



*“Local SDI Implementation at
County Level in Germany”*

**FIG Commission3 Workshop
2-4 February 2009, Mainz, Germany**

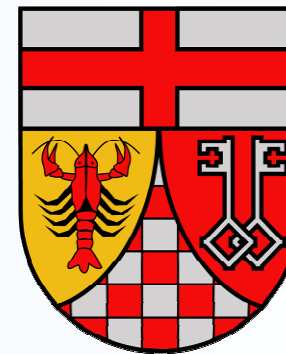
Dipl.-Geogr. Stephan von St. Vith

Introduction

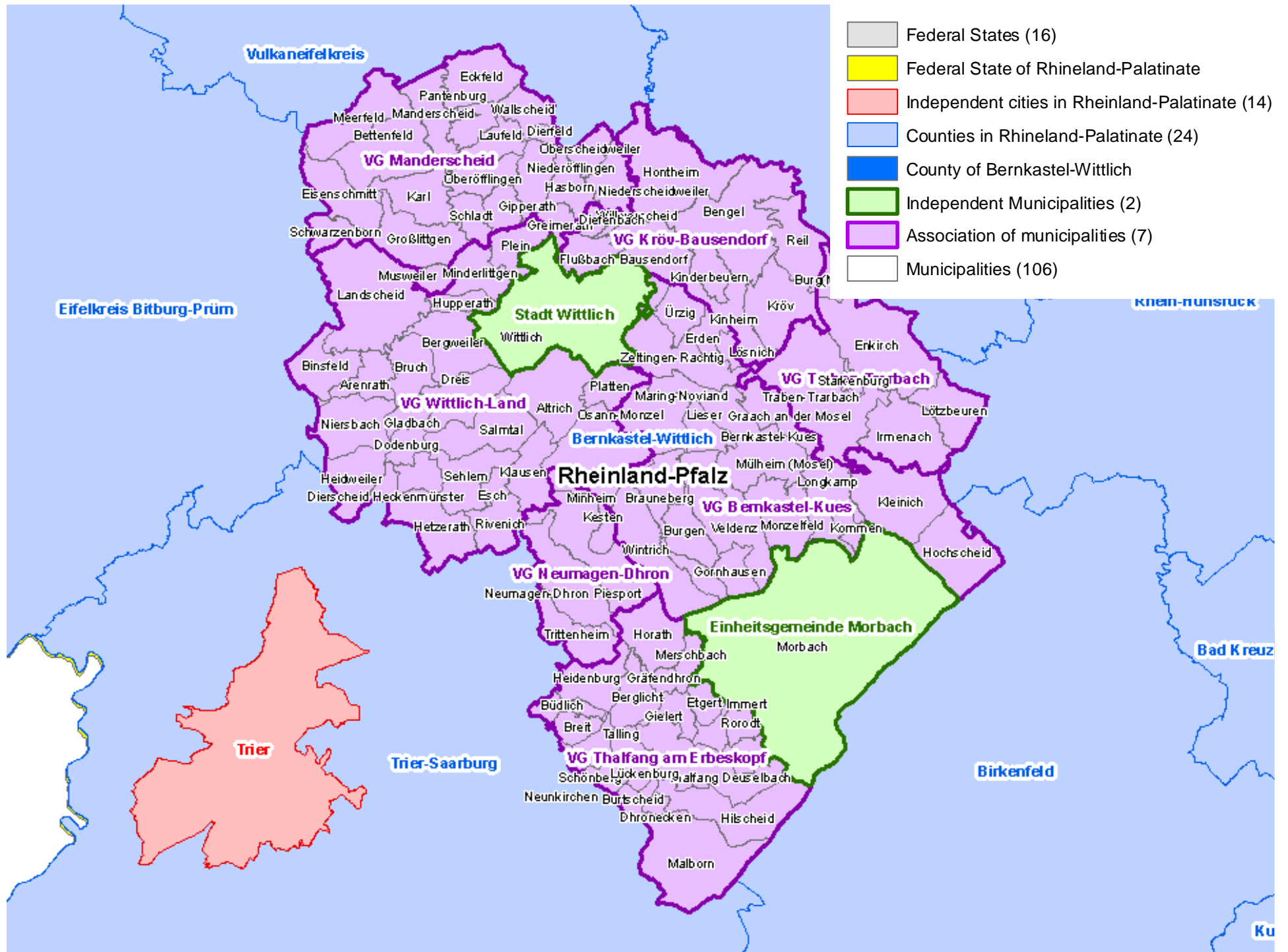
- Stephan von St. Vith, Dipl.-Geograph
- 1998-2002 Study of geography at the University of Trier
- 2000-2005 GIS distribution and GIS trainer for german ESRI-partner company
- since november 2005 GIS-Administrator at the county administration of Bernkastel-Wittlich



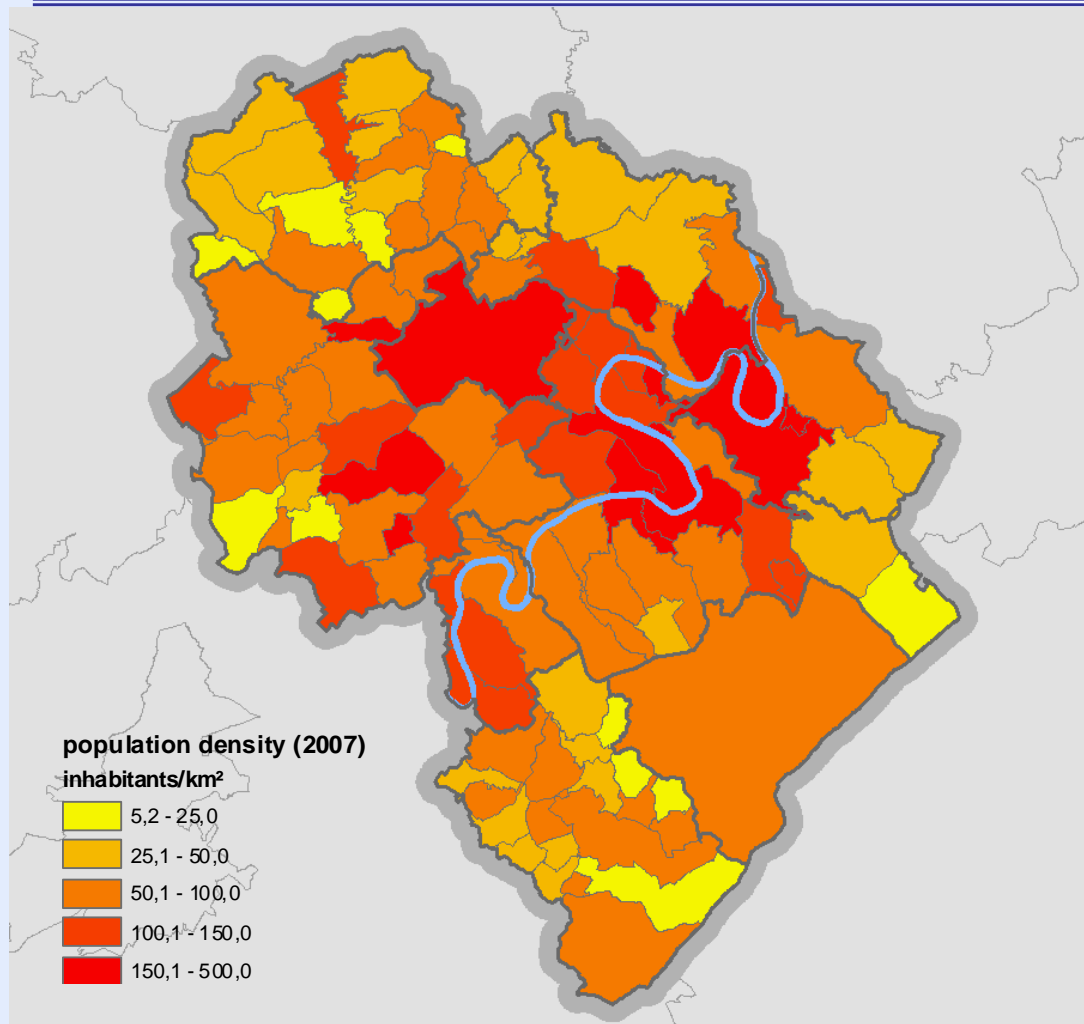
Administrative county office in Wittlich



County emblem



County of Bernkastel-Wittlich Overview



- Second largest county of Rhineland-Palatinate with 1178 km²
- 113.000 inhabitants (rank 19)
- 78 municipalities have less than 1000 inhabitants
- Population density of 97 inhabitants/km²

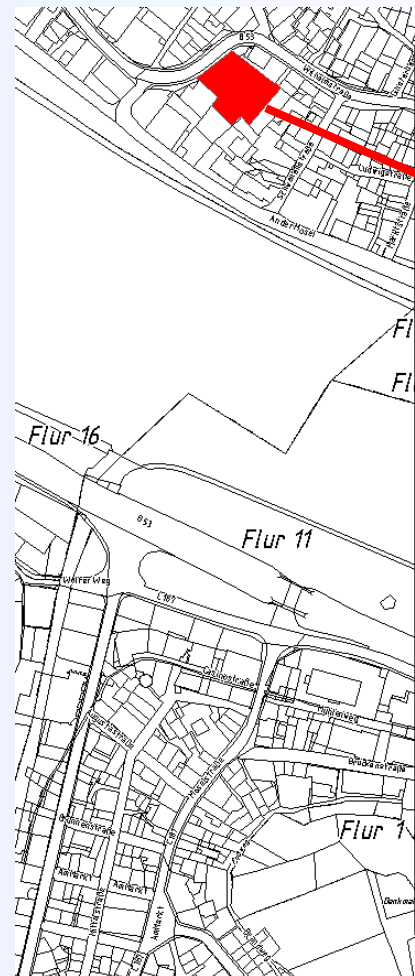
(comparison: Mainz: 200.000 inhabitants and population density of about 2000/km²)

Project initiatives concerning GIS at the regional level

- 2002 contract between the Landkreistag Rhineland-Palatinate and the Rhineland-Palatinate surveyor's office (LVermGeo) on spatial basic data.
 - 3 state-wide project initiatives concerning GIS initiated by the umbrella organisation of all Rhineland-Palatinate counties called Landkreistag Rheinland-Pfalz
 - **Project 1 (2003-2006):** GIS implementation in the Rhineland-Palatinate counties (with Bernkastel-Wittlich as pilot authority)
Goal: Developing a GIS implementation strategy for one exemplary local authority and creation of a functional specification for a modular build-up of a GIS
 - **Project 2 (2007/2007):** Promotion of building up spatial data infrastructures (SDI) on local level
Goal: How to build up a spatial data infrastructure for the co-operation and the data exchange within the local authorities themselves on one side, and between the local authorities and other public administration bodies on the other side
 - **Project 3 (2007/2008):** Build-Up of Rhineland-Palatinate regional SDI and spatial data as bas for the Federal State Development Plan IV (Landesentwicklungsprogramm IV)
Goal: Finding out, what's the important spatial data for spatial planning on federal state and regional level and build-up a catalog of spatial data for joining in a state wide SDI
 - project partners:
 - Landkreistag Rhineland-Palatinate (umbrella organisation for all Rhineland-Palatinate counties)
 - i3mainz - Institute for Spatial Information and Surveying Technology (FH Mainz)
 - County Administration of Bernkastel-Wittlich (pilot authority)
 - Project group with other GIS experienced counties and some federal state institutions
-

geo-spatial basic data – initial spark for the GIS implementation

- Digital Landscape Models (DLM) (1:25.000)
- Digital Terrain Model (DGM)
 - aspect (here 135-225°)
 - slope (here > 25°)
- Topographic Maps (DTK 25, DTK 50, hier DTK 100)
- Digital Orthophotos (DOP)
- Digital Topographic Map 1:5000 (DTK 5)
- Official house coordinates (georeferenced building addresses)
- Automated land survey register (ALK)
- Automated register of real owners (ALB)



| AUSZUG AUS DEM LIEGENSCHAFTSKATASTER - Liegenschaftsbuch - | | Flurstück | 072521-009-00072/002.00 | 0 |
|---|----------|---|-------------------------|---------|
| Flurstücks- und Eigentümernachweis | | Datum | 11.05.2007 | Seite 1 |
| Katasteramt | 0221 | Vermessungs- u. Katasteramt Bernkastel-Kues Im Viertel 24 54470 Bernkastel-Kues Telefon 0 65 31 / 59-0 | | |
| Markung | 072521 | Wittlich | | |
| Gemeinde | 07231134 | Wittlich | | |
| Kreis/Stadt | 0043 | Bernkastel-Wittlich | | |
| Finanzamt | | Bernkastel-Wittlich | | |
| Gmkg | Flr | Flurst-Nr | P | Status |
| 072521 | 009 | 00072/002 | 0 | 0 |
| Entstehung | | 1968/00075-01 | | |
| Fortführung | | 2008/03065-NA | | |
| Liegenschaftskarte | | 55.6436 A. 24 | | |
| Lage | | 11828 Altricher Weg 11945 Kurfürstenstraße 16 | | |
| Tatsächliche Nutzung | | 7318 m² 21-111 Gebäude- und Freifläche - öffentliche Verwaltung 100 m² 21-421 Park 320 m² 21-612 Einbahnige Straße | | |
| Fläche | | 7738 m² | | |
| Klassifizierung | | 320 m² 33 öffentliche Straßenflächen 33-350 Gemeindestraße | | |
| Summe | | 320 m² Erbz 0 | | |
| Hinweise | | 41 Denkmalschutz | | |
| Amtsgericht | | 2408 Wittlich | | |
| Grundbuchbezirk | | 072521 Wittlich | | |
| Bestand | | 072521-06131 7 Bvnr 5047 (N) Normaleigentum | | |
| 0001.00.00.00.00 | | Landkreis Bernkastel-Wittlich | | |

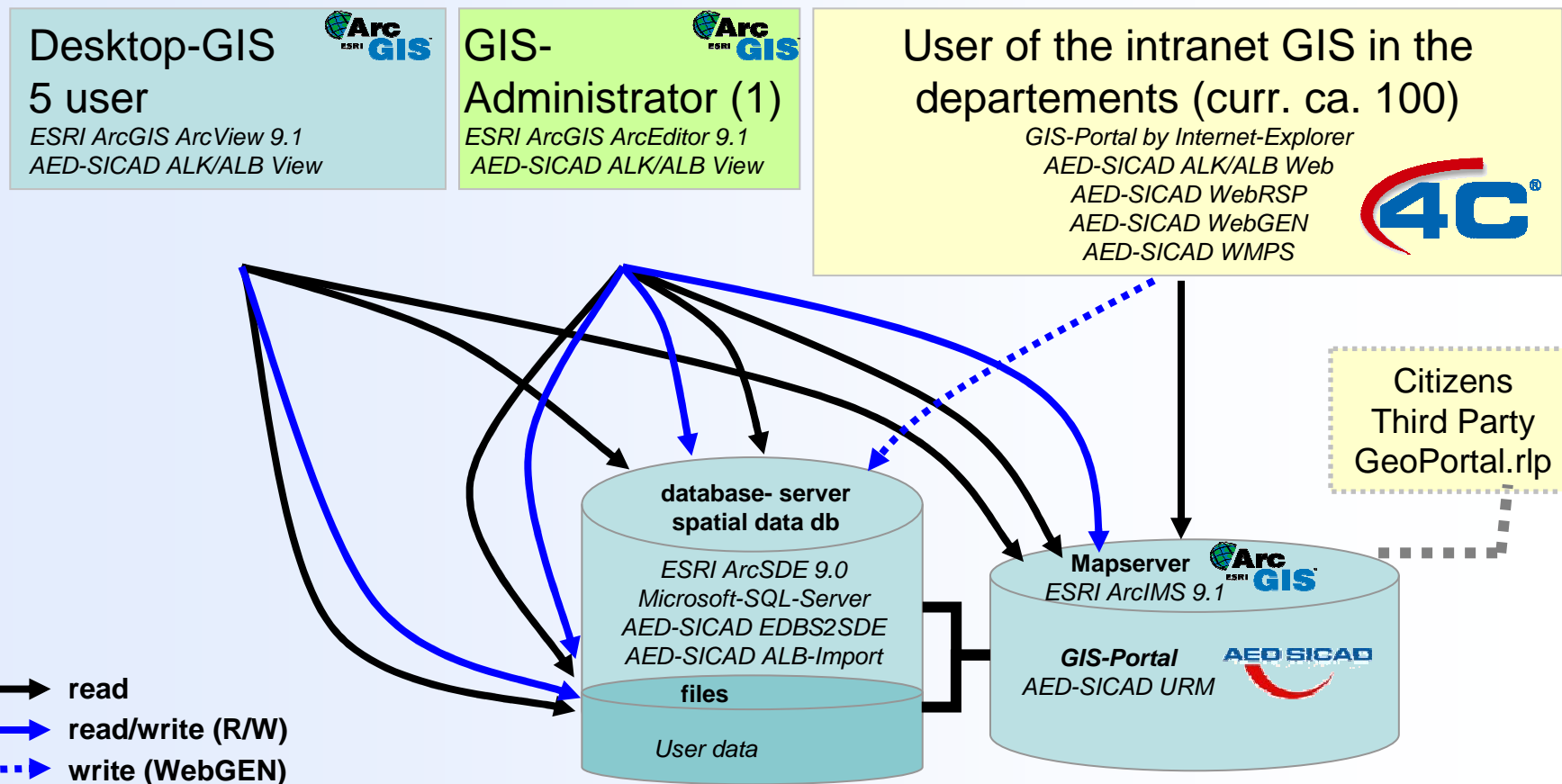
Der Auszug ist maschinell erzeugt, er ist ohne Unterschrift gültig. Die Veröffentlichung des Auszuges ist auch nach Umarbeitung oder Vervielfältigung - nur mit Zustimmung des Katasteramtes zulässig. Zweckerhöhungen werden als Grundbuchregister verlegt.

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Trarbach

GIS of the county administration of Bernkastel-Wittlich

- combination of desktop clients and client-server GIS



Jobs of the GIS-Administrator

- Implementation of the GIS
 - Installation and configuration of the GIS
 - Integration of the geo-spatial basic data
 - Preparatory training
- Day-to-day jobs
 - Care and maintenance of system and spatial data
 - Installation of updates and patches
 - Configuration of the system (first of all the WebGIS)
 - Convert and update the spatial basic data (first of all ALK and ALB)
 - Built-up, acquisition and integration of other spatial data (e.g. georeferencing preparatory land use plans or legally binding land use plans)
 - Metadata capturing
 - User support and training
 - Flexible GIS-services for the whole administration or the county-affiliated municipalities
 - Member of some GIS working groups on federal state and county level

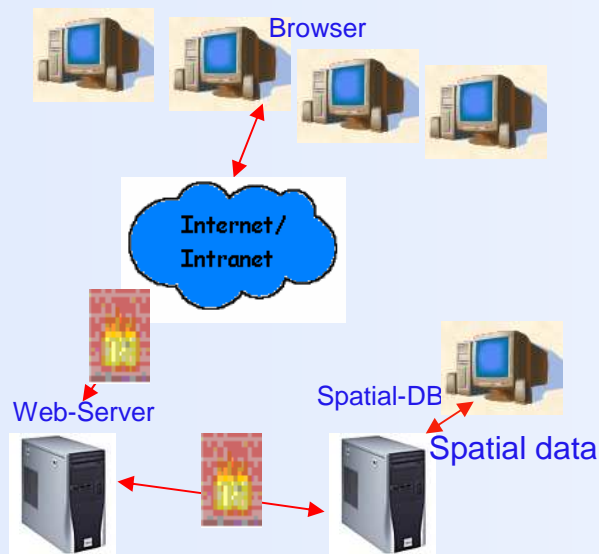
So far analog...

Analog data (paper documents and maps):

- Multiple and double data
- Difficult investigation of relevant data in the existing data pool
- Rapid „aging“ of the data, therefore limited use
- Data is not found or overlooked
- Complicated updates
- Missing spatial reference



... now digital!



Geographical information system (GIS)

- Data is up to date (planning security)
- Acceleration of workflows (efficiency)
- Permanent access to required data (time saving)
- Avoidance of redundant data storage (cost saving)
- Easy data exchange (time and cost saving)
- Analysis and presentation options (presentiveness)
- Creation of a spatial reference (combinability and comparability)

From experience

- Presentation of some practical work
 - all users: obtaining information from automated land survey register (ALK) and automated register of real owners (ALB)
 - department for building and environment: mapping of habitats and reserves
 - Department health: geocoding of all animal husbandman within the county as prevention for avian influenza
 - Planning department: examination of potential locations for wind power stations
 - department for building and environment: information system for legally binding land use plans and interface to the building application management
 - Integration of the preparatory land-use plan in the federal state SDI through OGC WebMapService (WMS)

Most used application - obtaining information from automated land survey register (ALK) and automated register of real owners (ALB)

The screenshot shows a web browser displaying a GIS application. The main map area shows a cadastral plan with several parcels labeled 'Flur 9', 'Flur 32', and 'Unter dem Rot'. A detailed information window is open for parcel 'Flurstück 072521-009-00080.008.00'. The window contains the following data:

| | | | |
|------------|---------------------|---------|---------------------|
| Kreis: | Bernkastel-Wittlich | Flur: | 9 |
| Gemeinde: | Wittlich | Nummer: | 80/8 |
| Gemarkung: | Wittlich | Lage: | Kurfürstenstraße 16 |
| | | Größe: | 7237 m² |

Below the parcel information, there is a section for 'Eigentümer' (Owner) with the following details:

- Grundbuchkennzeichen: 072521-06131
- Name, Anschrift: Landkreis Bernkastel-Wittlich

The interface also includes a legend on the left with various map layers like 'ALK_ALB_Auskunft', 'Tatsächliche Nutzung, Punkt', and 'Gebäude, Flächen'. A search bar and navigation tools are visible at the top of the map area.

Hierarchic navigation:
 association of municipalities
 municipality/district
 local subdistrict
 cadastral district
 number of land parcel

changing to the information part
 selection of a land parcel
 Output of an owner proof
 Output of a land parcel extract

departement for building and environment: mapping of habitats and reserves

Conservation data in part as OGC web map service (WMS) from the Federal State Ministry for Environment, Forest and Consumer Protection

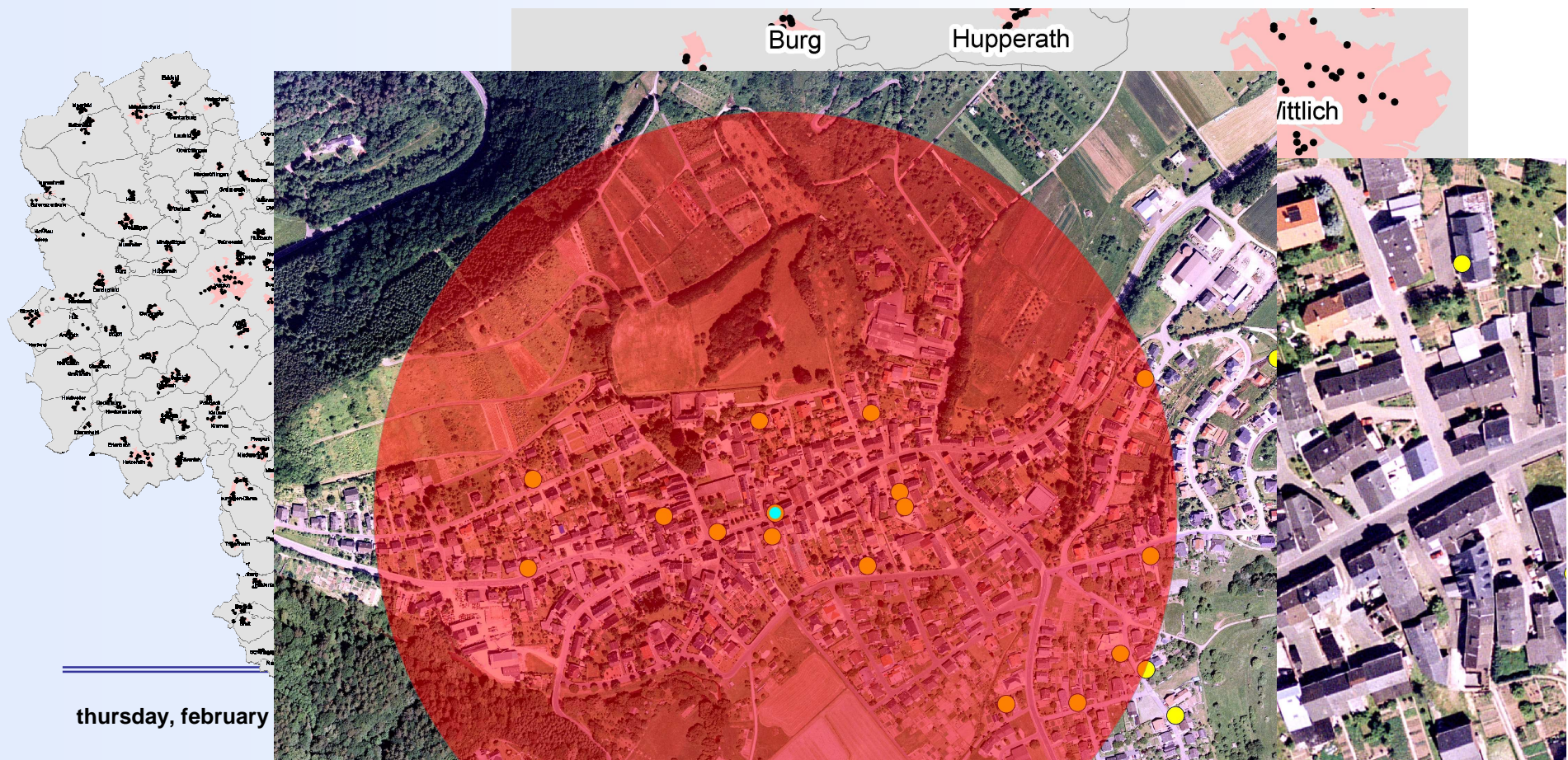
Describing information directly linked with the spatial conservation data

| FFH-Gebietsnummer, -Name und Gebietsgröße [ha] | 685 ha |
|---|--------|
| 6008-301 Kautenbachtal | 685 ha |
| Fließgewässer | 3260 |
| Feuchte Hochstaudenfluren | 6430 |
| Flachland-Mähwiesen | 6510 |
| Silikat-Schutthalden | 8150 |
| Silikatfelsen mit Felspflanzengesellschaften | 8220 |
| Pioniersäume | 8220 |
| Hainsimsen-Buschmähwiesen (Aureo-Elymus) | 9170 |
| Labkraut-Eichen-Hainbuchenwald (Galio-Carpinetum) | 9170 |
| Schlucht- und Hangmischwälder * | 9180 * |
| Erlen- und Eschenauenwald, Weichholzaunenwald * | 91E0 * |
| Cottus gobio (Groppe) | |
| Myotis bechsteini (Bechsteinfledermaus) | |
| Myotis dasycneme (Teichfledermaus) | |
| Myotis myotis (Großes Mausohr) | |

| Lebensraumsprüche der gelisteten Arten: | |
|---|--|
| Säugetiere | |
| Fischotter | Saubere Bäche und Flüsse. Artenreicher Wald und Wiesen in der Umgebung. |
| Luchs | Großflächige und strukturreiche Laubwälder. |
| Bechsteinfledermaus | ausgeprägte Waldart; Baumhöhlen als Quartier und Jagdgebiet im Wald und angrenzenden Wiesen. |
| Großes Mausohr | Wochenstubenkolonien meist in großen Dachräumen. Bevorzugte Jagdbiotope sind Wälder und strukturreiche Lebensräume. |
| Mopsfledermaus | Sommerquartier in Stammrissen oder unter abstehender Borke; alte Laubwälder; Winterquartiere in ungestörten Stollen. |
| Kleine und Große | Überwinterung in ungestörten Stollen. Der Lebensraum ist mosaikartig |

Department health

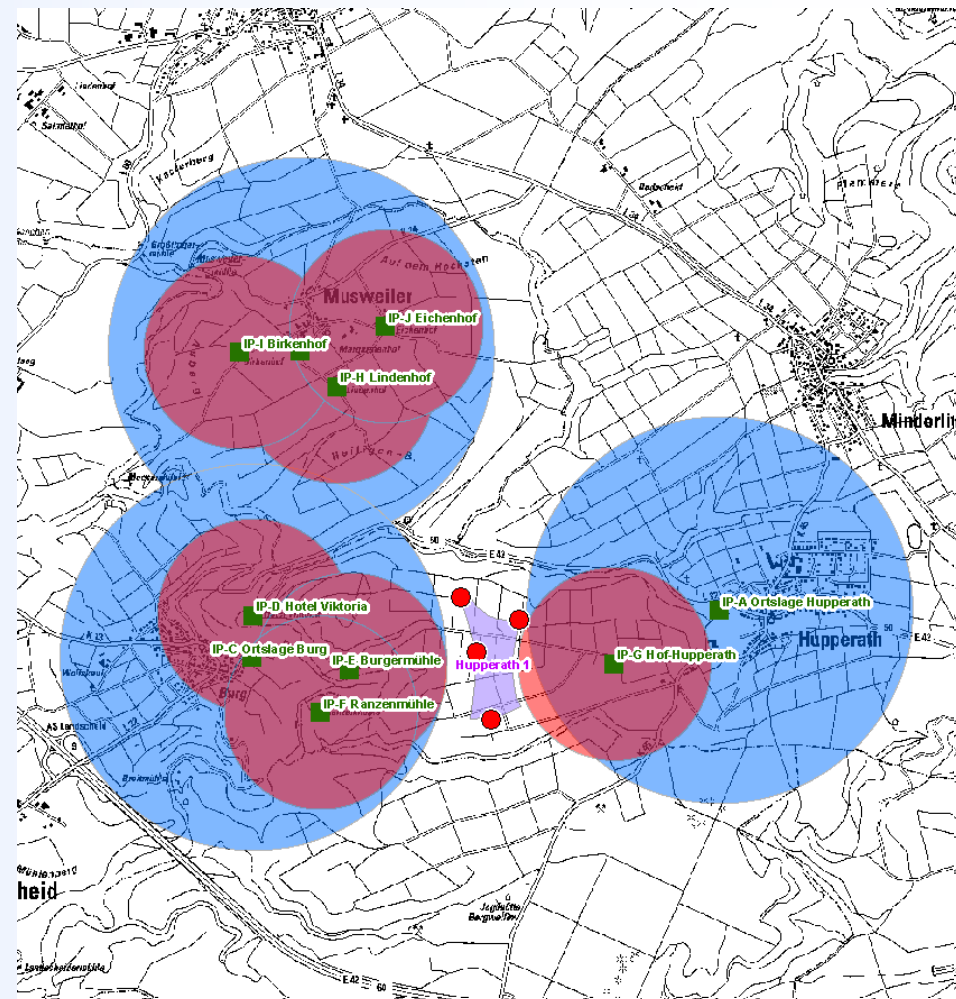
- Department health: geocoding of all animal husbandman within the county as prevention for avian influenza



thursday, february

Planning departement: examination of potential locations for wind power stations

- Planned locations for wind power stations (red)
- Precedence area for wind power stations (violet)
- Points that may not be affected (green)
- Points to protect are buffered with 500 and 1000 meters
- Planned locations have a sufficient gap to the protected points



departement for building and environment: information system for legally binding land use plans

KREISVERWALTUNG
BERNKASTEL-WITTLICH

Fachbereich
Beraten, Planen, Fördern

The screenshot displays a GIS application interface. At the top, there are menu items: Stufennavigation, ALK-ALB Auskunft, Bebauungspläne, Gefahrenatlas Mosel, LEP IV Planentwurf, Umwelt, WMS Dienste, Geodaten, and ALK/ALB Auskunft. The main window shows a map of Rapperath with various colored zones and buildings. A legend on the left lists layers such as ALK-Bebauungspläne, ALK (schwarz), Nicht nummerierte Grenz-, Flurstück, Texte, Gemarkung, Text, Gebäude, Text, Tatsächliche Nutzung, Text, Straßenflächen, Texte, Basis-topographie Liege-, Bauplätze lt. ALK, Flächen, B-Pläne Geltungsbereich, B-Pläne Geltungsbereich, Gebäudeumriss rot, Gebäude, Flächen, Flurstücksgrenzen (blau), Flurstücksgrenzen (schw), Nutzungsartengrenze, Tatsächliche Nutzung, Fl, ALK (weiss), Schutzgebiete (WSG, NSG), Gewässer klassifiziert, Flä, DGK 5 Grundriss (sw), Luftbilder (farbig), Bebauungsplanauskunft, Bebauungspläne Geltung, RSP_Abfrage, and Name B-Plan. A central window titled 'Planzeichenerklärung' shows details for a plan, including 'Art und Maß der baulichen Nutzung (§ 9 (1) Nr. 1 BauGB)' with categories WA (Allgemeine Wohngebiete) and MD (Dorfkerne), 'Bauweise, Baugrenzen (§ 9 (1) Nr. 2 BauGB)', 'Verkehrsflächen (§ 9 (1) Nr. 11 BauGB)', and 'Grünflächen (§ 9 (1) Nr. 15 BauGB)'. Below the map is a table with columns: Planabfrage, Gemeinde, Planname, Dateiname, and Dokumente. The table lists several plans for Rapperath, including 'Rapperath - Leisberg', 'Rapperath II - Am Börnchen', 'Rapperath - Morbacher Energielandschaft MEL, Südbereich 2', and 'Rapperath - Morbacher Energielandschaft (MEL)'. The bottom status bar shows the Start menu, taskbar with open applications, and system clock: 12:13.

| Planabfrage | Gemeinde | Planname | Dateiname | Dokumente |
|-------------------------------------|-----------|---|-------------------------------------|--------------------------|
| <input type="checkbox"/> | Rapperath | Rapperath - Leisberg | BBP07231502_2392-MOR_0038.jpg | Bitte Dokument auswählen |
| <input checked="" type="checkbox"/> | Rapperath | Rapperath II - Am Börnchen | BBP07231502_2392-MOR_0058.jpg | Legende |
| <input type="checkbox"/> | Rapperath | Rapperath - Morbacher Energielandschaft MEL, Südbereich 2 | BBP07231502_2392-MOR_0059-SUED2.jpg | Bitte Dokument auswählen |
| <input type="checkbox"/> | Rapperath | Rapperath - Morbacher Energielandschaft (MEL) | BBP07231502_2392-MOR_0066.jpg | Bitte Dokument auswählen |

choosing the municipality

all plans of the municipality are listed

choosing the right plan and zooming to the extent of the plan

setting the right scale and the desired layer

activating the joined attributes of the plan

activating the legally-binding arrangement

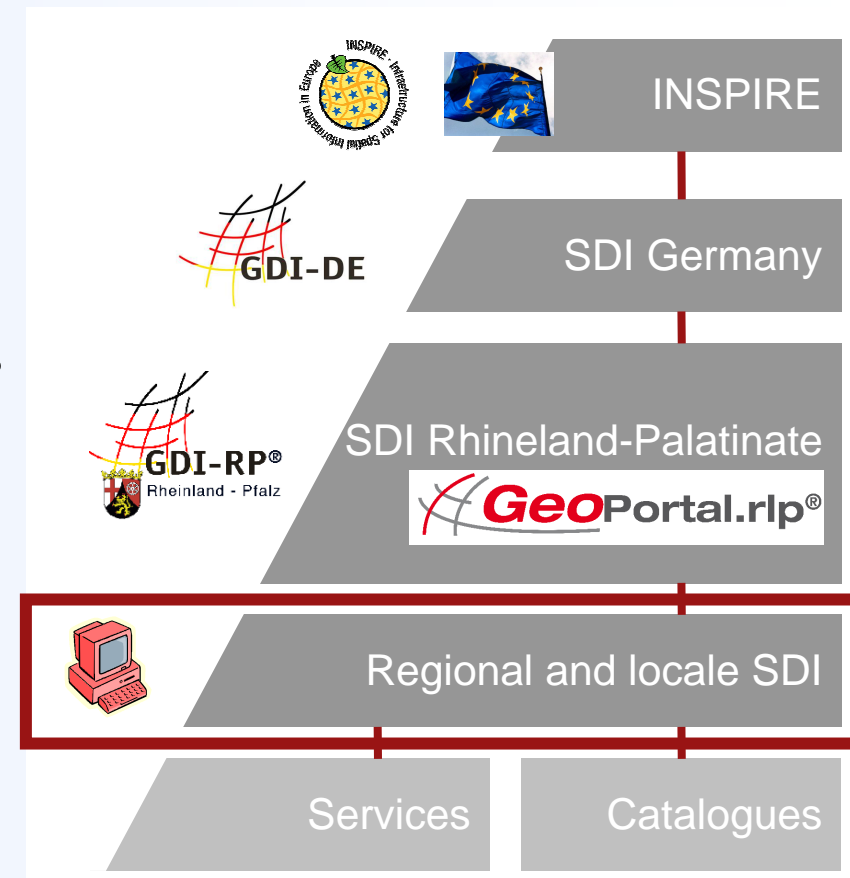
activating the legend

thursday, february 3rd, 2009

Regional and local SDI

Steps that have to be done

- Implementation of GIS
 - Built-up of local SDI
 - Providing of OGC-conform services
 - Using GeoWebServices
-
- Pilot-project Bernkastel-Wittlich



Preperatory land use plan in federal state SDI (www.geoportal.rlp.de)

The screenshot displays the GeoPortal.rlp website interface. At the top, there are navigation links: Geodaten, Das Portal, Informationen, Wiki, Aktuelles, Karten, Downloads, and Über uns. The main content area shows a map of Wittlich with various colored zones and price labels. A legend titled 'LEGENDE' is visible on the right, detailing building types under 'Art der baulichen Nutzung'. The legend includes categories like 'Wohnbauflächen', 'Gemischte Bauflächen', 'Gewerbliche Bauflächen', 'Sonderbauflächen', 'Aussiedlerhof', and 'Gebäude im Außenbereich'. The map also shows a 'Flächennutzungsplan der Stadt Wittlich' window with the URL 'http://www.wittlich.de/bau/fnp/fnp.htm'.

Diskussion

- Thank you for your attention
- Are there any questions left?

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