Cadastral Offices and the Reform of the Czech Cadastre

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Key words: Cadastral Offices, cadastre, reform, administration, computerisation.

ABSTRACT

The reform of the surveying and cadastre branch started at the same time as the Czech Republic took its first steps towards a market economy in the early 1990s. Organisational structures of the branch were transformed and partly privatised by 1993. The new legal Czech Cadastre arose in 1993. It was designed to satisfy new demands for technical and legal information on subjects and objects of the Cadastre and includes the registration of titles based on an adjudication process.

The executive bodies for the state administration of the Czech Cadastre are 77 Cadastral Offices. These have become separate legal subjects directly subordinated to the central body - the Czech Office for Surveying, Mapping and Cadastre in Prague.

The paper will first briefly deal with the present state and administration of the Czech Cadastre in comparison to the situation before the Velvet Revolution in 1989. Then it will look in more detail at the Statute of Cadastral Offices, their organizational stucture, basic tasks and the principles behind work in Cadastral Offices. Next follows a short description of the forms of land registration, maintenance, updating and providing data of the Cadastral information system and Internet access to cadastral data for the general public since 2001 and completing digitalisation (computerisation) of the Cadastre by the second half of this decade. In the closing part some statistical data on the work of Cadastral Offices and on development trends will be given.

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1. INTRODUCTION

The transition process of the centrally planned economy to a market economy in Central and Eastern Europe, and the building of a new economic system to put in place of the previous regime, is one of the greatest dramas of our age. The process is conditioned by changes in the legal and institutional sphere. An indispensable condition for a smooth path of reform is a functioning cadastre.

Cadastral systems in European countries that passed through the period of the socialist planned economy in the last century were strongly influenced and deformed within this period. The previous Czech cadastral system resulted from the conditions of the command economy and was not able to meet the requirements of the emerging Czech market economy in the 1990s. This was the main reason for **the reform of the cadastre** and its organizational structure. This paper will deal with the course of the reform at the level of Cadastral Offices.

2. HISTORICAL CONDITIONS

The Czech cadastral system has its **historical roots** in a central-european or rather an Austrian model, based on two separate instruments - a **Land Register** for the registration of titles and a **Land Cadastre** for the registration of land parcels. The Land Cadastre was administered by **Cadastral Offices** subordinated to the Ministry of Finance. The Land Register was managed by **Courts**. Both institutions closely cooperated. This system was abandoned in the 1950s.

The socialist **Real Estate Registry** that was constituted in 1964 served especially for planning agricultural production and for protecting the so called socialist ownership of real property. It registered both technical and legal information concerning real estate, owners, users, material rights and socialist rights of use land. The traditional principle of the Land Registry -registration of titles - was abandoned and partly replaced by the institute of registration of private property transactions at the State Notaries. The systematic registry of single private parcels of land in rural areas was simplified and suppressed.

Cadastral and surveying work was managed by the central body - the Czech Office for Geodesy and Cartography in Prague and performed, except for the capital, almost exclusively by Geodezie state enterprises in regions. The Real Estate Registry administered the organizational bodies of these enterprises in districts, called Centres of Surveying. The Centres had a very broad field of activity. To order, and for payment from citizens and organisations, they provided cadastral information, carried out cadastral legal surveys, reestablished lost and disputable boundaries and were involved in engineering geodesy,

thematic mapping, and other surveying activities. The administration of the Registry and cadastral mapping was directly financed from the state budget. The state enterprises fulfilled the state plan and the allocation of resources from the state budget depended on their economic results. Intesification of production was secured by systems of bonuses and output standards. A private sector in this branch did not exist.

3. THE PERIOD OF TRANSITION

At the beginning of the transition period it became obvious that the Real Estate Registry was not able to satisfy all the necessary demands of the changing society. This was the main reason for fundamental changes in the conception of the Czech cadastre and organization of the branch of surveying and cadastre in the early 1990s.

In 1991 the former regional monopoly state surveying enterprises, Geodezie, split into an entrepreneurial part, later privatized, and a part responsible for state activities in the branch comprising the above mentioned district Centres of Surveying. The Centres of Surveying strongly reduced their commercial activities concerning the Real Estate Registry (e.g. cadastral legal surveys) and left thematic mapping and geodetic engineering to the private sector.

On 1.1.1993 the Real Estate Registry was transformed into the new Cadastre of Real Estates and the branch of surveying and cadastre was simultaneously restructured. The new legislative regulation of the Cadastre followed after extensive **changes in** the field of **civil**, **commercial and land law** from 1990 to 1992, when the paternalistic role of the state was removed and equal rights restored to all forms of ownership.

4. THE CZECH CADASTRE OF REAL ESTATES

The present **Czech Cadastre of Real Estates** was established by the Cadastral Law No 344/1992 and the Land Registration Act No 265/1992. It jointly records location, descriptive and legal information on real estate, owners and other legally recognised subjects, taken on either from the former Real Estate Registry or newly registered. In contrast to the preceding socialist Registry, its main principle is the **compulsory title registration based on the adjudication process**.

The Czech Cadastre is designed as a multipurpose land information system intended first of all for legal and fiscal purposes, land management and providing base data for other information systems. It covers the whole Czech territory. The basic unit of the Cadastre is a parcel, a higher technical unit is a cadastral unit.

The cadastral information is arranged according to cadastral units in **geodetic** (survey) **information files** (map documentation partly in the form of digital cadastral maps), **descriptive information files** (computerized textual information on registered objects, subjects and interests in land), **surveying and measuring documentation** and **collection of deeds.**

The objects of the Czech Cadastre (real estate) are land parcels, buildings with solid foundations and private flats and non-flat rooms in blocks of flats.

The subjects of the Cadastre (natural persons and legal entities) are owners and others in right (other persons competent from judical rights registered in the cadastre). Every owner, (joint owners), has a separate owner's folio with information on the owner, (joint owners), registered objects, rights and restrictions.

Material rights to real property registered in the Czech Cadastre are ownership, (incl. share-ownership of a property, common property of married couples), easement, mortgages, the material right to re-buy a real property and special rights to state and municipal ownership.

At the end of 1993 an ambitious **Conception of Digitalisation of the Cadastre** was accepted by the government. The conception comprises several gradual steps of modernization of the Czech Cadastre including installation of LANs and network management software in COs in 1994, digitalisation of the descriptive information file finished in 1998 and digitalisation of cadastral maps in progress. In 2001 LANs of Cadastral Offices were interconnected with the centre by WAN and **the Enhanced Information System of the Cadastre of Real Estates** with advanced architecture and technology was implemented.

5. CADASTRAL AUTHORITIES

5.1 The Organizational Structure of the Cadastral Authorities

The contemporary system and organizational structure of the Czech Cadastre was created at the beginning of 1993. **State administration of the Cadastre executes the Czech Office for Surveying, Mapping and Cadastre** (COSMC) in Prague through 77 directly subordinated **Cadastral Offices** (CO) with limited legal subjectivity. The president of COSMC is appointed by the Czech government. COs have 35 branch offices in larger cities. Supervision is secured by 7 regional **Surveying and Cadastral Inspectorates. The Land Surveying Office** in Prague manages the central database of the cadastre. The seats, material and territorial competence of these bodies were defined by **the Survey and Cadastral Administration Act** No 359/1992.

5.2 Cadastral Offices

There are two groups of Cadastral Offices, offices of the first type in previous regions and offices of the second type in districts. The Cadastral Offices of the first type (the former Geodezie state enterprises) are separately financed account units responsible for the administration of the budget and own property in the whole region. They provide specific services for district cadastral offices in their region, too. The most important common services are in the field of personal work, administration of the budget and property, accounting, material supply and in information technologies. These COs also pursue extended JS23 Cadastral Reform – Organisational 4/13 Jiri Rydval Cadastral Offices and the Reform of the Czech Cadastre

activities in the field of new cadastral mapping, minor survey control points and medium scale State Map Series.

The most important task of the Cadastral Offices of the second type (formerly Centres of Geodesie) is the performance of the state administration of the Czech Cadastre.

The present **organizational structure** of COs is described in Organizational Rules of Cadastral Offices. The Offices of both types are managed by directors appointed by the president of COSMC and divided into organizational sections.

CO of the first type consists of the secretariat of the director, department of management and economy, department of the Cadastre, department of cadastral mapping, department of State Map Series and section of information technologies.

The department of the Cadastre carries out land registration, certificates legal cadastral surveys made by private surveyors, collects, maintains, updates, and provides access to cadastral data.

The department of cadastral mapping is active in the creation of new digital cadastral maps by using field surveys, computations and vectorisation of older analogue cadastral maps, creation and maintenance of minor horizontal control.

CO of the second type has a simpler organizational structure: department of legal relations to real properties, department of upkeeping cadastral documentation, documentation department, section of management and economy.

The legal department has responsibility for land registration by means of deciding the entries of material rights to properties into the Cadastre and for checking other legal documents submitted to the CO.

The department for upkeeping the Cadastre records changes according to documents approved by the legal department into the Cadastre.

The technically oriented **documentation department** carries out the gradual digitalisation of analogue cadastral maps, database management, checking legal surveys of licensed private surveyors, upkeeping digital cadastral maps, it solves corrections of errors in cadastral documentation concerning boundaries and areas of parcels. A separate line of activities of this departement is the provision of information from the cadastral documentation.

6. PRINCIPLES OF WORK IN CADASTRAL OFFICES

The basic principles of work in the Cadastre are securing:

- legality of the procedures and decisions of cadastral authorities,
- timeliness, correctness and completeness of cadastral data,
- unification of contents and procedures of the Cadastre on the whole Czech territory and

- conformity of the system and cadastral data with national standards,
- security of the system and data, protection of personal data,
- continuous improving and modernisation of the Cadastre (regulations, technology, proceedings, contents, data /extent, quality, precision/) according to the demands of society, technological development and the limitations imposed by the means of financing the system,
- open direct and remote access to up-to date, high-quality and cheap cadastral information for the users in the demanded volume, form and time-limit,
- minimalisation of costs in administration of the Cadastre.

Implementation of these principles is closely connected with personal management, marketing and quality assurance. The successful implementation of these principles as regards the cadastral system and cadastral data is now in progress. The minimalisation of costs or cost recovery of the system will be solved in a definitive way after completing the digitalisation of the Cadastre.

7. BASIC TASKS OF CADASTRAL OFFICES

Administration of the Cadastre including updating cadastral data is carried out separately in the territory of each Cadastral Office and branch office and in their local data bases with real time replications of changes into the central data base in Prague. Unification of procedures is secured through cadastral regulations issued by COSMC, uniform standards, hardware and application software. Special rules regulate, in detail, work in the Cadastre (Instructions for the Administration, Maintaining and Renewal of the Cadastre), handling written documents (Documentation Rules) and procedures concerning administration of the Cadastre (the Rule of Procedure).

The basic types of procedures in the Cadastre regulated by the Land Registration Act, Cadastral Law, Cadastral Regulations, Instructions and the Rule of Procedure are:

- land registration
 - entries,
 - records and annotations,
- providing information,
- certification of legal surveys (geometric plans),
- renewal of cadastral documentation,
 - new cadastral mapping,
 - conversion of cadastral maps,
 - land consolidation,
- proceedings relating to corrections of errors in cadastral documentation, objections to renewal of cadastral documentation and changes of boundaries of cadastral units,
- sanction proceedings.

The basic tasks of CO are the land registration, providing information and the renewal of the cadastral documentation.

7.1 Land Registration

Land registration in the Czech Cadastre has three forms - entry (changes of legal relations in the Cadastre on a contractual basis), record (changes in the Cadastre constituted by law and by decisions issued by the state administration and Courts), annotation (recording informative facts), and their deletion.

Contracts serving the official **entry of legally recognised interests in land** into the Cadastre must have prescribed enclosures, e.g. petition of paticipants, legal title of the transferor (transfer deed), geometric plan. Signatures must be authenticated by a registry, notary's office, or a lawyer and a fee of 500.- Kc for each petition has to be paid.

Deeds are, at the legal department, **examined**, in terms of the law, from several strictly defined points of view, which are: **the right of disposal** of the transferor with the object of the contract, **legality** of the form of the act, **certainty and comprehensibility** of the legal act, **the contractual freedom** of parties.

Entry into the Cadastre and its deletion are possible only on the basis of a **positive decision** of the Cadastral Office. There is no possibility to appeal against the positive decision. The legal consequences of the entry into the cadastre start retroactively from the day of delivery of the petition to the Cadastral Office. **The negative decision** must be delivered in written form to all participants. The parties have the right to appeal against the negative decision to Court.

The rights originated not from a contract but from a law, are registered in the Cadastre without an adjudication process by **record.**

The legal department passes checked documents to other departments to register the changes in the files of descriptive and aptly also geodetic information. The next operations are **checking** and **validiting** the new state of the Cadastre and filling the deeds and their enclosures in the collection of deeds. The deeds registered in the Cadastre by entry are delivered to all participants of the procedure.

7.2 Providing Cadastral Intormation

Cadastral Offices archive **cadastral documentation** including historical documentation, **graphical allotment plans and consolidation maps** and documentation of the former **Land Register**.

Conditions for providing information from the documentation, forms and price are determined in the **Regulation on providing information from the Czech Cadastre** No. 162/2001. The information in verbal, printed or electronic form is provided to the public, state administration, companies, municipalities and private surveyors partly against payment JS23 Cadastral Reform – Organisational 7/13 Jiri Rydval Cadastral Offices and the Reform of the Czech Cadastre

in cash or in the form of duty stamps, partly free of charge (e.g. public deeds to state administration and courts).

Cadastral Offices make **copies and extracts from the cadastre** on request. The copies of deeds, owner's folios, cadastral maps, identifications of parcels (comparison of identity of the old and new parcels in different documentation) and copies and extracts from insets for entries in the Land Register made by the Cadastral Office are **public deeds.** The fee for one format A4 copied deed is 25 Kc, for one owner's folio up to 20 parcels it is 100 Kc (\$ 2.80).

An **other information** provided in verbal, printed and electronic (computer) form has so far only an **informational character**. The cost of computer files with cadastral information is 10 Kc/kB. The cost of one page output information from the Cadastre by means of remote access (through Internet) is set at 50 Kc (\$ 1.40).

Information in **electronic form** for external users is provided only on written application. The applicant is obliged to use the information only for a given purpose (defined in the Cadastral Law) and in accordance with regulations on the protection of personal data. Moreover, he is not allowed to pass the data onto the public. **Internet access** to the duplicated central data base of the Cadastre for external users is secured only through the Land Surveying Office in Prague.

7.3 Legal Surveys and their Certification

Cadastral legal surveys (**geometric plans**) are secured solely by the private sector on the order of land owners and other clients. The completed documentation must be verified by a licensed surveying engineer and checked by the documentation department of the local Cadastral Office to the effect that it meets all the requirements of valid regulations and the numbering and areas of parcels correspond to the Cadastre. Cadastral Offices collect an administrative fee of 100 Kc for the certification of one geometric plan up to 20 parcels. Verification and certification of GP is subject to the compulsory inventory.

7.4 Computerisation of the Cadastre

Computerisation of the Cadastre is now the prime task of cadastral authorities. After converting the descriptive information file of the Cadastre to the form of database computer files, the digitalisation of cadastral maps is in progress. The documentation of the Cadastre comprises first of all three types of cadastral maps. **Graphical maps** derived from old island maps of separate cadastral units at the scale of 1:2880 (about 2/3 of the Czech territory) do not comply with the present standards. Nearly one third of the Czech Republic is covered by **numerical cadastral maps** usually at scales 1:1000 and 1:2000 based on field surveys in the national geodetic reference system with satisfactory accuracy of detailed points (m.s.e.= \pm 0,14 m and \pm 0,26 m). Cadastral maps in **digital form** exist now in 2,440 cadastral units.

Cadastral Offices are producing two types of digitised cadastral maps:

- **digitalised cadastral maps** in the old Austrian coordinate systems and in the form of island maps for separate cadastral units,
- seamless **digital cadastral maps** in the State Coordinate System JTSK.

The technology will be unificated this year.

Both types of vector cadastral maps are completed with **parcels in the simplified inventory** - land parcels in rural areas in the ownership of private individuals represented only in maps of former real estate inventories and in a simple form registered in the file of descriptive information.

7.5 Implementation of the Enhanced Information System of the Cadastre

The implementation of the Enhanced Cadastre was a crucial step in the digitalisation of the Czech Cadastre and the most important task of COs in the year 2001. Intensive tests of the migration system and application software, simultaneous run of the old and new system at pilot COs and improvements of the software preceded the decision of COSMC on the implementation.

All the technical staff took part in one to four weeks training in the new system. The training was organised preferably at the time of data migration, when the CO provided only limited service for the public.

Before the start of the migration several test migrations and corrections of incorrect data were completed. The implementation was carried out in 16 waves. The data migrated into the Enhanced Cadastre structure were automatically and selectively manually checked. After the finish of verification without discovering serious mistakes the director of the CO decided on the transition of the CO to the Enhanced Cadastre and the data from the workplace were completed, corrected and imported to the centre. Then real time replication of changes to the central data base and the provision of Internet access for external users started. The actual implementation of the Enhanced Cadastre at a workplace usually lasted a month.

8. BASIC STATISTICAL DATA ON THE CADASTRE AND CADASTRAL WORK

In the year 2001 the total number of employees in 77 Czech Cadastral Offices was 5,094. The Blansko Cadastral Office, as an example of a typical medium size district CO, had 48 employees.

Table 1, Data about objects and subjects of the Cadastre in the Czech Republic in 2001

Data	Unit	СО	Czech	Share %
		Blansko	Republic	
Territory	km ²	94.3	78,865	1.2
Inhabitants	million	0.11	10.3	1.1
Cadastral units	one unit	194	13,078	1.5
Cadastral parcels	million	0.221	14.733	1.5
Parcels in simplified inventory	million	0.092	6.783	1.4
Owner's folios	million	0.063	4.731	1.3
Registered buildings	million	0.033	2.364	1.4

Table 2, Settled Demands on Cadastral Offices in 2001

Data	Unit	СО	Czech	Share
		Blansko	Republic	%
Entries into the Cadastre	case	3,832	380,500	1.0
Records in the Cadastre	case	5,904	415,900	1.4
Requests for cadastral information	request	12,525	1,292,300	1.0
Confirmed legal surveys	geometric plan	1,407	110,800	1.3
Cadastral maps converted into digital form	cadastral unit	7	440	1.6

Table 3, Fundamental Working Activities of Cadastral Office Blansko in 2000 and 2001

Activity	2000 %	2001 %
Digitalization of cadastral maps	12.4	7.6
Registration of titles	9.3	8.8
Correction of errors	1.9	5.3
Updating the file of descriptive information	18.0	22.7
Updating the file of geodetic information	4.2	4.9
Documentation	1.3	1.3
LAN and data base management	2.5	3.7
Providing information from the Cadastre	8.8	6.4
Certification of legal surveys (geometric plans)	2.7	2.5
Training and implementation of the Enhanced Cadastre	5.0	8.6
Management and administration	8.2	7.3

8. CONCLUSIONS

Never in the whole history of the Czech Cadastre have there been such extensive qualitative and quantitative changes during such a short period as in the last decade. How will the development continue?

JS23 Cadastral Reform – Organisational Jiri Rydval Cadastral Offices and the Reform of the Czech Cadastre Intended changes in civil law and cadastral **legislation** should simplify administration of the Cadastre (e.g. buildings shall become again a part of plots) and strengthen the legal security of landowners and users (title registation only in the form of decisions of COs and possibility to appeal against positive decision of COs, as well, reintroduction of the principle of material publicity). In accordance with the ongoing reform of public administration, an amendment of the Survey and Cadastral Administration Act will constitute a new organizational structure of the branch and it ought to simplify both the methodical and economic management of COs by a central body and their mutual relationship. There will be constituted only 14 COs with legal subjectivity and present district COs shall become their subordinated workplaces. In a short time, completion of implementary regulations will permit the use of electronic signature and electronic mail rooms in electronic contacts of the public with COs.

In the **economic sphere** it is necessary to consider the extent and the means of eliminating the present direct funding of the branch of COSMC from the state budget. It is true that it is a temporary advantage in the period of expensive building of the new computerised Information System of the Cadastre, but it may be a limiting factor for future development. Cadastral agencies transformed into the form of customer oriented independent public administrative bodies are in several countries cost-recovering by their further development and gradual charge reduction of services. Nevertheless, in the Czech Republic it is necessary to take into account that COs administrate the legal cadastre and make decisions regarding the registration process. Their function is similar to the function of independent courts in other countries. The permanent requests from representatives of other state administrative bodies and communities for cadastral information completely free of charge might have a strong negative influence on creating a modern marketing stategy, too. In spite of the fact that the present charge for registration and providing information from the Czech Cadastre is very low in comparision with other countries, a more substantial rise will be difficult for the state institutions which use this service to accept.

Human resources management is a primary task at the level of the centre as well as at the CO level. As a consequence of the previous changes in the CO (privatisation - leaving specialists to private sector and hiring new staff) about 15% of personnel do not have the demanded qualifications. The present technological and legal environment of the cadastre is going through a rapid development and in this situation **further education** is of great importance. It is necessary to admit qualified specialists (IT, geomatics, law, personnel management, marketing) simultaneously with the supposed reduction of workplaces of COs and gradually decrease the number of unqualified employees. Significant changes are going to be needed in the field of motivation, personnel development planning and assessment of the staff. A designed **information system for support of managing processes** will serve to improve the quality of economical and human resources management.

Technological progress leads to an increase in quality and efficiency of work in COs and will result in radical changes in the character of work (computerisation of registers, conversion of cadastral maps, electronic documentation funds), extending the supply and improving the quality of services (electronic contact with the public, clients and other public bodies concerning registration process, legal surveys and providing information, providing

up-to-date cadastral information in country-wide range), gradual improving of the data base of the Czech Cadastre (uniform procedures, SW, HW and national standards, integration of descriptive and geodetic (graphical) information files stored in a data base environment, updating of the central and local databases by real time replications, data exchange with other IS).

The Czech Cadastre and its organizational structure are created conceptionally, coming out of the national traditions and contemporary requirements, take advantage of experiences in developed countries. A considerable contribution is financial support and consultancies from the PHARE programme and a significant stimulus is the approaching accession of the Czech Republic to the European Union. Within the Czech Republic the principal questions are consulted at the Public Platform of Nemoforum (Land Policy Forum), which joins Czech organisations operating in the field of geo-information. The implementation of the conception of the computerised cadastre is supported by the Czech government and positively influenced by changes and progress in the field of technology, legislation and organisational structure of the branch. It allows the completion of the Czech Cadastral System so that it is fully comparable with cadastral systems that exist in developed countries of the European Union in the second half of this decade.

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BIOGRAPHICAL NOTES

Mr. Jiri Rydval was born in Prague in 1941, where he graduated from the Czech Technical University, the Faculty of Civil Engineering, branch of study surveying, as surveying engineer (M.Sc.) in 1963. After graduating he was employed in the Regional Institute of Geodesy and Cartography in Plzen and later in the Hydroproject design institute in Prague, where he carried out cadastral and thematic mapping and geodetic engineering. Since 1973 he has been working at the Centre of Surveying in Blansko as head of the technical departement. Now he is the director of the Cadastral Office Blansko. As an expert witness in the cadastre he occasionally prepares certified documentation concerning disputes over boundaries for courts. At the present time he is a councillior of the Czech Union of Surveyors and Cartographers and a member of the National Committee for the FIG, where he is an assistant to the national delegate in Commission 7.