

Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland

Cadastre for the 21st Century – The German Way

by
Dr.-Ing. Winfried Hawerk
Chair of AdV Working Group Cadastre

Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland

Cadastre 2014 in Germany



- 6 statements for a vision
- World wide accepted
- Status in Germany
- New visions ?
- New trends ?


Cadastre for the 21st Century - the German Way 2

Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland

Cadastre and NSDI (GDI-DE)

Statement 1 on Cadastre 2014

Cadastre 2014 will show the complete legal situation of land, including public rights and restrictions!



Comment: The population of the world is growing. The consumption of land is increasing. The absolute control of the individual or of legal entities of land is increasingly being restricted by public interest. To provide security of the land forever, all facts about land must be made obvious by the cadastral system of the future.

Consequences: A new format is needed in necessary. Statements must take into consideration public law.

Cadastre for the 21st Century - the German Way 3

Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland

Cadastre and NSDI (GDI-DE)

- Idea was designed by AdV 30 years ago
 - Integrated real estate data base
 - Technical problems
- Technical solution in NSDI (GDI-DE)
 - Geo-portals on a federal, regional and communal level
- Co-operation with public and private companies (e.g. utilities), public registers, planning authorities etc.
 - Ownership of data
 - Responsibility
 - Standards
 - Guarantee for completeness of information
 - pricing

Cadastre for the 21st Century - the German Way 4

Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland

Cadastre and NSDI (GDI-DE)

- Cadastre is a key element in GDI-DE
- Cadastral services in E-Government
 - Extracts of cadastral documents via internet
 - Submission of survey documents via internet
- E-Land Administration is more a political and organisational task than a technical problem

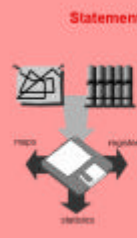
Cadastre for the 21st Century - the German Way 5

Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland

Cadastre and Land Registry

Statement 2 on Cadastre 2014

The separation between 'maps' and 'registers' will be abolished!



Comment: The separation was necessary because the available technology – paper and pencil – did not allow other solutions.

Consequences: The division of responsibilities between survey and cadastre in the domain of cadastre will be seriously changed.

Cadastre for the 21st Century - the German Way 6

Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland

Cadastral maps and records

- Digital Cadastral Records (ALB)
 - Development 70s
 - 100 % coverage
- Digital Cadastral Maps (ALK)
 - Development 80s
 - nearly completed
- ALKIS is new standard in Germany
 - ALKIS = ALB + ALK
 - Will be realised in near future

7


Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland

Cadastré and Land Registry

- Split system since more than 100 years
 - Cadastre ? de facto situation
 - Land Register ? legal situation
- Political activities on state and federal level
- Technical solution possible by 2014
 - ALKIS
 - Redesign of digital land register
 - Agreement on a common interface
 - Internet-based integrated information system

8

Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland



Statement 3 on Cadastre 2014

Cadastral mapping will be dead! Long live modelling!


Comment: Maps have always been models, but the available technology did not allow for the use of these models in a flexible manner. So in mapping flexibility had to be brought in by different scales. Different scales had to be represented by different data models.

Modern technology allows the creation of maps of different scales and registers in different forms from the same data model.

Consequences: In 2014 there will be no draftsmen and cartographers in the domain of cadastre.

9

Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland

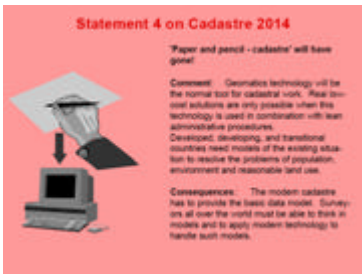


- New standard developed by AdV
 - For the integrated cadastral information system
 - For the topographical information system
 - Holistic approach for control point, cadastral and topographical information
- Based on ISO and OGC standards
- Standardised user interface NAS
- Documented by AdV in GeoInfoDok
 - Main document available in English
 - www.adv-online.de ? publications ? AFIS-ALKIS-ATKIS project ? GeoInfoDok

10

Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland

ALKIS Data and Processes



Statement 4 on Cadastre 2014

"Paper and pencil - cadastre" will have gone!

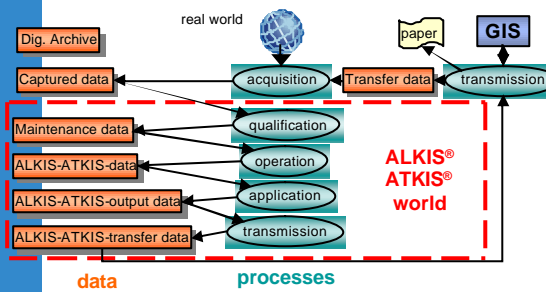
Comment: Geomatics technology will be the normal tool for cadastral work. Real-world solutions are only possible when this technology is used in combination with lean administrative procedures. Developed, developing, and transitional countries need models of the existing situation to resolve the problems of population, environment and responsible land use.

Consequences: The modern cadastre has to provide the basic data model. Surveyors all over the world must be able to think in models and to apply modern technology to handle such models.

11

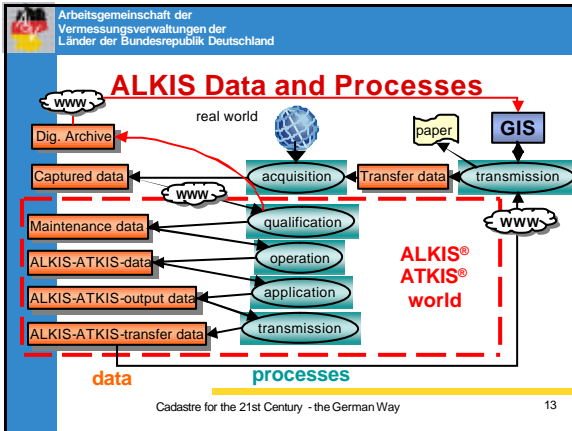
Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland

ALKIS Data and Processes



The diagram illustrates the flow of data and processes in the ALKIS® world. It shows a cycle between the real world and the ALKIS® world. In the real world, data is captured from a digital archive and transferred to the ALKIS® world. The ALKIS® world consists of several processes: acquisition, qualification, operation, application, and transmission. These processes generate data that is then transferred back to the real world. The ALKIS® world is also connected to a GIS and a paper-based system.

12



- Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland
- ## Workflow in Cadastre
- ALB and ALK available ? digital environment exists
 - Migration to ALKIS
 - Establishment of digital archives
 - Introduction of ETRS89 and UTM in Cadastre
 - Data capture software in ALKIS structures will be available
 - E-Government programs for E-Cadastre
 - Digital archives
 - Internet access to data
 - Electronic submission
- Cadastre for the 21st Century - the German Way 14

Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland

Public and private sector

Statement 5 on Cadastre 2014

Cadastre 2014 will be highly privatized! Public and private sector are working closely together!

Comment: Public systems tend to be less flexible and customer oriented than those of private organizations. Free economies demand flexibility in land markets, land planning and land utilization. Flexibility may be provided better by private institutions. For necessary security, however, public involvement is indispensable.

Consequences: The private sector will gain in importance. The public sector will concentrate on supervision and control.

Cadastre for the 21st Century - the German Way 15

Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland

Public and private sector

Statement 6 on Cadastre 2014

Cadastre 2014 will be cost recovering!

Comment: Cadastral systems need considerable investment. But the land documented and secured by the cadastre represents a multiple of the investment. The investment and operator costs have to be paid back at least partially by those who profit.

Consequences: Cost/benefit analyses will be a very important aspect of cadastre reform and implementation. Surveyors will have to deal more with economic questions in future.

Cadastre for the 21st Century - the German Way 16

- Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland
- ## Public and private sector
- Private licensed surveyors play important role in the cadastral procedures
 - Political pressure on public sector
 - Cost recovery in the public sector is a political issue
 - Service fees allow cost recovery
 - Maintenance of cadastre and public tasks without income for the cadastral authorities are covered by the budget
- Cadastre for the 21st Century - the German Way 17

- Arbeitsgemeinschaft der Vermessungsverwaltungen der Länder der Bundesrepublik Deutschland
- ## German Cadastre will be fit for 2014 !
- Migration to ALKIS
 - Establishment of a unique data set throughout the entire Republic
 - Contents have to be up to date
 - Introduction of ETRS89
 - Digital archives
 - Fine tuning of workflow in co-operation with the private sector
 - Establishment of E-Government processes
- Author will retire in 2015 !**
- Cadastre for the 21st Century - the German Way 18