An Open Regional Gazetteer for Europe – Challenges and opportunities

UNGEGN Webinar on Gazetteers
10.05.2022

Pier-Giorgio Zaccheddu, Jörgen Spradau
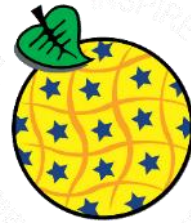Federal Agency for Cartography and Geodesy (BKG)

Content

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

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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

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Karte: National Geographic Deutschland

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)
…**

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BKG's motivation for a pan-European gazetteer

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

https://data.europa.eu/en

Content

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- ‚Open Regional Gazetteer' – Challenges and opportunities

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‚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

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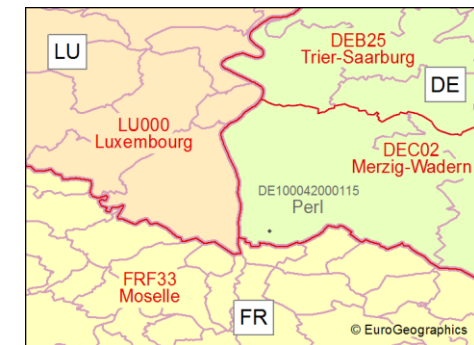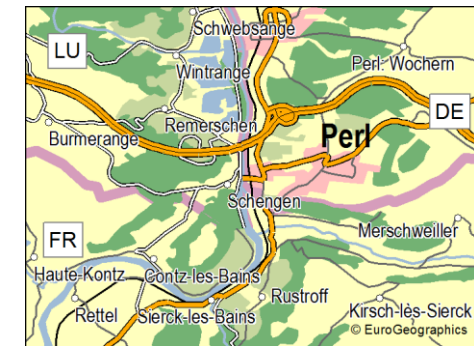
'Open Regional Gazetteer' – Challenges and oppo

- 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
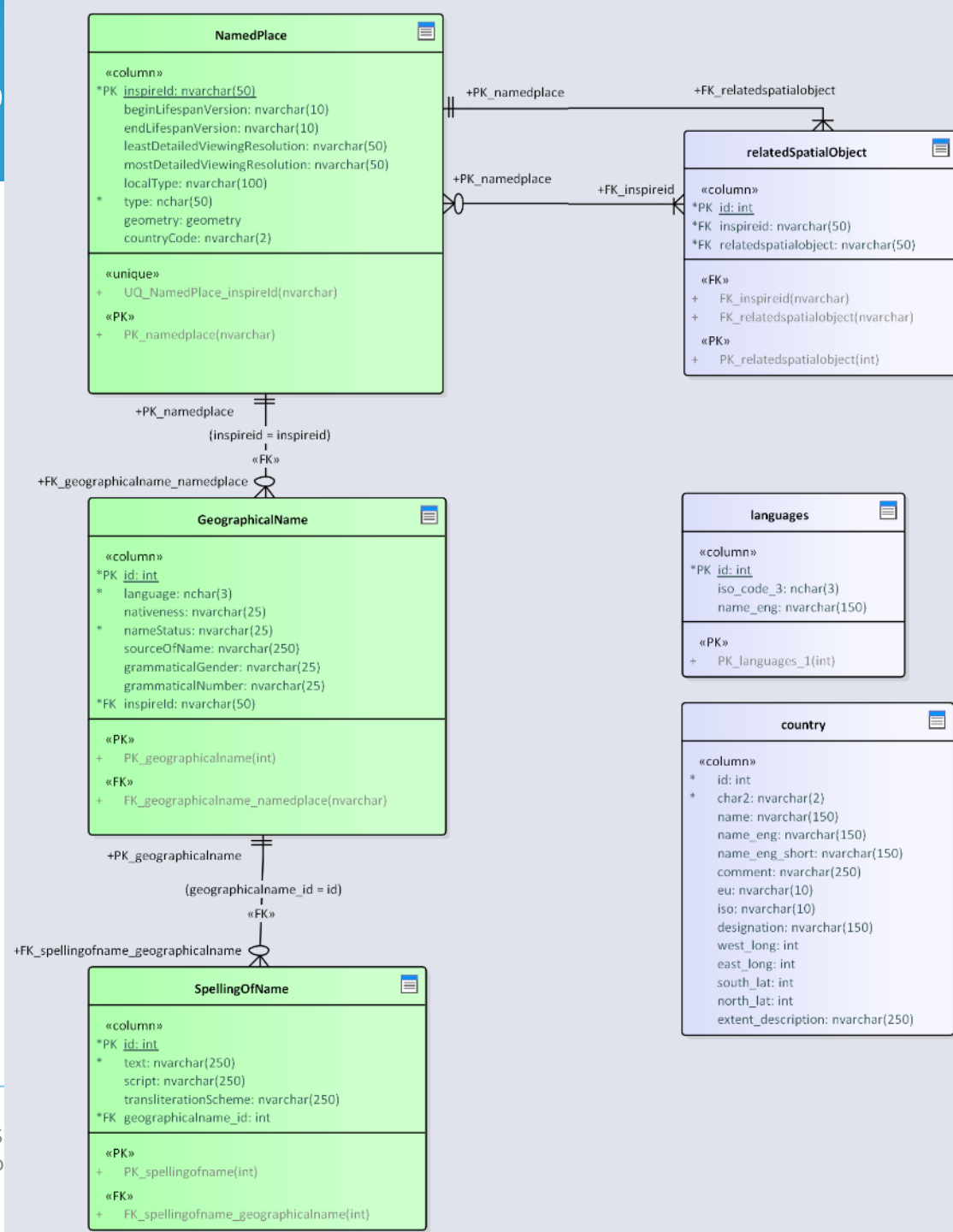
,Open Regional Gazetteer' – Challenges and opportunities

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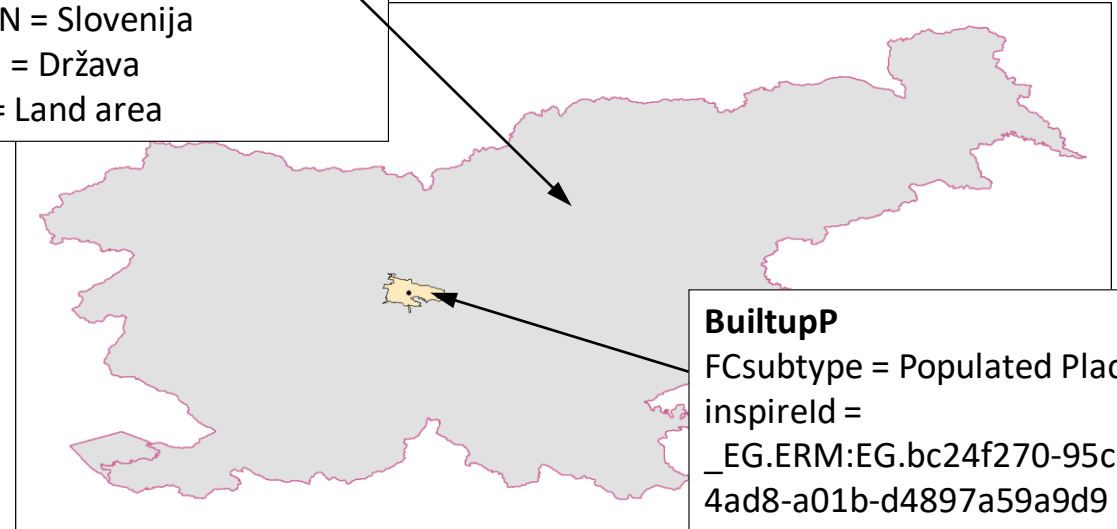
BuiltupP
FCsubtype = Populated Place
inspireId =
_EG.ERM:EG.bc24f270-95cc-
4ad8-a01b-d4897a59a9d9
F_CODE = AL022
ICC = SI
NAMN1 = Ljubljana
NAMA1 = Ljubljana
NLN1 = SLV
PPL = 280310
USE = International
PopulatedPlaceID =
N.SI.BUILTUP.10110084

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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

NamedPlace
inspireId = _EG.EBM:AU1.SI000000.1
type = administrativeUnit

NamedPlace
inspireId =
_EG.ERM:EG.bc24f270-95cc-
4ad8-a01b-d4897a59a9d9
type = populatedPlace
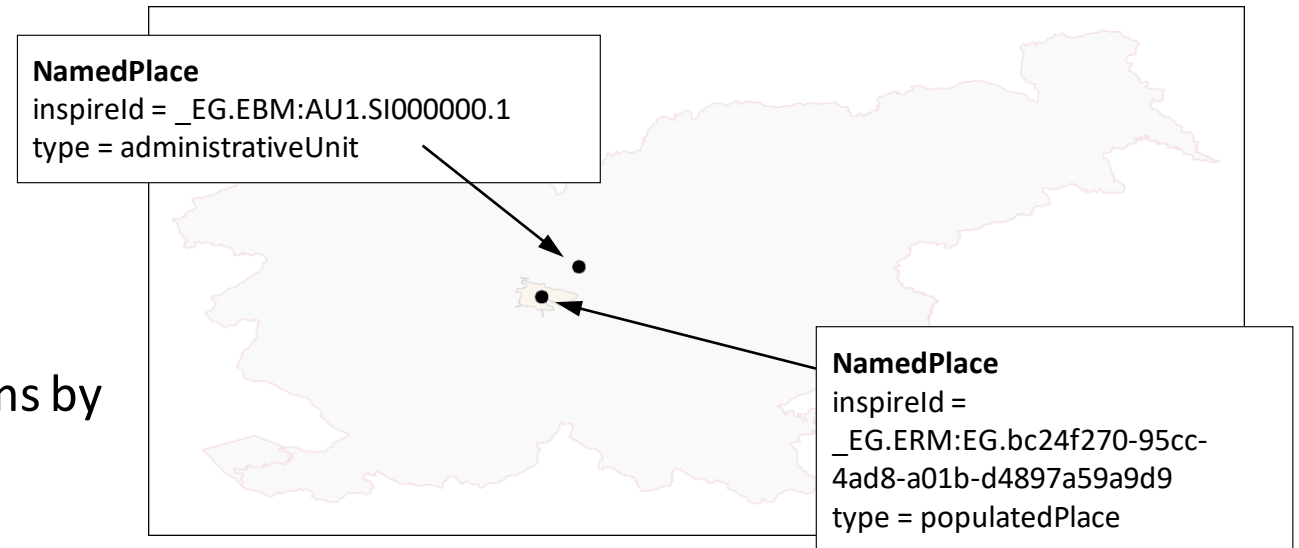
inspireID	text	nativeness	language	namestatus	…
_EG.EBM:AU1.SI000000.1	Slovenija	endonym	slv	official	
_EG.EBM:AU1.SI000000.1	Slovenia	exonym	eng	standardised	
_EG.EBM:AU1.SI000000.1	Словения	exonym	bul	standardised	
…					
_EG.ERM:EG.bc24f270-95cc-4ad8-a01b-d4897a59a9d9	Ljubljana	endonym	slv	official	
_EG.ERM:EG.bc24f270-95cc-4ad8-a01b-d4897a59a9d9	Љубљана	endonym	srp	other	
_EG.ERM:EG.bc24f270-95cc-4ad8-a01b-d4897a59a9d9	Liubliana	exonym	spa	standardised	
…					

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Implementation

- River Rhine

  - Endonyms included in ERM:

    - *Ijssel*

    - *Neder-Rijn*

    - *Waal*

    - *Rijn*

    - *Rhein*

    - *Le Rhin*

    - *...*

  - Exonyms for "Rhein" from UNGEGN expert

    - *Rhine*

    - *...*

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,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

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‚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)

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'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

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'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

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

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- 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

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Questions…?

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It remains exciting…

©pza

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

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