

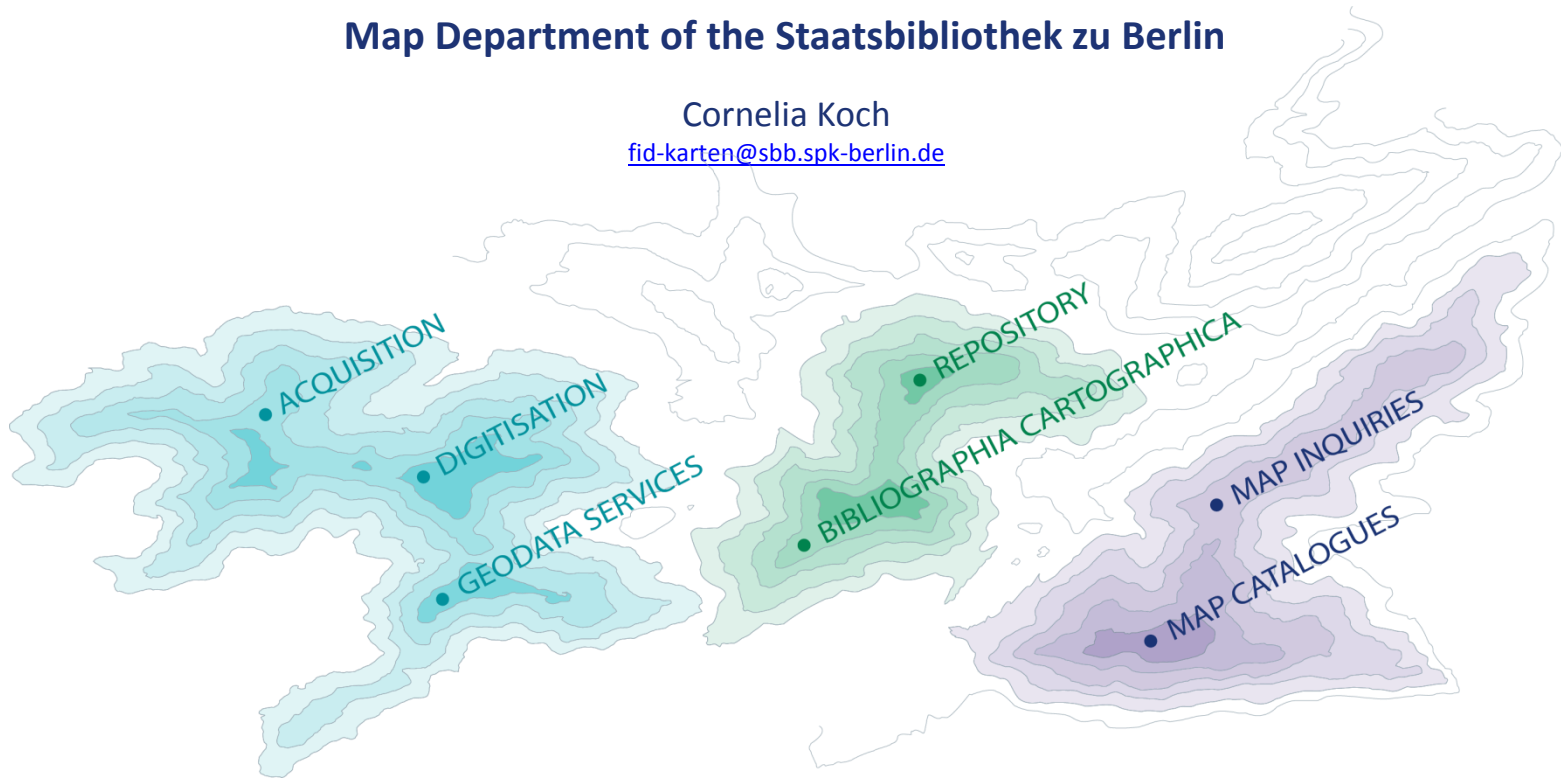
Current Developments in the Specialised Information Service Cartography and Geodata -SIS MAPS-

Fachinformationsdienst Kartographie und Geobasisdaten
-FID Karten-

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A Service of

Funded by

Content of presentation

SIS MAPS - General overview

Aims – Resources and Services

Bibliographia Cartographica

CarLi+

Acquisition

Digitisation

Geodata

Focus on Geodata

What are Geodata?

Map Department and Geodata- reasons to deal with geodata

Results of online Survey

Summary and perspectives

SIS MAPS - General overview

- SIS MAPS located in the **Map Department of the Staatsbibliothek zu Berlin (SBB)**
- funded by the **German Research Foundation (DFG)**

„The DFG's primary purpose in supporting specialised information services is **to develop a sustainable information infrastructure that serves the interests and needs of research...**”

Extract of the Guidelines „Specialised Information Services“ by DFG (2015)

- The concept of SIS MAPS was presented **for the first time at the MAGIC Conference in Riga (2016)** by Mr. Crom
- In the meantime we **have made progress** toward the developments of our services to **improve the research environment** of our Community
- **Target group:** Researchers especially from the fields of **cartography, geoinformation and the history of cartography**

SIS MAPS – Specialised Information Service Cartography and Geodata

REGISTRATION

SERVICES

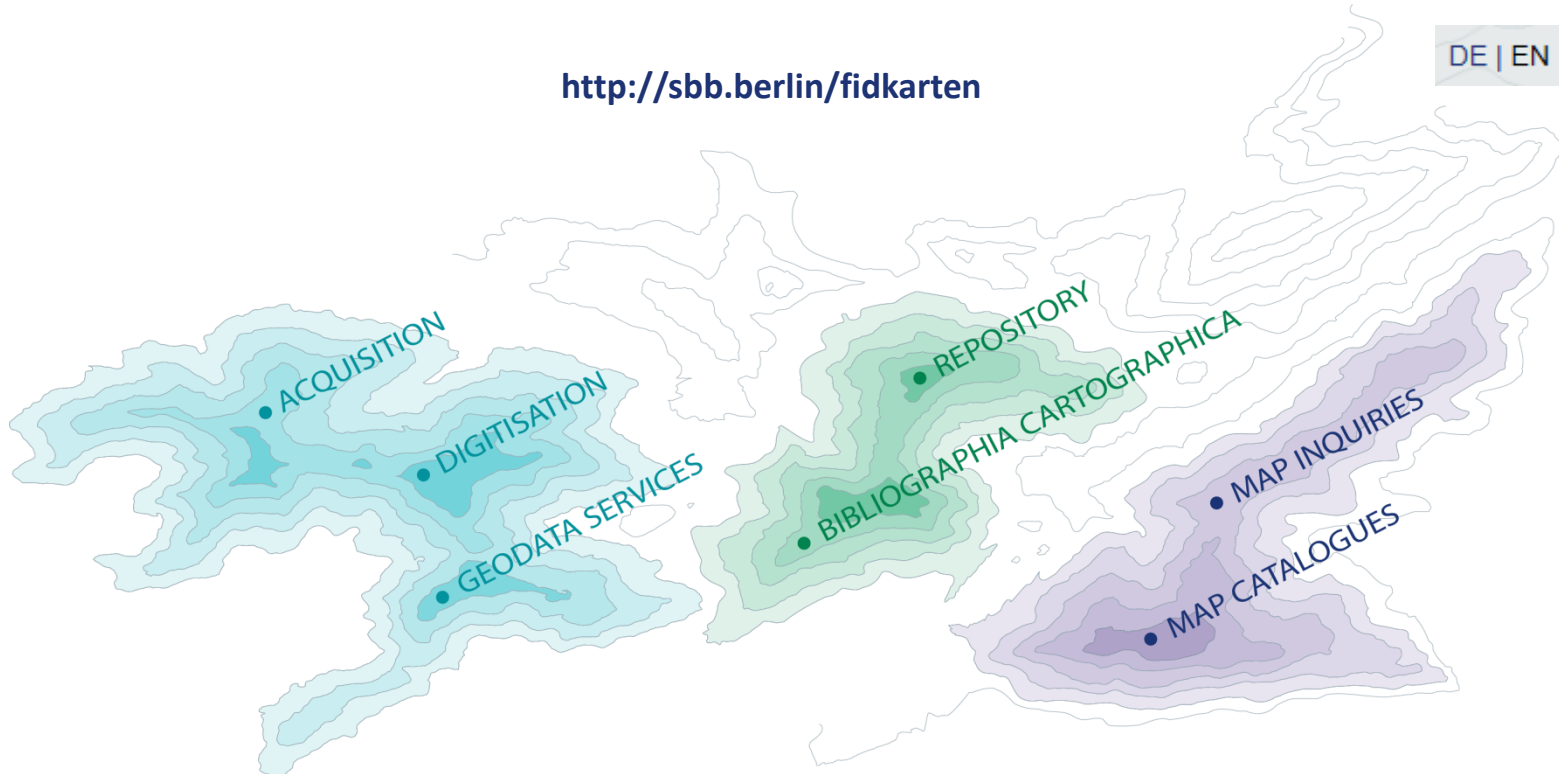
RESOURCES

SEARCH THE COLLECTIONS

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<http://sbb.berlin/fidkarten>

DE | EN



First project phase 2016-2018

Second project phase – application made (2018)

Aims - Extension of resources

REGISTRATION SERVICES **RESOURCES** SEARCH THE COLLECTIONS SIS MAPS

Inclusion of freely accessible academic publications

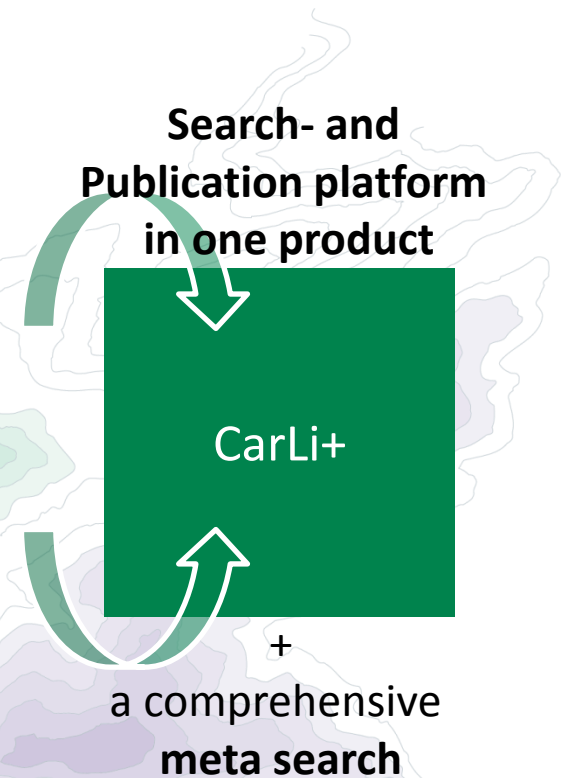


- Basis: existing subject related bibliography (**Bibliographia Cartographica**-Cataloguing of research literature since 1989) as search tool
- Extension of the BC by **addition** of links to **articles published online** (full texts)
- Provision of **Open access** (free of charge)

Development and creation of a subject repository



- **International open access platform**
- Offers authors the possibility to **publish** their subject-specific **research publications**
- Availability of publications: online, free and unlimited



Aims - Creation of subject-specific services

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Project-related acquisition of cartographic materials and specialist literature



- Consideration of **acquisition suggestions for current research questions** (analogue / digital cartographic material), for example:
- **Time series of different map editions**
- **Thematic maps**

Thematically focused digitisation of maps (SIS new acquisitions / holdings)



- **Additional digitisation of maps which have a common content** (region, topic or time period) – according to the research topic

Aims - Creation of subject-specific new service

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Advice and help for the procurement of global geodata



- Map department of SBB is a **frequent cooperation partner** for scientific projects
- In connection with these requests for cooperation, the **availability of geodata** - besides the classical services of the map department - is more and more **up for discussion**

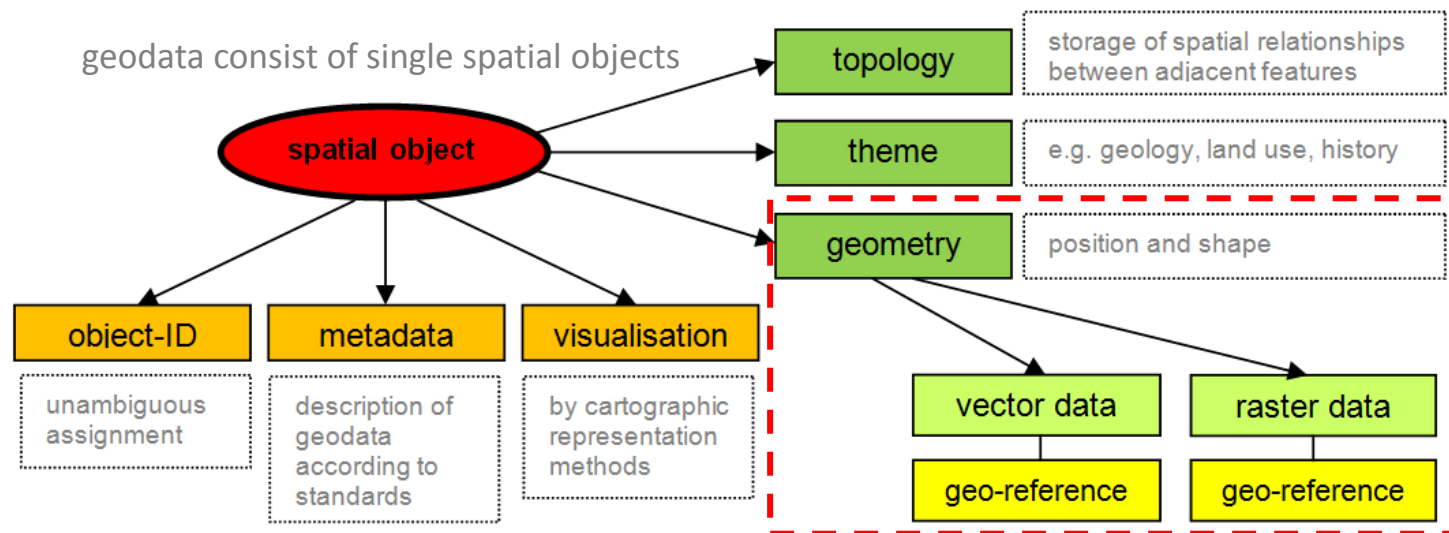
Why is it important to deal with geodata in SIS MAPS?

- Demand for **up-to-date geodata** is increasing
- Number of **printed maps** is decreasing
- Demand for **digital old maps** is increasing
- Interest in **historic geodata** is increasing

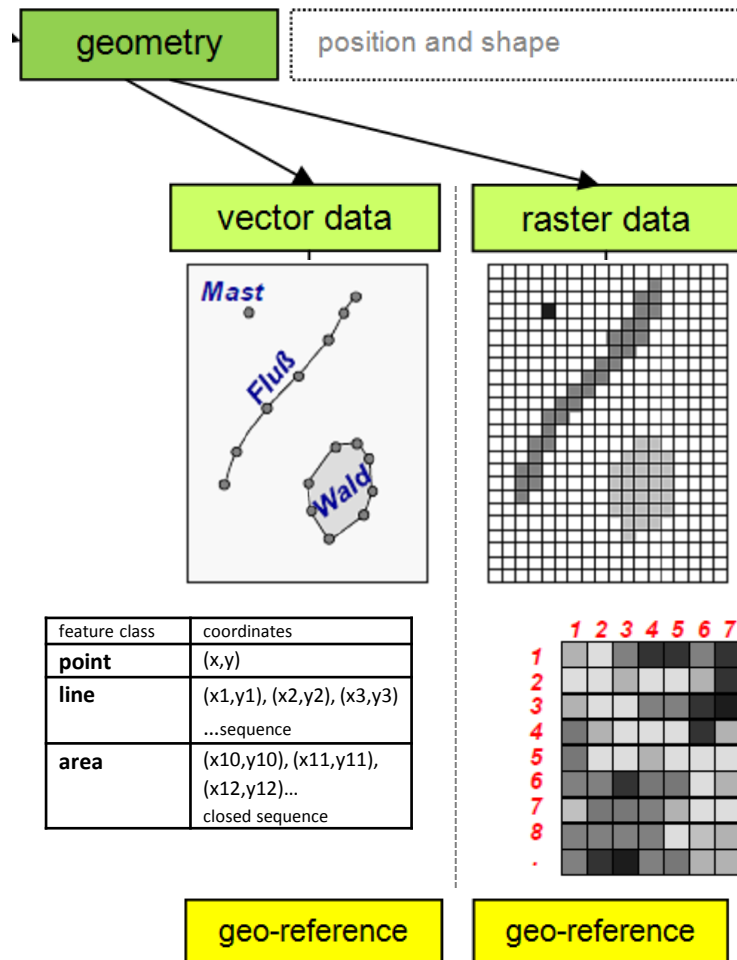
What are Geodata?



- **More than 80% of political and commercial decisions** are based on Geodata
- We are **surrounded by geodata**: e.g. we ask our navigation system for an optimal route or we want to know our present location etc.
- Geodata are **digital data of real existing features on the earth and the base of modern maps**
 - features of **topography** (transport, cultivation, water system, vegetation, relief)
 - features of **specific themes** (land use, geology, population density, history etc.)



What are Geodata? Data structure



Based on:
-**nodes** (with coordinates) and
paths, which represent
feature classes

Properties:
-object oriented
-selectable
-high graphic quality

Base for most modern maps

Based on:

-a **matrix of cells** (pixels)
organized into rows and columns
(grid-cell-data-structure),
where **each cell contains a value**
representing information
like coordinates (and/or
categories: forest, road etc.;
height and spectral value)

Properties:

-Image
-not object oriented (only with
the use of special remote sensing
software)

**Base for satellite images,
orthophotos**

Locational component gives geospatial data their **unique character**
Location is based on **global** (GCS, UTM) or **national coordinate systems**
Geodata are **one component of GIS** (beside Software, Hardware, methods and people)

Aims - Reasons to deal with geodata in SIS MAPS



Demand for up-to-date geodata is increasing

- General tendency of an increased need of geodata

„ ... All public authorities (of the federal government which participated in the survey) gave the statement **that they need more geodata.**

Generally they see a great potential for the use of geodata, provided that the **general conditions are optimized** and the **access to geodata becomes easier.**“

(Extract of “Ergebnisbericht zur Geodatenbedarfserhebung des Bundes für den Bereich Wissenschaft und Forschung 2012”)

- In 2017 the SIS Maps invited the research community to **participate in a survey on geodata**

SIS MAPS – Specialised Information Service Cartography and Geodata

Aims - Reasons to deal with geodata in SIS MAPS



Demand for up-to-date geodata is increasing

Aim of online survey

Evaluation of research community

- regarding the demand for geodata
- beside organizational and technical requirements
- of experiences made when searching for spatial data

Use of the results

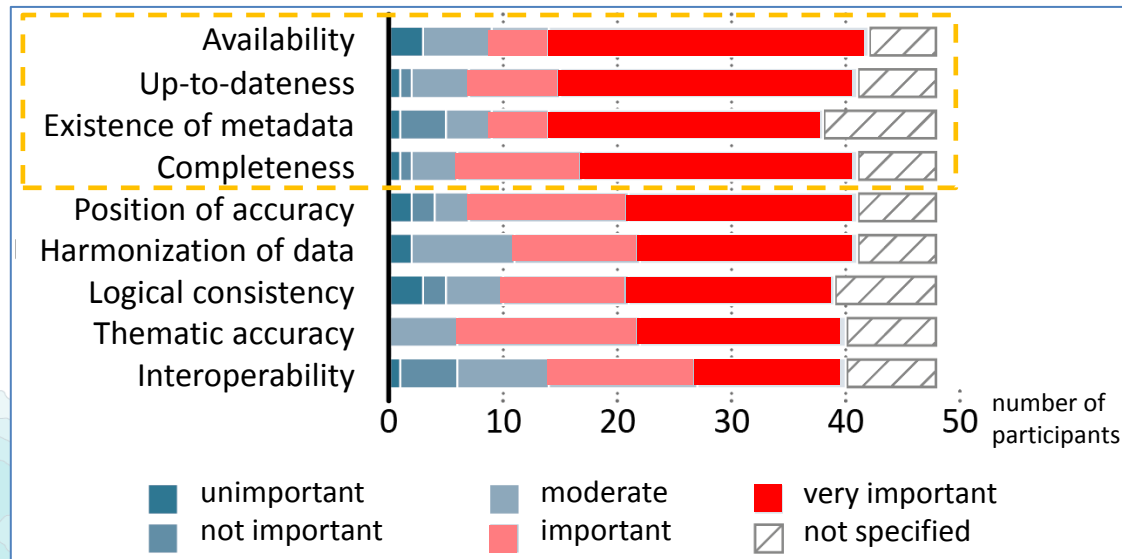
- The analysis of the results helped us to sharpen the profile of the new service
- Needs of the research community should be answered in the best possible way
- The research environment should be optimized accordingly

Frame work conditions

- Participation: 48 universities and research institutions in Germany from the fields of cartography, geoinformation and history of cartography
- Software: lime survey (open source)
Questionnaire of 44 questions (principally developed by my predecessor Ms. Rieckert)
- April-May 2017

Online survey – results

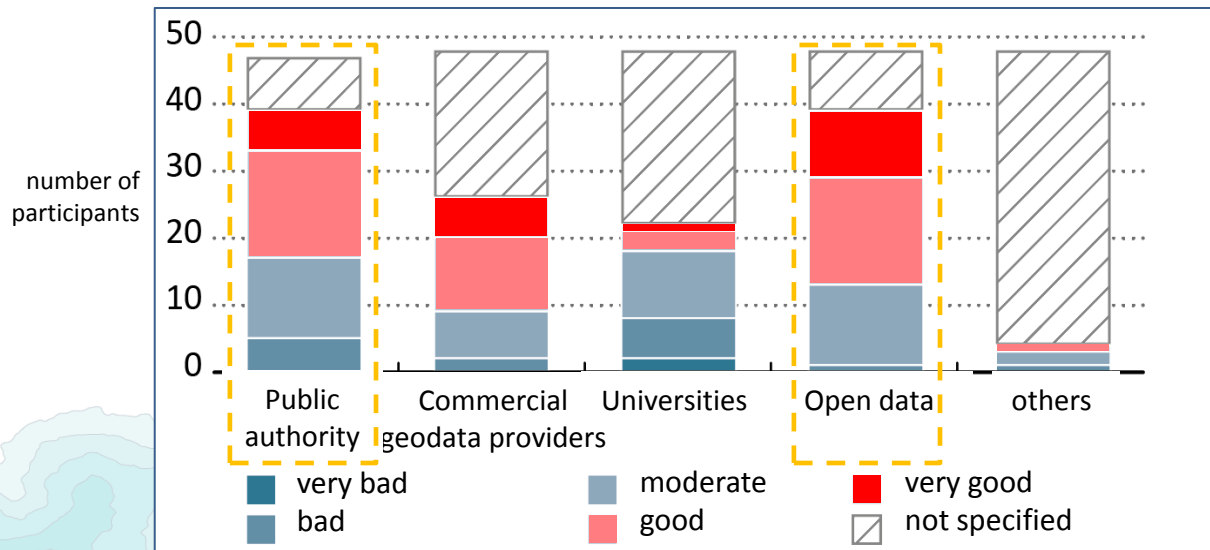
Requirements for geodata quality



- All parameters of **data quality** mostly range from **important to very important**
- **Highest priority** for the **availability** of geodata
- Followed by **up-to-dateness** and **Completeness** and the existence of metadata
- This means: **Above all geodata should be available and have a high quality**
- The **top four** requirements are **most interesting for our consulting service**

Online survey – results

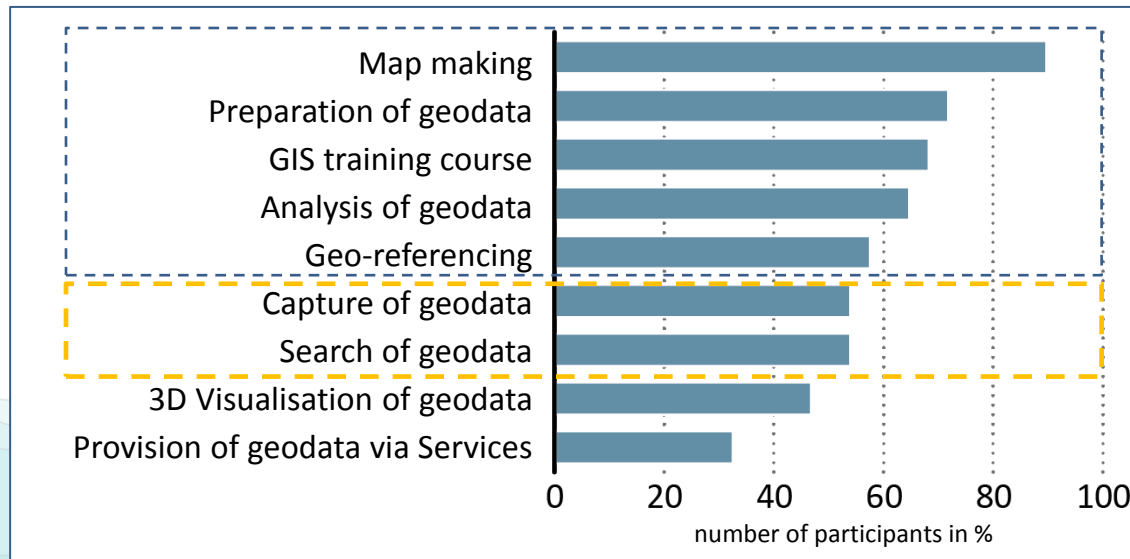
Satisfied with the availability of geodata of different providers



- Most participants are **mainly satisfied** with the **data availability** of **public authorities** and **open data**
- **Reasons:** the high data quality of official data and the free use of open data (80% of the institutions we asked have a tight project budget of less than 2,000 €)
- Help in **providing official** and **open geodata**

Online survey – results

Wishes regarding the kind of subject-specific support (multiple choice)



- Asked for a **comprehensive support** regarding **mapmaking and the related work flows** (Preparation, analysis and geo-referencing of geodata) as well as **GIS training courses** (difficult for a map department to provide, but consulting function possible)
- But more than 50 % need **support in the field of data capture and searching**

Aims - Reasons to deal with geodata in SIS MAPS



Need of digital old maps increases

- EU INSPIRE directive ensures the state members **to establish a infrastructure for spatial information** (law passed in 2007)
- Main aim: to make **spatial** or geographic **information** more **accessible** and **interoperable** for a wide range of purposes
- To fulfil this requirement a large number of **geoportals are created** and **offer relevant services** (e.g. WMS or WFS) making geodata available online
- Besides maps, orthophotos and datasets, **scans of old maps are increasingly included in geoportals** in order to document, compare or analyse landscape situations

Aims - Reasons to deal with geodata in SIS MAPS



Increasing interest in historical geodata

- Historical geodata are important for **modern space-time analyses** or monitoring of landscape and administration situations (e.g. boundaries)
- Such analysis can be topic of research projects
- **Geodata only exist since the 1970s** (often these „older“ geodata are no longer interoperable with today's hard and software)
- Holdings of map department: Large quantity of old **analogue maps**, e.g. historical topographic land surveys, **which are much older than the existence of geodata**
- The **largest part of topographic and thematic information** which was visualized on old maps **does not exist in the form of geodata**
- Old maps **offer an invaluable source** for deriving and creating historical geodata

Increasing interest in historical geodata

From the old map to the modern GIS analysis

1

Scan

in high resolution
distortion free

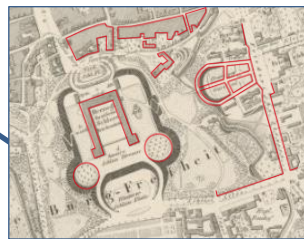
Analog map
of SBB holdings



Part of:
Grundriss der Herzöglichen
Residenzstadt Gotha (1823)

Vectorizing
from raster
to vector data

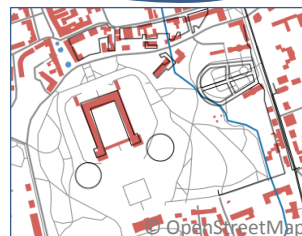
2



Transformation
to modern
geodetic reference

3

Geo-referencing
to historical geodata



Matching
to current geodata



4

Spatial-temporal
Analysis (GIS)

Cartographic
Visualisation

REGISTRATION

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Advice and help for the procurement of global geodata



Discussions, exchange of ideas and survey results have led to the following tasks of our new services:

Main objective:

Support of the research community in providing geodata for their scientific projects

Giving advice on

- **searching** for geodata
- **geodata management** (e.g. file formats)
- selecting the appropriate **geodata quality**
- **all cartographic questions** (workflows, map making, georeferencing, visualisation etc.)
- analysis of **planimetric accuracy of old maps** (Map Analyst)

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SIS MAPS

Advice and help for the procurement of global geodata



Discussions, exchange of ideas and survey results have led to the following tasks of our new services:

Help for the procurement of geodata

- by **contacting the geodata providers**
- in **providing geodata** via geodata providers (especially global geodata difficult to provide)
- by preparation of **official geodata** acquisition (thanks to INSPIRE directive: good availability in Europe) and
- **open data** acquisition (depending on the market situation)
-no provision or archiving of geodata is planned, SIS MAPS has the function of an agency acting as intermediary-
- by indexing of **worldwide geoportals**

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Summary and perspectives

Main goals of SIS MAPS to improve the research environment for the Community:

Extension of resources:

- Creation of a new product **CarLi+** (Search- and Publication platform in one product) based on the existing BC

Extension and creation of Services:

- New orientation of acquisition guidelines
- Subject related thematically focused digitisation
- Consulting and Services of geodata

Progress through collaboration

Subject related Special Information Services

- SIS for Historical Studies
- SIS for Solid Earth Geosciences (SIS GEO)
- SIS Mining and Metallurgy

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Summary and perspectives

Progress through collaboration

Federal Agency for Cartography and Geodesy (BKG-Bundesamt für Kartographie und Geodäsie)

Synergy effects for both institutions

- as **service provider** for geodata or maps
- with the interest in a **fair access to data for economy, science and research**
- with the increase in a **client-specific and demand-oriented interest**

Topics of common interest

- **Analysis of the needs** of the research community in the fields of access / use of geodata (by the development of a corporate workshop)
- **Networking with geodata providers** (especially international)
- **Quality management** of geodata
- Promote **the combination of official and open data**
- Provision of **historical cartographic data**

Thank you for your attention!

More information / questions:

- <http://sbb.berlin/fidkarten>
- Register for our newsletter
- E-Mail: fid-karten@sbb.spk-berlin.de

