Federal Agency for
Cartography and Geodesy

Session:

Managing a national names programme

v1.0

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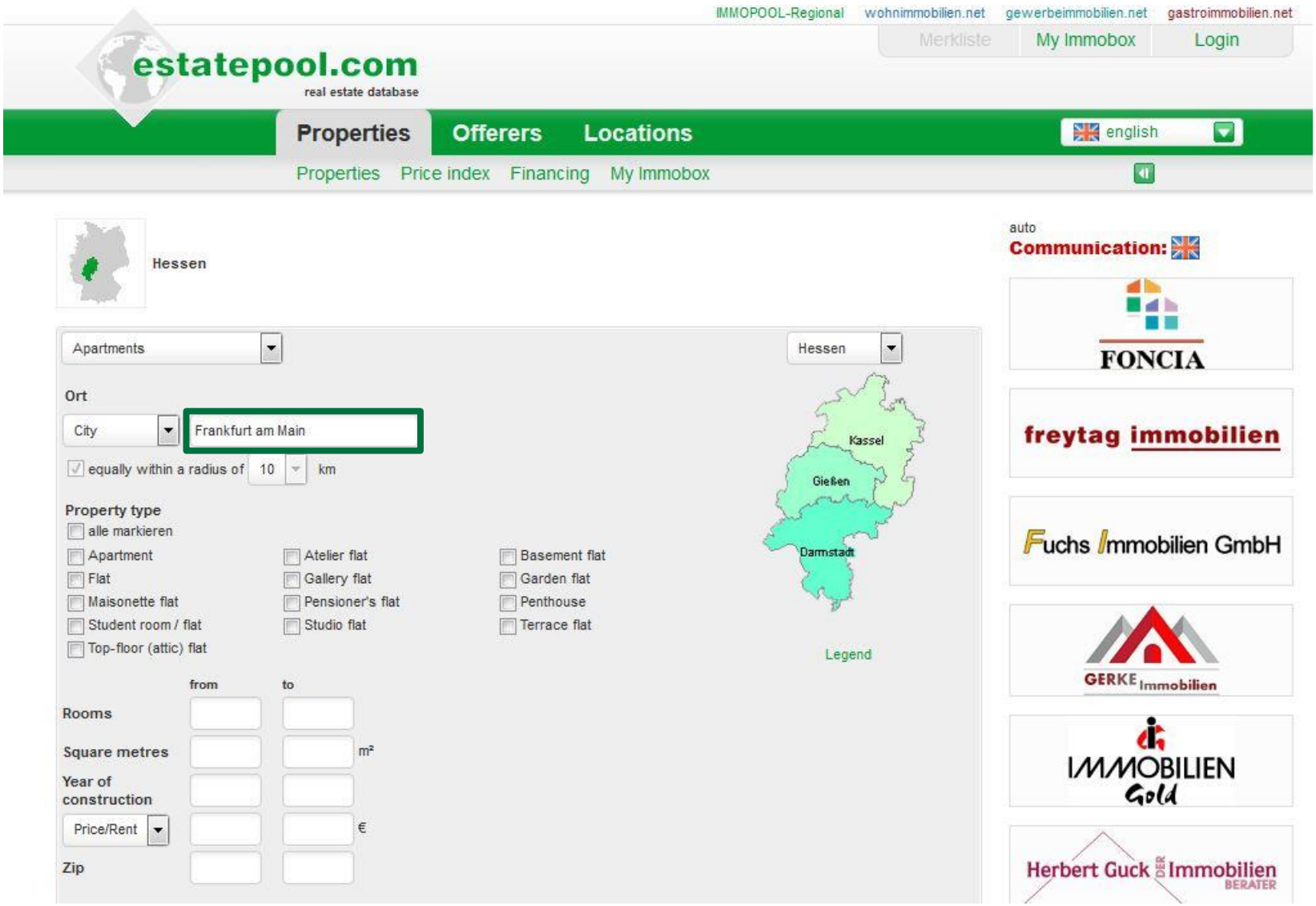
A flight…

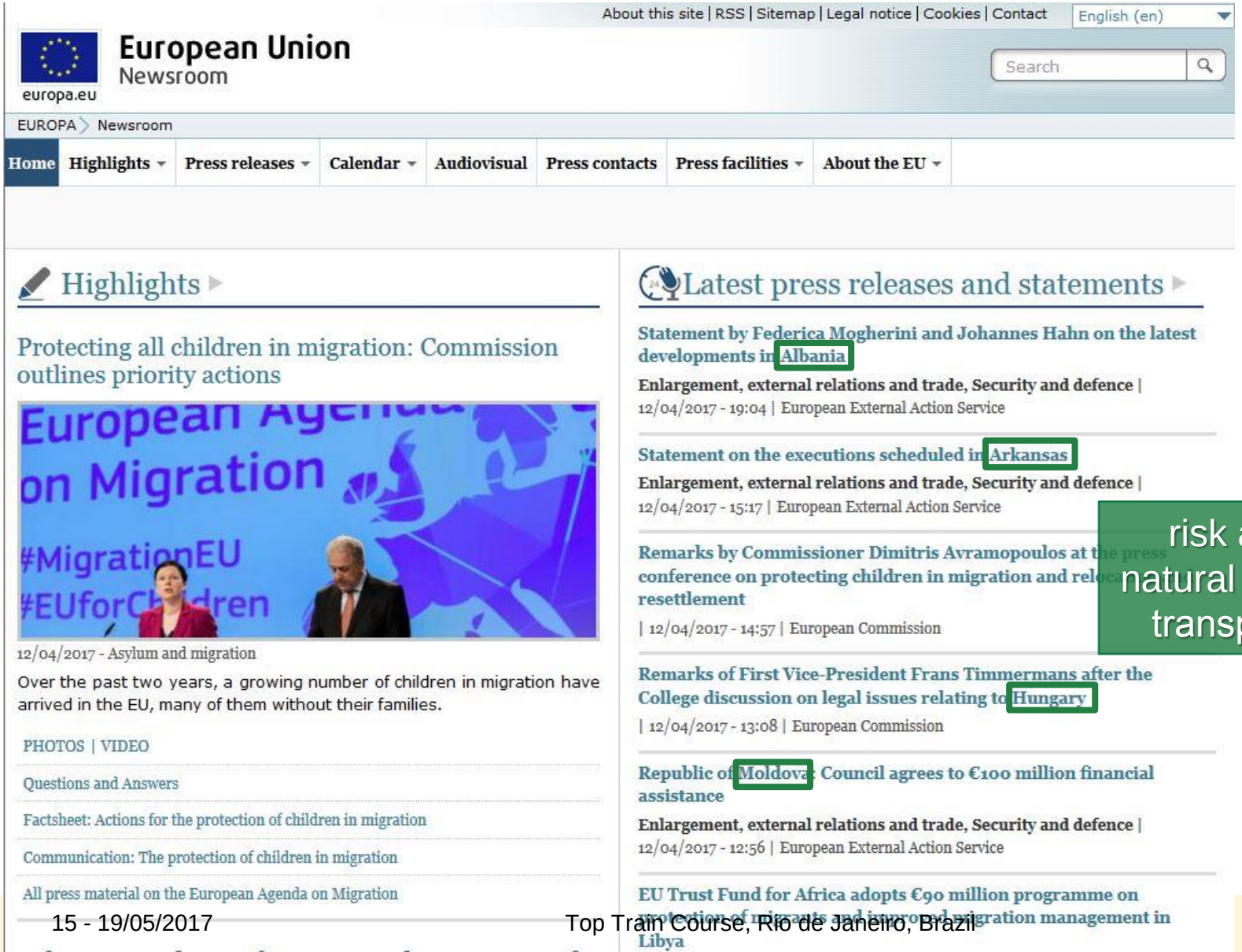
		Longitude	Latitude	Height	Population
From	Frankfurt	8.682432754	50.11087997	100	701.350
To	Rio de Janeiro	-43.1728965	-22.9068467	31	6.429.923

Localize people, places, events, …

First access to geospatial information… through geographical names



First access to geospatial information… through geographical names



risk areas, natural hazards, transport, …

First access to geospatial information… through geographical names

2D maps for orientation

Content

- **Management in Germany**
  - Official surveying and mapping in Germany
  - Minority language areas and names in Germany
  - Rendering names in German datasets & publications
  - Finances & administration & human resources at BKG
  - Names data within the German Spatial Data Infrastructure (GDI-DE)

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Responsibilities in Germany

States/AdV

Authoritative surveying and mapping is the responsibility of the federal states

Federation

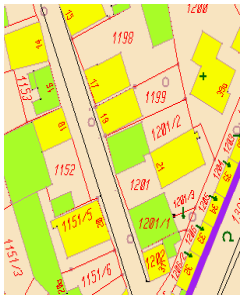
Agreement
Federal Government - States
Mission of BKG to provide the geodetic and topographic reference data
(medium to small scale, from 1 : 200 k and smaller)

AdV = Working Committee of the Surveying Authorities of the States of the Federal Republic of Germany

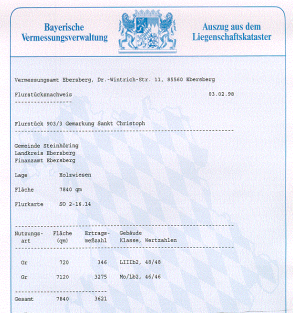
Services of the State Survey Offices & BKG

States/AdV

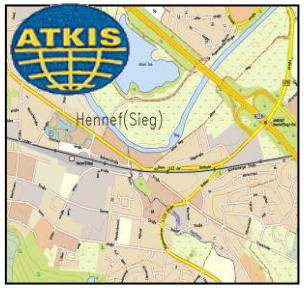
ALK
Automated Real Estate Map



ALB
Automated Real Estate Register



Geographical names are essential part of all services



ATKIS
Authoritative topographic-cartographic information system

Geodetic control points

States/AdV & BKG

Standardization process for geographical names

Institutions involved in Germany:

- communes, counties, states
  (for populated places and administrative units)
- state survey administration (for geographic regions/landscapes)
- federal and state hydrographic administration
  (for hydrographic features)
- federal and state transport administration
  (for streets and railways)
- StAGN – Permanent Committee on Geographical Names (responsible for orthographic rules and principles for place names)

→ **decentralized responsibility between federal government and states**

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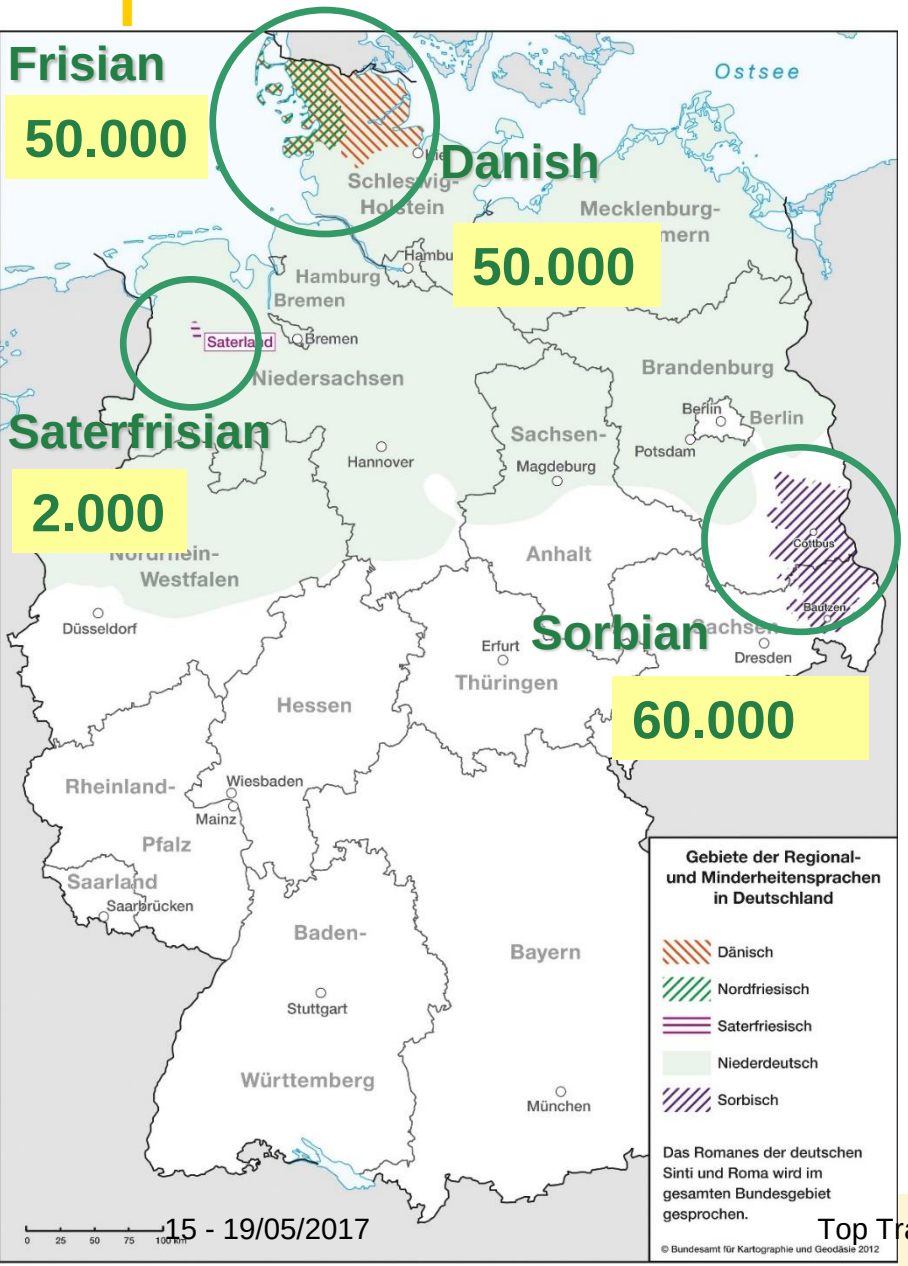
Official surveying and mapping in Germany



Officially approved geographical names of minority and regional languages spoken in Germany

Sorbian	ca. 700
Frisian	ca. 500
Danish	ca. 80
Romany	0

spoken by some 70.000 Sinti and Roma (spread all over Germany)

Legal framework regarding minority languages in the Federal Republic of Germany

1. Grundgesetz - Constitution of the Federal Republic of Germany (1949)
2. Protokollnotiz zum Einigungsvertrag - Special note to the minutes of the Unification Treaty (1990)
3. Framework Convention (Council of Europe) for the Protection of National Minorities (1995/1997)
4. European Charter (Council of Europe) for Regional or Minority Languages (1992/1998)
5. State laws in Saxony (1999), Brandenburg (1994), Schleswig-Holstein (2004)

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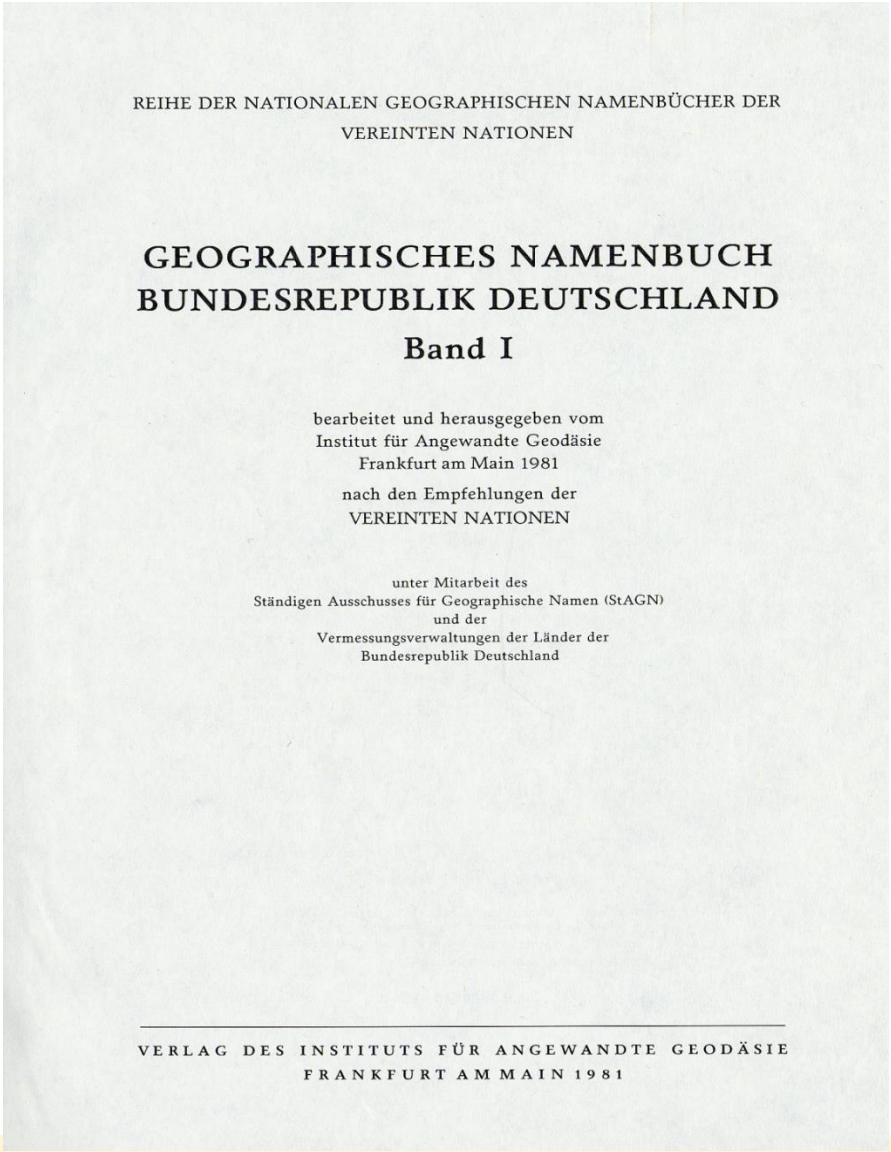
Rendering names in German datasets & publications



REIHE DER NATIONALEN GEOGRAPHISCHEN NAMENBÜCHER DER VEREINTEN NATIONEN

GEOGRAPHISCHES NAMENBUCH
BUNDESREPUBLIK DEUTSCHLAND
Band I

bearbeitet und herausgegeben vom
Institut für Angewandte Geodäsie
Frankfurt am Main 1981
nach den Empfehlungen der
VEREINTEN NATIONEN

unter Mitarbeit des
Ständigen Ausschusses für Geographische Namen (StAGN)
und der
Vermessungsverwaltungen der Länder der
Bundesrepublik Deutschland

VERLAG DES INSTITUTS FÜR ANGEWANDTE GEODÄSIE
FRANKFURT AM MAIN 1981

In 1981 the first edition of the Gazetteer Federal Republic of Germany („West Germany“) was published by the Institute for Applied Geodesy (IfAG; its name was changed to BKG in 1996).

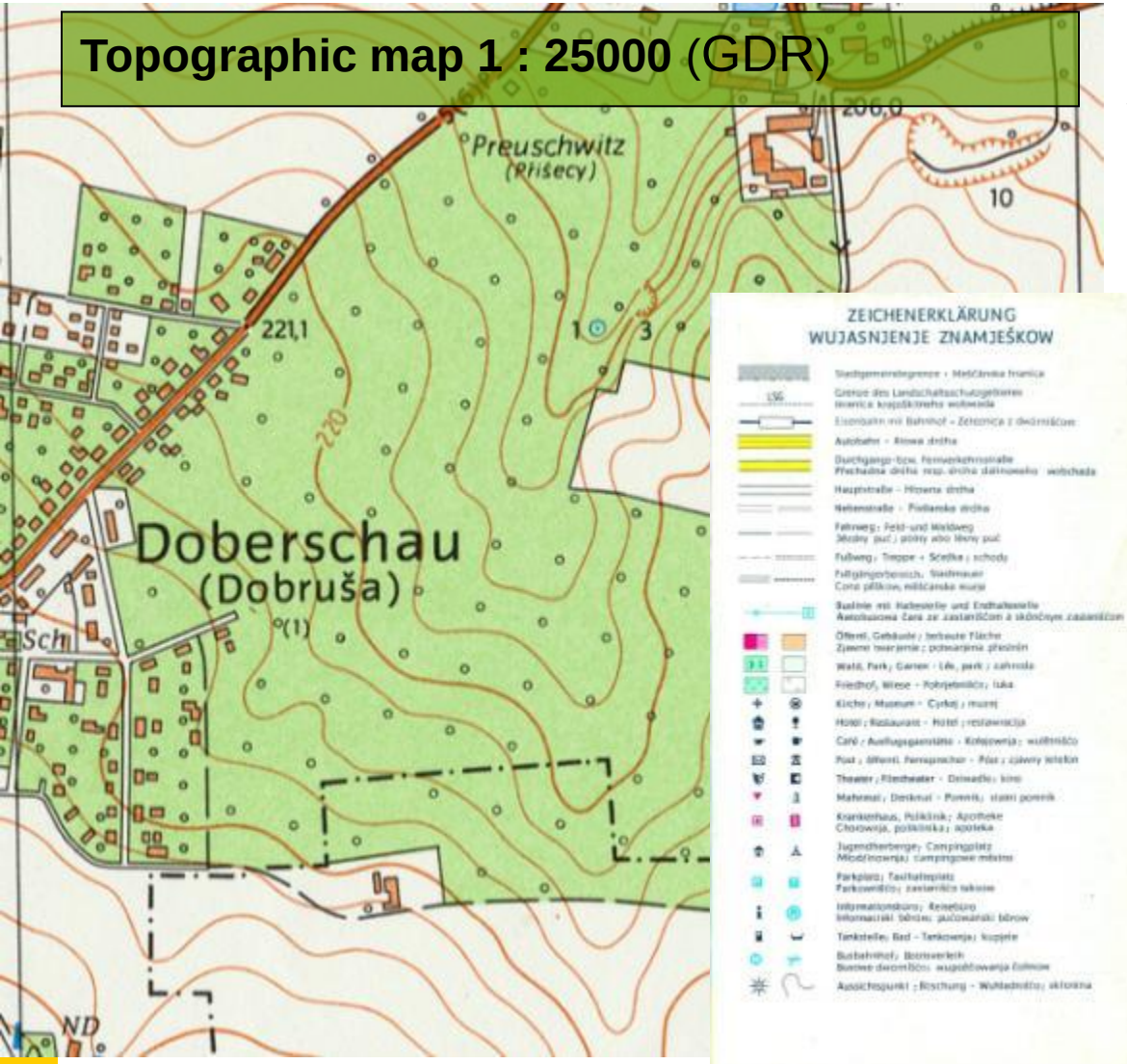
It comprised some 21.500 geographical names contained on the 1:500 000 General Topographic Map series.

At that time it was the first gazetteer in Germany which had been prepared in accordance with the United Nations resolutions.

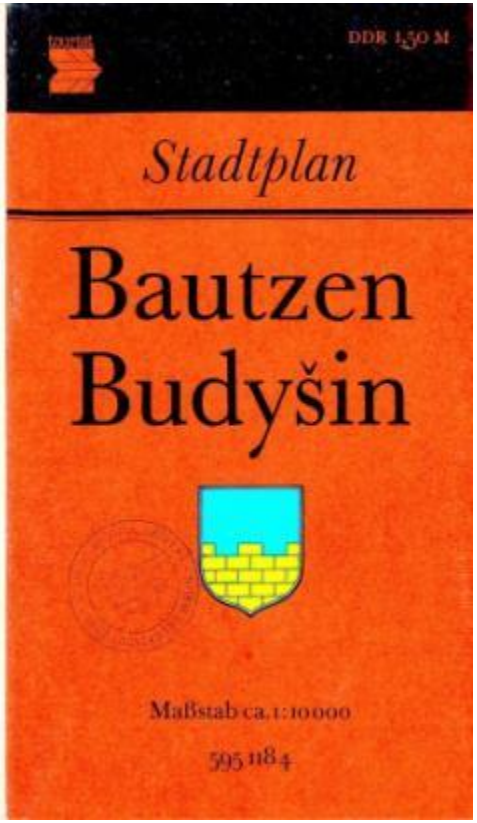
Rendering names in German datasets & publications

former GDR

Topographic map 1 : 25000 (GDR)



Examples for the Sorbian area – Saxony in the former GDR (until 1990)



Rendering names in German datasets & publications

Federal States

Statistisches Landesamt des Freistaates Sachsen

Statistical register - Saxony

Schlüsselnummer	Gemeinde Gemeindeteil

Noch: Regierungsbezirk Dresden

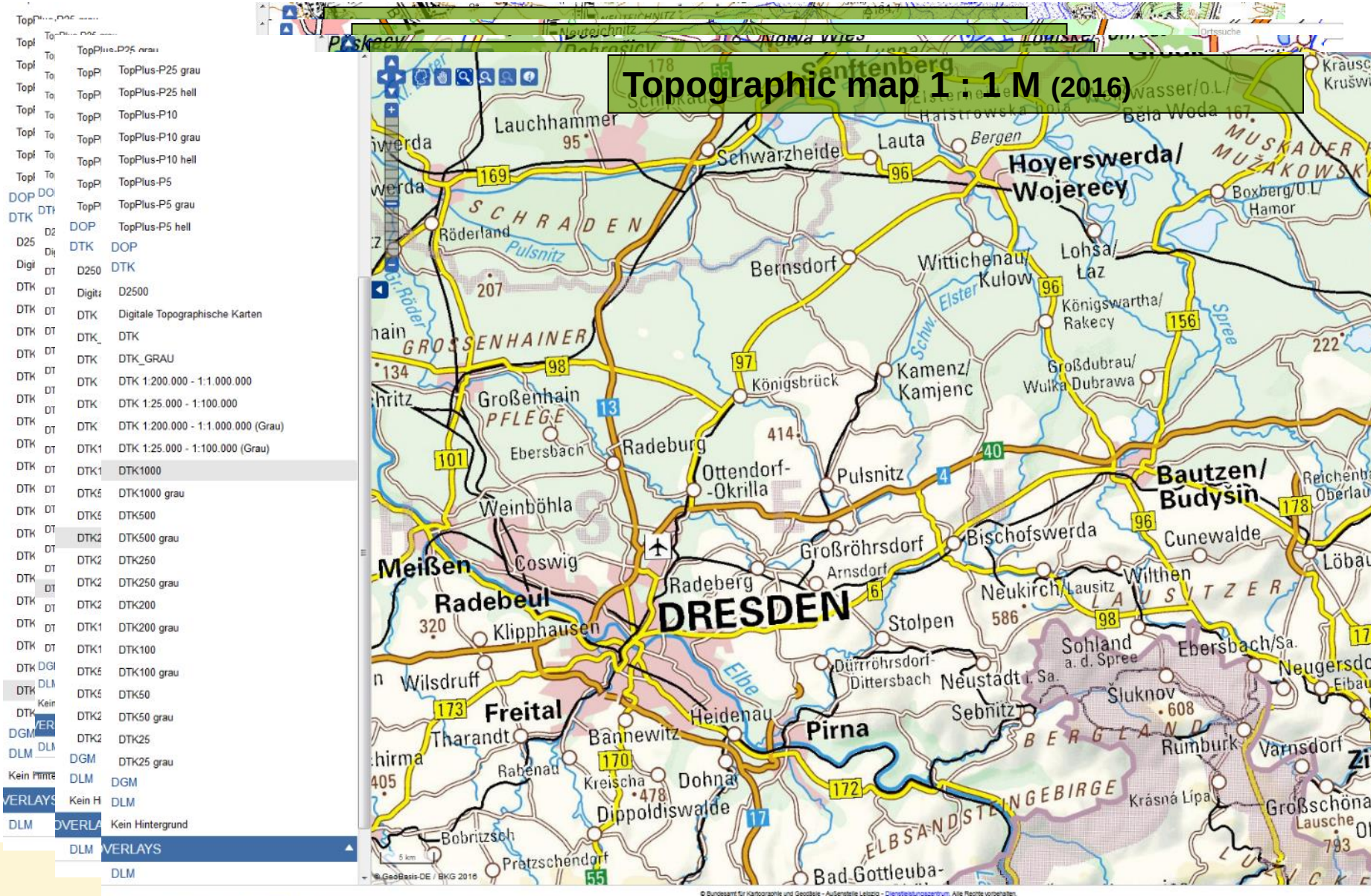
Landkreis Bautzen

14 2 72 010		**Bautzen, Stadt / Budyšin**
	010	Altstadt / Stare mesto
	020	Burk / Bórk
	030	Gesundbrunnen / Strowotna studnja
	040	Nadelwitz / Nadźanecy
	050	Niederkaina / Delnja Kina

Federal Agency for Cartography and Geodesy

Rendering names in German datasets & publications

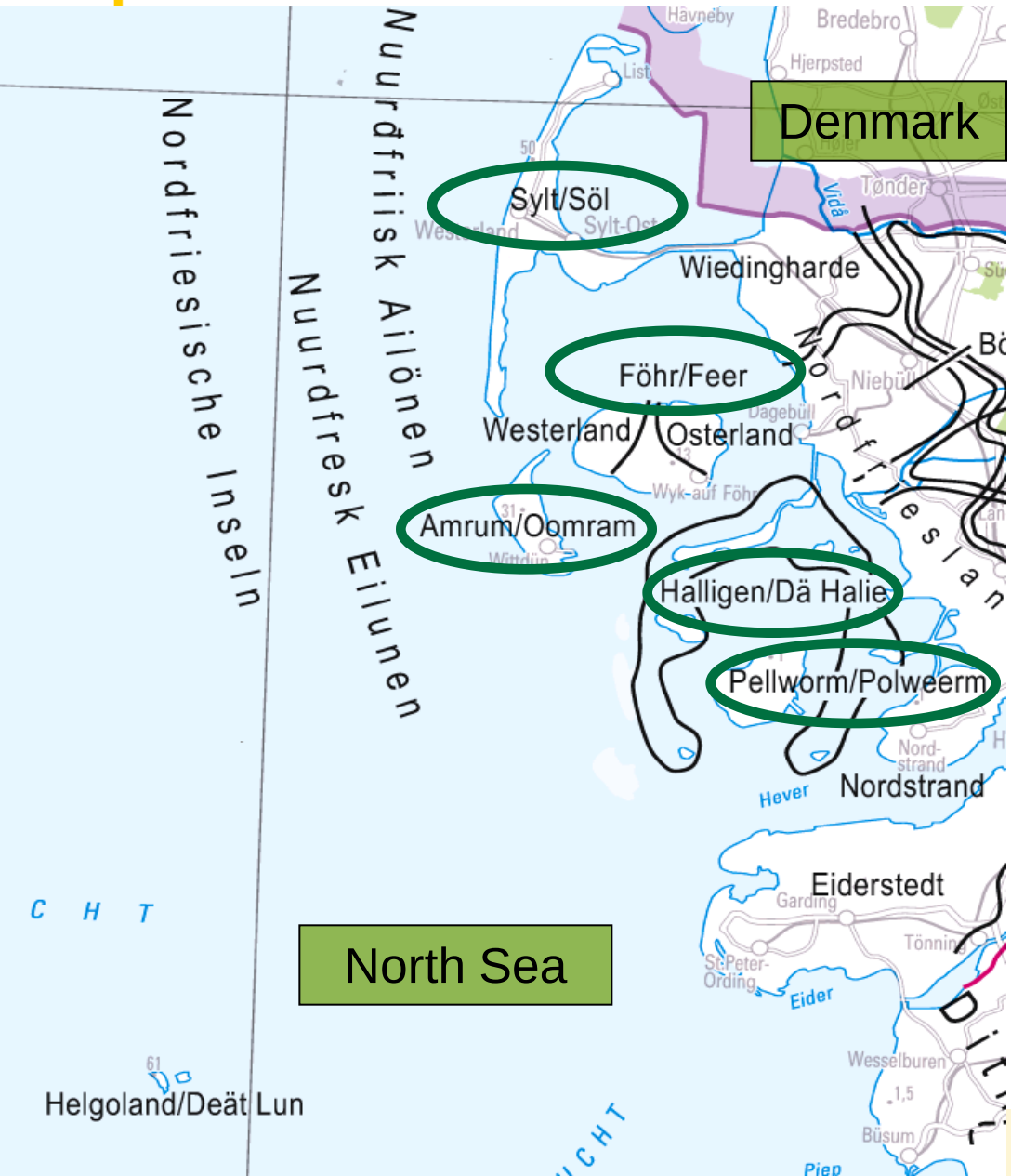
Federal States



Federal Agency for Cartography and Geodesy

Rendering names in German datasets & publications

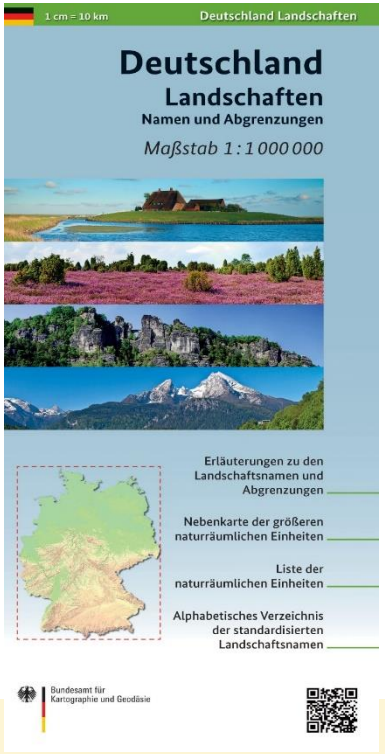
BKG / StAGN



„Landschaftsnamenkarte“
Geographic regions (landscapes) of Germany

6th edition,
BKG/StAGN, 2014

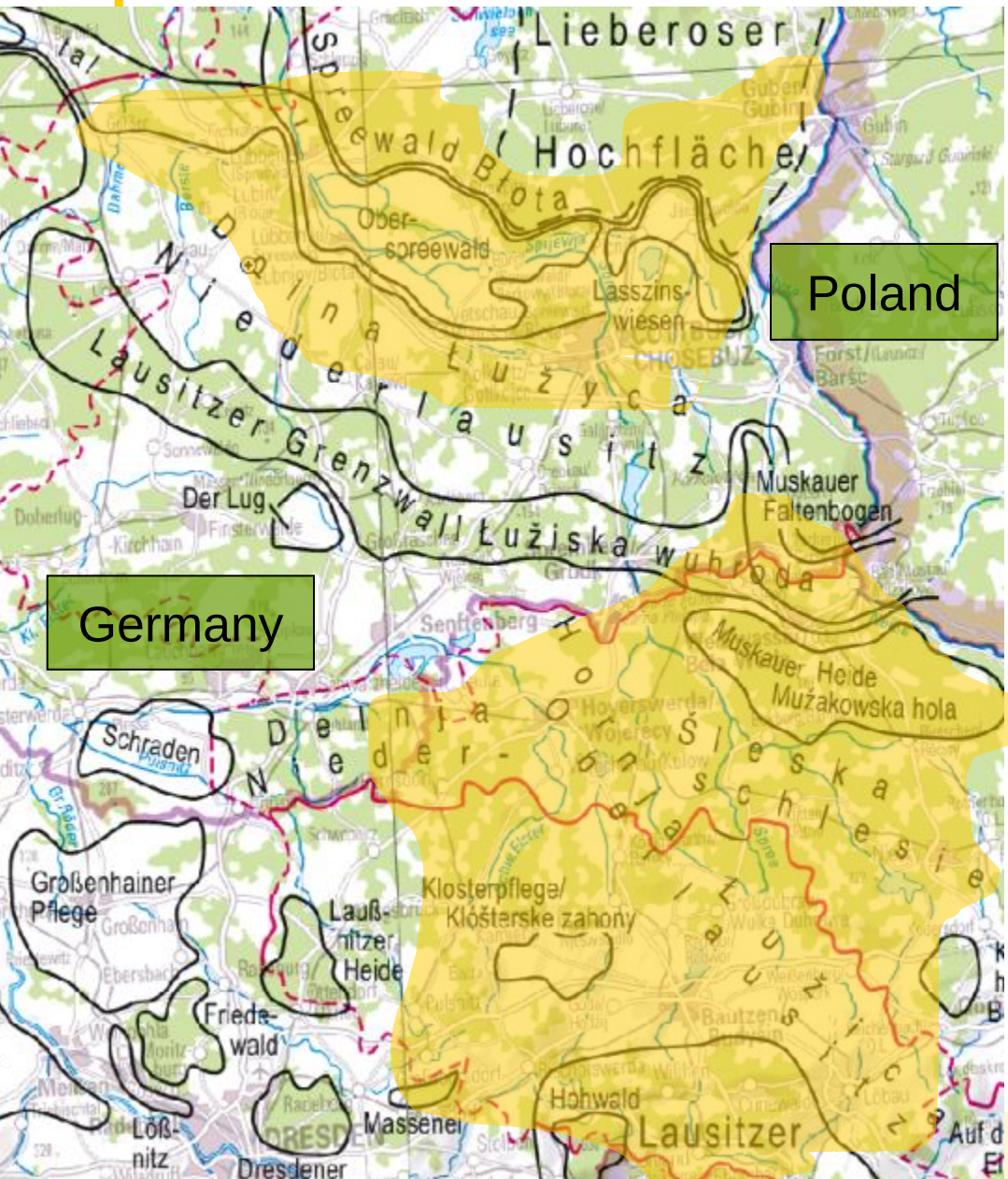
Frisian minority names



Federal Agency for Cartography and Geodesy

Rendering names in German datasets & publications

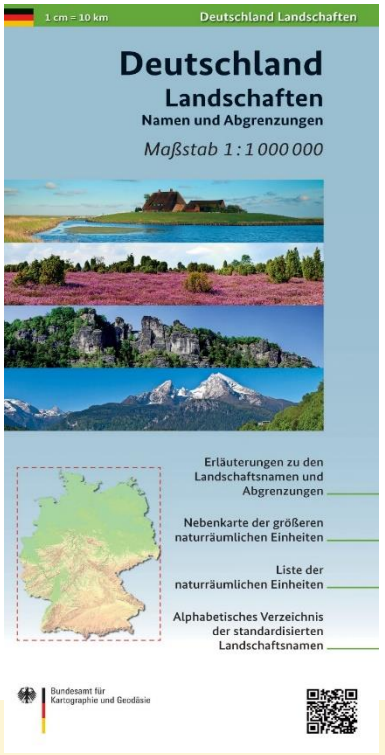
BKG / StAGN



„Landschaftsnamenkarte“
Geographic regions (landscapes) of Germany

6th edition,
BKG/StAGN, 2014

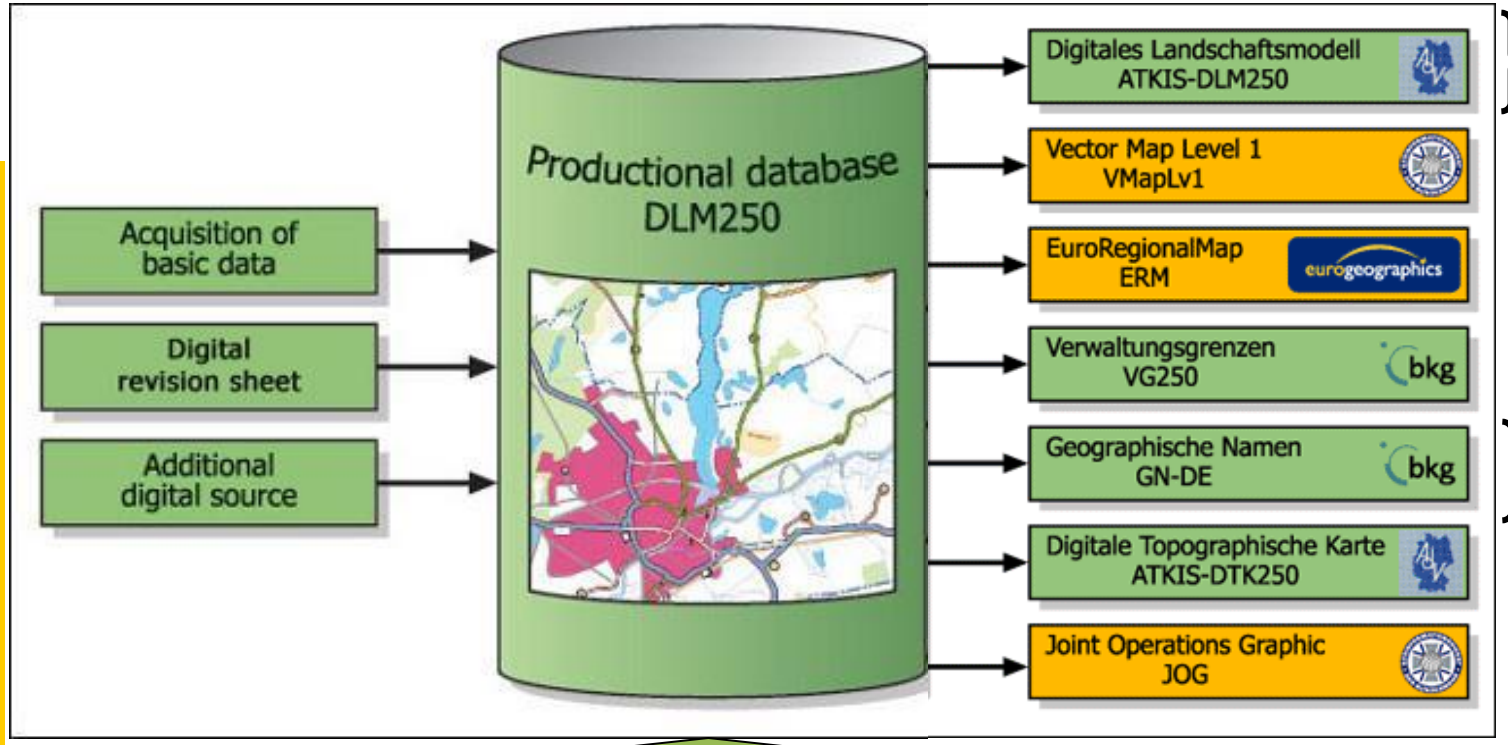
German and Sorbian names of geographic regions



Rendering names in German datasets & publications

BKG / Federal Government

BKG's produkt line – derived from the Digital Landscape Model (DLM250)



DLM for the AdV product line

GN dataset for the national gazetteer service

Geographical names data set **GN-DE** is essential part of the productional database and is unambiguously linked to the **spatial objects/features** through **unique identifiers (UIDs)**

Geographical names in production database – GN-DE

The object/feature themes of the GN-DE geographical names database are:

- **settlement, transportation, vegetation, hydrography, relief, areas and regions**
- with **attributes** regarding the administrative hierarchy (administrative code), river system (hydrographic key number in accordance with the German Working Group on water issues (Bund/Länder-Arbeitsgemeinschaft Wasser -LAWA) and
- **number of inhabitants**, **size** (area, length), **position** (geometry data from DLM250 as well as additional attributive geographical coordinates), **postcodes**, **status**, **language** of the geographical name and **height** data (in meters).

Geographical names in production database – GN-DE

Example: 1 spatial object/feature → *Bautzen/Budyšin*

GN_OBJEKT:¶

NNID	Landescode	Karten	GeoL	GeoB
21000020369	276	4852; L4952; C5150; CC5550; JOG250; UK500GB; ; D1000	14,42944444	51,182222

¶

ENDONYM:¶

NNID	Name	Sprache	Status
21000020369	Bautzen	DEUTSCH	amtlich
21000020369	Budyšin	SORBISCH	amtlich

¶

GN_DLM:¶

NNID	Layer	OBJECTID
21000020369	sie01_f	

¶

GNO_PLZ:¶

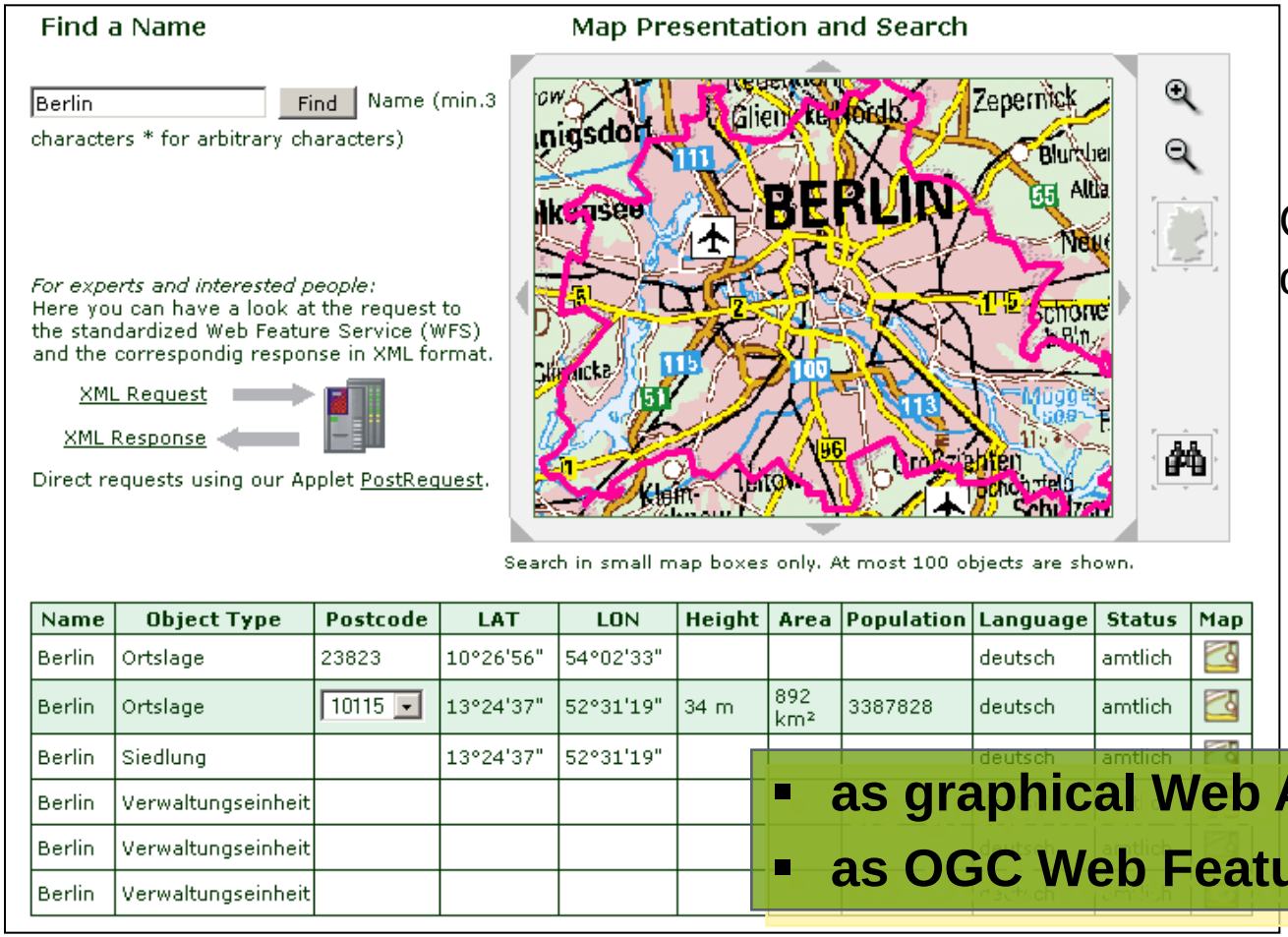
NNID	PLZ
21000020369	02625

Entities for both languages

"Bautzen" (German) and "Budyšin" (Sorbian)

The national gazetteer service –

search for geographical names of Germany…



Name	Object Type	Postcode	LAT	LON	Height	Area	Population	Language	Status	Map
Berlin	Ortslage	23823	10°26'56"	54°02'33"				deutsch	amtlich	
Berlin	Ortslage	10115	13°24'37"	52°31'19"	34 m	892 km²	3387828	deutsch	amtlich	
Berlin	Siedlung		13°24'37"	52°31'19"				deutsch	amtlich	
Berlin	Verwaltungseinheit									
Berlin	Verwaltungseinheit									
Berlin	Verwaltungseinheit									

Gazetteer service based on the dataset **GN-DE**

- **as graphical Web Application**
- **as OGC Web Feature Service (WFS)**

United Nations Group on Experts on Geographical Names - UNGEGN

- *8th UN Conference on the Standardization on geographical Names, Berlin, 2002*
  - Resolution VIII/6
- **Integration of geographical names data into national and international spatial data infrastructures**
- The Conference,…
- recommends,

that standardized geographical names data should be considered in the establishment of national and regional spatial data infrastructures and included in their design, development and implementation.

Data model – database modelling

"UNGEGN schema" (proposal): elements

Field Name	Data Type	Description	Example
RecordID	Index	This number is assigned automatically by the system. Do not change it.	
UID	Number (long integer)	A unique identifier assigned to the name (or named feature). In our exercise, each group may start to count from 1 and add the group number multiplied by 100, e.g. 201 for the first name by group 2.	20001 might indicate e.g. 2000 for feature type 'Populated places'
Name	Text (50 char.)	Geographical name in Romanian	Oran
Latitude	Number (double)	Geographical Coordinates, in degrees decimal.	35,…
Longitude	Number (double)		-0,5…
FeatureCode	Text (50 char.)	Feature codes, from an existing feature code table	DDS
AdminUnit	Text (50 char.)	Name of the administrative unit where the name is situated in	Departement d' Oran, Department of Oran
Language	Text (50 char.)	Language of the name	
Description	Text (255 char.)	Field remarks, meaning of the name, language of the name, historical names if any	e.g. capital of a political entity
VariantName	Text (50 char.)	Enter variant names, if any e.g. Hungarian name	Wilaya d' Oran,Wilaya d' Oran
MapSheet	Number (long integer)	Reference to a map sheet in a topographic map series, e.g. 1:250.000	80
Source	Text (255 char.)	Source of the information on the name: - Informant - Interviewer	Mr. XY, old person at xyz, interview by group 1
Status	Text (50 char.)	The status of the name. In our case, the names are not yet approved by the Board.	not approved
Pronunciation	OLE-Object	Audio-files of the pronunciation of the geographical name	e.g *.wav -file
Location information	OLE-Object	Digital pictures of the location	e.g *.jpg – image file

INSPIRE Data Specification on Geographical Names – Guidelines (Extract)

[…] Geographical names are widely used in every-day communication

[…] Geographical names are used extensively when searching for information in web-services […]

[…] Correct usage of geographical names […] are a prime interest of many users […]

[…] The … INSPIRE geographical names model **is a simple yet flexible structure** that allows geographical names to be used as an **attribute of a spatial object**.

The possibility of **linking more names with the same named places** gives the opportunity to **integrate minority languages and exonyms**, which are an **important contribution to European multilingualism**. […]

Data model – database modelling

The European (INSPIRE) GN schema: elements

mandatory

- name(s) (text, spelling)
- geomety
- feature type
- unique identifier

‘voidable’

- language {three letter codes from ISO 639-3 or -5}
- nameStatus {official, standardised, historical, other}
- link to relatedSpatialObject
- script {four letters codes defined in ISO 15924}
- nativeness {endonym, exonym}
- transliterationScheme
- grammatical gender {masc., fem., neuter, common}
- grammatical number {singular, plural, dual}
- pronunciation
- sourceOfName
- typeLocal
- lifeCycleInfo (begin/end of the object in the source DB)
- …

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Finances & administration & human resources

BKG personnel: about 90.000 Euros / year

- **Office of Permanent Committee on Geographical Names**

  1 person, full time, about 40.000 Euros / year

- **Coordination of names activitiy at BKG**

  2 person, 30 %, about 10.000 Euros / year

- **Technical staff for administration of databases**

  1 person, 50 %, about 20.000 Euros / year

- **Technical staff for administration of web (gazetteer) service**

  1 person, 50 %, about 20.000 Euros / year

Finances & administration & human resources

BKG investments: about 20.000 Euros / year

- **Database (hard- and software)**

  2 databases, updates per year for 5.000 Euros / year

- **Server (hard- and software)**

  1 server update per year for 5.000 Euros / year

- **IT-specific training**

  2 person, about 10.000 Euros / year

- **Soft- and hardware amortization is different for server or database and varies between 3-5 years**

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Names data within the German Spatial Data Infrastructure (GDI-DE)

- The GN-DE dataset is currently used for the geographical names data provision within the '***German Spatial Data Infrastructure*** (GDI-DE)' → UN Res VIII/6
- GN-DE is the rationale for the national data provision for **European purposes** as it is the only dataset in Germany that includes the mandatory and almost all optional European attributes (like language, status, gender …).
- A wide range of **different applications** (e.g. geoportals) has been built up that provide discovery functionality for spatial data sets and services and generally make use of the functionality.
- Germany declared the federal government's geodata to be **open data** in the course of the revision to the Geodata Access Act (GeoZGÄndG) on 16 November 2012. Hence, the gazetteer web service of BKG is available free of charge, too.

Further discussion on logistics, production time needed and necessary upkeep costs

- The financial and human resources roughly estimated by BKG as necessary for maintaining the national geographical names programme amounted to about **€ 110,000** per year for both personnel and investments.
- Most of the German Länder might invest a similar small amount in logistics, the maintenance of geographical names database and the development and up keeping of services and applications, about the overall yearly costs would amount to **€ 1,8 million.**
- Considering that the data content for GN-DE is based on a map scale 1: 250,000 a cooperation of the Federal Government with the Länder– (the latter are responsible for data based on maps at scales 1:25,000 – 1:10,000) is envisaged to **increase the content** of the national web service.

Thank you for your attention!