UN-GGIM: User case studies
Germany
Germany: Geoportal.de – the simple way to geodata…

Geoportal.de

- provides a search utility for places, addresses and spatial data sets and services in the context of the national spatial data infrastructure of Germany (GDI-DE)
- provides a common component of the German Federal Government, the Federal States and the municipalities
- provides several thematic maps covering Germany

Floodwaters – Trigger and spreading
Source: Wasser- und Schifffahrtsverwaltung des Bundes (WSV) (German Federal Waterways and Shipping Administration) and Wupperverband (the Wupper water authority)
Screenshot Geoportal.de, Copyright 2012 BKG

www.bkg.bund.de
In Germany, official surveying and mapping is assigned to the 16 Laender.

The “Working Committee of the Surveying Authorities of the Laender of the Federal Republic of Germany” (AdV) is coordinating and harmonising official surveying and mapping in Germany.

WebAtlasDE is a recent service resulting from this cooperation between the Laender and the Federal Agency for Cartography and Geodesy (BKG). It satisfies the need of industry and administrations for a Germany-wide, official basic map.

WebAtlasDE is used in the geoportals of the federal government and many Laender and integrated as WMS or WMTS in several applications.

http://www.adv-online.de/icc/exteng/
Germany: User interface for protected sites

Benefits
- Getting standardized access to protected sites of 16 federal states (“Bundesländer”) and on federal level
- Bridging the gap between GI and further information (species, habitats)

Efficiency
- Application of geodata infrastructures:
  - Overlay of geo-information on nature conservation (BfN) and topography (BKG)

Fit for use
- Direct use of viewer (citizens, organisations, planning agencies)
- Use of WMS (SME, science, administrations)

www.bfn.de
Germany: Integrated Air Quality with Satellite Observations

Objectives
- Seamless integration of satellite and high-resolution model data into GIS applications
- Support of EU air quality compliance monitoring
- Support of EU Copernicus atmosphere services

Benefits
- Precise geo-referencing of atmospheric data
- Easy data access using open standards
- Added value by combining different layers of information

Emerging markets
- Integration into web & mobile applications
- User interaction for new services & products

http://www.dlr.de/dlr/en
Germany: Radiological Emergency Response

Disasters require a focused crisis management in order to keep the impact on people and the environment as low as possible:

• The nuclear accident in Chernobyl 1986 prompted the establishment of the “Integrated Measuring and Information System for the Monitoring of Environmental Radioactivity” (IMIS), operated by the Federal Office for Radiation Protection (BfS)

In case of emergency, IMIS provides the information necessary to give recommendations and take appropriate countermeasures. This information is based on measurements, forecasts and spatial analysis.
Main IMIS tasks for radiological emergency response:

• measure external radiation (ambient dose rate, ODL),
• estimate and limit radiological consequences (PARK), and
• assess the radiological situation ("Real Time Online Decision Support System" (RODOS)

It is essential to analyse the environmental contamination and radiation exposure of humans very quickly.

By overlaying forecasts, measured data and other geodata, it is possible to determine potentially affected areas and prepare and implement appropriate countermeasures.

www.bfs.de
Germany: Risk assessment in the insurance business

ZÜRS zoning system for floods, backwater and heavy rains developed by the German Insurance Association (GDV)

ZÜRS Geo is an online risk assessment tool for the insurance industry which helps to assess risks and offer a risk-related premium.

At the heart of the ZÜRS Geo system is a geo-database which uses address information (road network, house number data etc.) to show the risk of natural hazards (especially flooding) for any requested area.

Furthermore ZÜRS Geo is used as a technical basis for other automated zoning systems (e.g. environmental liability) and as a viewer for web based services (WMS, WFS etc.) provided by the German authorities.

http://www.gdv.de/english-2/
### Germany: Risk assessment in the insurance business

#### Flood Module

**Geodata in the flood module**
- Street and address datasets as basic data
- Water data divided into geographical and linear water depiction
- Flood plains divided into hazard classes
- Creek zone
- Island zone
- Aerial image as background information
- Topographical map (TK50) as background information
- Shading as background information

#### Liability Module

**Geodata in the liability module**
- Street and address datasets as basic data
- Water data
- Water protection areas
- Protected areas under the EU Council directive on the conservation of natural habitats and of wild fauna and flora (FFH sites)
- Protection areas under the Birds Directive (bird sanctuary areas)
- Protected landscape areas
- Nature protection areas
- Natural parks
- Biosphere reserves

Germany: Interactions between the natural environment and society (Monitor for Settlement and Open Space Development)

- **What:** Regular analysis of a nationwide topographical geodata set for monitoring land use development
- **Why:** Controlling of sustainability of settlement development under declining population conditions
- **How:** High resolution, spatial and temporal comparable description and localization of land use changes by maps and indicators, visualization and transfer in open data manner
- **Data base:** Digital Landscape Model of topographical features (ATKIS Base-DLM) combined with statistical data
- **Benefit:** Public information by maps and indicators about critical developments for political and planning stakeholders on all levels from nation to municipalities

[Image of density of buildings in settlement areas (2010)]

http://www.ioer-monitor.de/
Germany: Map-based official regional statistics

Interactive Web Mapping and Network Services (WMS, WFS) for Spatial Data Infrastructures

- Extended data supply by linking web mapping to the online information systems of regional statistics (GENESIS-Online on federal, Regionaldatenbank Deutschland on common federal and Länder level)
- Standardised and quality assured supply of metadata, tables, graphics and maps
- Enhanced cartographic analysis potential
- New distribution channels by implementing SDI / INSPIRE standards

Thematic map within the website by the NSI Germany (above) and the Geoportal.de by the GDI-DE (below)

https://www.destatis.de/EN/Homepage.html
Germany: The weather of tomorrow, the day after tomorrow…

- Germany’s National Meteorological Service, the Deutscher Wetterdienst (DWD), is responsible for meeting meteorological requirements arising from all areas of economy and society in Germany.

- In addition to the basic warnings, the warning page [http://www.dwd.de/warnungen](http://www.dwd.de/warnungen) also displays all active special warnings of the DWD, such as lake warnings, heat and UV warnings as well as coastal and marine weather warnings.

- Anyone interested can incorporate the DWD’s official weather warnings in their website by adding the widget. The graphical presentation can be adjusted to the style of one’s own website and adapted to the needs of the target group. The displayed warnings, which the DWD makes available for free, are updated continuously.

[https://www.dwd.de](https://www.dwd.de)
Germany: ... and the climate until 2100

- Climate consultancy and information provision in support of adaption to climate change for users in governmental authorities and industrial sectors in Germany.
- The DWD’s Climate Atlas of Germany presents possible scenarios for the future climate in comparison with past and current climate observations.

https://www.dwd.de
Germany: Food Emergency Information System

Aim of the Food Emergency Information System

• support of experts of the food emergency precaution in the federal public agriculture administrations in food crisis and prevention

Geo Information System (GIS)

• Spatial analysis and assessment
  • Specialized data from food production, population structure and distribution, critical infrastructures and data of agricultural statistics
  • Presentation of current supply situation and potential hazards
• Information gathering in different crisis scenarios
  • Immediate and target-oriented retrieval of data
  • Individual and standard queries and reports
  • Interfaces for data exchange

https://www.ble.de/EN
Germany: Noise mapping for the railway transport network

- National Railway Authority (EBA) is the competent body for noise mapping of railway noise acc. to Environmental Noise Directive (END)
- Calculation of noise emission. Some relevant parameters:
  - Type of train, length and speed
  - Track type and rail condition
- Sound propagation influenced by topography and obstacles
- Acoustic Model composed of data by various providers, e.g. DB AG, BKG, Authorities of the Federal States
- Data further enhanced by linking information from different sources
- Data mainly held in Oracle DB, controlled and managed by GIS
- Information on noise burden of the Public by means of Internet-Presentation

http://www.eba.bund.de/EN
Germany: ‘TSN’ – the central tool to manage animal disease outbreaks in Germany

**TierSeuchenNachrichtenSystem**

- Decentralized computer assisted notification and analysis system of the state veterinary services for listed animal diseases
- Client-/Server system with GIS components for spatial analysis
- Online map-server generates overviews from the centralized animal disease database regarding the current disease status
- Local GIS-tool ‘Kartenexplorer’ depicts maps indicating farm locations, animal populations and control measures
- TSN ensures fast and efficient disease control and reporting to international bodies to ensure national and international trade with healthy animals

http://www.fli.bund.de/en/
**Germany:** Integrated geo-referencing for infrastructure projects, environment and disaster management

Initiatives: Active National Densification Networks

New Global Navigation Satellite System (GNSS)

- Promote common policy throughout GIS community in Europe to
  - densify public GNSS reference networks
  - upgrade them for the European Galileo now
  - follow an open data GNSS data policy for observation exchange

New GNSS real-time positioning techniques

- Request manufacturers to also implement alternative positioning techniques
  - Make “Precise Point Positioning” (PPP) an optional alternative to Network Real Time Kinematic (RTK)
- Help preventing monopolies
- Treat manufacturers preferentially if they support Open Standards

www.bkg.bund.de
Germany: Operational positioning for infrastructure projects, environment and disaster management

Benefits

• Spatial referencing:
  • Improved realization of a unique spatial reference frame in Germany and in neighboring countries
  • Long-term maintenance of the European Terrestrial Reference Frame 1989 (ETRS89) also in tectonically affected areas
  • Developing GIS markets requesting PPP with sub-decimeter accuracy
• Cost efficiency:
  • use of existing infrastructure only
• Added value:
  • basic input for science and safety (e.g., tectonic risk assessment)
Germany: Area survey for the official area statistics (1)

Real Estate Cadastre

- The cadastre- and surveying authorities of the 16 Laender are competent for the management of the real estate cadastre in Germany.

- They coordinate their work under the Working Committee of the Surveying Authorities of the Laender of the Federal Republic of Germany (AdV).

- In the real estate cadastre, data on actual usage of the land for the whole territory of Germany is provided.

http://www.adv-online.de/icc/exteng/
Germany: Area survey for the official area statistics (2)

Data on actual usage

- Data on **actual usage** are presented annually to the statistics authorities for the preparation of the official area statistics.

- They serve as **reference** for the official area survey in Germany.

- The area survey is an important tool notably for **area monitoring** to meet the following objective under the strategy of sustainability:

  *to limit the increase of built-up- and transportation area to an average of 30 hectar per day by 2020*

http://www.adv-online.de/icc/exteng/
Germany: Networked Standard Ground Values Information System (VBORIS) (1)

VBORIS – a project of the AdV

- **Standard ground values** are basic informations of land parcel valuations.
- They are very important to business, administration, research and citizens.
- **VBORIS** allows online-delivery of standard ground values
  - SDI-conform,
  - nationwide uniformly,
  - area-wide,
  - with the quality mark „authoritative“,
  - based on the geospatial reference data of the cadastre and surveying authorities of the Laender (AAA-basic schema)
- Access to VBORIS through the Community Portal of the Laender 
  www.gutachterausschuesse-online.de

http://www.adv-online.de/icc/exteng/
Germany: Networked Standard Ground Values Information System (VBORIS) (2)

VBORIS – the concept

- Description of the model: at the same time basis for implementation of uniform solutions
- data model: Application schema, uniform data structure for standard ground values
- SDI-Modell: SDI-conform data delivery
- Community portal: implemented as network of the portals of the Laender
- Conditions and pricing model: uniform and simple
- Taking account of the increased requirements together with the enhanced potentials currently offered by information and communication technology, VBORIS was updated and presented in Version VBORIS 2.0.

http://www.adv-online.de/icc/exteng/
Germany

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