

Austrian Cadastre and Land Register – a pillar for sustainable land management

Land Registry and Cadastre have a long tradition in Austria. Nearly 200 years ago, in 1817, the application of the property tax cadastre for the entire Austro-Hungarian Empire was ordered by Emperor Franz I. Between 1817 and 1861 approximately 50 million land parcels were surveyed and mapped and the land was classified within 14 land-cover categories. The main purpose of this system was taxation calculated on the basis of square meter and land-cover.

In 1871 the Land Registry System (Grundbuch) was added to the Cadastre introducing legal processes for documentation of owners and mortgages and in 1883 the maintenance of the Austrian Cadastre, the so called “Evidenzhaltungsgesetz” (Evidence Act) was enacted. This regulation forced that all changes in parcels (boundaries and ownership) have to be registered in the Cadastre and in the Land Registry. Since that time the Land Registry (Grundbuch) and the Cadastre are constantly updated and even nowadays the dual system of Land Register and Cadastre is still in use. Responsible for the administration of the Land Registry are the District Courts (jurisdiction) and for the Cadastre the Regional Cadastral Offices (administration).

Following the Soil Evaluation Act 1934 of Germany an evaluation based on the natural conditions for productivity of agricultural land was carried out in Austria only between 1940 and 1973. The calculated yield figure for each land parcel was recorded in the Cadastre. Every twenty years the data of the Soil Evaluation are controlled and updated.

With the Surveying Act 1968 (Vermessungsgesetz 1968) the Cadastre in Austria got a new meaning. The purpose of the Cadastre changed to a Legal Cadastre in which boundaries are legally binding after consultation with all neighbours and a surveying of all boundary points of a cadastral parcel.

In 1978 the data of the Cadastre, the Land Registry and the yield figure for taxation were joined in the Real Estate Database (Grundstücksdatenbank – GDB). Not included at that time was the geometrical information of the cadastral parcels, the Cadastral Map, which was primarily recorded between 1987 and 2004.

Progress achieved since the year 2000

At the beginning of the new millennium Cadastre and Land Register were mainly digital. The Real Estate Database (GDB) was very popular and frequently used with about 20 million queries and 9 million updating transactions per year. Subsequently to the update of the GDB also the Digital Cadastral Map (DKM) was updated in an independent process. Infrastructure companies and other public authorities strongly demanded digital cadastral data for the

documentation and planning of their own tasks. The dissemination of data was only possible via media within a time span of more than one month.

In 2001 the BEV faced the challenge to develop the Real Property Register and the Digital Cadastral Map from a query and documentation system into an integrated Planning and Decision Support System. The following requirements were postulated to fulfil customer needs:

- Consistency between GDB and DKM
- Up-to-dateness - fast and reliable maintenance of data (no gaps)
- Traceability (Process documentation and historization)
- The legal information of the surveying documents must be the same as in the digital cadastral map
- Online availability (7x24)
- Web services for online integration in customer systems
- Individual data requests on single objects and entities

To reach these goals improvements in the process of data delivery and in the maintenance process were necessary.

1. Improvement of the dissemination system:

Since 2003 the BEV has invested about 10 million Euro to improve the online delivery of data. All cadastral and topographical data are now centralized in one dissemination system. The data of 60 local cadastral offices are transferred every night to this dissemination database and can be delivered by the Web Portal of the BEV (www.bev.gv.at). This web based dissemination system of spatial data combines numerous different datasets provided by the BEV in one logical dissemination data base. Updating works automatically or event triggered, depending on the way how data are recorded. Every user can store individual settings for easy data access with different roles and rights. The geo-information portal offers different dissemination channels for different customer groups. An easy accessible shop for citizens and an advanced shop for customers, an online GIS, map and feature services are built up on one dissemination database.

Since 2010 all products of the portal have been available via a web service which can be integrated into the IT-Systems of the customers. Without any visual interface the user receives the information on his request just a few minutes later from the BEV-Portal directly into his working system. Billing and payment runs in the background.

Since launching the system in the year 2008 the number of registered clients permanently using the system increased from 2,000 up to 12,000 at present. The number of delivered products increased from 180,000 in the first year to 1.5 million in 2014.

Currently about 80 % of cadastral information is ordered and delivered through this product web service.

2. Improvement of the maintaining system:

Since 2006 the BEV has invested about 10 million Euro to renew the Real-Property Register and to implement a fully digital maintaining process in the cadastre. The process between the Cadastral Offices and the District Courts are without any analogue interfaces and mutually used information is referenced to a single source.

The BEV has implemented a digital cadastral archive and a tracking system which traces and documents the whole process. At the beginning of the registration process the private licensed surveyor produces a digital surveying document, which is electronically signed. This document is submitted (uploaded) to the BEV-portal, verified by the cadastral authority and stored in the digital cadastral archive. The digital cadastral map is updated in advance in a preview-layer and shows the future legal configuration of the cadastral parcels. The accordance of the new geometry in the digital cadastral map with the surveying document is fully checked in this process. After the legal registration process in the land register the graphical cadastre is automatically updated based on a message from the registration system.

The entire maintaining process of the cadastral and land register information has been reduced from 4 month to 4 weeks. About 50 % of the business cases are finished within two weeks. As a consequence queries via the BEV-Web portal to obtain digital cadastral information such as graphical as well as administrative information always deliver up-to-date information.

As a result of these two main improvements over the past 15 years the digital cadastral information is the system most used by all municipalities, all federal provinces, electricity providers, and other public authorities to support planning and decision making as it delivers the necessary property and spatial information about boundaries of parcels and land use. Due to availability, sustainability, security and accessibility of cadastral information numerous private companies use the information of the cadastre for their own value added services. In 2000 more than 70 % of the users of cadastral information were from the public sector, nowadays 75 % of the users come from the private sector.

Priorities for the future:

One of the main demands in the change process of 2001 is only partly fulfilled:

The new cadastral and land registration process guarantees that the digital cadastral map is now actualized with exactly the same information, which is in the legally valid surveying deeds. All surveying documents older than 2012 are not updated geometrically correctly in the digital cadastral map in any case. Furthermore these deeds are only available in analogous form in the archives of the cadastral offices.

But the only “analogue” break in the fully digital registration process lies in the surveying documents from before 2012, which are only available in analogue form in the archives of the cadastral offices. To fill this gap the BEV started to develop a Legal Information System and started scanning all the analogue 4.5 million surveying documents referenced to the cadastral parcels. The scanning process will continue until 2025 and make all the legally valid information about boundaries digitally available. Then it will be possible for all users to verify the information of the cadastral map should this be necessary. This will reduce surveying costs extraordinarily. Moreover, it will improve legal certainty and it will enhance the quality of the cadastral information system.

The total benefit for the economy, the citizens and the administration is estimated at more than 10 million Euro per year.