

Spatial Data Infrastructure

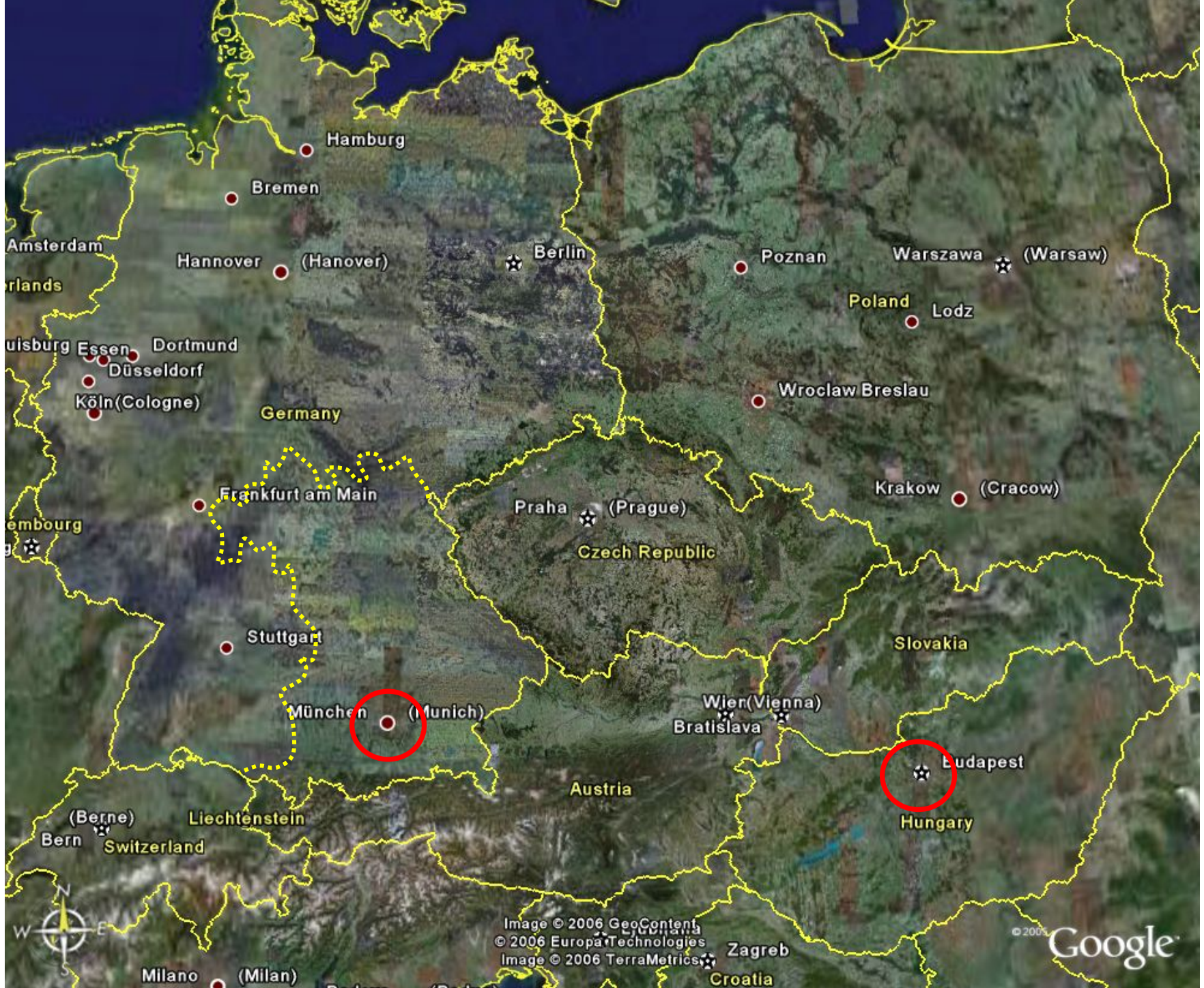
SDI as part of eGovernment in Bavaria

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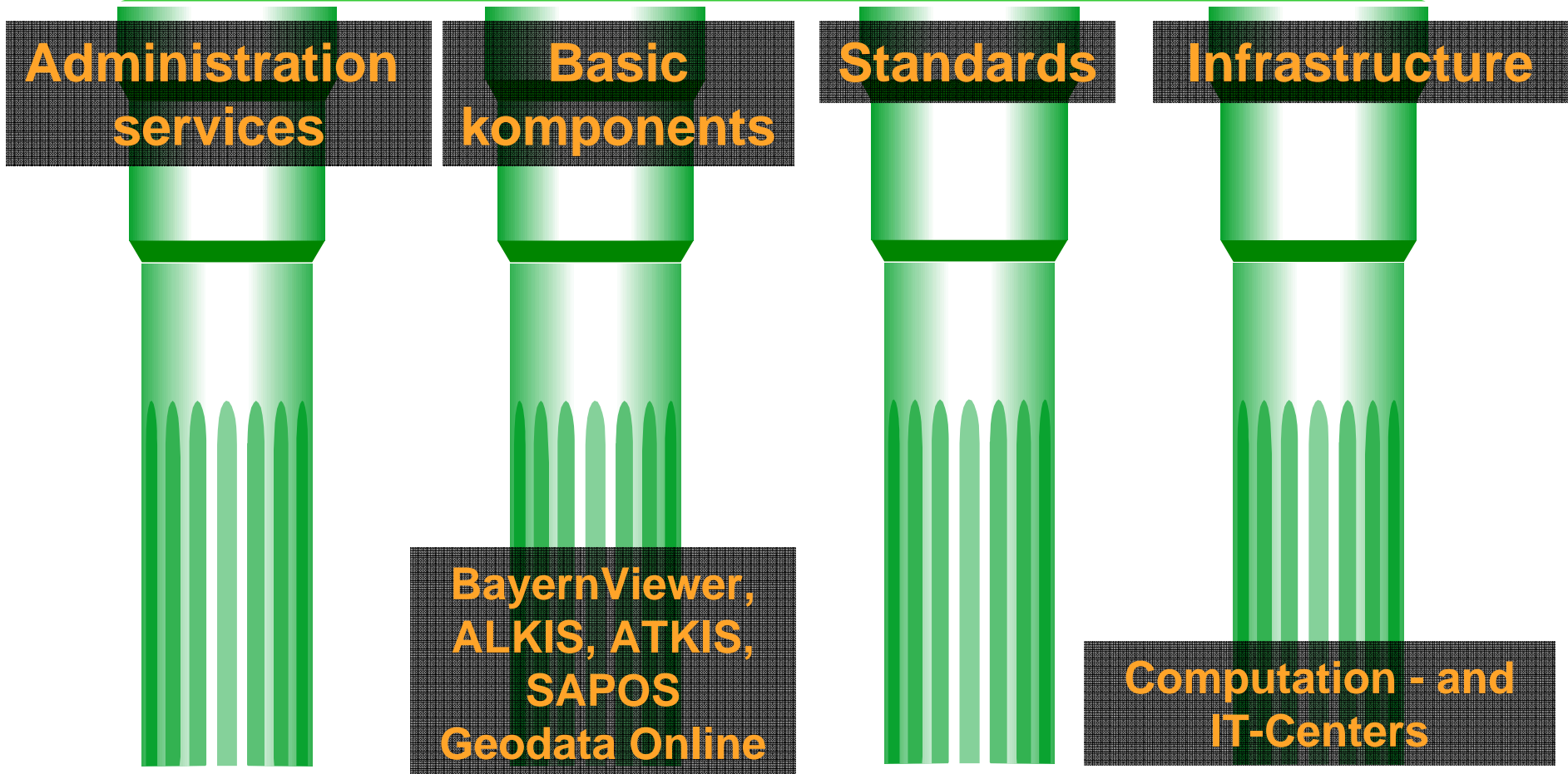


- **eGovernment Initiative in Bavaria (2002)**
- **eGovernment serves citizens, economy and administration**
- **Spatial Data Infrastructure is part of eGovernment**
- **SDI means easy access to and use of geodata**

Bayerische Staatskanzlei



eGovernment-concept Bavaria from 9.7.2002



What is SDI ? (short version)

SDI = {
 Reference Data
 User data
 Metadata
} **+ web + standards + services**

very brief version:

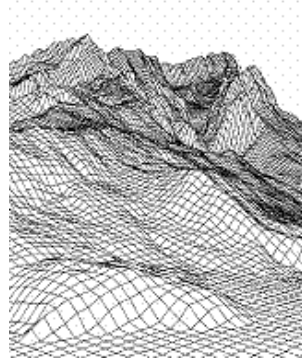
SDI = easy access to and use of geo information

What are spatial or geo data?

Reference data



Orthophotos



Digital Terrain Model



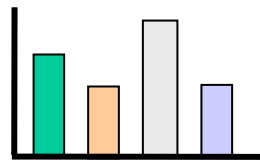
Digital Landscape Model



Topographic Maps

User or thematic data

	Kodex	Höhe	Index
112	344	2334	fe33	
113	24	2234	fe22	
114	23432	2235	fr55	
115	23343	2267	fs22	
116	243	2334	fs11	



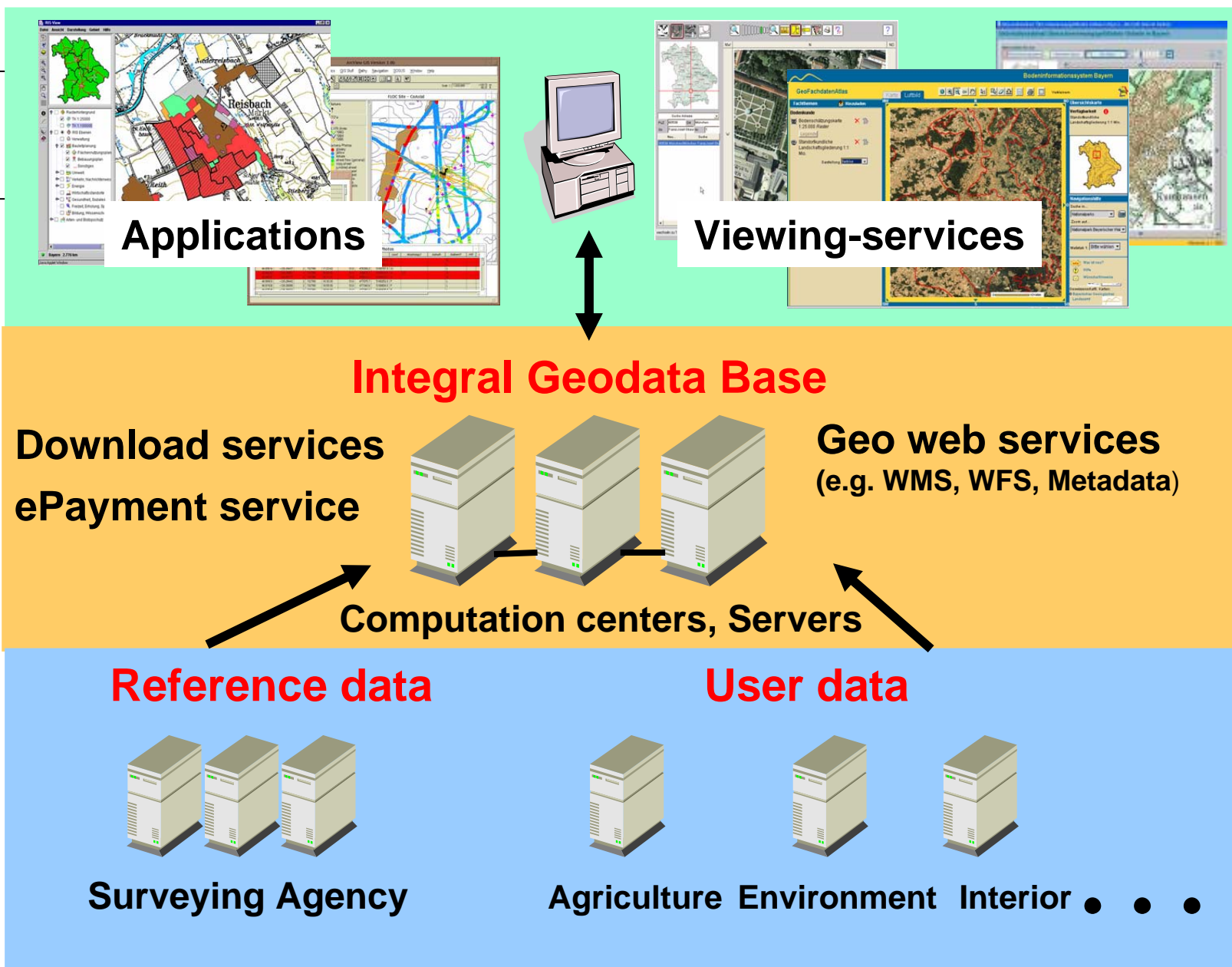
Metadata: data describing the data

Up-to-dateness, quality, prices, conditions of use, data formats

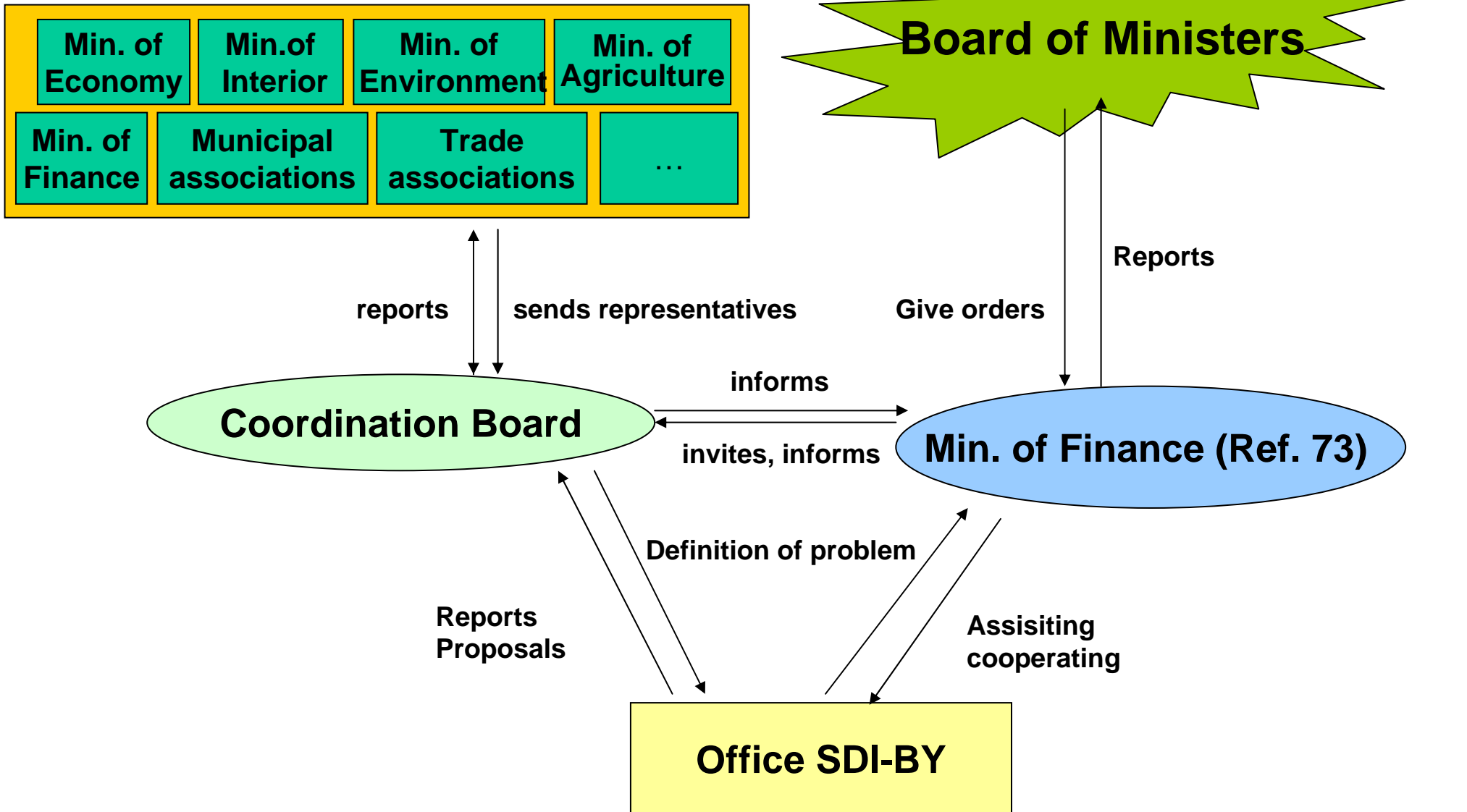
Basic Principles

- **building SDI-BY as part of the Bavarian eGovernment strategy**
- **sticking to the principles of the INSPIRE Initiative**
- **building SDI as part of the German Federal spatial data infrastructure (SDI-DE)**
- **stepwise approach by developing customer oriented SDI projects to gain the needed experience**
- **separation of data production and data distribution**
- **a close cooperation among the resorts and the players involved**

Application
Distribution
Production



Structure of SDI in Bavaria



Office Spatial Data Infrastructure

- **Founded in 01.03.2004**
- **development and updating of a concept for building SDI-BY**
- **monitoring of SDI-projects**
- **Analysis and supporting the development of technical standards**
- **Development of application profiles out of a huge variety of standards**
- **Cooperation with other SDI initiatives, particularly with SDI-DE and INSPIRE**
- **Public relations and advertisements for SDI-BY**
-

Standards

- **BayITS (recommendations, harmonisation, open source)**
- **Standards (DIN, CEN, ISO etc.) (de jure standards)**
- **Open GIS Standards (OGC) (de facto standards)**
- **Development of Profiles**

International standards are the most efficient instruments to create interoperable geo data

Standards und Services.

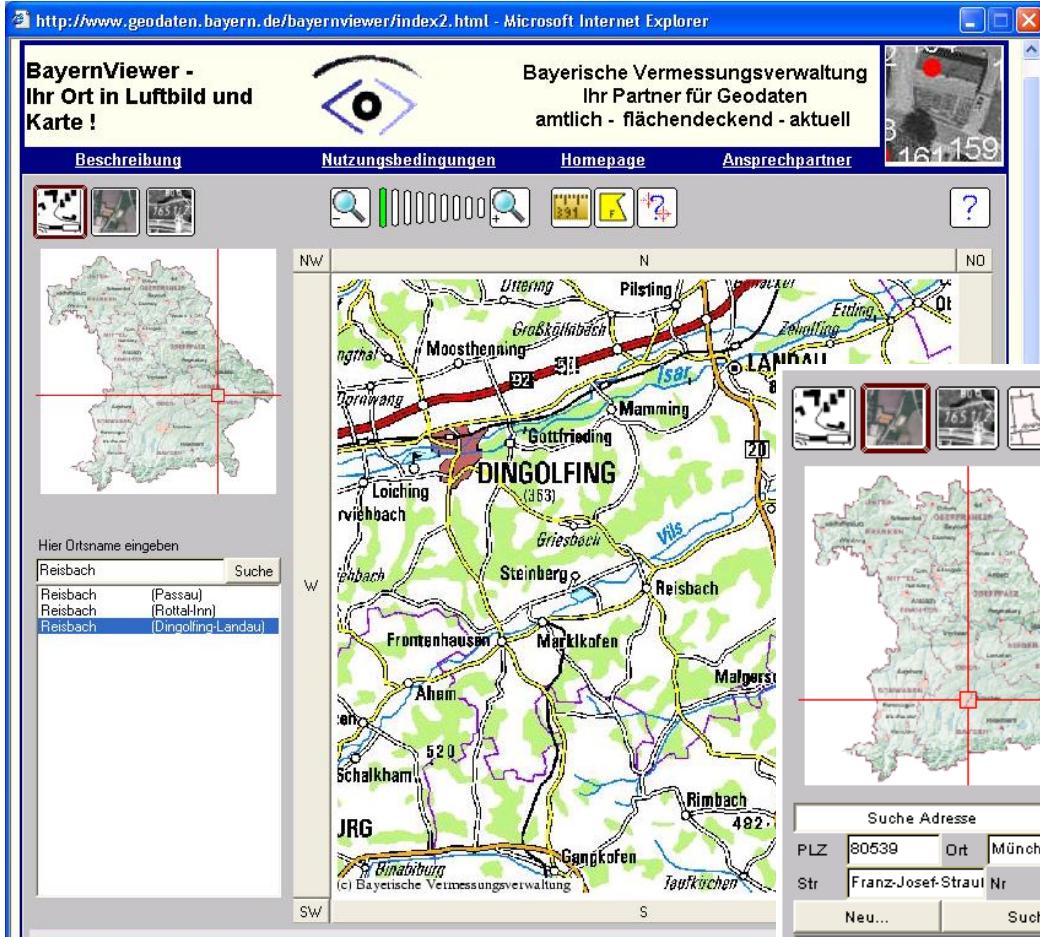
Which one to take?

Name	Organisation	short description
ISO 19115	ISO	Metadata, description of content
ISO 19139	ISO	Metadata, description of structure (XML)
ISO 19119	ISO	Metadata, description of services (e.g. for the online access to the geo data)
WMS	OGC	Geo data, access to map (Raster)
WFS	OGC	Geo data, access to Objects (Vectors)
SOAP	W3C	Web service – Protocol
GML, XML	ISO, OGC	Geo XML (Geographic Markup Language)

Aim: setting up a suitable profile composed of several standards or possible parameters of standards

Important OGC-Standards

- **WMS Web Map Service**
- **WFS Web Feature Service**
- **Gazetteer Service** (Returns the co-ordinates for a given address)
- **Standards for Metadata** (adopted by ISO)
- **WPOS Web Pricing and Ordering Service**
- **WCTS The Web Coordinate Transformation**

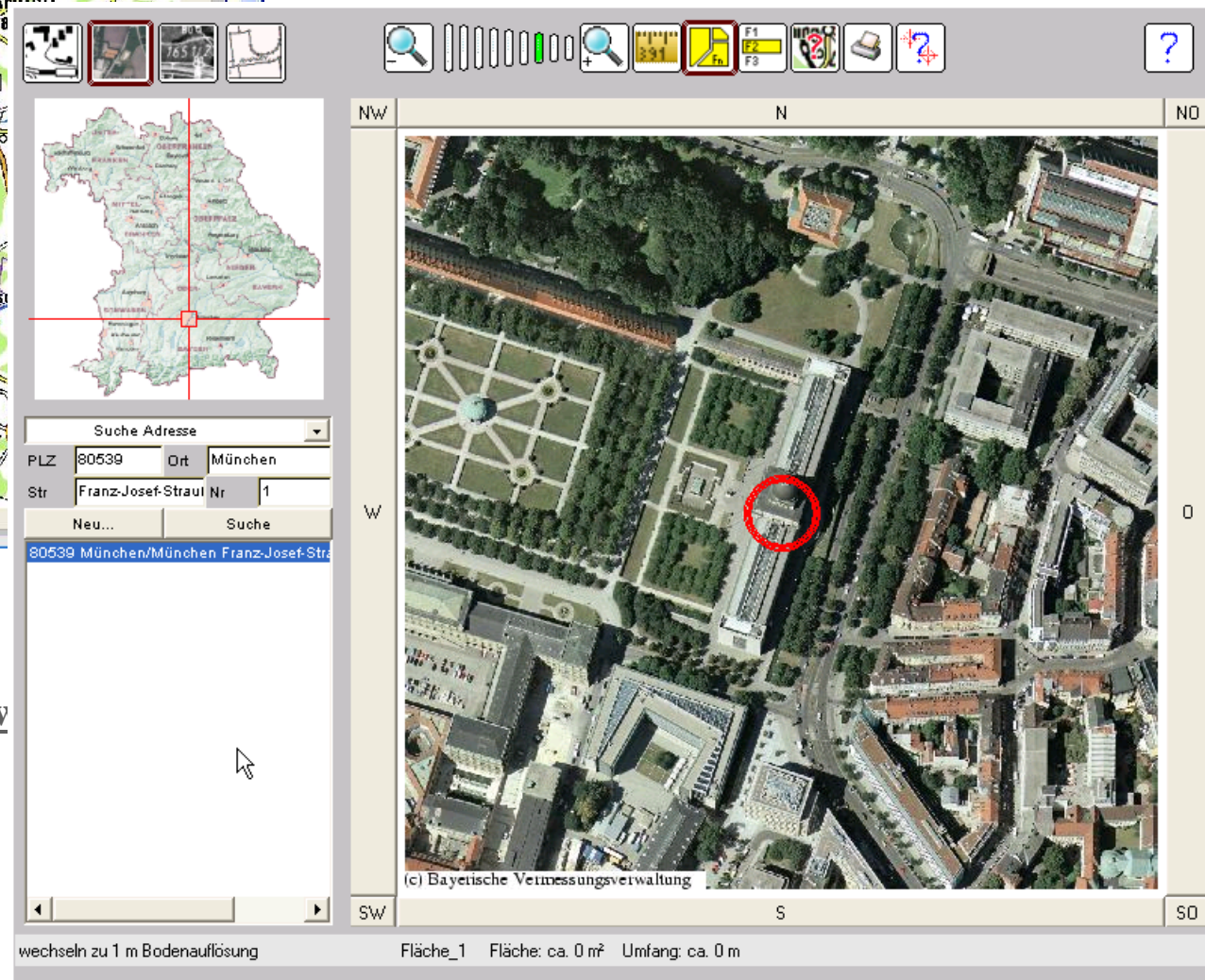


BayernViewer

<http://www.geodaten.bayern.de/bayernview>

SDI-Applications in Bavaria (selection)

BayernViewer-plus



<http://www.geodaten.bayern.de/bayernviewer-plus/index.html>

Informationsdienst Überschwemmungsgefährdete Gebiete in Bayern

Bitte wählen Sie aus:

Überschwemmungsgebiete
 Risikobereich Wasser
 Alle Gebiete

Hier Ortsname eingeben
Ortsauswahl mit Doppelklick

Landshut Suche
Landshut (Altötting)
Landshut (Landshut (Stadt))

Legende

- Überschwemmungsgebiete
- Risikobereich Wasser

in Maßstab 1:120 000 wechseln

BayernViewer-agrar

<https://ssl.stmlf.bayern.de/mfa/index.htm>

F1
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 F100

NW N NO

W 0

SW S SO

(c) Bayerische Vermessungsverwaltung

Feld_1

Aktuelles Feldstück

Name (editierbar)

Feld_1

Beschreibung (editierbar)

Bemerkung

neues Feldstück

Teilfläche	Sperfläche
<input checked="" type="checkbox"/> snap	undo

löschen

gehe zu Feldstück ...

BayernViewer-aqua

<http://geodaten.bvv.bybn.de/bayernviewer-aqua>



WMS

What geodata can be accessed by WMS? (in Bavaria)

Reference data:

DOP Digital Ortho photo

DTK Digital Topographic Map

DOK Digital Map (scale 1:10000, with road names)

(DTM Digital terrain model)

(DLM Digital landscape model)

Thematic Data:

Soil map BÜK 200 (Bodenübersichtskarte 1 : 200 000)

Geological map GK 25

Protected areas

.....

Kartenauswahl Ortssuche Hilfe

Geodatenquellen (Web Map Server)

BY: Landesvermessungsamt (LVA BY)

Geobasisdaten und Geofachdaten (Web Map Services)

DFK Raster BY (Digitale Flurkarte) ▲

TK50 BY (Topographische Karte)

UK500 BY (Übersichtskarte) ▼

Geodaten auswählen

Ausgewählte Geodaten (Selected WMS Services)

UK500 BY nach oben

DTK200-V BKG nach unten

löschen

Koordinaten Rechts: 4470893 Hoch: 5332299 GK-System, 12°

DeutschlandViewer (Bavaria)

Examples of Internet applications using the OGC-standard WMS

WMS within a GIS-System

**BIS: Soil information system: developed by
Bavarian State Geological Agency**

**Commercial sites information system: developed by
Chamber of Industry and Commerce**

WMS on a PDA

WMS on a mobile

WMS im GIS ArcView 8.1

The screenshot shows the ArcView 8.1 interface with the 'Add WMS Data' dialog box open. The main window displays a map of a rural area with various layers in the 'Layer' panel on the left. The 'Add WMS Data' dialog is open on the right, showing the 'Specify Server' section with the URL 'http://geo4.bayern.de/ogc/getogc.cgi?' and a list of servers including 'http://linuxcluster//cgi-bin/dopogcselect?' and 'http://geo4.bayern.de/ogc/getogc.cgi?'. The 'Select Data To Add' section shows a tree structure with 'Web Map Server' selected, containing 'OGC-Dienst der Bayerischen Vermessungsverwaltung' with sub-items 'DFK', 'DOP', 'TK50', and 'UK500'. A red arrow points to the 'WMS' icon in the toolbar.

BIS: Soil information system

Bodeninformationssystem Bayern

GeoFachdatenAtlas

Karte Luftbild

Fachthemen **Hinzuladen**

Geologie

- Einzelfundpunkt
- Aufschluss Geologie

Verfübarkeit

Aufschluss Geologie

Navigationshilfe

Suche in...

Maßstab 1:

Copyrights

Topografische Karten / Orthofotos:

© Bayer. Landesvermessungsamt

IRS-1C/D Mosaik Euro-Maps

© 2000 GAF/EUROMAP

Geowissenschaftl. Karten:

© Bayerisches Geologisches

<http://www.bis.bayern.de/bis/viewer.html>

SUCHE: SCHLAGWORTSUCHE ANSPRECHPARTNER

HOME SISBY Gewerbegebiete Hilfe

GEOINFOSERVICE

Einführung

Themenkarten

Themenkarten Archiv

Impressum

Kontakt

Karte
Quellen

Bei Klick auf Karte: Vergrößern Verkleinern Verschieben Abfragen

Druckbild

Kartenbildgröße Mittel

Geodaten: © Bayer. Vermessungsverwaltung

[Ganz Bayern](#)

[Ausgangskarte](#)

Maßstab 1 :

Kartenthemen

- Reg. Bez. -Grenze
- Landkreisgrenze
- Gemeindegrenze
- Gewerbegebiet (s. Fn)
 - ▲ Koordinate lagetreu
 - ▲ Koordinate aus GKZ
- Eisenbahnnetz
- Straßennetz I
- Straßennetz II
- Gemeindefreie Gebiete
- Kommunen gr. 10.000 EW

Fn: Gewerbegebiete hellrot Lage geogr. korrekt, dunkelrot Lage noch nicht geogr. korrekt.

- Topografische Karte

Web side of SISBY of IHK (Bavaria)

WMS with getFeatureInfo

The screenshot shows the ArcMap interface with a Web Map Service (WMS) layer named 'wms_umwelt' overlaid on a satellite image. The layer displays a green grid pattern. The 'Layers' panel on the left shows the following structure:

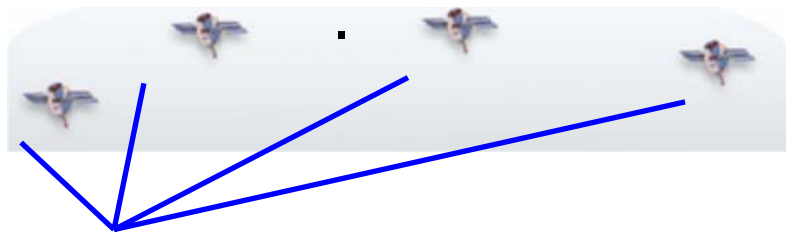
- Web Map Service wms_umwelt
 - wms_umwelt
 - NSG_B_FL
- Bavarian WMS MAP Server
 - OGC-Dienst der Bayerischen Vermessungsverwaltung
 - UK500
 - TK50
 - DOP

The 'Identify Results' dialog box is open, showing the following information:

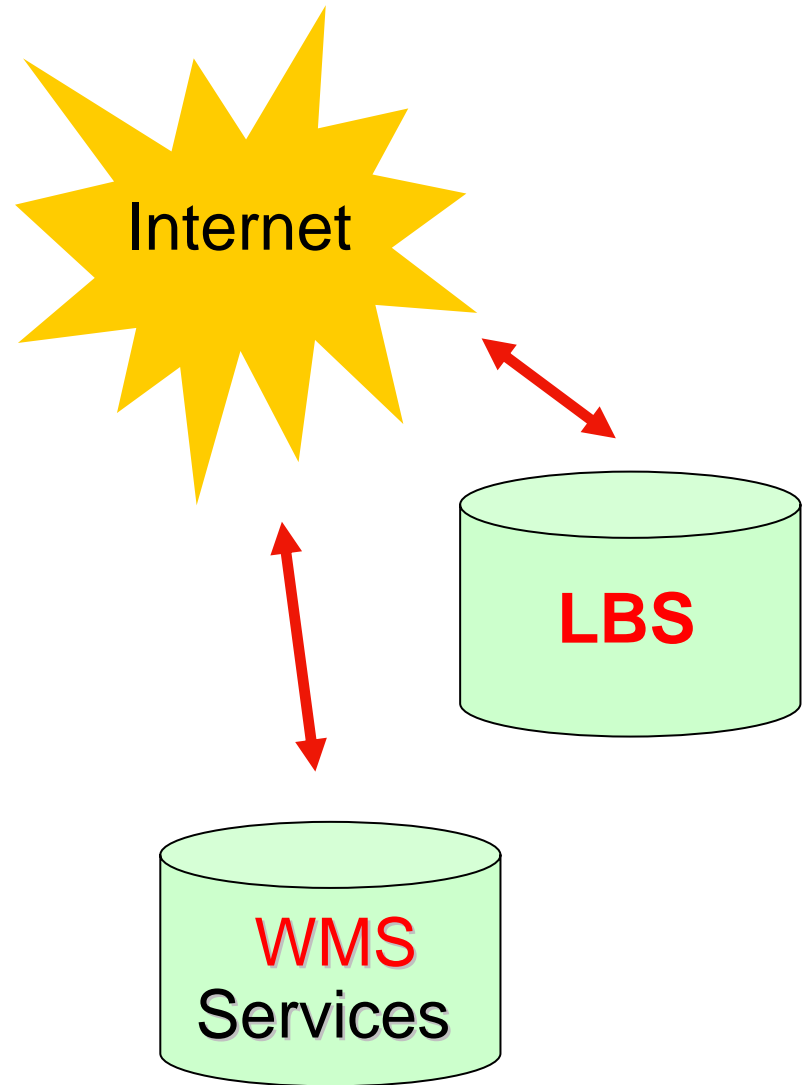
Layers: wms_umwelt
Location: (4533601,973587 5314653,884829)

AREA_QM	ID	NAME	ROK_PRJ_NR	ID	LAYERID	SHAPE
1401306,138	100.081	Seeoner Seen	1/001132/00/00	79	0	[Geometry]

The status bar at the bottom right shows the coordinates: 4533308,67 5315030,98 Meter.



Satellitensignale





SDI on Mobiles

Using WMS-services

All 16 Länder of Germany take part

Harmonising the content

More content eg POI



Thanks for your attention!

www.gdi.bayern.de

