The National SDI for Germany in the European Context

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Outline

1. Introduction

2. Development of the German SDI: GDI-DE

3. European Spatial Data Infrastructure
   - EuroGeographics
   - INSPIRE
   - GMES

4. Conclusion
Frankfurt am Main (Headquarter)

Leipzig

Geodetic Observatories Wettzell and Concepcion, Chile

BKG Sites

National Geospatial Data Infrastructure - Fields of Applications

GDI-DE: Geospatial Data Infrastructure for Germany

NGDB: National Geodatabase Consisting of validated metadata, spatial basic data and thematic geodata

GeoPortal.Bund: Central entrance into the GDI-DE with the necessary services

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German Spatial Data Infrastructure (GDI-DE)

GDI-DE® = \{NGDB, network, services, standards\}

National Geo Data Basis
NGDB = \{reference data, thematic data, metadata\}

GeoPortal.de
the central point of entry to GDI-DE
Digital Topographic Maps (DTK)

- DTK10-V
- DTK25-V
- DTK100-V
- DTK1000-V

Digital Landscape Models (DLM)

- Base DLM
- DLM 50
- DLM 250
- DLM 1000

Digital Terrain Models (DGM)

- DGM5
- DGM-DE
- DGM50 / DGM 250
- DGM 1000

Digital Orthophotos (DOP)

Object-based data

Raster data

Grid

Raster data

ATKIS: Topo reference data for Germany
National GeoDataCentre at BKG

Data volume: 16 .. 60 Terabytes
Milestones of GDI-DE Development

1998 Federal Cabinet founded the IMAGI
- Efficient Management for Spatial Data
- Cooperation with States
- Standards & Norms

2001 & 2003 Resolutions of German Parliament
- Development of SDI
- User-friendly Access
- Cooperation with States and Industry

2004 Resolution of CEOs of Chancellery & State Prime Ministries
- Establishment of a Steering committee GDI-DE for the 3 administrative Levels

2007 INSPIRE Directive
- Directive committing the EU MS to share their NSDIs with the EU

2009: SDI Law of the Federation + states
- National adoption of the INSPIRE Directive in Germany
Organisation of GDI-DE (since 2005)

National SDI is coordinated by the Steering Committee GDI-DE

The Steering Committee comprises representatives of all levels of public administration:
- national: 2 Federal Ministries
- regional: 1 each State (16),
- local: 3 Associations of Municipalities

- strategic decisions
- conceptual framework

Steering Committee GDI-DE

Coordinate Office GDI-DE

NETWORK: Partners of Federation and States, Working Groups, INSPIRE Experts, Universities,....
GDI-DE – Technical Framework

GDI-DE Architecture
Data, Standards, Network, Services

GDI-DE Pilot Projects

GeoPortals
Applications

Technical Network

Registry
Catalogue (OGC-CSW)

Download-Service
View-Service
weitere ...

European Spatial Data Infrastructure

Data resources:
- Local data
- National and Subnational SDI
- European Data (GMES LC/LU)

ESDI specifications:
- Discovery Service
- Technical Integration/harmonisation
- Harmonised Data policy
- Collaborative agreements

Users:
- EC
- European Institutions
- EU MS, EFTA
- GEO
- Industry
- Citizens

Request for information services:
- Delivery of information services

ISO/OGC
Organisation of work for EBM / ERM / EGM / EDEM

- **Decentralised production**
  All participating countries produce their own data according to the specification

- **Data Integration** and final data assembly by project leader:
  - ERM: IGN Belgium
  - EGM: NLS Finland
  - EBM: BKG Germany
  - EDEM: BKG Germany

- **QA/QC** by Regional Coordinators and Project Leader
DIRECTIVES

DIRECTIVE 2007/2/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 14 March 2007

establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)

1. The purpose of this Directive is to lay down general rules aimed at the establishment of theInfrastructure for Spatial Information in the European Community (hereinafter referred to as Inspire), for the purposes of Community environmental policies and policies or activities which may have an impact on the environment.
INSPIRE Regulations:

- **Chapter II – Metadata**: descriptions of spatial datasets about INSPIRE-conformity, licenses and prices, quality, validity
- **Chapter III – Interoperability**: common rules with implementing rules like unique identifier, relations, key attributes, temporal dimensions etc.
- **Chapter IV – Network Services**: providing geographic information with discovery-, view-, download-, transformation- and invoke-services
- **Chapter V – Data Sharing**: measures for easy access and use of spatial data sets including licensing, pricing and e-commerce
- **Chapter VI & VII – Coordination, Complementary Measures and Final Provisions**: SDI-structures, contact point, monitoring, reporting and legal implementation
- **Annex I – III**: Definition Content

Details are regulated through the INSPIRE Implementing Rules

INSPIRE Schedule

- **Transform. into national law**
- **Metadata**
  - Themes of Annexes I + II
  - Themes of Annex III
  - IR for themes of Annex I
  - IR for themes of Annex II + III

**Implementation rules**
- 15.05.2007 In Krafttreten
- before 15.05.2008
- before 15.05.2010
- before 15.05.2011
- before 15.05.2012
- before 15.05.2013
- before 15.05.2014
- before 15.05.2016
- before 15.05.2019

**Data still in use**

**Themes of Annex III**
- new or restructured data
- data still in use

**Spatial data and services**

- Metadata
- Spatial data and services
About geographical names in SDI

- have to be “integrated into national spatial data infrastructures”
  (United Nations, Resolution VIII/6, 2002)
  → but have been (in general) not yet fully integrated into national spatial data infrastructures

- are “geographic identifiers” used for indirect spatial referencing (ISO 19112 – spatial referencing by geographic identifiers)
  → but there has been no European standardization organisation with power behind it

- are “core reference data components” (INSPIRE)
  → but (in general) have been neglected so far in developing SDIs

Project EuroGeoNames (EU FP7 funding) 2006-2009
border crossing routing; transport and delivery service networks

cross border market analysis & asset management

educational establishments, libraries

mass media (broadcast, TV)

location based services (LBS)

emergency services; health and safety

private sector map and atlas producers

hotel reservation services; tourism

Cinq Terre, Italy

EGN target users
Resolution of the European Council (2001):

„To develop an independent, sustainable and reliable European Earth observation capacity operational by the end of 2007“

since 2003:
GMES ⇒ EU‘s contribution to GEOSS
GMES Architecture

OBSERVATION INFRASTRUCTURE

Space Infrastructure  In-Situ Infrastructure (Ground-based)

GMES CORE SERVICES

Land  Marine  Emergency  Atmosphere  Security

GMES DOWNSTREAM SERVICES

Air Quality  Precision Farming  Etc.

Users
GMES: Contributing EO Missions

Cosmo-SkyMed  SPOT  Pleiades  Jason-2  Radarsat

TopSat  Terrasar-X  Rapideye  UK-DMC  METOP

+ ESA‘s EO Development: GMES sentinels 1-6
to be launched from 2013 onwards
Future ESDI: INSPIRE and GMES

Services

In-situ systems

GMES

Space systems

Data Integration & Information Management

INSPIRE
DLM-DE - large-scale reference data set within GDI-DE

Sat. EO

Derived products:
GMES LC data etc

Cartograph. Presentations

BDLM updates
BDLM
DTM
Gazetteer
Digital Map

Topo Mapping (ATKIS)

Industry

Conclusions

1. Sustainable development, land management and spatial planning depend on reliable, useful geoinformation with a NSDI at the core.

2. The development of the German SDI - GDI-DE – is going well both in terms of coordination, technology and stepwise implementation.

3. GDI-DE is designed such that it also is going to contribute to the European SDI (INSPIRE, GMES) and the international monitoring program GEOSS and the UNSDI.
Thank you for your attention!

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