The Geoportal of Bavaria (Germany) - Development to 3D-Bavaria in real time

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Organisation of Authoritative Surveying and Mapping Germany

AdV: working group of German SMAs

BKG
Federal Agency for Cartography and Geodesy in Frankfurt/Main

BVV Bavaria
VV BW
VV Hessen
etc. etc.
More than 200 years of history

Measuring the Baseline
Munich-Aufkirchen (21,65 km)
in 1801

Survey of Bavaria (SOB)

History of SOB

Cadastral Map
1: 5 000 / 1: 2 500

Cadastral Book

Topographical Map
1: 25 000

Framework based on identical geodetic system

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Survey of Bavaria (SOB)

Staff
approx. 15

Bavarian Ministry of Finance

Organisation

Bavarian Office for Surveying and Geographic Information

- Cadastre
- Satellite Positioning System (SAPOS®)
- Aerial Imagery
- Digital Terrain Model (DGM)
- Topographic Cartographic Information System (ATKIS®)
- Topographic Maps
- PR and Marketing

approx. 550

approx. 2800

51 Cadastral Offices

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Survey of Bavaria (SOB)

Cadastre

70550 km² Surface of Bavaria

2056 Communities

10,4 Mio. Parcels of Land

Value: ca. 500 Billion EUR

3,5 Mio. Buildings

Value: ca. 1200 Billion EUR

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BayernViewer
Othophoto +
Topographic Maps

www.geodaten.bayern.de

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Digital Topographic Map
1 : 10.000
Internet Service BayernViewer-plus
Orthophoto plus Cadastral Maps

Survey of Bavaria (SOB)

Ground Resolution of Orthophotos 0.2 Meters

Searching for exact address
Numbers of parcels

Digital Cadastral Map online

Extract of the Cadastral Book
Spatial Data Infrastructure (SDI)

Survey of Bavaria (SOB)

- Special data: Protected monuments, road, environment, agriculture, geology, forest, electricity, water, agriculture, environment, geology, protected monuments, agriculture, geology, protected monuments.

Geodateninfrastruktur (GDI)

- Core data: Survey of Bavaria (SOB), road, water, energy.

- Special data: Production, distribution, application.

- OGC-Services, download, viewing-services.

- Intergovernmental Services: presentation, accounting, core data, special data.
Survey of Bavaria (SOB)

**SA**tellite **P**OSitioning **S**ervice **SAPOS**

of the German State Mapping Agencies

Permanent Station Munich

Bavarian transformation model (ca. 10,000 identical points)

*accuracy 5 … 7 cm*

Transformation from ellipsoidal heights to official „normal heights“

*accuracy 3 … 5 cm*

Both models are designed to be implemented in rover firmware
Topographer Max von Kienle (1795–1860)
Topographic Map M=1:25000

Survey of Bavaria (SOB)

3D Geospatial Data

City Geography Markup language (CityGML standardized by Open Geospatial Consortium (OGC))
Survey of Bavaria (SOB)

Laser Scanning  Digital Terrain Model (DTM)

Digital Elevation Model (DEM)

Flood disaster management

June 1999
Survey of Bavaria (SOB)

Automatic Combination of core data to 3D-City Model

- Digital Terrain Model (DGM)
- Digital Elevation Model (DEM)
- Orthofoto
- Surrounding Lines of Building (cadastre)
- Terrestrial Photos of house claddings

Blockmodel exported to Google Earth
Detecting the Potential of Solar Energy

Including the „data producer“
Flight Programme of Bavaria

- Mb = 1 : 12,400
- Update 3 years cycle
- Colour photos
- 20 cm ground solution
- Infra red since 2009

Street project
- Georeference!
- Standard!
Survey of Bavaria (SOB)

- GeodatenOnline
- DFKonline (DFK = Digitale Flurkarte)

Core Data of SOB
Thank you for your attention!