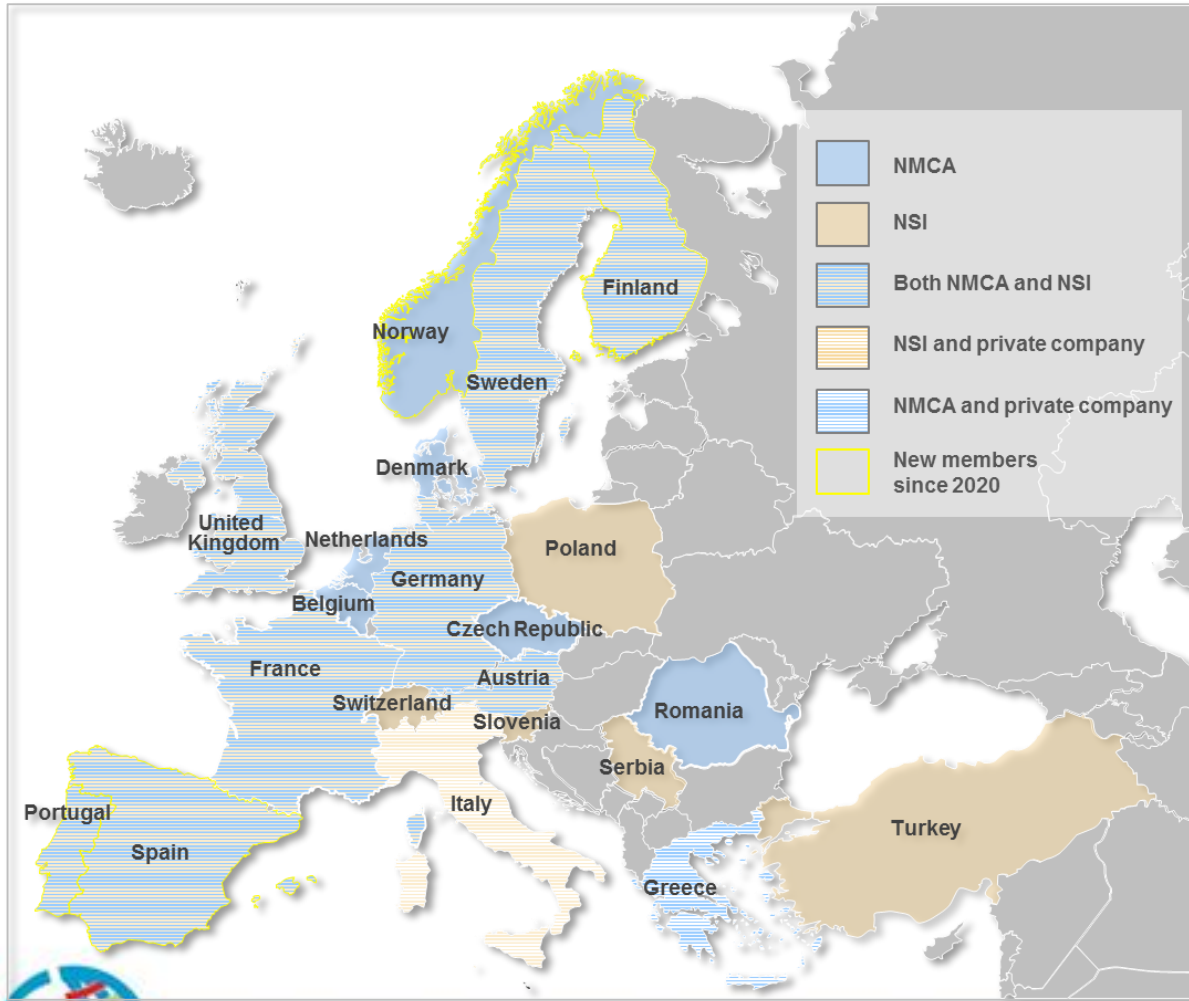


UN-GGIM: EUROPE

UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Working Group on Data Integration – Who are we?



- **25-30 members from Member States** affiliated to geospatial and statistical agencies
- **Private companies**
- **Observer organisations**, like Eurostat, EC Joint Research Center (JRC), European Environment Agency (EEA), University Bonn



UN-GGIM: EUROPE

UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Working Group on Data Integration → Line of Work DI & SDG

Integrated Geospatial Information Framework

- Activity lead – United Kingdom. ExCom lead – Sweden

Global Geodetic Reference Frames

- Activity lead – Belgium. ExCom lead – Germany

Data Integration

- Activity Lead – Germany Belgium, Austria. ExCom lead – Germany

Sustainable Development Goals

- Activity lead – Germany, Portugal. ExCom lead – Portugal

Data Strategy and Policy

- Activity lead – Poland. ExCom lead – Slovenia

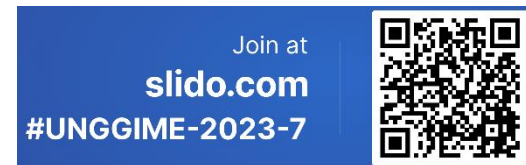


Line of Work ,Data Integration' – Webinar work plan 2023

© CC BY-SA



- To promote and conduct **webinars on specific topics** relevant data integration
- Webinar (2023-03) – Data integration in Europe – A perspective on challenges, findings, added value and cost savings in the EU context
- Webinar (2023-06) – The way towards a Geospatial Knowledge Infrastructure
- Webinar (2023-11) – Linked Data in the European spatial data infrastructure – an operational view
- Data Integration Webinar Series 2023
<https://un-ggim-europe.org/working-groups/working-group-data-integration/#>



UN-GGIM: EUROPE

UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Data Integration Methods – Key recommendations

- Define and implement valid **Persistent Identifier (PID)**
- Have the **European political program** and the **European Green deal** and its impact on the further data integration methods in mind
- Be aware of developments like common **Data Spaces**
- Develop and implement **standardized Open APIs** for a smart geospatial data provision
- Agree upon **common definitions** and enforcement of **fundamental geographies** and **linked data**
- Make geospatial and statistical data interoperable and of **good quality**
- Develop and implement sustainable and **automated data integration processes**
- Invest resources and capacity building into a cross-domain ‘**Geospatial knowledge infrastructure (GKI)**’
- **Modernize National Spatial Data Infrastructures** towards GKIs



[Published in November 2021](#)



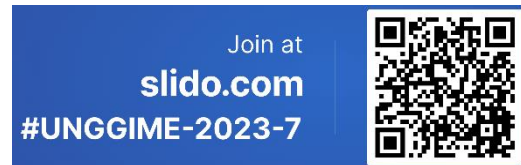
UN-GGIM: EUROPE

UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Linked Data in the European SDI - Agenda

- Introduction to UN-GGIM:Europe LoW DI and linked data
- Preparing data integration and the common data spaces using OGC API's
[Jari Reini, NLS and ISO subgroup on data spaces]
- Enabling data linkage on pseudonymised address data
[Justin McGurk, CSO Ireland and EFGS]
- A pragmatic example for Linked Data: the Kadaster Knowledge Graph
[Lexi Rowland, Kadaster NL]
- Q&A / SLIDO Session
- Resume



UN-GGIM: EUROPE

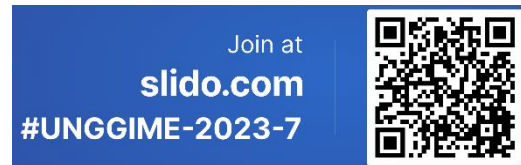
UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Working Group on Data Integration

Linked Data in the European SDI

- **Preparing data integration and the common data spaces using OGC API's**
[Jari Reini, NLS and ISO subgroup on data spaces]
- This presentation reveals the use of open standards with RESTful principles to deliver data for common European data spaces.



UN-GGIM: EUROPE

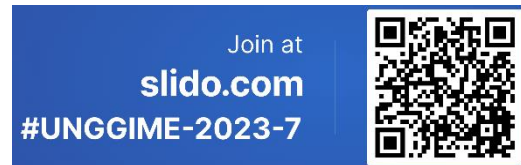
UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Working Group on Data Integration

Linked Data in the European SDI

- **Enabling data linkage on pseudonymised address data**
[Justin McGurk, CSO Ireland and EFGS]
- Using persistent identifiers and supporting data linkages are main requirements for common data spaces. This talk highlights experiences with establishing linked data and spatial analysis even with protected identifiers and pseudonymised georeferences.



UN-GGIM: EUROPE

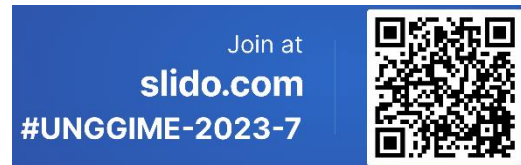
UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Working Group on Data Integration

Linked Data in the European SDI

- **A pragmatic example for Linked Data: the Kadaster Knowledge Graph**
[Lexi Rowland, Kadaster NL]
- A rich collection and increasing availability of fundamental geospatial data themes lead to **enhanced linking of the semantics** as well as data down to the feature level across data spaces and therefore creates a **geospatial knowledge infrastructure**. This presentation shares experiences and highlights the most important methods by example of the **Kadaster Knowledge Graph**.



UN-GGIM: EUROPE

UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Working Group on Data Integration

Linked Data in the European SDI

- Questions – Answers – Discussion
- We will use Sli.Do (slido.com) for questions and comments
- Please start the question with the **name of the speaker** so we know who to address the question to

Join at
slido.com
#UNGGIME-2023-7



UN-GGIM: EUROPE

UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Working Group on Data Integration – Linked Data in European SDI

References

- Best Practices for Publishing Linked Data <https://www.w3.org/TR/ld-bp/>
- NL Kataster Knowledge Graph <https://data.labs.kadaster.nl/dst/kkg>
- and https://labs.kadaster.nl/thema/Knowledge_graph
- Trustworthy Artificial Intelligence https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/excellence-and-trust-artificial-intelligence_en
- Real-time linked data spaces <https://dataspaces.info/common-european-data-spaces/>
- SEMIC definition of data space <https://joinup.ec.europa.eu/collection/semic-support-centre/data-spaces>
- International Dataspace Association <https://internationaldataspaces.org/>
- Our common data space EU <https://ourcommondataspace.eu/>
- Europeana Linked Data Taskforce <https://pro.europeana.eu/project/linked-data-task-force>
- List of ontologies https://www.w3.org/wiki/Lists_of_ontologies
- [European Forum for Geography and Statistics \(EFGS\)](#)
- [GSGF Europe](#)
- [UN-GGIM Europe – Working Group on Data integration](#)



„Linked Data“ – next steps

- To **evaluate the outcome** of the webinar → **evaluation report**
- To highlight **gaps** and **requirements** of Linked Data issues worth to be tackled by UN-GGIM: Europe in the future
- To share experiences, requirements and knowledge to support common data spaces
- To use synergies and establish a substantial and fruitful cooperations (e.g. with UNECE) and enhance **capacity building** and experience exchange
- To **strengthen the link** to the global initiatives on Data Integration, Linked Data and Geospatial Knowledge Infrastructures



Line of Work ,Data Integration' – Main contacts

Working Group Lead / Chair:

Pier-Giorgio Zaccheddu, Germany

Federal Agency for Cartography and Geodesy (BKG)

pier-giorgio.zaccheddu@bkg.bund.de

Sabine Afflerbach-Thom, Germany

Federal Agency for Cartography and Geodesy (BKG)

sabine.afflerbach-thom@bkg.bund.de

Working Group Leads / Co-Chairs:

Nathalie Delattre, nathalie.delattre@ngi.be

National Geographic Institute, Belgium

Markus Jobst, markus.jobst@bev.gv.at

Federal Office of Metrology and Surveying, Austria



UN-GGIM: EUROPE

UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT

