

# Czech Office for Surveying, Mapping and Cadastre



# Annual Report 2008

# Content

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<i>Introduction</i>	<i>2</i>
<i>1. The Surveying, Mapping and Cadastre Sector in the Czech Republic</i>	<i>4</i>
<i>2. Administration of the Cadastre of Real Estates</i>	<i>6</i>
<i>3. Land Surveying Activities in the Public Interest</i>	<i>16</i>
<i>4. e-Government Services</i>	<i>20</i>
<i>5. Human Resources and Economics</i>	<i>28</i>
<i>6. Inspection and Supervision Activity</i>	<i>32</i>
<i>7. International Cooperation</i>	<i>36</i>
<i>8. Research and Development</i>	<i>38</i>

# Introduction

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State administrative bodies of the Cadastre of Real Estates managed by the Czech Office for Surveying, Mapping and Cadastre provide state administration in the area of registration of land parcels represented by the Cadastre of Real Estates. Apart from this they ensure performance of surveying activities in the public interest including particularly administration of basic geodetic control including the network of GNSS permanent stations, running the Fundamental Base of Geographical Data, publishing the set of the Basic Maps of the Czech Republic, surveying of the state border and managing of the Central Archives of Surveying, Mapping and Cadastre.

Services provided by cadastral offices as for the registration of material rights and other data into the cadastre of real estates and provision of information has significantly improved in 2008. Cadastral offices have completed 766 305 proposals for registration of rights, which represents yearly increase of 10 %. The time for completing the registration has shortened again. Significant progress was reached in Prague, where long terms for registration in the past complicated real estate businesses. In 2008 most error-free submissions were completed within one month. This positive trend will go on even in 2009. Registration based on record and notation even reached 1 190 566 in 2008, which represents yearly increase of 12 %. Only the number of records and annulments of notations for seizure reached 693 000. Main part of these records is practical meaningless, because the notations are registered even though the obliged persons are not owners of any real estate.

Yearly increase in the number of requests for outputs from the cadastre was solely realized by e-services of the Remote access, which satisfied even 60 % of 3 800 000 requested information from the cadastre of real estates. For the first time the number of requests at desks in cadastral offices decreased on 14 %, whilst the number of provided outputs via verifiers (CzechPoint , notaries) increased on 140 %.

Cadastral map was digitized on further 2 % of the territory of the Czech Republic. However, such speed of digitalization is not in accordance either with needs of the public administration and other users. There are available raster cadastral maps in internet applications so far, but their use is limited by their low precision and sporadically bad legibility. In 2008 intensive preparation was in progress to enable speeding up the digitalization of cadastral maps in further years, to ensure digitalization rate of 1 000 cadastral districts in 2009.

In 2008, fulfilment of the long-term program of constructing a national geoinformation infrastructure, provided by the Czech Office for Surveying, Mapping and Cadastre continued. Czech network of GNSS permanent stations, which allows fast and precise positio-

ning in the whole territory of the state with cm accuracy thanks to permanent reception of signals of global navigation system, has been interconnected with similar networks of Austria, Bavaria and Slovakia in the frame of the European project EUPOS. Map products are provided via Geoportal of Land survey office in the form of web map services, so that users can download them straight from the Geoportal in the necessary amount - they are not forced to copy the updated data. In 2008 the project of acquisition of new terrain model of the Czech Republic has been prepared in cooperation with the Ministry of agriculture and Ministry of defence. With help of airborne laser scanning data of the earth surface will be collected based on which the high precision terrain model will be produced so as the model of land cover depicting buildings and permanent plants.

The annual report of the Czech Office for Surveying, Mapping and Cadastre provides an overview of important activities and their results, provided by cadastral offices, Land survey office, survey and cadastral inspectorates and the Czech Office for Surveying, Mapping and Cadastre.



Karel Večeře  
President of COSMC

# 1. The Surveying, Mapping and Cadastre Sector in CZ

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## Cadastre of Real Estates

The Cadastre of Real Estates of the Czech Republic is a set of data about real estates in the Czech Republic, including their inventory and description and their geometric specification and position. Parts of it are records of property and other material rights and other legally stipulated rights to these real estates. The Cadastre of Real Estates continues to a long tradition and inventories of ownership and land registrations in the territory of the Czech Republic, with roots going back to the 14th century. The current Cadastre of Real Estates is integrated in the Information System of the Cadastre of Real Estates (ISKN) and represents one of the principle registers of state administration.

## Land Surveying Activities

The main goal of land surveying activities in the public interest provided by the surveying, mapping and cadastre sector is to provide both professional users and wide public with requested geographical products and data and make available services from the area of geodetic control administration, administration of Fundamental base of geographical data, creation of state map series, orthophotographic representation of the Czech Republic, standardization of the geographical names and administration of the Central Archives of Land Surveying and Cadastre. These land surveying activities, as well as the administration and management of the Cadastre of Real Estates, fall fully within the competence of state administration.

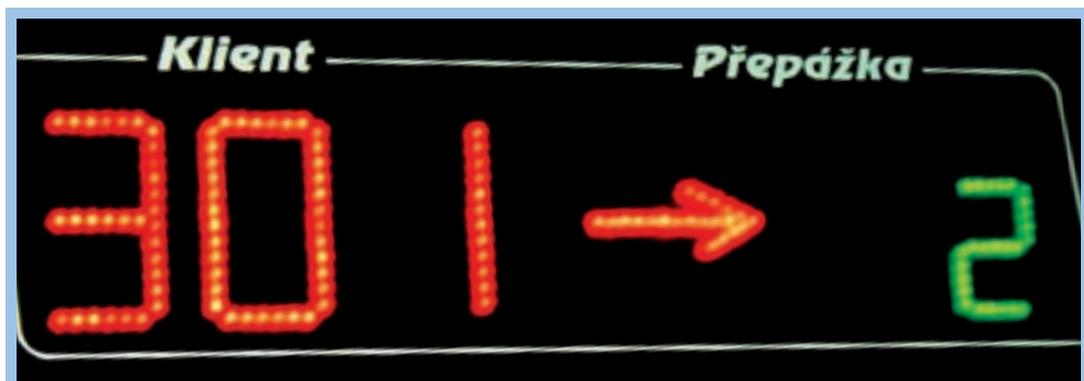
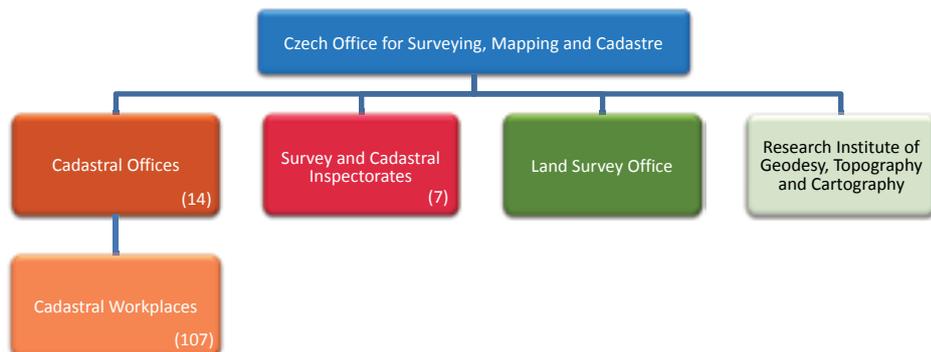


## Organizational Structure

The Czech Office for Surveying, Mapping and Cadastre (COSMC) governs 14 regional cadastral offices, which have 107 workplaces in larger towns and execute state administration of the Cadastre of Real Estates, it further manages the 7 Survey and Cadastral Inspectorates that control cadastral offices and supervise some commercial activities, whose results are applied to the Cadastre of Real Estates and state documentation funds COSMC further manages the Land Survey Office (LSO), which focuses on other land survey activities that are provided in the public interest by the surveying, mapping and cadastre of real estates section. COSMC is also the founder of the Research Institute of Geodesy, Topography and Cartography, p.r.i.

Administration authorities for the cadastre of real estates and land surveying were set up by Act No 359/1992 Coll. on land surveying and cadastral bodies, which also specifies their material and territorial competence.

*Organizace resortu zeměměřictví a katastru nemovitostí*



# 2. Administration of the Cadastre of Real Estates



First records concerning the land inventory were collected for tax purposes. The effort for unified tax policy was tangible even in 1022, when the Czech prince Oldřich from the family of Přemyslovci set up the hide tax. Despite the area of the estate taking for the tax basis was not accurate, we can consider it as the first step towards to the development of the cadastre of real estates (real estates records) as a fiscal tool.

The nobility started to secure private rights to property by recording in Land records at the start of the 14th century. That was the start of the recording of rights to real estate here. Later other records of real estate and cadastres were set up, serving predominantly for more effective and fair tax collection.

The foundations of today's modern Cadastre of Real Estates were laid by issuing a supreme patent of the Austrian Emperor Franz I on 23. 12. 1817, about land tax and land surveying. Its basis was a precise inventory and geodetic measurement of all land, a so-called Stable Cadastre. Most cadastral maps of the territory of the Czech Republic are today still derived from the survey documentation of the Stable Cadastre. Such a cadastral maps (usually at a scale of 1:2 880) are available for about 62 % of the territory of today's state.

Current Czech Cadastre of Real estates was established in 1993 and integrates the function of Land Registry Book (registration of rights) and former Cadastre of Lands (records of real estates) into one tool.



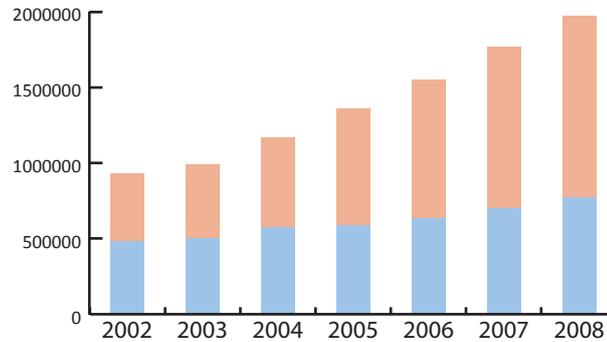
Cadastre of Real Estates in the Czech Republic is administered with help of the information system. The Information System of the Cadastre of Real Estates (ISKN) is an integrated information support system for state administration of the Cadastre of Real Estates and for providing user services of the cadastre. It was implemented in 2001. The new system increases the data quality, their accessibility and reliability and offers the option of connecting to other basic registers of state administration. Data are administered in local databases and replicated in roughly 2-hour intervals in the central database by means of the WAN department network. Thanks to this functionality it is possible to search up-to-date data of the cadastre throughout the whole Czech Republic by means of the Internet service „Remote Access to the Cadastre of Real Estates“.

Since September 2001 was all historical data of descriptive and spatial data stored, so it is possible to assemble data into required outputs on historical data (time development). Since June 2006 are the electronic outputs signed by the electronic mark and have the same significance as the public documents issued by cadastral workplaces.

## Main Tasks of Cadastral Offices

The main task of cadastral offices is recording of material rights to real estates and other data by means of entry or registration and record of notations. Total number of completed records increased yearly almost about 200 000 again.

**Development of the Total Number of Completed Proceedings on Entry and Registration**

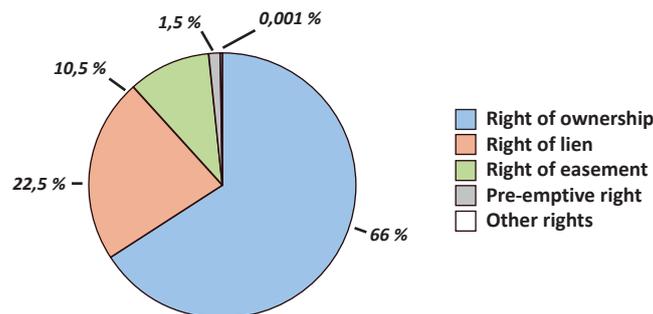


Year	2002	2003	2004	2005	2006	2007	2008
Entries	480 801	498 229	572 296	581 025	626 948	695 564	766 305
Registrations	443 341	485 161	587 824	768 252	910 038	1 064 336	1 190 566

### Entries of Proprietary Rights into the Cadastre of Real Estates

Entry in the Cadastre of Real Estates records of property rights to real estate (right of ownership, right of lien, right of easement, pre-emptive right with material effect) and other rights stipulated by the cadastral act. In administrative proceedings the cadastral office assesses deeds and other documents, decides on permitting entry and, based on these decisions, records the rights in the Cadastre of Real Estates. Property rights to real estates are created by registering in the Cadastre of Real Estates with legal effect on the date of application for entry.

**Share of Different Types of Rights Recorded by Entry in the Cadastre of Real Estates**

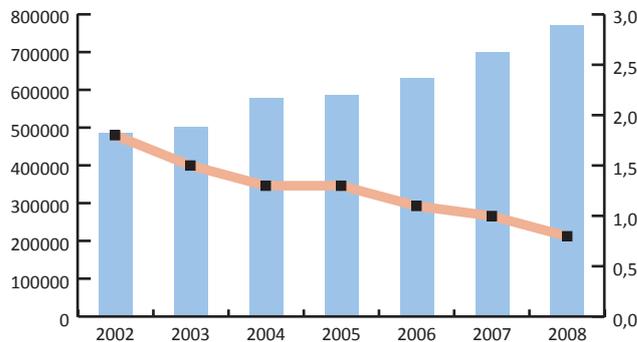


Entries of rights in the Cadastre of Real Estates are the most demanding activities of cadastral offices in terms of capacity and time. Year 2008 brought a growth in processed proposals for entries of rights of 10 % compared to 2007 – a total of 766 000. Proposals for entry of proprietary rights are represented by 66,0 % of the total number, rights of lien concerned 22,5 % of proposals, 10,0 % of proposals concerned easements and 1,5 % pre-emptive rights with material effects. During years the number of entry of rights of

ownership (1,6 %) and right of easement have increased most (2,3 %). On the contrary the decrease in number of registration of right of lien (4 %) shows the decrease of mortgages as a consequence of development of financial crisis.

We managed to reduce the time of processing requests for entry of rights in 2008 again in comparison with previous year conjoined with significant increase in number of completed requests. Average time for decision on the request was reduced from 20 to 16 days in the Czech Republic, total average time from submission of application to registration the right into the cadastre decreased from 30 to 25 days – cf. following chart. Discrepancy between the development of financial resources for ensuring of activities of Cadastral Offices and development of the amount of performed activities has further significantly intensified.

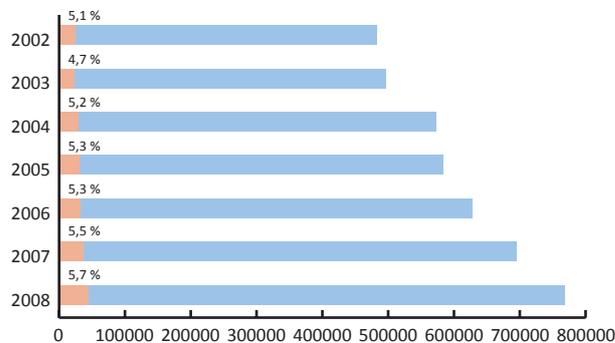
**Development of the Total Number of Completed Proceedings on Entry**



Year	2002	2003	2004	2005	2006	2007	2008
<b>Completed Proceedings on Entries</b>	480 801	498 229	572 296	581 025	626 948	695 564	766 305
<b>Average Time for Decision (in months)</b>	1,8	1,5	1,3	1,3	1,1	1,0	0,8

From the total number of yearly requests for entry, 94 % entries of rights are approved, the rest of administrative proceedings are refused or interrupted. Not only the total numbers of refused entries, as you can see in chart 4, but also their percentage at the total number of received requests for entries is growing, which implies slight degradation in quality of delivered requests for entry of rights. The share of incorrect requests for entry which has to be corrected during the proceeding and which means prolongation for the proceeding is high in the long term.

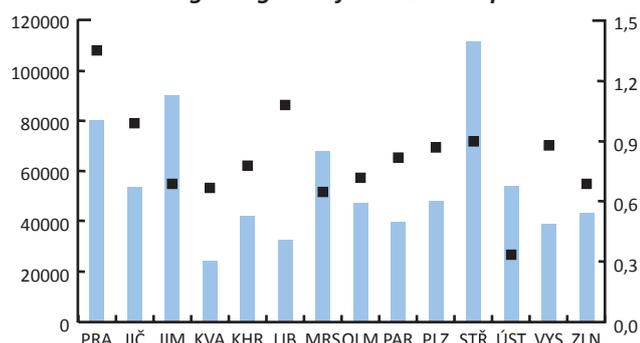
**Development in the Number of Approved and Refused Entries**



Year	2002	2003	2004	2005	2006	2007	2008
<b>Approved Entries</b>	455 833	471 428	541 162	550 447	593 672	655 818	722 123
<b>Refused Entries</b>	23 531	22 528	28 619	29 626	31 829	36 799	44 020

Development of time for processing of requests for entry in the Cadastral Office for Prague-City was very positive in 2008. Waiting for registration of rights has been currently reducing during the whole year so, that the correct requests were elaborated in one month as a rule and in the second half of 2008 the average time for completion of all requests did not reach one month. In total figures for 2008 the average time for proceeding of all requests reached 1.3 month, which represents reduction of half of the time in comparison to 2007. In other regions the time limit for proceeding varied from 10 to 32 days, as it is evident in the following chart.

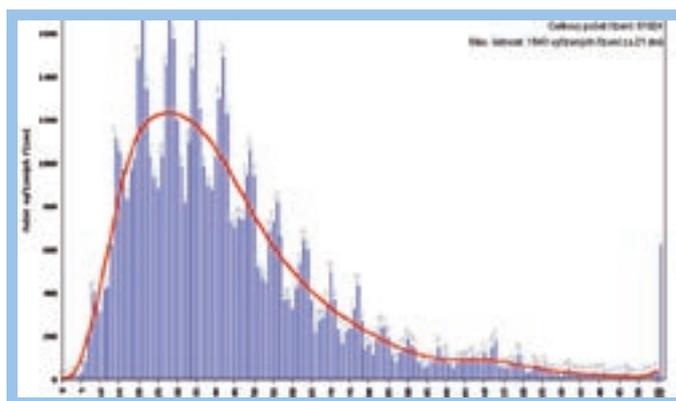
**Number of Entries and Suppose Duration of Proceedings in Single Regions of the Czech Republic**



Region	PRA	JIČ	JIM	KVA	KHR	LIB	MRS	OLM	PAR	PLZ	STŘ	ÚST	VYS	ZLN
Average Period for Settlement (in months)	1,3	1,0	0,7	0,7	0,8	1,1	0,6	0,7	0,8	0,9	0,9	0,3	0,9	0,7

Following chart of dispersion of period for entries in the Cadastral Office for Prague–City depicts the proposals delivered and completed in 2008 and proves, that the highest number of applicants was satisfied within 21 days from the delivery of the proposal for entry and overwhelming majority of proposals were completed within 60 days.

**Dispersion of Periods for Entry Proceedings between 1. 1. 2008 and 31. 12. 2008 in the Cadastral Office Prague–City**



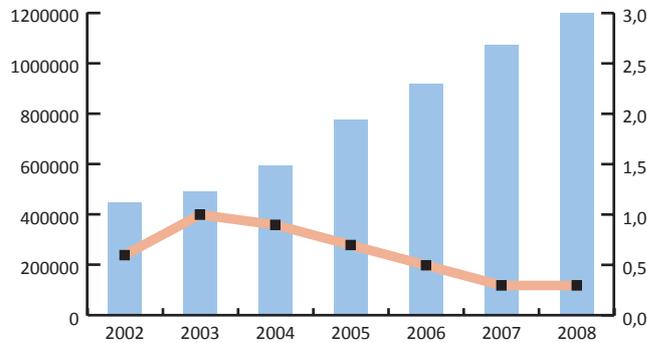
### Registering of Rights by Record, Notation and Registering of Other Data

Cadastral offices perform also other registrations into the Cadastre of Real Estates, namely registering by record. This is the way how to register the rights to real estates established by decision of the other organizations of state administration, by decision of courts or given by the law, by knocking down of the auctioneer in the public auction, how to annul extinguished rights of lien and easements. Further types of registrations are the registrations by notation. Notations serve to denotation of facts or relations

relating to the real estate or a person, which are solely informative. Following data are recorded into the Cadastre of Real Estates regarding e.g. change of land type, real estate protection etc.

In 2008 the enormous growth in the number of submissions for recording and registering of notation went on. Whilst 1 059 000 submissions were delivered to cadastral offices in 2007, in 2008 the number of these submissions exceeded 1 166 000, which represents an annual growth of more than 10 %. The cardinal influence on the growth of these requests had the records and annulments of property by seizure of assets, which represented more than 50 % out of total number of registrations by records and notations, which cadastral offices carry out without delay. In order to not prolong the time for other registration by records, significantly more requests had to be managed than those submitted in the particular year. In total 1 191 000 submissions for registration by record were handled. Despite the growing number of submissions, the average period for completing has shortened – instead of 10 days in 2007 it was 8 days in 2008.

**Number of Completed Submissions for Registering of Rights by Record and Notations**



Year	2002	2003	2004	2005	2006	2007	2008
<b>Number of Completed Proceedings</b>	443 341	485 161	587 824	768 252	910 038	1 064 336	1 190 566
<b>Aver. Period for Settlement in Months</b>	0,6	1	0,9	0,7	0,5	0,3	0,3

### Certification of Survey Sketches

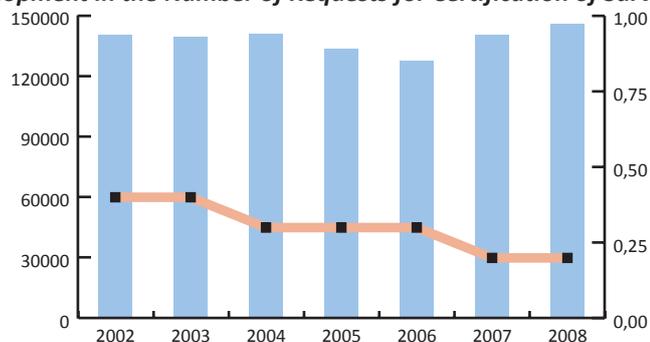
Survey sketches represent land parcel division, position of a building or change of its external outline in the cadastre of real estates and some other changes shown in cadastral maps. They are made solely by private geodetic firms. They are important documentation for maintaining of cadastral maps, thus every survey sketch must be legalised by an authorised surveyor who is authorised to certify the results of surveying activities by the COSMC under Section 14 of Act No 200/1994 Coll. on surveying and mapping.

The number of surveying sketches has been very high in the Czech Republic for a long time, since there are transformation processes constantly occurring, whose result or partial step is land division (agricultural restitution, registering property



of municipalities, sale of state farming land etc.). Building of residential, industrial and infrastructure constructions is also developing. The trend of moderate lowering number of requests for certification of survey sketches in 2005 and 2006 has turned and in 2008 the number increased in comparison to 2007. The average time for checking and certification of survey sketches remained unchanged (7 days).

**Development in the Number of Requests for Certification of Survey Sketch**



Year	2002	2003	2004	2005	2006	2007	2008
Certified Survey Sketches	443 341	485 161	587 824	768 252	910 038	1 064 336	1 190 566
Aver. Period for Settlement in Months	0,6	1	0,9	0,7	0,5	0,3	0,3

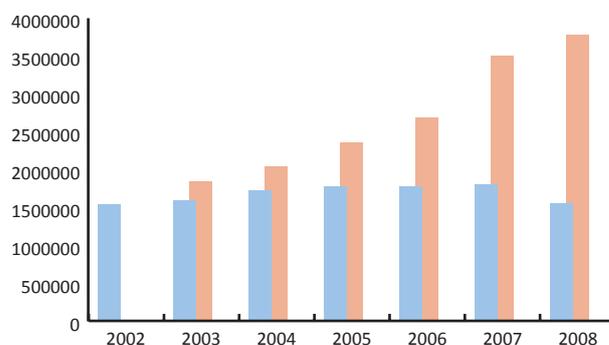
### Provision of Information from the Cadastre of Real Estates

Individual workplaces of cadastral offices provide clients with information from the cadastre over the counter during office hours. Outputs from the cadastre contain both technical data on real estates and data on legal relations. In addition, copies of cadastral maps, copies of documents stored in document funds, copies from historical registries (Land Registry Book, Cadastre of Lands) and some other outputs are provided. Since 2001 Internet services have been available allowing outputs from the cadastre by remote access, without visit to the cadastral office. These services satisfy today more than a half of continually growing demand for information from the Cadastre of Real Estates. Requests for provision of information at the counters of cadastral offices in 2008 decreased yearly on 14 %, while the total increase of satisfied requests for information from the cadastre of real estates including remote access was 8 %. Therefore in 2008 60 % of applicants for information from the cadastre of real estates were satisfied by electronic services. This progress was fundamentally influenced by the development of services on contact points of public administration, so called Czech POINTs, which issued 230 000 outputs from the cadastre of real estates in 2008. Further influence of significant importance is growing orientation of users towards acquiring information by means of remote access via Internet services, which have started to use not only banks



and real estate agencies, but also municipalities and regional authorities. On 1. 7. 2006 notation of statements from the Cadastre of Real Estates with an electronic mark began. Such statements are considered as public documents. More in the chapter Electronic services of COSMC – Remote access.

**Development in Number of Provided Information:  
over the counter (number of requests), electronically (number of external outputs-reports)**



Year	2002	2003	2004	2005	2006	2007	2008
Information Provided in Cadastral Offices	1 518 721	1 569 246	1 698 690	1 757 902	1 756 365	1 780 972	1 530 412
Included Information Provided Electronically	-	1 824 000	2 020 000	2 328 600	2 669 419	3 486 033	3 760 788

## Digitalization of the Cadastre of Real Estates

Digitalization of the real estates registry as a whole is a vital step not only for effective operation and administration of the Cadastre of Real Estates. Cadastral maps in digital form are fundamental databases for administration and decision-making about the area. They are strategically important as a reference basis for creation of further maps, information systems and applications relating to the territory as f.i. digital technical maps, spatial plans, price maps, monitoring and development of technical and traffic infrastructure, environment and others. Digitalization of the file of descriptive information of the cadastre has begun in 1993. The 5-year objective was completion of the cadastral database with missing data on land parcels consolidated into large agricultural and forest areas, supplementation of some data on ownership of real estate, supplementation of identifiers of owners and data on agricultural land quality. In the course of this process almost 40 million entries were added to the database and its volume thus doubled. Digitalization of the file of descriptive information of the cadastre created basic conditions for the transition to a higher version of the CIS equipped with remote access to data in the central database of the cadastre. Currently the size of the database is in total 0.7 Tb (terabytes).

Digitalization of cadastral maps started in connection with the completion of digitalization of descriptive information of the cadastre. The capacity that cadastral offices can give to map digitalization is limited in view of the growth of volume of other activities. Therefore only 2 to 3 % of the total cadastral territories in the Czech Republic are transformed into digital form yearly. Attention is focused above all on cadastral maps of cities and larger municipalities, where higher quality documentation is usually available, there are more transactions on the property market and development objectives are realized. Digitalization of cadastral maps in such localities is time consuming.

### Progress of Digitalization

At 31. 12. 2008 the cadastral map was available in digital form in 4 976 cadastral districts, which represents 38 % of the total number of 13 027 cadastral districts of the Czech Republic. 28 % of them are DCM (Digital Cadastre Map) and 10 % are the KM-D (Cadastral Map-Digitized). Revision of cadastral documentation was completed in the form of vector digital cadastral maps (DCM) based on the results of land consolidation projects and new mapping in 199 cadastral districts (or their parts), revision of cadastral documentation by adaptation of the set of geodetic information in the S-JTSK (System of Unified Czech / Slovak Trigonometrical Cadastral Net) coordinate system to DCM in 98 cadastral districts and in 97 cadastral districts transformation of the cadastral map in S-JTSK to DCM was carried out in 2008.

Until digital cadastral maps are available in other regions, users make use of raster data, obtained by precise scanning of cadastral maps and land cadastre maps. Raster data of cadastral maps with up-to-date content are procured continually, based on requests. Currently these maps are available in the whole CR by means of the application „Remote access to the Cadastre of Real Estates“.

The actual course of adaptation of cadastral maps into digital form is negatively affected on the one hand by the necessity of completing cadastral maps of parcels consolidated in the course of collectivisation into large land blocks, today registered in a simplified manner using the historical map fund of former registrations, and on the other hand by the very urgent problem of resolving the consequences of unfinished allotment and consolidation proceedings arisen after the second world war. Whilst the removal of parcels registered in a simplified manner is a technical problem, resolution of the consequences of unfinished allotment and consolidation proceedings is a problem with serious legal aspects. Land consolidation, which is the most effective tool for the solution of relations in the area as a whole, because it provides digital cadastral map together with resolution of ownership relations i.a., is however proceeding very slowly due to insufficient financial support.



<b>Development of Digitalization of the File of Geodetic Information of the Cadastre (FGI): 2000-2008</b>										
<b>Year</b>	<b>unit</b>	<b>until 2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<i>Digitalization Completed</i>	c.d.	1 049	440	453	543	383	314	279	263	313
<i>Total in Digital Form</i>	c.d.	1 988	2 428	2 881	3 424	3 807	4 121	4 400	4 663	4 976
<i>Yearly Growth from the Total of 13 027 c.d.</i>		8,1 %	3,4 %	3,5 %	4,2 %	2,9 %	2,4 %	2,1 %	2,0 %	2,4 %
<i>% from the Total Number</i>		15,3 %	18,6 %	22,1 %	26,3 %	29,2 %	31,6 %	33,8 %	35,8 %	38,2 %

Decrease in the number of completed cadastral districts in 2004–2007 has been influenced in particular by the reduction in the number of employees (2 % yearly in 2004–2006).

### Plan of Digitalization of Cadastral Maps

The Czech government decided in July 2007 to speed up the digitalization by creating suitable conditions, which enable completing of digitalization of cadastral map on 62 % of the state territory by the end of 2015. It means the speed of 1200 completed cadastral districts yearly, which represents 9 % cadastral districts yearly, see the following figure.

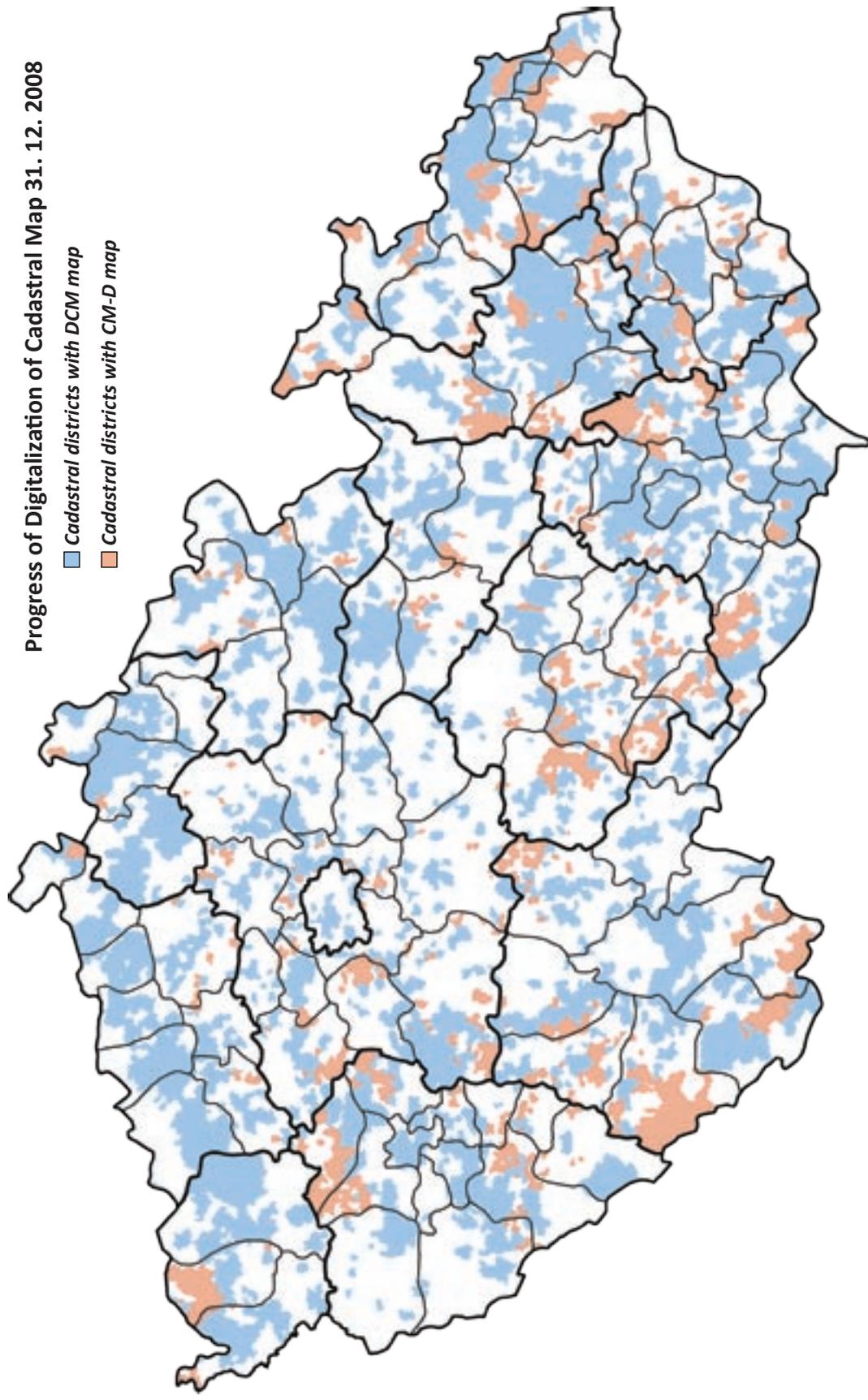
<b>Schedule of Digitalization of FGI: 2008 – 2015</b>								
<b>Year</b>	<b>1997 - 2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
<i>Proposal of the Number of c.d. for Map Digitalization</i>	-	955	1 386	1 322	1 336	1 293	1 159	600
<i>Total Number of c.d. with Cadastral Map in Digital Form</i>	4 976	5 931	7 317	8 639	9 975	11 268	12 427	13 027
<i>Yearly Growth in % out of Total Number</i>	3,4 %	7,3 %	10,6 %	10,1 %	10,3 %	9,9 %	8,9 %	4,6 %
<i>Podíl z celkového počtu</i>	38 %	46 %	56 %	66 %	77 %	86 %	95 %	100 %

To meet the proposed deadline it is necessary to complete step-by-step the land consolidation and allocation in cadastral districts with uncompleted proceeding by the end of 2015. The problem is also unbalanced performance of digitalization in single regions, which ranges between 24 and 54 % out of the total number of cadastral districts in a region. The lowest digitalization ratio influencing the need for strengthening of personal capacities is in Central Bohemia region and in the region Vysočina. This fact significantly complicates the organizational and methodical aspect of control of the whole digitalization task.

### Cooperation with Private Sector

Following the resolution of the government on speeding up the digitalization the private sector will take part on digitalization approximately in range of 40 % of necessary capacity during 7 years. In 2008 the cooperation with private geodetic companies was the subject of pilot testing in the frame of five cadastral offices and in the scope of eight cadastral districts. Functionality of the cooperation under different specifications, defined by existing map basis and chosen process of renewal of the cadastral documentation, was the subject of testing. Pilot test proved that the cooperation with external providers under the firm stated conditions regarding the scope of work and precise outputs description is not problematic. In the end of 2008 eight cadastral offices put up public tenders for works connected with the digitalization of cadastral maps, further cadastral offices will have done so by the end of the first quarter of 2009. Public tenders were launched in the form of open proceeding for so called framework agreement followed by implementing agreements for single localities. To define range and contract prices the catalogue pages for four basic renewal types are used.

Progress of Digitalization of Cadastral Map 31. 12. 2008



# 3. Land Surveying Activities in the Public Interest

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It is typical at present for land surveying activities in the public interest to utilize new technologies for data collecting, systematic data processing including their storage into the database systems and making them fast available to users via internet applications. In 2008 main focus was given to creation of the conditions for trouble-free implementation of the Directive of the European Parliament and Council 2007/2/ES, on establishing the Infrastructure for spatial information in the European community (INSPIRE).

In the area of geodetic control the effort was focused on cooperation with private land surveying subjects regarding error detection on points and services provision in the frame of the project of Czech network of permanent stations GNSS, in particular. Since further development of geodetic control is impossible without connection to European terrestrial reference frame ETRF89, preparation for its implementation in the CR was in progress last year. Huge effort has been given to stabilization of production system of the Fundamental base of geographical data of the CR (ZABAGED®) and to integration of the database of geographical names (Geonames) into it, because ZABAGED® has become the basic source of information for geoinformatic systems and for map production with still growing demands on its quality and regular updating. In 2008 development and new technology solution for cartographic production have been going on under the conception of integrated information cartographic system. Project for preparation of new digital terrain model on the whole territory of the country based on laser scanning has been prepared, public map services have been launched and geographical data provision via Geoportal has been extended.

## Geodetic Control

The Land survey office performs administration of geodetic control of the Czech Republic and decides on the localisation, transfer or removal of survey marks of basic geodetic control. At present the importance is given to the modern part of geodetic control represented by the Czech network of permanent stations GNSS for positioning (CZE-POS) apart from classic geodetic control represented by minor control.

In 2008 the geodetic control development was directed at activities leading to new realization of European terrestrial reference frame ETRF89 and system of the Unified Czech/ Slovak Trigonometrical Cadastral Net S-JTSK/05 on the territory of the Czech Republic. Dynamic maintenance of geodetic minor control was launched last year based on the communication with users - mostly private surveyors, who send the reports on damages or changes on points of minor control via Internet.



## Maintenance and Documentation of the State Border

The Land survey office carries out surveying activities for maintenance and verification of state borders after agreement with the state border documentation administrator, which is the Ministry of Interior of the Czech Republic. The actual performance of surveying activities, their scope and specific material content is different for state borders with individual neighbouring states. They are completely subject to tasks arising from international agreements on state borders and their documentation, which is administered in agreement between both partners. The international border commission coordinates processing of documentation for maintenance, signalling and verifying state borders and updating border documentation. From the point of view of surveying activities the current period can be described as a period of transformation and updating of state border documentation from a graphical to a digital form and specification of positioning coordinates of all break points of the state border.



## Fundamental Base of Geographic Data (ZABAGED®)

ZABAGED® is a database set of selected geographic, topographic and geodetic data from the whole territory of the Czech Republic. ZABAGED® creates the continuous digital geographic model of the territory matched by its accuracy and detailed representation of geographic reality to the Base Map of the Czech Republic 1:10 000 (ZM 10). The content of ZABAGED® represents 116 types of features represented by vector graphic and descriptive part with more than 350 types of descriptive and qualitative attributes. Selected types of features (hydrography, communications) content in its descriptive part the identifiers (integration keys) for the connection to the databases of their administrators. The vertical component represented by spatial 3D sets of contours is administered in the separate file system. In the area of updating the main goal was in 2008 to stabilize the ZABAGED®'s production system, reach the areal data updating of 1/3 of the Czech Republic yearly and deepen the cooperation with partner organizations to ensure future continuous ZABAGED® updating. The content of ZABAGED® has been enlarged on definition points of address places and definition points of administrative units obtained from the Czech Statistical Office (ČSÚ). The work on provision of high-quality street names' implementation and improvement of the road network structure went on. Technology of the ZABAGED® production system was completed with the possibility to administrate and update the Base dataset of administration and cadastral boundaries. The integration of ZABAGED® and Geonames has started on the application and data level.

## Altimetry

Altimetry data of the Czech Republic territory, administered and provided in the ZABAGED® frame in the form of altimetry contour line model, has been checked and updated in 2008 in the range of 1400 map sheets of BM10. To facilitate the application of the altimetry model in geographical information systems this model is being alternatively transformed into the point grid sized 10x10 m and as such provided to users. Land survey office has taken up the preparations for the project of new altimetry mapping of the territory of the Czech Republic with use of the technology of airborne laser scanning in 2008. In December 2008 the Agreement on cooperation on creation of CR altimet-

ry digital databases was signed between the Czech office for surveying, mapping and cadastre, the Ministry of agriculture and the Ministry of defence of the Czech Republic. The testing data from localities Sobotka and Dobruška were acquired, the basic principles of the data processing technologies verified and reached data quality evaluated in the cooperation with the University in West Bohemia in Pilsen.

## State Map Series

State map series represent sets of basic and thematic map series produced by the Land survey office and the Czech office for surveying, mapping and cadastre. The basic state map series is a cartographic work with a basic generally usable content, coherently showing the territory according to unified principles, created and issued in the public interest. The sources of topographic content of the basic state map series are cadastral maps, ZABAGED® and Geonames, in particular.

The basic state map series at a scale of 1:5 000 is provided both in digital and printed form and is available in three versions. The former state maps 1:5 000 – derived (SMO-5) are provided only in the form of copies and prints for sale. Another version is the state map 1:5 000 (SM 5) provided in digital, raster and printed form for approximately 25 % of the territory of the Czech Republic. The last version is state map 1:5 000 – raster one (SM 5 R) based on the SMO-5 printing bases and being provided both in raster and printed forms. SM 5 is not regularly updated at present, because there are ongoing preparations in operation in LSO for launching of new full-automated technology for creation of this map series. Base maps at medium scales represent the most important part of the basic state map series. Base Maps of the Czech Republic are produced in a scale series of 1:10 000, 1:25 000, 1:50 000, 1:100 000 and 1:200 000. An important part of the state map series are maps of territorial units forming the Map of Districts of the Czech Republic 1:100 000, Map of Regions of the CR 1:200 000, Map of the Czech Republic 1:500 000, CR – Physical-geographical map 1:500 000 and Czech Republic 1:1 000 000. The collection of the basic state map series is still being supplemented with a group of maps of the administrative division of the Czech Republic at scales of 1:200 000, 1:500 000, 1:1 000 000 and 1:2 000 000. In 2008 creation of new map series has been launched – map of municipalities with enlarged administrative competencies 1:50 000, where the administrative district of every municipality with enlarged administrative competencies is depicted on one separate map sheet. It is completed for the regions Vysočina and South Bohemia at present.

The thematic state map series is a cartographic work representing certain thematic phenomena as a rule, on the basis of the basic state map series, which is published in the public interest. The collection of the thematic state map series issued by the Czech office for surveying, mapping and cadastre includes the Base Hydrographic Map of the Czech Republic 1:50 000, Road Map of the Czech Republic 1:50 000, Regional Road Map of the Czech Republic 1:200 000, and some other maps with thematic land surveying content. In 2008 a new version of BM100 was completed and much effort is given to the process of creation of BM25 to be completed by the end of 2009. Development of creation of Derived State Map (DSM) will be supported in the new information cartographic system prepared in cooperation with the company T-Mapy Ltd., which is to be completed in the first half of 2009.



## Orthophotographic Representation of the Czech Republic

Orthophotos created by the orthogonalization of aerial photographs (transformation of photographs to the orthogonal projection in digital form) find more and more uses in various fields of activities. A colour orthophoto is available for the whole territory of the Czech Republic and is being updated in cooperation with the Ministry of agriculture and Ministry of defence of the Czech Republic. Aerial orthophotos are taken regularly in three-year cycles so as every year the updated orthophotos from one third of the territory of the Czech Republic are for disposal. The Land survey office distributes this product to users in map sheets of the State Map 5 (ca 5 sq m). Data are in TIF raster format, JPEG or MrSID with resolution of 0.5 m and are georeferenced in coordinate system S-JTSK with help of text set TFW (SDW). Sets for georeferencing into the world coordinate system WGS84 are also provided.

In 2008 orthophotos from the west zone were processed and so the second cycle of creation of colour orthophotos on the territory of the Czech Republic was completed. Preparation for conversion to the orthographic representation of the republic with higher accuracy given by the smaller pixel size 0,25 m since 2009 is in full run.

## Geonames Database

The Geonames database provides a complete set of information on standardized geographical names (in total 68 types of designated objects) and names of settlement units for the Base Map of the Czech Republic 1:10 000. The Geonames database facilitates the access to terminological data, allows their analysis for the needs of onomastic and historical research. Alongside with the data from the Fundamental Base of Geographic Data CR (ZABAGED®) it provides users with an integrated view of the territory of the Czech Republic. It is a source for publishing state map series of various scales.

Updating of the Geonames database is going on in cooperation with municipalities harmonized with updating of ZABAGED®. In 2008 the methodology for integration of data in both mentioned applications was prepared with the particular goal of making the Geonames administration more efficient, elimination of duplicities and discrepancies in both data sets, and ensuring seamless outputs from the Geonames database.

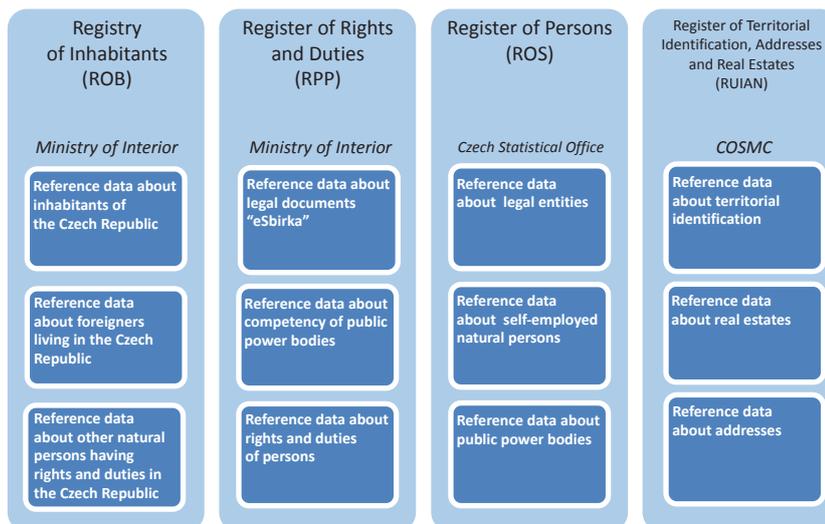
# 4. e-Government Services

Headstones of the national e-Government conception (electronic public administration) are the basic registers. Basic registers contain data on people, companies, real estate and on rights and obligations.

Four registries depicted in the following picture should create the database of electronic public administration.

Interconnection of basic registries of public administration and connection with other information systems should remove current problems with heterogeneous data, in particular in the area of people, companies, addresses and territorial identification. After launching of basic registries these data will be centralized in one place to save financial resources and time not only to public authorities but also to other subjects outside the public administration. These resources could be then allocated to be used for creation of other information services. Citizens should benefit from cooperation of these registries in the area of notification duty (notification of changes at one place – Czech POINT).

The branch COSMC is in particular involved in the Registry of territorial identification, addresses and real estates (RÚIAN). The registry will serve as the source of reference and other data on territorial items and territorial-registered units included parcels, buildings, addresses and their localization.



## Electronic Services in COSMC

Informatization of the public administration and society in general brings the need of creation of infrastructure on the national level, included the geoinformatics both on national and European levels. Introduction of e–Government encompasses several component technical problems, such as digitalization of the data series and information funds, use of protected electronic communications (ciphered communication, electronic signature, electronic mark), making accessible agendas and remote services (presentation of products and services on www portals, implementation of web services for remote access to data), interconnection of information systems of public administration and similar. In the area of land surveying and the cadastre users have several services that can be termed applications of electronic public administration available. These services allow clients to acquire information from the cadastre, use the on-line map services or determine the actual position or carry out a precise measurement using the network of GNSS ground stations.

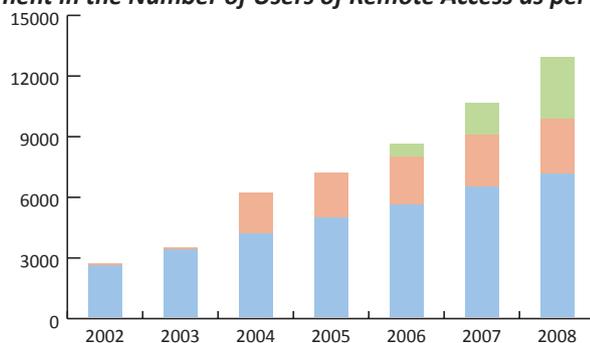
### Remote Access to the Cadastre of Real Estates

<https://katastr.cuzk.cz/>

Remote access (DP) allows the provision of data from the cadastre for the whole territory of the Czech Republic over the Internet. Outputs from the cadastre obtained in this way – for example, statements from the cadastre and other configurations, are formally and materially completely identical to documents issued at the same time by the cadastral office.

In 2006 the possibility of visual search in the application was improved. Aside from digital cadastral maps, orthophoto maps (aerial photographs) and Base Topographical Maps for the whole territory of the CR were made available, as a navigation tool for orientation in space and improved searching of parcels. Since 2007 scanned raster maps of the cadastre are also available through the application Remote access to the Cadastre of Real Estates for the whole CR and those cadastral districts where digital maps are not available yet. In 2008 raster pictures of cadastral maps of the former Cadastre of Land were completed, which are being utilized for depiction of agriculture and forest land amalgamated during land consolidation into larger land complexes till digitalization is not completed. Using of digital and raster basis made available the digital data from the cadastre for the whole territory of the Czech Republic.

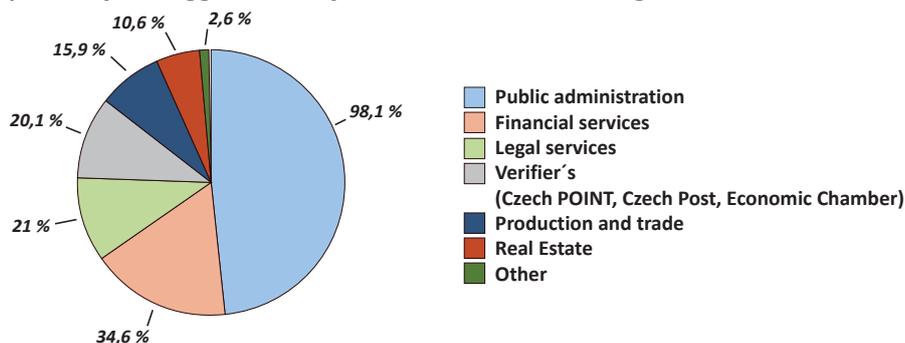
**Development in the Number of Users of Remote Access as per Account Type**



Year	2002	2003	2004	2005	2006	2007	2008
<b>Paying customers</b>	2 580	3 387	4 169	4 933	5 572	6 474	7 132
<b>Free accounts</b>	55	66	1 979	2 190	2364	2 558	2 667
<b>Verifier's accounts</b>	-	-	-	-	614	1 540	3 051

Outputs from Remote access are paid, but substantial group of users from state administration and self-government have been provided with data from the cadastre in this manner free-of-charge. Remote access has been operated since 2001 and since its launch the number of clients actively using it has grown annually. The number of RA users increased by about 20 %, at 31. 12. 2008 the number of users' accounts was at a total of 12 850, 2 667 of which were free accounts and 3 051 were accounts for certifiers (see later). Many new users' accounts were set up in connection to the project CzechPOINT.

**Depiction of the Biggest Users of Remote Access – According to the Data Value**



As well as the number of users, the income for provision of data via Remote Access is growing. In 2008 the income from paid accounts overreached 100 million CZK in total. In term of the total turnover the biggest paid private customer of the RA is the group „Financial services“ (being represented by the banking sector in particular), followed by the group „Legal services“ (court executors, notaries, solicitors). As for the statistics of frequency of outputs from RA in 2008 the most popular output is unambiguously the extract from the cadastre of real estates, followed with a large spacing by the summary of ownership.

### Issuing of Verified Outputs from the Information Systems of Public Administration

Based on the amendment of Act No 365/2000 Coll., on public administration information systems (ISVS), marking of outputs from the RA with an electronic mark based on a qualified system certificate started at the beginning of July 2006. That electronic mark guarantees authenticity (issued by the Czech Office for Surveying, Mapping and Cadastre) and constancy of the output. An electronically marked statement from the cadastre has all the appurtenances of a public document. Furthermore, the number of places where it is possible to acquire a certified statement from the Information System of



the Cadastre of Real Estates was increased. The amendment to the Act on ISVS mentioned above allowed issuing of statements to following subjects from 1. 7. 2006: notaries, regional, matrimonial, municipal and city district authorities, selected representative offices, the list of which is stated by the implementing legal regulation, and further the Post Office and the Czech Chamber of Economy. These subjects (verifiers) then put outputs into the paper form and issued them consequently as the public output from the information system of the public administration.



In the frame of the project CzechPOINT (POINT stands for - Czech posting authorization information national terminal), that has been launched in pilot version in April 2007 and since 1st January 2008 is in full operation, it is possible to acquire the verified extract from the cadastre of real estates, from the trade and commercial registries and from criminal record. At present the CzechPOINTS enable issuing of the extract from the cadastre of real estates (ownership folio-OF) by the name of the cadastral district and number of ownership folio or real estate identification. The possibility of issuing copies of digital cadastral maps is under preparation.

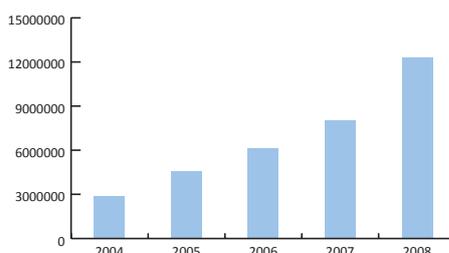
### Consultation of the Cadastre of Real Estates

<http://nahlizenidokn.cuzk.cz/>

Probably the best-known e-Government service, operated in this department, is free consultation of the cadastre. This Internet service was launched on 1.1.2004 and allows provision of selected data concerning ownership of parcels, buildings and building units (flats or non-residential space). By means of consultation it is possible to find information on the state of proceedings from the moment of submission to the cadastral office for the purposes of registering property and other rights to real estate or other data recorded in the Cadastre of Real Estates of the Czech Republic. The consultation application is very intensively used by a wide range of users and has contributed in a significant way to increase the transparency of the course of individual administrative proceedings.

Consultation of the cadastre is one of the most visited websites of Czech state administration. In the five years of its existence the application has registered a constant growth in the number of users; in 2008 it had more than 12,3 million visits. Yearly growth in the number of visits is 54 %, caused mainly by the fact, that in March 2008 the new version of application was launched, which enabled the access to depicted cadastral maps from the whole territory of the Czech Republic. In localities not covered by the digital cadastral map, the raster pictures of cadastral maps are for disposal, which are updated in two-week intervals with depiction of changes based on survey sketches to solve for better orientation. That way the users have access to currently updated complex information from the cadastre of real estates direct from their worktable.

**Development of the Number of Visits to Consultation of the Cadastre of Real Estates**



Year	2004	2005	2006	2007	2008
Number of accesses in millions	2,9	4,6	6,1	8,0	12,3

### Web Map Services for Cadastral Maps

At the beginning of 2008 pilot operation of the web map service (WMS) for cadastral maps was launched. WMS uses the identical databases for storage of scanned maps as the „Remote Access“ application and provides graphical data from the digital cadastral map and orientation parcel map. Digital data (DCM, depiction of changes and definition points) are being obtained in the form of outputs from the central database.

### Geoportal of the Land Survey Office

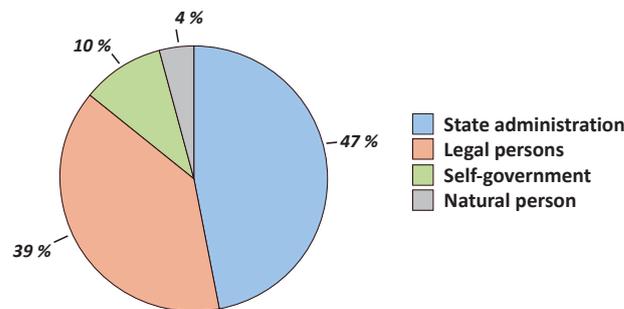
<http://geoportal.cuzk.cz/>

The Geoportal of the Land Survey Office is a comprehensive Internet solution for the sale and provision of geodata, both in the form of file data and in the form of map services. The commercial module allows ordering of map services, files of digital data and printed products based on Internet business. Geoportal homepage contains links to further applications and services of the Land Survey Office (Archival maps, CZEPOS, Geodetic control points).

### Datasets Provision

By means of the commercial module it is possible to order data not only in existing vector and raster formats, but also, for example, in GML format (ZABAGED® data). The client is enabled to select required data according to the sheet line system, i.e. units for which files are available direct via the internet. The part of the commercial module creates the metadata section with information on provided datasets and also the reference to information about single map sheets. The most demanded data sets are ZABAGED®, orthophoto and raster form of the Base map of the Czech Republic 1:10 000 (RBM10). The biggest data amount is provided to users from the public administration area. Share of single users' types on the total number of issued units provided in 2008 via commercial module is depicted in following figure.

*Structure of Geoportal Users in 2008, Included Map Services*



Students can get the data via commercial module free of charge in the reasonable amount for the purposes of their Master or Bachelor Thesis or semestral elaboration based on the agreement signed with the head of the Faculty or University in question.

### Map Services

The second part of the Geoportal - map services, allows on-line Internet access to map data administered by the Land survey office. Clients who connect their system to such a service need not administer their own database of fundamental geodata and accessible data are provided to them with the maximum possible relevance. Registered users are being provided with the publication of ZABAGED® data, dataset on administrative boundaries, orthophotos, RBM10, RBM50, SM 5 raster data and Geonames.

At the beginning of 2008 the full operation of viewing map services was launched for wide public. Application Geoviewer enabled to make accessible free viewing of datasets provided to registered users, moreover graphical searching of geodetic points in the Database of Geodetic control (DBP) or in the network for permanent stations CZEPOS was made accessible. Thus the user can precisely locate the position of requested geodetic points with help of map work in the Geoviewer and also get further information about these points from the DBP.



Another important function of the Geoviewer is its connection with the map service of the Cadastre of Real Estates. The user can view the cadastral maps and maps of cadastre of land together with data provided by the Land survey office.

At the end of 2008 web map services were connected to the Portal of public administration. The thematic layers of map services in the Portal of public administration are based on the products of Land survey office – orthophotos, RBM10 and RBM50.

### Archive maps

In 2006 the application Archive maps was launched within the Geoportal. The application is available both from the homepage of the Geoportal and separately at the <http://archivnimapy.cuzk.cz>. Through this service it is possible to view scanned archival documents of the Central Land Survey and Cadastral Archive.

Available archive maps:

- imperial mandatory prints of the Stable cadastre from 1824 to 1843 in scale of 1:2 880, now completed with the comparison records of areas between 1845 and 1948,
- prints of topographical sections of the third military mapping between 1872 and 1853 in scale of 1:25 000,
- collection of maps and plans from the second half of the 16th century until 1850.

The whole territory of the Czech Republic on old maps of the Stable Cadastre (about 50 000 map sheets) was made available at the end of 2008 by Land survey office. In case the imperial mandatory print is not extant in certain cadastral district, it will be replaced in 2009 by adequate map, such as original map of Stable Cadastre, in the end of scanning works.

The offer of these maps on Internet is being continuously enriched according to the proceeding of scanning of single map sheets. The service is provided free of charge. Via commercial module on Geoportal it is possible to order printed maps or digital sets in printing quality. Information on further archival documents of the COSMC is available on the address: <http://geoportal.cuzk.cz/ISAR/>.

## Czech Positioning Network of Permanent Stations GNSS - CZEPOS

<http://czepos.cuzk.cz/>

The CZEPOS includes 22 stations placed on cadastral office buildings, 1 station on the building of the Czech Office for Surveying, Mapping and Cadastre and 4 external stations. The stations will be uniformly located in the territory of the Czech Republic at a distance of app. 60 km from each other. Data provided by the CZEPOS network allows to users equipped with a single GNSS (Global Navigation Satellite System) apparatus with GPRS or GSM transfer to determine the position in real time with accuracy of one cm, or determine this position by post-processing after measurement to the accuracy of 1 mm.

Real time data in the form of RTCM corrections will be provided in an accessible format and by means of services, i.e. differential GPS for improving navigation position, RTK (real time kinetics) in the form of FKP (area correction) and RTK in the form of VRS (virtual reference station). Data for post-processing will be provided from individual stations in RINEX format. In standard operation CZEPOS covers the whole territory of the Czech Republic with its services based on the network solution in the same quality, regardless of the location of the measured point to permanent stations. Land survey office ensures permanent monitoring of system operation round the clock with service provision to users on the mobile phone – CZEPOS hotline, where possible users' problems are being solved via remote administration. Quality and availability control is also part of the CZEPOS administration.

Based on bilateral agreements between the Land survey office and administrators of GNSS permanent stations of neighboured countries three Slovak stations of SKPOS network and three Bavarian stations of German SAPOS network were connected to CZEPOS in 2008. Further agreements are prepared for signing to connect border stations from Austria, Poland and Sachsen. Data from borderline stations are provided free of charge on the reciprocity principle. Connection of borderline stations increases quality of provided CZEPOS services in particular in the border areas of the Czech Republic. At the same time the statistical data on availability of so called network solution (process of generating areal corrections GNSS) and the stability results of CZEPOS stations were published on CZEPOS website in 2008. CZEPOS gains its wide ground in geodesy, navigation or in the area of intelligent control systems. At 31. 12. 2008 there were registered 660 CZEPOS network users.



## Database of Geodetic Control Points

<http://bodovapole.cuzk.cz/>

Database of geodetic control points contains 70 000 centres of trigonometric and densification points, 51 000 associated points and further 83 000 levelling points and 400 gravity points.

The Land survey office performs administration of the database; its continuous updating is shared with cadastral offices in the frame of their competency. Selection of points from the DGCP is possible via localization units (number of point and triangulation sheet, sheet of the Base Map of the Czech Republic 1:50 000 or State Map 1:5 000 – derived, cadastral district, surroundings given by coordinates and distance) or via graphical selection at the overview map of the triangulation sheets or via application Geoviewer at the chosen map base. The database is accessible free-of-charge.

In 2008 the internet interface was improved regarding announcement of defects and changes on geodetic control points. Provision of geodetic data on points of geodetic control was enlarged by the points of minor control administered in the frame of ISKN. Internet website of DBP data recorded a total of more than 453 000 visits, which means yearly growth of nearly 44 %. By the end of 2008 there were 408 DBP cooperating users registered (who send the internet reports on defects and changes).

Cooperation with DBP users helps to improve efficiency in maintenance of geodetic control points, because it is possible to adjust only those points which are requested by the land surveying public.

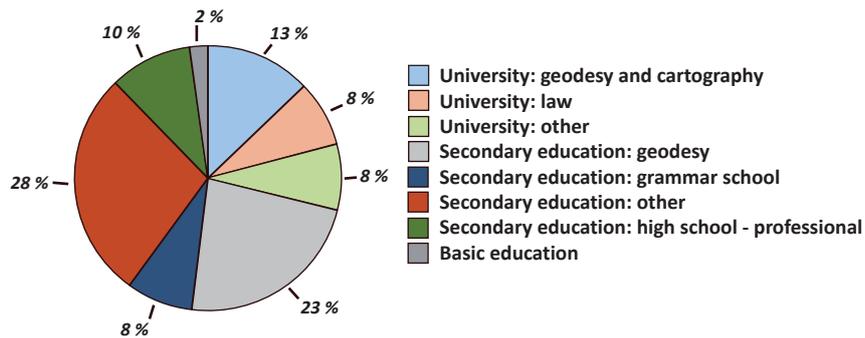


# 5. Economics and Human Resources

## Personnel Structure in the Branch

The overview of the personnel structure in 2008 according to age and education confirms the positive trend of the last few years – a constantly increasing share of university graduates among employees. In the youngest age categories (to 40 years) there are no longer employees with basic education only. A reality is the constantly increasing representation of other fields than geodesy and cartography; above all these are employees with training in information technology, law and economics. The number of employees with secondary geodetic and secondary general education slightly decreased (on 44 ps.), on the contrary the highest grow was recorded in the category of University educated employees in the category - others (on 85 ps.).

*Overview of the Personnel Structure According to Education Type in 2008*



## Assessment of Employee Training

Training in the COSMC is governed above all by the Rules for education of employees in administrative bodies in accordance with government resolution and further by internal regulations, including the Training Plan in the Sector of the Czech Office for Surveying, Mapping and Cadastre, based on which the human resources department carried out a whole range of training professional and management activities in 2008 as the part of systematic mediation, mastering and strengthening of knowledge, skills, values and attitudes of employees.

In 2008 the important goal was to improve the existing training system, which is the tool for getting, maintenance, renewal and deepening of the qualification of every particular employee in accordance with requested qualification of the employees of administrative bodies and with further demands connected with requirements on activities performance at particular job positions.

Group, regional and special expert training was important part of the Training plan in COSMC branch. Due to legislation changes unscheduled seminars were necessary to be realized except for scheduled ones. The seminars focused on legal, economic, personnel and cadastre subject matters. Training plan for 2008 was completed based on the most requested areas and needs of the subordinated organizations in the branch.

## Granting Official Authorization for Verification of Results of Land Surveying Activities

In the framework of granting official authorization for certification of the results of surveying activities professional competence exams for authorization were held in four terms in 2008 in accordance with Section 14 of the Act No 200/1994 Coll. on surveying and mapping.

From the total number of 98 applications (13 of them from 2007) 59 new official authorizations were granted and authorizations of 5 applicants were expanded. In remaining cases the proceedings with 8 applicants were terminated (they did not attend the exam or they did not fulfil the legal conditions for granting the official authorization), 7 applicants did not pass the exam and will repeat it in 2009, 3 applicants did not succeed repeatedly, 2 applicants were excused and proceedings are continuing with 24 applicants, since they did not fulfil the legal conditions for granting the official authorization. 12 applicants who applied for the exam in the end of 2008 will be invited to the exam at the beginning of 2009.

There were 2 437 official authorizations registered by 31. 12. 2008. 89 authorized land surveying engineers were deleted from the registry, because of death or termination of their activity. In 2008 7 authorized land surveying engineers were deleted from the registry (1 terminated his activity, 5 passed away, 1 official authorization was withdrawn). The list of official authorized land surveying engineers contents 2348 valid records.



## Economics

The approved state budget of the Czech Republic for 2008 specified revenue of CZK 190 000 000 and expenditure of CZK 2 824 226 000 for the COSMC. Based on the request of the Czech office for surveying, mapping and cadastre, the Ministry of finance increased expenditure for other material expenditure by CZK 20 000 000 for postal services and the expenditure for wages and other complementary payments by CZK 15 000 000 for speeding up the digitalization of cadastral maps by making over from the chapter 398 – General treasury administration.

The approved budget stipulated income in 2008 of CZK 190 000 000 was filled by CZK 214 158 000, thus means fulfilment of 112,7 % of the approved budget. The greatest share on the exceeded incomes was the higher income for the data from the cadastre of real estates provided via Remote Access. These incomes constantly grow, while the incomes collected at the desks at cadastral offices decrease.

As in previous years in 2008 the greatest share of expenditure was expenditure on employees' salaries, other payments for work carried out and associated expenditure, which form 71 % of the total expenditure of the sector.

The average monthly income achieved per 1 employee in 2008 was CZK 22 392, thus means growth on about 2,5 % in comparison to 2007. The second major part of expenditure was program expenditure allotted for procuring and management of state tangible and non-tangible property. In 2008 the proportion of this expenditure was 21 % of the total expenditure of the chapter. More than two thirds of program expenditure was non-investment expenditure intended for securing the operation, maintenance and repair of state assets and for the lease of computer technology and administrative buildings. Total expenditure also included other material expenditure and expenditure on research and development. 48 % of other material expenditure directly associated with fulfilment of legally stipulated tasks were used on postal services. The remaining part of other material expenditure covered the main expenditure on material, travel costs, training and educational expenditure and other services.

**Summary of Obligatory Indexes of Chapter 346 of the State Budget for the Years 2002 - 2008**

<b>Index / Year</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>Revenues of the chapter<sup>1)</sup></b>	<b>205 209</b>	<b>181 437</b>	<b>158 315</b>	<b>143 125</b>	<b>157 572</b>	<b>175 459</b>	<b>214 158</b>
<i>Administrative fees</i>	<i>456 000</i>	<i>466 998</i>	<i>486 472</i>	<i>544 156</i>	<i>549 614</i>	<i>644 280</i>	<i>682 226</i>
<i>Data provided free</i>	<i>312 000</i>	<i>329 461</i>	<i>336 544</i>	<i>438 426</i>	<i>536 376</i>	<i>630 959</i>	<i>664 009</i>
<b>Total expenditure of chapter<sup>2)</sup></b>	<b>2 030 922</b>	<b>2 133 961</b>	<b>2 327 168</b>	<b>2 421 660</b>	<b>2 513 377</b>	<b>2 815 730</b>	<b>2 806 480</b>
<b>Current expenses without non-investment</b>	<b>1 748 294</b>	<b>1 680 182</b>	<b>1 802 266</b>	<b>1 830 893</b>	<b>1 956 447</b>	<b>2 109 573</b>	<b>2 197 182</b>
<b>Including: wage resources<sup>3)</sup></b>	<b>1 060 661</b>	<b>1 148 146</b>	<b>1 179 756</b>	<b>1 308 839</b>	<b>1 308 839</b>	<b>1 424 864</b>	<b>1 456 806</b>
<i>Insurance and FKSP</i>	<i>390 089</i>	<i>421 717</i>	<i>434 688</i>	<i>452 144</i>	<i>483 848</i>	<i>527 530</i>	<i>539 126</i>
<i>Other material costs</i>	<i>297 544</i>	<i>110 319</i>	<i>187 822</i>	<i>154 686</i>	<i>163 760</i>	<i>157 179</i>	<i>201 250</i>
<b>Program expenditure</b>	<b>251 986</b>	<b>429 516</b>	<b>500 302</b>	<b>563 362</b>	<b>528 266</b>	<b>677 493</b>	<b>580 634</b>
<b>Including: non-investment</b>	<b>16 377</b>	<b>218 804</b>	<b>247 735</b>	<b>256 231</b>	<b>356 631</b>	<b>414 244</b>	<b>402 841</b>
<i>Investment</i>	<i>235 609</i>	<i>210 712</i>	<i>252 567</i>	<i>307 131</i>	<i>171 635</i>	<i>263 249</i>	<i>177 793</i>
<b>Research and development expenditure</b>	<b>30 642</b>	<b>24 263</b>	<b>24 600</b>	<b>27 405</b>	<b>28 664</b>	<b>28 664</b>	<b>28 664</b>
<b>Including: operational</b>	<b>27 827</b>	<b>23 763</b>	<b>24 100</b>	<b>26 405</b>	<b>27 664</b>	<b>28 164</b>	<b>28 664</b>
<i>Investment</i>	<i>2 815</i>	<i>500</i>	<i>500</i>	<i>1 000</i>	<i>1 000</i>	<i>500</i>	<i>0</i>
<b>Number of employees in Sector<sup>4)</sup></b>	<b>5 676</b>	<b>5 680</b>	<b>5 616</b>	<b>5 523</b>	<b>5 445</b>	<b>5 430</b>	<b>5 412</b>
<i>COSMC</i>	<i>70</i>	<i>70</i>	<i>158</i>	<i>158</i>	<i>157</i>	<i>159</i>	<i>153</i>
<i>Cadastral Offices</i>	<i>5 107</i>	<i>5 106</i>	<i>4 902</i>	<i>4 816</i>	<i>4 755</i>	<i>4 755</i>	<i>4 738</i>
<i>Land Survey Office</i>	<i>407</i>	<i>411</i>	<i>466</i>	<i>455</i>	<i>443</i>	<i>430</i>	<i>427</i>
<i>Survey and Cadastral Inspectorates</i>	<i>92</i>	<i>93</i>	<i>90</i>	<i>94</i>	<i>90</i>	<i>91</i>	<i>94</i>

1) revenues are adjusted for resources from revenue accounts of the CNB with prefixes 4714 and 2110, used for increasing expenditure (resources of RF, FKSP, donations)

2) the given expenditure does not include state budget resources transferred to reserve funds, which will be used in following years

3) employee wages + other payments for work performed

4) average corrected calculation

# 6. Inspection and Supervision Activity

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Inspection of state administration of the Cadastre of Real Estates, supervision over the certification of results of land survey activities used for the Cadastre of Real Estates and state map series, and decision-making on appeals against first instance decisions of cadastral offices (CO) are delegated by law to the 7 surveying and cadastral inspectorates (SCIs). In the sense of the administration code (Act No 500/2004 Coll.) SCI are considered as governing bodies of cadastral offices in accordance with the interpretation made by the advisory committee of the Ministry of interior on the administration code. The administration code also defines the term complaint and modifies the procedure for handling it.

In 2008 SCI accepted 27 applications for measures against the inaction of CO (60 % in comparison to 2007). The extent of decision-making agenda of SCI on appeals against decisions of CO decreased in 2008 on 7 % (707 appeals delivered in 2008 as opposed to 760 appeals delivered in 2007). The quality of decision-making of CO as first instance bodies has slightly worsened compared with 2007 (41.2% of CO decisions were found to be illegal in appeal proceedings in 2008; in 2007 this figure was 38.9 %). The number of appeals in matters regarding correction in cadastral documentation remained practically on the same level as in 2007 (425 appeals delivered in 2008 as opposed to 427 delivered in 2007), the number of appeals in matters regarding objections against the content of renewed cadastral documentation increased on 21.2 % (92 in 2008 as opposed to 76 in 2007) and the number of delivered appeals against procedural decisions of CO increased by a quarter in 2008 in comparison with 2007 (171 in 2008 as opposed to 234 in 2007). Inspection activity of SCI in 2008 was focused above all on control of application practice of the cadastral decree No 26/2007 Coll., new instruction for renewal of the cadastral documentation and transformation, process of renewal of the cadastral documentation based on the land consolidation, problems of notation records based on the garnishee order on distraint and distraint orders, and on practice in solutions of such cases, in which the owner of real estate has not been uniquely identified.

In the framework of inspections of state administration of the Cadastre of Real Estates SCI carried out a total of 1 616 documented inspections at cadastral offices in 2008. All knowledge from inspections collected in the SCI quarterly analyses was systematically organized in unified style and passed to individual COSMC expert units for use. Wide internal publicity of these analyses was ensured by means of Intranet of COSMC.

In the framework of supervisory activity (supervision of certification of the results of land survey activities) in 2008 SCI performed a total of 521 documented supervisory actions. In 9 cases in the subsequently conducted administrative proceedings SCI decided that the verifier had committed an administrative offence of infringement of order in the sphere of surveying and imposed fines at a total of CZK 256 000.

<b>SCI Decisions on Appeals Against CO Decisions</b>										
<b>Matters</b>	<i>Not resolved at 1.1.</i>	<i>Received after 1.1.</i>	<i>In total</i>	<i>Forwarded</i>	<i>Appeal rejected</i>	<i>Decision amended</i>	<i>Decision annulled and returned to CO</i>	<i>Rozhodnutí KÚ zrušeno a věc vrácena KÚ</i>	<i>Still being resolved</i>	<i>Faulty proceedings</i>
<i>Correcction of errors in cadastre</i>	68	425	493	6	237	49	9	144	41	7
<i>Objection to revised cadastral documentation</i>	9	92	101	-	55	11	-	26	6	3
<i>Infringements of order in the sphere of the cadastre</i>	-	-	-	-	-	-	-	-	-	-
<i>Procedural</i>	13	171	184	5	114	7	4	43	6	5
<i>Changes in the boundaries of cadastral district</i>	-	-	-	-	-	-	-	-	-	-
<i>Administrative fees</i>	-	14	14	-	9	-	-	1	2	2
<i>Rejection of applications for submission of information</i>	-	-	-	-	-	-	-	-	-	-
<i>Other</i>	1	5	6	-	5	-	-	-	1	-
<b><i>In total</i></b>	<b>91</b>	<b>707</b>	<b>798</b>	<b>11</b>	<b>420</b>	<b>67</b>	<b>13</b>	<b>214</b>	<b>56</b>	<b>17</b>

<b>Total Number of Complaints for 2008</b>							
<b>Inspectorates</b>	<i>Not resolved at 1.1.</i>	<i>Received after 1.1.</i>	<i>In Total</i>	<i>Forwarded</i>	<i>Legitimate</i>	<i>Not legitimate</i>	<i>Still being resolved</i>
<i>in Brno</i>	-	15	15	12	-	3	-
<i>in Č. Budějovice</i>	-	1	1	-	-	1	-
<i>In Liberec</i>	1	11	12	1	1	10	-
<i>in Opava</i>	-	3	3	-	-	3	-
<i>in Pardubice</i>	-	5	5	1	-	4	-
<i>in Plzeň</i>	1	9	10	2	1	6	1
<i>in Praha</i>	6	76	82	50	5	25	2
<b><i>In Total</i></b>	<b>8</b>	<b>120</b>	<b>128</b>	<b>66</b>	<b>7</b>	<b>52</b>	<b>3</b>

## Financial Inspection

The Czech office for surveying, mapping and cadastre, as administrator of budget chapter 346 of the state budget, performed financial inspections according to the Act No 320/1990 Coll. on financial inspection, at its subordinated bodies in 2008.

Main goal of these inspections was not only to verify the financial management of inspected persons, following the binding legislation, economic and internal rules, functioning of internal managing systems but also the creation of conditions for economical and efficient performance of the public administration.

The COSMC inspection group verified particular cases of utilization of public resources not only before, but also during and after their use. Inspections focused in 2008 as well as in 2007 on fulfilment of provisions, being adopted to eliminate insufficiencies from previous inspections and inspections performed in the branch by the Supreme audit office during its inspection of the management in 2005 and 2006.

According to the approved plan of public administration inspections for the year 2008 the inspection group of COSMC carried out public administration inspections together at following 12 inspected persons:

CO for Královéhradecký Region, CO for the Region Plzeň, CO for the Region Sputh Bohemia, CO for the Region Liberec, Land Survey Office and all 7 SCI, in which performing of internal audit is substituted by performing of public administration inspection in compliance with the Section 29, art. 5 of the Act No 320/1990 Coll. on financial inspection.

Public administration inspections of some inspected persons in 2008 found less serious formal and objective shortcomings emerging from the inconsistent compliance with some provisions of COSMC economic rules, some partial shortcomings in records of assets and in provision of information from the cadastre of real estates in the CR. No serious shortcomings were discovered by public inspections in 2008 that would unfavourably affect the activities of inspected persons. All documents from carried out inspections were delivered to the president of the COSMC, who then in compliance with Section 18, art. 2 of the Act No 320/1990 Coll. on financial inspection imposed measures to elimination of realized shortcomings and to prevention of their recurrence and then terminated the public administration inspections.

## Internal Audit

Internal audit is in COSMC part of the system of financial inspection in accordance with the § 3 of the Act No. 320/2001 Coll., on Financial inspection in the public administration and on changes and amendments of some Acts in wording of later regulations (further only Act on the financial inspection). It is carried out by special mandated employees - internal auditors, whose systemized job positions are established in state administration bodies in the branch (further only SAB) - COSMC, LSO and all CO. The function of internal audit is not established in SCI and is substituted there by the public administration inspection. Organizational rules of SAB ensure fully independence of the auditors and their organizational separation from managerial and executive structures. They are directly subordinated to heads of SAB. The main task of performed internal audits is independent inspection and evaluation of appropriateness and efficiency of the managerial inspection, including verification of accuracy of chosen operations in conditions of particular SAB.

The activity of internal auditors results from the medium-term plans and on yearly plans based on them. Planning of audits is based on the risk evaluation and is focused on priority processes in conditions of particular SABs. The part of the plans of internal audits is also performing further tasks in compliance with Standards for the professional practice of internal auditors. Internal auditors carry out methodical and consultation activities and take part on the creation and amending of internal regulations.

Integral part of their activities is their professional development. Nearly all branch auditors (87,5 %) hold the certificate on passing the basic training class of the unified system of professional training of public administration employees in the area of financial inspection and internal audit.

In accordance with approved plans of internal audits for 2008 internal auditors performed 101 internal audits and 4 extra audits not mentioned in the yearly plan. From the total number of internal audits 30 were financial ones in accordance with the § 28 art. 4 a) of the Act on financial inspection, 38 were audits of systems in accordance with the § 28 art. 4 b) of the Act on financial inspection, 9 were audits of operation in accordance with the § 28 art. 4 c) of the Act on financial inspection and 28 were other internal audits.

Performed audits focused in particular on functionality and efficiency of the internal inspection system of particular SABs, verification of existing state of the fulfilment of suggested recommendations stemming from completed audits and inspections in 2007, performance of the risk analysis based on the risk evaluation and creation of the map of risks, verification of procedures connected with submission of public tenders, managing of state property, accounting administration, administration fees for data provision from the cadastre of real estates and further areas inspected according to particular requirements. Performed audits are completed in the written reports with proposed recommendations, which are submitted to particular SAB heads. In 2008 all recommendations were accepted and measures were issued to eliminate revealed insufficiencies. Audit survey proved that monitored processes were in compliance with generally binding rules so as with internal regulations of SABs, and public resources were utilized economically and efficiently. Auditing activities were considered to be without critical insufficiencies and risks, which could basically influence fulfilment of crucial tasks and proved goals of SABs.

# 7. International Cooperation



The most involved bilateral cooperation occurs with the land surveying services of neighbouring countries Slovakia, Germany, Austria and newly also Poland in particular in the area of documentation of common state borders, establishing of networks of permanent GNSS stations and exchange of data and experience in cadastre of real estates and land surveying.

The development of new map services and projects aimed at

constructing a unified infrastructure of spatial data in Europe is the remit of the international organisation EuroGeographics, of which COSMC is a member. In the scope of EuroGeographics activities the work of a special working group for the cadastre went onto, in which COSMC has also a representative.

Branch representatives have taken part not only in national but also in international meetings on the European Directive INSPIRE (Infrastructure of Spatial Information in Europe) and on its implementation. It deals in particular with disclosure of spatial data in electronic form especially for needs of the environment in the European area. The Directive should ensure availability, quality, organization, disclosure and sharing of spatial information and necessary provisions for exchange, sharing, access and use of spatial data and services. COSMC was actively involved in testing of data specifications for INSPIRE implementation, which should be completed by May 2009.

Also through the COSMC the Czech Republic became involved in last years in preparations for inclusion to the EULIS service (the European Land Information Service), which has the objective of creating a European multinational portal allowing paid on-line access to information on real estate in various states of the EU. Currently the service is functional for a total of 6 European states – Sweden, the Netherlands, England & Wales, Norway, Lithuania and Ireland. After completion of the preparatory phase in the EULIS PLUS project the Czech office for surveying, mapping and cadastre should connect up to the portal during next years by means of its „Remote Access to the Cadastre of Real Estates“ service.

COSMC is represented in the management board of the Working Party on Land Administration (WPLA), working under the auspices of UNECE, which is engaged in land and real estates information and related thematic. Main goal of WPLA is to promote the land

administration ensuring material rights, develop the real estates markets in developing countries and modernize registration systems in other European countries.

At the end of 2008 took COSMC over the presidency of the Permanent Committee for Cadastre in European Union (PCC) in accordance with the presidency of the Czech Republic in the Council of EU for the first half of the year 2008, main goal of which is to represent a privileged link between cadastral institutions and the organs of the European Union and other entities requiring cadastral information to carry out their activities.

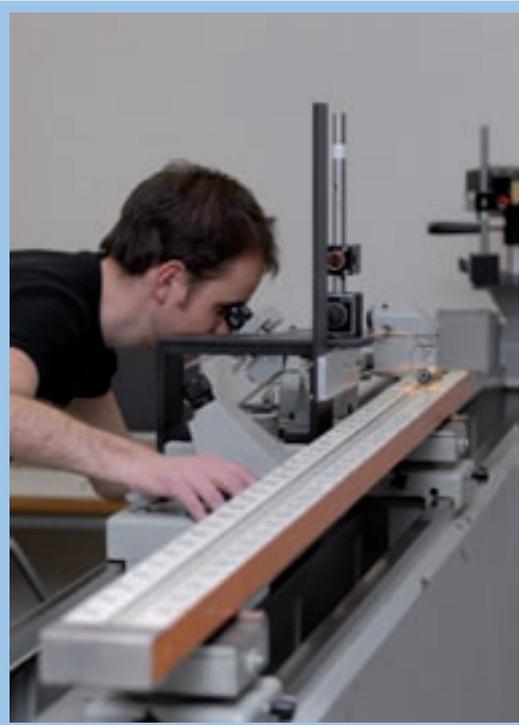
Furthermore, COSMC actively participates in regular meetings of cadastral service providers of succession state of the former Austro–Hungarian Empire, who share with us a common cadastral tradition. In 2008 25th anniversary meeting was held in Italian Merano in attendance of participants from Croatia, the South Tyrol, Austria, Slovakia, Trentino, Hungary and the Czech Republic.

COSMC supports active cooperation also in the frame of FIG (International Federation of Surveyors), in particular in the Commission FIG 7 for the cadastre and real estates administration, where the Czech representative is involved.



# 8. Research and Development

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Research and development in the sector of surveying, mapping and cadastre is subject to the needs of state administration with the aim of acquiring and using new knowledge usable for its improvement. It also takes account of needs in the sector for use of information and communication technologies and the needs of international cooperation in the field. Resolution of tasks of research and development is the concern of the Research institute of geodesy, topography and cartography (RIGTC) in the framework of the research aim Research and development in geodesy, the cadastre and geomatics in 2005-2009, which the COSMC provides with institutional support.

Tasks resolved in the scope of the research aim in 2008 were completed pursuant to the stipulated technical and economic parameters in line with the agreement between the COSMC and RIGTC. Minutes from inspection days provide information on the course of individual tasks in the course of 2008.

The projects, which were part of main goals in 2008, will be further proceeded within 2009. It refers, in particular, to proceeding with the development of tools for renewal of the cadastral documentation by means of mapping, revision and conversion of the numeric information to digital one. The technology and software for creation of the digital record of the detailed surveying of changes was launched. The solution was further focused on the technology of current measurements and surveying for renewal of the cadastral documentation with use of GPS instruments, including electronic transmission of measured data.

In 2008 further monitoring GNSS techniques were being developed and so as the use of collected data from the data centre of the geodetic observatory Pecný to examine the influence of the environment on the results measured by global navigation methods of the time changes of the gravity field of the Earth. The results of implementation of ETRS89 (2005), included stating of transformation relations between national and European coordinate systems are of great importance for development of geodetic control in the CR. In 2008 State standard for acceleration of gravity and State standard of long distances were launched. Reference position standard should be completed in 2009.

RIGTC worked on grant tasks from other Czech subjects so as from other international organizations in the frame of cooperation, mainly for EU, except for work for COSMC. This activity is closely connected with the main goal of the institute, which is the work for the COSMC, and represents 35 % of total capacities of the Institute. In the frame of grant projects the project 6FP "SWIRLS", was successfully completed, which dealt with the development of the geodetic device for monitoring of Galileo system.



## **Annual Report 2008**

Czech Office of Surveying, Mapping and Cadastre

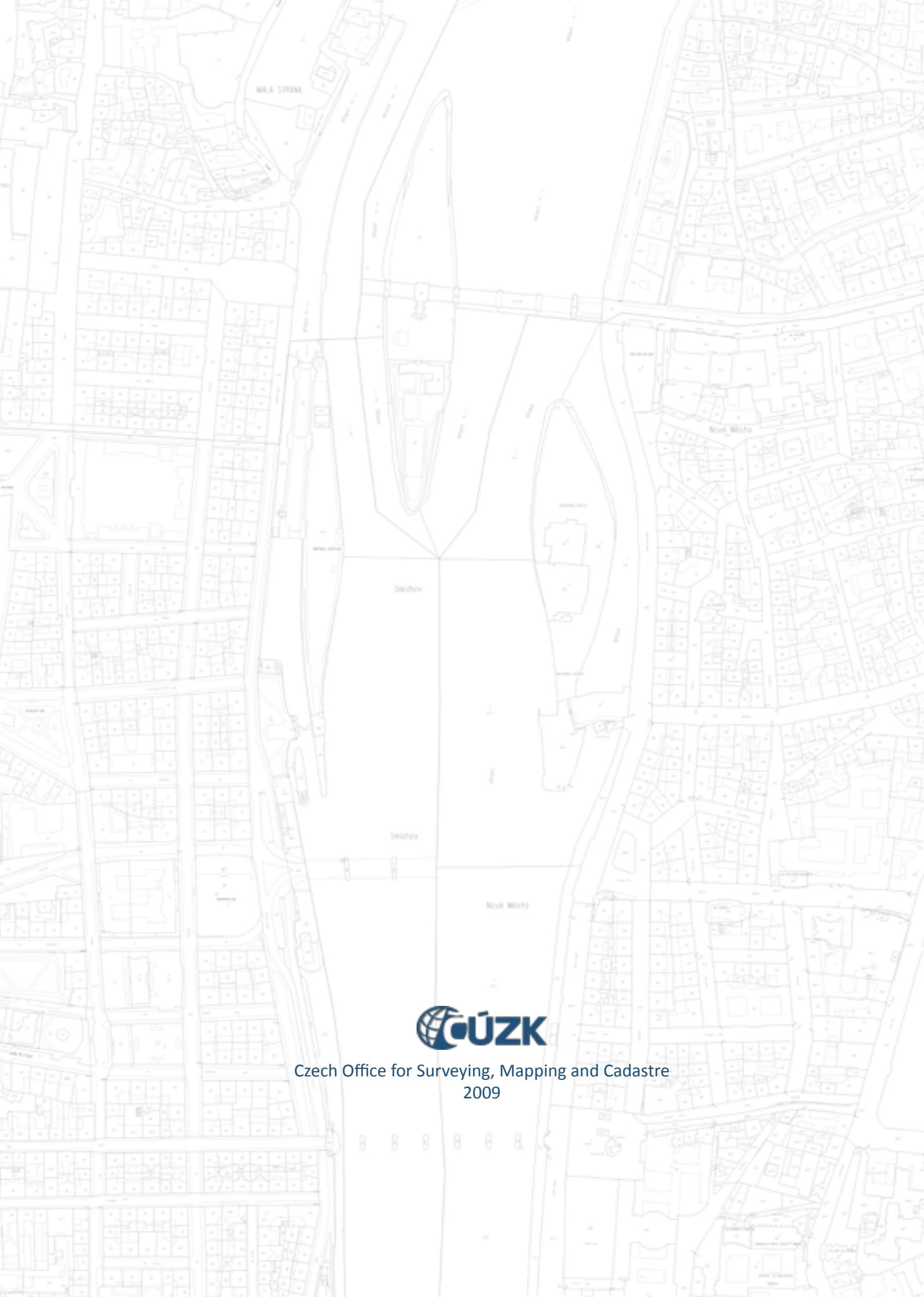
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