



E-Government, e-Services related to Cadastre in Germany

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Content of this presentation

Brief introduction of my person

**Two bricks for building an e-government infrastructure
related to geoinformation in Germany:**

- 1. The National Database for reference data
- Data modelling issues**
- 2. Geo Web Services for e-government applications**



Personal Background

- Member of the DVW Working Group on geoinformation
 - Delegate to FIG Com 7
- Head of the SDI office in Bavaria
 - Establishment of a SDI in Bavaria
- Head of the project team “SDI Standards” of the AdV
 - Responsible for developing and maintenance of the new integrated cadastre model ALKIS
- Representative of the AdV to the OpenGeospatial Consortium (OGC)
 - AdV becomes a technical member of OGC
- Head of the German delegation to ISO/TC 211
- Member of the Drafting Team “Data Specification” at INSPIRE



Current situation in Europe

Data policy restrictions

- pricing, copyright, access rights

Lack of co-ordination

- across borders
- between levels of government

Lack of standards and interoperability

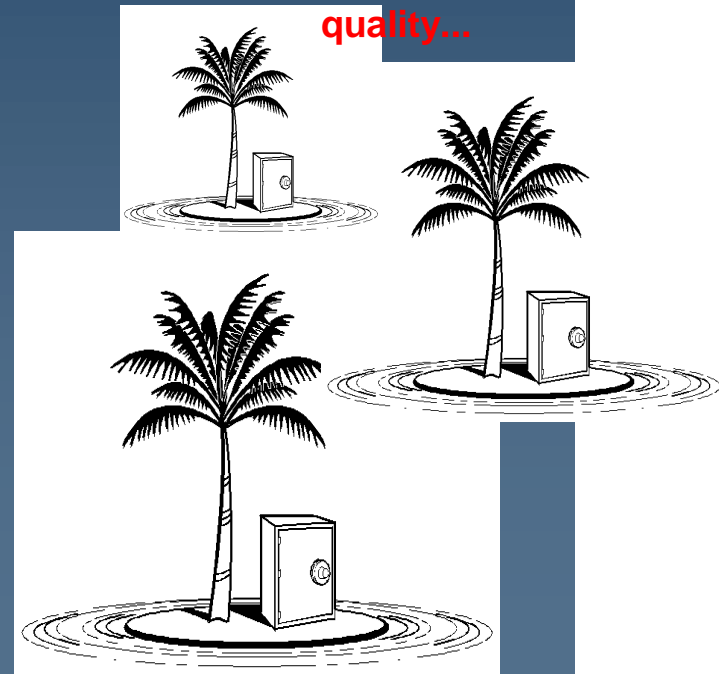
- incompatible data formats
- incompatible information systems
- fragmented information
- missing information

Lack of

efficient e-government applications
we have to get rid of these problems

No spatial data infrastructure

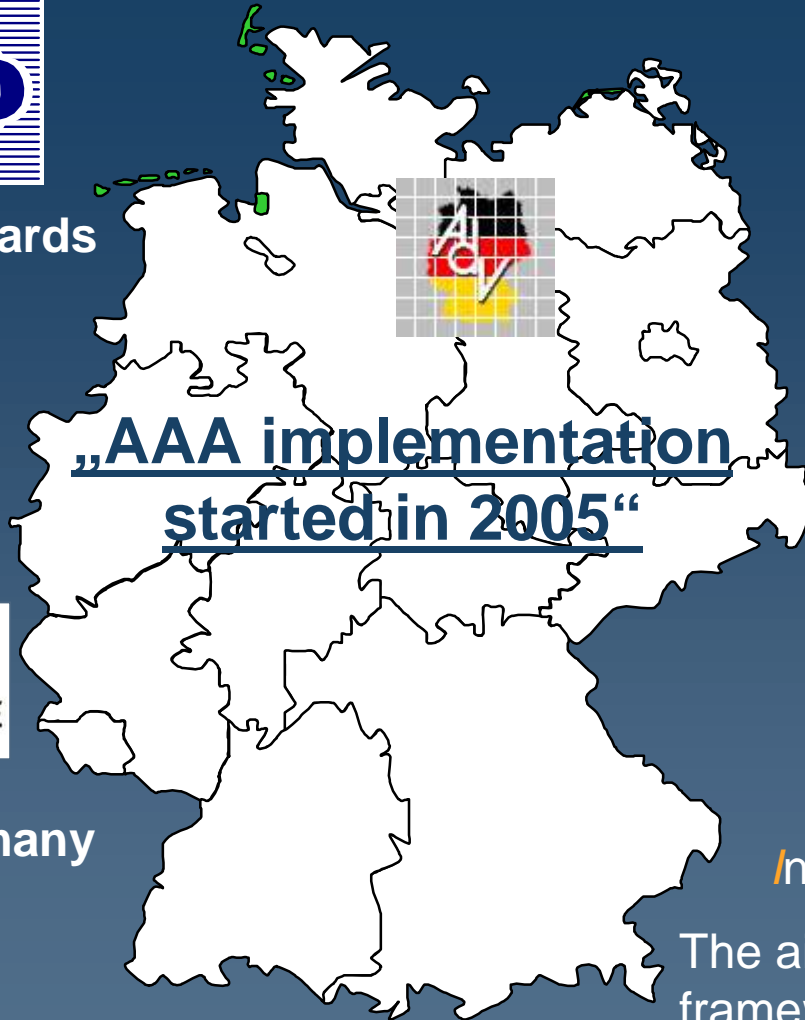
EU has islands of data of different standards and quality...



Framework for E-services



GI-standards



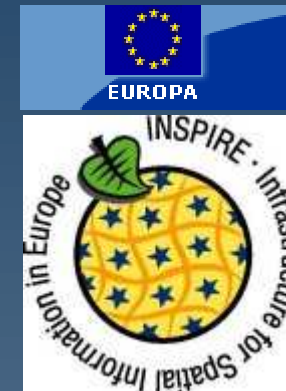
„AAA implementation started in 2005“



SDI Germany



GI-specifications



*IN*frastructure for *SP*atial
*Info*Rmation in *EU*rope *INSPIRE*

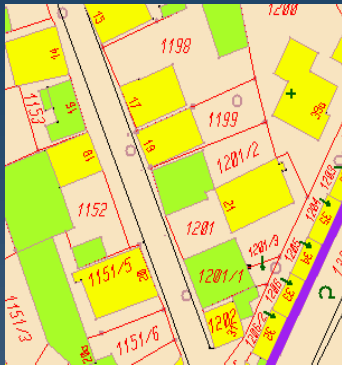
The aim is the a harmonised framework directive for implementation of a European spatial data infrastructure (ESDI)



The National Geodatabase – Reference Data

ALK

Automated Real Estate Map

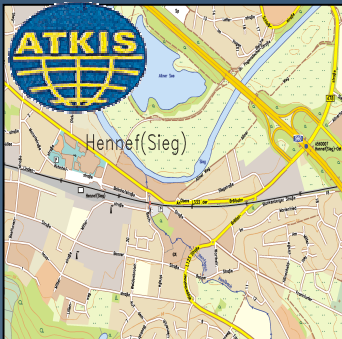


ALB

Automated Real Estate Register

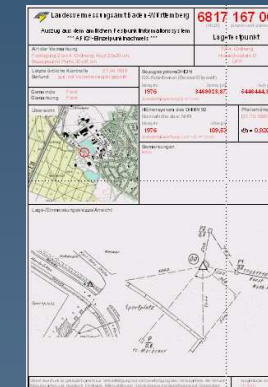


AFIS-ALKIS-ATKIS Application Schema



ATKIS

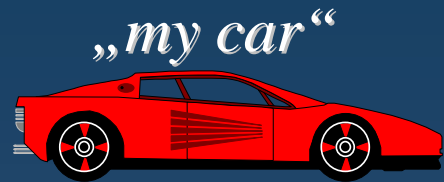
Official Topographic and Cartographic Information System



Geodetic Reference Points



Data modelling: Data and Information



send:

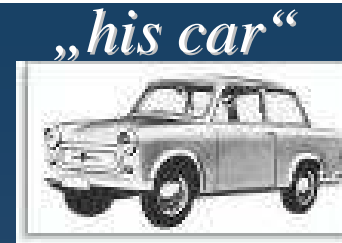
Information



(formalising)



data



receive:

Information



(reconstruction)



data

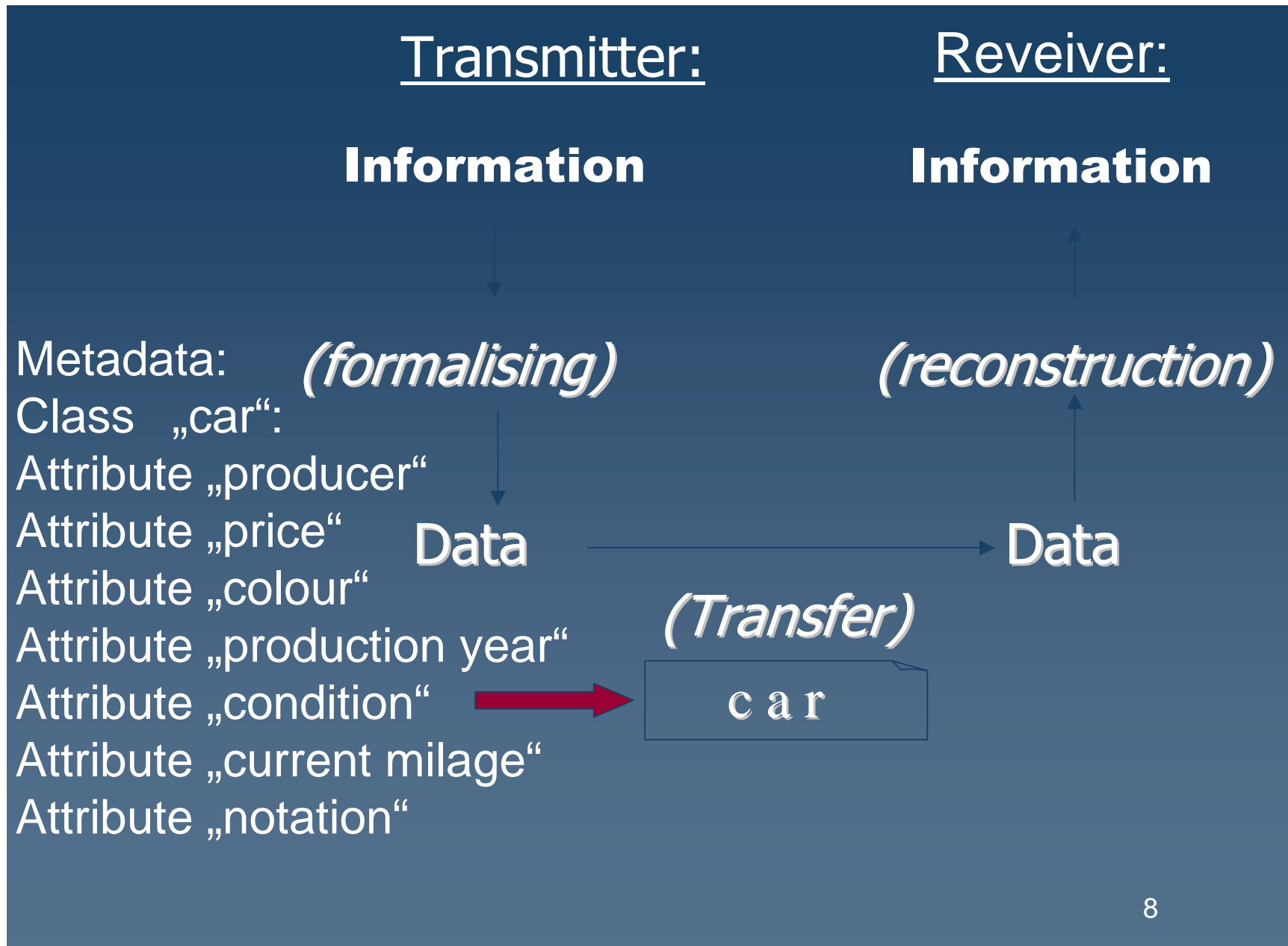


(Transfer)

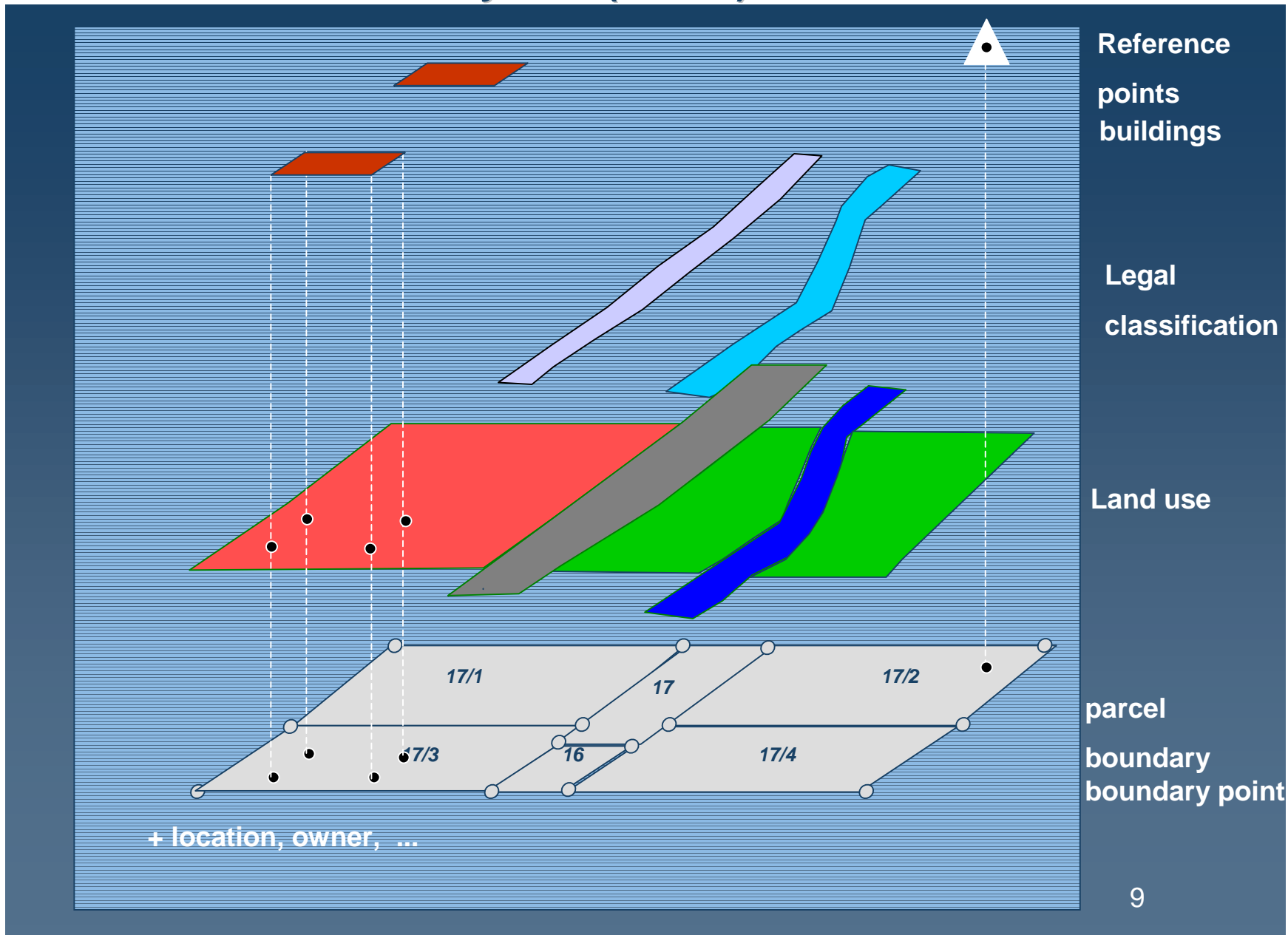




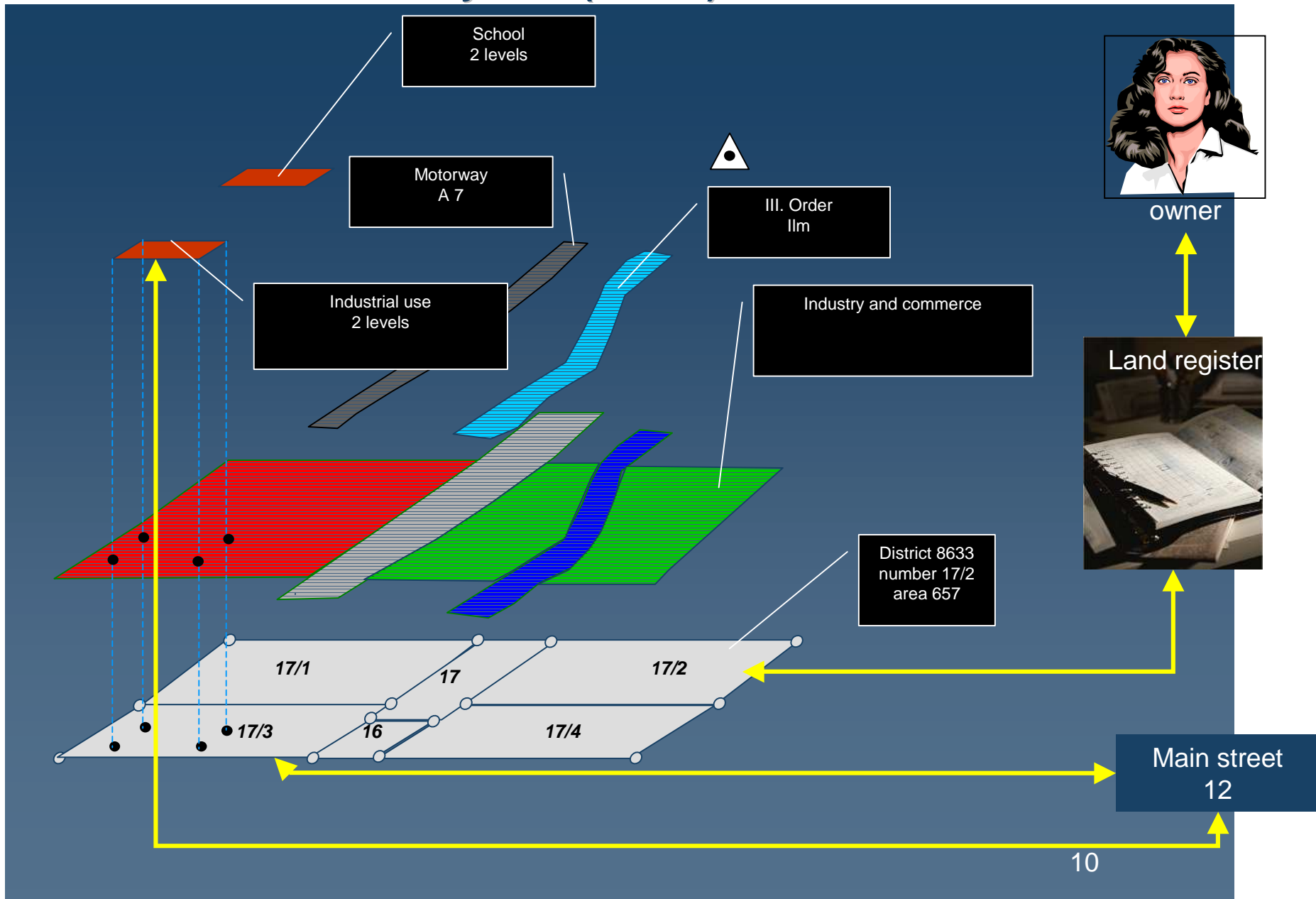
Data modelling: Data and Information



Content of the new cadastre information system (ALKIS)

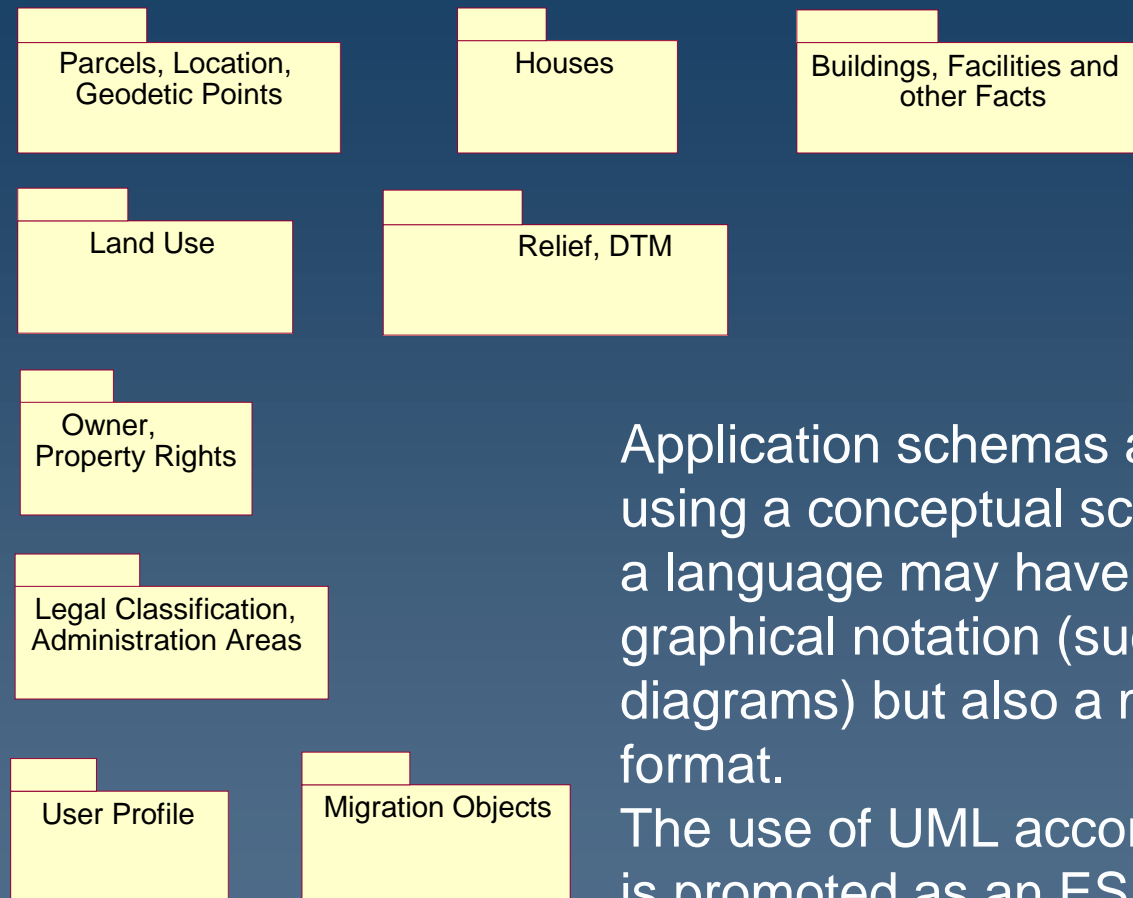


Content of the new cadastre information system (ALKIS)





Unified Modelling Language (UML)



Application schemas are documented by using a conceptual schema language. Such a language may have a well defined graphical notation (such as UML for class diagrams) but also a machine-readable format.

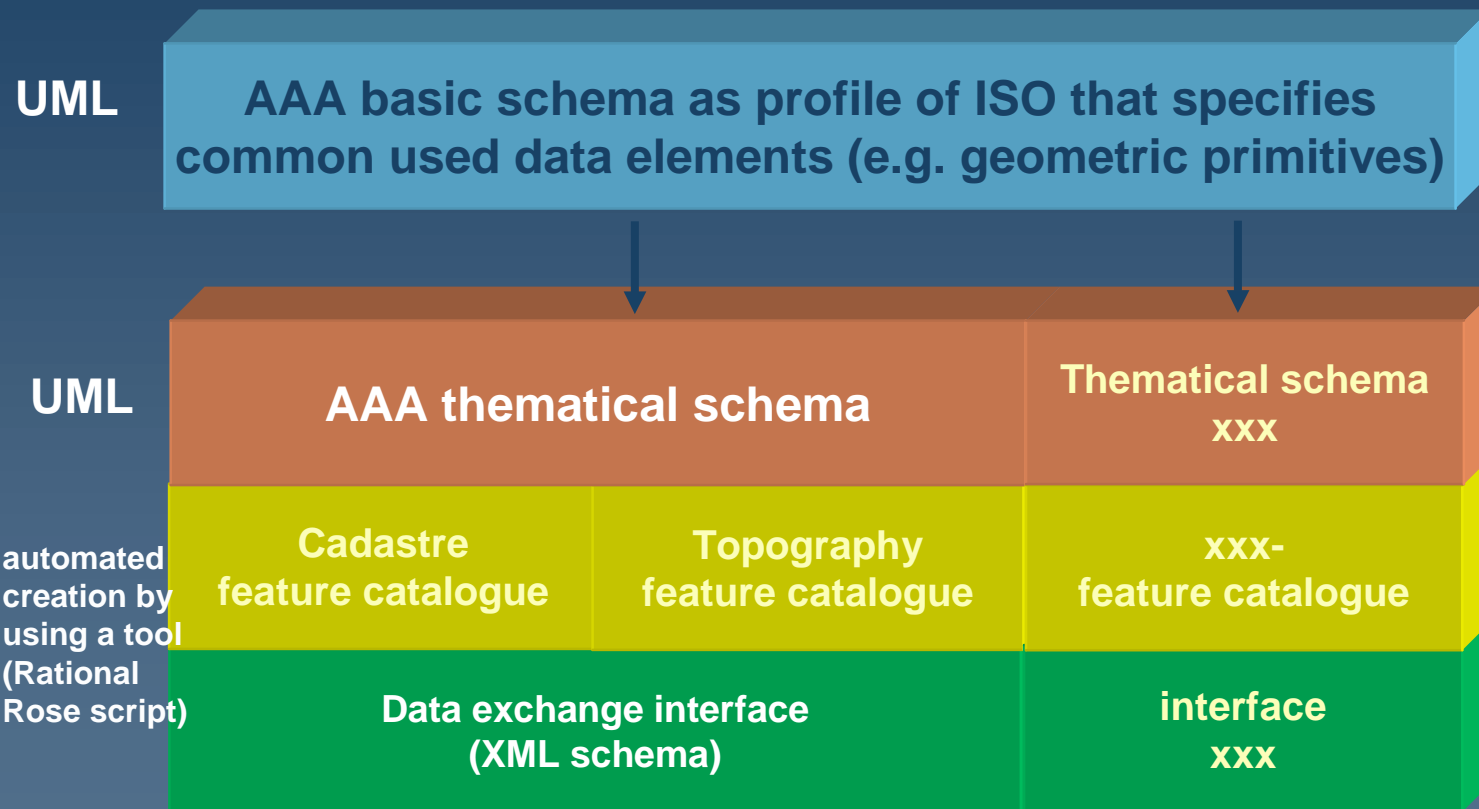
The use of UML according to ISO/TS 19103 is promoted as an ESDI conceptual schema language.



Generic Structure of the AAA data model

Components of the AAA data model

Aim: National geodata base



Data modelling

as a basis for a SDI



- A simple overlaying of maps in the internet does not need an object-oriented data model but sufficient search and presentation functionalities (web map services)
- In future the requirements for geo-information will increase, that means geoinformation must be (automatically) readable



- SDI Requirements

- Standardised and readable description of the digital content using a data model
- Internet services that can handle geoinformation in the internet (search, find, interpret, process, transfer und present → web feature services)
- A spatial data infrastructure therefore needs web functionalities as well as standardised data models for describing all geoinformation (reference data and thematic)

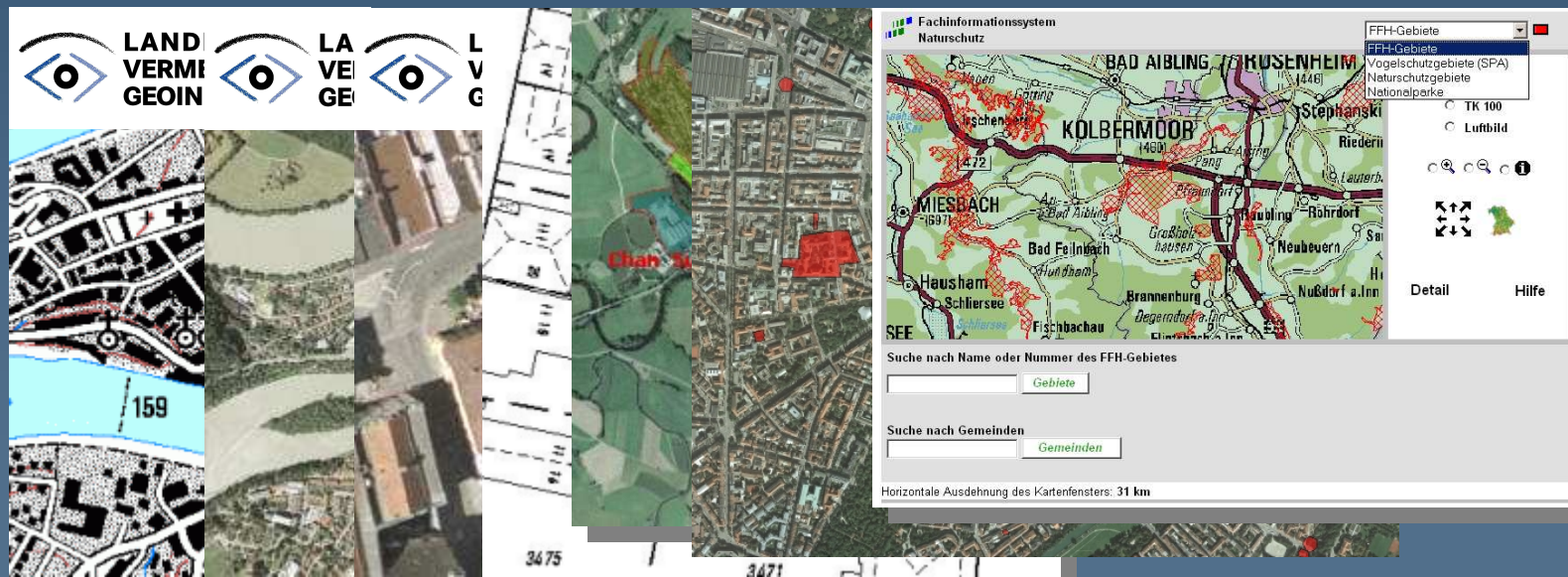


- All web services are implemented under consideration of the activities of SDI-Germany
- AdV defined a profile of the Web Map Server specification, determine some further definitions to fill degrees of freedom, e.g:
 - CRS
 - Raster format
 - etc.
- A WFS-G (Gazetteer service) is implemented for providing coordinates for buildings
- A catalogue service for discovering and harvesting metadata will be implemented based on ebRIM or CSW DE profile
- For operational implementation of the SDI Germany a registry (for CRS etc.) will be applied
- For examples see www.gdi.bayern.de



OGC Web Map Service (WMS)

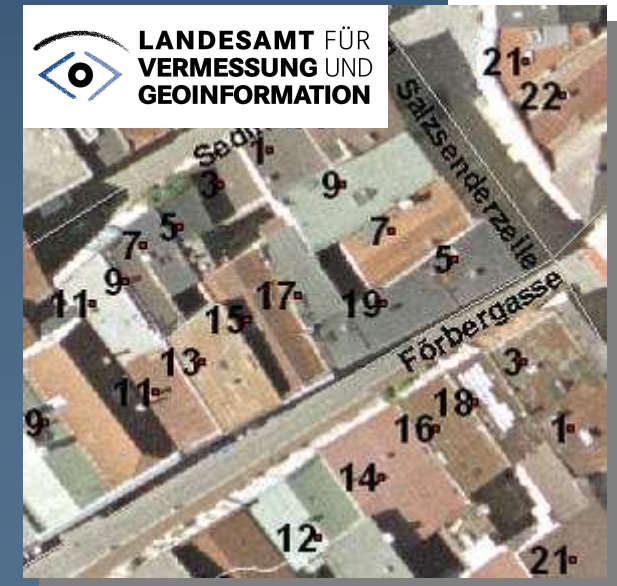
- Request of digital maps in raster format (PNG, GIF, TIFF, JPEG) coming from separated digital geographic databases
- Displaying with a web viewer (web browser or GIS)
- Precondition: georeferencing, metadata, URL
- Functionalities: GetCapabilities, GetMap, GetFeatureInfo





OGC Web Feature Service (WFS)

- Request to geo resources in vector format (attributes and geometry)
- Displaying with a web viewer (web browser or GIS)
- Precondition: Georeferencing, metadata, URL
- Functionalities: GetCapabilities, DescribeFeatureType, GetFeature
- Extension: Transaction-WFS (read only and update)



Online Presentation



Geo web services:

www.gdi.bayern.de

E-services related on cadastre:

www.geoportal.bayern.de



- **The AAA data model with the basic schema offers a thematic-independent and generic model framework that can be a baseline for modelling of other thematic domain data models. That will help to standardise the geoinformation in Germany.**
- **A SDI for geoinformation (not just geodata) needs an exact and transparent definition of the sharable data. Therefore the same methodology as defined with the AAA data model can be used. Doing this a national geo database can be established.**
- **The AdV offers support by using the UML tools for defining the data model and deriving the data exchange interface. Specific guidelines have been published on the AdV home page. The AdV guaranties maintenance at least until 2012.**
- **The success of the AAA data model bases on the consequent use of international GI standards from ISO.**
- **Geoservices will help to provide cadastral information and can be integrated within variable applications of e-government solution.**



Thank you