Deep dive into the OME2 HVLSP production process

Noémie Grémeaux (IGN France)

Co-funded by the European Union

Digital Europe Programme
Grant Agreement No 101100625

Contents

Co-funded by the European Union

Digital Europe Programme
Grant Agreement No 101100625

HVLSP production process overview

Co-funded by the European Union

Digital Europe Programme
Grant Agreement No 101100625

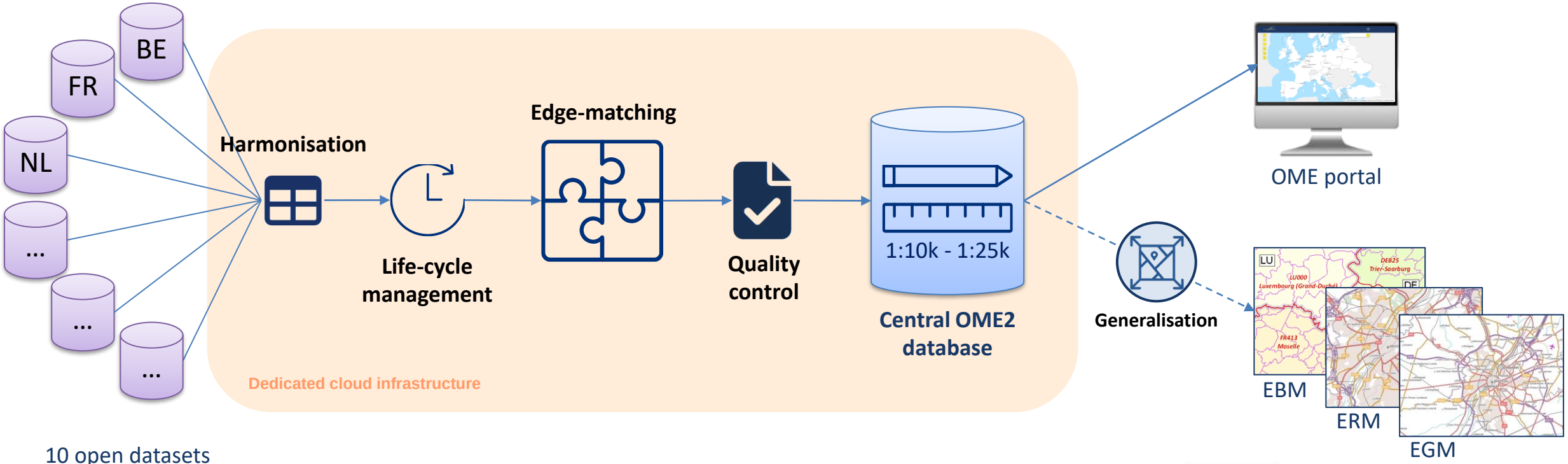
Objectives

To set up a workflow to create and maintain:

- A **central pan-European** high-value large-scale prototype (**HVLSP**)
- **3 themes**:
  - Administrative units (AU)
  - Transport network (TN)
  - Hydrography (HY)
- **10 countries** by 2025 (to be extended afterwards)
- Common **data model**
- Geometrical and topological **consistency across international boundaries**
- **Life-cycle management** (from the creation of the database)

Digital Europe Programme
Grant Agreement No 101100625

Future production process



10 open datasets provided by national producers (INSPIRE or national data model)

Co-funded by the European Union

Digital Europe Programme
Grant Agreement No 101100625

The OME2 approach

- **Centralised process**: implementation, maintenance & production are handled by the project
- **Minimal additional workload** for national producers
- **Re-use results** from previous projects
- A **technical** and **practical** approach to harmonisation:
  - Iterative approach taking into account feedback from users
  - Technical (not political) solutions
  - Highly automated

Co-funded by the European Union

Digital Europe Programme
Grant Agreement No 101100625

Progress since January 2023

Co-funded by the European Union

Digital Europe Programme
Grant Agreement No 101100625

2023 objectives

By the end of January 2024, **first version of the HVLSP**:

- 3 countries: BE, FR, NL
- 2 themes: AU and TN
- < 15% errors on edge-matching on international boundaries

Co-funded by the European Union

Digital Europe Programme
Grant Agreement No 101100625

Challenge #1 – Common data model

UN-GGIM: Europe
United Nations Committee of Experts on Global Geospatial Information Management

eurogeographics
EBM ERM EGM

ELF EUROPEAN LOCATION FRAMEWORK

Technical data specifications v0

Validation specifications v0

Target content of the HVLSP:

- Administrative unit areas levels 1 to 6
- Transport:
  - Road transport
  - Railway transport
  - Air transport
  - Water transport
- Hydrography
  - Watercourses
  - Standing waters
  - Dams/locks, falls
  - …

- Main focus: include UN-GGIM Europe core content and be able to derive EBM/ERM
- A dynamic data model which might evolve with the addition of new countries

Co-funded by the European Union

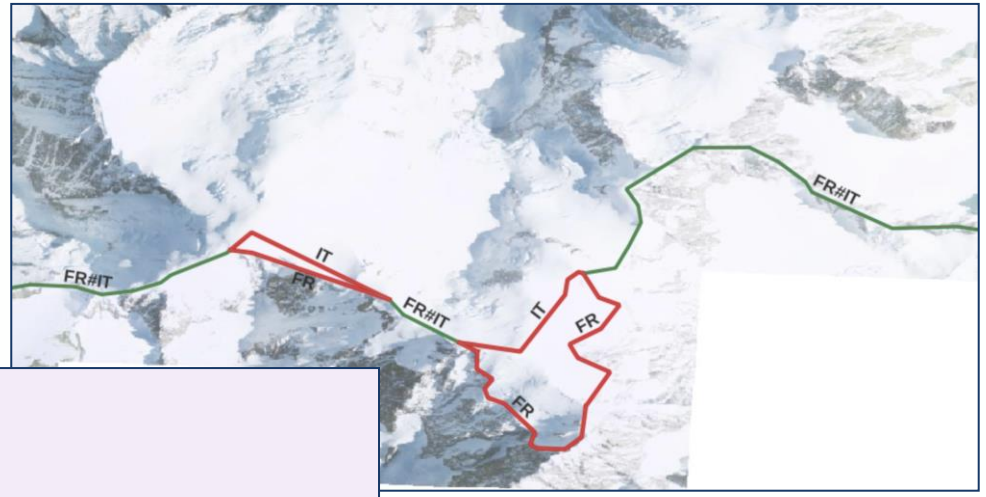
Digital Europe Programme
Grant Agreement No 101100625

Challenge #2 – Common international boundaries

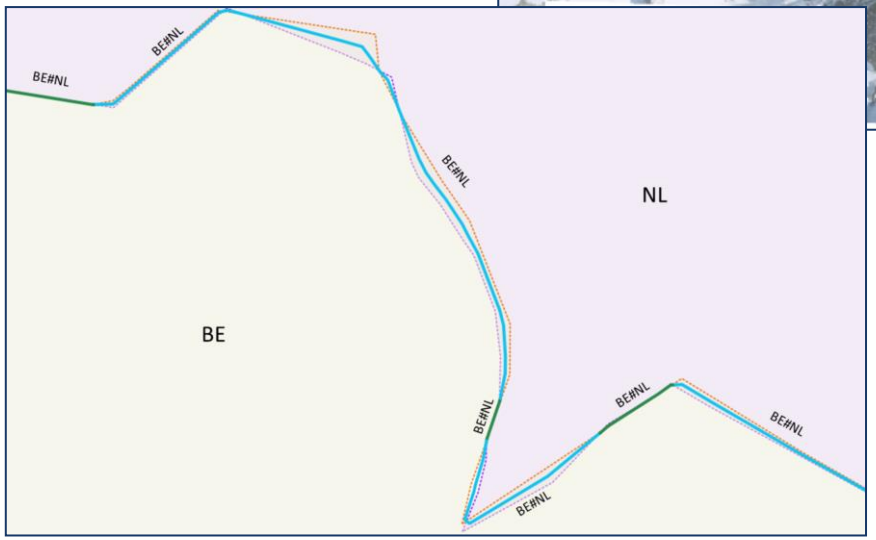
3 cases:

- Full agreement → official line
- Theoretical agreement → common technical line
- Disagreement → two lines

Operational process to calculate common technical lines (FME)



Case 3



Cases 1-2

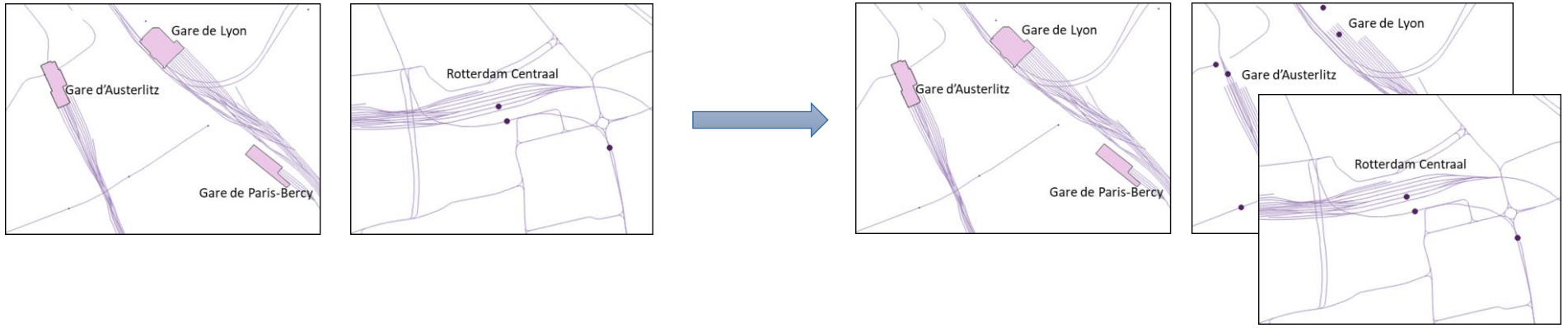
Co-funded by the European Union

Digital Europe Programme
Grant Agreement No 101100625

Challenge #3 – Common representation

Countries can have different representations for the same objects (e.g. railway stations)

→ Keep all the available information but build a common core



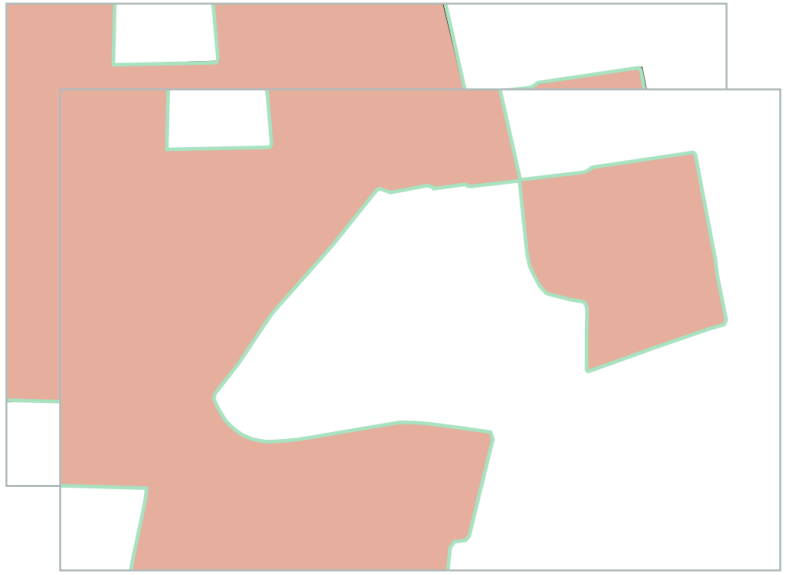
Flexible harmonisation/model conversion tool (Python)

Beta version, to be configured/adapted to new countries
Publicly available in June 2024

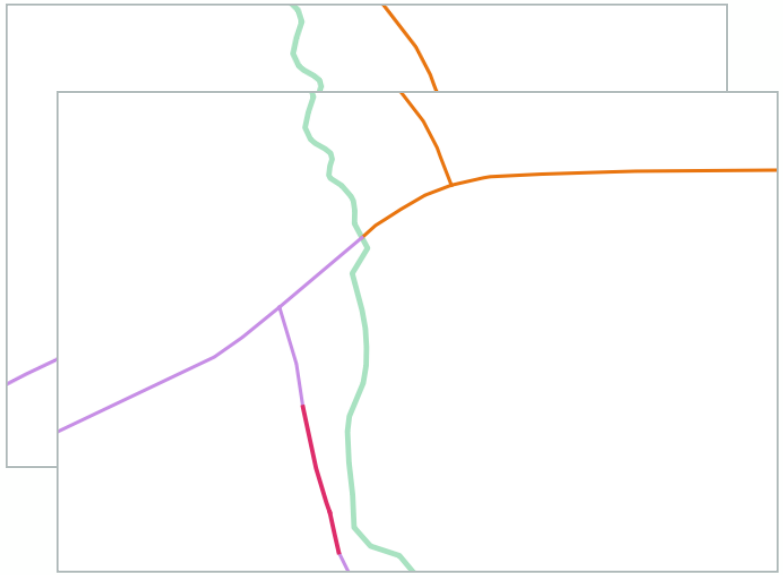
Co-funded by the European Union

Digital Europe Programme
Grant Agreement No 101100625

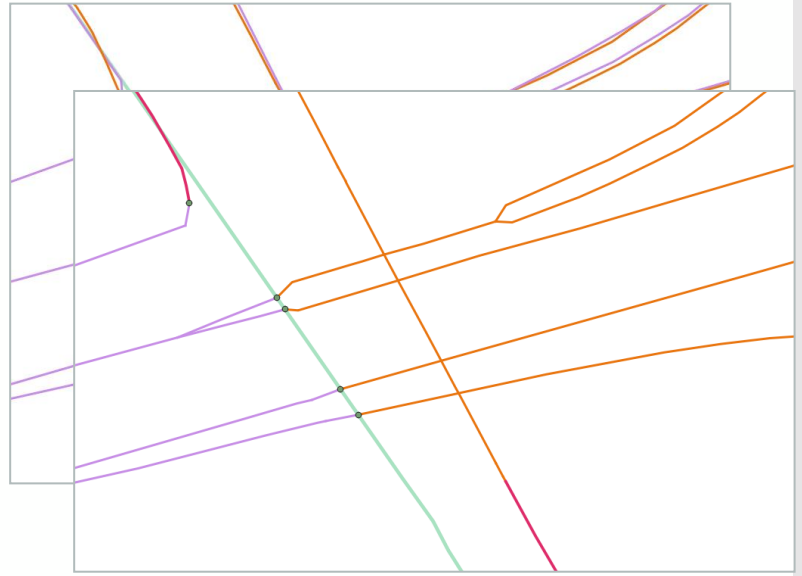
Challenge #4 – Consistency across international boundaries



Administrative units



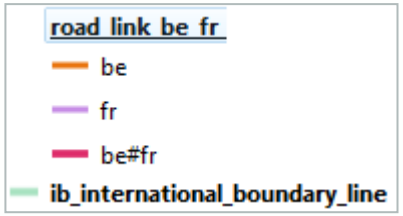
Road network



Road network

Edge-matching tool for AU and TN (C++)

Beta version, to be adapted to new countries and extended to HY
Publicly available in June 2024

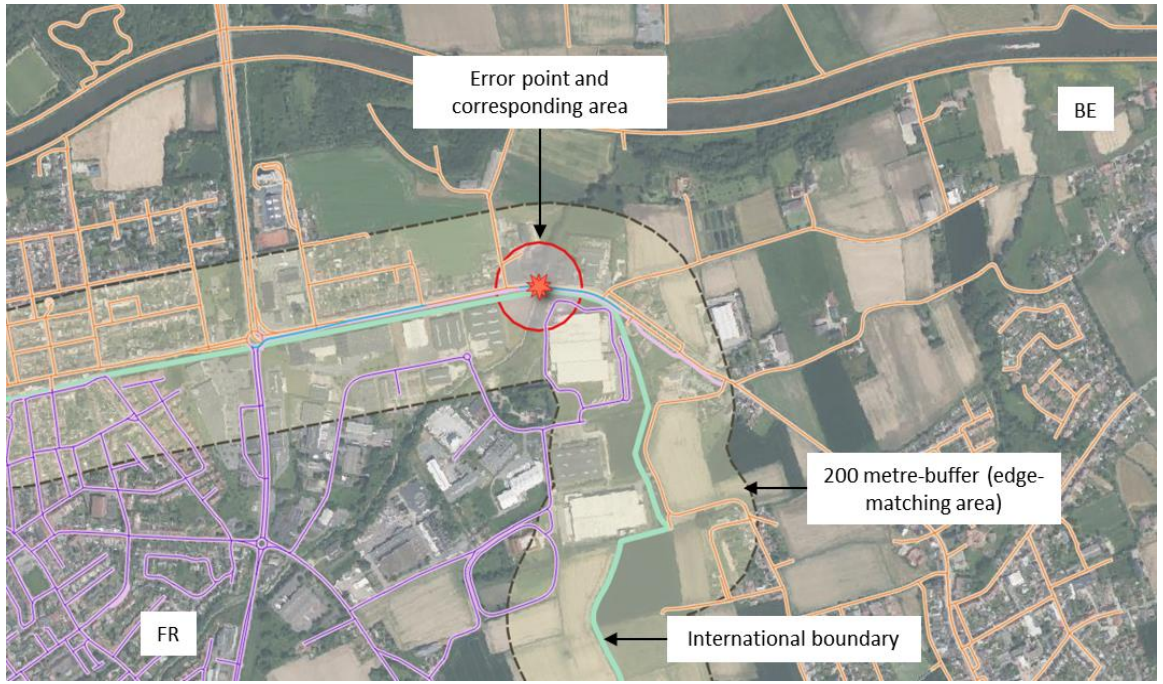


Co-funded by the European Union

Digital Europe Programme
Grant Agreement No 101100625

Challenge #5 – Error rate lower than 15%

- A methodology was defined to measure edge-matching errors
- Edge-matching errors (objective < 15%):
  - Roads: **1,24%** (3,52% before manual corrections)
  - Other tables: **0%**



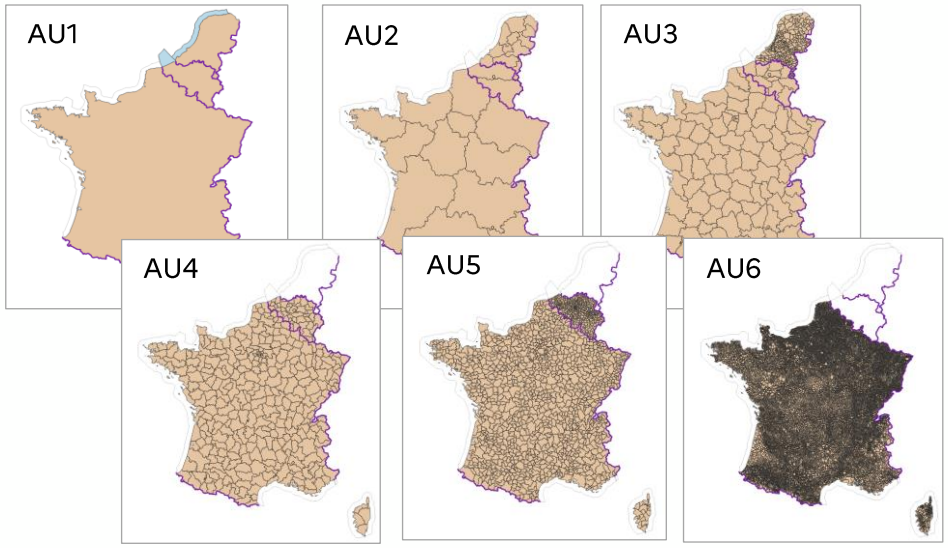
Co-funded by the European Union
Digital Europe Programme
Grant Agreement No 101100625

Current status of the HVLSP

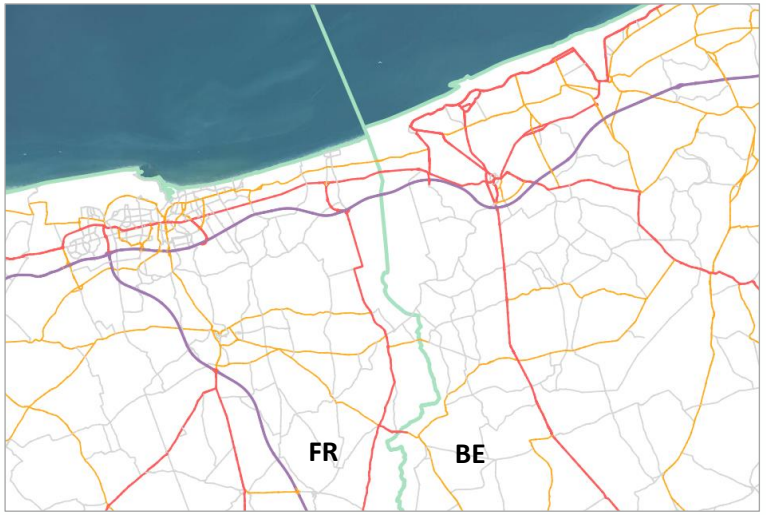
	BE	FR	NL	LU	CH	?	?	?	?	?
Administrative units	●	●	●	●	●					
Transport network	●	●	●	●	●					
Hydrography	●	●	●							

Target for January 2024

- **HVLSP v1.0 successfully delivered in Jan 2024!**
- Very encouraging feedback received from Eurostat and BKG.
- To be tested by more users now that the dataset is available on the OME portal.



Administrative units



Road network

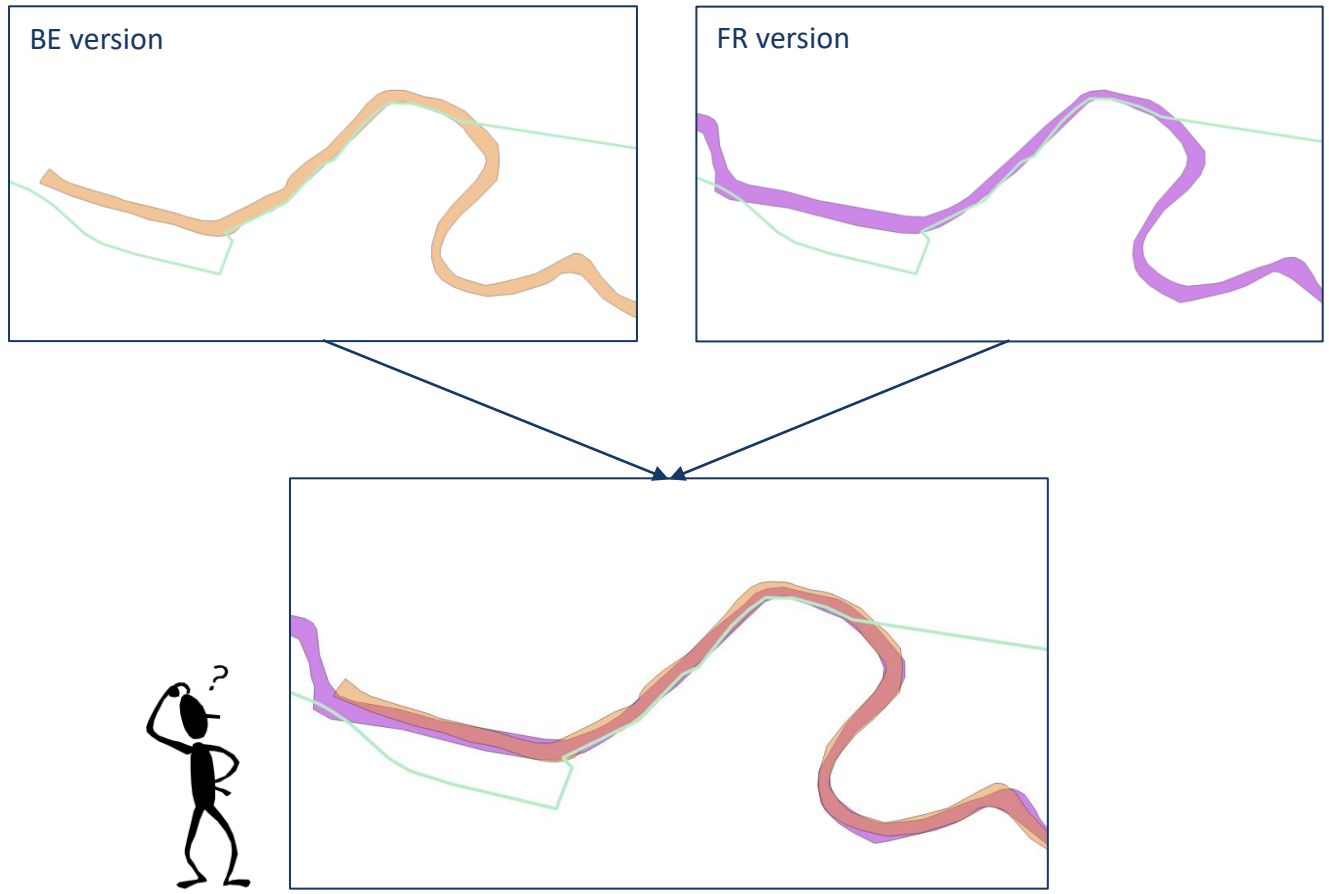
Next steps

Co-funded by the European Union

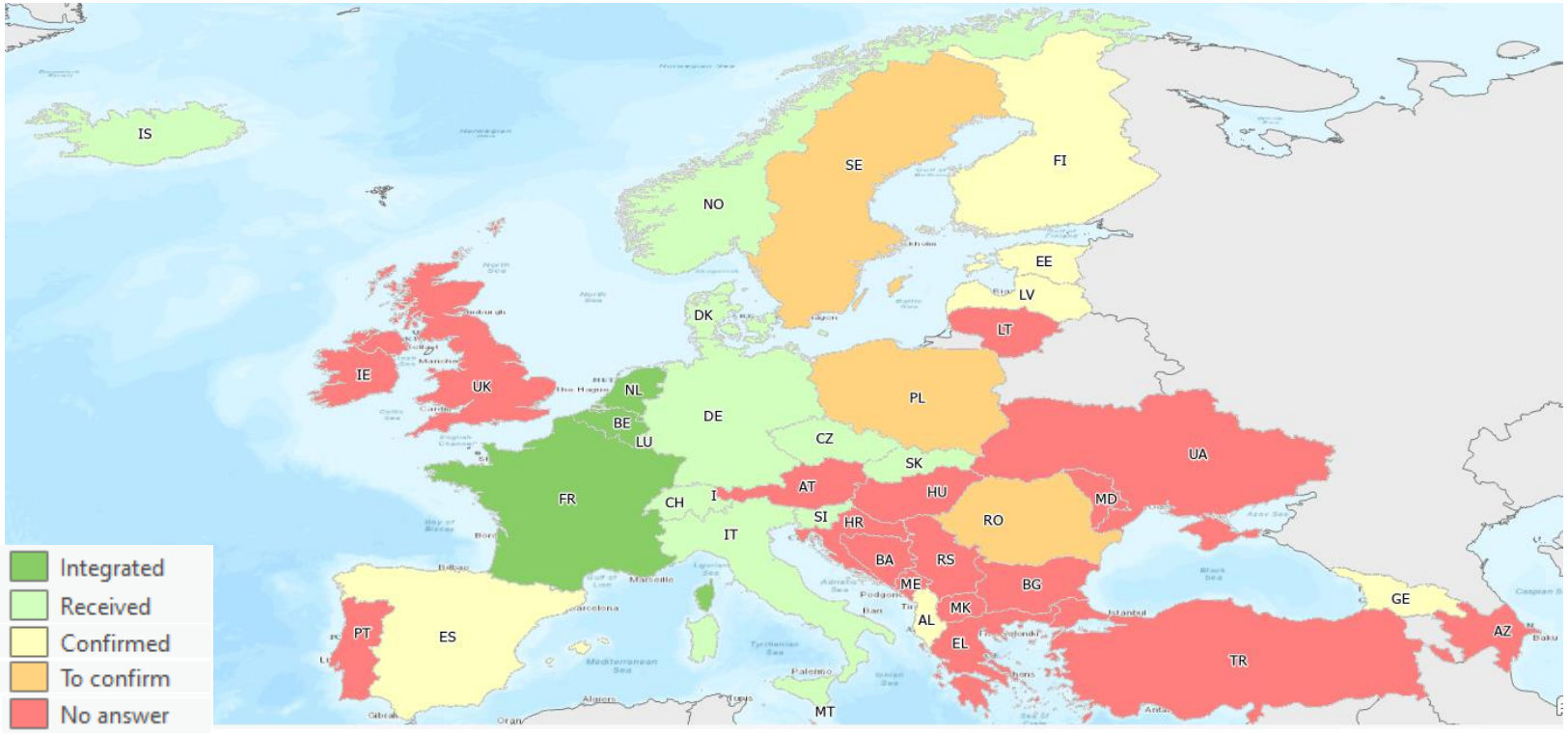
Digital Europe Programme
Grant Agreement No 101100625

Next steps (2024)

- Hydrography (new challenges!)
- Life-cycle management
- Consolidation of the harmonisation and edge-matching tools
- First versions of the quality and generalisation tools
- Cloud infrastructure
- Coverage extension



Coverage extension



- Priorities:
  - Prototype covering 10 countries by Dec 2025
  - Inventory of available data on EU27 at least (ideally on all of Europe)
- Calendar:
  - 10/2024: 5 countries, 2 themes
  - 06/2025: 10 countries, 3 themes (1st version)
  - 10/2025: 10 countries, 3 themes (final version)

Digital Europe Programme
Grant Agreement No 101100625

Should I join OME2?

⭐ Level 1: make your data available to the project team

- → *INSPIRE download service, national geoportal, FTP transfer…*
- → *Will be used for inventory*

⭐⭐ Level 2: help us with the transformation to OME2

- → *Fill a mapping table between your national data model and OME2 (not needed for INSPIRE data) + answer our questions*
- → *The data can be integrated in the central database*
- → *It does not have to be released if it is not open yet*

We are ideally looking for…

- ➢ Large-scale (10k) vector data
- ➢ INSPIRE or national model
- ➢ Administrative units, Transport and Hydrography
- ➢ Open data or data usable internally for the project

What's in it for me?

- ➢ Make your data available to European key users…
- ➢ Get a harmonised and edge-matched version of your large-scale data
- ➢ Use it for cross-border applications (mapping…)
- ➢ … and all that with very little work on your part ☺

Co-funded by the European Union

Digital Europe Programme
Grant Agreement No 101100625

Thank you for your attention!

Contact: ome2_project@ign.fr
noemie.gremeaux@ign.fr

Co-funded by the European Union

Digital Europe Programme
Grant Agreement No 101100625