

Session:

Database creation (theory)

v1.0

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Content

Preparing the names database – General issues

- What are the purposes of a database?
- Names database and Geographic Information System (GIS)
- Names database and Web
- Use cases for Web applications

Description of database characteristics – Database management

- Characteristics of databases
- Realisation of databases: open source vs. proprietary
- Data model vs. database modelling

Objectives for the ‘hands on’ experience for creating a database

I don’t want to...

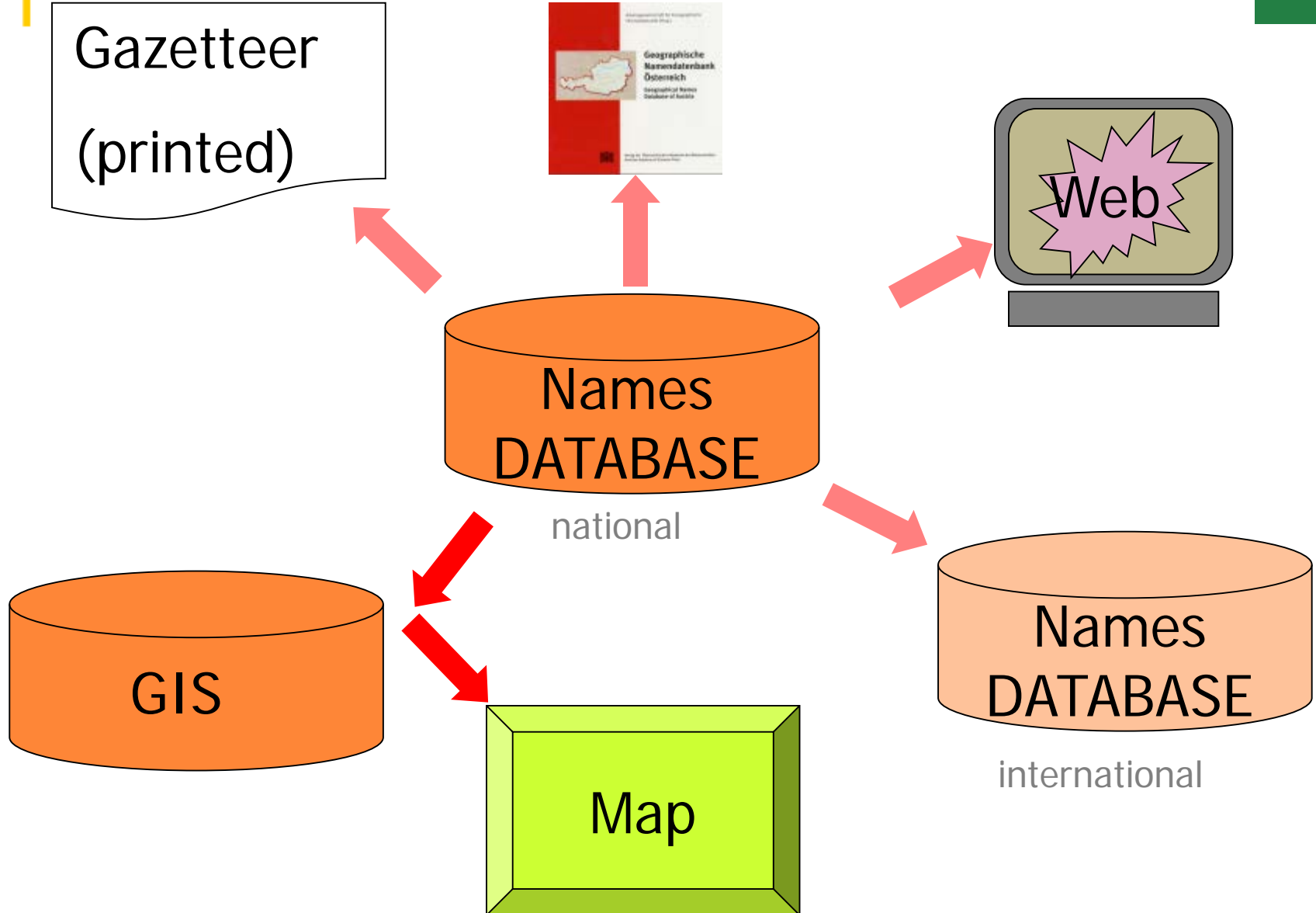
- invest too much time in gaining technical IT knowledge
- understand the technical database management in detail
- use Geographic Information System (GIS) in future work
- technically understand Web services and Web applications

I do want to...

- understand a database model in principle
- discuss with and explain to my technical IT staff the use cases and database content
- explain the database model and its concept to my staff

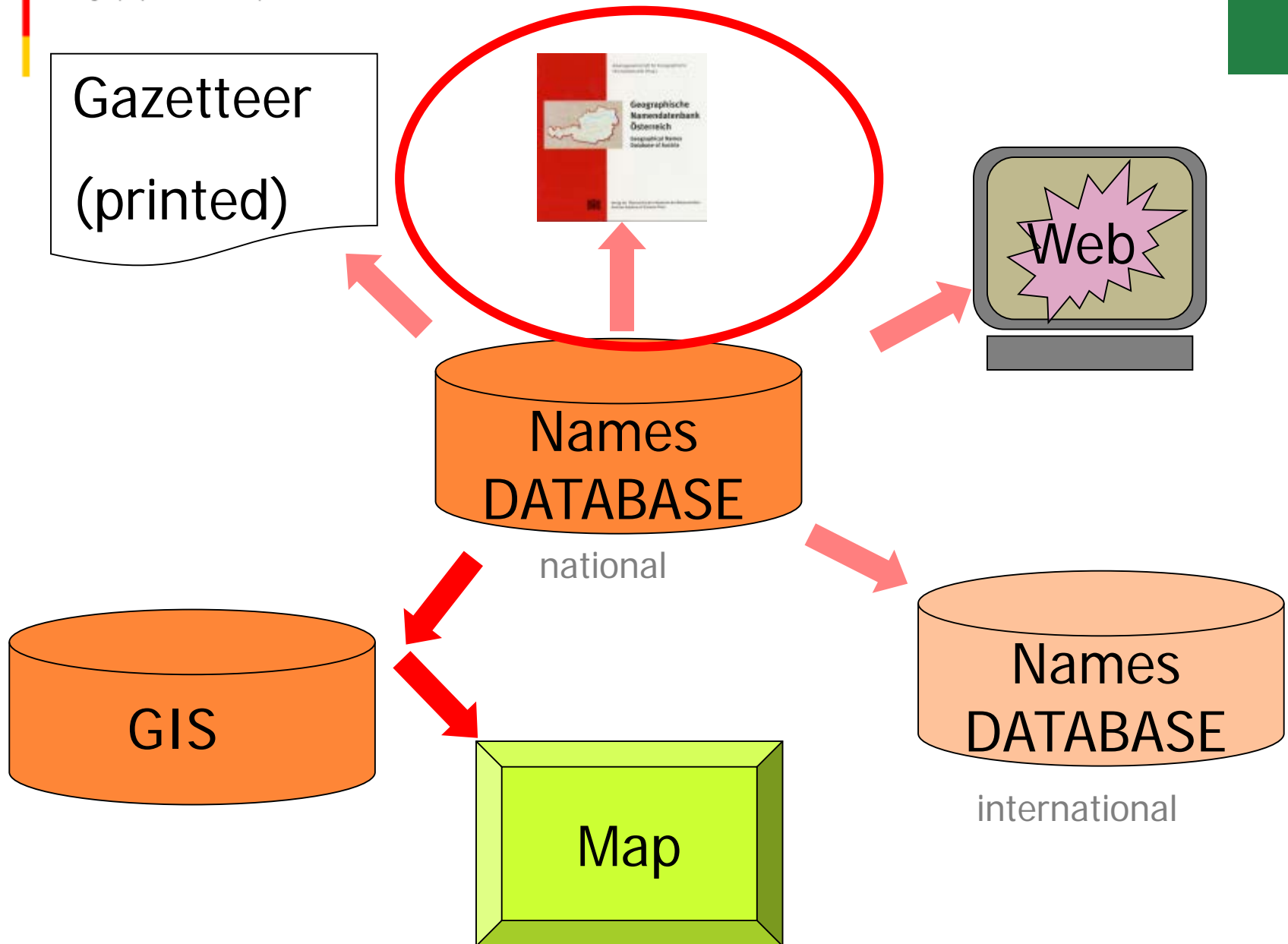


What are the purposes of a DB?





What are the purposes of a DB?





What are the purposes of a DB? Example: Netherlands

Digital Gazetteer M733 landmacht

Search for:

Name Sheetnumber Gazetteercode

Name: *amster*

Limit Selection to:
Sheetnumber
Gazetteercode
Administrative Code

Name	Code	Long	Lat	MGRS
Amsterdamse Bos	FRST	4°49'10"	52°18'48"	FT24039743
AMSTERDAM	POPL	4°49'14"	52°20'50"	FU24000122
Gemeente Amsterdam	ADMD	4°58'09"	52°24'38"	FU33940851
Amsterdam-Zuidoost	POPL	4°58'44"	52°18'04"	FT34929637
AMSTERDAM	POPL	4°53'60"	52°22'16"	FU29340402
Amsterdam-Rijnkanaal	CNAL	4°58'43"	52°21'07"	FU34760201
Amsterdam Arena	MISC	4°56'29"	52°18'51"	FT32339775
Amsterdamse Brug	BRDG	4°57'40"	52°21'59"	FU33520359
Amsterdam-Rijnkanaal	CNAL	5°00'17"	52°12'29"	FT36998606
Amsterdam-Rijnkanaal	CNAL	5°04'53"	52°04'36"	FT42637160
Amsterdamse Straatweg	ROAD	5°04'23"	52°06'59"	FT41957600
Klein Amsterdam	POPL	6°05'57"	52°09'04"	LC01548181
Amsterdam-Rijnkanaal	CNAL	5°08'09"	52°01'21"	FT46546571
Amsterdam-Rijnkanaal	CNAL	5°12'06"	51°59'57"	FT51156323
AMSTERDAM-RIJN KAI	CNAL	5°23'44"	51°56'13"	FT64685674

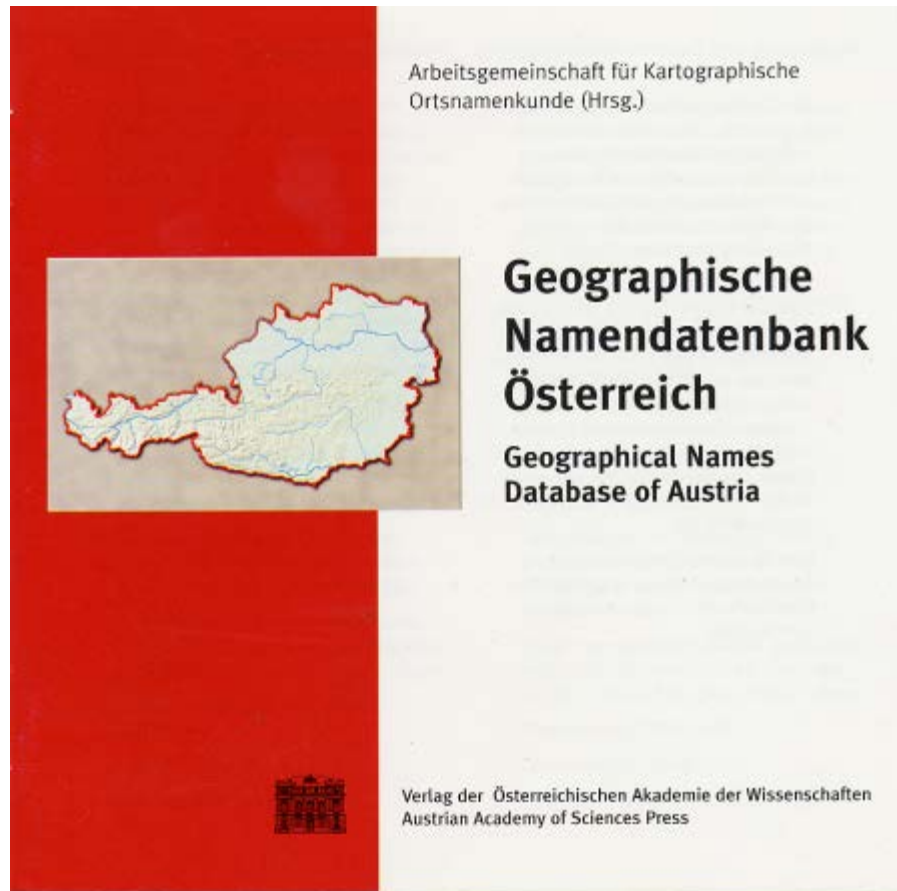
Search in Database New search Print Close

**Geographical
Names Database:
Netherlands**

Offline DB



What are the purposes of a DB? Example: Austria



**Geographical Names
Data Base: Austria
Offline CD-ROM**



What are the purposes of a DB? Example: Germany

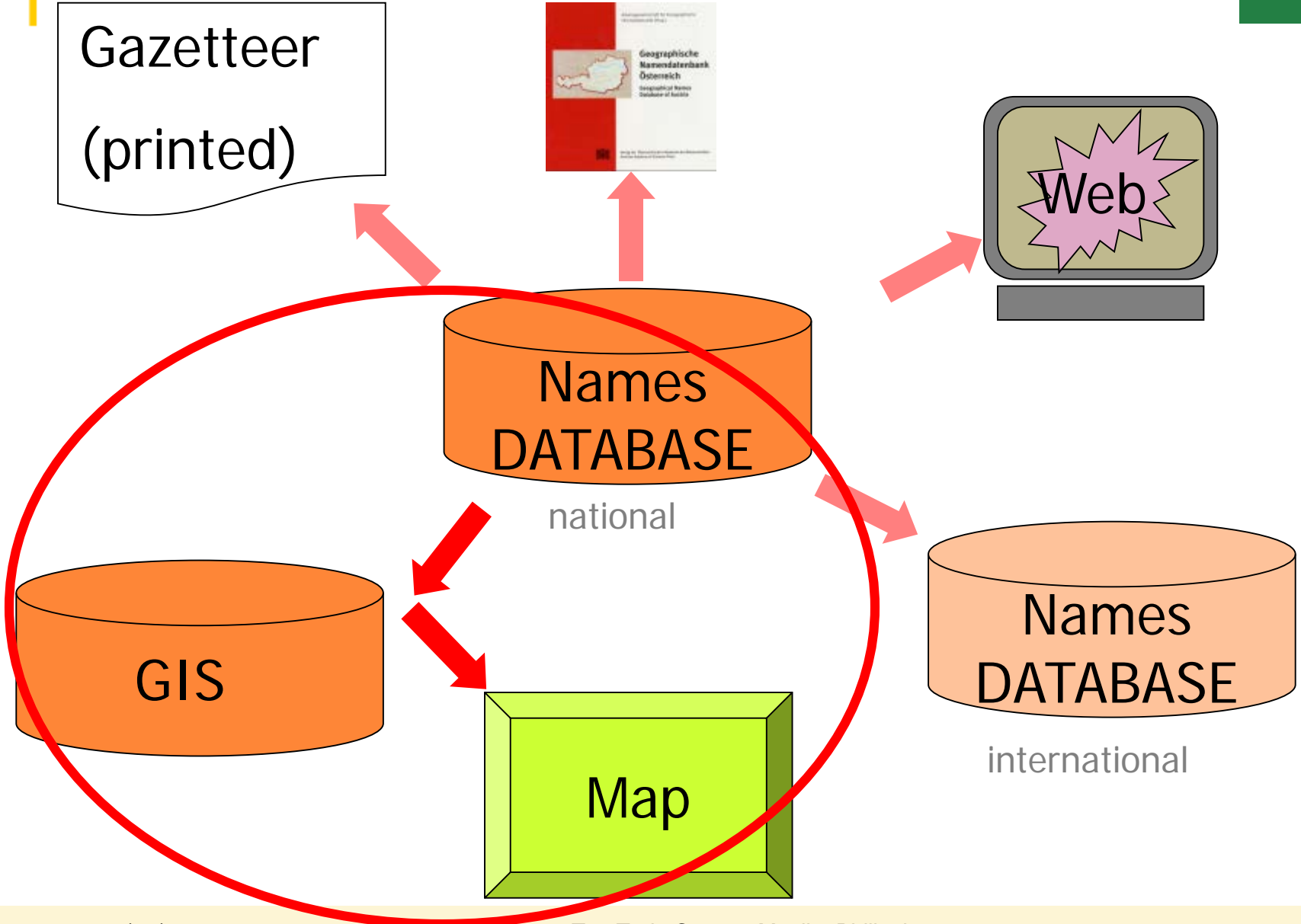


Example of a
topographic data file
with integrated
names data base:
Germany

Offline CD-ROM



What are the purposes of a DB?





Names database and Geographic Information System (GIS)



Reality



Model



- Where am I?
- Where do I find...?
- Where is the next...?
- How do I get to...?
- How far is it to...?
- Where does this way lead to?

Data models

↓ *consist of*

feature definitions + relations

↓ *including*

spatial reference to points,
locations, areas or regions as
specific feature

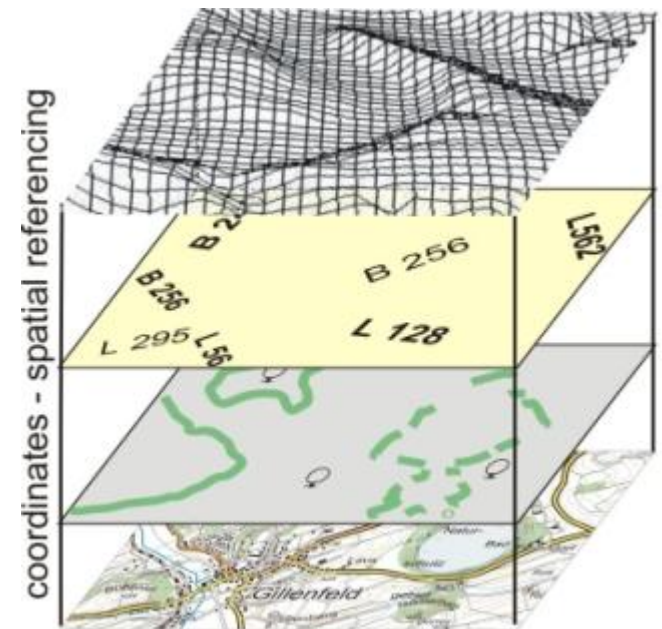
- ***necessary information is called geo(graphic) information***
- ***80% of all information is estimated to be spatially referenced***

Geographic Information System (GIS)

a GIS is an organized collection of computer hardware, software, (geographic) data and personnel.

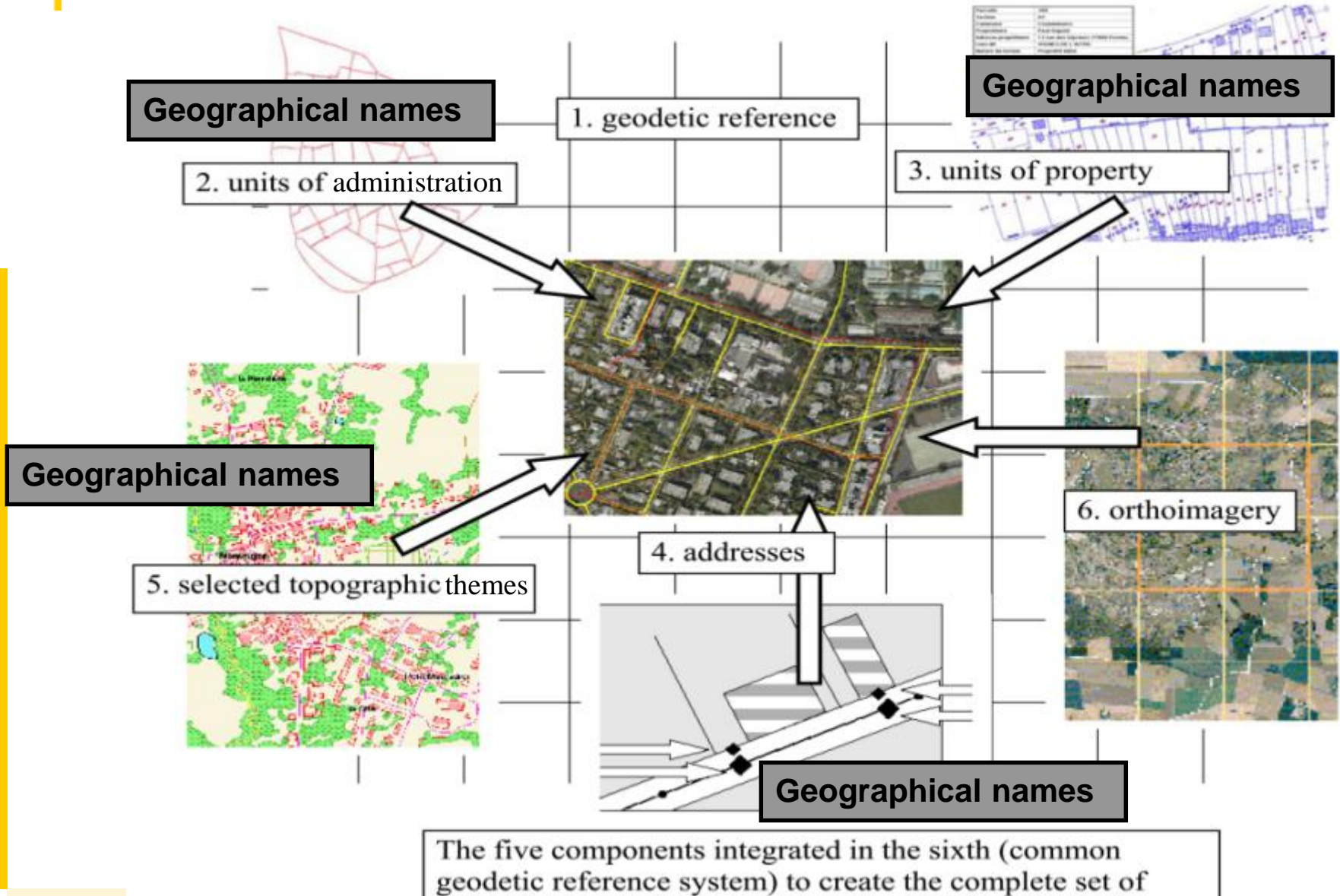
→ designed to *capture, store, update, manipulate, analyse* and *display* all forms of geo referenced information.

(see www.GIS.com)



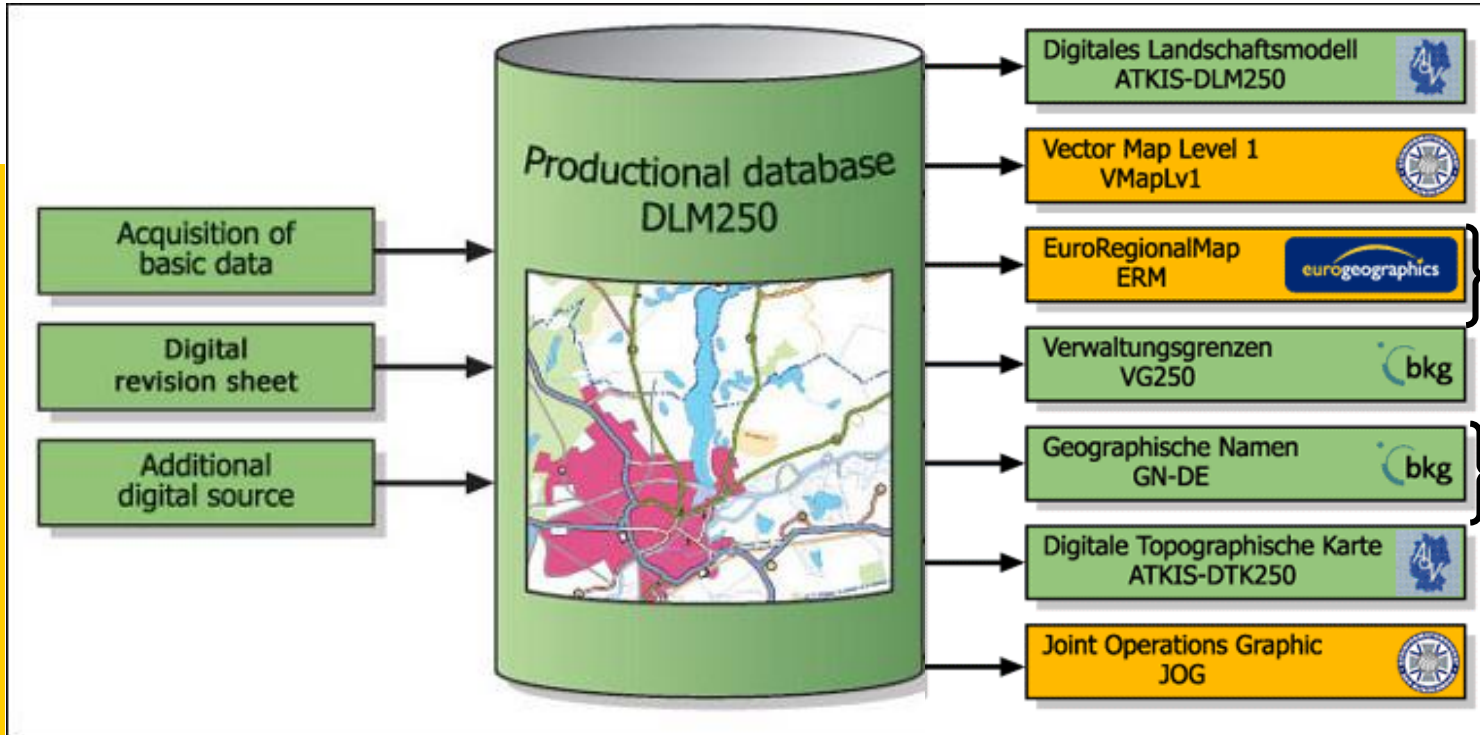


Names database and Geographic Information System (GIS)



Names database and Geographic Information System (GIS)

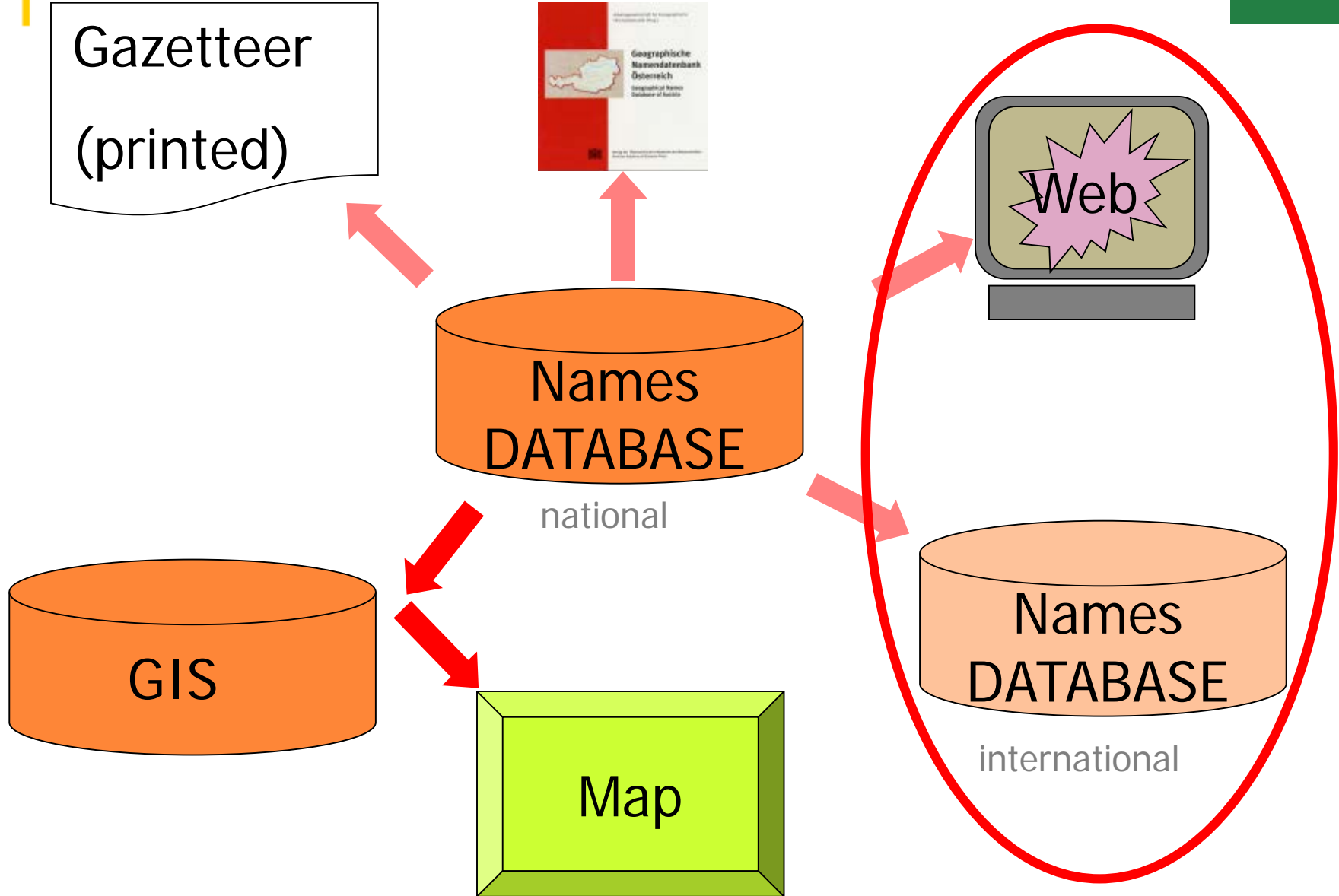
BKG's produkt line – derived from the Digital Landscape Model (DLM250)



European dataset
derived from the
national one

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)**



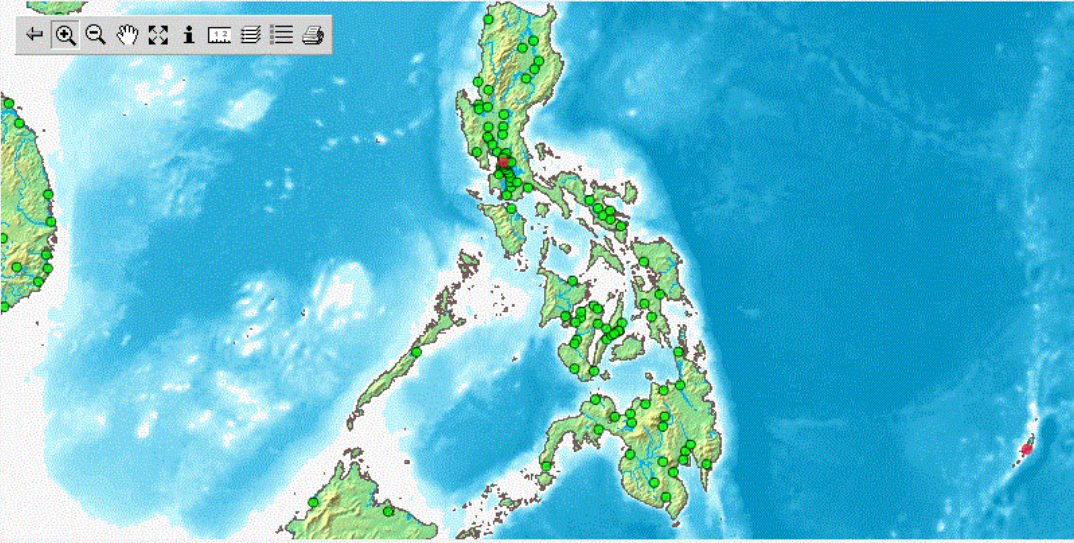
The international UNGEGN database – search for geographical names of countries and capitals



Geographical Names Database | [About](#) | [FAQ](#) | [Feedback](#) | [Contact](#) Beta version

Philippines (the) ▼

Roll over a country to display the country name in the six UN languages. Point to a city to see the city endonyms (where available and in romanized form only) and the English name. Capital cities are shown in red, other cities are shown in green.
Note: Depending on the computer settings, some names might not be able to be displayed properly.



Notes:

- The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. The source for the file is [UNGIWG](#). Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined.
- The Arabic fonts are not connected at this stage because of technical problems.

<http://unstats.un.org/unsd/geoinfo/geonames/>



Country names

Endonyms

Language	Short name	Formal name	
English	Philippines (the)	the Republic of the Philippines	i
Pilipino	Pilipinas	Republika ng Pilipinas	i

United Nations languages

Language	Short name	Formal name	
Arabic	الفلبين	جمهورية الفلبين	i
Chinese	菲律宾	菲律宾共和国	i
English	Philippines (the)	the Republic of the Philippines	i
French	Philippines (les) [fém.]	la République des Philippines	i
Russian	Филиппины	Республика Филиппины	i
Spanish	Filipinas	la República de Filipinas	i

Capital and other major cities

Capital city

Lat: 14.59 | Long: 120.98 **Manila**

Endonym

Language	City name	Source
English	Manila	UNGEGN
Pilipino	Maynila	UNGEGN

United Nations Languages

Language	City name	Source
Arabic	مانيلا	UN terms
Chinese	马尼拉	UN terms
English	Manila	UN terms
French	Manille	UN terms
Russian	Манила	UN terms
Spanish	Manila	UN terms



Endonym		
Language	City name	Source
English	General Santos	UNGEGN
Lat: 6.48 Long: 124.87	Koronadal	
Lat: 6.74 Long: 125.36	Digos	
Lat: 6.90 Long: 122.08	Zamboanga	
Lat: 6.95 Long: 126.22	Mati	
Lat: 7.01 Long: 125.09	Kidapawan	
Lat: 7.06 Long: 125.61	Davao	
Lat: 7.20 Long: 124.24	Cotabato	
Lat: 7.28 Long: 125.67	Panabo	
Lat: 7.45 Long: 125.80	Tagum	
Lat: 7.83 Long: 123.44	Pagadian	
Lat: 7.90 Long: 125.09	Valencia	
Lat: 8.00 Long: 124.28	Marawi	
Lat: 8.15 Long: 123.85	Ozamis	
Lat: 8.16 Long: 125.13	Malaybalay	



Search for geographical names through the GEOnet Names Server (GNS)
<http://geonames.nga.mil/gns/html/>, last accessed 03/2018

The national gazetteer service – search for geographical names of Germany...

Find a Name

Name (min.3 characters * for arbitrary characters)


For experts and interested people:
Here you can have a look at the request to the standardized Web Feature Service (WFS) and the correspondig response in XML format.

[XML Request](#)

[XML Response](#)

Direct requests using our Applet [PostRequest](#).

Map Presentation and Search



Search in small map boxes only. At most 100 objects are shown.

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	<input type="text" value="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)



Gazetteer for Scotland	http://www.scottish-places.info/
Gazetteer of Japan	http://www.gsi.go.jp/common/000042053.pdf
Magyarország Helységnevtára, 2012 - The Detailed Gazetteer of Hungary, 2012	http://www.ksh.hu/apps/cp.hnt2.gazetteer
ScotlandsPlaces, Historical place name gazetteer	http://www.scotlandsplaces.gov.uk/
The National Gazetteer of Wales	http://homepage.ntlworld.com/geogdata/ngw/places.htm
Composite Gazetteer of Antarctica	https://www1.data.antarctica.gov.au/aadc/gaz/scar/search.cfm
Gazetteer of British Place Names	http://www.gazetteer.org.uk/index.php
Getty Thesaurus of Geographic Names Online	http://www.getty.edu/research/tools/vocabularies/tgn/
Bavarikon, Ortssuche	http://www.bavarikon.de/places
Gazetteer of Australia - Geoscience Australia, Place Name Search	http://www.ga.gov.au/place-names/index.xhtml
Geographic Names Information System	http://geonames.usgs.gov/apex/f?p=136:1:8584754151386
Canadian Geographical Names Data Base - CGNDB	http://www.nrcan.gc.ca/earth-sciences/geography/place-names/search/9170
NWT Place Names Database	http://www.pwnhc.ca/cultural-places/geographic-names/database-of-nwt-geographic-n
North Dakota Place Names	http://www.webfamilytree.com/North_Dakota_Place_Names/index.htm
Directory of Towns, Villages and Hamlets Past and Present of Missouri	http://thelibrary.org/lochist/moser/search.html
A Gazetteer of Cities, Towns, Villages, Mountains, Hills, Rivers, and other Place names with their location, la	https://www.placenames.com/
GeoTWIN 2.0	http://geotwain.de/
Openstreetmap Nominatim	https://nominatim.openstreetmap.org/
Crimean Tatar Place Names	http://www.iccrimea.org/place/placenames.html
Geographic Names Informations System, Query Form for Antarctica	http://geonames.usgs.gov/apex/f?p=gnispq:1:0::NO:1:P1_SHOW_ANTAR%2CP1_SHOW_A
Interaktyvus Rytų Prūsijos žemėlapis II IRPŽ II - Interaktive Karte von Ostpreußen	http://prusija.lki.lt/
Antarctic Place Names	https://www1.data.antarctica.gov.au/aadc/gaz/
Registar Geografskih Imena - Gazetteer of Geographical Names	http://cgn.dgu.hr/name-search/
Registar Geografskih Imena Nacionalnih Manjina Republike Hrvatske - Gazetteer of national minorities of th	http://www.dgu.hr/assets/uploads/Dokumenti/Poslovne%20info/Registar%20geog%20i
Autoriserede stednavne i Danmark - List of authorized Danish place-names	http://www.stednavne.info/VisKort/Popupmap.aspx
Maanmittauslaitos - National Land Survey of Finland	http://kansalaisen.karttapaikka.fi/kartanhaku/paikannimihaku.html?e=406643&n=719513
Géoportail, le portail des territoires et des citoyens - Geoportal Frankreich	http://www.geoportail.gouv.fr/accueil
Geographische Namen Deutschlands GN-DE	http://www.geodatenzentrum.de/geodaten/gdz_rahmen.gdz_div?gdz_spr=deu&gdz_akt
Historische Ortsnamen	http://www.geodatenzentrum.de/geodaten/gdz_rahmen.gdz_div?gdz_spr=deu&gdz_akt

→ Session on Names Servers...on Friday, March 24

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Use cases for Web applications using names data services



Vivium International Property Listings

Real Estate Rentals List Your Property

Enter Listing ID or Location:

Vivium -> Real Estate -> Western Europe -> Villas

Location: Andorra - Austria - Belgium - Cyprus - Denmark - Finland - France - Germany - Greece - Greenland - Iceland - Ireland - Italy - Liechtenstein - Luxembourg - Malta - Monaco - Netherlands - Norway - Portugal - San Marino - Spain - Sweden - Switzerland - UK - Vatican City - All Locations for Villas - [List Your Property !!](#)

Also See: Single Family Homes - Mansions - Townhouses - Duplexes - Triplexes - Bungalows - Timeshares

Villas For Sale in Western Europe - Available Properties

Showing 1 - 10 of 253 listings (Page 1 of 26)

Villa For Sale in Lucca, Tuscany Italy - Pozzuolo 1,150,000 €

Private and secluded farmhouse in a beauty spot close to the charming walled city of Lucca. The original stone built house nestles in 3 hectares of land with a planting of chestnut (the house used to be a chestnut farm) and a swimming pool. Perfect for ...

Holiday Villa For Sale in Tuscany, Italy 1,000,000 €

Casa Migliano - 5 Migliano set in a little valley and the house is fully restored and a sleepy hamlet 20 km from Lucca.

Villa For Sale in Limassol, Cyprus

The Most Exclusive built utilizing the best delivery time attest villa has been delivered partially furnished.

Village House For Sale in Olympia Raches Olympias

Village House For village of Olympia with 500 civilians, recently renovated but needs further renovation. Mountain view from the front side, sea view from the back side. 2 balconies and garden. A 3-level house that can easily ...

Location based information on *Pozzuolo, Toscana (IT)* and its pronunciation, possibly directly from the Italian data repository!

International purchase of properties with Internet property services

<http://www.viviun.com/>

⇒ Geographical names databases or web services can provide additional location based information

Use cases for Web applications using names data services


Provision of European news

⇒ GN databases
or web services
can provide
additional location
based information

12/04/2017 | Select edition **English** ▾

euronews. Search

HOME › NEWS › WORLD › **WAR IN SYRIA: LAVROV TELLS TILLERSON US MISSILE STRIKES MUST NOT BE REPEATED**



RUSSIA
War in Syria: missile strikes

euro news.

Country names

Endonyms

Language	Short name	Formal name
Arabic	الجمهورية العربية السورية <i>Sūriyah</i>	الجمهورية العربية السورية <i>Al Jumhūriyah al 'Arabiyah as Sūriyah</i>

United Nations languages

Language	Short name	Formal name
Arabic	الجمهورية العربية السورية <i>Sūriyah</i>	الجمهورية العربية السورية <i>Al Jumhūriyah al 'Arabiyah as Sūriyah</i>
Chinese	阿拉伯叙利亚共和国	阿拉伯叙利亚共和国
English	Syrian Arab Republic (the)	the Syrian Arab Republic
French	République arabe syrienne (la)	la République arabe syrienne
Russian	Сирийская Арабская Республика	Сирийская Арабская Республика
Spanish	República Árabe Siria (la)	la República Árabe Siria



Use cases for Web applications using names data services

The screenshot displays the European Data Portal interface. At the top, there is a navigation bar with links for Newsletter, FAQ, Search, Contact, Cookies, Legal notice, and Login. A search bar is present with the text "Search site content...". The main header features the European Data Portal logo and a search bar with the text "Search Portal".

The left sidebar contains a "Search Datasets" section with a search input field and a "Browse Datasets by Category" section with icons for Agriculture, Fisheries, Forestry & Foods; Transport; Government & Public Sector; Education, Culture & Sport; and Science & Technology. Below this is a section for "Open Data in Europe".

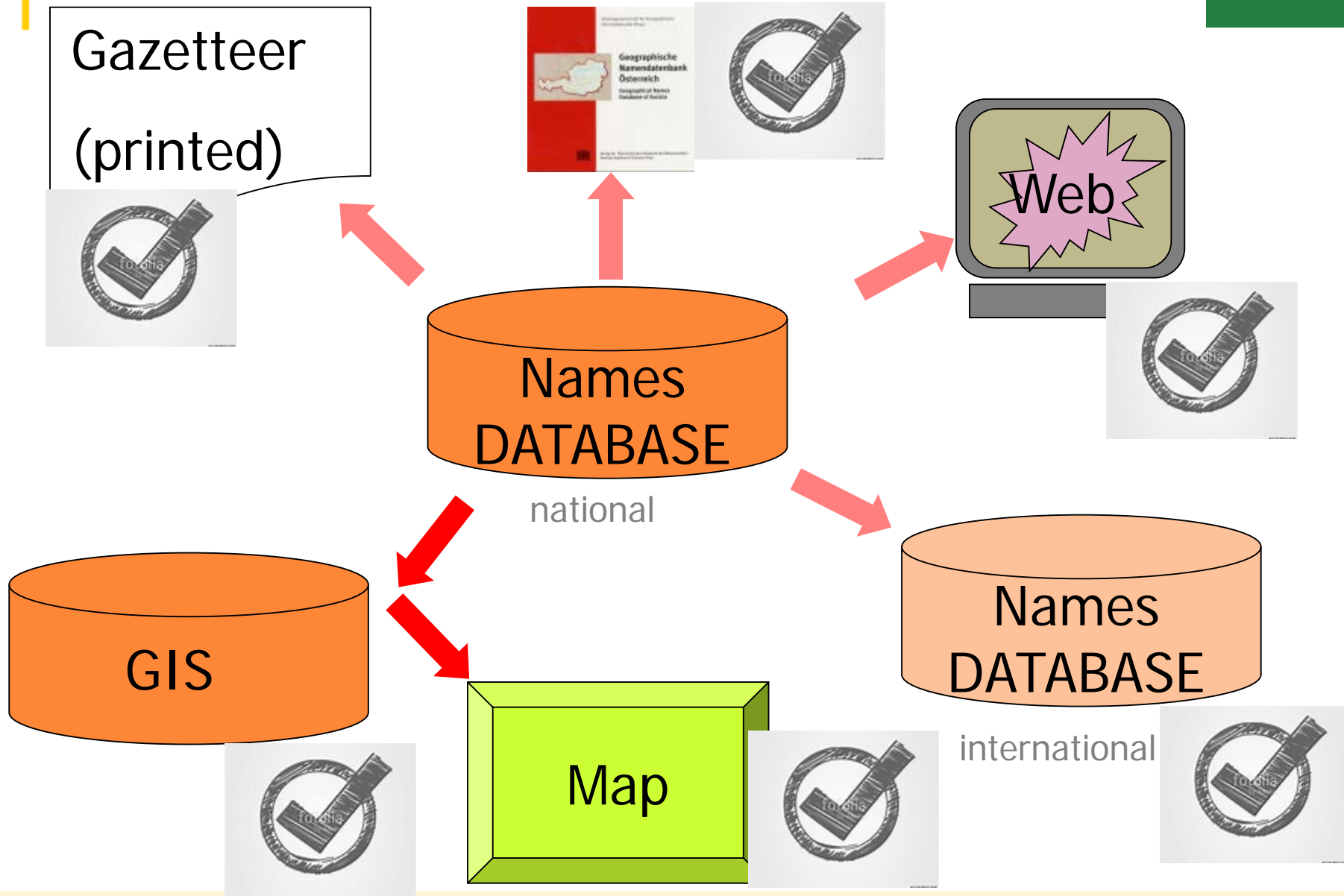
The main content area shows a search result for "geographical names of Germany BKG". The search query is entered in a search bar, and the results are displayed in a list. The first result is "828 datasets found for 'geographical names of Germany BKG'", with an "Order by" dropdown set to "Last Modified". Below this, there is a "Bund: INSPIRE Geographical Names GN250" section, which includes a description: "The INSPIRE-conform dataset geographical names Germany is the base for an INSPIRE-conform Web Feature Service (WFS) and Web Map Services (WMS). The dataset includes all relevant...".

A "Filter by location" panel is visible, showing a map and a list of countries. The "Germany" filter is selected, and the list shows "Germany (205607)" as the active filter. Other countries listed include Czech Republic (340802) and United Kingdom (44757).

At the bottom left, the date "19- 25/03/2018" is displayed.



What are the purposes of a DB?



Eighth United Nations Conference on the Standardization of Geographical Names, 2002

Resolution VIII / 6

Integration of Geographical Names Data into National and Regional 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 constructions.



What are the purposes of a DB?

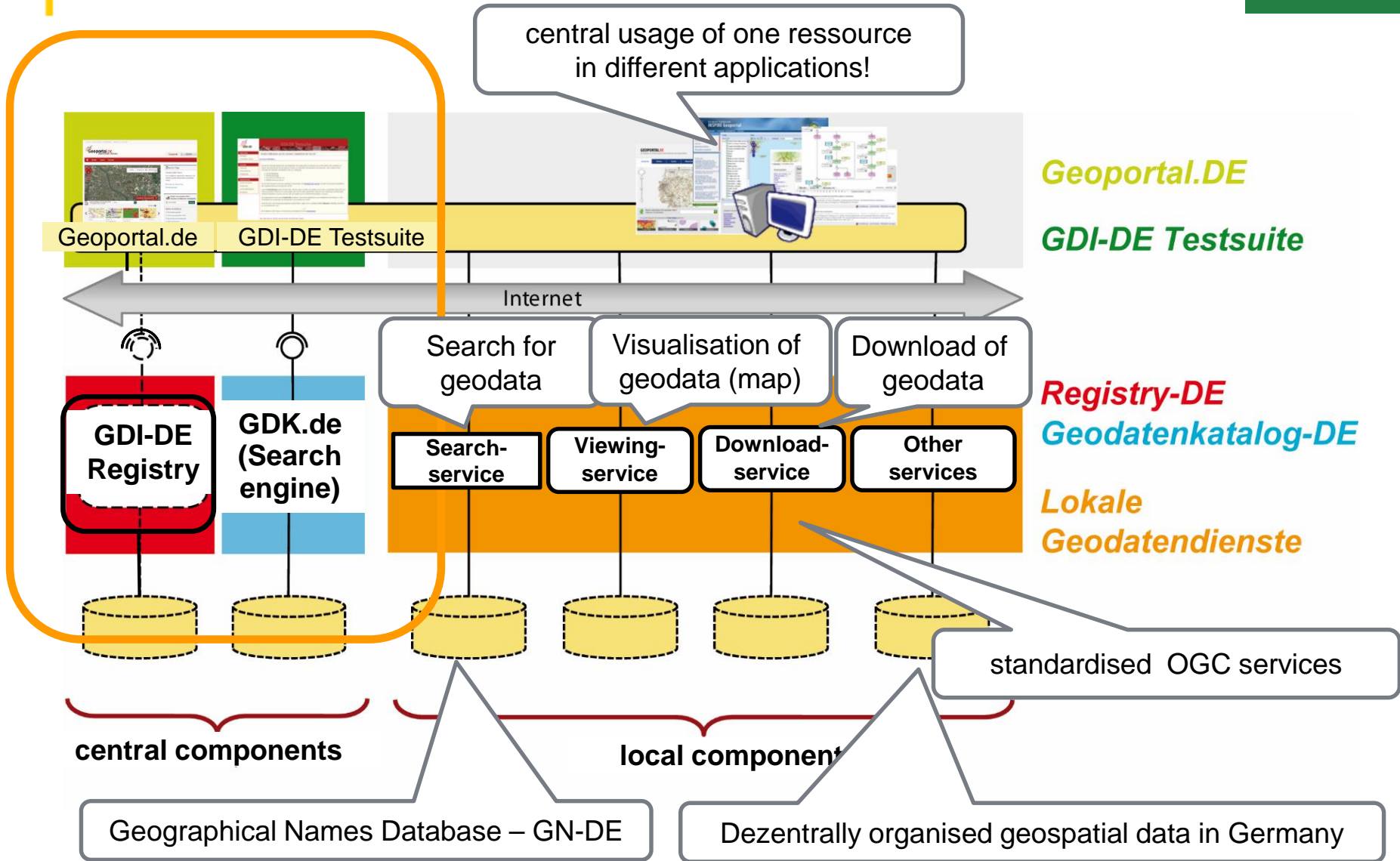
A **spatial data infrastructure (SDI)** is a data infrastructure implementing a framework of geospatial/geographic data, metadata, users and tools that are interactively connected in order to use spatial data in an efficient and flexible way.

Another definition is:

[...] the technology, policies, standards, human resources, and related activities necessary to acquire, process, distribute, use, maintain, and preserve spatial data.

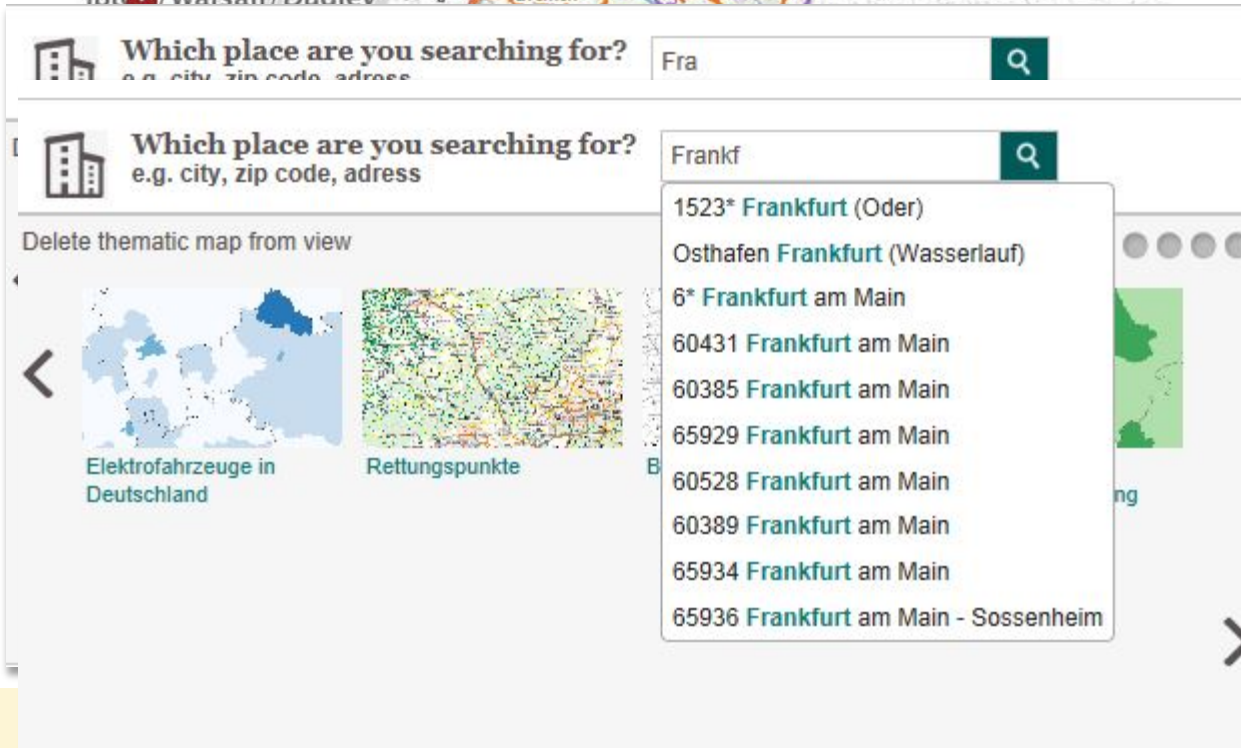
The White House - Office of Management and Budget (2002) Circular No. A-16 Revised, August 19, 2002

What are the purposes of a DB?





What are the purposes of a DB?



The German national geographical names database (GN-DE) published as a web service as part of the national spatial data infrastructure (GDI-DE) and visualized through the Geoportal application (Geoportal.de)

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Characteristics of databases



What do you have to consider (or to know) before you start with creating a database?

Different computer support different characteristics...

Data Capture



Data Storage



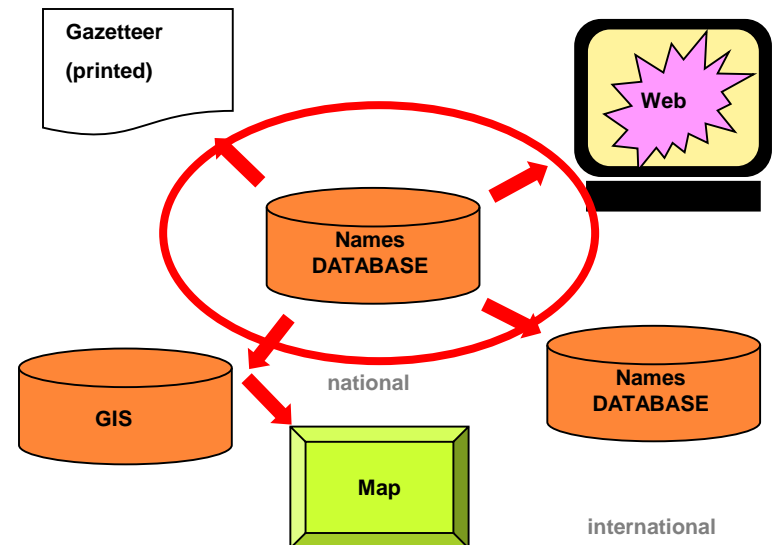
Data Processing



Data Output

from cards, lists,
books, fieldwork, maps,
other databases,

in a database





1. Operating system

An operating system (OS) is a software program that manages the hardware and software resources of a computer. The OS performs basic tasks, such as controlling and allocating memory, prioritizing the processing of instructions, controlling input and output devices, facilitating networking, and managing files.

Examples:

- Microsoft Windows (proprietary)
- Linux (open source = free of charge and usage)



2. Database

One possible definition is that a database is a collection of records stored in a computer in a systematic way, so that a computer program can consult it to answer questions.

Examples:

- Microsoft Access, Oracle, etc. (proprietary)
- MySQL, PostgreSQL/PostGIS, SQLite, etc. (open source)



3. Geographic Information System (GIS)

A **geographical information system** (GIS) is a system for creating, storing, analyzing and managing spatial data and associated attributes.

In a more generic sense, GIS is a tool that allows users to create interactive queries (user created searches), analyze the spatial information, and edit data.

Examples:

- ESRI ArcGIS, ViewMap, etc. (proprietary)
- Quantum GIS, etc. (open source)



e.g. Codepages!!!

ISO8859 character set or Unicode?

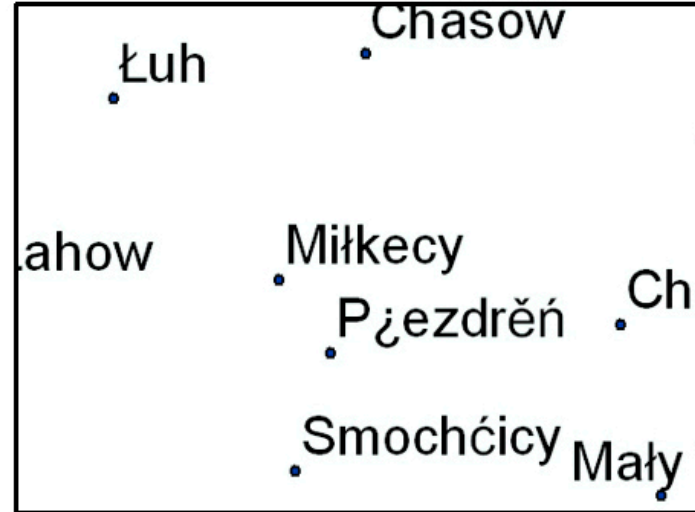
in (Microsoft Windows) operating system

Different interpretation of characters possible in

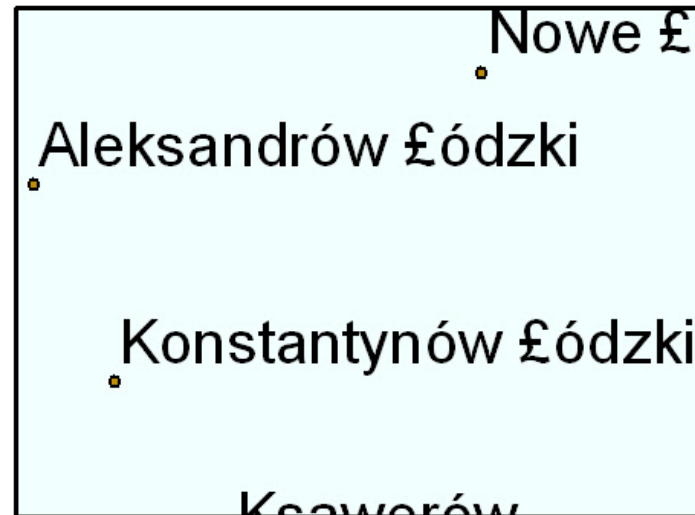
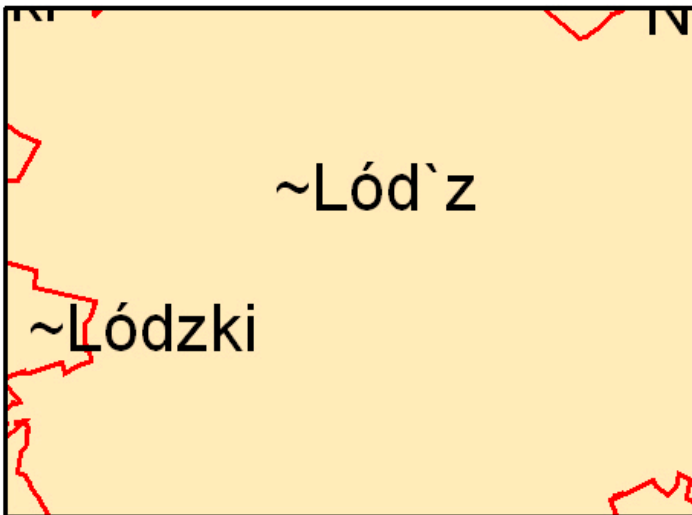
- Database products: MS Access or similar
- GIS software: ESRI ArcGIS or similar



Characteristics of databases



Without Unicode



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Operating System:

Microsoft Windows?

Linux? (open source)

Database:

Microsoft Access?

MySQL? PostgreSQL/PostGIS? (open source)

UNECA GeoNyms application? (open source)

Geographical Information System

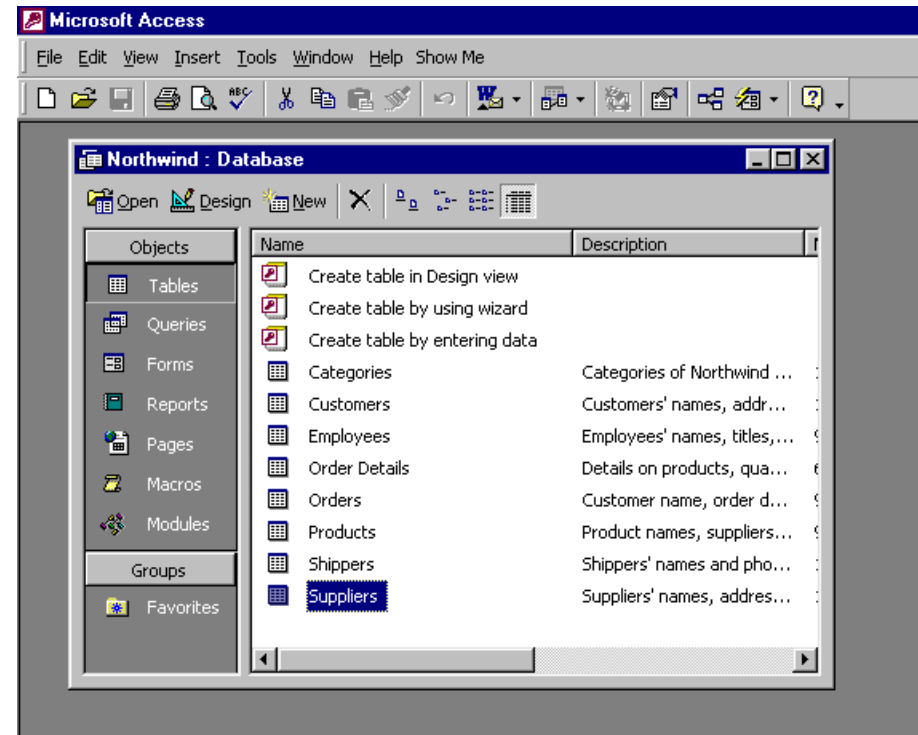
ESRI ArcGIS?

Quantum GIS? (open source)



Database: Microsoft Access? (proprietary)

- Microsoft Access is a **pseudo-relational database management** system from Microsoft that combines the relational Microsoft Jet Database Engine with a graphical user interface and software-development tools.
- Access stores data in its **own format** based on the Access Jet Database Engine. It can also import or link directly to data stored in other applications and databases.
- Website:
<http://office.microsoft.com/en-us/access/>





Database: Microsoft Access? (proprietary)

The screenshot displays the Microsoft Access interface. On the left, the navigation pane shows a list of objects including Customers & Orders, Inventory & Purchasing, Suppliers, Shippers, Reports, Employees, Supporting Objects, and Unassigned Objects. The 'Suppliers' object is selected, and a 'Supplier List' form is visible. The main window shows a table with the following data:

ID	Feld1	Feld2	Feld3	Feld4	Feld5	Feld6	Feld7	Feld8	Feld9	Feld10	Feld11
1	1679357	Casili	Casili	Casili,Kasili			P	PPL	PH		2
2	1679358	Zumbo River	Zumbo River	Izumbo River,Z			H	STM	PH		41
3	1679359	Zumarraga Che	Zumarraga Che	Zumarraga Che			H	CHNM	PH		8
4	1679360	Zumarraga	Zumarraga	Zumarraga			P	PPLA3	PH		8
5	1679361	Zumarraga	Zumarraga	Zumarraga			A	ADM3	PH		8
6	1679362	Zona Sur	Zona Sur	Banate,Zona S	11		P	PPL	PH	PH	6
7	1679363	Zona Sur	Zona Sur	Anilao,Zona N			P	PPL	PH	PH	6
8	1679364	Zona Norte	Zona Norte	Zona Norte			P	PPL	PH		6
9	1679365	Zoe Island	Zoe Island				T	ISL	PH		41
10	1679366	Ziuanan River	Ziuanan River	Ziuanan,Ziuan			H	STM	PH		2
11	1679367	Ziuanan	Ziuanan	Zimigui-Ziuan			P	PPL	PH		2
12	1679368	Zitanga	Zitanga	Zitanga,Zitang			P	PPL	PH		2
13	1679369	Zinundungan F	Zinundungan F	Sinundungan,S			H	STM	PH		2
14	1679370	Zinundungan	Zinundungan	Sinundungan,Z			P	PPL	PH		2
15	1679371	Zinarag	Zinarag	Sinarag,Zinar			P	PPL	PH		2
16	1679372	Ziminila	Ziminila	Ziminila			P	PPL	PH		2
17	1679373	Zimigui River	Zimigui River	Simigu River,Z			H	STM	PH		2
18	1679374	Zimigui	Zimigui	Zimigui			P	PPL	PH		2
19	1679375	Zig Zag Gate	Zig Zag Gate	Zig Zag Gate			P	PPL	PH		15
20	1679376	Zerrudo	Zerrudo	Zerrudo			P	PPL	PH		6
21	1679377	Zayao Island	Zayao Island	Zayao Island			T	ISL	PH		5
22	1679378	Zau Island	Zau Island	Signaning Islar			T	ISL	PH	PH	14
23	1679379	Zarrague	Zarrague	Zarrague			P	PPL	PH		6
24	1679380	Zarraga River	Zarraga River				H	STM	PH		6
25	1679381	Zarraga Point	Zarraga Point	Zarraga Point,Z			T	PT	PH		6
26	1679382	Zarraga Ilaya	Zarraga Ilaya	Zarraga Ilaya			P	PPL	PH		6
27	1679383	Zarraga Ilaud	Zarraga Ilaud	Zarraga Ilaud			P	PPL	PH		6
28	1679384	Zarraga	Zarraga	Zarraga,Zarrag			P	PPLA3	PH		6
29	1679385	Zarraga	Zarraga	Zarraga			A	ADM3	PH		6
30	1679386	Zaragoza	Zaragoza	Zaragoza			P	PPL	PH		1
31	1679387	Zaragoza	Zaragoza	Zaragoza,Zarag			P	PPL	PH		1
32	1679388	Anonang	Anonang	Anona,Anonar			P	PPL	PH		3
33	1679389	Zaragoza	Zaragoza	Zaragoza			P	PPL	PH		40
34	1679390	Zaragoza	Zaragoza	Zaragoza			P	PPL	PH		5
35	1679391	Zaragoza	Zaragoza	Zaragoza,Zarag			P	PPL	PH		6
36	1679392	Zaragoza	Zaragoza	Zaragoza,Zarag			P	PPL	PH		6
37	1679393	Zaragoza	Zaragoza	Zaragoza			P	PPL	PH		8
38	1679394	Zaragoza	Zaragoza	Saragossa,Zara			P	PPL	PH	PH	13
39	1679395	Zaragoza	Zaragoza	Zaragoza,Zarag			P	PPL	PH	PH	11
40	1679396	Zaragoza	Zaragoza	Zaragoza,Zarag			P	PPL	PH	PH	1
41	1679397	Zaragoza	Zaragoza	Zaragoza,Zarag			P	PPL	PH		7



Database:

MySQL? PostGreSQL/PostGIS? (open source)

My SQL *“The world's most popular open source database”*

- MySQL is a **relational database management system** (RDBMS) that runs as a server providing multi-user access to a number of databases.
- The MySQL development project has made its **source code available** under the terms of the GNU General Public License, as well as under a variety of proprietary agreements.
- MySQL is a popular choice of database for use in web applications.
- Website: <http://www.mysql.com/>



Database:

MySQL? PostgreSQL/PostGIS? (open source)

PostgreSQL / PostGIS (open source)

- PostgreSQL, often simply Postgres, is an **object-relational database management system** (ORDBMS).
- PostgreSQL is not controlled by any single company — a global community of developers and companies develops the system.
- PostGIS **adds support for geographic objects** to the PostgreSQL object-relational database. In effect, PostGIS "spatially enables" the PostgreSQL server, allowing it to be used as a backend spatial database for geographic information systems (GIS), much like ESRI's SDE or Oracle's Spatial extension.
- Website: <http://www.postgresql.org/>
<http://postgis.refractive.net/>



Database: MySQL? PostGreSQL/PostGIS? (open source)

The screenshot shows the pgAdmin III interface. The left pane displays the server structure for a PostgreSQL 9.6 instance on localhost:5499, including a 'demo1' database with various objects like catalogs, extensions, and schemas. The right pane shows the properties of a selected table, listing attributes like Name, OID, Eigentümer, and others. The main output window displays a table with columns: geonameid, name, asciiname, and alternatenames. Below the table, a snippet of SQL code is visible, showing a table definition with columns for latitude, longitude, and fclass.

	geonameid integer	name character varying(200)	asciiname character varying(200)	alternatenames text
1	1692192	Quezon City	Quezon City	Keson-Siti, Quezon City, Ресон-Сити
2	1701668	Manila	Manila	City of Manila, Dakbayan sa Manila, Gorad Manila, Lungsod ng Maynila, MNL, Mainile, Manila, Manilae, Manilla, Manillah, Manille, Manilo, Manyl, Ma
3	1720151	Caloocan City	Caloocan City	Caloocan, Caloocan City
4	1723510	Budta	Budta	Budta
5	1715348	Davao	Davao	Central, Ciudad ti Davao, DVO, Dakbayan sa Davao, Davao, Davao City, Davao Lakanbalen, Davao Stad, Davaó, Lungsod ng Dabaw, Syudad han Davao, da
6	1978681	Malingao	Malingao	Malingao
7	1717512	Cebu City	Cebu City	CEB, Cebu, Cebu City, City of Cebu, Ciudad de Cebu, Ciudad de Cebú, Dakbayan sa Sugbo, Sebu, sebu, Себу, 세부
8	1713022	General Santos	General Santos	Dadiangas, Dakbayan sa General Santos, GES, General Santos City, General Santos Lakanbalen, General-Santos, Heneral Santos, Kota General San
9	1684308	Taguig	Taguig	City of Taguig, Santa Ana, Tagig, Taguig, Тагиг
10	7290466	Pasig City	Pasig City	Pasig
11	1707174	Las Piñas	Las Pinas	City of Las Pinas, City of Las Piñas, Las Pinas, Las Piñas
12	1730501	Antipolo	Antipolo	
13	1703417	Makati City	Makati City	Makati, Makati City

```
latitude double precision,  
longitude double precision,  
fclass character(100)
```

Geographical Information System ESRI ArcGIS? (proprietary)

ESRI Arc GIS

Esri® ArcGIS® facilitates collaboration and **lets you author data, maps, globes, and models on the desktop** and serve them for use on a desktop, in a browser, or in the field, depending on the needs of your organization.

- ArcGIS **support and educational services** consist of technical maintenance programs, software releases and updates, technical support, online support services, publications training, and consulting services.

- Website:

<http://www.esri.com/software/arcgis/index.html>





Open Source Software Collection

Open source software collection: **OSGeo Live**

URL: <http://live.osgeo.org/en/index.html>

about:

OSGeo-Live is a self-contained bootable DVD, USB thumb drive or Virtual Machine, that allows you to try a wide variety of open source geospatial software without installing anything. It is composed entirely of free software, allowing it to be freely distributed, duplicated and passed around.



Open your Mind through GIS: training in Open Source GIS

The screenshot shows the 'FORMATION CONTINUE' section of the University of Geneva website. It features the university's logo and name in a pink box, navigation links for 'unige.ch' and 'annuaire', and a search bar. The main content area is titled 'Open-Source GIS' and 'Inscription en ligne'. It provides instructions for creating an ORISIS account and filling out a registration form. A link for 'Inscription en ligne à la session Open-Source GIS >>' is highlighted in pink. The footer includes a 'top' button and copyright information for August 2015.

UNIVERSITÉ DE GENÈVE FORMATION CONTINUE

unige.ch annuaire

Accueil | Contact | Plan du site | Portail UNIGE

Université de Genève > Centre pour la formation continue et à distance > Open-Source GIS > Ipel

Open-Source GIS

Inscription en ligne

Comment s'inscrire

Pour accéder au service d'inscription en ligne aux programmes de formation continue de l'université de Genève, vous devez avoir un **compte ORISIS**.

Si nous n'avez pas encore de compte ORISIS, vous devez effectuer les étapes 1 et 2:

Etape 1. Créer un compte ORISIS:
Cliquer sur [ce lien](#) et remplir la "Demande d'inscription d'un nouvel utilisateur dans l'environnement ORISIS", après avoir lu les instructions suivantes:

1. Remplir le formulaire
2. Contrôler l'exactitude de l'adresse email que vous avez indiquée comme identifiant. Vous recevrez vos codes d'accès à cette adresse.
3. Envoyez la "demande de compte".
4. Sur votre boîte email: ouvrir le mail de confirmation et activer votre compte ORISIS en cliquant sur le lien indiqué.

Vous avez un compte ORISIS:
Etape 2. Remplir le formulaire d'inscription à la session Open-Source GIS:
Cliquer sur le lien ci-dessous, identifiez-vous et remplissez le formulaire.

[Inscription en ligne à la session Open-Source GIS >>](#)

↑ top

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<http://www.unige.ch/formcont/opengis.html>

Content

Preparing the names database – General issues

- What are the purposes of a database?
- Names database and Geographic Information System (GIS)
- Names database and Web
- Use cases for Web applications

Description of database characteristics – Database management

- Characteristics of databases
- Realisation of databases: open source vs. proprietary
- Data model vs. database modelling

“UNGEEN 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 <u>unique identifier</u> 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

The European (INSPIRE) GN schema: elements

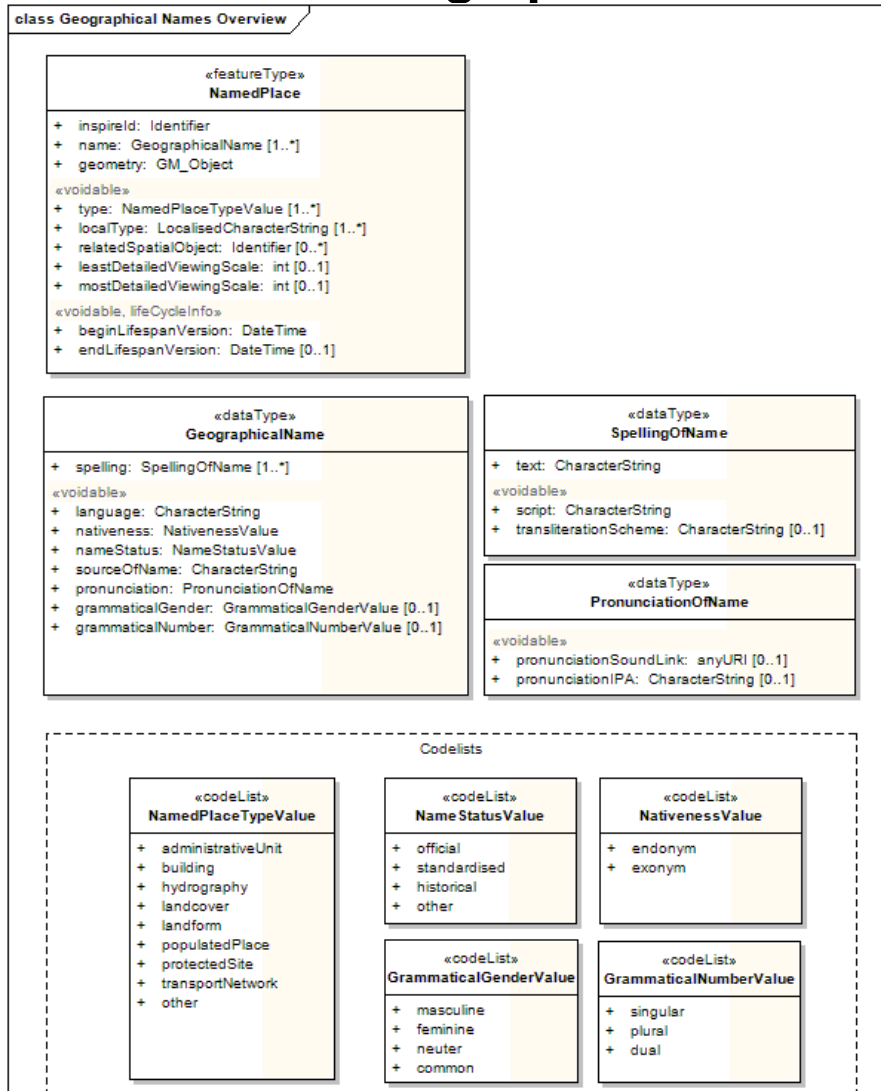
mandatory

- name(s) (text, spelling)
- geometry
- 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)
- ...

INSPIRE Geographical Names – UML Schema



A Named Place,

representing a real world entity referred to by a Geographical Name

e.g. “the City of Athens” type = built-up area
geometry = {X, Y}

is associated with one or several

Geographical Names,

i.e. proper noun applied to the feature

- (1) “Athína” language = Greek
nativeValue = Endonym
- (2) “Athens” language = English
nativeValue = Exonym

and may have one or several

Spellings of Name.

i.e. proper way of writing the name

- (1.1) text = **Aθnva**
script = Greek
- (2.1) text = **Athens**
script = Latin
- (1.2) text = **Athína**
script = Latin

INSPIRE priorities in Annex I-III and the selection of „Core Data“ for Europe through UN-GGIM: Europe

Annex I

Coordinate Reference Systems

Geographical Grid Systems

Geographical Names

Administrative Units

Addresses

Cadastral Parcels

Transport Networks

Hydrography

Protected Sites

Annex II

Elevation

Land Cover

OrthoImagery

Geology

Annex III

Statistical units

Buildings

Soil

Land use

Human health and safety

Utility and governmental services

Environmental monitoring facilities

Production and industrial facilities

Agricultural and aquaculture facilities

Population distribution - demography

Area management/restriction/ regulation

Natural risk zones

Atmospheric conditions

Meteorological geographical features

Oceanographic geographical features

Sea regions

Bio-geographical regions

Habitats and biotopes

Species distribution

Energy resources

Mineral resources



Participate in the activities of the Working Group on Toponymic Data Files and Gazetteers of UNGEGN

UN Statistics Home | UN Home

UNGEKN
United Nations Group of
Experts on Geographical Names

Overview	<h3>2. Working Group on Toponymic Data Files and Gazetteers</h3> <p>Convener</p> <p>Mr. Pier-Giorgio Zacheddu (Germany), E-mail: pier-giorgio.zacheddu@bkg.bund.de</p> <p>Scope of work</p> <p>To respond to UN resolutions and UN data needs, this Working Group on Toponymic Data Files and Gazetteers addresses various issues of toponymic data processing, including the creation, maintenance and outputs of toponymic data files (including gazetteer production) and aspects of toponymic data exchange formats and standards. Issues of providing geographical names information within national and international spatial data infrastructures (SDIs) through web (gazetteer) services and multipurpose toponymic database solutions in the context of SDIs as well as the utilization of volunteered geographic information and crowd sourced data are becoming more and more important. The issue of appropriate definitions for gazetteers and data types and of general feature types/categories relates with the agenda of the WG TDFG.</p> <p>Work plan</p> <ul style="list-style-type: none"> maintain liaison with international standardization bodies like the Unicode Consortium regarding digital text encoding in the context of geographical names, the International Organization for Standardization (ISO) and the Open Geospatial Consortium (OGC) with reference to the development of exchange standards for toponymic information and to web (gazetteer) services for the provision of toponymic information through the Internet; provide consultancy and technical advice to the UN-GGIM activities related to the fundamental data theme 'Geographical Names' as well as to the support of gazetteers to the Agenda 2030, the Sustainable Development Goals (SDG) monitoring; promote and support the geographical names database of the United Nations Group of Experts on Geographical Names (UNGEKN database); promote, complement and support the "UNECA Africa GeoNyms database/gazetteer initiative"; promote and provide consultancy and technical advice to national standardization programs and to toponymic training courses including the development of multipurpose toponymic database solutions in the context of spatial data infrastructures. This comprises issues like the discussion of appropriate definitions for gazetteers and data types and of general feature types/categories for a global use; organize workshops in conjunction with UNGEGN Sessions or UN Conferences, focusing on topics like data collection, categorization and modeling, database applications or lessons learned through national and international geographical names programs or projects, and, as required, provide presentations on such topics at the UNGEGN Sessions and upcoming UNCSGN; recommend content and structure of nationally produced authoritative gazetteers and toponymic data files in particular making use of the Internet; examine processes and recommend best practice for the exploitation and validation of volunteered geographic information and crowd sourced data as part of national toponymic standardization work <p>Actions 2017 – 2019</p>
Mandate	
Conference	
General	
Conferences	
UNGEKN	
General	
Sessions	
Divisions	
Working Groups	
Bureau and Convenors	
Liaison Officers	
World Geographical Names	
Web Based Training	
National Names Authorities	
General	
Country links	
Geographical names databases	
Toponymic guidelines	
Publications	
UNGEKN Publications	
Bulletin	
Media kit	
Other reference material	
Events	
Links	
Contact	

<https://unstats.un.org/unsd/geoinfo/UNGEKN/wg2.html>



Participate in the activities of the Working Group on Toponymic Data Files and Gazetteers of UNGEGN

Bereiche ▾ Durchsuchen ▾ Anmelden Registrieren

Overview:

- Getting started - Rules for participants
- Work plan
- Actions for 2017 - 2019
- Activities & meetings
- Discussion forum
- Encoding
- Useful Links
- Members
- Geospatial Announcements

Favourites:

[Working Group on Toponymic Data Files and Gazetteers](#)

Erstellt von BKG, zuletzt geändert von Sabine Afflerbach-Thom am Nov 23, 2017

To respond to UN resolutions and UN data needs, this Working Group on Toponymic Data Files and Gazetteers addresses various issues of toponymic data processing, including the creation, maintenance and outputs of toponymic data files (including gazetteer production) and aspects of toponymic data exchange formats and standards.

Issues of providing geographical names information within national and international spatial data infrastructures (SDIs) through web (gazetteer) services and multipurpose toponymic database solutions in the context of SDIs as well as the utilization of volunteered geographic information and crowd sourced data are becoming more and more important. Furthermore, the issue of appropriate definitions for gazetteers and data types and of general feature types/categories relates with the agenda of the WG TDFG.

- [work plan](#)
- [actions for 2017 - 2019](#)

If you would like to enable the website's menu bar in English as well, please make sure you have configured your web browser's language to English. Otherwise the language supported by your web browser should be enabled automatically.

Mozilla Firefox: [Firefox Help](#)

Internet Explorer: [How to change the language settings in Internet Explorer 6/7](#)

Opera: [How to change display language in Opera](#)

This homepage was created for the [Working Group on Toponymic Data Files and Gazetteers \(WG TDFG\)](#) of the [United Nations Group of Experts on Geographical Names \(UNGEGN\)](#).

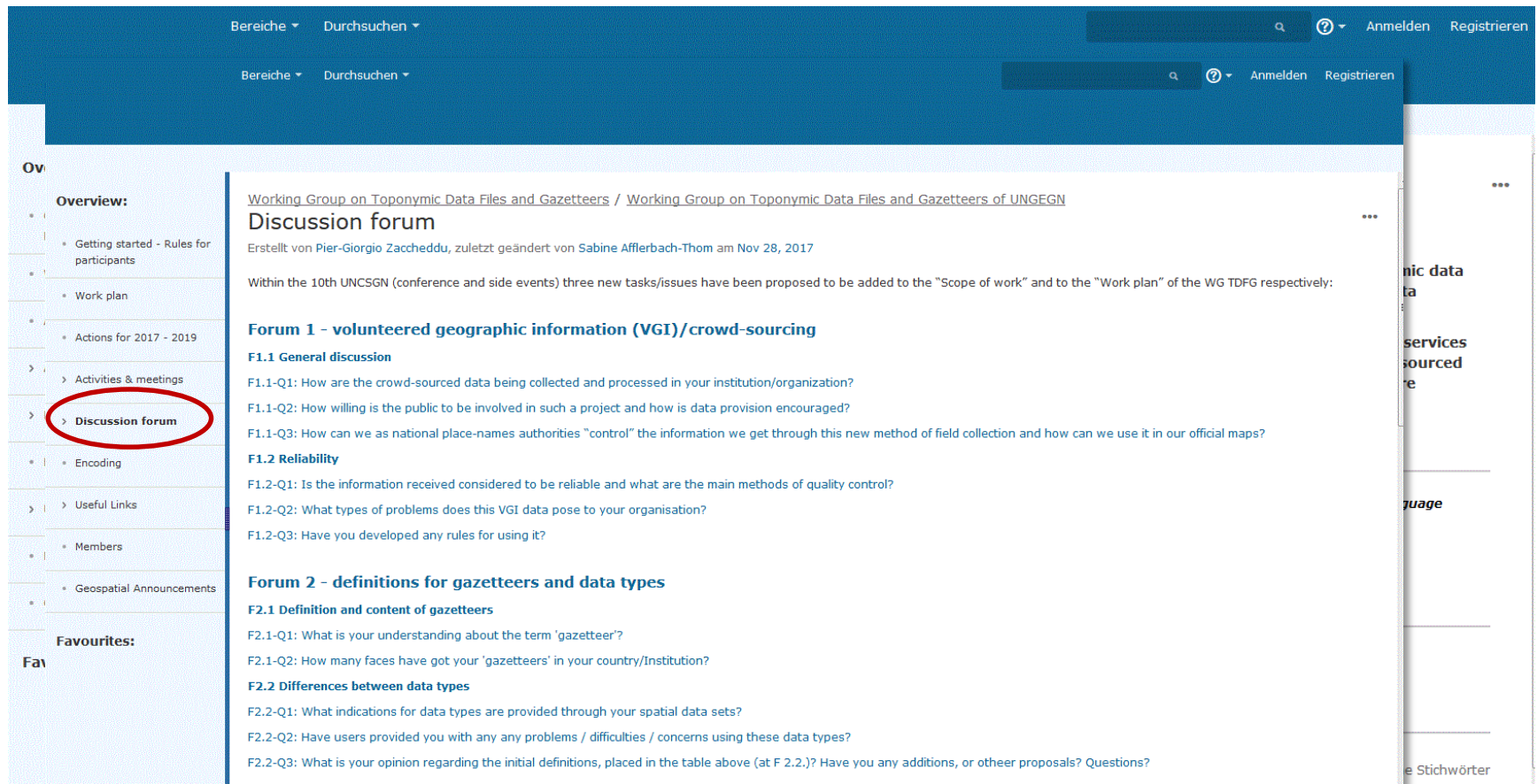
Rules for participants

For further information, please contact Pier-Giorgio Zaccheddu ([pier-giorgio.zaccheddu\[at\]bkg.bund.de](mailto:pier-giorgio.zaccheddu[at]bkg.bund.de)).

Keine Stichwörter

<https://wiki.gdi-de.org/display/wgtdfg/Working+Group+on+Toponymic+Data+Files+and+Gazetteers+of+UNGEGN>

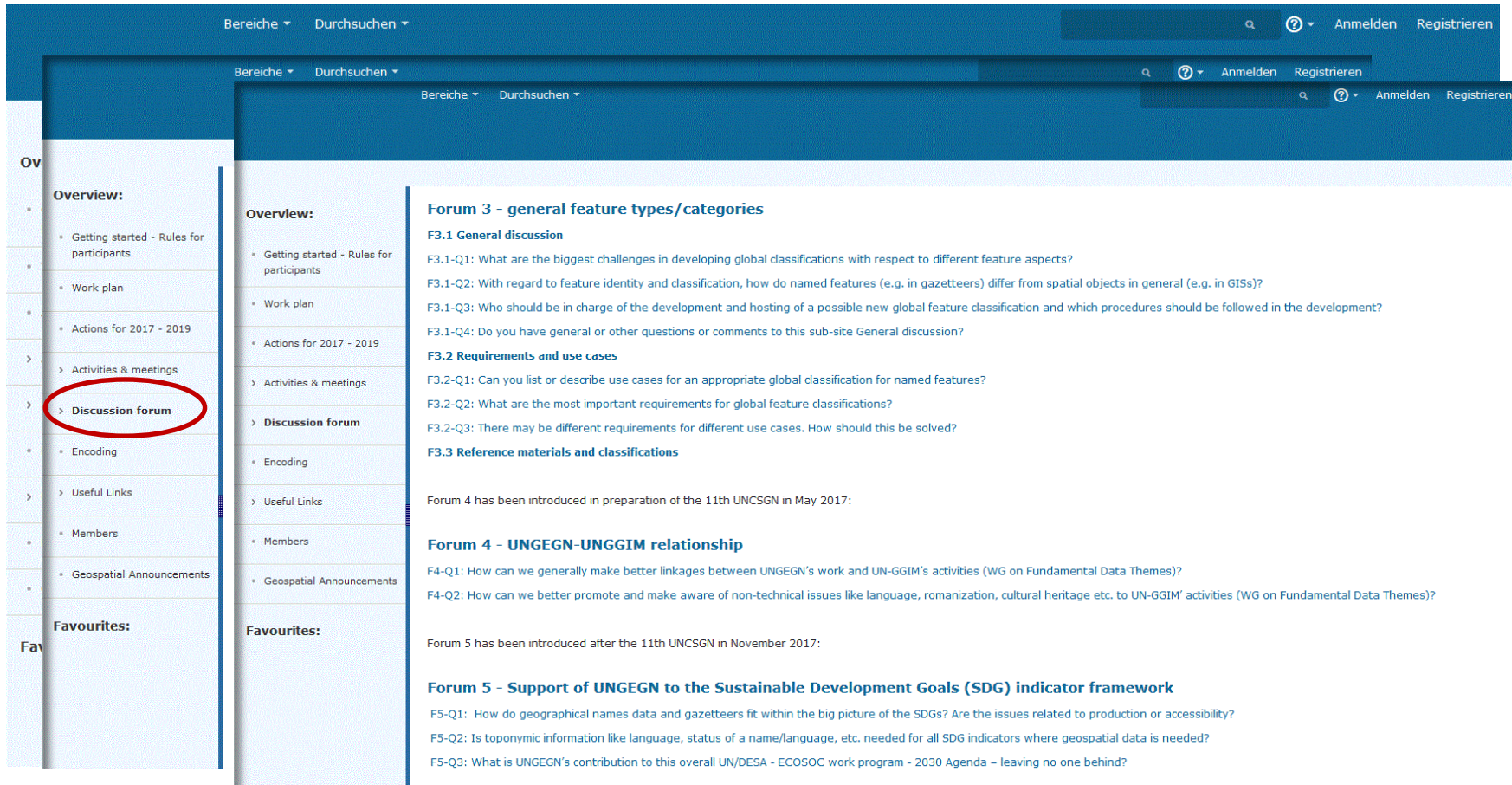
Participate in the activities of the Working Group on Toponymic Data Files and Gazetteers of UNGEGN



The screenshot shows a web interface for the UNGEGN Discussion forum. The top navigation bar includes 'Bereiche' and 'Durchsuchen' dropdown menus, a search bar, and links for 'Anmelden' and 'Registrieren'. The main content area is titled 'Discussion forum' and includes a breadcrumb trail: 'Working Group on Toponymic Data Files and Gazetteers / Working Group on Toponymic Data Files and Gazetteers of UNGEGN'. Below the title, it states 'Erstellt von Pier-Giorgio Zaccheddu, zuletzt geändert von Sabine Afferbach-Thom am Nov 28, 2017'. The main text begins with 'Within the 10th UNCSGN (conference and side events) three new tasks/issues have been proposed to be added to the "Scope of work" and to the "Work plan" of the WG TDFG respectively:'. The forum is organized into sections: 'Forum 1 - volunteered geographic information (VGI)/crowd-sourcing', 'Forum 1.1 General discussion', 'Forum 1.2 Reliability', and 'Forum 2 - definitions for gazetteers and data types'. Each forum section contains several questions (Q1, Q2, Q3) related to data collection, public involvement, reliability, and definitions. A left sidebar contains a navigation menu with 'Overview' and 'Favourites' sections. The 'Discussion forum' link in the 'Overview' section is circled in red. The right sidebar shows a partial view of a search results list with terms like 'nic data', 'services sourced', and 'guage'.

<https://wiki.gdi-de.org/display/wgtdfg/Working+Group+on+Toponymic+Data+Files+and+Gazetteers+of+UNGEGN>

Participate in the activities of the Working Group on Toponymic Data Files and Gazetteers of UNGEGN

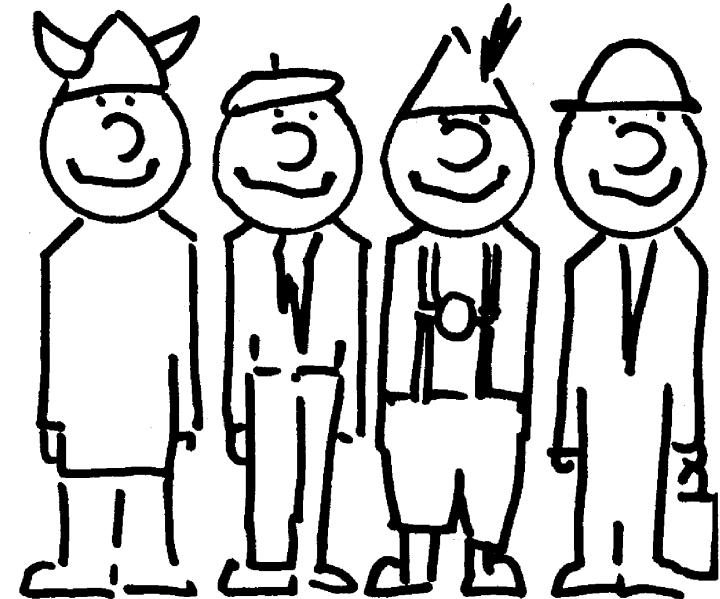
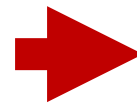


The screenshot displays the UNGEGN Wiki interface. The left sidebar contains a navigation menu with the following items: Overview, Getting started - Rules for participants, Work plan, Actions for 2017 - 2019, Activities & meetings, Discussion forum (circled in red), Encoding, Useful Links, Members, and Geospatial Announcements. The main content area is titled 'Forum 3 - general feature types/categories' and includes sections for 'F3.1 General discussion', 'F3.2 Requirements and use cases', and 'F3.3 Reference materials and classifications'. Below these are sections for 'Forum 4 - UNGEGN-UNGGIM relationship' and 'Forum 5 - Support of UNGEGN to the Sustainable Development Goals (SDG) indicator framework'.

<https://wiki.gdi-de.org/display/wgtdfg/Working+Group+on+Toponymic+Data+Files+and+Gazetteers+of+UNGEGN>

Not standardized and very different

Almost harmonized, but with national specialities



© Andreas Illert

Thank you for your attention!