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EuroGeoNames (EGN) – developing a European Geographical Names Infrastructure and Services

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EuroGeoNames (EGN) – developing a European geographical names infrastructure and services

1 Rationale

Access to consistent and reliable multilingual geographical names is essential for a number of uses including postal services, emergency services, navigation, tourism, property purchases, the mass media and applications such as Google Earth. In all of these areas, geographical names provide one of the most important keys for referencing and accessing a variety of related information. However, today, there is no European standard or service for geographical names, rather a patchwork of heterogeneous national services that are not suitable for the European market.

In the context of the current INSPIRE initiative[1] resulting in a European Spatial Data Infrastructure (ESDI), geographical names are considered to be one of the three most important data components (priority reference data). EuroSpec is the Eurogeographics[2] programme that will prepare, influence, and contribute to the implementation of INSPIRE, from the member organisations perspective. EuroSpec, with its related projects, such as EuroRoadS, RISE, etc. is already addressing a number of the INSPIRE reference information priority components, such as roads, elevation, hydrography, direct referencing systems, and geographical names. The Eighth United Nations Conference on the Standardization of Geographical Names (Berlin, 2002) recommends that standardized geographical names data shall be considered in the establishment of national and regional spatial data infrastructures and included in their design, development and implementation. However geographical names have not been given active and attentive focus yet.

Presumably, in some countries databases are already including geographical names data. They are mainly used by surveying and mapping authorities supporting processes in cartographic map production and they mainly consider national linguistic specifics. But, in some cases various feature categories of geographical names (e.g. populated places, administrative units, etc.) are very often not yet based on the same data model and are therefore not yet compatible with each other. Additional toponymic attributes to geographical names, e.g. exonyms[3], the pronunciation, the gender, the language or script of geographical names are currently very rarely available.

Therefore, the Dutch- and German-speaking Division of the United Nations Group of Experts on Geographical Names (UNGEGN) and the German Federal Agency for Cartography and Geodesy (BKG) initiated the EuroGeoNames (EGN) project. EGN will address the aforementioned problems by implementing an interoperable internet service that will link and provide access to the official, multilingual geographical names data held at the national level across Europe. The user – primarily 'value added service' providers - will have access to this information through a Web GIS application which will enable searching using all official European languages, including minority languages.

2 Proposed solution

The setup of an interoperable Web (Gazetteer) Service will be compliant to open standards (specifically OGC standards and the Unicode standard[4]). The network of the geographical names sources will be based on a harmonised data model. Access will be provided by a Web Feature Service (WFS) interface implemented at each data provider's database. A reference Web Service will access these distributed WFS to query the EGN data network and return standardised result

[1] INSPIRE is a legal framework being developed by the Commission services with officials and experts in Member States and accession countries from national, regional and local levels. It is to be implemented throughout the European Union (EU) from 2006 onwards with different types of geographical information gradually harmonised and integrated, resulting in a European Spatial Data Infrastructure (ESDI).

[2] Association of the European National Mapping and Cadastral Agencies (NMCA), www.eurogeographics.com

[3] Example for exonyms: a German could prefer to start his Internet search by entering the German name "Prag" (German exonym) instead of the Czech name "Praha" (endonym). E.g. the Italian exonym would be "Praga" and so on.

[4] Unicode is a new character coding system designed to support the worldwide interchange, processing, and display of the written texts of the diverse languages and technical disciplines of the modern world.

sets to the inquirer. Single searches for geographical names within the EGN Web Service will be free of charge.

The following figure shows an example of a possible service architecture and data flow:

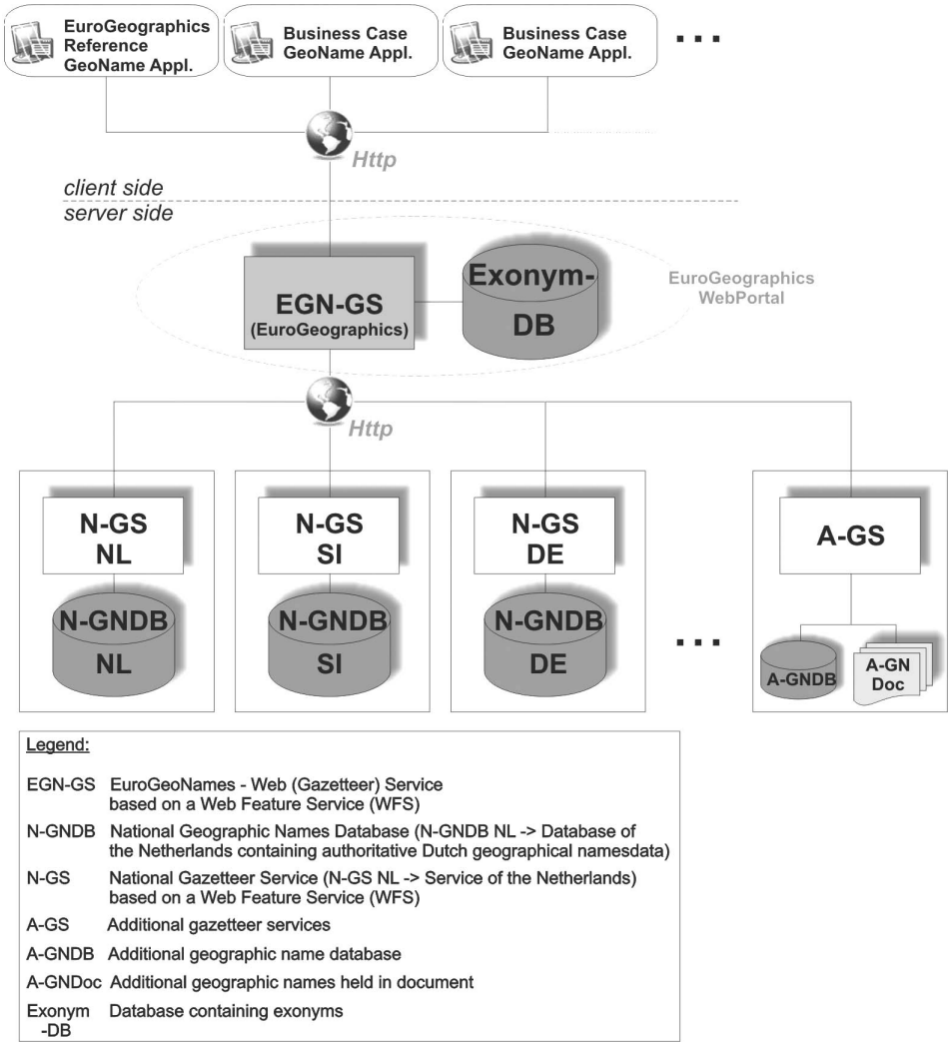

Figure – Example of a possible service architecture and data flow

In the primary phase, the target will be to aggregate data of (minimally) five to ten European countries. The remaining countries will be subsequently phased in across the following years, based on an implementation plan in order to achieve full European coverage (of the available data). This comprises also Candidate as well as EFTA countries.

The EGN Web Service will enable names searches using all official European languages (at minimum the languages in use in all participating countries – including the officially recognized minority languages where such data is available and applicable).

Apart from the EGN Web Service, a Web GIS reference application will also be developed, showcasing a graphic user interface for names searches and for the visualization of the search results. EuroGeographics or another competent consortia member will host this application.

In countries, where official sources are not yet available other data repositories (e.g. the US GEOnet Names Server (GNS), http://earth-info.nima.mil/gns/html/, etc.) could be considered to be taken into account.

3 Partners

The project consortium brings together partners from the public (three National Mapping and Cadastral Agencies from Slovenia, Austria and Germany), academic (University of Utrecht, Edina National Data Centre) and private sectors (Geodan IT Holding – The Netherlands, GeoTask AG – Germany , ESRI Geoinformatik GmbH – Germany), embracing the full 'value chain' from data providers > technology partners > value added service applications. These partners have well established working relationships based on other work, including the survey/inventory on European geographical names data (SI-EGN) that was completed in mid 2005. This lays the ground for a successful project that will make a major contribution to opening up public sector information within a wider European spatial (geographic) information infrastructure.

Further information about the project can be obtained through the project website: **www.eurogeonames.com**

REFERENCES

[1] ISO/DIS 19112, Geographic information – Spatial referencing by geographic identifiers (2001)

[2] Proposal for a Directive of the European Parliament and of the Council establishing an infrastructure for spatial information in the Community (INSPIRE), Brussels, 23.7.2004, COM(2004) 516 final, http://inspire.jrc.it/home.html

[3] United Nations Resolution VIII/6 (2002), Integration of Geographical Names Data into National and Regional Spatial Data Infrastructures, Eighth United Nations Conference on the Standardization of Geographical Names

[4] United Nations Resolution II/28 (1972), List of exonyms (conventional names, traditional names), Second United Nations Conference on the Standardization of Geographical Names

[5] Open Geospatial Consortium (OGC), OGC Web Services Common Specification (2005)

[6] http://www.unicode.org./standard/WhatIsUnicode.html