



Session #6 “Partnerships and Innovations for Effective Land Administration”

**INTERNATIONAL SEMINAR ON
UNITED NATIONS GLOBAL GEOSPATIAL INFORMATION MANAGEMENT
with the theme “Effective Land Administration”**

**Instituto Nacional de Estadística y Geografía (INEGI)
Av. Héroe de Nacozari Sur #2301, Jardines del Parque, 20276 Aguascalientes, México
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Content

- ◆ Introduction, background
- ◆ Geoinformation at federal and state level in Germany
- ◆ Smart Mapping (AdV, BKG)
- ◆ Recent developments in Lower Saxony
- ◆ FELA
- ◆ Conclusions

Federal Structure



AdV-Smart Mapping Beta-Version

Federal Republic of Germany consists of 16 states („Länder“)

Capital: Berlin

Area ~357.000 km²

Inhabitants ~ 82,8 million

Settlement area: ~ 29.000 km²

Agricultural land: ~ 187.000 km²

Core Functions of German Cadastre

Guarantee of private land ownership
Official inventory of all land parcels
Inventory of official soil valuation results

Reference data for legal transactions, spatial planning, administration, taxation purposes

GI services for effective risk management
E-Government function

Market transparency for the real estate market

Provision of reference data for the geodata infrastructure in Germany (GDI-DE) and INSPIRE

SDI in Germany

GDI-DE | Geodateninfrastruktur Deutschland

German

Geoportal.de

SDI INSPIRE NGIS Cooperations Service

Search

Welcome to the SDI Germany

The Spatial Data Infrastructure Germany (SDI Germany) is a joint project of the Federal Government, the Länder and local authorities to make their spatial data available in a standardised and simple way via the Internet. The SDI Germany is integrated into the European Spatial Data Infrastructure created by the INSPIRE Directive.

Publicly provided geodata of the federal, state and local governments can be searched, found and used by interested users via the Geoportal.de.

Working group Architecture:

News on the technical and strategic foundations

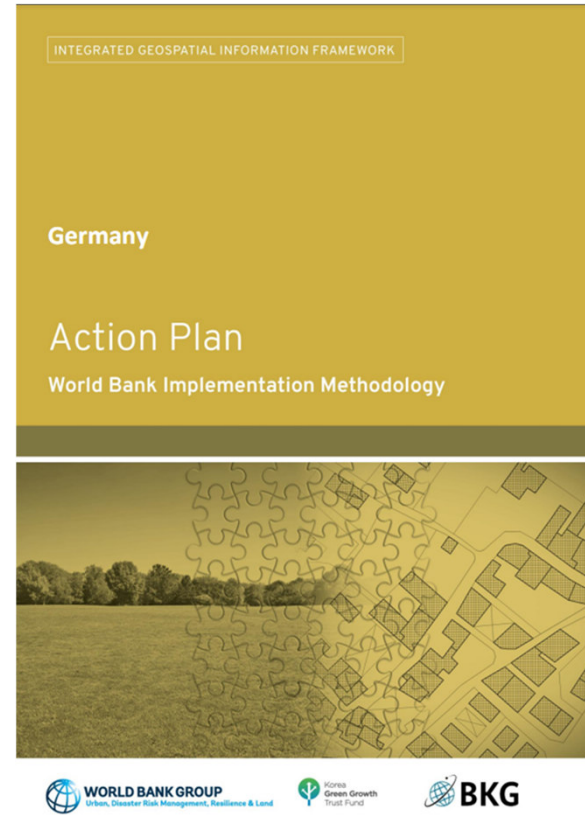
News

New Technical Component

Source: <https://www.gdi-de.org/>

Joint project of Federal Government,
16 states and local authorities
Steering Committee
Coordinating office at BKG

Country Action Plan IGIF



Working Committee of the Surveying Authorities of the Laender of the Federal Republic of Germany (AdV)



Recommendations, guidelines and binding regulations for state survey and real estate cadastre in Germany

Co-ordination of state overlapping projects

Collaboration in research, development and application of technical methods and procedures

Representation of official surveying and mapping of the states of Germany and co-operation at international level

AdV – Smart Mapping I

A government development collaboration at state and federal level

Combination of official German survey data with other open geospatial data sources

Technical platform for agile development, continuous integration, deployment and operation of SDI systems based on cloud technologies

Free and Open Source Software

Simple user oriented data model for geospatial data

Creation of new AdV standard products.
Basemap



Map

Create vector maps with individual styles with our viewer by customizing predefined basemaps. Try it out!

[Viewer »](#)



Applications

Our application examples show possible use cases for custom vector maps in combination with other data sources.

[Application examples »](#)



Documentation

With our Vector Tiles API you can use official data and styles in your own map application. Take a look at the documentation for details.

[Documentation »](#)

Source: AdV-Smart Mapping Beta-Version

Deutsch English (UK)

PRODUCTS/SERVICES

VIEWER

OPEN DATA

basemap.de

NEWS

CONTACT

PROJECT ►



Welcome to

basemap.de

Official maps of Germany

Modern.



Source: AdV-Smart Mapping Beta-Version



AdV – Smart Mapping V

PRODUCTS AND SERVICES



basemap.de web vector

- Dynamic web map in vector format
- Vector Tiles: EPSG 3857
- Update: monthly
- Characteristics: relief, color, gray, etc

[More information](#)



basemap.de web grid

- Web map in grid format
- WMTS: EPSG 3857, 25832, 25833
- WMS: additionally EPSG 4326 etc
- Update: quarterly
- Characteristics: color and gray

[More information](#)



basemap.de web raster hillshade

- Shades in grid format
- WMTS: EPSG 3857, 25832, 25833
- WMS: additionally EPSG 4326 etc
- Update: annually
- Characteristics: oblique light, combined hillshading, etc

[More information](#)



basemap.de P10 grid

- Presentation output in grid format
- Print-optimized and scale-related map output
- Scale 1:10,000
- EPSG 25832 and 25833
- Update: quarterly
- Characteristics: color and gray

[More information](#)

Lower Saxony



Source: LGLN



The Customer

Open data, HVD implementing act of the EU

Up-to-date reference data, much shorter updating-cycles for reference data

Artificial intelligence algorithms and machine learning

Distribution of data and algorithms through portals and platforms

Geodata and services on mobile devices

Access and use of reference data through appropriate API's

Quality management

Integration within the framework for e-Government (OZG)

Market transparency for the real estate market

Landing Page HVD

OpenGeoData.NI

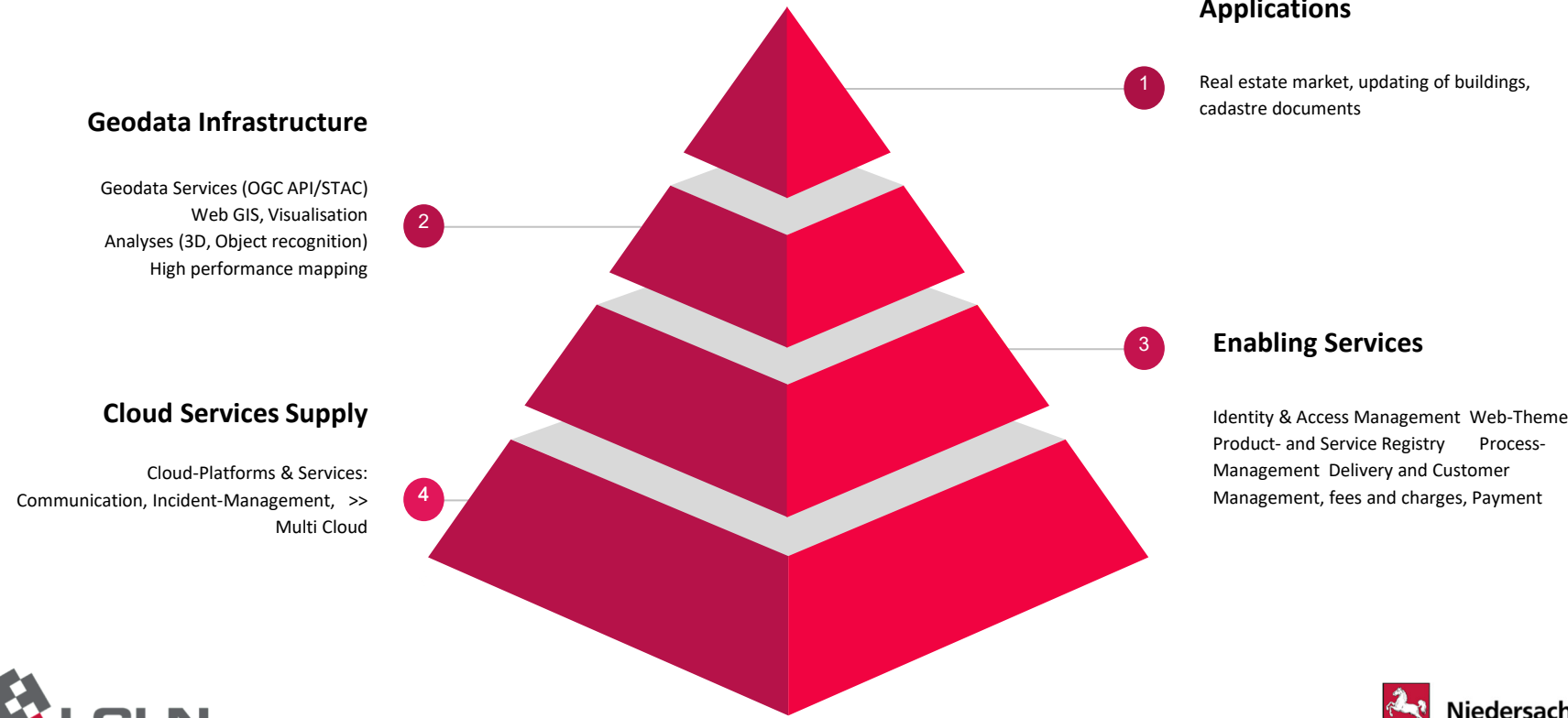
FAQ

OpenGeoData.NI

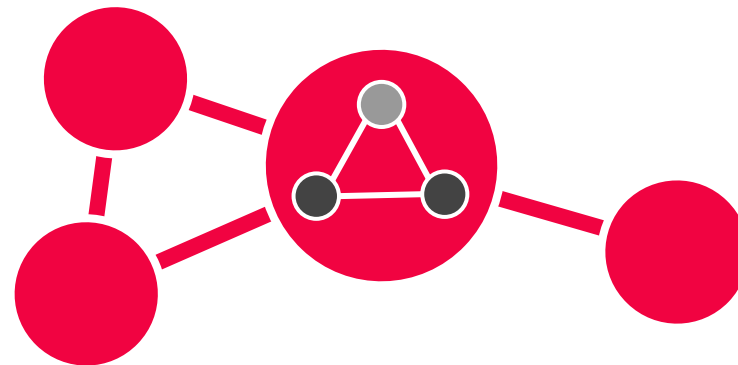
Transparenz wird in Niedersachsen groß geschrieben

Auf dieser Seite finden Sie gebührenfreie Open Geo Data, die durch das Landesamt für Geoinformation und Landesvermessung Niedersachsen (LGLN) bereit gestellt werden.

Software Architecture



A Platform Approach



Platform Economy

Service Customer

Registers on platform
Obtains services

Platform

Administers customers
Lists services
Monitors usage
Accounting

Service Provider

Provides services

Building Detection **with AI**

AI-technology as easy-to-use service
for other organisations.

No deep AI-expertise required on the customer side
Object-recognition on own ortho images
Integration into their own GIS



Source: LGLN

Real Estate Valuation

- Transparent data and mathematical models
- Real-time availability instead of long update-cycles
- Easy to handle on mobile devices
- Participation in data capture and model development
- Agile development for spatial and thematic sub-markets
- Authoritative certification of data sources and models
- ...



Partnerships



Federal Government – Laender (e.g. joint positioning service)

GDI-DE

AdV

- ◆ Distribution Centres for cadastre data, geo-topography and geodetic reference data (SAPOS®)

Multi-lateral implementation partnerships (Software)

IT



FELA Pathways	Action LGLN
Governance, institutions, accountability	Security of land ownership (land register and cadastre, GDI-NI, role of LGLN as geodata and services provider for Lower Saxony)
Policy and legal	Legal framework in place (Land registration, cadastre, surveying and mapping, land consolidation, European legislation)
Financial	Open data, authoritative task, cost recovery through individual services to administration
Data	HVD, API, bulk download, various data formats, from cadastre to small-scale mapping, customising
Innovation	Software architecture, use of advanced technologies (AI, remote sensing..)
Partnerships	Laender, federal institutions, IT-providers, implemetation partnerships, universities
Capacity building and education	Geomatics apprentices, support of bachelor and master studies in geo-informatics, geodesy, ...

The Bottom Line

Digitisation means a paradigm shift for land administration data and services.

Skills mix is needed. Capacity building is a critical success factor for further development and sustainable services.

New business processes and an appropriate approach to data sharing and delivery are necessary for digitisation.

Open Data requires appropriate services and IT-infrastructure (fit for purpose).

Partnership with administration, research and business required to make best use of land-related information, products and services.

Thank you for listening!