National Report 2009/2010

Arbeitsgemeinschaft der Vermessungsverwaltungen
der Länder der Bundesrepublik Deutschland

AMTLICHES DEUTSCHES VERMESSUNGSWESEN

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The present activity report impressively shows once again the work focuses which the member authorities of the AdV have involved themselves with during the reporting period. It documents the complex range of tasks of the official surveying and mapping and explains the challenges placed on the federal states and the federal government of Germany in federally structured surveying and geoinformation. The AdV faces these challenges in order to regulate technical issues of basic and national importance in a standardised way.

For example, it could be counted as a success of recent years that common tastes are performed in some fields of the official surveying and mapping according to one of the principles ("one or some for all") of the Federalism Commission. Agreements between the federal states about the establishment of a central agency for the provision of satellite positioning data, the transfer and licencing of house coordinates including house outlines and jointly with the federal government about the provision of digital geotopographical and cartographic data of the surveying and mapping authorities of the federal states have existed for some years. The system is implemented.

One perception from the experiences gained there was that this form of cooperation could also be successfully implemented in other areas. The AdV has looked for a way to this and has tackled it with the „Administrative Agreement about the Cooperation in Official Surveying and Mapping" plan. The fundamental concept here is the separation of the tasks of the AdV into administrative and operational parts.

The bodies of the AdV should continue to establish the strategy for the official surveying and mapping in the existing combination of the working groups and the plenum.

However, the future operative implementation of the strategic decisions should be moderated in the future by a „Geospatial Steering Committee". The produced draft of the administrative agreement about the cooperation in the official German surveying and mapping pursues the objective of further improving the operative implementation of the strategies agreed in the AdV and further optimising the collaboration throughout Germany. Furthermore, it should be ensured by the administrative agreement that the geospatial reference data are available standardised in the required quality to all users. The administrative agreement represents a solid, legally binding and sustainable basis which takes account of the legally anchored responsibility of the federal states and contributes to a further development of the infrastructure of the federal states and thus also grants significant impulses to the Germany economy.

The conference of the interior ministers of the federal states and the federal government (IMK) took note of the draft of this administrative agreement at its meeting of May 27/28, 2010, and recommended the federal states to conclude this. A significant milestone for the future work of the AdV is achieved with this. After signature of the administrative agreement by the federal states, the Geobasis Steering Committee can be constituted and take up its work. It can be reported in more detail in the next activity report if the planned time frame is to be observed. For today, I wish you stimulating and informative reading about the work of the AdV in the years 2009 and 2010.

Wolfgang Draken
President of AdV

1. Organisation and Performance of Tasks

In the Federal Republic of Germany, the federal states are responsible for the performance of the tasks in the official surveying and mapping. Since 1948, the specialist authorities of the federal states and the Federal Ministries of the Interior, Defence as well as for Traffic, Construction and City Development responsible for official surveying and mapping have been cooperating in the Working Committee of the Surveying Authorities of the States of the Federal Republic of Germany (AdV) in order to handle technical issues of fundamental and national importance. The German Geodetic Commission (DGK) as representative of geodetic education and research and the Bund-Laender Task Force Rural Development (ArgeLandentwicklung) as government-state representation for rural development have guest status in the AdV.

Surveying, mapping and cadastral authorities of the federal states

In most federal states, the specialist authorities responsible for surveying and mapping, real estate cadastre and geoinformation are assigned to the Ministry of the Interior of the respective state. They have a two or three-level administrative structure. The respective state survey authorities are responsible for the realisation of a standardised spatial reference system and the management of topographical geospatial reference data. At the regional level, the surveying. mapping and cadastral authorities are responsible for the collection, management and provision of the real estate cadastre information. In the course of the administration reform, some federal states have merged their state survey and their surveying, mapping and cadastral authorities into an integrated geoinformation authority and are making use of the synergy effects produced from this.

The original range of services provided by the surveying, mapping and cadastral authorities includes:

- the area-wide provision of spatial reference data via reference networks in the Authoritative Control Point Information System (AFIS®), consisting on the one hand of terrestrial control points and their proof and on the other hand based on the satellite supported positioning service SA*POS*®,
- the storage of an area-wide image of the Earth surface using geotopographical products in the Authoritative Topographic-Cartographic Information System – (ATKIS®) using landscape and terrain models, the official topographical state maps and the aerial photographs,

- the area-wide digital proof of buildings and approx. 64 million land parcels in the official real estate cadastre for ownership rights in the land register (currently using the method of the automated real estate map – ALK and the automated real estate register – ALB, in the future with the Authoritative Real Estate Cadastre Information System – ALKIS®) and
- the integration of the real estate cadastre and state survey in a geospatial reference data system.

Federal Agency for Cartography and Geodesy

Bundesamt für Kartographie und Geodäsie

The Federal Agency for Cartography and Geodesy (BKG) is a federal authority responsible to the Federal Ministry of the Interior. In cooperation with the federal states, the BKG fulfils the following tasks in the field of geographic information and geodesy:

- provision and representation of current analogue and digital topographic-cartographic information as well as the advancement of the procedures and methods required for this purpose,
- provision and updating of the geodetic reference networks of the Federal Republic of Germany including the required,
- services pertaining to surveying and mapping as well as the theoretical services for the acquisition and processing of measured data and the participation in bi-lateral and multi-lateral work for determining and updating global reference systems,
- advancement of the implemented measuring and observation technology and
- representation of the interests of the Federal Republic of Germany in the field of geodesy and geoinformation on an international level.

The Bundeswehr Geoinformation Service

The task of the Bundeswehr Geoinformation Office (BGIO) is to merge all geosciences relevant to the Bundeswehr (geodesy, geography, geology, remote sensing, cartography, geoinformatics, meteorology, climatology, ecology, biology), so that under the slogan “Geoinformation from one source” the geoscientific basis for deployment of the armed forces can be created and the fulfilment of all spatial reference tasks of the Bundeswehr can be guaranteed. The BGIO closely cooperates with the state survey authorities and other federal authorities.

Federal Ministry for Transport, Construction and City Development

WSV.de
Wasser- und Schifffahrtsverwaltung des Bundes

The Federal Ministry for Transport, Construction and City Development (BMVBS) has been a member of the AdV since 1950. It has assigned the Federal Water and Shipping Authority, of the Federal Government as a specialist authority, which employs its own surveying personnel, to the operation and maintenance of the federal waterways stretching over 7,300 km. The surveying and real estate division has approx. 450 employees. Official surveying and mapping tasks are carried out throughout Germany which require close consultation with the AdV. The Federal Water and Shipping Authority maintains its own reference network (position and height control points) and is a constant user of the SA*POS*® services. For the waterway

network, a digital map system (1:2 000) is created and updated, the contents of which are used for advancement of the ATKIS® basic DLM. The BMVBS is represented in the AdV by the waterways and shipping division.

Organisation of the AdV

The following graphic (Fig. 1) shows the organisation of the AdV. Its organs are the President and the Plenum. The AdV is supported by the working groups, the Task Force PRM and the management.

Objectives and tasks of the AdV

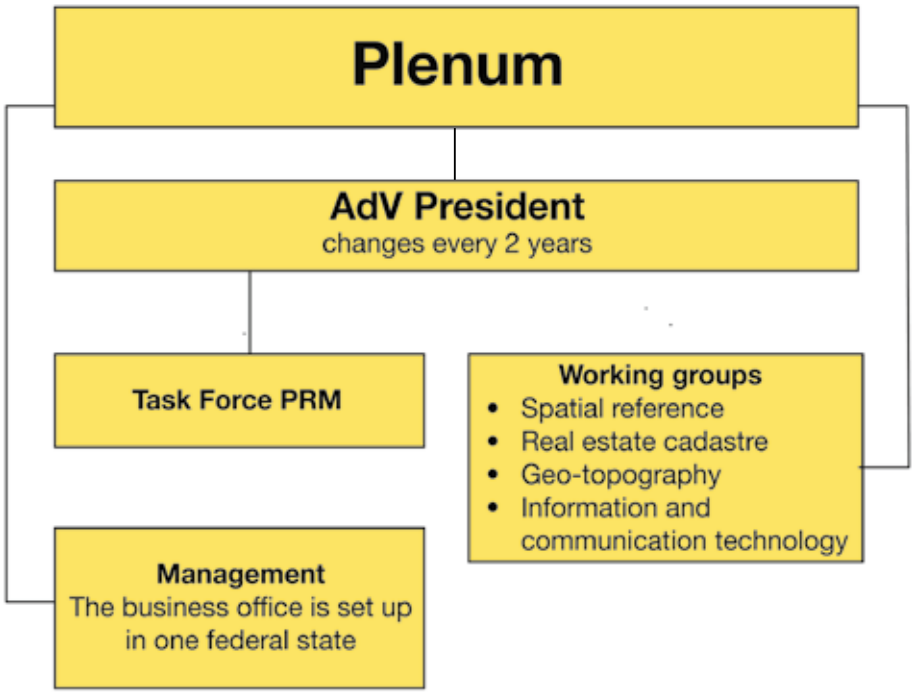

Fig. 1: Organisation of the AdV

The member authorities collaborate in the AdV

- to regulate technical matters of basic and national importance for the official surveying and mapping in a standardised way,
- to create a stock of standardised fundamental geospatial reference data oriented to the requirements of the information society and
- to provide the infrastructure for the geospatial reference data as an important component, particularly for modern eGovernment architectures.

In order to achieve these objectives, the AdV performs the following tasks:

- creation and agreement of future-oriented joint concepts for the national standardisation of real estate cadastre, state survey and the geospatial reference data information system according to the needs of politics, economy and administration,
- advancement of the common execution of nationwide important plans,
- moderation and coordination of the standardisation for the recording and management of the geospatial reference data and the access and sales methods,
- support of the structure and further development of the national and European spatial data infrastructure and the corresponding electronic services,
- representation and presentation of the official surveying and mapping to the outside world,
- participation in international technical organisations for advancing the transfer of expertise,
- collaboration with subject-related organisations and authorities as well as geodetic research and education institutions and
- agreement for issues of technical training.

State	Inhabitants in thousands	Square kilometres	Cadastral parcels in thousands	Number of authorities		Licensed Surveyors ÖbVI
				State authorities	Regional authorities	
Baden-Württemberg	10,750	35,751	8,890	1	44	161
Bavaria	12,520	70,552	11,546	1	51	-
Berlin	3,416	892	387	1	12	46
Brandenburg	2,536	29,478	3,057	1	18	158
Bremen	663	405	206	1	1	6
Hamburg	1,771	755	244	1	-	9
Hessen	6,073	21,115	4,964	1	7	88
Mecklenburg-Western Pomerania	1,680	23,186	1,889	1	13	74
Lower Saxony	7,972	47,625	6,102	1	14	104
North Rhine-Westfalia	17,997	34,088	9,178	1	54	473
Rhineland-Palatinate	4,046	19,853	6,382	1	20	86
Saarland	1,037	2,570	1,302	1	-	11
Saxony	4,220	18,419	2,604	1	13	116
Saxony-Anhalt	2,412	20,448	2,625	1	-	57
Schleswig-Holstein	2,837	16,018	1,806	1	8	42
Thüringen	2,289	16,172	3,058	1	-	71
Germany total	82,218	357,327	64,540	16	255	1,502

Date: 31/12/2009
Fig. 2: Statistics

2. Spatial reference

With its global, regional and local reference systems and their realisation, the spatial reference forms the basis for standardised and related measurements and their representation in information systems. The connections to the global reference systems for the Germany territory are also provided by the BKG. With the SA*POS*® *reference frame DREF-Online, the linking of the* SA*POS*® *reference stations of the federal states via the GREF stations of the BKG to the international reference networks has been performed since 2009.*
At the national spatial reference level, the AdV is successfully continuing to work on the renovation of the German Height Reference System (DHHN). Precision levelling in the 1st order network and absolute gravity measurements were also carried out by the BKG in 2009. In the area of SA*POS*® *quality management, the* SA*POS*® *product definition has been updated based on numerous current technical developments. Information from the production operation of the networking centres has also been made available to the federal states in an internal portal.*

Connection to the global reference systems

An important cornerstone of the services of the International Association for Geodesy (IAG) is the Wettzell Geodetic Observatory of the BKG which has been in operation jointly with the Satellite Geodesy Research Facility (FESG) of the Munich Technical University for almost 40 years. The BKG also operates data and analysis centres for almost all geodetic spatial techniques and, since the year 2000, the central office of the International Earth Rotation and Reference System Service (IERS). The BKG is thus contributing to the global reference systems which are the basics, among other things, for the European and national position, height and gravity reference systems. Furthermore, modern observation and analysis approaches will be implemented at the national level in the course of the continuing development of geodetic technology.
The national geodetic reference network GREF consists of approx. 30 permanent stations of the Global Navigation Satellite System (GNSS) in Germany and neighbouring countries. In addition, a part of the stations belongs to the network of the global International GNSS Service (IGS network) and/or to the continental, European reference network “EUREF Permanent Network” (EPN). Most GREF stations have an Internet connection so that their observation data are available in real time. For this purpose, the BKG operates the – not freely accessible – NTRIP broadcaster www.gref-ip.de (broadcaster of the Network Transport of RTCM via Internet Protocol), on which the observations are stored both in raw data as well as in the standardised RTCM format. On two further NTRIP casters (www.igs-ip.net and www.euref-ip.net) data streams from more than 200 globally distributed IGS and EPN stations and some other GNSS permanent stations are provided.

Pseudo section cours corrections are calculated using a networking software application from a network solution for approx. 20 virtual stations even distributed over the Federal Republic of Germany which are already being provided in addition to the original observations via the World Wide Web in the NTRIP format. Furthermore, various networks since November 2006 have only been calculated using absolute antenna phase eccentricities (absolute PCV), e.g. a (sub)network of the EPN comprising approx. 110 stations. Individual antenna calibrations are taken into account if available. The networks are calculated daily using the precise satellite orbit and clock information and Earth rotation parameters of the IGS and merged into a weekly solution every seven days. Coordinates are provided in the IGS05 and ETRS89 systems as results. The extension of GREF also includes the combination of the geometric satellite positioning process with physical methods of height determination and/or gravity measurements. GREF thus complies with the IAG concept of the Global Geodetic Observing System (GGOS) which envisages linking the geometric with the gravimetric observations.

SA*POS*® reference frame DREF-Online

The DREF-Online station network, a combination of the GREF stations and some selected SA*POS*® stations (Fig. 3) were implemented as reference frame for the monitoring of the SA*POS*® station coordinates in routine operation. In the framework of a contract concluded with the state survey authorities for this, the BKG regularly performs DREF-Online evaluations which enable the realisation of the SA*POS*® reference system based on the diagnostic equalisation 2003 (ETRS89/DREF91) by transformation of the coordinates from the current calculation system into ETRS89/DREF91. Network solutions are calculated daily in the post-processing and provided as week combination coordinate time series.

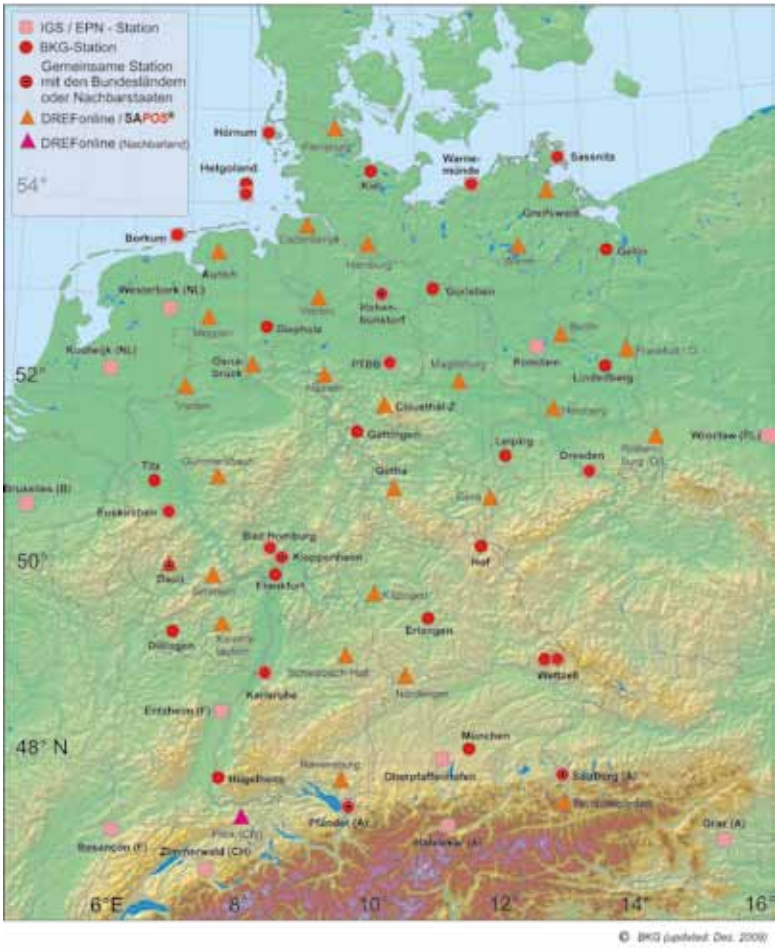

Fig. 3: Distribution of the DREF-Online stations

National geodetic spatial reference

The tasks of the geodetic spatial reference are coordinated in the Spatial Reference Working Group of the AdV. These are primarily national infrastructure-related tasks which are integrated in the context of international standardisation bodies.

One of the main tasks in this subject area is the renovation of the German Height Reference System (DHHN) which came into being in 1992 in the course of the German Reunification as DHHN92 and is currently being redefined in the epoch “2006 to 2011”. The objective of this nationally standardised project is the review of the official height reference system in order to discover height changes and stresses in the DHHN92 and to be able to make recommendations for the implementation of a new height status. The different data which the federal states and the BKG measure during the project duration (see Fig. 3) should also be used for the modelling of a new German quasi geoid in order to further improve the necessary foundations of the satellite-supported official heights determination.

The high temporal and qualitative standardisation of the measurements resulted in the Spatial Reference Working Group considering using the data and results of this renovation project as the basis for the realisation of an epoch of the integrated spatial reference which is formed in the course of the restructuring of the nationally standardised geodetic control framework using the geodetic reference network points (GGP), the points of the DHHN and the German Primary Gravity Network (DHSN) and the reference station points of the SA*POS*® network.

The measurement on 250 defined and marked GNSS observation points (ground marks) which have been classified in the course of the establishment of the geodetic land network as GGP was carried out using a nationwide satellite-supported measuring campaign of several weeks. A part of approx. 50 % of the designed fixed control point framework of the GGP in the course of the GNSS measurements for the renovation of the DHHN was created with this in 2008. As the GGPs, due to their very good quality and reliability, guarantee long term high availability of the spatial reference as physical assurance system, the further establishment of the remaining GGPs by the federal states should be performed quickly.

Absolute gravity measurements are carried out by the BKG on 100 of the 250 GGPs setup in the course of the renovation of the DHHN (see Fig. 4). Of these, 53 points were determined in 2009 in accordance with the project planning; the remaining 47 points will be observed by Summer 2010. The campaigns carried out include control measurements at the Bad Homburg reference station at the beginning and end of the campaigns as well as the regular check of the laser and atomic clock instrument standards. Furthermore, supplementary absolute gravity measurements on GGP will be performed in many federal states so that new absolute gravity values will be available in total for more than 150 points. The results will be available to the federal states shortly after the preparation by the BKG.

Fig. 4: Absolute gravimeter A-10 on GGP Wallenhorst, Lower Saxony

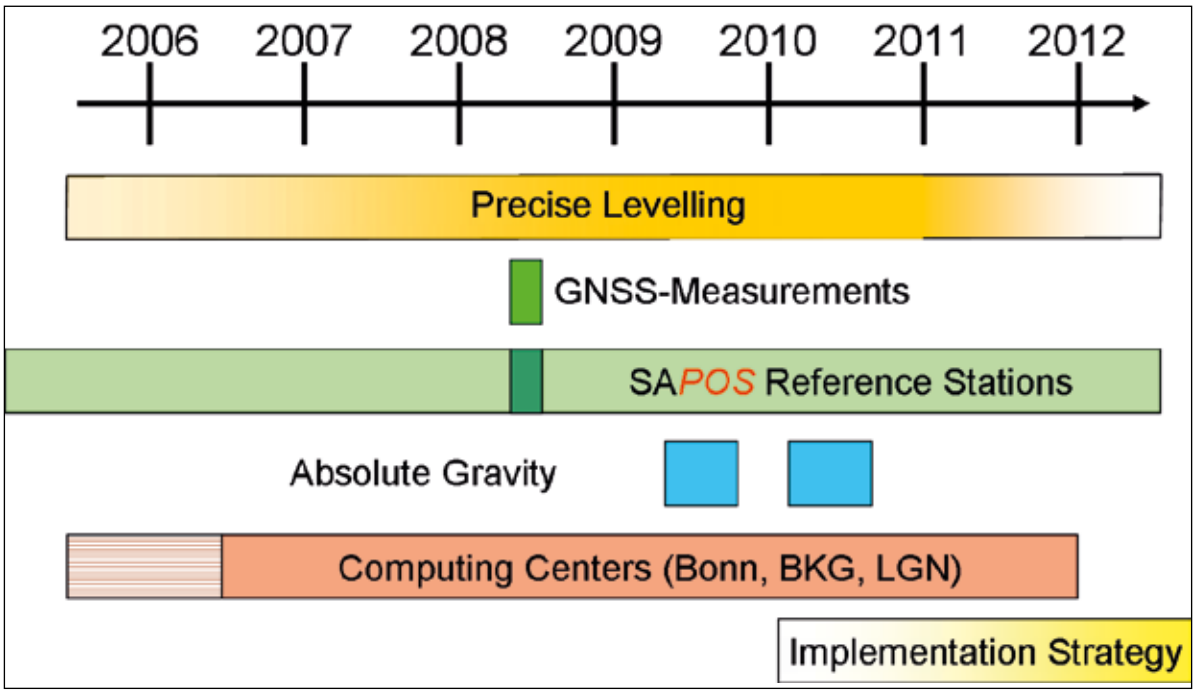

Fig. 5: Renovation of the German Height Reference System (DHHN) from 2006 to 2011 – Overview of the various measurement techniques and processing steps

Figure 5 shows a temporal overview of the complete renovation project. The GNSS measurements are completed and the absolute gravimeter measurements will be ended in 2010. The precision levelling measurements are on schedule and are based on planning made between 2003 and 2004. In addition to the levelling lines to be renovated, other optional lines were also planned by the federal states in the original concept. Analyses in the data centres (Bonn, BKG, LGN) which are based on the currently measured data and the initial agreements in the working group afterwards have resulted in the original network planning which was based on a separation into mandatory and optional lines being changed. The line network of the DHHN92 is now considered standardised in the renovation project in order to compensate for the numerous defects (height changes, stresses and point losses) in the levelling network as optimally as possible. The federal states are individually responsible for deciding about the measurement capacities which go beyond the original planning. The increased measurement effort is largely compensated for by internal federal state optimisation and results in scattered measurement conclusions in 2012 (date: February 2010).

Further work in the area of the **Geodetic Spatial Reference** has been carried out in the working group which concerned the checking of the usefulness of kinematic geodetic control frameworks and the effects of international coordinate realisations on ETRS89. These issues which are closely connected to the problem of the ground movements will be increasingly relevant in the course of the further increase of the accuracy and reliability of satellite-supported positioning.

If the individual segments of a global navigation system (GNSS) and a positioning service (as shown in Fig. 6) are considered, the SA*POS*® quality management (SA*POS*®-QM) includes all existing areas. These start with the status of the satellites and end with the satisfaction of the SA*POS*® user.

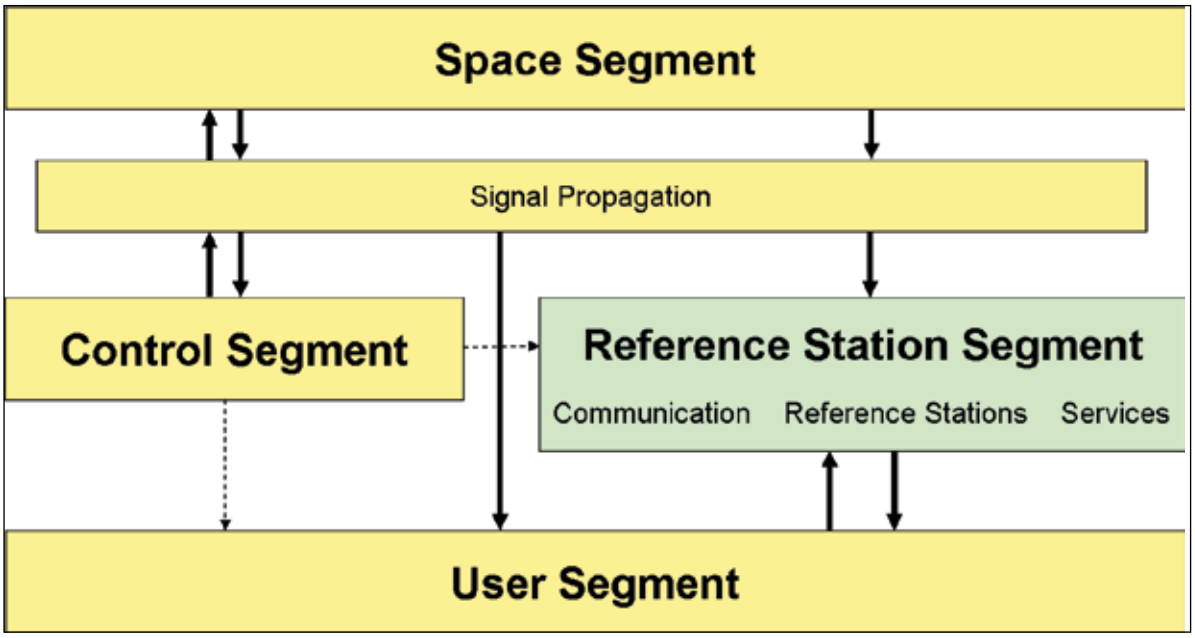

Fig. 6: Segments of a global navigation system and positioning service

A working group project team in the task area of the SA*POS*® QM is developing the partial aspect about the collection, management and internal provision of standardised quality information about the operation of SA*POS*® (operating status information). This control instrument is based on a standardised product understanding of the SA*POS*® services and processes. After an initial analysis of existing state-specific information by the project team, six areas were selected and prepared for statistical analysis. The core of this preliminary work is formed by the "Collection requirements for national SA*POS*® statistics" which forms a standardised handling basis for all federal states.

The various items of quality information highlight different aspects of SA*POS*®. Information about the quality of the reference stations (station environment, long term stability of the dish antenna and availability of the post-processing data), the data availability in the SA*POS*® central office and key figures about the quality of the HEPS service and the user resonance is merged. The federal states provide their information at defined status dates for standardisation and preparation. Afterwards, the standardised operating status information is provided to the federal states for internal purposes.

SA*POS*® QM is not a new development. The GPS Reference Stations expert group has already occupied itself intensively with this subject and prepared an initial internal QM manual in the year 2000. Special topics will be further developed in accordance with technical advances and are also based on a continuation of the product definition of SA*POS*®.

Another focus in the work of the working group is the implementation of the **Authoritative Control Point Information System (AFIS®)**. This concerns a complete migration of the spatial reference information to the new AFIS®-ALKIS®-ATKIS® basic schema. Even if this database is quantitatively very much smaller than that of the real estate cadastre, it forms the basis of the spatial reference systems of the federal states qualitatively. Due to regular changes of the Earth surface and the ground, the spatial reference must always be kept up to date and integrated in historical databases. This information source can be included at any time for the analysis of time-related changes, e.g. in the height geodetic control framework.

Many federal states are currently involved with the preliminary analysis of their spatial reference data (pre-migration) in order to prepare them for an error-free migration. The databases are examined for plausibility using AdV and internal federal state regulations and improved if necessary for this. The new software components which will be used productively in the future in the verification of the state survey must be examined with respect to their functionality. Furthermore, it must be ensured that the AFIS® products individual point verifications, point lists and point extracts must be able to be provided in line with the requirements and quickly using electronic media (Web Services).

In connection with the implementation of AFIS®-ALKIS®-ATKIS®, there is also the conversion to the new standardised reference system ETRS89 which should be implemented standardised nationally and across Europe or is already in use. The spatial reference data also form the necessary foundations here to migrate standardised geospatial reference data and geotechnical data using state-specific transformation approaches or the nationally applicable “BeTA 2007” approach.

3. Real estate cadastre, valuation of real property

In the real estate cadastre area, the activities of the AdV focus on the consolidation of the verifications of the real estate cadastre, the assured process development and maintenance of ALKIS® and in the provision of the data and products in accordance with the model. In this way, the constantly increasing requirement for nationally standardised contents and outputs of the real estate cadastre of the federal states is taken into account. This also applies to the presentation of the results of the valuation of real property which the AdV Real Estate Cadastre Working Group is promoting.

ALKIS® – Implementation

As the development of the ALKIS® model using the GeoInfoDok 6 status of the documentation for modelling the geoinformation of the official surveying and mapping (see www.adv-online.de / AAA®-Projekt) is basically considered as complete, the implementation phase is running at full speed in the federal states. Some North Rhine Westphalia cadastral offices and the federal states Hamburg and Hessen comprehensively are already running ALKIS® live; the other federal states will follow by 2013 (Fig. 7).

Fig. 7: Status of the ALKIS® implementation

So that the user, in addition to the knowledge for the modelling of ALKIS® can also gain an impression of the actually managed or planned ALKIS® core data and the state-specific data in the federal states, a synopsis has been published under www.adv-online/Liegenschaftskataster/Download. For each federal state this shows comprehensively for each federal state the content of all

- feature types with associated codes,
- attribute types / relation types and
- value types with associated values.

Product sheets are also published here which give the interested users a detailed overview of the real estate cadastre and value determination products including the provided standards currently available in the federal states.

ALKIS® – Model maintenance

Error management has been set up for the constant assurance of the ALKIS® model. Review requests of the federal states are collected for content modifications of the GeoInfoDok. The revisions are initially checked for technical feasibility. then agreed and recommended by the federal states from a technical point of view. The date for the implementation of new model versions is nationally standardised on decision of all federal states. This procedure should guarantee continuous ordered model maintenance and planning reliability in the federal states.

Fig. 8: Outline of the real estate cadastre (yellow, nationally available)

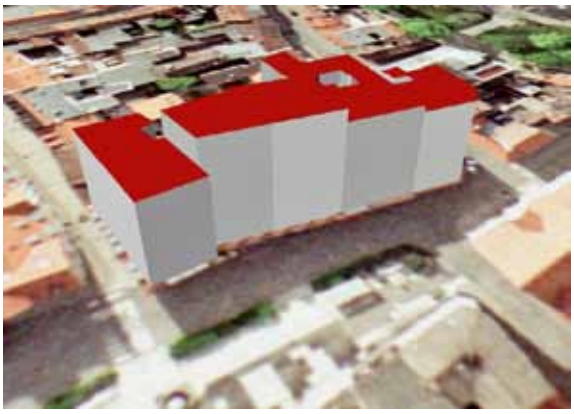

Fig. 9: Level of Detail – LoD 1 (block model from 2013)

Fig. 10: Level of Detail – LoD 2 (block model with standard roof shape, planned)

Digital Surface Models

The AdV has confirmed that a core task of the official surveying and mapping is the collection, modelling and verification of the buildings for the geotopographical survey and the management of the real estate cadastre and also belongs to „the third dimension“. Based on the existing representation in the real estate cadastre (Fig. 8), it will be striven for from the year 2013 to provide 3D building models in its first realisation phase as nationally standardised block models (Fig. 9). The second realisation phase as block model with standard roof shapes (Fig. 10) should be promised. The form of the modelling based on an AAA®-compliant 3D technical schema is in preparation. With this, the surveying and mapping authorities provide a further component of the official geo database which is particularly required for 3D city modelling and 3D projects such as, e.g. noise protection, solar potential analysis and radio network planning.

Networked Standard Ground Values Information System (VBORIS)

The technical realisation of the VBORIS (see www.gutachterausschuesse-online.de) concept decided by the AdV is proceeding. In doing so, requirements which came into force on July 1, 2009 with the amendment of the German building law are included. Comprehensive reference value zones will be required in the future. Together with the Federal Ministry for Transport, Construction and City Development, the AdV is developing a new draft for the adaptation of the design directive about standard ground values of the year 2000. Recommendations for the further development of VBORIS are also being produced.

Provision of nationally standardised data

The output of nationally standardised date and products is increasing in importance for the area of the real estate cadastre. There are currently contacts with the Federal Statistical Office, mainly for the interpretation and output form of the actual uses collected by the federal states. The form of the output from ALKIS® data in primary database which will be used for the existing structures documentation of the federal government in the outside facilities real estate information system LISA® is being discussed with the real estate management of the federal government. There are constant contacts to other potential customers via the Association for the Distribution of the House Coordinates and House Outlines.

Technical recommendations for the form and content are currently being developed for a standardised appearance of the products for the output via online services.

Agreement in the development of the IT land register

The collaboration in the further development of the technical processes for the data communication in the triangular relationship between ALKIS®, the State Development Technical Information System (LEFIS) and the IT land register has been intensified. The data transfer between ALKIS® and LEFIS via the Standards-based Data Exchange Interface (NAS) has been established for a considerable time. There is still development potential in the data communication with the land register. In the meantime, there is agreement that the data exchange between the IT land register and ALKIS® and LEFIS is performed in the NAS format using bidirectional conversion (NAS / NAS-LEFIS to the XJustiz interface on the land register side). Options for conversion of the data to XML structures are currently being discussed.

4. Geo-topography

Using the Authoritative Topographic-Cartographic Information System (ATKIS®), the state surveying and mapping authorities are managing the geospatial reference data describing the landscape in the Digital Landscape Models, Digital Terrain Models, Digital Topographic Maps and Digital Orthophotos product groups. Actuality in the sub-year area for important topographic objects and for the complete database with cyclical updates is guaranteed. The focuses are the update meeting the requirements of the data inventories taking account of the requirements from INSPIRE and the migration of ATKIS® to the AFIS®-ALKIS®-ATKIS® data model.

Digital Landscape Models

One of the core tasks of the surveying and mapping authorities is the establishment and the current management of the Digital Basic Landscape Model (Basic DLM) as geotopographical database for the establishment and management of different types of technical information systems in the administration and economy. The ATKIS® Basic DLM database is also the basis for the derivation of the small scale ATKIS® DLM50, DLM250 and DLM1000 digital landscape models and for the derivation of official digital topographic maps. A national database with more than 120 topographic objects is available for the ATKIS® Basic DLM.

The prerequisites have been created with the „ATKIS® Generalisation“ project to be able to derive the DLM50.1 in an automated way from the Basic DLM using model generalisation. In comparison with the Basic DLM, the DLM50.1 shows a simpler structure and a smaller quantity of data. The DLM50.2 has been derived from this landscape model using automation-supported cartographic generalisation. The appropriate automation supported cartographic processes are currently being developed for the final production of the DLM50.

The DLM250 and the DLM1000 processed in the BKG are available covering the needs and are updated annually. The contents are continually extended for the production of the EuroGeographics products EuroRegionalMap (1:250.000) and EuroGlobalMap (1:1.000.000) and for the linking of technical data at the European level (main user: European Commission).

The digital landscape models of the ATKIS® project must be continually adapted to the changing requirements for a geotopographical database. With the current alignment of the core data of the official surveying and mapping to the common AFIS®-ALKIS®-ATKIS® data model, a largely continuous object structuring of the real estate cadastre and geo-topography data is being implemented. Requirements for the Germany geotopgraphic database which arise from the European projects GMES and CORINE Land Cover (CLC) and INSPIRE are currently being discussed and will still be taken account of in 2010 in the ATKIS® feature catalogue.

The feature catalogue DLM in the GeoInfoDok is available for the ATKIS® technical concept in the framework of the AFIS®-ALKIS®-ATKIS® concept. The migration to the AFIS®-ALKIS®-ATKIS® data model has started in the federal states. A first national database of the Basic DLM in this data model is planned to be ready at the end of 2010.

Digital Terrain Models

In parallel with the digital landscape models, the surveying and mapping authorities are managing digital terrain models (ATKIS® DGM) with various precisions. These are available to the administration and economy as part of the geotopographical database for the establishment and management of many different types of technical information systems. Digital terrain models describe the terrain surface as the ground area between the solid Earth body and the water on the one hand and the air on the other hand. The terrain surface is modelled using a representative three-dimensional number of points. As well as regularly distributed geodetic points, the digital terrain models (DGM Grid) can contain DGM structure elements in the form of terrain form lines and particular terrain points. The feature catalogue DGM in the GeoInfoDok is available for the ATKIS® technical concept in the framework of the AFIS®-ALKIS®-ATKIS® concept.

Currently, national DGM datasets with a grid width of 10 m (DGM10), 25 m (DGM25), 50 m (DGM50), 200 m (DGM200) and 1000 m (DGM1000) can be provided. The data quality is documented in the ATKIS® product standard for digital terrain models. For the high-precision DGM10, this envisages a terrain type-dependent height accuracy of the grid points of +/- 0.5 m to 2 m with a statistical certainty of 95 %. This data quality will be achieved by the surveying and mapping authorities by the end of 2012. The DGM10 is currently available with a terrain type-dependent height accuracy of the grid points of +/- 2 m. DGMs with larger grid width are derived on request from the DGM with the smallest grid width. Furthermore, high precision DGMs with grid widths of 1 m (DGM1), 2 m (DGM2) and 5 m (DGM5) are already available in various federal states. Fig. 11. and 12. show 3D perspectives of DGM10 and DGM25.

With the definition of the product standard and the technical standards for the data exchange of the DGM, the prerequisites, among other things, for the merging of the state data at the geodata centre of the BKG to a national database are fulfilled. The geodata centre provides the DGM jointly with the federal states.

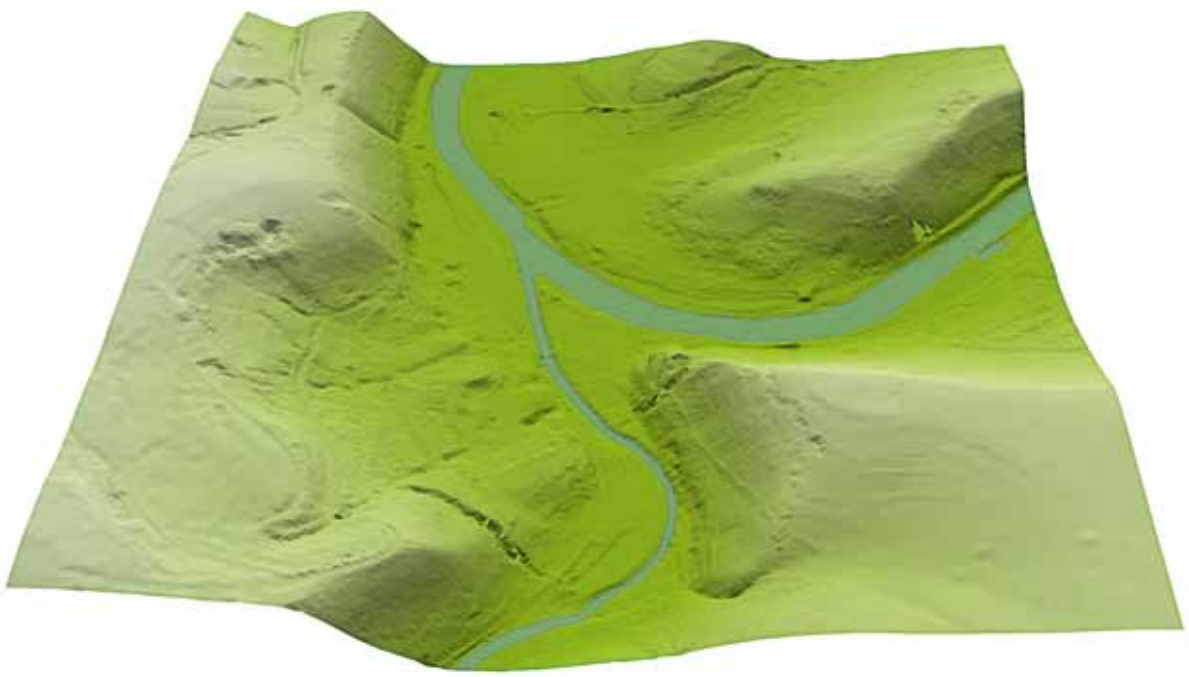

Fig. 11: ATKIS® DGM10 as 3D perspective view in pseudo colour coding (Section Wertheim)

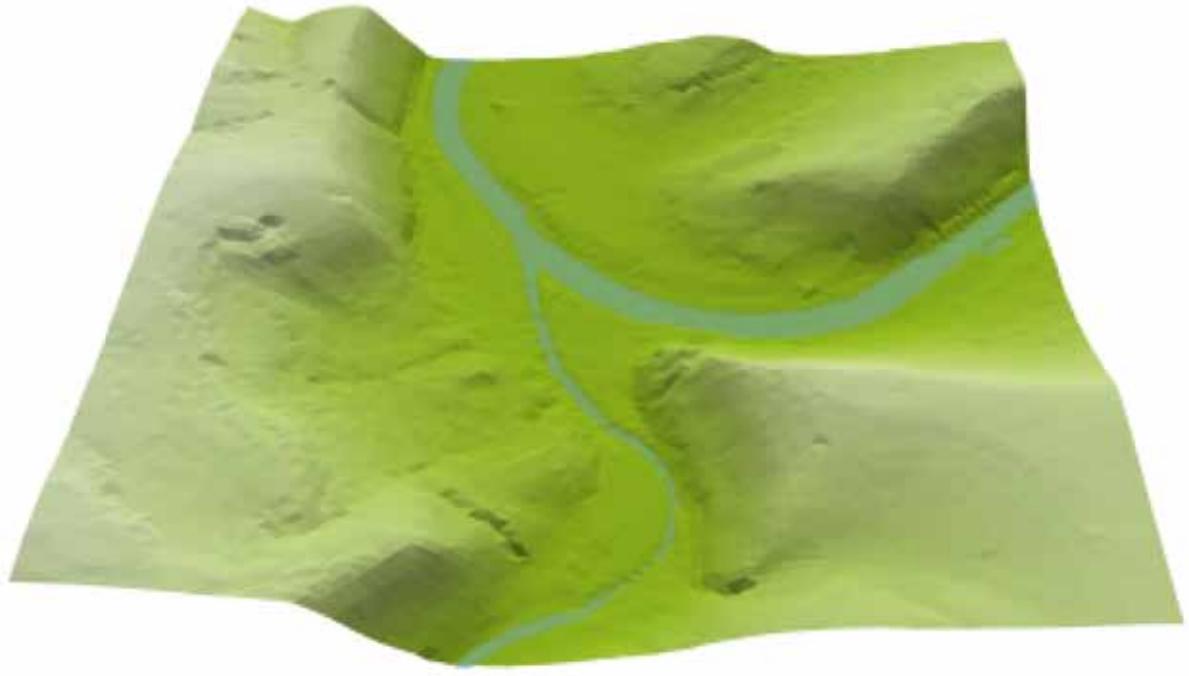

Fig. 12: ATKIS® DGM25 as 3D perspective view in pseudo colour coding (Section Wertheim)

Digital Topographic Maps

Based on the digital landscape and terrain models, the surveying and mapping authorities have started the derivation of the topographic map books on the basis of new map graphics, documented in the ATKIS® portrayal catalogues and published in the GeoInfoDok of the AAA project. Digital Topographic Maps (ATKIS® DTK) meeting the requirements are already available in several federal states. The DTK1000, published by the Federal Agency for Cartography and Geodesy, is also available. Processes for a mostly automation-supported cartographic generalisation of the various map books still have to be further developed so that a significantly more efficient derivation from the digital landscape and terrain models can be achieved. The surveying and mapping authorities have agreed with the Federal Ministry of Defence for the DTK50 and DTK100 that these topographic map books will be managed and published as joint civil/military map books.

Until the topographic map books to be created on the basis of the ATKIS® portrayal catalogues are available, the Federal Government and its states will update the conventional topographic map books within the required scope, keep them ready for printing and store them as raster data record for diverse applications The CD-ROM series Top50 and Top200 are available in an up to date version covering the needs for the whole of Germany.

Digital Orthophotos

The Digital Orthophotos product group (ATKIS® DOP) rounds off the ATKIS® concept. Due to the image-based documentation of the landscape, DOPs are suitable for viewing-oriented applications. A national DOP dataset with a ground resolution of 40 cm (DOP40) is currently available. DOPs with a ground resolution of 20 cm (DOP20) are already available for 90 % of the area of Germany. With the implementation of the planned survey flights in the current year, DOP20s covering the requirements for Germany will be available from the end of 2010. Due to the high importance of the aerial photograph results for the prompt updating of the geotopographical core data from ATKIS®, it is assumed the high resolution DOP20 will be subject to an updating cycle of three to four years. With the definition of a product standard and the technical standards for the data exchange of the DOP, the prerequisites, among other things, for the merging of the state data at the geodata centre of the BKG are fulfilled. The BKG provides this jointly with the federal states and has developed a DOP viewer available online for the AdV. Further details about the DOP Viewer can be found under point 6 Task Force Public Relations and Marketing.

The introduction of digital aerial photograph camera systems also makes new requirements for the surveying and mapping authorities. In addition to issues of the quality requirements for digital aerial photography and the data transfer and evaluation, the surveying and mapping authorities are addressing the problems of data compression and the history management of data quantities in the terabytes range. The high efficiency of the multi-channel recording of digital aerial photography cameras has resulted in the replacement of black and white by colour aerial photographs. With the addition of the infrared channel, the requirement for a merging of requirements from surveying and mapping, forestry and environmental authorities in the aerial photography plans of the federal states is fulfilled (Fig. 13, 14, 15). Furthermore, the combination of digital aerial photograph camera and laser scanner provides new possibilities for the three-dimensional acquisition of geospatial reference data describing the landscape in the form of digital surface models.

Fig. 13: PAN – aerial photograph (section Ludwigslust)

Fig. 14: RGB – aerial photograph (section Ludwigslust)

Fig. 15: CIR – aerial photograph (section Ludwigslust)

Toponymy

In collaboration with the permanent committee for geographic names (StAGN), the BKG provides a standardised (gazetteer) service which provides the toponymy (GN-DE) from the vector data of the DLM 250, VG250 and GN250 products. The GN-DE database is available as a standardised Web Feature Service (WFS) according to the specification of the Open Geospatial Consortium (OGC) at the geodata centre of the BKG.

5. Information and Communications Technology

Information and communications technology forms the technical interface between the operations in the areas of spatial reference, real estate cadastre and geo-topography. It supports the establishment of the spatial data infrastructure (GDI) based on official geospatial reference data using networks and geoservices. The focus is the maintenance and further development of the AFIS®-ALKIS®-ATKIS® (AAA) concept for the modelling of the geoinformation of the official surveying and mapping and the information technology coordination of the GDI activities for the AdV at the national level.

AAA Model

The AAA basic schema forms the basis for the technical application schema for the modelling of the AFIS®, ALKIS® and ATKIS® objects and for the data exchange. Being a neutral entity, other technical information systems can use the classes defined in the AAA basic schema for their own modelling. For supporting wide use of the AAA model, the software scripts on which the the modelling is based are available to third parties.

The AAA basic schema and the standards-based data exchange interface NAS comply with international standards (ISO 19136, GML 3.2). The main document of the documentation for the modelling of the geoinformation of the official surveying an mapping (GeoInfoDok) in the Version 6.0 declared by the AdV as reference version is also available in the English language.

The conformance of the AAA data models with the requirements which emerge from the INSPIRE Directive and their implementation in the geospatial data access laws and spatial data infrastructure laws of the federal government and the federal states is of central importance. Accordingly, the AdV is intensively involved with the INSPIRE data specifications and their effects on the AAA model. Experts from the AdV are represented in the corresponding European bodies and pursue the interests of the official surveying and mapping insofar as the geospatial reference data are concerned.

AdV Metadata Catalogue

The AdV has implemented and published the AdV metadata catalogue.

The standardisation of metadata about geospatial data is defined by the ISO 19115 (Geographic Information – Metadata) standard. It contains more than 400 metadata elements which are used for the description of the geospatial data. The core metadata recommended by ISO describes a minimum of mandatory and optional information for the identification and cataloguing of a dataset. User groups can define any subsets for their special needs in compliance with the ISO standard. In doing so, the ISO schema can also be extended by additional, individual elements (extensions).

ISO 19115 is the basis for the AdV metadata catalogue. The relevant elements for the AdV have been extracted from this, translated and explained. The AdV also oriented itself here to the GDI-DE translation of ISO 19115, however specified elements in individual cases for the special use of the metadata in the official surveying and mapping. At the data exchange level, there is always conformity with ISO 19139 (Geographic information -- Metadata -- XML schema implementation). It is therefore guaranteed that the AdV metadata elements can communicate with other metadata information systems.

The metadata catalogue of the AdV is used on the one hand as basis for the further development of the AdV metadata information system which contains information about data, services and products of the official surveying and mapping which can be evaluated for search purposes. On the other hand, it is used for the creation of product-specific data which are given to the AdV standard products as additional information. Defined subsets (profiles) of this catalogue are used for the individual products.

AdV-WFS-G Profile

The AdV has decided on the „Germany Online Gazetteer Profile House Coordinates“ as an AdV profile. In collaboration between the central distribution point for the Germany house coordinates and the GDI Initiative Germany Online / Geospatial Data Plan, a services profile for a „Germany House Coordinates Gazetteer Service“ has been developed and agreed between various involved parties in the last two years. Based on this services profile, a central access node for the operation as distribution web service in the form of a cascade is currently being established. With the classification as AdV profile, this services profile now has a formal, secured basis.

6. Task Force PRM

All spatial referenced planning and decision processes require geospatial reference data to link the relevant technical information with the corresponding location on the Earth's surface in each case. Such geospatial reference data are every interest and application neutral description of the topography of the Earth's surface (state survey) and the real estate (real estate cadastre). In order to ensure the availability of the geospatial reference data for state, economy, science and society, the surveying and mapping authorities of all federal states are legally obliged to collect, manage and provide geospatial reference data.

Requirements

The federal states have the constitutional legal responsibility for the official surveying and mapping. However, because the need for many spatially referenced applications goes beyond the provision of geospatial reference data within one federal state, it is required to store nationally standardised, up to date and high quality data and to make these accessible to the „geomarket" and interested public. The use of digital geospatial reference data in the administration and economy is continually increasing. The surveying and mapping authorities are taking account of this development with usage-oriented changes in the data provision. In addition to output on data carriers, web-based data provisions have become standard. Using geoportals, geoservices and geoviewers, the surveying and mapping authorities provide digital data inventories with different characteristics for searching, viewing and for downloading as well as technical aids. The metainformation system gives information about availability, characteristics and contact persons of the products.

In order to make a nationally standardised product range possible, the distribution points are networked and their provision is standardised. Certain product groups are current provided nationally and harmonised in three central distribution points: the Association for the Distribution of the House Coordinates and House Outlines (GVHK/GVHH), the SA*POS*® central office and the geodata centre of the Federal Agency for Cartography and Geodesy (BKG) which also supplies the institutions of the federal government with geospatial reference data (Fig. 16).

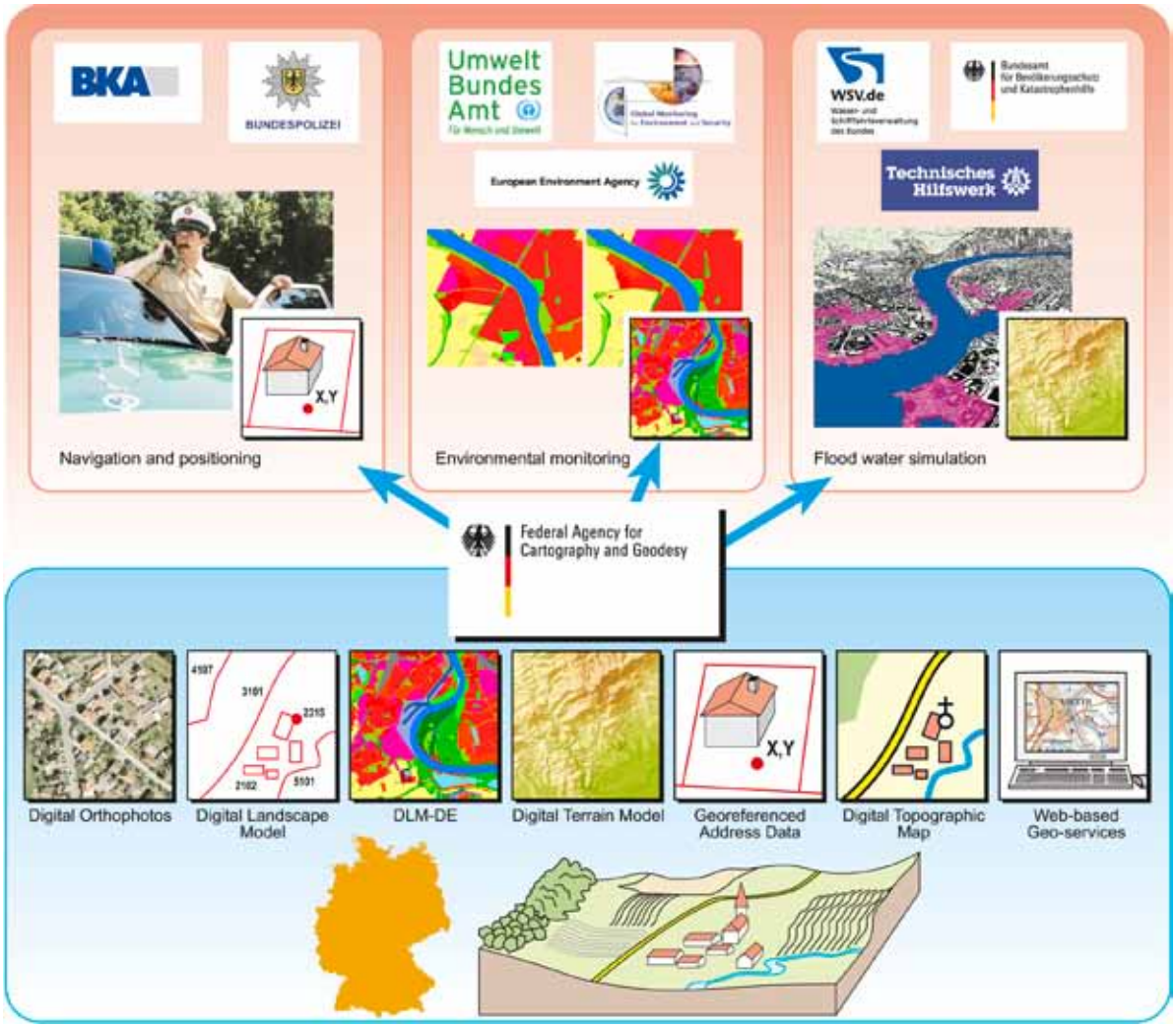

Fig. 16: Central supply of institutions of the federal government with geospatial reference data by the BKG

With the objective of continuously achieving the national requirement and standardisation of the product provision in the official surveying and mapping, the Task Force Public-Relations and Marketing (TF PRM) of the AdV performs the operative PRM tasks for the nationally available geospatial reference data product range with the involvement of the member authorities and the working groups of the AdV. In doing so, the following subject areas must be covered:

- Collection and documentation of the requirements of state and society for the collaboration; comparison of this with the geospatial reference data product range (requirements survey and requirements analysis),
- maintenance of the licence and fees models and model licence agreements as well as execution of example licencing for the use of the geospatial reference data and services (conditions and distribution policy),
- support of activities for the achievement of a strategic and technical infrastructure for the provision and use of geospatial reference data and services,
- implementing measures for the information about the availability and usability of the geospatial reference data and services (product information) and
- implementing measures for the (positive) perception of the official surveying and mapping and its national geospatial reference data product range (image maintenance).

Services

Requirements survey and requirements analysis

In order to achieve optimum distribution of the geospatial reference data products, user and purpose oriented geospatial reference data products must be produced and provided in the course of the official actions of the surveying and mapping authorities. In order to obtain the necessary information about the need and requirements of the users for the geospatial reference data (product, intended use, product satisfaction), the provision conditions and product information (information and contact paths to the surveying and mapping authorities), the central distribution points carried out a user survey based on a standardised questionnaire in the Spring and Autumn of 2009 and evaluated the results jointly with the TF PRM. The survey will be repeated once per year from 2010 in order to check the product range, the service and the product information of the official surveying and mapping for requirements orientation.

The Deutscher Dachverband für Geoinformation e.V, (DDGI), in accordance with its self-conception, is working towards a general improvement of the availability and usability of geoinformation. In doing so, it sees itself as a neutral entity which equally represents the interests of all disciplines from the economy, science and administration. The TF PRM is in constant contact with a corresponding technical group of the association, regularly discusses supply and demand aspects with it and develops proposals for the updating of the supply of geospatial reference data from the official surveying and mapping.

Licence and Fees Model

For the regulation of the usage rights in connection with the provision of the geospatial reference data and services, a nationally standardised licence and fees model is needed which is sufficient for the current requirements, as simple and clear as possible and regulates the usage of all currently provided geospatial reference data products. The official surveying and mapping has approved the guideline for fees for the provision and usage of geospatial reference data of the surveying and mapping authorities of the federal states of the Federal Republic of Germany (AdV fees guideline) which meets these requirements and published it at www.adv-online.de. It is used by the central distribution points and is currently implemented in the individual federal states. In order to guarantee a standardised and proper design of the AdV fees guideline, the TF PRM has developed recommended actions. The TF PRM updates the licence and fees model according to the requirements of the AdV and in agreement with the working groups if the AdV fees guideline has to be adapted to the technical further development of the products and the user requirements.

Furthermore, the TF PRM sees itself as communications platform for the distribution points of all surveying and mapping authorities and the joint distribution points and supports the exchange of experience with respect to the application of the AdV fees guideline.

Model Licence Agreements

Against the background that the national provision of geospatial reference data and services continues to be standardised and that the surveying and mapping authorities with its national provision of geospatial reference data are perceived more and more as an association of providers, the TF PRM has updated the standardised model licence agreements and the General Terms and Conditions of Business and Usage (AGNB). In addition, a small sample agreement with reduced content has been developed which is intended

for simple cases of geoproduct licencing. This model agreement is used in the central distribution points and is recommended for the internal federal state licencing. The interested public can view it and download it from www.adv-online.de and use it for its own purposes.

Fig. 17: Design requirements for presentations

Information Material and Corporate Design

The AdV has approved a common corporate design (AdV-CD) for a standardised appearance of the official surveying and mapping and made this available to all member authorities.

Due to these design regulations, information material will be adapted or redeveloped which should give information about the usability and availability of the geospatial reference data products in the language of the geodata market. The TF PRM is updating the AdV product folder with the title „Grundlage für Ihre Entscheidungen“ which focuses on the geospatial reference data product range of the surveying and mapping authorities and its potential use. 2009 product brochures for DOP and SA*POS*® have been published on this basis. It is planned to produce further product brochures step by step with detail information about the products in agreement with the working groups of the AdV.

Web portals and reference works

*Fig. 18: SA*POS®* *product brochure*

The website of the AdV (www.adv-online.de) provides information about tasks, product range and developments with a user-friendly interface. In a further step, the various product-related websites should be merged and adapted accordingly. The presence of the AdV in the available reference works on the World Wide Web is important because role, tasks and product range can be widely communicated via this medium. The TF PRM is currently developing a process for linking www.adv-online.de with appropriate online reference works.

Product Information

As an important prerequisite for optimum provision of geospatial reference data and for the activation of the geomarket, organised product information must provided by he surveying and mapping authorities. Current and potential users should be regularly informed specifically and comprehensively about the range of geospatial reference data products and services. For example, in order to increase the general awareness of the available orthophotos (DOP) meeting the needs for Germany, the national advertising campaign for DOP was carried out in 2009 with original press information and own website with links to distribution points. Flanking this, the DOP-D Viewer was made available at no charge for a limited period. Using the DOP Viewer (Fig. 19), digital orthophotos of all federal states wit the ground resolution of 40 cm can be viewed and overlaid with selectable information from the basic landscape model (Basic DLM).

Image Maintenance

For a positive perception of the surveying and mapping authorities, it is necessary to pursue active public relations and to create appropriate media and effective public appearances for this. The TF PRM has produced a geofilm which describes the organisation, role and range of products and services of the official surveying and mapping in a form suitable for a wide audience. In order to be able to make it widely publicly effective, it should be subtitled in German, English and in sign language and designed for the World Wide Web. Furthermore, regular holding of topic days is envisaged. A „Geo Day“ should be arranged, always on the same date every year, whereby all surveying and mapping authorities are informed about the various geospatial reference data topics simultaneously.

Fig. 19: DOP Viewer

Public relations and exhibition appearances

In the course of the establishment of spatial data infrastructures in the Federal Republic of Germany, the AdV is striving to increase the awareness of the products (geospatial reference data) of the surveying and mapping authorities of the federal states. As in previous years, the official surveying and mapping, represented by the AdV, was also present in 2009 at the world's largest event and communication platform in the area of geodesy, geoinformation and land management, INTERGEO® in Karlsruhe (Fig. 20), and at other trade shows. Apart from the presentation of the products and services of the official German surveying and mapping, accompanying presentations and discussion forums also took place.

Fig. 20: Joint stand of the AdV at INTERGEO® 2009 in Karlsruhe

7. Participation in national and international organisations

EuroGeographics

EuroGeographics, the association of the national authorities for geodesy, cartography and cadastre, has defined as its primary objective to establish the reference data (geodetic reference networks and geospatial reference data) of a European Spatial Data Infrastructure and to bring about their interoperability. For this purpose, EuroGeographics has set up the program **ESDIN** (**E**uropean **S**patial **D**ata **I**nfrastructure **N**etwork). This is a project promoted by the EU since 2008 in the framework of the eContentplus Programme in which no less than 18 institutions as well as the BKG are involved. The project has the objective to merge different resolution geospatial data for some INSPIRE subject areas by the development of web-based services. The implementation of such services based on a distributed software and hardware architecture should enable the merging of "interoperable" data in a cost-efficient and effective way. The BKG is bringing its expertise into several work packages, is also leading the work package "ExM Data Specification (medium/small scale)" and is participating as data supplier for the test of the specifications and implementations (Fig. 21).

In the framework of EuroGeographics, the BKG is mainly participating on the creation of the products **EuroBoundaryMap** and **EuroDEM** as project manager, for **EuroGlobalMap** as regional coordinator and for **EuroRegionalMap** as partner. The BKG is also represented in the working groups of the **State Boundaries of Europe** project.

EuroBoundaryMap (EBM), a Europe-wide reference dataset of the administrative units from the federal states to the communal level, was first published in 1993 based on a specification developed at BKG and has been continuously updated since then by BKG in collaboration with the EuroGeographics Head Office using data supplied from the European countries involved. EBM is provided in the application scale 1:100.000 and in different GIS formats. EBM also contains a reference for the local administrative units of all EU countries to the NUTS classification updated by the European Commission and Eurostat in 2007 which ensures interoperability between this European wide geographical database of administrative units and statistical data. In addition, so-called "Full Europe" versions (all countries in one feature type class) have been produced as new product variants which contain as well as the administrative regions at each national administrative level and for the EU countries also the NUTS regions. Within the scope of the licence agreement, concluded at the end of 2005 between the European Commission / Eurostat and EuroGeographics for the supply of a Europe wide geographical database of the administrative regions and statistical area units, BKG produ-

ced for product versions for the annual EBM updates by the end of 2009 in accordance with the additional contractual requirements of Eurostat. In the reporting period, the database with status date of 01/01/2009 and taking account of the updated NUTS classification was completed as EBM Version 4.0 and supplied on time to Eurostat together with the updated metadata and documents. After expiry of the 4-year licence agreement, a new extension of the EBM contract was signed in December 2009 by EuroGeographics and the European Commission/Eurostat. The BKG is responsible for the contractual delivery of the updated European administrative regions as of 01/01/2010 to Eurostat. As well as the provision of data and metadata, BKG also provides all customers and interested parties with technical support, an up to date product specification as well as a specimen dataset for download from the EuroGeographics website www.eurogeographics.org/products-and-services/euroboundarymap. Furthermore, EBM has been provided for various EU-financed projects (FP7 Programme) by EuroGeographics in the reporting period.

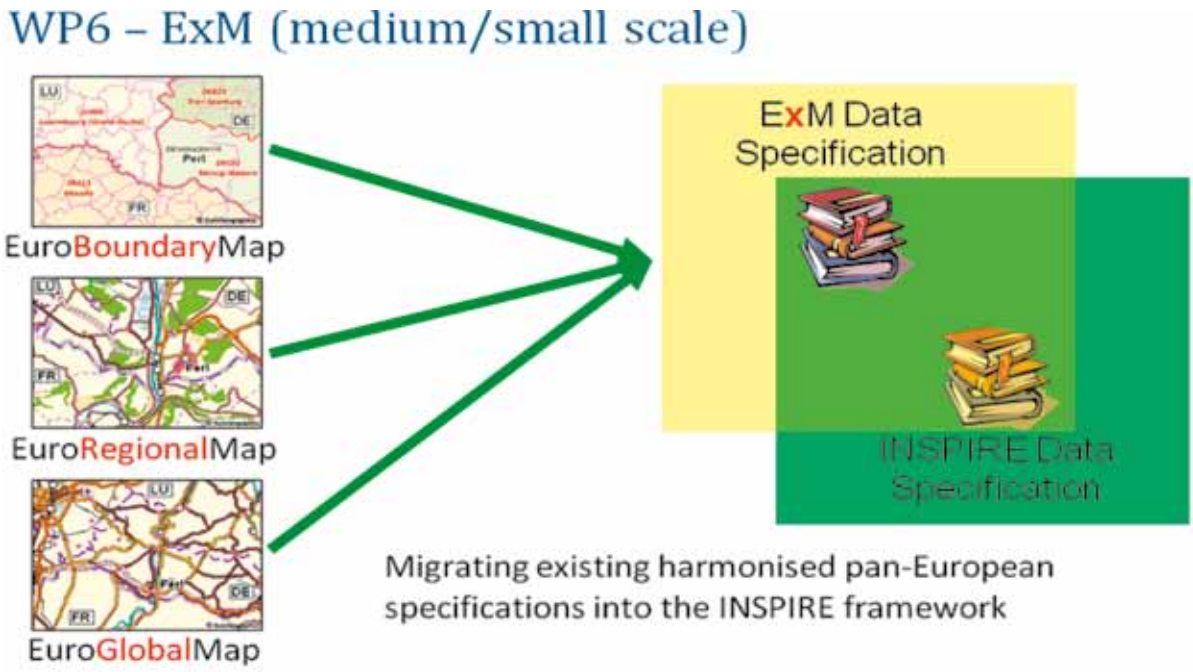

Fig. 21: ESDIN: Migration from EuroGeographics specifications to INSPIRE

EuroDEM is a digital terrain model of Europe whose establishment was decided by EuroGeographics in 2007 and which was successfully realised by the BKG by the end of May 2008. The terrain model covers the territory of the EU27 countries and some bordering countries. The dataset which was conceived for the scale range 1:50.000 to 1:100.000 describes the relief of the European landscapes with the following specifications:

- height accuracy: 8 - 10 metres,
- grid width: 2 arc seconds (~ 60 metres),
- merged from the databases of the national cartography authorities of Europe,
- harmonised at the country boundaries.

The BKG also continues to be available to EuroGeographics as product manager for the EuroDEM product. No updates of the product are currently planned, yet an improvement of the resolution and height accuracy will be pursued in the long term.

The products **EuroRegionalMap** (ERM) and **EuroGlobalMap** (EGM), two digital topographic reference datasets in the scales 1:250.000 and 1:1.000.000, have also been significantly improved in the past with considerable support of the (harmonisation of the specifications, conversion to the Geodatabase database format). The BKG is participating in the respective technical teams under the management of the IGN Belgium project manager for ERM and the National Land Survey Finland project manager for EGM. The new versions of ERM (v3.0) and EGM (v3.0) have been produced in the reporting period. Both products have been updated and qualitatively improved. The improvements of their content and their functionality comply with the user requirements, particularly those of Eurostat, as there are also contracts between Eurostat and EuroGeographics for these datasets. While the EGM contract ended in December 2009, the four-year licence agreement for ERM is still running until December 2010. As well as Eurostat, the European environmental authority is also showing great interest in the products from EuroGeographics and corresponding contracts with a term until 2011 have been concluded for EBM, EGM and ERM.

The data model developed with the participation of the BKG in the project **State Boundaries of Europe** (SBE, formerly EuroBoundaries) for the exact position acquisition of the state boundaries has been extended by another component which supports the cross-border edge adjustment of topographic objects linked to the boundaries using so-called connecting points. One of the first border sections which has been recorded according to the SBE data model was a German-Belgian section, compiled by the responsible surveying and mapping authorities. The Maritime Boundaries sub-working group with the participation of the Federal Maritime and Hydrographic Agency started its work at the beginning of 2009.

The 9th general meeting of EuroGeographics was held in Autumn 2009 in Vilnius, Lithuania. The discussions of the representatives of 52 member organisations concentrated on the strategy and further development of EuroGeographics and on the participation in European programmes and initiatives such as INSPIRE, GMES, GEOSS etc. Dorine Burmanje, the general director of the national cadastral authority of the Netherlands was unanimously elected as the new President of EuroGeographics.

European Infrastructure for Geographical Names Data – EuroGeoNames

The **EuroGeoNames** (EGN) project – with the BKG as project initiator and coordinator – has been performed by an international consortium which consists of nine partners from commerce, research and public administration from five countries (Austria, Germany, the Netherlands, Slovenia, the United Kingdom) and the EuroGeographics Head Office. National surveying authorities from more than 20 countries are the potential data providers who have already declared making available their national geographical names databases for the project. In doing so, the data storage and updating remains the sole responsibility of the countries which have collected the data.
In the EU-promoted project (term: September 2006 until February 2009), a web services infrastructure for official geographical names data in Europe has been established in collaboration with the data providers. In doing so, the decentralised official names data held in the EU countries have been linked with each other and made searchable using so-called “Web Feature Services - WFS”. Furthermore, geographical names in recognised minority languages, e.g. Sorbian and Frisian in Germany, are also considered. The financial total volume of the project was EUR 1.8 million whereby 50 % of the costs were covered by the EU in the framework of the eContentplus Programme. The EGN project coordination was transferred to EuroGeographics in Summer 2009. The primary objective of the so-called “Implementation Phase 2009 - 2012” is EU27 coverage. A business model for the sustainability will also be prepared. Promotion options will be examined and a test platform set up for pilot customers.

Some countries such as Belgium, Germany, Estonia, Finland, Croatia, Latvia, Lithuania, the Netherlands, Norway, Austria, Slovenia, Spain and Cyprus have already completed the EGN implementation. Other countries such as Hungary, the Czech Republic, Greece and France will complete the implementation by the middle of 2010.
The European Commission and the project partners have praised the first project phase of EGN as very successful. EGN is probably the first INSPIRE-compatible gazetteer service in Europe and provides EuroGeographics and its members with outstanding possibilities to fulfil future requirements in their role as supplier of geospatial reference data for national and European spatial data infrastructures.
Information about the EuroGeoNames project as a whole can be found at: www.eurogeonames.com

Open Geospatial Consortium (OGC)

The participation in the „Standards Working Group (SWG) ebRIM RegRep“ concentrated on letting the experience gained in the AdV for the establishment of registries flow into the international standardisation process. The AdV sustainably supports this development direction because a consistent continuation and embedding of the running work in the GeoInfoDok-based registries of the AdV is performed by the AdV project group GDI-Standards as are also planned by GDI-DE and within INSPIRE. The experiences which have been collected within the AdV during this development process, particularly for the establishment of registries of the coordinate reference systems used in the AdV and of registry-supported coordinates transformation, are brought directly into the OGC-SWG via the developing companies and thus into the running international standardisation process. It is therefore ensured that the developments performed in the AdV, both in the establishment of the GDI-DE as well as in the INSPIRE implementation, will be integrated without contradictions.

PCC

Sweden took over the presidency in the PCC for the second half year of 2009 on July 1, 2009. The general assembly for the conclusion of the presidency took place in Tällberg. The third part of the series of books „Cadastral Information System – a resource for E.U. policies“ with information about the cadastre in Denmark, Estonia, Lithuania, Luxembourg, Portugal and Romania was also presented there. It was also resolved that a joint working group of the PCC and EuroGeographics should continue the successful collaboration for the development of an article for the implementation guidelines of INSPIRE for the cadastral parcel in 2009 and 2010 for data from Annex II and III which refer to cadastre. In the meantime, this working group has met several times and sent a questionnaire about the data „land use, land cover, buildings, orthoimages“ to the members of both organisations. The Secretary General represents the AdV in the expert group.

Spain took over the presidency for the first half year of 2010 on January 1, 2010. A meeting in Madrid under the title „Conference on Cadastre, Public Policies and Economic Activity“ will take place at the beginning of June for the conclusion of the presidency. Belgium will take over the presidency for the 2nd half year of 2010 on July 1.

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