

An aerial photograph of a multi-lane highway bridge. The bridge spans across a valley with autumn-colored trees below. A white grid of lines is overlaid on the right side of the bridge, likely representing a geospatial or structural analysis. Several cars are visible on the bridge.

# Technical Issues for EBM, ERM and EGM

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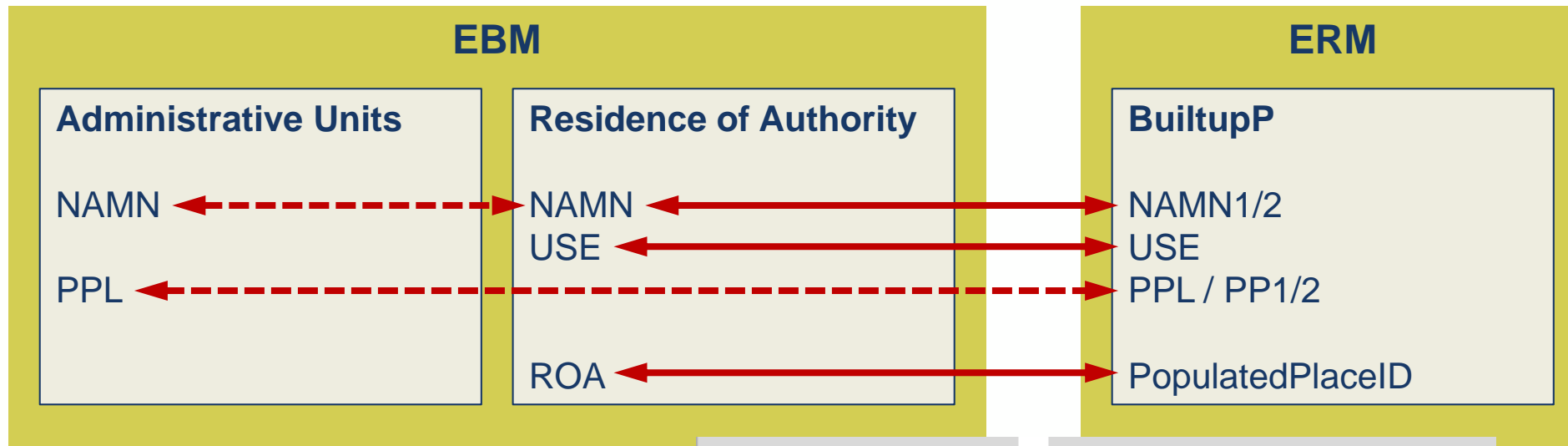
## EG Producer Meeting, Zagreb, 6<sup>th</sup> / 7<sup>th</sup> November 2018

# Agenda

Consistency: EBM / RoA – ERM / POP  
Naming conventions in EBM  
Open ELS Regional Gazetteer  
Errors in ERM impacting EGM

# Consistency: EBM / RoA – ERM / POP

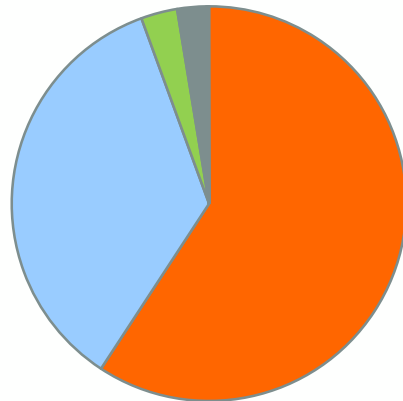
- Strong correlation between EBM and ERM/ POP



	EBM: USE		ERM: USE	
1st order (country level)	1	=	23	International
2nd order	2	=	26	Primary/ 1st order national level
3rd order	3	=	30	Secondary/ 2nd order national level
4th order	4	=	31	Tertiary/ 3rd order national level
5th order	5	=	111	Fourth/ 4th order national level
6th order	6	=	112	Fifth/ 5th order national level

# Consistency: EBM / RoA – ERM / POP

- Reality:  
(4 Groups)



- Missing in EBM or ERM
- Different location
- Different USENaming issues
- Naming issues
- Duplicate IDs in ERM
- Different RoA / PopulatedPlaceID
- Overlaps ERM

- Production Management Team started correction together with Data Producers
  - Emails with errors were sent to Data Producers
  - Corrections for EBM and/or ERM are provided to PMT
  - Incorporation of new data for EBM/ERM 2020

# Naming conventions in EBM

- More than one language for one administrative unit
  - Separation of language by #, correspondence of NAMN / NLN

NAMN	NLN	Delimiter name	Order name to language
Flensburg#Flensburg	GER#DAN	correct	correct
Flensburg/Flensburg	GER#DAN	<b>WRONG</b>	correct
Flensburg#Flensburg	DAN#GER	correct	<b>WRONG</b>

- If several languages uses the same variant of the name  
→ Use only this one name for NAMN

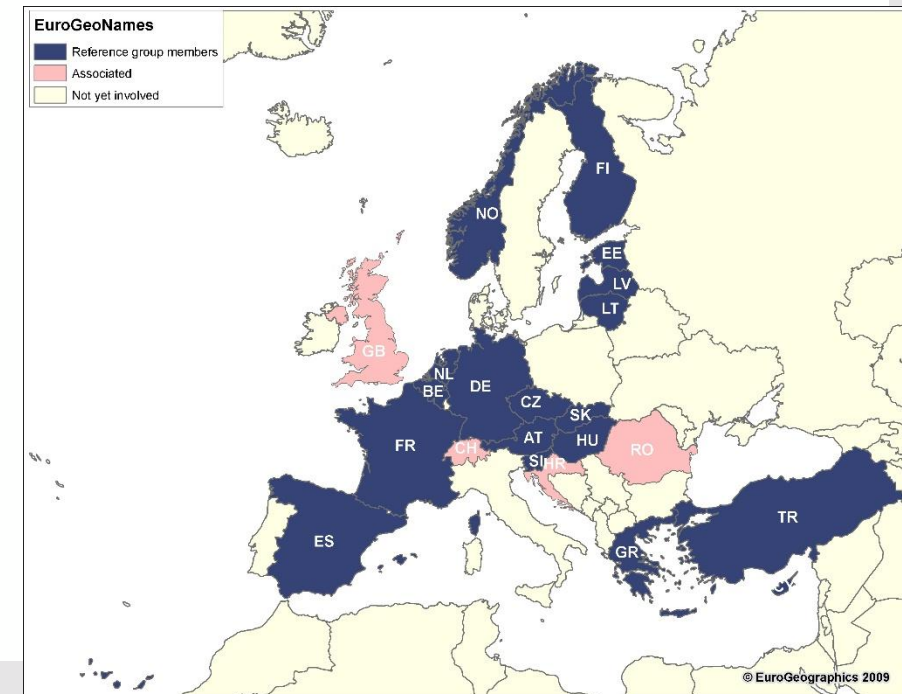
NAMN	NLN	Comment
Flensburg	GER#FRI	correct
Flensburg#Flensburg	GER#FRI#DAN	<b>WRONG</b>
Flensburg#Flensburg#Flensburg	GER#FRI#DAN	correct

Example:

Name	Language
Flensburg	GER
Flensburg	FRI
Flensburg	DAN

# OpenELS Regional Gazetteer

- Background
  - Gazetteer - What is available?
    - Nominatim OSM (<https://nominatim.openstreetmap.org/>) → Not authoritative
    - GeoNames (<http://geonames.org/>) → Not authoritative
    - UNGEGN database: search for countries and cities (<http://unstats.un.org/unsd/geoinfo/geonames/>)
      - Contains 2700 names for countries and 6100 names for 3362 cities
  - EuroGeographics Project: EuroGeoNames (2006-2009)
    - Development of a Web-Services-Infrastructure for authoritative geographical names data in Europe
    - Cooperation of European NMCAs and names expert community (UNGEEN)
    - About 1 million entries



# OpenELS Regional Gazetteer

- Demand for an OpenData Gazetteer fed by data from NMCAs (JRC, Eurostat)
    - European-wide coverage, exonyms, multilingualism
    - Objectives
      - Simplicity (significant reduction of schema complexity)
      - Scalability (cloud-based service infrastructure)
      - Expansion (through INSPIRE GN Download Services)
      - Usability (support for various standards-compliant access interfaces and content encodings)
      - Semiautomatic update process
- Effective promotion of NMCA data sets

# OpenELS Regional Gazetteer

- Source data = EBM/ERM
  - Contain a huge amount of toponyms for all topographic feature types with full European coverage
  - EBM contains all names of administrative units
  - ERM contains names of settlements (only city districts missing), transport network, hydrography and more
  - Positional accuracy is absolutely sufficient for a gazetteer
  - ERM/EBM contain all endonyms



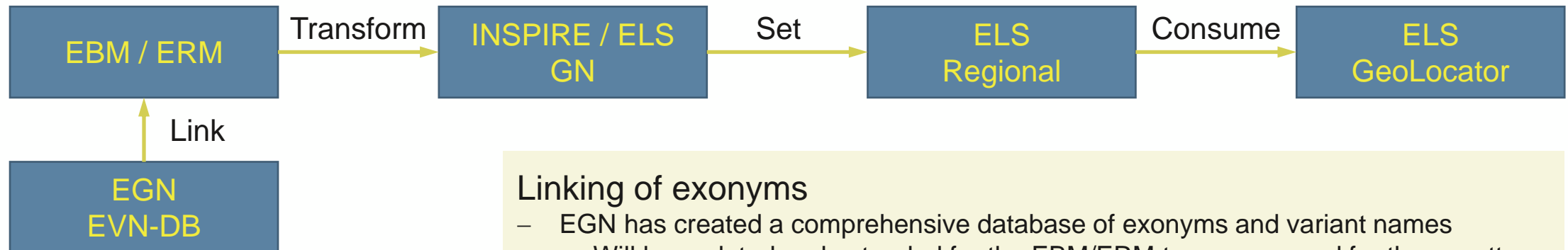


# OpenELS Regional Gazetteer

## Approach

- All feature types with geographical names are transformed into the INSPIRE GN data model
- Only reference points are used as geometry  
→ All EBM/ERM features with line or area geometry are generalised to points

Priority	EBM/ERM feature type
1	BuiltupP
2	UrbanP, RailrdC, AirfldP/C, FerryC, HarborP/C, ExitC
3	AdministrativeUnit_x
4	LakeresA, IslandA, WatercrsA, WatercrsL
5	Additional ERM themes
6	Additional feature types of hydrography and transport

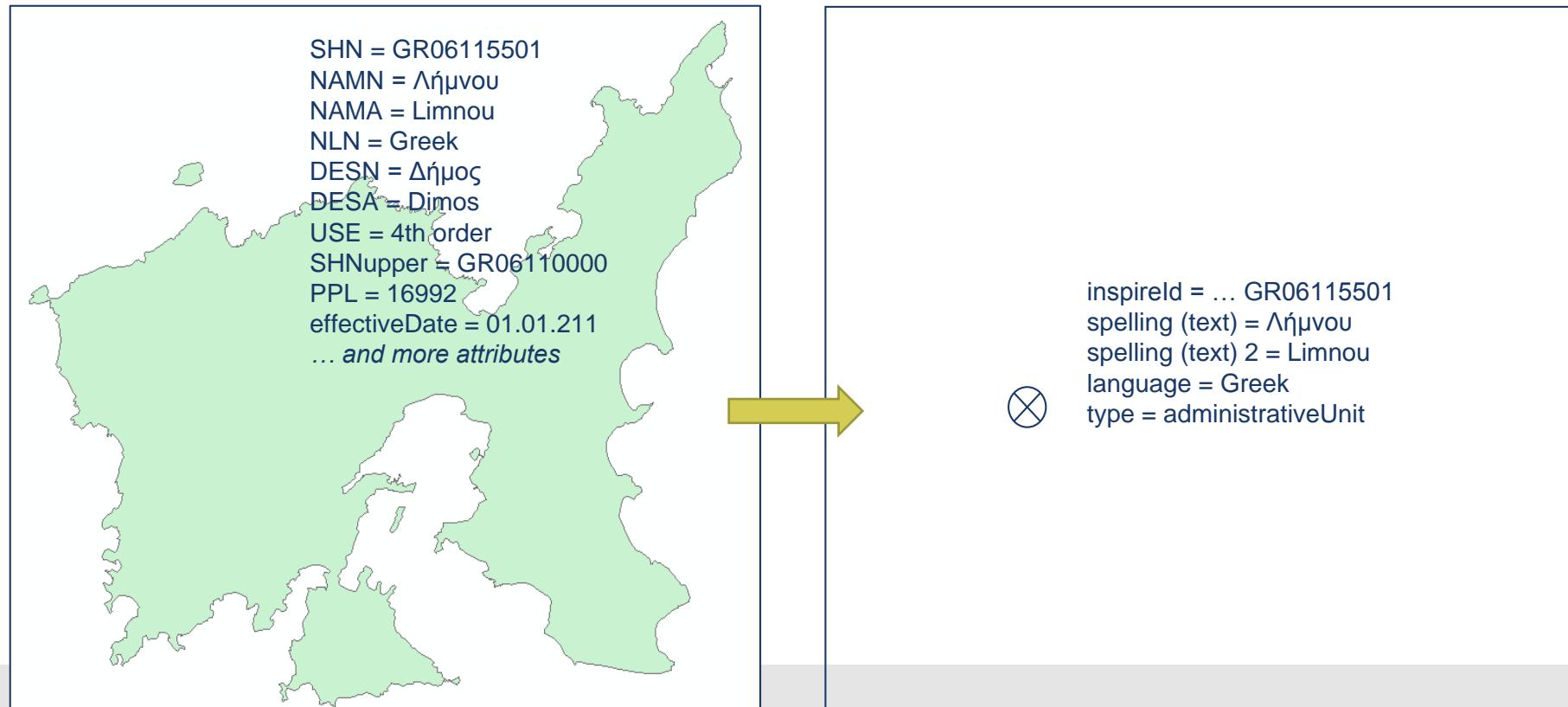


### Linking of exonyms

- EGN has created a comprehensive database of exonyms and variant names  
→ Will be updated and extended for the EBM/ERM toponyms used for the gazetteer
- The linkage of exonyms and variant names will be extended step by step
- All exonyms are maintained in a database
- The linkage to features in the gazetteer is ensured by stable identifiers

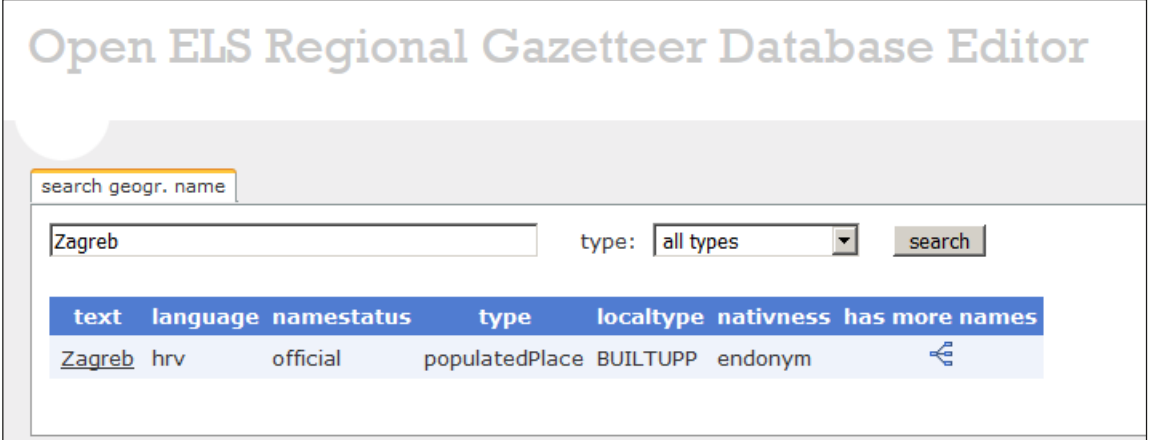
# OpenELS Regional Gazetteer


- Example:  
Area transformation from EBM AdministrativeUnit to the OpenELS Regional Gazetteer



# OpenELS Regional Gazetteer

- Publishing
  - Licensing
    - Utilisation of data from existing EuroGeographic's Pan European products, but published as an Open ELS service
    - Data providers have to include permissions for this data to be used for this product within the ELS Data Provider Agreement
  - Published as web feature service (WFS)
  - Published as database
  - Utilizing by ELS GeoLocator
  - <https://ebrm.bkg.bund.de/eg-gazetteer/>



text	language	namestatus	type	locatype	nativness	has more names
Zagreb	hrv	official	populatedPlace	BUILTUPP	endonym	

# Errors in ERM impacting EGM

- Topological errors
  - LakeresA objects overlapping other objects (LakeresA, LandIceA, WatcrsA)
  - DamL objects duplicated (DE)
  - WatcrsL overlapping other WatcrsL objects
- Errors in name attributes
  - E.g.: NAMN1 fulfilled and NLN1 empty, NAMA2 empty and NAMN2 fulfilled...
- Discontinuity in the watercourse network

# Errors in ERM impacting EGM

What would help?

→ Please mention in your metadata / lineage information the biggest deviations from specifications which you or your regional coordinator found in your data!

Thank you!

## EG Producer Meeting, Zagreb, 6th / 7th November 2018

# Thank you for your attention

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