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EuroGeoNames

25th UNGEGN & Toponymic Training Course

EuroGeoNames (EGN) –
An implementation of an European gazetteer service

Nairobi, Kenia

1 to 12 May 2009

Pier-Giorgio Zaccheddu
EuroGeoNames Project Coordinator

Frankfurt am Main

Content

- Introduction

- Partners

- Distributed EGN services' architecture

- Implementation status: services & applications

- EGN link to INSPIRE

- Sustainability

- Use case - example

- Conclusion

Project EuroGeoNames (EGN) –

Developing a European geographical names infrastructure and services based upon the decentralized kept and maintained national data bases

= distributed OGC Web Feature Services architecture

Co-funded by the eContent*plus* programme of the EC

Budget: 1.900.000 Euro (50% co-funded)

Co-funded duration: Sep' 2006 to Feb' 2009

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Meeting the demand of the Grant agreement with EC

as for the **30 month funded period** (Sep'06 to Feb'09) **and for 3 years beyond** the following **obligations** towards the EC are due:

✓ **WFS infrastructure** connecting 5 - 10 countries

→ Implementation Plan aiming at full European coverage

✓ **Applications**, end-user interface (operable), commercial use case (example)

✓ Limitation of the amount/content of the responses to **"single inquiries/requests"**, based on point coordinates and/or bounding boxes.

✓ provision of responses is **"free of charge"** (at least until 2012)

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**EuroGeoNames**

Partners – EGN Consortium

- BKG, Frankfurt am Main (Co-ordinator)

- Bundesamt für Eich- und Vermessungswesen, Wien

- Surveying and Mapping Authority of Slovenia

- EuroGeographics Head Office, Paris

- Universiteit Utrecht, Geographic Department

- EDINA National Data Centre, Edinburgh

- Geodan Holding, Amsterdam

- ProDV AG, Dortmund

- ESRI Geoinformatik GmbH, Kranzberg

Public sector

Academic sector

Private sector

# Partners – EGN Reference Group (NMCAs)
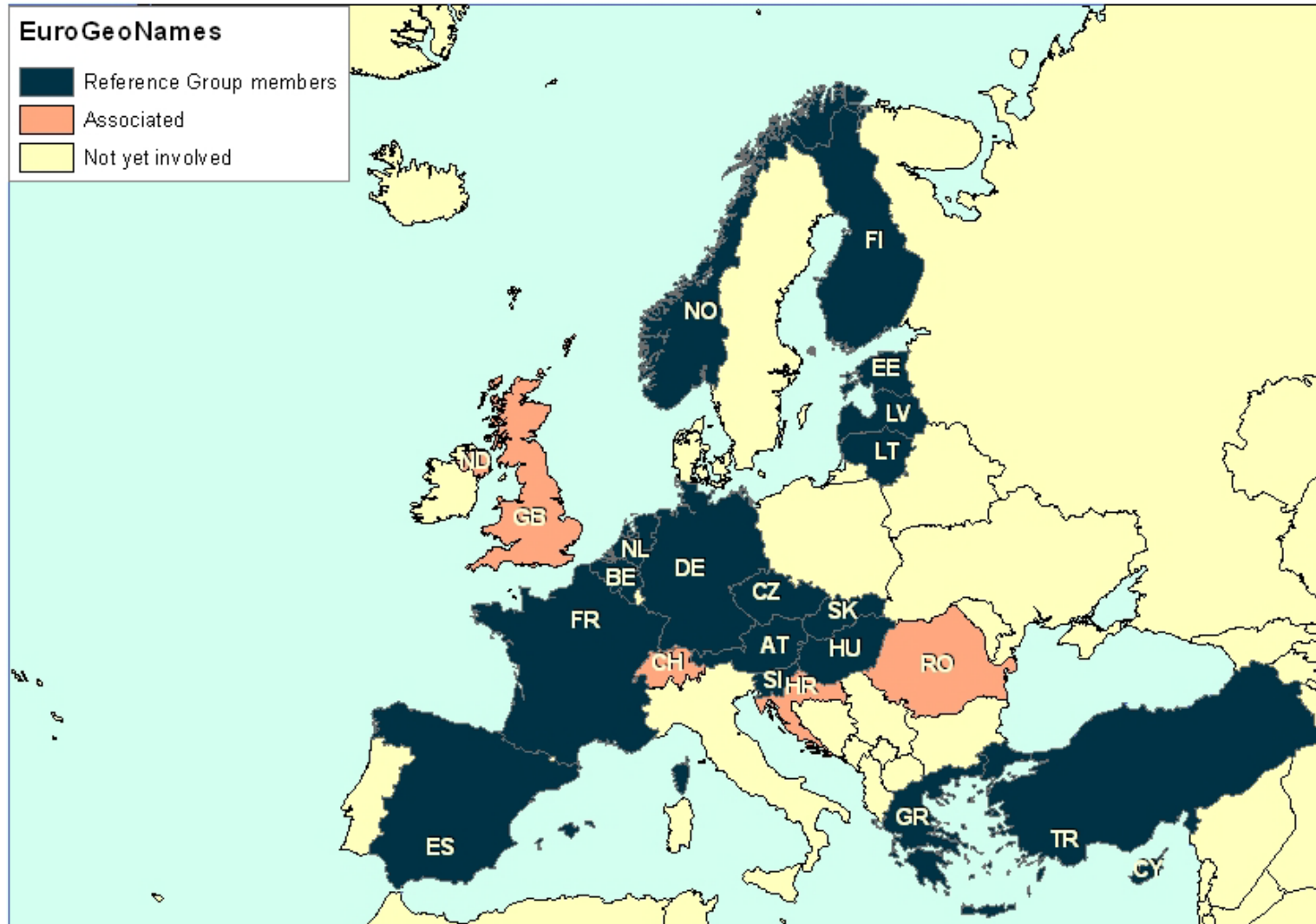
Partners – EGN Group of Interest

26 organizations: Standardization bodies, private GI companies, cartographic publishing houses, GI interest groups, etc.:

OGC Europe, **UNGEGN** (United Nations Group of Experts on Geographical Names) and several divisions, **ICA**, **Eurogi**, **DDGI** (German umbrella organization for GI), **GDI-DE** (Secretariat of the German spatial data infrastructure), **Imagi** (Interministerial Committee for GI of the German Federation), **AGISEE** (Association for GI in South-East-Europe), **National Geographic Germany**, ICOS (International Commission of Onomastics Sciences), **Westermann** (German publishing house for school atlases), **Ed. Hölzel** (Austrian publishing house for school atlases), **CartoTravel** (German publishing house of GI products), **EEA** (European Environment Agency), **PCGN** (UK Permanent Committee on Geographical Names), **StAGN** (PCGN of German-speaking countries/regions), **Greenland Language Secretariat** (Oqaasileriffik), **Bookings** (Hotel reservation service, Amsterdam), **AdV** (Association of German survey administrations), **Deutsche Nationalbibliothek** (German National Library), **Intergraph** (Germany), **Freytag & Berndt** (Austrian publishing house), **Institut für Kartographie** (TU DD), **JRC** Language Technology Group, **BDVI** Association of German Surveyors, **Eurostat** (Luxembourg), **Iat/Ion GmbH** (Germany)

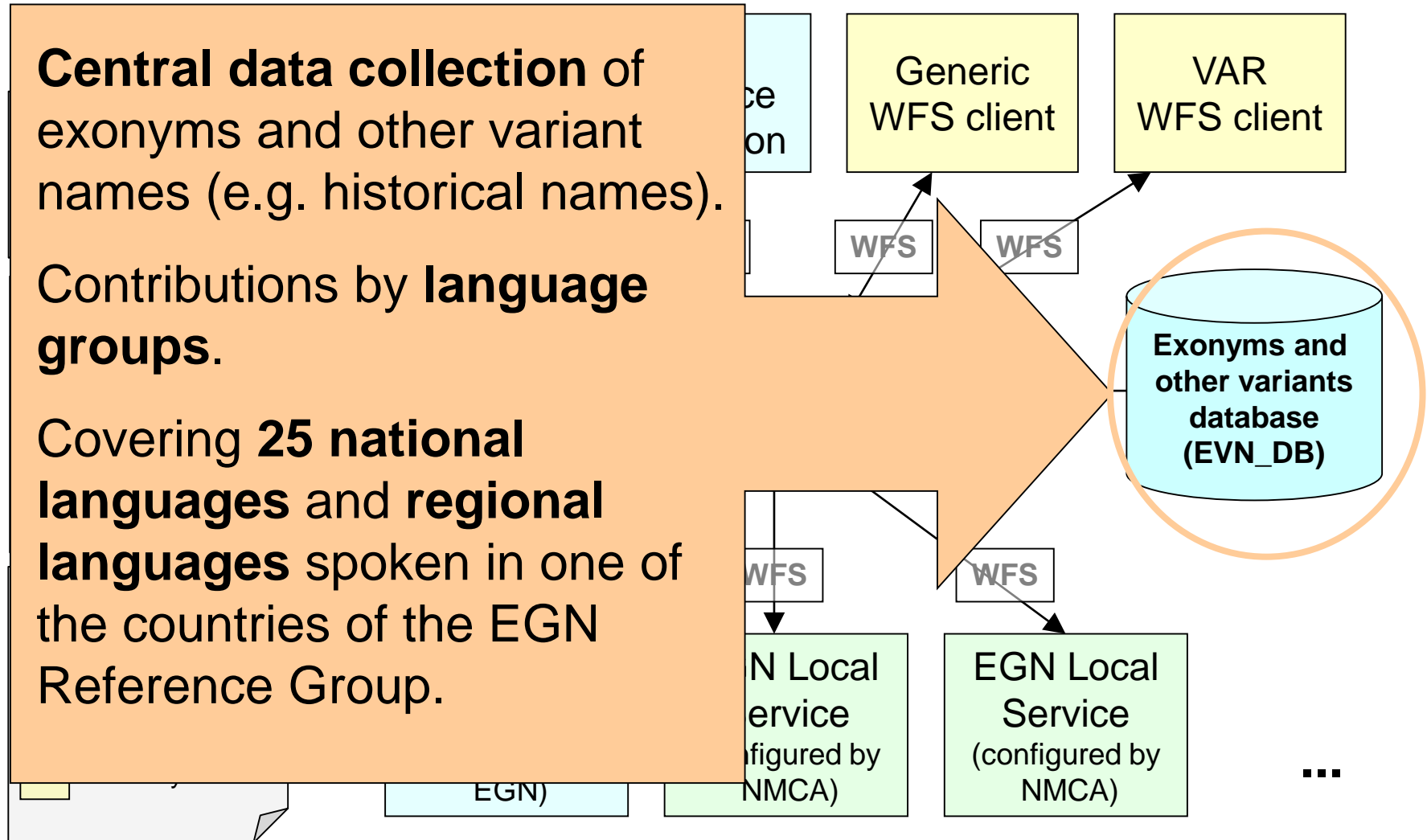# Distributed Web Feature Services' architecture
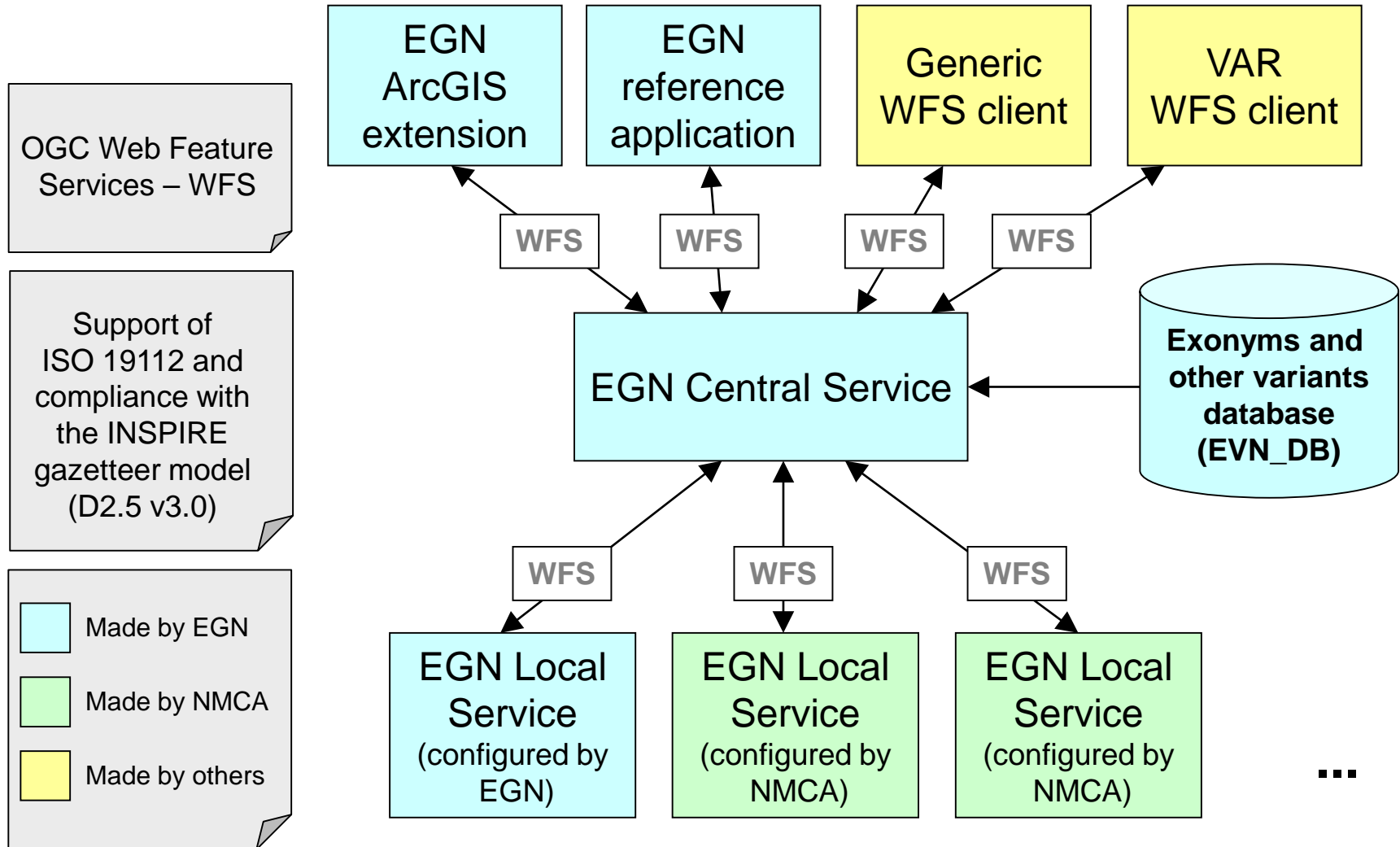
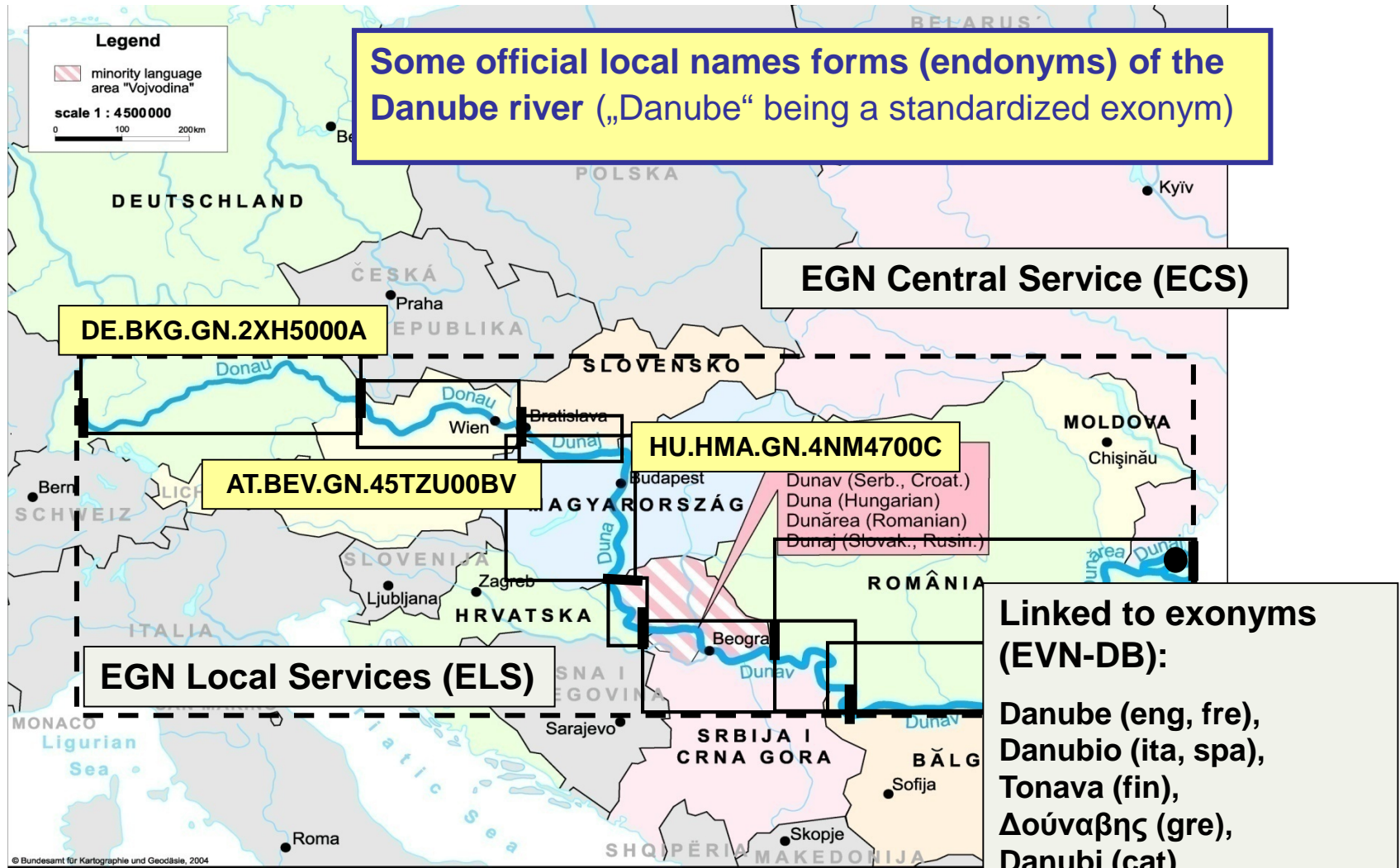# Exonyms and other variant names' management

Central data collection of exonyms and other variant names (e.g. historical names).

Contributions by **language groups**.

Covering **25 national languages** and **regional languages** spoken in one of the countries of the EGN Reference Group.
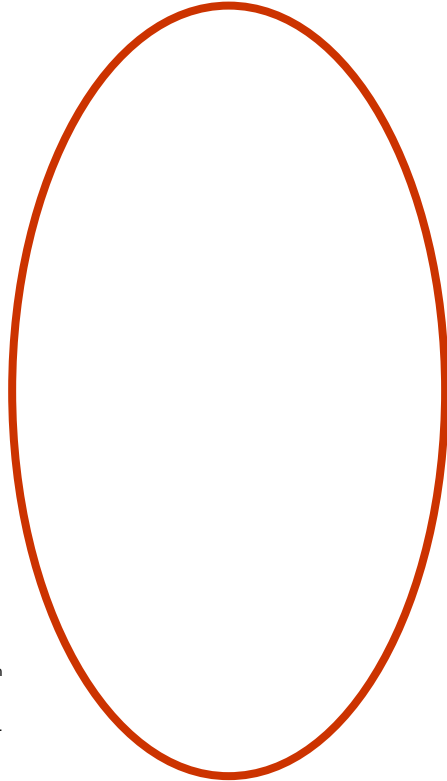
Generic WFS client

VAR WFS client

WFS

WFS

Exonyms and other variants database (EVN_DB)

WFS

WFS

N Local ervice fIgured by NMCA)

EGN Local Service (configured by NMCA)

EGN)

...

Complexity – linkage between ECS & ELS & EVN-DB

Some official local names forms (endonyms) of the Danube river („Danube" being a standardized exonym)

EGN Central Service (ECS)

DE.BKG.GN.2XH5000A

HU.HMA.GN.4NM4700C

AT.BEV.GN.45TZU00BV

Dunav (Serb., Croat.)
Duna (Hungarian)
Dunărea (Romanian)
Dunaj (Slovak., Rusin.)

EGN Local Services (ELS)

Linked to exonyms (EVN-DB):

Danube (eng, fre),
Danubio (ita, spa),
Tonava (fin),
Δούναβης (gre),
Danubi (cat)
...

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Implementation – EGN „gazetteer profile"

INSPIRE D2.5 –
Generic Conceptual Model

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19112 model
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fusion.

- **EGN** is a **pan-European gazetteer service** compliant with the INSPIRE gazetteer application schema (D2.5 Generic Conceptual Model, V3.0)

- **INSPIRE_Data_Specification_GN_D2.8.I.3-v2.0** is supposed to be a **„data exchange standard"** for all potential (national and pan-European) geographical names sources.

- **mandatory EGN content** is **fully compliant** with the **mandatory content of INSPIRE** (Data Spec GN, v2.0)

- some **mandatory EGN attributes** are only **„optional" in INSPIRE**

- one **„optional" INSPIRE attribute** has not yet been introduced in **EGN** (+ „levelOfDetail")

Implementation – harmonized feature types

- **8 classes and 27 sub-classes** defined by EGN Reference Group

- essentially for the purpose of **query-filtering**

- EGN gazetter model allows for different feature classifications to be used (e.g. INSPIRE IFCD)

Code	Feature Type	Short Definition	Feature Type Examples
1	COUNTRIES, ADMINISTRATIVE UNITS AND OTHER AREAS	Countries, territorial units of a country for administrative purposes and other man-made areas	
1.1	Country	Country of Europe	
1.2	Administrative units	Territorial units of every country for statistics and administrative purposes *Including:*	
		Nomenclature of Territorial Units for Statistics in EU (NUTS 1, 2 and 3)	länder (Germany) autonomous region (Spain) province
		Local Administrative Units (LAU 1 and 2)	municipality
		Other administrative units	
1.3	Other non-administrative units	Other type of man-made areas like economic, cultural, linguistic or tourist areas	
2	POPULATED PLACES	Buildings for housing of any category like cities, towns, villages, etc.	
2.1	Administrative capitals	Populated places with capital status	

•••

Implementation – harmonized attributes

Mandatory content:

- the **name** itself (endonym, exonym or variant)

- the **language** of each name

- **extent** (BoundingBoxes in ETRS coordinates)

- **position** (mid-point in ETRS coordinates)

- **date of creation** (date of entry in database)

- **feature classification** according to the EGN feature classification

- the **local feature classification** (text and description according to local classification)

- the **organisation(s) responsible** (provider)

- the **date of last modification** of any of the stored properties of the name

- the **status** of the name

- the **unique identifier** "spatialObject_UID" of the associated spatial object/feature

Optional content:

- the **historical start/end dates** of a name (variant names)

- the **pronunciation** of the name (as IPAs and/or audio-files)

- the **data source** (describing the origins of the name entry)

- the **local status** of the name

- the **national unique IDs** (name- or feature-related)

- the **grammatical number** of the name

- the **gender** of the name

- the **script** used for the spelling

- the **transliteration scheme** used

- the **complex geometry** of the spatial object / feature (lines, polygons)

Implementation – harmonized metadata

- EGN partners have defined a **metadata profile** for geographical names data in 2007

- EGN metadata profile was adapted to **INSPIRE Implementing Rules for Metadata** in 2008

- **13 NMCAs** have completed the EGN Metadata profile in 2008

- National metadata content was introduced in **Web Catalogue Service (CSW)** of BKG

- **EGN Reference Application** displays the metadata in HTML

Implementation – connected EGN Local Services

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- Connected Reference Group members in February 2009
- To be connected until April 2009
- To be connected until end 2009
- Reference Group members not yet involved
- Not yet involved

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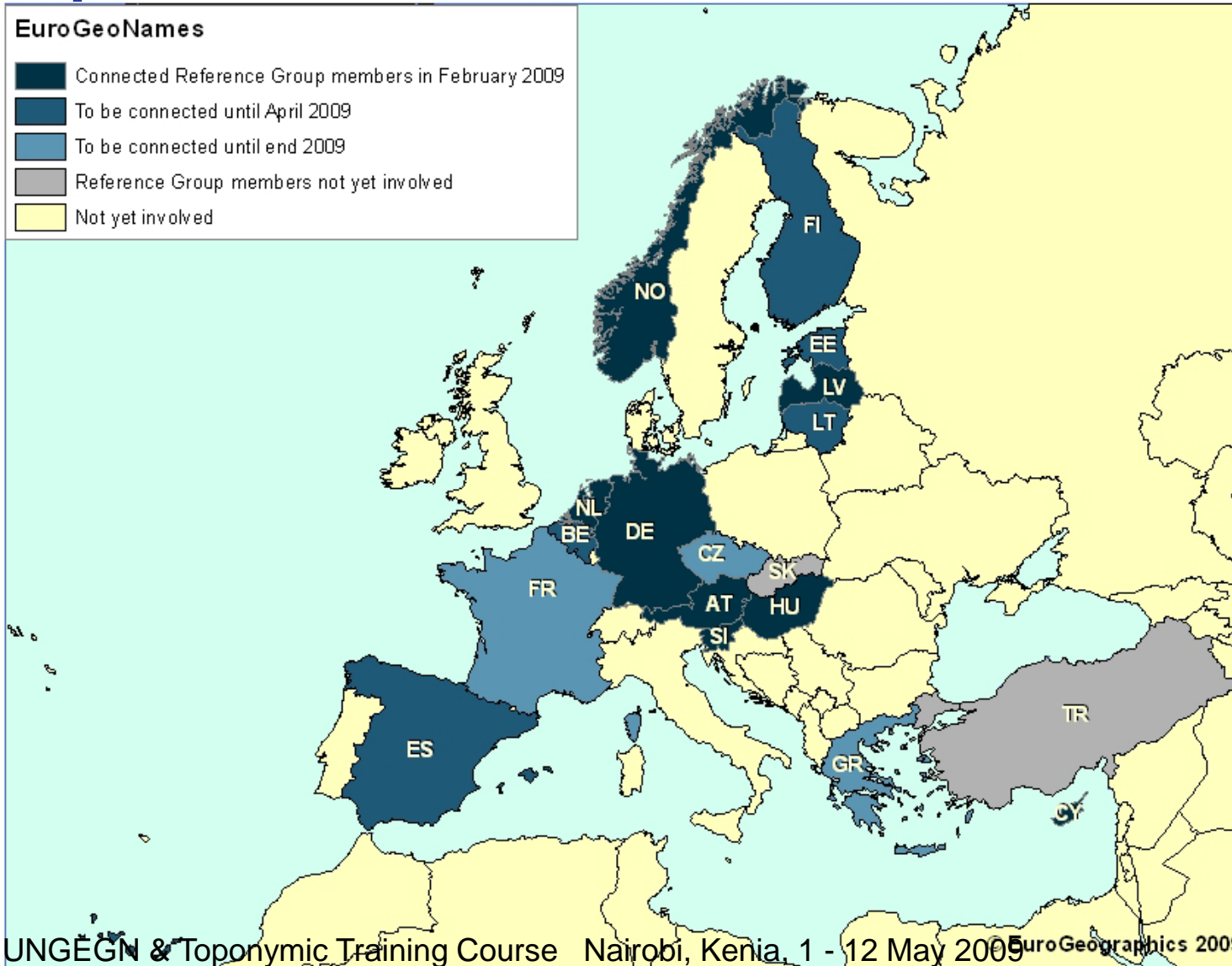
*Euro*GeoNames

Reference application – search & visualization
http://www.eurogeonames.com/refappl/

"1st window"

end-user interface defines name searches, displays results and demonstrates functionality of the EGN infrastructure

8 languages supported, so far!

Reference application – example of "Riga" (ger)

Reference application – metadata

View in the
Reference
Application

Latvian Geographical Names Database

Data Identification:

Identification Information

Abstract (en):	Single database named Latvian Geographical Names Datab featuree, sources
Language:	latvian
Characterset:	utf8
Topic Category:	location
Citation:	

Citation

Title (en):	Latvian Geographical Names Database
Date:	

DateRef

Date:	02/01/03
Date Type:	creation

Resource Constraints:
+ Legal Constraints

Spatial Resolution:
+ Resolution

Equivalent Scale:	
Representative Fraction	
Denominator:	250000

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Commercial application – ESRI ArcGIS Extension

"2nd window"

enables **ESRI ArcMap** to perform name searches, to analyze, visualize and save the results in a standard commercial GIS

1 million ArcGIS user base

available as free download

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EGN link to INSPIRE

EGN ArcGIS extension	EGN reference application	EC = WFS client

OGC Web Feature Services – WFS

Support of ISO 19112 and compliance with the INSPIRE requirements (D2.5 v3.0)

WFS | **WFS** | **WFS**

EGN Central Service

WFS | **WFS** | **WFS**

| EGN Local Service (configured by EGN) | EGN Local Service (configured by NMCA) | EGN Local Service (configured by NMCA) |

Made by EGN

Made by NMCA

Made by others

INSPIRE Implementing Rules define the **"data exchange model"** and the network services for **publishing data** as it exists!

INSPIRE Implementing Rules might **not** spell out **requirements on data content.**

It is on the data providers (NMCAs) to make products fit for European applications !

...
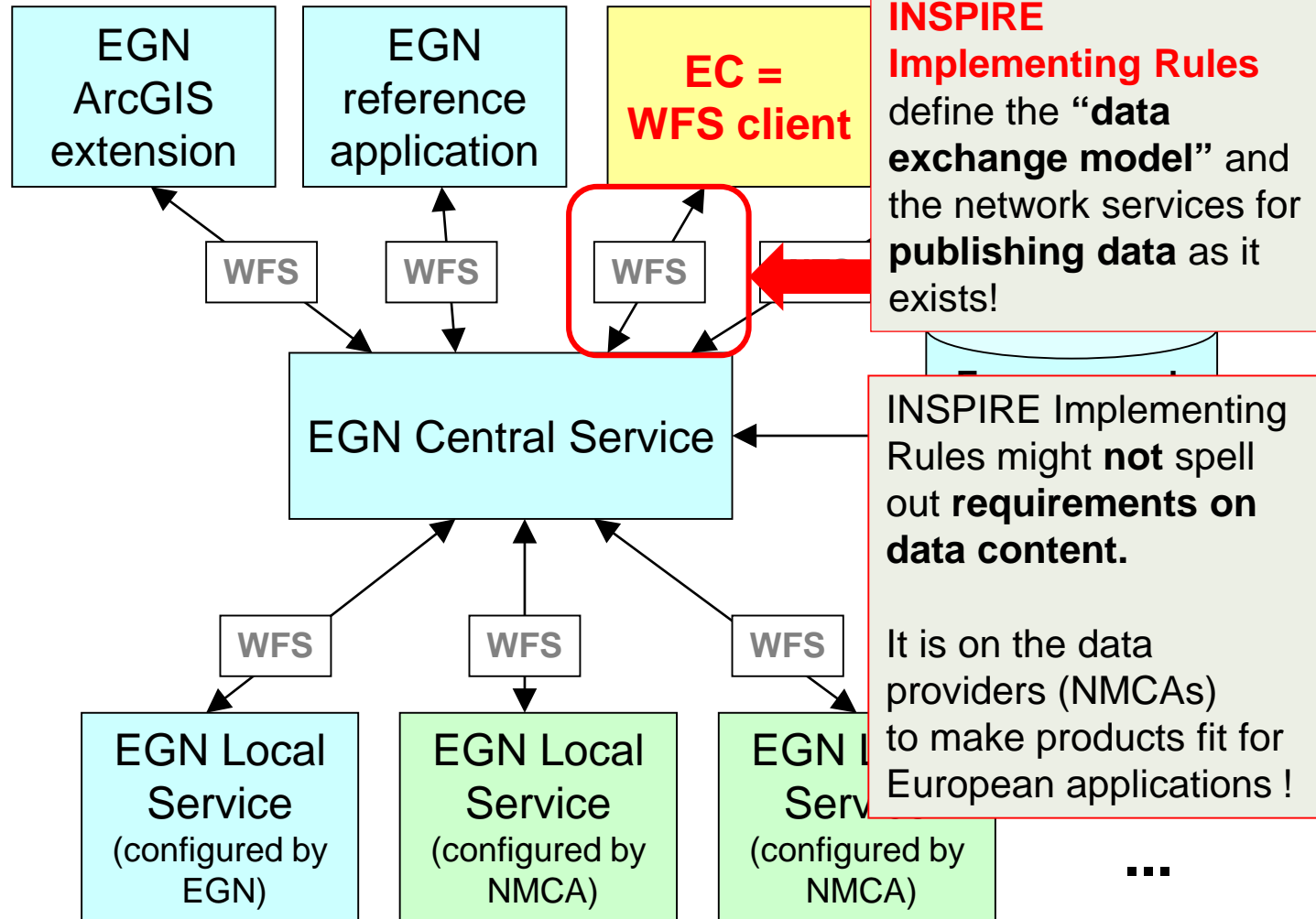
EGN link to INSPIRE – open issues

- further **business/use cases** might be elaborated by the EGN project management based on requirements of the pilot customers

- additional **metadata** elements requested by the INSPIRE data specifications/ Implementing Rules for Annex I might have to be added to the EGN metadata profile

- **INSPIRE attributes** might be considered to be added to the EGN gazetteer model (e.g. „LevelOfDetail")

- **"Language codes"** (currently ISO 639-2-codes are proposed) are under discussion within INSPIRE.

- EGN **feature classification** may have to be adapted to the one adopted by INSPIRE, which may become the INSPIRE Feature Concept Dictionary - IFCD

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Sustainability – Implementation Plan 2009 - 2012

A joint venture, mainly between **BKG** and **EuroGeographics:**

- Host the EGN Central Service   **BKG**

- Host the EGN Reference Application   **BKG**

- Continuing technical support for NMCAs (EGN Local Services)   **BKG**

- Technical support for EC (in integrating the EGN Central Service   **BKG**
  in applications or services)

- Project management and administrative support   **EuroGeographics**
  for pilot customers (development of business model)

- Further development of the EGN infrastructure & services   **XY**
  (development of new functionality requested by pilot customers/VARs)

                                                                      ... on a tendering process

Use case – example

News agencies

⇒ EGN Central (WFS) Service to provide additional location based information

EGN Central Service integrated in a news portal as additional functionality

e.g. search for the **official spelling** and its **pronunciation** (if available).

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Conclusion – benefits of EuroGeoNames

- ✓ Accessibility of the **primary sources** of **official** geographical names data (comprising **minority language names**) and their related **multi-lingual attributes**

- ✓ **Continuous updating** by the EU countries themselves

- ✓ Primary entry are **endonyms** (NMCAs), linked to the **(standardized) exonyms** and other names

- ✓ Provision of information through a **distributed WFS infrastructure & services**, i.e. **no secondary data sets**

- ✓ Support of (at least simple) **spatial relationships** (bounding boxes, full geometry possible)

- ✓ Link to **spatial objects (UIDs)** of NMCA datasets and **metadata** of the national sources available

- ✓ Facilitate **quality control** through **official national cooperation** on a European level

EuroGeoNames website: www.eurogeonames.com

Deliverables of status "public" (will be) available under *'Downloads',* amongst others:

D1.7 Final Project Report

D3.3 Metadata Profile

D4.2e Conceptual schema & documentation (EGN gazetteer profile)

D5.6 Exonyms and variant names database specification

D6.5 EGN Web Services profile/specification for implementation

D7.4 EGN Web GIS Reference Application documentation

D8.2 IS-EGN ArcGIS Extension documentation

… Questions ?

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