

## 25<sup>th</sup> UNGEGN & Toponymic Training Course

# **EuroGeoNames (EGN) –**

An implementation of an European gazetteer service

**Nairobi, Kenia**

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## Introduction

# 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 *eContentplus* programme of the EC**

Budget: 1.900.000 Euro (50% co-funded)

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

# 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)

## Partners – EGN Consortium

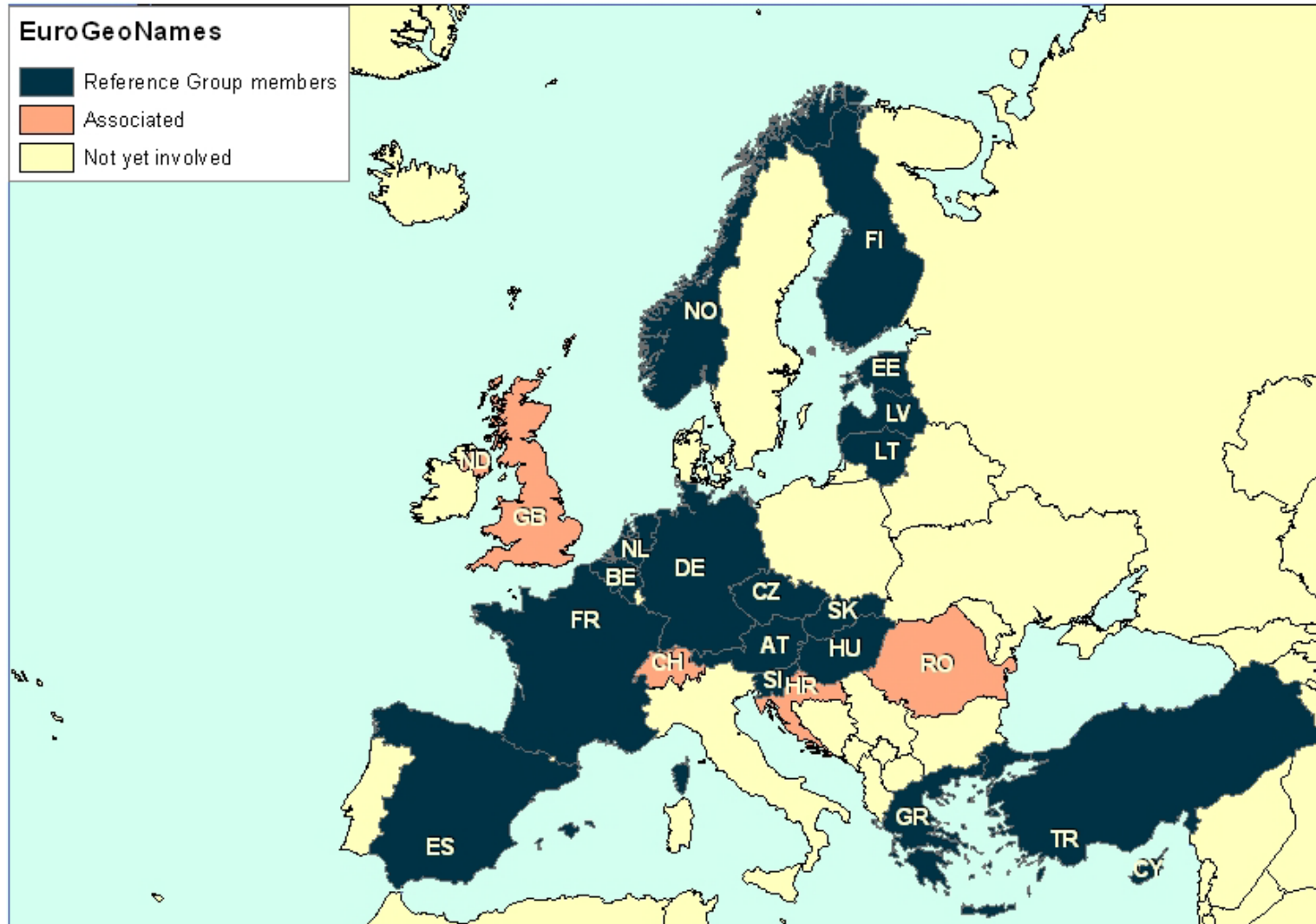
- BKG, Frankfurt am Main (Co-ordinator)
- Bundesamt für Eich- und Vermessungswesen, Wien
- Surveying and Mapping Authority of Slovenia
- EuroGeographics Head Office, Paris
- Universiteit Utrecht, Geographic Department
- EDINA National Data Centre, Edinburgh
- Geodan Holding, Amsterdam
- ProDV AG, Dortmund
- ESRI Geoinformatik GmbH, Kranzberg

**Public  
sector**

**Academic  
sector**

**Private  
sector**

# Partners – EGN Reference Group (NMCAs)

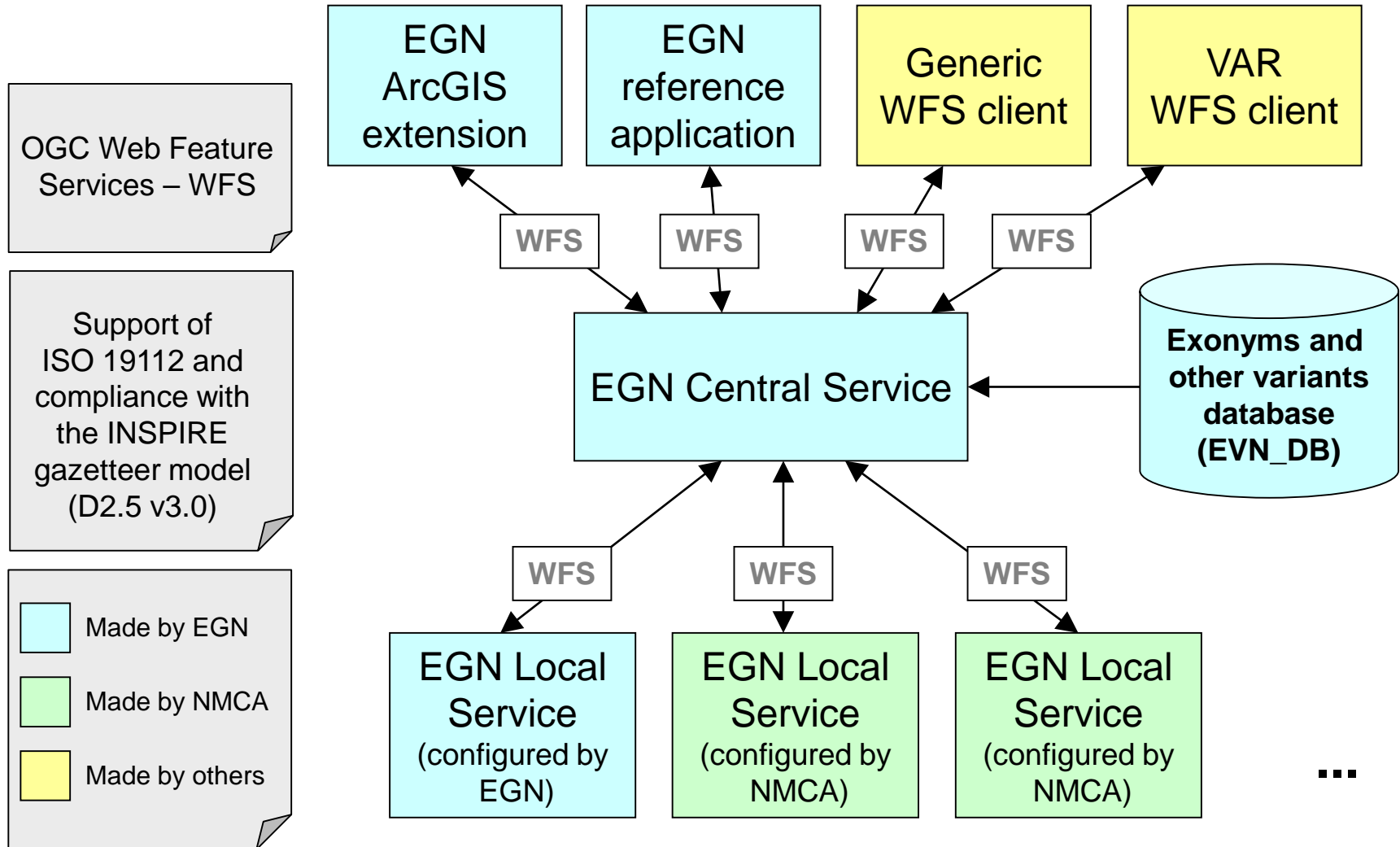


## Partners – EGN Group of Interest

**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), **Freitag & Berndt** (Austrian publishing house), **Institut für Kartographie** (TU DD), **JRC** Language Technology Group, **BDVI** Association of German Surveyors, **Eurostat** (Luxembourg), **lat/ion GmbH** (Germany)

# Distributed Web Feature Services' architecture



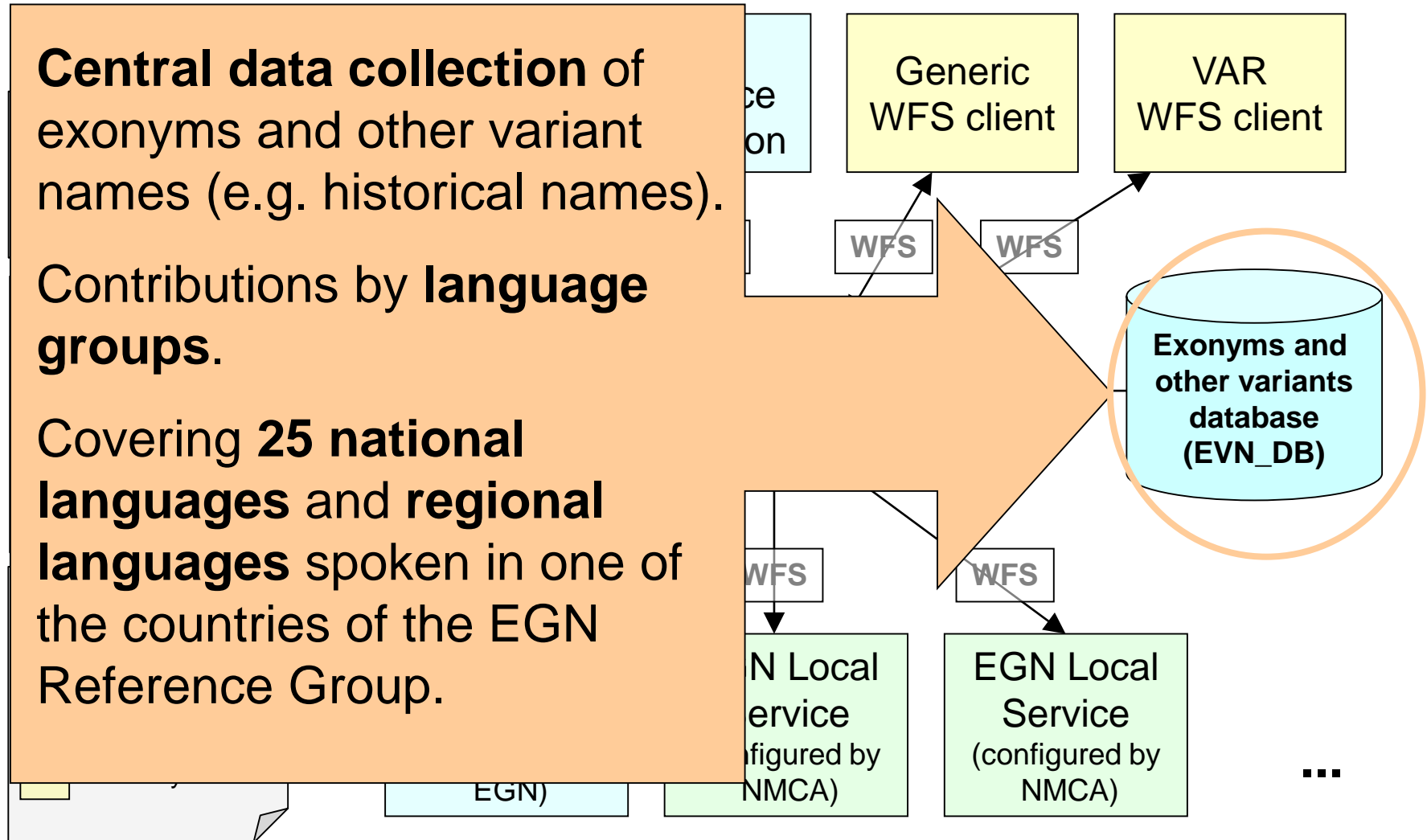


# Exonyms and other variant names' management

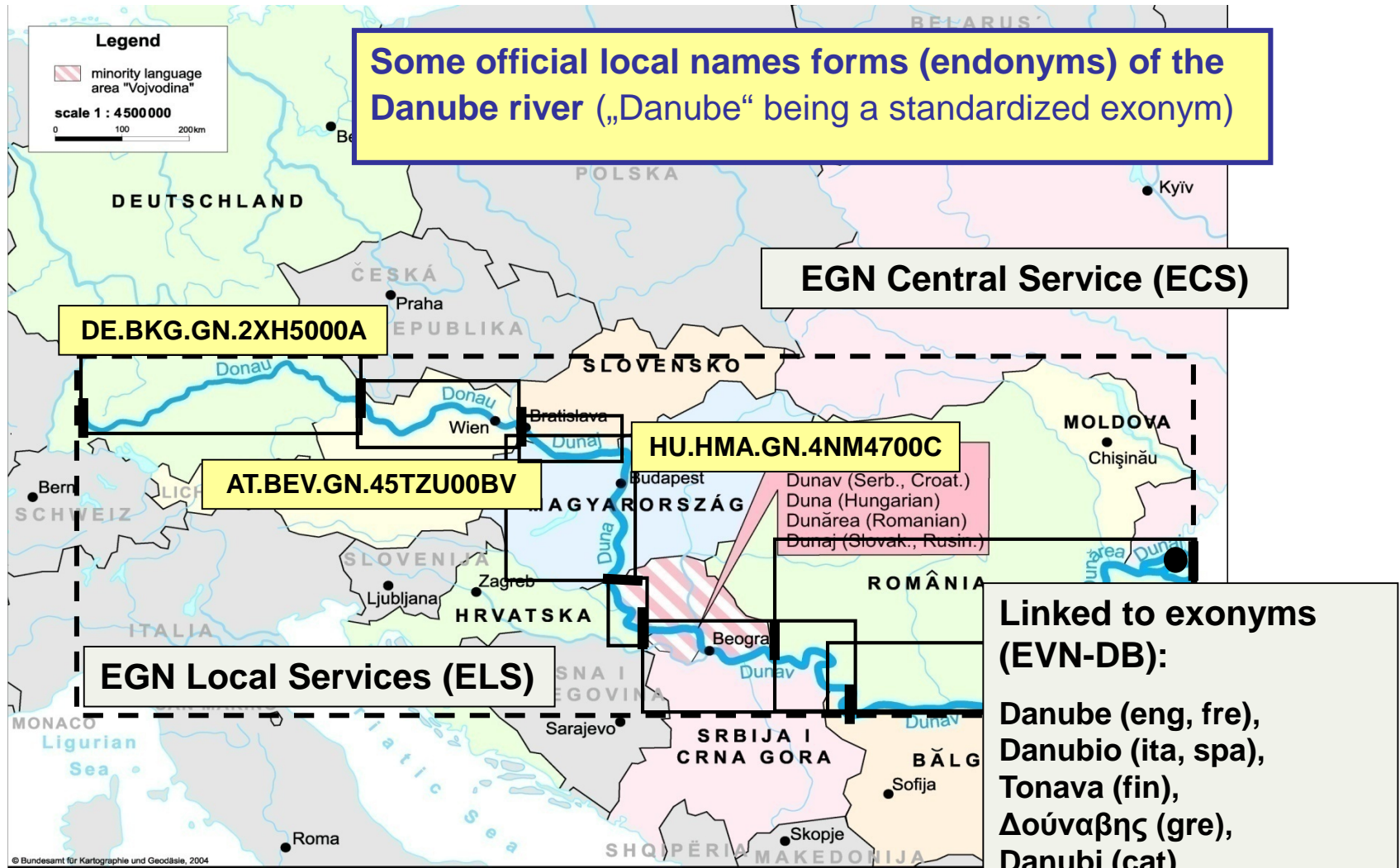
**Central data collection** of exonyms and other variant names (e.g. historical names).

Contributions by **language groups**.

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

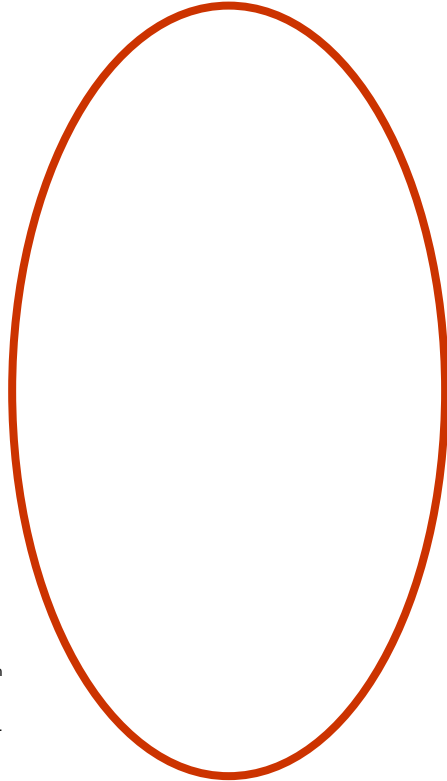


# Complexity – linkage between ECS & ELS & EVN-DB



# Implementation – EGN „gazetteer profile“

## INSPIRE D2.5 – Generic Conceptual Model



In the original  
19112 model  
specific a 0..1  
multiplicity for  
GeoObject we have  
changed this to be a  
mandatory element. In  
this case every record  
must have a  
GeoObject attribute.  
multiplicity is  
changed to avoid  
confusion.

## Implementation – EGN „gazetteer profile“

- **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\_D2.8.1.3-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“)

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usion.

# Implementation – harmonized feature types

- **8 classes and 27 subclasses** 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)

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

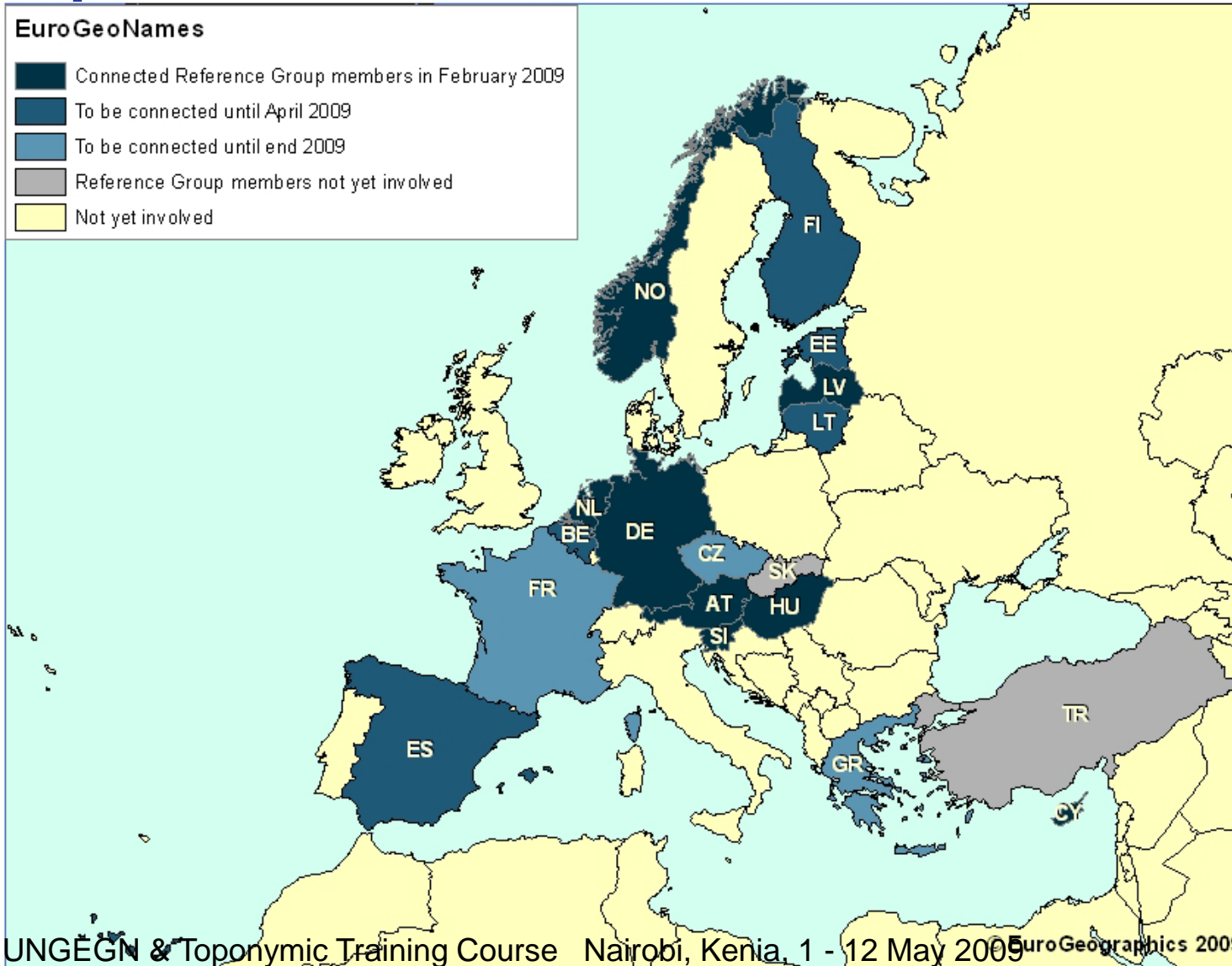
- EGN partners have defined a **metadata profile** for geographical names data in 2007
- EGN metadata profile was adapted to **INSPIRE Implementing Rules for Metadata** in 2008
- **13 NMCAs** have completed the EGN Metadata profile in 2008
- National metadata content was introduced in **Web Catalogue Service (CSW)** of BKG
- **EGN Reference Application** displays the metadata in HTML



# Implementation – connected EGN Local Services

## EuroGeoNames

- 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





# 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!**

EuroGeoNames Reference Application V.-1.0 - Microsoft Internet Explorer

Available languages : ENG FRE GER SPA GRE SLV LIT CAT

EuroGeoNames Reference Application

Search Result Map Query Help & Info

Welcome to the EuroGeoNames Reference Application

This application illustrates the capabilities and the benefits of the EuroGeoNames Web Service. The Reference Application finds and locates names on the map that represent all kinds of geographical objects. The service provides you with the official spelling, the spelling in other languages and information about pronunciation, gender etc. Read more about the service, the project and the partners on the project website <http://www.eurogeonames.com>

Enter search term : Riga Search

Advanced Options

Advanced Search Criteria

Search type: exact

Language: exact, fuzzy, sounds-like, Altaic (Other), Aromanian, Basque

Country: Iceland, Ireland, Italy, Latvia, Liechtenstein

Spatial Search

Partner logos: Bundesamt für Kartographie und Geodäsie, BEV, EDINA, Universiteit Utrecht, Geodan, GeoTask, ESRI, eurogeographics

# Reference application – example of “Riga” (ger)

Search **Result** Map Query Help & Info

## Result list

The result list shows the available information about a name. Please read notes at the end of this page.

2 features found for "Riga" [Display Results on the Map](#) [Refine Search](#)  
[Display All Available Attributes](#) [New Search](#)

### Riga

Feature type : Miscellaneous  
 Country : Netherlands  
 Language : Dutch

### Rīga

Alternative Names : [Riika\(eu\)](#) ; [Ryga\(eu\)](#) ; [Rīga\(lv\)](#)  
 Feature type : Administrative capitals  
 Country : Europe  
 Language : German

1 Of 1

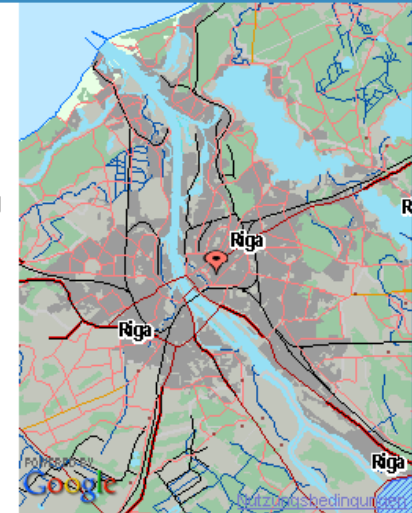
The minimum properties of a name are : the name itself, its geograph and language. The information depth may vary form country to country to the number of result lists and displayed properties. The full function EGN Central Service Interface. Please read [the providers page](#) for mor users.

## Feature Information

### Ryga

Country :   
 Feature type : Administrative capitals  
 Temporal extent : 2008-10-23T13:12:15  
 Position : 56.95999877997035  
 24.124454663980575  
 Administrator : Bundesamt für Kartographie und Geodäsie (BKG)  
 Last update date : 2008-10-23T13:24:32  
 Status : **standardized\_exonym(English)**  
 Language Iso639 : **lit**  
 Alternative geographic identifier : Riika;EU.B9D76A4B-3C72-4010-99DD-A22346772BA0 - Riga;EU.B9D76A4B-3C72-4010-99DD-A22346772BA0 - **Rīga;LV.31749**  
 Data Source : Svetimvardžiai  
 Geographic identifier : Ryga;EU.B9D76A4B-3C72-4010-99DD-A22346772BA0  
 Custodian : EuroGeoNames variant names database

[BoundingBox](#)



Close

# Reference application – metadata

## Latvian Geographical Names Database

### Data Identification:

#### Identification Information

<b>Abstract (en):</b>	Single database named Latvian Geographical Names Database, sources
<b>Language:</b>	latvian
<b>Character set:</b>	utf8
<b>Topic Category:</b>	location

#### Citation:

##### Citation

<b>Title (en):</b>	Latvian Geographical Names Database
<b>Date:</b>	
<b>DateRef</b>	
<b>Date:</b>	02/01/03
<b>Date Type:</b>	creation

#### Resource Constraints:

##### + Legal Constraints

#### Spatial Resolution:

##### + Resolution

#### Equivalent Scale:

##### Representative Fraction

<b>Denominator:</b>	250000
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View in the  
Reference  
Application



# Commercial application – ESRI ArcGIS Extension

“2<sup>nd</sup> 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

The screenshot shows the 'EuroGeoNames Extension for ArcGIS' window. The search term is 'Rīga'. The interface includes a search type selector (fuzzy, literal, sounds like), find options (all words, any word, exact term), locale settings (Language: -- All Languages --, Country: -- All Countries --), and spatial filter options (no spatial filter, current extent). The results table is as follows:

Name	Language	Alternatives	LocationType
Rīgas jūras līcis	Latvian	0	Land transport
Rīga	Latvian	0	Air transport
<b>Rīga</b>	<b>Latvian</b>	<b>3</b>	<b>Administrative capitals</b>
Vecrīga	Latvian	0	Other populated places
Rīgaji	Latvian	0	Other populated places
Rīgas rajons	Latvian	0	Country
Rīgas naftas bāze	Latvian	0	Other non-residential stru...
Rīgas ūdenskrāt...	Latvian	0	Standing water features
Rīgas rajona pa...	Latvian	0	Other non-residential stru...
Rīgas dome	Latvian	0	Other non-residential stru...

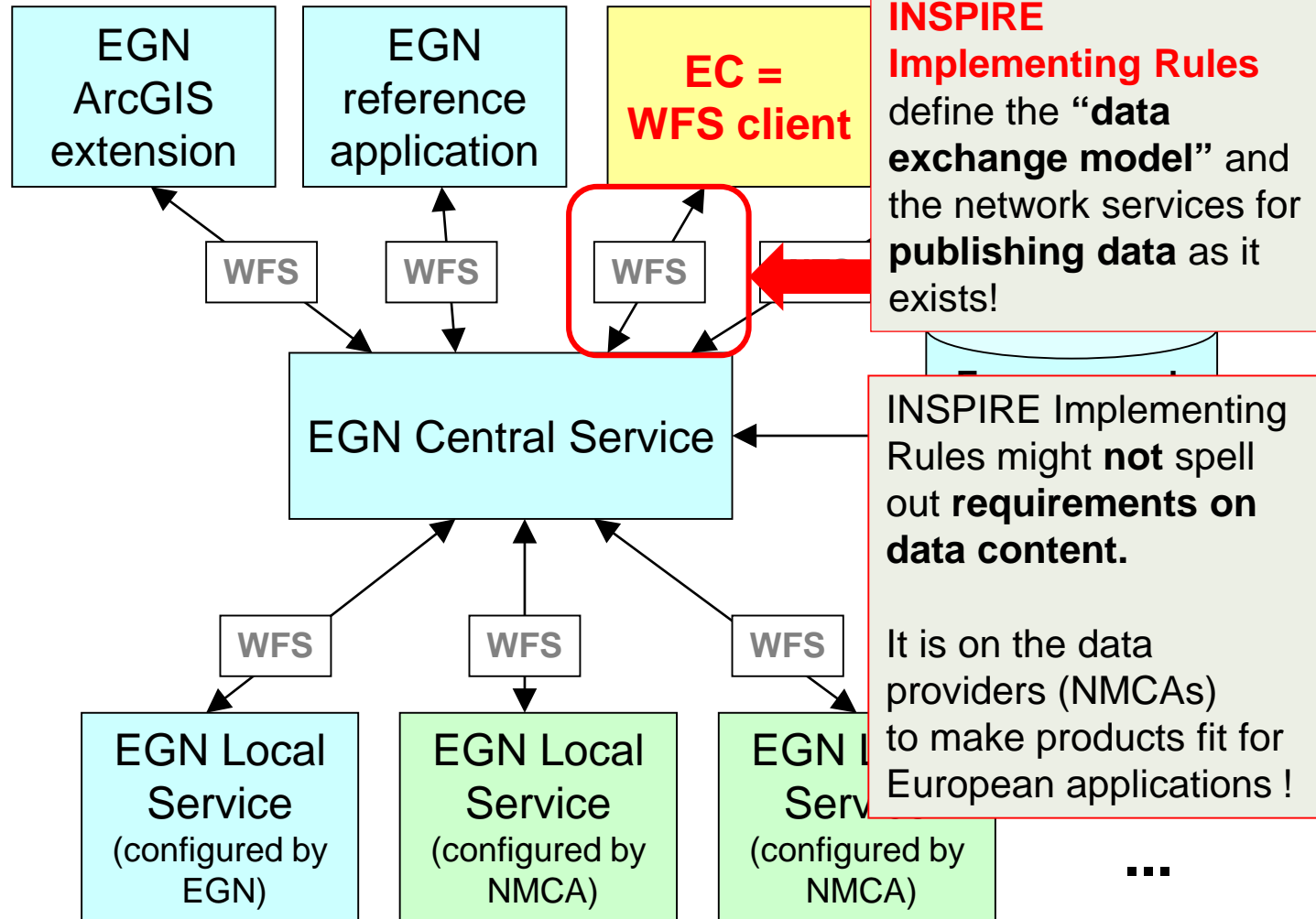
Additional details from the screenshot: 13 features found. The right pane shows metadata for the selected 'Rīga' feature, including NationalUniqueid (31749), Gender, GrammaticalNumber, XML, LocationInstanceID (1769283), GeographicIdentifier (Rīga, LV. 31749), Alternatives (3), and AlternativeGeographicId (String[] Array).

# EGN link to INSPIRE

OGC Web Feature  
Services – WFS

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

Made by EGN  
 Made by NMCA  
 Made by others



## 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

## 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 in applications or services) **BKG**
- Project management and administrative support for pilot customers (development of business model) **EuroGeographics**
- Further development of the EGN infrastructure & services (development of new functionality requested by pilot customers/VARs) **XY**

... on a tendering process



# Use case – example

The screenshot shows the einnews.com website interface. At the top, there is a navigation bar with a globe icon and the text "einnews.com a service for global professionals". Below this are several utility buttons: "SIGN UP FOR THIS NEWSLETTER", "MANAGE NEWSLETTER(S)", "MAKE A NEW NEWSLETTER", "SEND PAGE TO A FRIEND", and "BOOKMARK THIS PAGE". The main content area is titled "Central Europe Online" with a sub-link "EIN Home > Central Europe Home". A dropdown menu shows "All Central Europe Newsfeeds". The main content features several news articles with blue headlines and timestamps. On the right side, there is a "PICTURES OF THE DAY" section with four news items, each accompanied by a small image and a source attribution (CNN, U.S. Politics Today, VOA News, Reuters UK, Hajj, iAfrica, NASA News).

## 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).



## 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](http://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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