EUROGEONAMES (EGN) - THE IMPLEMENTATION OF AN INSPIRE SERVICE

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EXECUTIVE SUMMARY

The EuroGeoNames (EGN) project funded by the eContentplus programme of the European Commission (EC) started on 1st September 2006 and the funded period lasted until 28th February 2009 with a project budget of 1,8 M €. During the funded period a European geographical names infrastructure has been established by connecting existing national official data sources of the participating National Mapping and Cadastral Agencies (NMCAs). In this way the geographical names data is updated in a consistent way and maintained at the source level by the responsible organizations.

EGN has been recognized as a very successful project by the European Commission and the project partners. EGN can become the first INSPIRE compliant service in Europe and provides excellent opportunities for EuroGeographics and its members to meet future requirements in their role as reference information providers for national and European spatial data infrastructures.

Since 2009, the overall management of the EuroGeoNames infrastructure is conducted by EuroGeographics together with the German Federal Agency for Cartography and Geodesy (BKG).

Implementation over the period of 2009 – 2012 ensures the continuation of the EGN infrastructure and services. A priority is to achieve at least EU27 coverage as a part of our initiative to make EuroGeoNames self sustaining.

The best architecture, use and management of EGN have been explored partly within the ESDIN project (a European Spatial Data Infrastructure Network). In this project best practice is sought for reaching INSPIRE compliance and creating harmonized pan-European location data and services. As Geographic Names is one of the 5 themes targeted by ESDIN there have been a number of insights and improvements which are now included in the EuroGeoNames implementation.

1. BACKGROUND

The increasing use of public domain geographical information, especially geographical names data raises an interesting question given the pedigree of such data - who decides where (for the general population) European places are and how they are spelled?

Considering the multilingualism and cultural richness in Europe, the people use different spellings and languages when talking about the same location and even within a country more than one spelling may be used. This is the European situation that should be considered as a prestige value and not as an obstacle! Thus, full richness, completeness and high quality of European data seem only to be guaranteed if the data providers are the European countries – creating and maintaining the source data – themselves.

According to existing popular web services using public domain data sources the answer would appear to be that by default and in lieu of an European alternative, it is not the respective National Mapping and Cadastral Agency (NMCA) – or another national institution – that decides where e.g. Bruxelles/Brussels is located and how it is spelled.

2. OBJECTIVES AND ACHIEVEMENTS

Within the EU-funded period (1st September 2006 until 28th February 2009) the EuroGeoNames (EGN) Consortium has implemented a web (gazetteer) service infrastructure for providing official geographical names data in Europe together with about 20 European NMCAs to help you to find the official spelling of a name, together with its spelling in other languages, its geographical location, its pronunciation, etc.
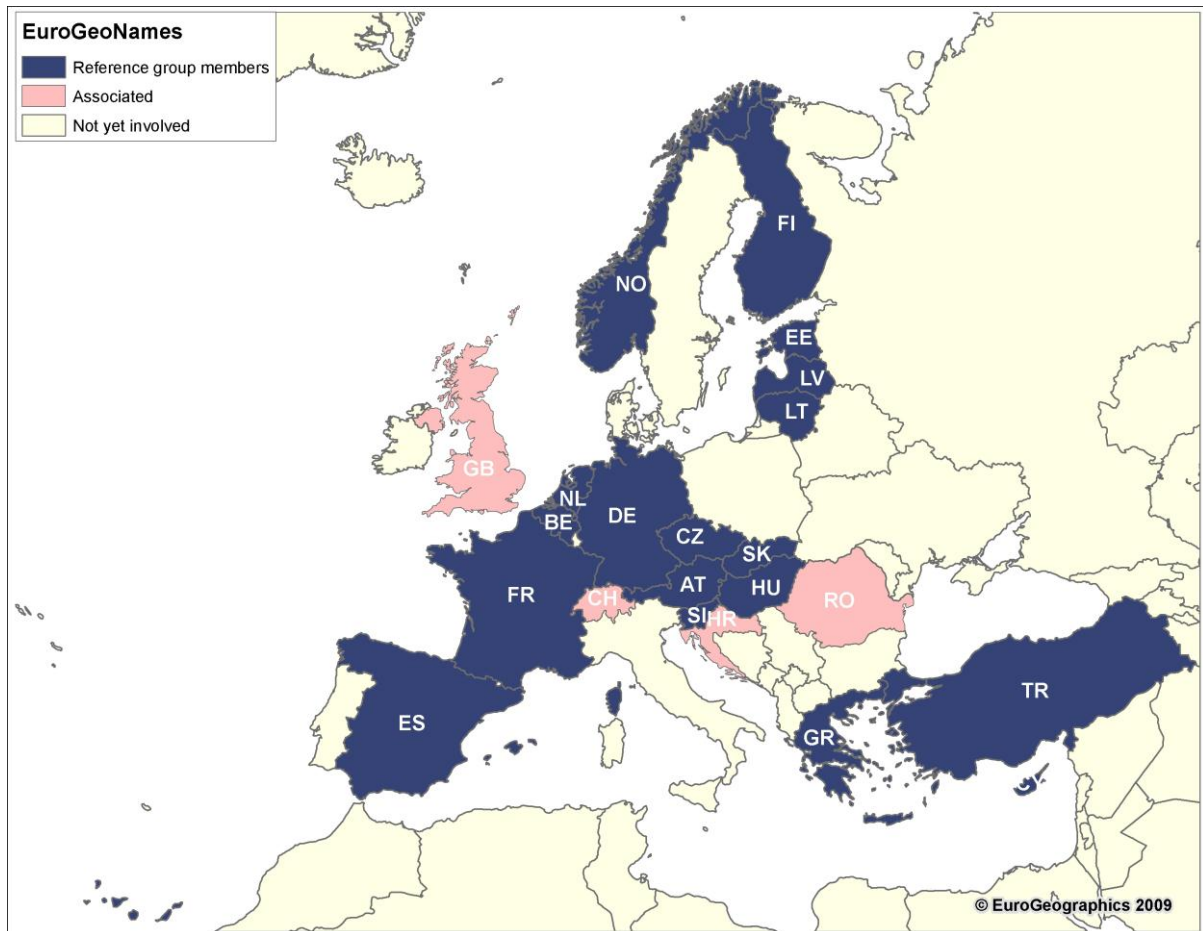
Figure 1: Participating and associated National Mapping and Cadastral Agenicies (NMCAs)

The official geographical names data kept decentrally in the EU countries is linked to and searchable via so-called ‚Web Feature Services – WFS'. A so-called "EGN Central (WFS) Service" accesses the distributed "EGN Local (WFS) Services" at each data provider (NMCAs) to query the EGN data network and return standardized result sets (in XML) to the inquirer. The data maintenance and updating process remain in the responsibility of the countries, which have collected and maintained them. An exonyms and other variant names database (EVN-DB) comprises important names used in a specific language for a geographical feature situated outside the area where that language is spoken, and differing in its form from the name used in an official or well-established language of that area where the geographical feature is located. These names are not part of the databases of the participating NMCAs of the EGN project. The EVN-DB is a supplement database to the EGN Central Service and each (standardized) exonym and other variant name is linked unambiguously with the appropriate official endonym(s) provided by the NMCAs. An online-editing service serves to maintain the EVN-DB in future. Single requests (currently limited to 50 requests / day for anonymous users) for geographical names by using the EGN Central Service are free of charge.
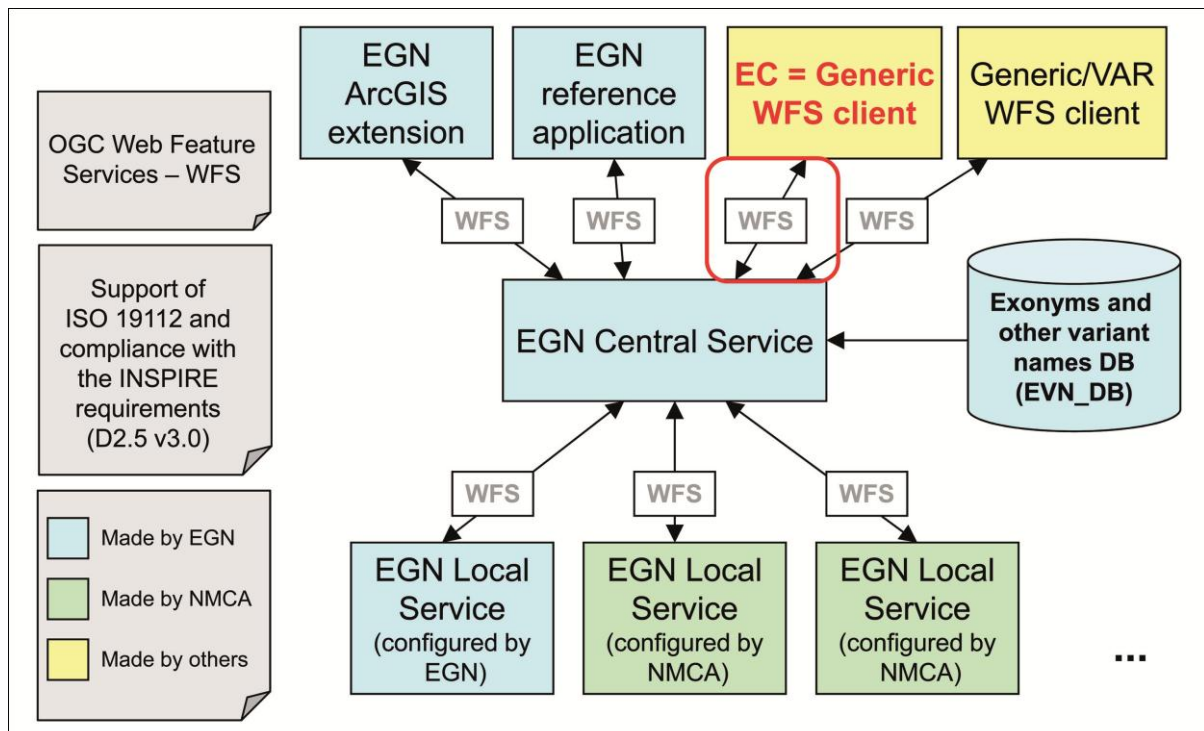
Figure 2: EuroGeoNames Services' architecture

Generally, the EGN Consortium aimed at being as much compliant as possible with findings of the INSPIRE initiative. The major strength is that the EGN gazetteer model is compliant with the current version of the INSPIRE gazetteer model (INSPIRE D2.5 Generic Conceptual Model, v3.1). As for the final version of the INSPIRE data specification for geographical names (v3.0) it can be stated that the output of the EGN Central Service can be mapped to the INSPIRE data specification and that EGN currently conforms to all content mandatorily required by INSPIRE.

EGN is targeted primarily at value added resellers (VARs) and service providers to develop specific applications for their customers and deploy value-added GIS products by using the EGN Central Service. The end user has access to this information either through the gazetteer service interface (http://www.eurogeonames.com:8080/gateway/gateto/anonymous-public) or through the applications (end-user interfaces). Two applications have been developed within the funded period.

The first one is the so-called EGN Reference Application, which enables searching for geographical names in all official European languages, including officially recognized minority languages, showing the full functionality of the EGN infrastructure. (http://www.eurogeonames.com/RefAppl/). The second one is the EGN ArcGIS extension developed by ESRI. This extension enables ArcMap to perform name searches based on several query criteria and to analyze, visualize and save the results in a standard GIS software environment. The EGN ArcGIS extension is available as a free download through ESRI ArcScripts (http://arcscripts.esri.com/). Other applications, developed by third parties, will be encouraged.

3. STATUS OF THE EUROGEONAMES INFRASTRUCTURE

The main task of the EGN consortium until February 2009 was to connect as many countries as possible to the EGN infrastructure. The "critical mass of content aggregated", as requested by the eContentplus programme, was fulfilled by aggregating data for eight countries: Slovenia, Latvia, The Netherlands, Austria, Norway, Hungary, Cyprus, and Germany. Additional countries like Belgium, Lithuania, Estonia, Finland, Spain, and France have now joined in the post project phase with a number of countries destined to join during 2011.
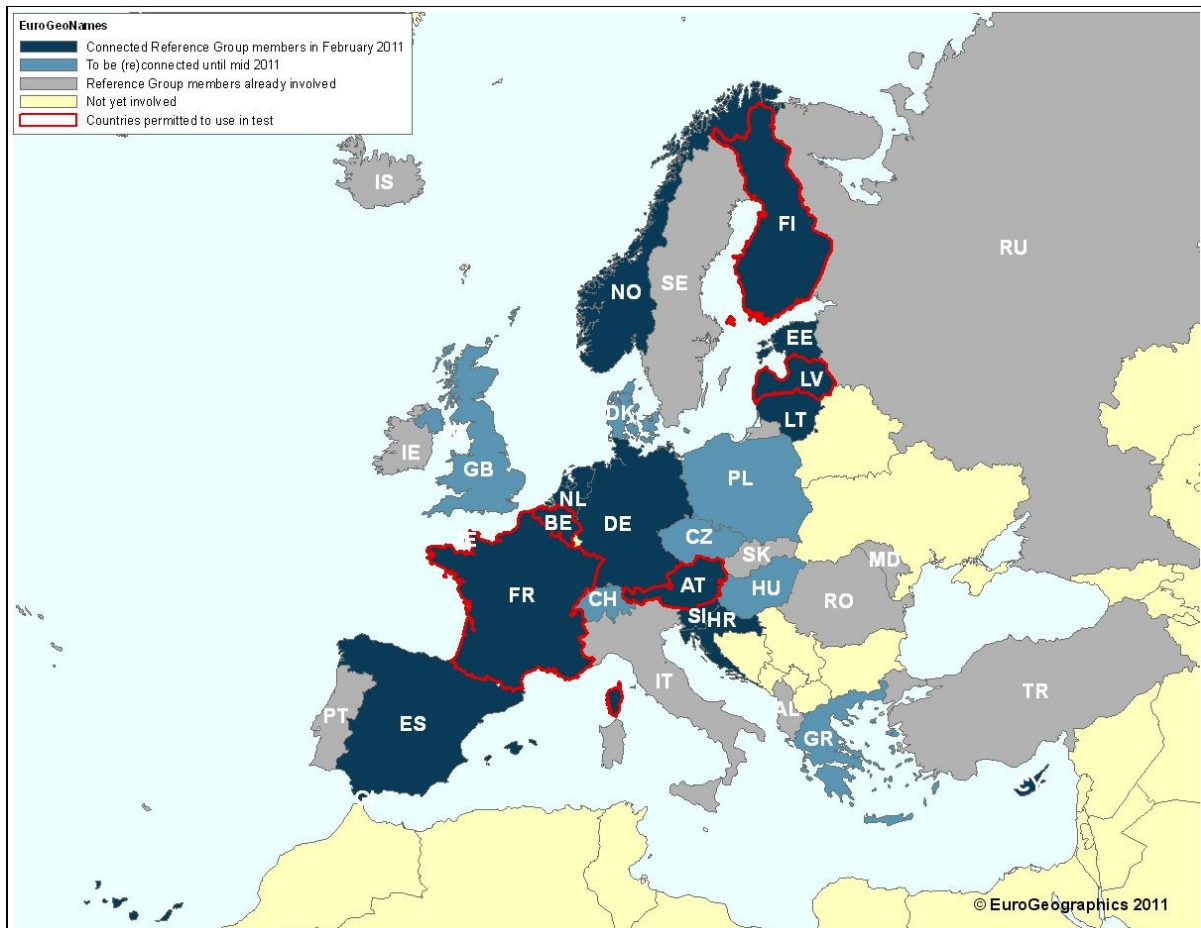
Figure 3: Overview of connected National Mapping and Cadastral Agenicies (NMCAs)

The quantity of the geographical names data in the respective countries is quite different and depends on the general shape of the country, the map scales used as the basis for data acquisition as well as on the level of information detail required in the countries themselves. It varies between 1 : 5,000 (e.g. Cyprus), 1 : 10,000 (e.g. The Netherlands) and 1 : 200,000 (e.g. Germany). Within the initiation phase of EGN remarkable time was required for analyzing the data to be aggregated during the project. As for a gazetteer service the scale information is not relevant. It is of more importance that e.g. all geographical names of 'administrative units' are available.

Currently, the connected German service provides about 90,000 entries, the Finnish one about 808,000 entries. Thus, assuming that about 16 countries mentioned above will be connected to EGN in 2009, the quantity of geographical names may lie in between 2,8 million and 3,5 million entries (endonyms). In addition, about8000 exonyms and other variant names will be linked to the national databases.

4. TARGET USER AND THIER NEEDS

Within the EGN project, the market in terms of potential applications and related business actors and stakeholders from both public and private sectors was analyzed as well as user and business requirements based on the outcome of the market analyses described.

As for the target user groups the following ones can be distinguished:

- emergency services; health and safety,
- cross border market analysis & asset management,
- border crossing routing; transport and delivery service networks,
- hotel reservation services, tourism,
- private sector map and atlas producers,
- educational establishments, libraries,
- mass media (broadcast, TV),
- location based services (LBS).

Generally, the JRC INSPIRE geoportal is potentially a user for EGN as well as agencies of the European Commission, such as Eurostat and also commercial actors like Google, Yahoo, Microsoft, Tele Atlas, Nokia, etc.

The so-called 'EGN Group of Interest' comprising 26 organizations (standardization bodies, private GI companies, cartographic publishing houses, GI interest groups, etc) potentially interested in using the EGN infrastructure and services too, was invited to join, comment and shape the EGN project activities from the beginning in 2006 and to provide 'customer feedback' by participating in workshops.

The unique selling points (USP) of the EGN infrastructure and services for Europe and its quality are that:

- the names data provided are from a primary source,

- it is continuously updated,

- it is more detailed than other names data,

- it is closer to the experts that collect the names,

- there is a better quality control through official cooperation,

- it is based on European standards,

- the data is generated by trustworthy institutions providing unbiased products.

5. ESDIN: A EUROPEAN SPATIAL DATA INFRASTRUCTURE

ESDIN – a European Spatial Data Infrastructure with a best practice network- is dedicated to maximising the use of data from our National Mapping and Cadastral Agencies (NMCAs). Funded by the eContentplus programme of the EU the project promises to provide the guidance needed to meet the demands of the INSPIRE legislation.

The project emerged during an exciting period in the history of digital content. ESDIN embraces the trends we have seen developing in the use of GI and in parallel markets as the world wakes up to the power of geographic information and insists on simpler ways to access it.

As Geographical Names is one of the themes ESDIN covers, the project offered the chance to demonstrate Geographical Names services as the corner-stone of a future European Spatial Data Infrastructure. As a result EuroGeoNames is referenced for the proposed extended INSPIRE specifications that ESDIN offers and implementations within the ESDIN project include EuroGeoNames.

Exploiting expertise from the National Mapping, Commercial development and academic world the twenty partners offer best practice when maximising the use of public sector mapping data.

6. MAKING EGN SUSTANAIBLE

EuroGeoNames continues to be supported and extended by EuroGeographics together with the German Federal Agency for Cartography and Geodesy (BKG) beyond the end of the project during this implementation period.

As a first stage, in spring 2009, the EGN project coordination was transferred to EuroGeographics. BKG continues to function as the "Service Center" for hosting the EGN Central Service, the Reference Application and the Exonyms and other variant names database as well as for providing technical support to NMCAs and pilot customers.

During implementation in the period 2009 – 2012 the first priority is to grow the coverage to accommodate 27 nations. We have been successful in growing the connections to 14 by the beginning of 2011 and the initiatives to grow this further include awareness campaigns and activities with key users, suppliers and influential groups. These activities include;-

• Involvement with the United Nations group of experts on Geographic Names

• Providing necessary advice, software and on-line tools to ease the task of mapping to the EGN specification and creation of Local Web Feature Services

• Workshops and questionnaire with National Mapping and Cadastral agencies on proposed pricing and licensing, access and supply preferences.

• Increasing basic coverage for the whole of Europe by including names data from alternative sources

• A test programme, interviews, questionnaires and meetings with all key customer groups.

The Creative Problem Solving approach by the EGN Coordination committee sets out a plan to improve accessibility and usability of the offering and now shapes the proposition for a sustainable EuroGeoNames.

EGN is, probably, the first INSPIRE compliant service in Europe and provides excellent opportunities for EuroGeographics and its members to meet future requirements in their role as reference information providers for national and European spatial data infrastructures.

After 2012 the ambition is for EGN to become a component in EuroGeographics services infrastructure.

7. FUTURE PLANS

Events like the one day workshop on EGN at the UNGEGN regional conference in Zagreb (February 11th 2011) have helped us to engage with suppliers and users at the same time. Such activity will boost the number of connections as we gain a unique insight on core issues and take the opportunity to address them.

Our future plans are to;

• Increasing the connections by understanding and addressing supplier needs

• Improving user interfaces to meet user requirements

• Incorporating alternative content

• A new and more flexible architecture to accommodate different feeds

• Launch with an off-line Gazetteer product

• Continue with a phased approach to other offerings

• Increase the exonymn and variant names data base content

• Iteratively improve the quality of content by providing free analysis of supplier data

The business plan for EGN proposes that EuroGeoNames becomes self sustaining. Models based on the well known internet "Freemium" model are going to be important.

8. REFERENCES

The outcomes as well as all other deliverables of status 'public' are available through the EGN website: www.eurogeonames.com

Amongst others, the following documents should be mentioned explicitly here:

EGN Deliverable D1.7, Final Report D1.7, 2009

EGN Deliverable D3.3, EGN Metadata profile, 2008

EGN Deliverable D4.2e, Data model conceptual schema & documentation, 2008

EGN Deliverable D6.5, EGN Web Services profile - specifications for implementation, 2008

EGN Deliverable D7.4, Documentation EGN Web GIS Reference Application, 2009

EGN Deliverable D8.2, EGN ArcGIS Extension Documentation, 2009

EGN Deliverable D11.2, Implementation Plan, 2009