
Towards one stop citizen interfaces as entry points to Spatial Information Infrastructures

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Classification of SDI hierarchy levels

Source: Rajabifard et al (1999)

- Global Spatial Data Infrastructure (GSDI)
- Regional Spatial Data Infrastructure (RSDI)
Ex. INSPIRE
- National Spatial Data Infrastructure (NSDI)
Ex. SDI Germany
- State or Provincial Spatial Data Infrastructure (SSDI)
- Local Spatial Data Infrastructure (LSDI)
Ex. SDI German State of Rheinland-Pfalz
- Corporate Spatial Data Infrastructure (CSDI)

**Spatial
Information
Infrastructures**



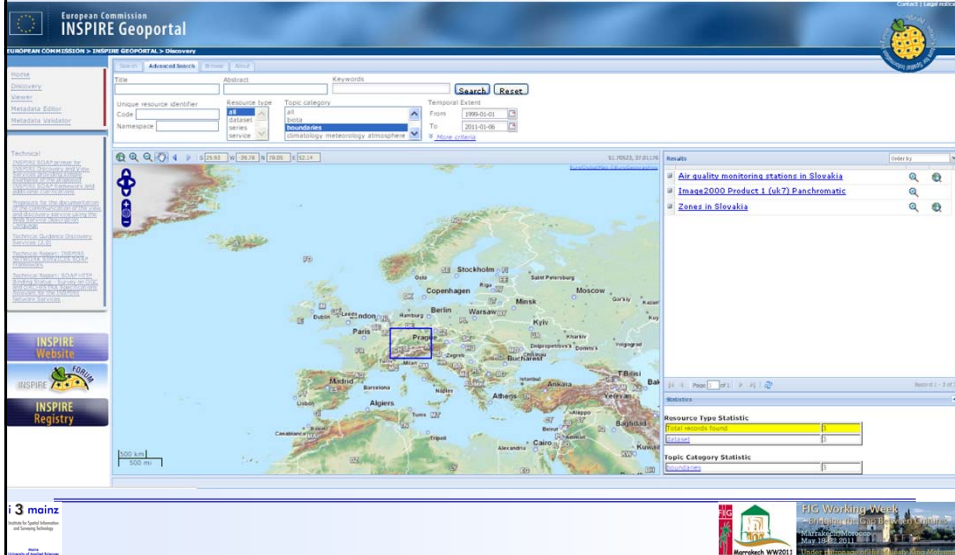
Cascading Services linking EU Regional level, National level and Local level SDI's



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Prototype INSPIRE Geoportal, accessed 19 May 2011

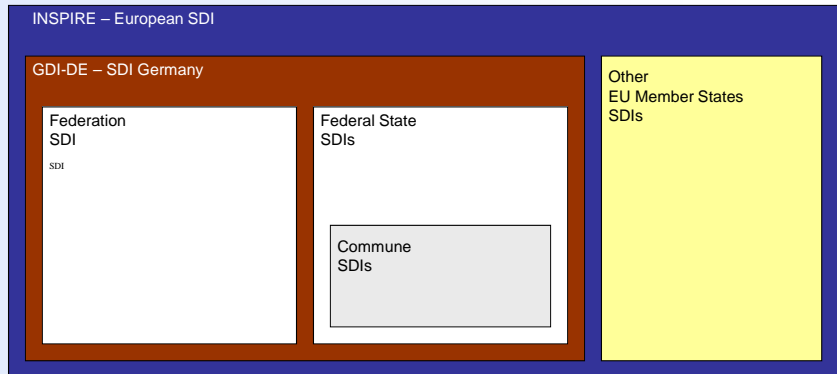


Cascading Services linking EU Regional level, National level and Local level SDI's



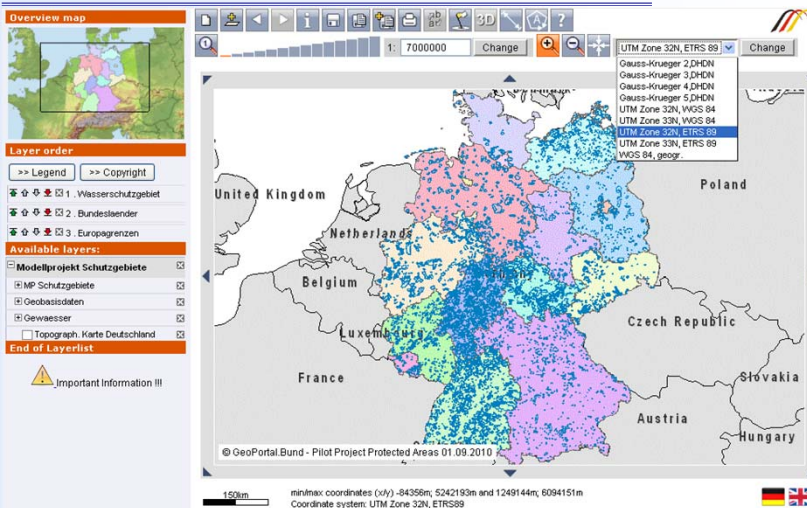
SDI Germany within the European SDI framework

Source: adapted from Schilcher et al. (2009)



Geoportal Bund, Protected area information

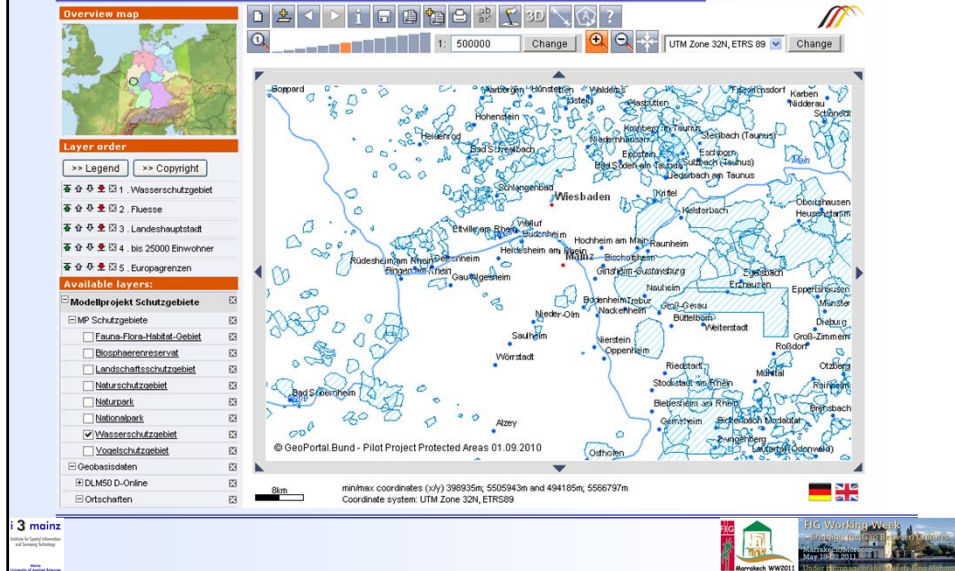
Source: <http://ims1.bkg.bund.de/navmpsg/basicviewer.jsp>



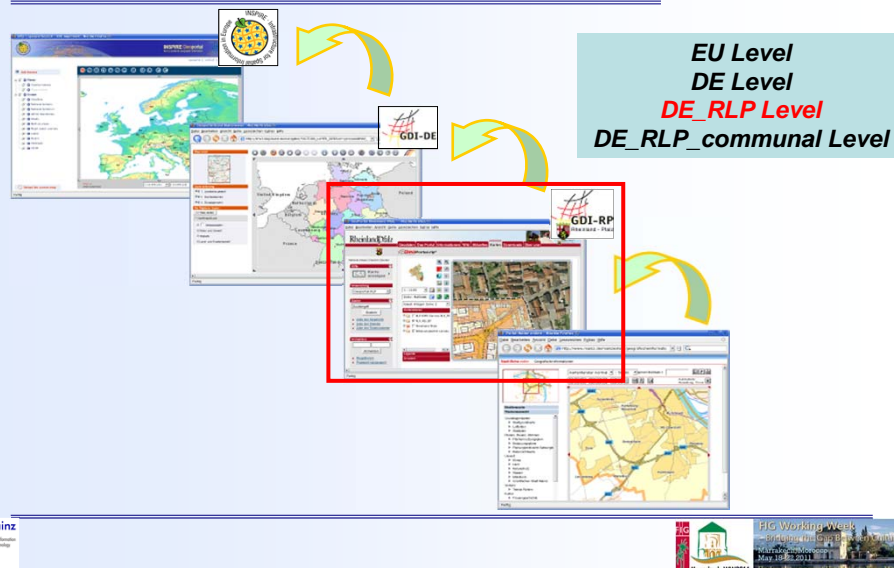
Geoportal Bund, Protected area information

zoomed view to the Rhein-Main area around Frankfurt

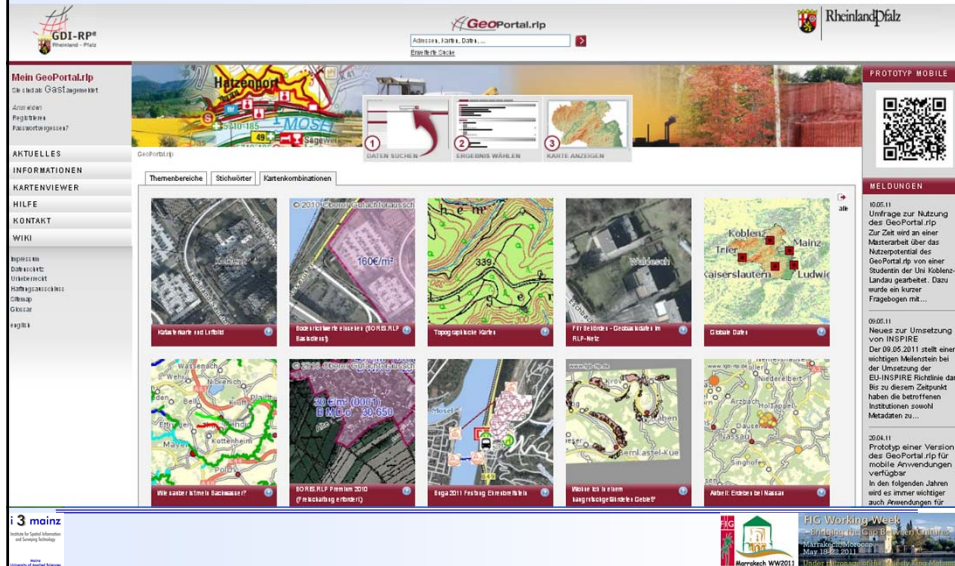
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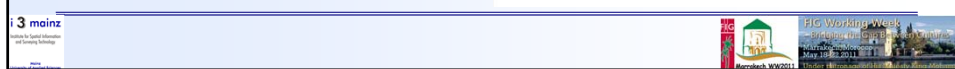


Cascading Services linking EU Regional level, National level and Local level SDI's

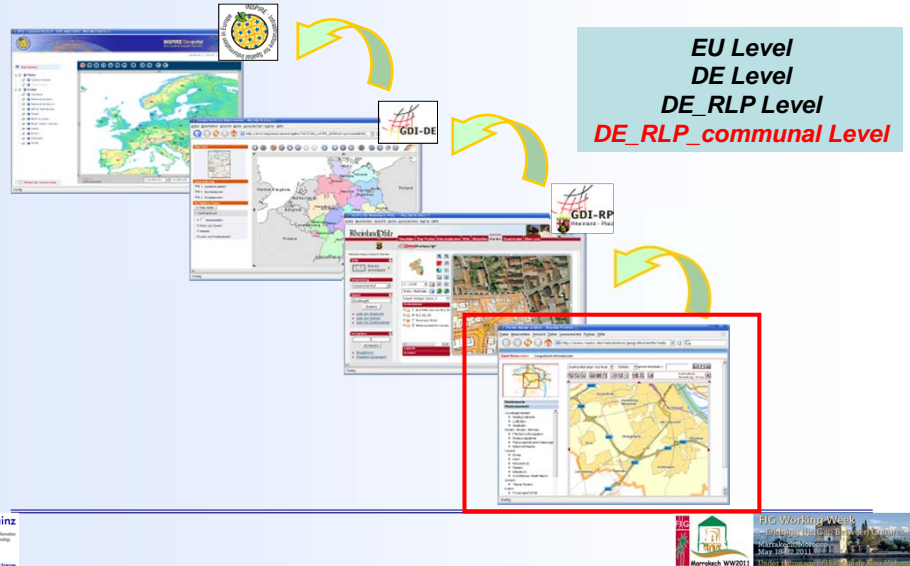


Federal Structure of Federal Republic of Germany Federal State of Rheinland-Pfalz consisting of 24 counties

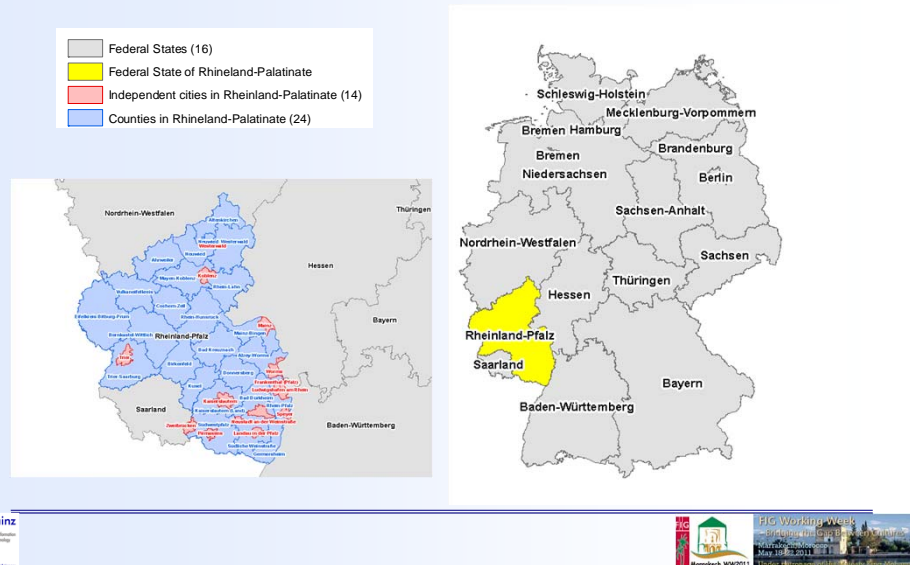
- Federal States (16)
- Federal State of Rhineland-Palatinate
- Independent cities in Rheinland-Palatinate (14)
- Counties in Rheinland-Palatinate (24)



Cascading Services linking EU Regional level, National level and Local level SDI's



Federal Structure of Federal Republic of Germany Federal State of Rheinland-Pfalz consisting of 24 counties



SDI assessment at Rheinland-Pfalz county level

List of SDI assessment indicators

Source: *SDI assessment at the county level, State of Rheinland-Pfalz*

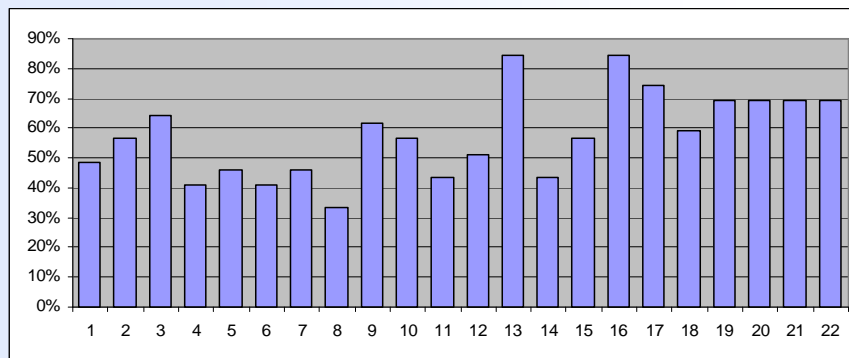
1. Degree of availability of digital geospatial basic data
2. Availability of qualified personnel (employee with a high level GIS qualification)
3. Degree of availability of digital geospatial thematic data and of metadata
4. Information retrieval of digital geospatial basic data as a part of daily routine of service personnel
5. Information retrieval of digital geospatial thematic data as a part of daily routine of service personnel
6. Powerful computer hardware available
7. Powerful computer network available
8. Broad use of Desktop GIS in different departments interacting with each other
9. Broad use of external web services in different departments
10. Provision of web services for external users
11. Availability of a WebGIS intranet
12. Availability of WebGIS internet access for general public use
13. Availability of WebGIS internet access for professional use

0 not available
1 implementation scheduled
2 partly implemented
3 fully implemented

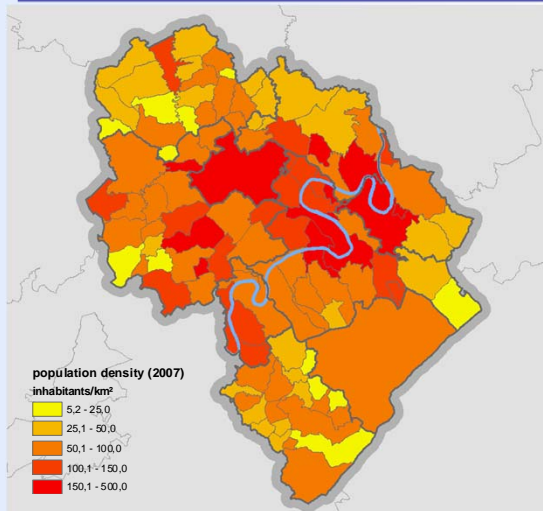
Local SDI implementation at county level

State of Rheinland-Pfalz 2009/2010

Source: *SDI assessment at the county level, State of Rheinland-Pfalz*



Case study - Germany – Federal State of Rheinland-Pfalz - County of Bernkastel-Wittlich

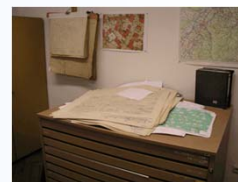


- area 1178 km²
- 113.000 inhabitants
- 78 of 106 municipalities < 1000 inhabitants
- 97 inhabitants/km²

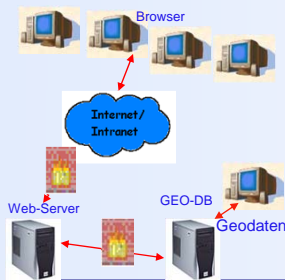
So far analogue...

Analogue data (paper documents and maps):

- Double or even multiple data
- Difficult retrieval of correct data in the existing data pool
- Rapid „aging“ of the data, therefore limited use
- Data can not be found or it is not known that such data exist
- Complicated updates
- Missing spatial reference



... now digital!



Geographical information system (GIS)

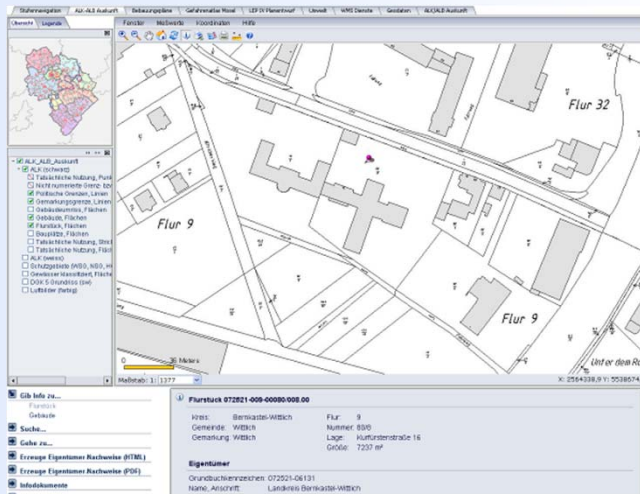
- Data is up to date (planning safety)
- Acceleration of workflows (efficiency)
- Permanent access to required data (time saving)
- Avoidance of redundant data storage (cost saving)
- Easy data exchange (time and cost saving)
- Analysis and presentation options (presentiveness)
- Establishment of a common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



Use of Geospatial Basic Data across County Administration Departments

Information retrieval from automated land survey register (ALK) and automated register of real owners (ALB)

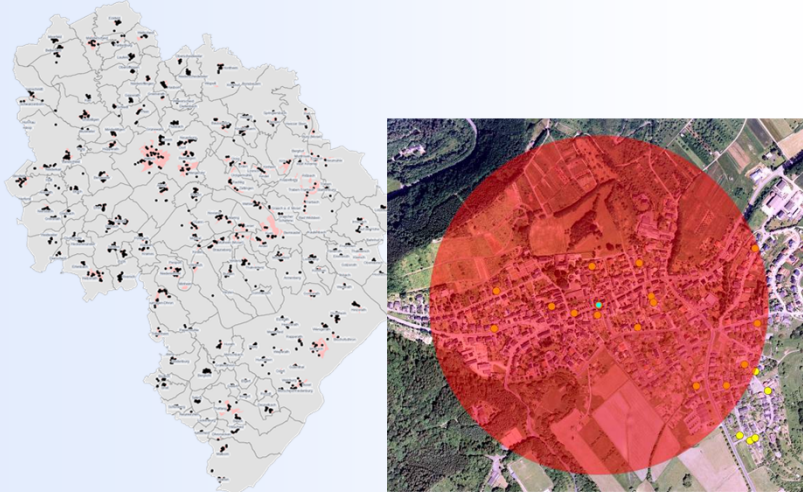
Source: County administration of Bernkastel-Wittlich



Applications in the Health Department

Simulation of avian influenza case and resulting possibly affected locations

Source: County administration of Bernkastel-Wittlich



Applications in the Planning Department

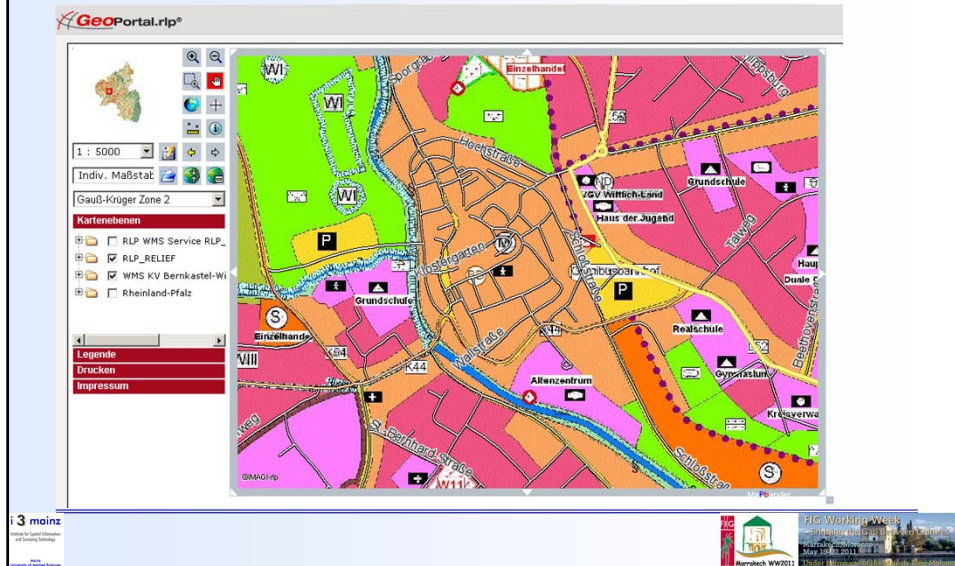
Examination of potential locations for wind power stations

Source: County administration of Bernkastel-Wittlich



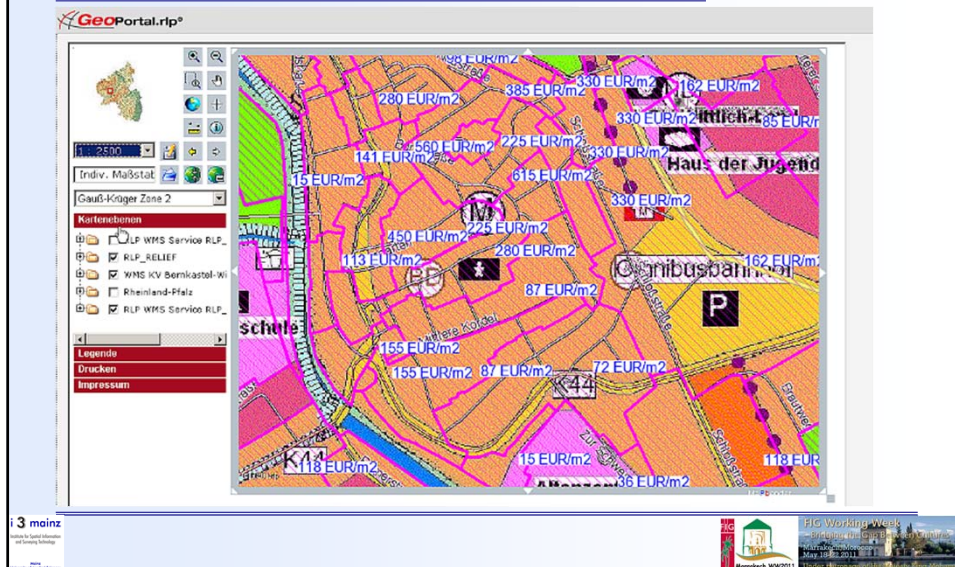
Integration of commune SDI into GDI-RP federal state SDI

Preparatory land-use plan within federal Rheinland-Pfalz state SDI provided by county administration
Source: <http://www.geoportal.rlp.de/>



Integration of commune SDI into GDI-RP Federal State SDI

Provision of preparatory land-use plan and land values within federal state SDI
Source: <http://www.geoportal.rlp.de/>



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Conclusions and further work

- SDI implementation at all levels enables to fulfil many basic needs of citizens and public administration by providing many basic spatial data in needed formats
- Careful SDI design and implementation at the local level is indispensable for establishing a working SDI at all higher levels
- Consideration of standards, mainly those defined by OGC makes it possible to integrate local SDI bricks smoothly into an overall SDI
- Many questions concerning semantic interoperability, metadata specification and maintenance not yet answered in a sufficient way