



Federal Agency for
Cartography and Geodesy



An Open Regional Gazetteer for Europe – Challenges and opportunities

UNGEFN Webinar on Gazetteers
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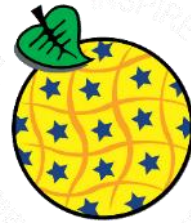
Content

- BKG's motivation for a pan-European gazetteer
- ‚Open Regional Gazetteer‘ – Challenges and opportunities



BKG's motivation for a pan-European gazetteer

- Globally no gazetteer service existed providing comprehensive authoritative names data
→ *geonames.org* was the best option
- In Europe only „cross-border“ patchwork through prototypes or national names services existed
- All previous approaches failed at relying on available INSPIRE compliant services
→ Harmonisation of content still needed!
- BKG supports global (UNGEGN) and European (EuroGeographics, INSPIRE et al.) names data activities



UNEGN World Geographical Names
Multilingual, multiscriptural dataset of names of countries, capitals and major cities.

Geographical Names Database | About | FAQ | Feedback | Contact | Beta version

Germany

Notes:
+ Indicated names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined.
- The border was not corrected at this stage because of technical problems.

Country names

Endonyms		
Language	Short name	Formal name
German	Deutschland	Bundesrepublik Deutschland (die)

United Nations languages		
Language	Short name	Formal name
Arabic	ألمانيا	جمهورية ألمانيا الاتحادية
Chinese	德国	德意志联邦共和国
English	Germany	the Federal Republic of Germany
French	Allemagne (l') [fém.]	la République fédérale d'Allemagne
Russian	Германия	Федеративная Республика Германия
Spanish	Alemania	la República Federal de Alemania

Capital and other major cities

Capital city

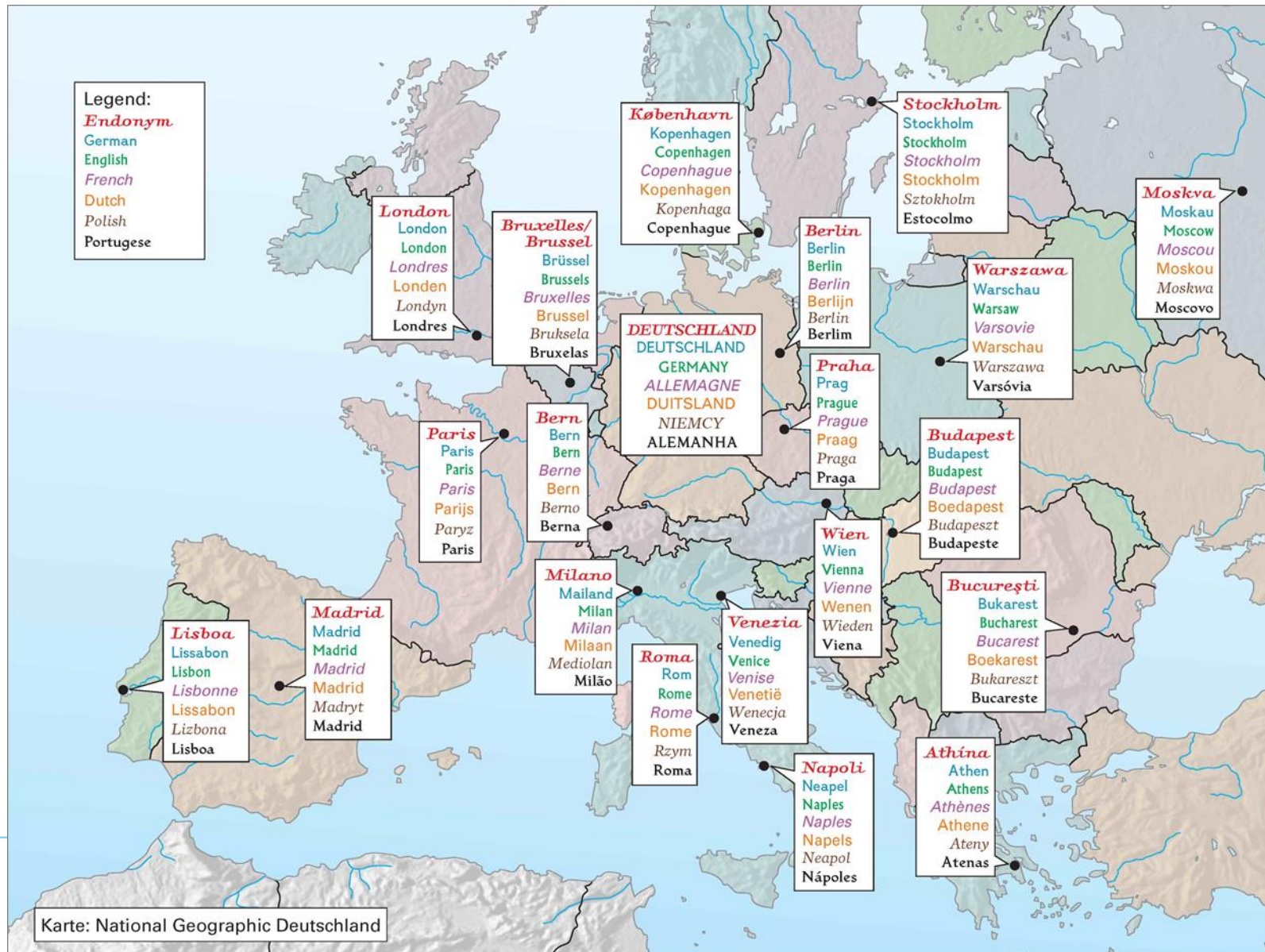
Lat: 52.47 | Long: 13.62 **Berlin**

Endonym		
Language	City name	Source
German	Berlin	UNGEGN

United Nations Languages		
Language	City name	Source
Arabic	برلين	UN terms
Chinese	柏林	UN terms
English	Berlin	UN terms
French	Berlin	UN terms
Russian	Берлин	UN terms
Spanish	Berlin	UN terms



BKG's motivation for a pan-European gazetteer



BKG's motivation for a pan-European gazetteer



- The „EuroGeoNames (EGN) approach“ ...
 - EU-funded project
 - 2006-2009
- Prototype implementation of an INSPIRE-compliant Web Feature Service

Linked to exonyms:

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

...

BKG's motivation for a pan-European gazetteer

- Geographical names in Europe:
Integration of national services in the EU-Data Portal

The screenshot shows the data.europa.eu website. The main header includes the logo and navigation links for 'Data', 'Studies', and 'data.europa academy'. Below the header, it states 'The official portal for European data' and displays statistics: 170 Catalogues, 36 Countries, and 1 298 285 Datasets. A 'Trending datasets' section lists several items, including a consolidated list of persons subject to EU financial sanctions and COVID-19 statistics. The 'Search datasets' section features a search bar and various filters: Settings (Operator: AND/OR), Data scope (European Union Data, International Data, National Data), and Provenance (Germany, 7 519 datasets). A grid of icons represents different sectors: Economy & Finance, Education, Culture & Sport, Energy, International Issues, Justice, Legal System & Public Safety, Population & Society, Regions & Cities, Science & Technology, and Transport. At the bottom, there are links for 'DATA CATALOGUES', 'ALL DATASETS', and 'EU INSTITUTIONS DATASETS'.

Datasets

This section shows a detailed view of the search results for 'geographical names'. It includes a search bar with the query 'geographical names' and a search icon. Below the search bar, there are tabs for 'Datasets', 'Catalogues', and 'Editorial Content'. A summary bar indicates '7 519 datasets found'. The 'Provenance' filter is set to 'Germany'. The first result is 'INSPIRE-WMS HE Geographic names ATKIS Basic DLM — Geographical Names', which is a WMS service containing administrative units derived from the ATKIS Basic DLM. It was updated on 15.11.2021 and is provided by GDI-DE. The second result is 'INSPIRE BY Geographical Names ATKIS Basic DLM', an INSPIRE compliant dataset for geographical designations, updated on 01.05.2019, also provided by GDI-DE.

<https://data.europa.eu/en>

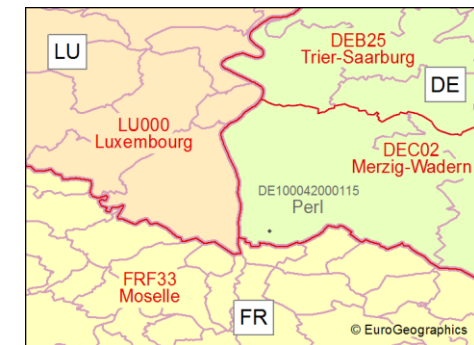
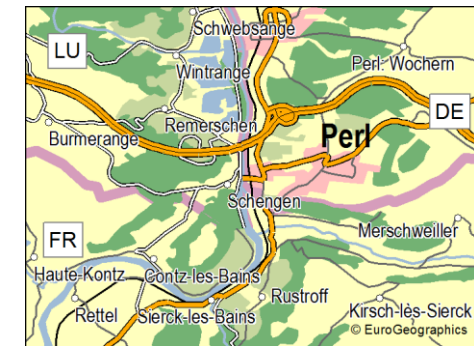
Content

- BKG's motivation for a pan-European gazetteer
- ‚Open Regional Gazetteer‘ – Challenges and opportunities



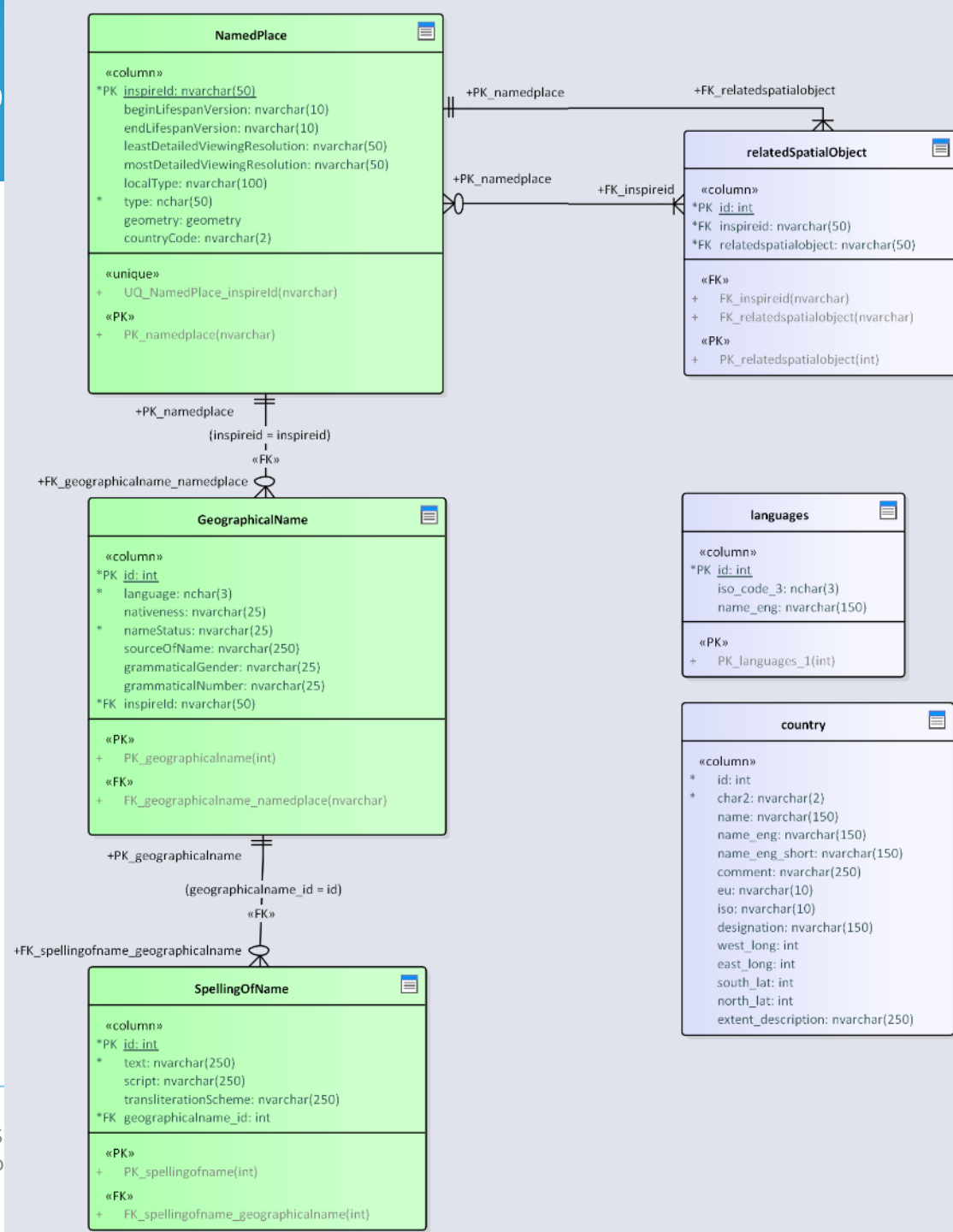
‘Open Regional Gazetteer’ – Challenges and opportunities

- EuroGeographics products as backbone for the gazetteer
- EuroRegionalMap (ERM) → Topographic dataset, 1 : 250.000
 - 51 countries and territories from 36 data producers
 - Provides e.g. administrative units, hydrographic, transport, settlement, land cover, physiographic region et al. features
 - 32 Feature Classes with geographical names
 - Feature Classes comprise about 930.000 primary and 12.700 secondary names for ERM 2021
- EuroBoundaryMap (EBM) → Administrative boundaries, 1 : 100.000
 - 55 countries and territories from 39 data producers
 - Provides geometry, names and unique identifiers
 - 7 Feature Classes with about 218.000 geographical names for EBM 2021



,Open Regional Gazetteer' – Challenges and oppo

- Data model = INSPIRE GN data model
 - Points
 - InspireID as identifier
 - Tables (Content) with information on Geographical names
 - Nativness: endonym / exonym
 - Status: Official, standardized, historical, other
 - NamePlaceType: administrativeUnit, building, hydrography, landcover, landform, populatedPlace, protectedSite, transportNetwork, other
 - LocalType: ERM feature type
 - Language code and name: ISO 639-3
 - Transliteration scheme
 - Source: ERM 2021, EBM 2021



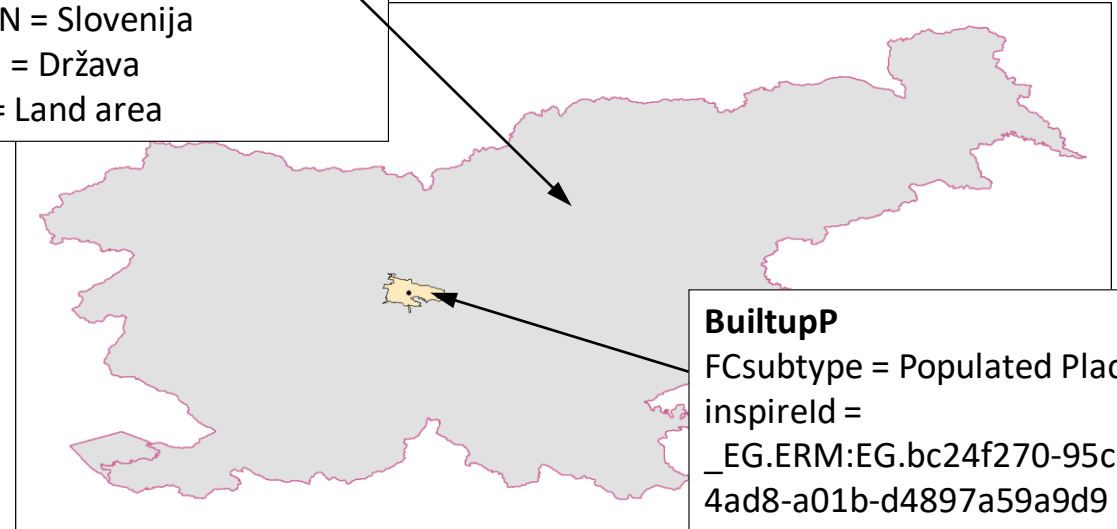
‘Open Regional Gazetteer’ – Challenges and opportunities

Implementation

- Source data
 - EBM 2021: AdministrativeUnit_x
 - ERM 2021:
 - BuiltupP = Populated Place (points)
 - UrbanP = Named Location / Urban places (points),
 - RailrdC = Railway Station (points),
 - AirfldP/C = Airport / Airfield (points),
 - FerryC = Ferry Station (points),
 - HarborP/C = Port (points),
 - LakeresA = Lake / Pond / Reservoir (points),
 - IslandA = Island (areas),
 - WatrcrsA = Watercourse (areas),
 - WatrcrsL = Watercourse (lines)

AdministrativeUnit_1

inspireId =
_EG.EBM:AU1.SI000000.1
ICC = SI
SHN = SI000000
ISN = 2801
NAMN = Slovenija
DESN = Država
TAA = Land area



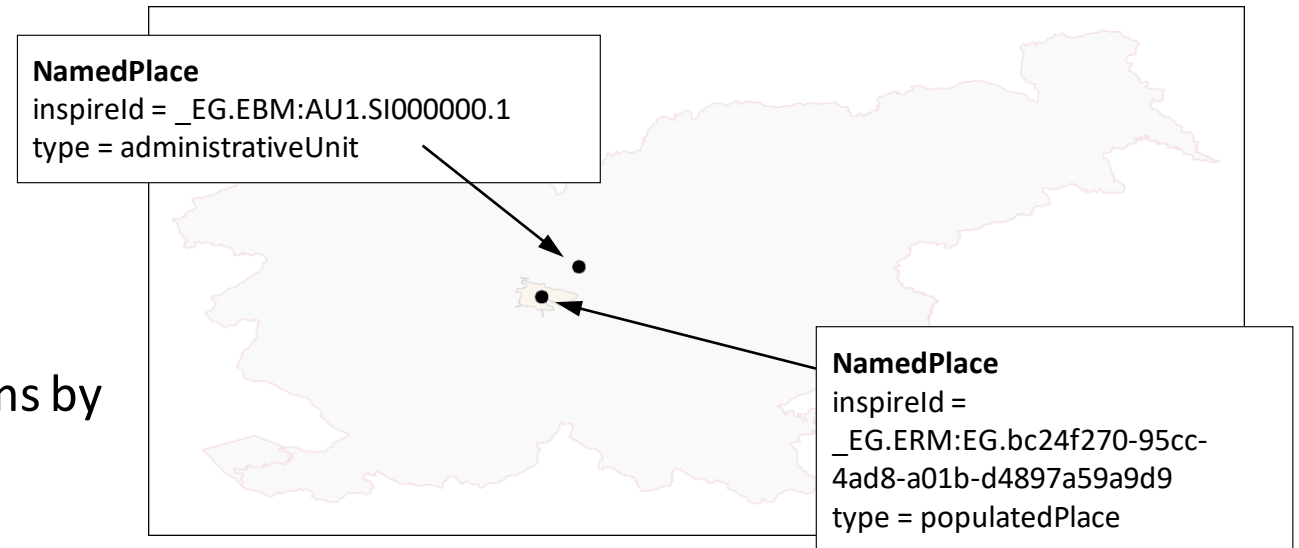
BuiltupP

FCsubtype = Populated Place
inspireId =
_EG.ERM:EG.bc24f270-95cc-4ad8-a01b-d4897a59a9d9
F_CODE = AL022
ICC = SI
NAMN1 = Ljubljana
NAMA1 = Ljubljana
NLN1 = SLV
PPL = 280310
USE = International
PopulatedPlaceID =
N.SI.BUILTUP.10110084

‘Open Regional Gazetteer’ – Challenges and opportunities

Implementation

- Only reference points are used as geometry
→ All EBM/ERM features with line or area geometry are generalized to points
- Exonyms and variant names linked to endonyms by UNGEGN expert



<u>inspireID</u>	text	nativeness	language	namestatus	...
_EG.EBM:AU1.SI000000.1	Slovenija	endonym	slv	official	
_EG.EBM:AU1.SI000000.1	Slovenia	exonym	eng	standardised	
_EG.EBM:AU1.SI000000.1	Словения	exonym	bul	standardised	
...					
_EG.ERM:EG.bc24f270-95cc-4ad8-a01b-d4897a59a9d9	Ljubljana	endonym	slv	official	
_EG.ERM:EG.bc24f270-95cc-4ad8-a01b-d4897a59a9d9	Љубљана	endonym	srp	other	
_EG.ERM:EG.bc24f270-95cc-4ad8-a01b-d4897a59a9d9	Liubliana	exonym	spa	standardised	
...					

‘Open Regional Gazetteer’ – Challenges and opportunities

Implementation

- River Rhine
 - Endonyms included in ERM:
 - *Ijssel*
 - *Neder-Rijn*
 - *Waal*
 - *Rijn*
 - *Rhein*
 - *Le Rhin*
 - ...
 - Exonyms for “Rhein” from UNGEGN expert
 - *Rhine*
 - ...



„Open Regional Gazetteer“ – Challenges and opportunities

■ Open Maps for Europe - Project



Co-financed by the Connecting Europe Facility of the European Union

- Coverage = 54 countries according to ISO 3166 country codes plus Kosovo and Northern Ireland
- Current version includes about 17.000 validated variant names and exonyms
- Specification
- List of References (UNGEGN expert)

<https://www.mapsforeurope.org/datasets/open-gazetteer>

eurogeographics

Open Gazetteer

Access Data Search on Map

The Open Gazetteer provides authoritative geographical names as maintained in the source data of the NMCAs. It can be used for any reference or information purpose.

Last Update

04/2021

Coordinate System

- Datum: European Terrestrial Reference System 1989 (ETRS89),
- Coordinate reference system: two-dimensional geodetic coordinates (latitude and longitude) based on ETRS89 and using the parameters of the GRS80 ellipsoid (EPSG code 4258).

Available Formats

Web Services

WFS

Download

Geopackage - 115.1Mb zip

Dataset Documentation

[Technical Specification](#)
[Attribution Document](#)
[List of References](#)

Coverage

Andorra	Kosovo*
Austria	Latvia
Belgium	Liechtenstein
Bulgaria	Lithuania
Croatia	Luxembourg
Cyprus	Malta
Czech Republic	Martinique

‘Open Regional Gazetteer’ – Challenges and opportunities

- Licensing
 - Utilisation of data from existing EuroGeographics’ Pan European products, published as an Open service
- Published as Open Geospatial Consortium (OGC) Web Feature Service (WFS)
- Published as database (GeoPackage)

The screenshot shows the EuroGeographics website interface. At the top left is the EuroGeographics logo. Below it, an aerial satellite-style map displays a road and a forested area with a green wireframe overlay. A semi-transparent text box on the left side of the map contains the following text:

Open Maps for Europe
 Providing easy access to pan-European open data created using official map, geospatial and land information.

At the bottom of the text box are two yellow buttons: "Access Data" (with a globe icon) and "Explore Map" (with a globe icon). A hamburger menu icon is visible in the top right corner of the page.

The screenshot displays the Open Gazetteer service interface. The top section features a word cloud for the city of Brussels, with the word "Bruxelles" prominently displayed in yellow in the center. Surrounding it are numerous other translations of the name in various languages, including English (Brussel, Brussels, Brussel, Bryssel), German (Brüssel), Dutch (Brussel), and others. Below the word cloud, the text reads:

Open Gazetteer
 an open gazetteer service providing authoritative multilingual geographical name

At the bottom right, there are two yellow buttons: "More Info" (with an information icon) and "Search on Map" (with a globe icon).

‘Open Regional Gazetteer’ is published as INSPIRE compliant web feature service



- Web Feature Service publication of the Open Regional Gazetteer based on deegree (<https://www.deegree.org>)
- What is deegree?
 - Open source software for spatial data infrastructures and the geospatial web
 - Implements geospatial OGC webservice specifications and European (INSPIRE) Network Services
- Why deegree?
 - Designed for rich data models
 - Backend supports flexible mapping of GML application schemas to relational models
 - Implements WFS standards 1.0.0, 1.1.0 and 2.0.0 as well as WMS standards 1.1.1 and 1.3.0

‘Open Regional Gazetteer’ is published as downloadable Offline-Product

- Downloadable publication of the Open Regional Gazetteer based on GeoPackage
- What is GeoPackage?
 - “GeoPackage is an open, standards-based, platform-independent, portable, self-describing, compact format for transferring geospatial data.” (<https://www.geopackage.org/>)
 - Based on SQLite, which is a public-domain library that contains a relational database system and is free to everyone
- Why GeoPackage?
 - First OGC standard for portable GI-Format (vector and raster data) and for non-spatial data
 - Includes table definitions for storing data in complex data models
 - Easy to use



'Open Regional Gazetteer' – Challenges and opportunities

The image displays a screenshot of the Eurogeographics website. The top left corner features the 'eurogeographics' logo. A search bar on the right contains the text 'Brüssel'. Below the search bar, a dropdown menu lists search results for 'Brüssel', including 'Brüssel Brussel-Hoofstad#Bruxelles-Capitale, België / Belgique / Belgien' and 'Brüssel Brussel-Hoofstad#Bruxelles-Capitale, Belgium'. The main map area shows a detailed view of the Brussels region, with various roads and landmarks labeled. A search bar at the top right of the map also contains 'Brüssel'. The bottom left corner of the image shows the logo of the Federal Agency for Cartography and Geodesy.

- Open Maps for Europe Portal (Application)
- Search for “Brüssel”
- Result

‘Open Regional Gazetteer’ – Challenges and opportunities

- Figures about usage of the Open Regional Gazetteer since first launch of Open Maps for Europe portal to end of March 2022

	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	TOTAL
No. of registered users	174	48	52	42	33	35	60	444
No. dataset downloads	130	43	22	31	24	19	41	310
WFS Transactions	6	83	15	0	0	1	1	106

- Launch of second version of Open Maps for Europe portal end of April 2022, promotion starts with Geospatial World Forum in May 2022





Federal Agency for
Cartography and Geodesy



Questions...?

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References

- Open Regional Gazetteer: <https://www.mapsforeurope.org/datasets/open-gazetteer>
 - [Specification and Technical Guidance](#)
 - [Attribution Guide](#)
 - [List of References](#)
- Status report on gazetteer developments under European Location Services, UNGEGN, 3-7 May 2021, (GEGN.2/2021/48/CRP.48):
https://unstats.un.org/unsd/ungegn/sessions/2nd_session_2021/documents/GEGN.2_2021_48_CRP48_14_Open_European_Regional_Gazetteer.pdf
- INSPIRE Data Specification on Geographical Names – Technical Guidelines
<https://inspire.ec.europa.eu/id/document/tg/gn>