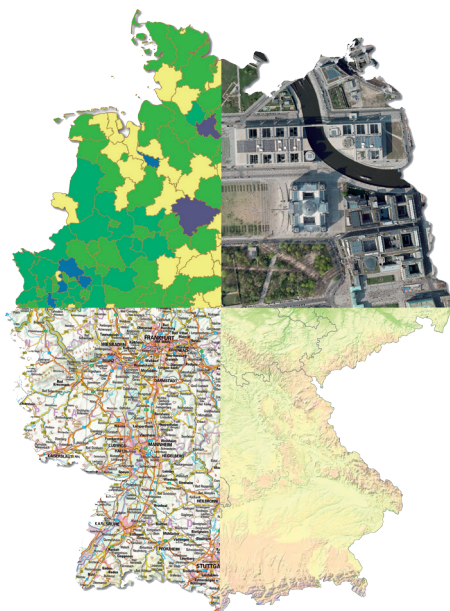




Federal Agency for
Cartography and Geodesy



observe. survey. understand.

About BKG



Federal Agency for Cartography and Geodesy

BKG at a Glance

Who we are:

- The central service provider of topographic data, cartography, and geodetic reference systems for the German federal government
- A technical agency under the Federal Ministry of the Interior, with specialist departments in geodesy and geoinformation
- Operators of a service center for geoinformation and geodesy
- Providers of training in the professions of geomatics technician and precision mechanic

Our locations:

- Main office in Frankfurt am Main
- Branch office in Leipzig
- Geodetic Observatory Wettzell in Bad Kötzing (Bavarian Forest)



Orientation and Navigation: Find Yourself

Is my house located in a floodplain? Where are planned commercial areas in a specific region? Where are wind power stations currently located, and where is there still untapped potential?

BKG supports the networking and efficient utilization of spatial data, which help us find answers to questions like these, and many more. Official spatial data are generated and used at the federal, state, and local level - used in the federal office, town hall, and many places in between.



Topographic maps contain important name and location information, and may be used for environmental orientation, as well as depiction of settlement areas, transportation systems, and hydrographical networks.

Uniform **reference systems** constitute the coordinate, height, and gravity basis for activities such as surveying and navigation, as well as monitoring and exploration of Earth's global changes. These reference systems are critical in order to understand how various types of spatial data are related to each other.

Precise positioning and **coordinate reference systems** are essential factors in the success of business, science, and administration. Vehicle data navigation systems, and even landing robots on Mars, can only be possible with accurate navigation and measurement.

Geoinformation: From Space to your Mobile Phone

Road construction, flood protection, and event planning are just a few examples of the many activities in both the public and private sectors that are based upon spatial data, which helps to better describe our environment, climate, transportation information, and economic structure.

The Geoinformation specialist department at BKG develops processes, products, and services through which spatial data may be utilized and combined in the most efficient way available.



Geoinformatics experts at BKG use basic topographic data to produce products such as:

- Printed and digital topographic maps
- Digital information systems
- Geo-services such as the WebAtlasDE
- Digital landscape models representing the artificial and natural features of a given landscape, such as settlements, transport routes, water bodies, and land cover
- Digital terrain models representing the height and shape of Earth's surface, which may be used in the planning of transportation projects or for the simulation of flooding scenarios
- Internet and smartphone applications that may be used to model three-dimensional terrain

Geodesy: The Measurement of the Earth

Earth is a dynamic system in constant movement and subject to continuous change. Continents shift, sea level changes, and the planet's speed of rotation is not constant. Water flows downwards with gravity, which then changes the topography and leads to changes in the location of water bodies. Shifting ice masses and changes in groundwater level can influence gravitation and the earth's gravity field. Because of this, we need fixed reference systems so that we are able to measure and evaluate these changes.

The BKG specialist department of geodesy supplies, maintains, and updates these reference systems. BKG also takes measurements in addition to those supplied by international partners. For example, the Geodetic Observatory Wettzell, located in the Bavarian Forest, uses satellite navigation systems (such as GPS and Galileo), as well as laser ranging to the moon and other satellites, and radio telescopic measurements to far-off radio source stars (quasars).



In cooperation with a consortium of international partners, BKG determines, on the basis of these data and many other data sources, the different coordinate, height, and gravity reference systems in order to:

- Calculate the movements of the earth and satellites in space, as well as high-precision coordinates on the earth's surface
- Determine precise uniform height data, such as dike heights in the context of flood damage prevention

Our service for you

Products and services

Maps and data

- Digital and printed maps
- Aerial photographs
- Digital models of the earth's surface
- Information on geodetic reference systems and satellite navigation services
- Data for the needs of positioning services (e.g. GPS)
- Models of the earth's gravity field
- Administrative boundaries and areas
- Geographical names (e.g names of places and landscapes)
- Historical maps

Web applications

- Visualization of maps, aerial photographs and administrative boundaries
- Research of place names
- Elevation calculations

Our Service Center

- Advises its customers, and offers customer-oriented solutions
- Integrates the official spatial data records of BKG and all sixteen federal states (Länder), as well as those of third-party suppliers. These data are then edited and standardized by BKG before being made available in digital form.
- Provides a great variety of spatial data, web services, and web applications
- Can be reached at: www.geodatenzentrum.de

Measuring Germany: Maps and coordinates

Every day, BKG

- Ensures a uniform coordinate system for the entire territory of the Federal Republic of Germany
- Provides up-to-date spatial data of Germany via the internet
- Supports the establishment and expansion of spatial data infrastructure, which in turn enables all citizens to search for and take advantage of the spatial data offered by the federal government
- Represents German interests in international collaborative entities and projects addressing the fields of geodesy and geoinformation

BKG Geodata and Geo Services

- Lay the groundwork for functional satellite navigation systems, including GPS and Galileo
- Deliver substantial contributions to data structures within Germany as well as throughout Europe
- Provide decision-making information in a variety of areas, including transportation, disaster monitoring and prediction, domestic security, energy, and environment

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