OME2 – New production process for a high-value large-scale database

Noémie Grémeaux (IGN France)

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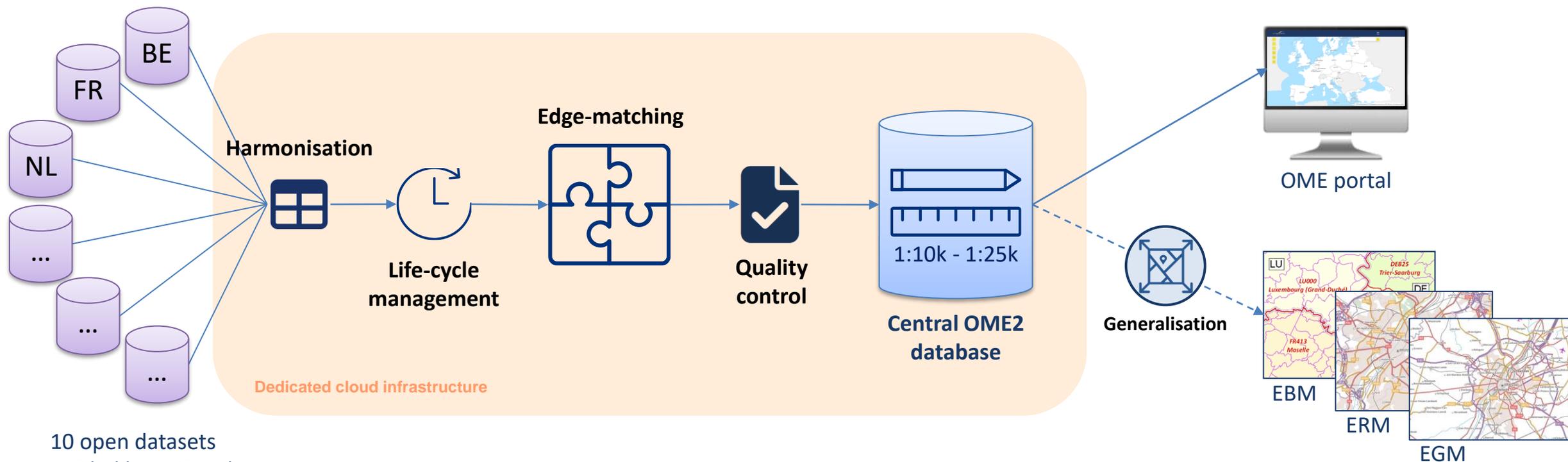# Overview of the process

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)

The OME2 approach:

➢ **Centralised** process

➢ **Minimal additional workload** for national producers

➢ **Re-use results** from previous projects

➢ A **technical** and **practical** approach to harmonisation:
- Take into account feedback from users
- Technical (not political) solutions
- Highly automated

Future production process

BE
FR
NL
...
...
...

Harmonisation

Life-cycle management

Edge-matching

Quality control

1:10k - 1:25k

Central OME2 database

Dedicated cloud infrastructure

Generalisation

OME portal

LU
LU000
Luxembourg (Grand-Duché)
DEB25
Trier-Saarburg
DE
FR413
Moselle

EBM

ERM

EGM

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

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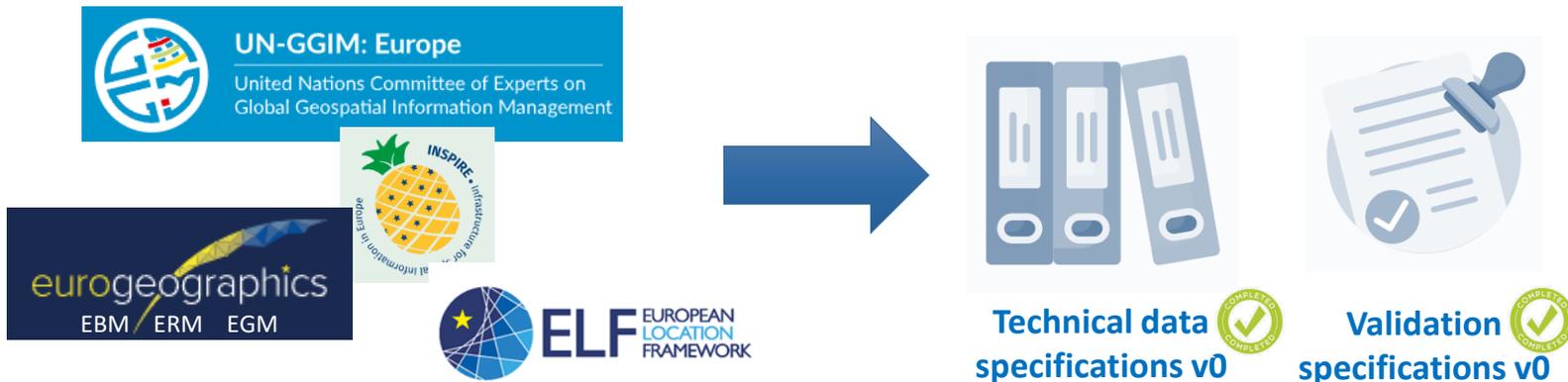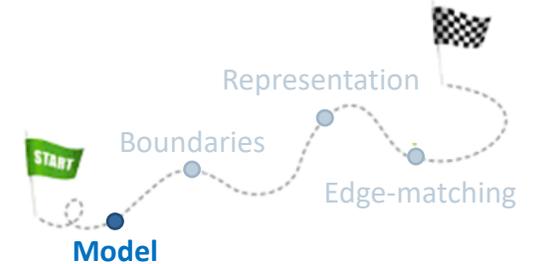# Challenges

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Grant Agreement No 101100625

Challenge #1 – Common data model

Representation

Boundaries

Edge-matching

START

Model

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

INSPIRE

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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 data model which might evolve with the addition of new countries (e.g. more harmonised classifications…)

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Challenge #2 – Common international boundaries

Boundaries
Representation
Edge-matching
Model
START
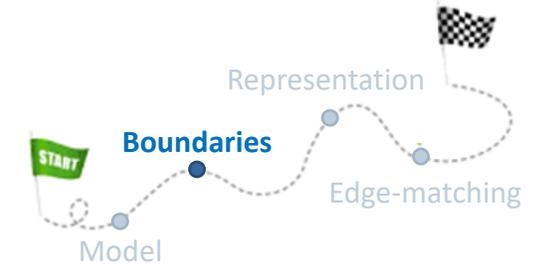
3 cases:

➢ Full agreement → official line

➢ Theoretical agreement → common technical line

➢ Disagreement → two lines
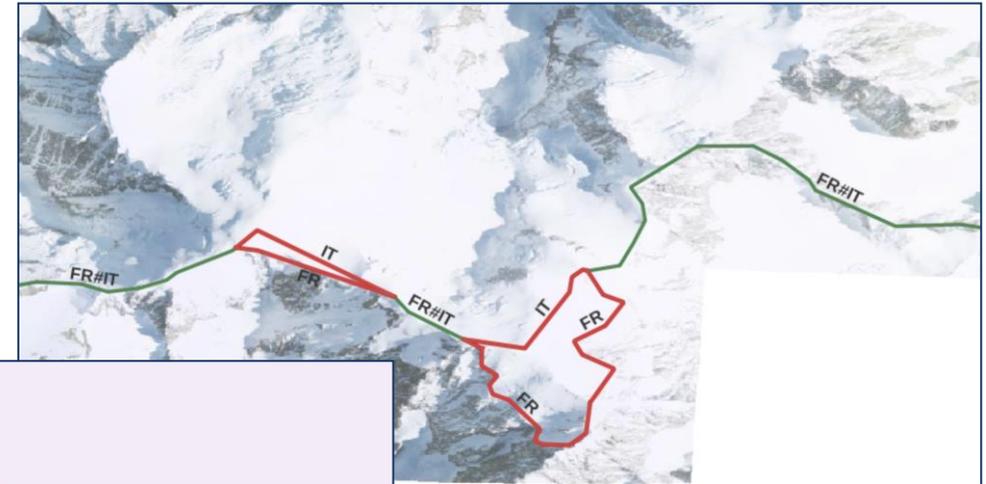
Operational process to calculate common technical lines (FME)
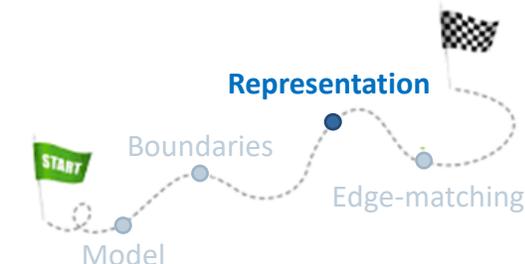

Cases 1-3

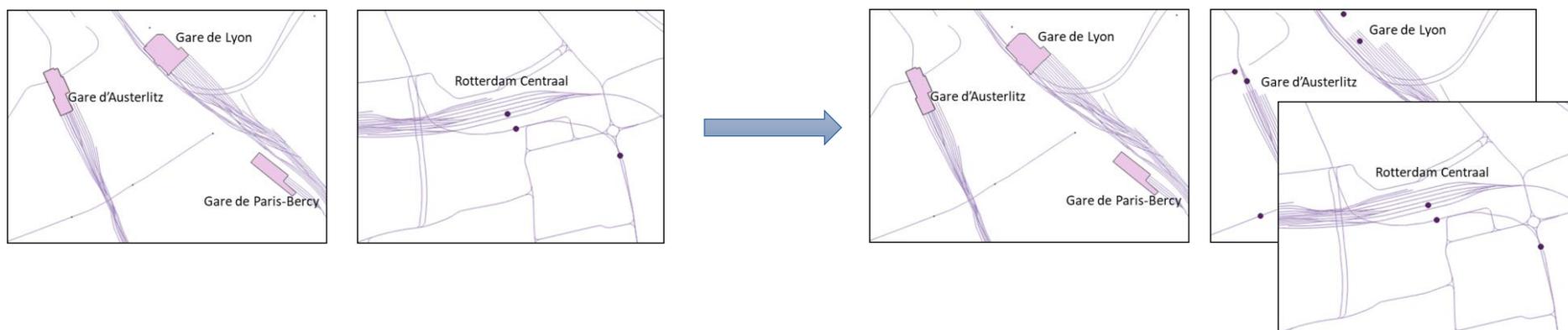Cases 1-2

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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 (from User requirements workshop #1)

**Flexible harmonisation/model conversion tool (Python)**

Beta version, to be configured/adapted to new countries available in June 2024
Based on mapping tables provided by national producers

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Challenge #4 – Consistency across international boundaries

Representation

Boundaries

START

Edge-matching

Model
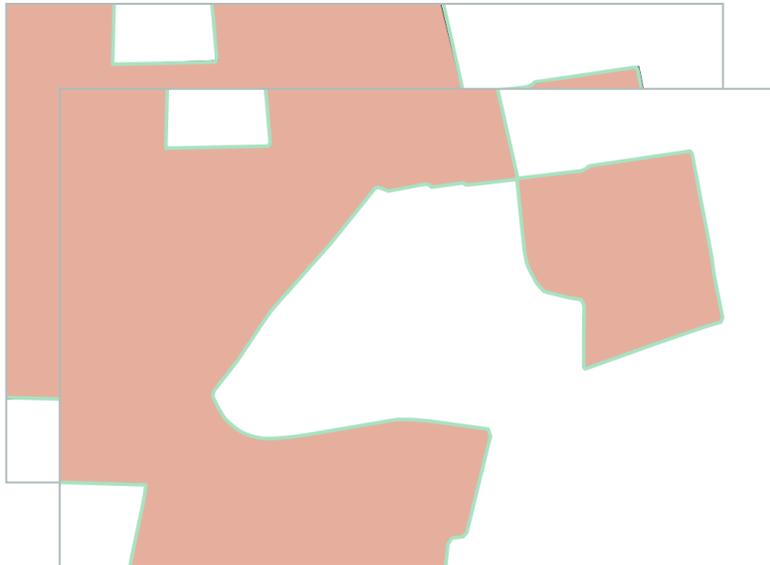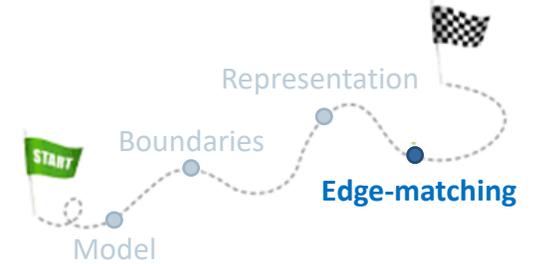
Administrative units
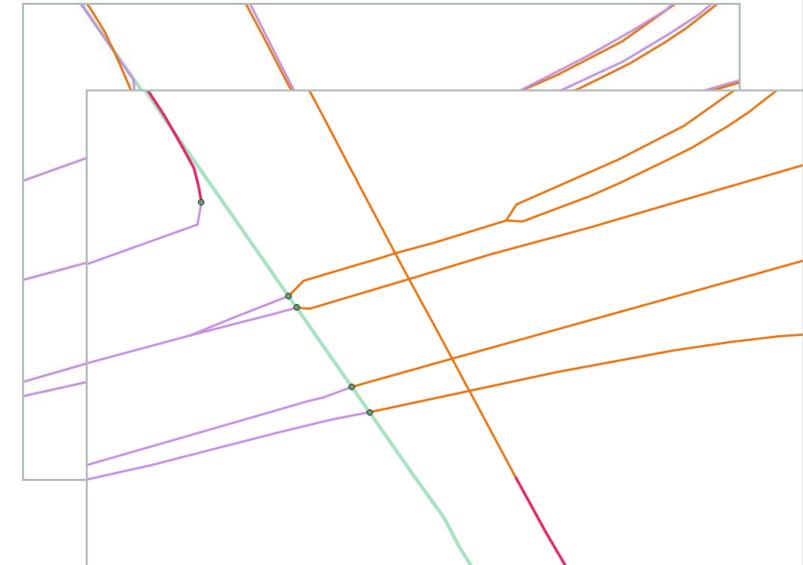
Road network

Road network

Edge-matching tools for AU and TN (C++)
Beta version, to be adapted to new countries and extended to HY available in June 2024

road_link_be_fr

▬▬	be
▬▬	fr
▬▬	be#fr
▬▬	ib_international_boundary_line

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HVLSP status

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Current status of the HVLSP

	BE	FR	NL	LU	CH	CZ	AT	DE	?	?
Administrative units										
Transport network										
Hydrography										

V1.0 V2.0 March 2024

> **HVLSP v1.0 successfully delivered in March 2024 on https://www.mapsforeurope.org/**

> Edge-matching errors (objective < 15%):
> - Roads: **1,24%** (3,52% before manual corrections)
> - Other tables: **0%**

> Next steps: HY, cloud infrastructure, coverage extension
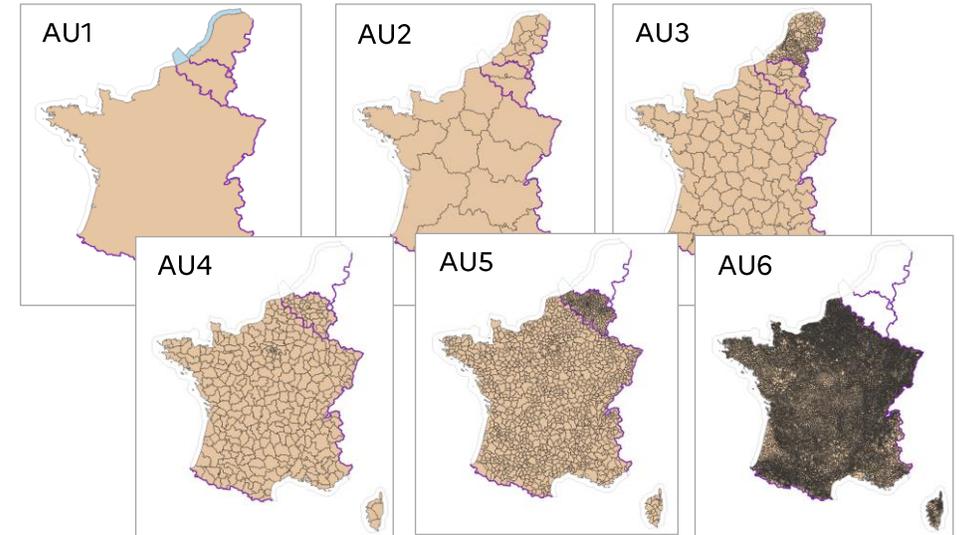
Administrative units
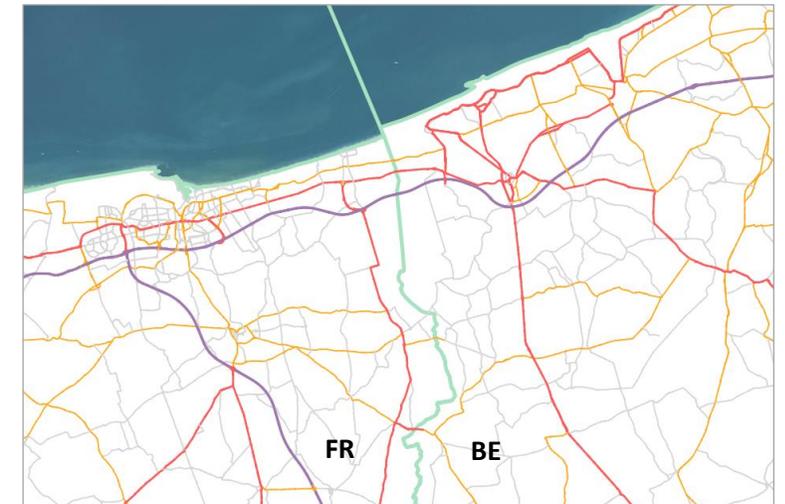
Road network

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Coverage extension
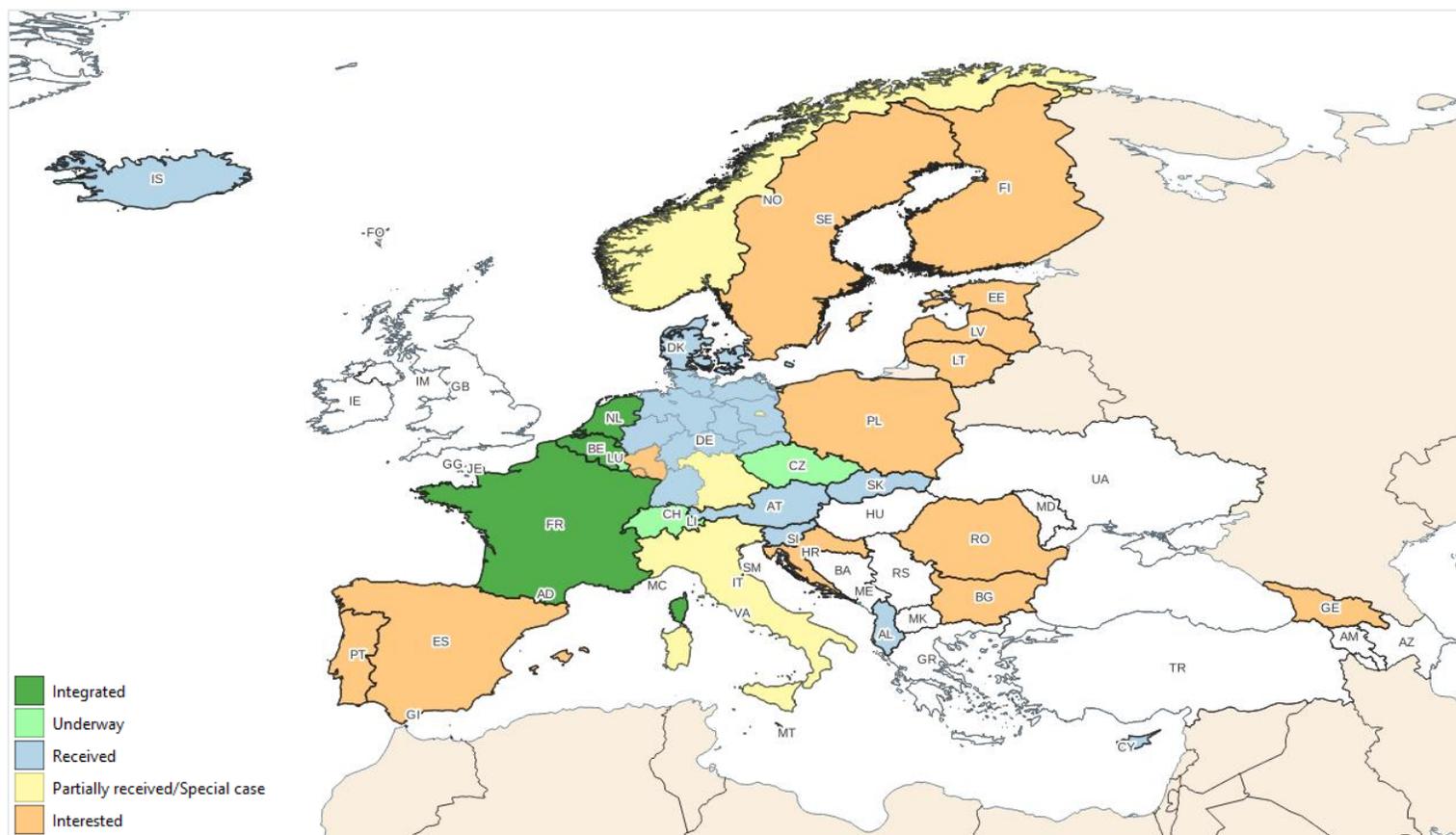
- ➢ Data received for:
  - o 12/EU27 countries
  - o 17/43 EuroGeographics' members
- ➢ Many countries are willing to participate
- ➢ But a few do not seem to have all the data we need (GR?, BG?)
- ➢ Priority: get data from at least all EU27 countries for an inventory of what is available

Legend:
- Integrated
- Underway
- Received
- Partially received/Special case
- Interested

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Feedback

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Feedback

Questionnaire sent by EuroGeographics before the summer → 26 answers
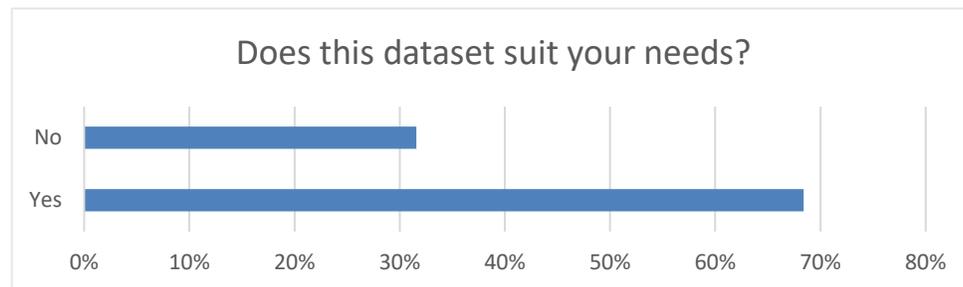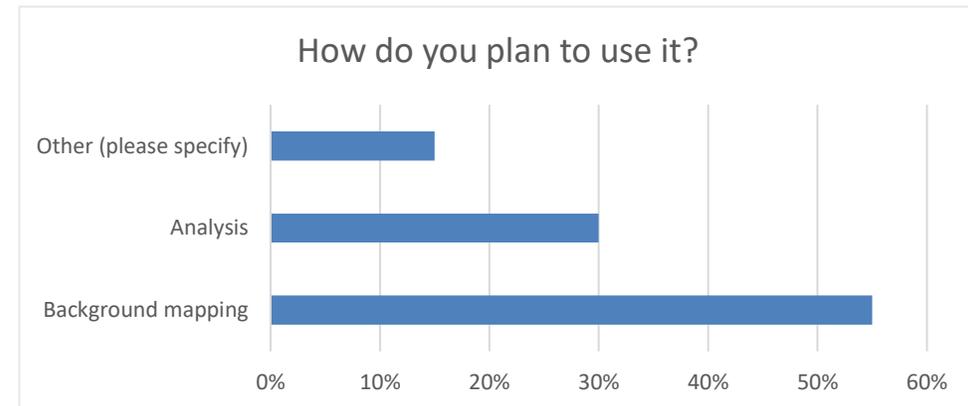
➢ The available formats (WMS, WFS, WMTS, gpkg) are suitable.

➢ Suggestions:

  ▪ General: names not in JSON format, more detailed metadata, extended coverage, update rythm

  ▪ Additional information: area and population figures for AU, speed limits better filled

Does this dataset suit your needs?

No	(bar ~32%)
Yes	(bar ~68%)

0% 10% 20% 30% 40% 50% 60% 70% 80%

Improvements: coverage, update rythm

How do you plan to use it?

Other (please specify)	(bar ~15%)
Analysis	(bar ~30%)
Background mapping	(bar ~55%)

0% 10% 20% 30% 40% 50% 60%

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What we would like to know…

➢ Would an « industrialised » HVLSP dataset be useful to you?
  ▪ EU27
  ▪ Annual updates

➢ Is some information missing and preventing you from using it?
  ▪ Additions to the data model
  ▪ More themes
  ▪ More countries (more than EU27)
  ▪ More frequent updates
  ▪ Other formats
  ▪ …

HVLSP 1.0
Mar 2024
3 countries, 2 themes

HVLSP 3.0
Jul 2025

HVLSP 3.2
Dec 2025
10 countries, 3 themes

HVLSP 2.0
Nov 2024
5 countries, 2 themes

HVLSP 3.1
Sep 2025
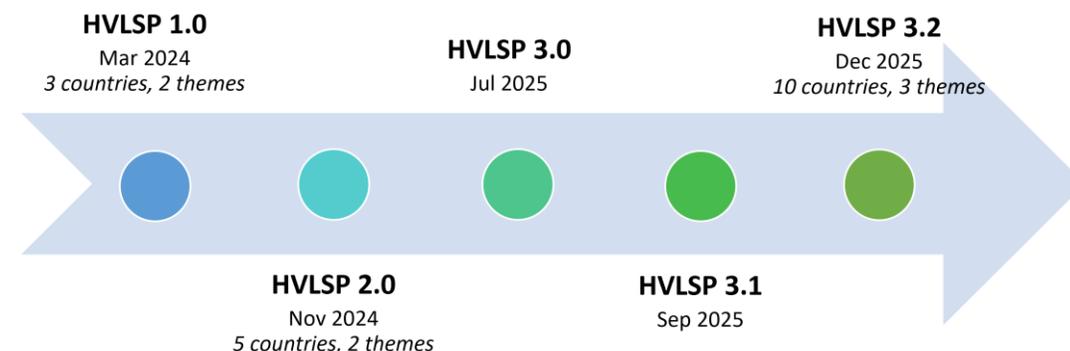
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Thank you for your attention!

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

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Questionnaire

Responses
Hellenic Cadastre, GREECE
GIM
Google Maps
"Ion Creangă" State Pedagogical University (note GV: Moldavia)
University of Minho, Centre of Molecular and Environmental Biology (CBMA)
Department of Lands and Surveys/Cyprus
Poznan University of Life Sciences
Landesamt für Digitalisierung, Breitband und Vermessung
Statistics Norway
UrbanIntelligence Stadssociologen (urban sociologists)
Polytechnic Institute of Tomar, Portugal
Infodom
University of Stirling
EQUIS Ltd.
C. Mark
Studio Tecnico Agronomico Gravina Srl Stp
european commission
CORDA consortia (Bilbomatica Altia Company / Geograma / Epsilon IT

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