

The Provision of Functionalities Related to Place Names as a Web Service in a Multi-Provider Environment

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By: Pekka Latvala, Finnish Geospatial Research Institute (FGI), National Land Survey of Finland

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Outline

ELF project
ELF GeoLocator service
Architecture
Service operations
Web Client





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ELF project

- "The European Location Framework is a technical infrastructure which delivers authoritative, interoperable, cross-border geospatial reference data for analysing and understanding information connected to places and features."
- Many delivarables...
 - ELF Data specifications
 - ELF National services
 - ELF GeoLocator Service
 - ELF Cascaded Services
 - Tools
 - Transformation, edge-matching, generalization, etc...











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25 May, 2015



ELF GeoLocator Service

- The ELF GeoLocator is a gazetteer service that provides functionalities related to place names
 - ★ Geocoding
 - ★ Reverse geocoding
- ★ The ELF GeoLocator is based on earlier EuroGeoNames (EGN) gazetteer service
 - ★ Developed in 2012
 - * Service interface conformant with the OGC Gazetteer Service AP (WFS-G) for the WFS
 - ★ Contains multilingual data and support for exonyms (exonymdatabase content)
- ★ Based on authoritative spatial data
- ***** ELF GeoLocator adds **new data** and **new functionalities** to the earlier EGN service
- ★ New data from themes
 - * Addresses (AD), Administrative Units (AU), Geographical Names (GN)
- Adds INSPIRE / ELF GN output format





EGN data coverage

Country
Austria
Belgium
Croatia
Cypros
Czech Republic
Estonia
Finland
France
Germany
Greece
Italy
Latvia
Lithuania
Slovenia
Spain
Switzerland
The Netherlands
United Kingdom
Exonymdatabase





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GeoLocator service operations

★ WFS operations

- ★ GetCapabilities
- ★ DescribeFeatureType

★ GetFeature (ordinary geocoding through WFS filtering) Supports additional LANGUAGE-parameter

★ Custom operations

- ★ GetFeatureInAU
- ★ FuzzyNameSearch -
- ★ ReverseGeocode
- AU-limited geocoding that focuses the search on a specific administrative unit
- Geocoding functionality that searches close matches for names
- Finds nearest name from the given point or the administrative unit of that point



Returns service metadata

Returns features

Returns feature type metadata



ELF GeoLocator service - Architecture





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Data import process

- AD, AU and GN data were imported into database with a custom Java application
- The AU data were imported one level at a time, starting from the highest level.
 - ★ Center points were calculated with a PostGIS function for each AU-unit for indicating the name label location
- ★ The data were linked together to form a hierachy
 - ★ AD and GN data are linked to the AU elements
 - * AU elements are linked together so that the imported data forms a hierarchy





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Main output - OGC Gazetteer Service AP...

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...OGC Gazetteer Service AP output

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Custom operations - GetFeatureInAU

• The GetFeatureInAU operation performs **administrative unit-limited geocoding** where name search queries can be focused to a specific administrative unit

Created with PostGIS's spatial operations

Parameters:

NAME	(Mandatory)	name to be searched
AU	(Mandatory)	name of the administrative unit
LANGUAGE	(Optional)	Language for displaying the location type information







Custom operations - FuzzyNameSearch

• The FuzzyNameSearch operation returns features whose names are near matches for the queried name.

- Can find features from slightly misspelled input
- Can be used to request features whose names contain diacritics or other special characters that are not available on the user's keyboard.

• Returns the maximum amount of 10 features whose names are best matches for the queried name.

Created with PostgreSQL's pg_trgm() function

Parameters

NAME	(Mandatory)	Name to be searched	
LANGUAGE	(Optional)	Language for displaying the location type inform	nation







Custom operations - ReverseGeocode

The operation has two modes

1. Ordinary reverse geocoding

(finds the nearest name)

2. Administrative unit-based reverse geocoding (finds the Administrative unit)

Parameters

LAT	(Mandatory)	latitude (in EPSG:4258)
LON	(Mandatory)	longitude (in EPSG:4258)
MODE	(Optional)	Fixed value 'AU' indicates AU-based reverse geocoding
LANGUAGE	(Optional)	Language for displaying the location type information







Web client

- Demonstrative client application has been developed with OSKARI javascript library
- Oskari library can be found at <u>http://www.oskari.org</u>
- •http://54.75.147.57/



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Thank you

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