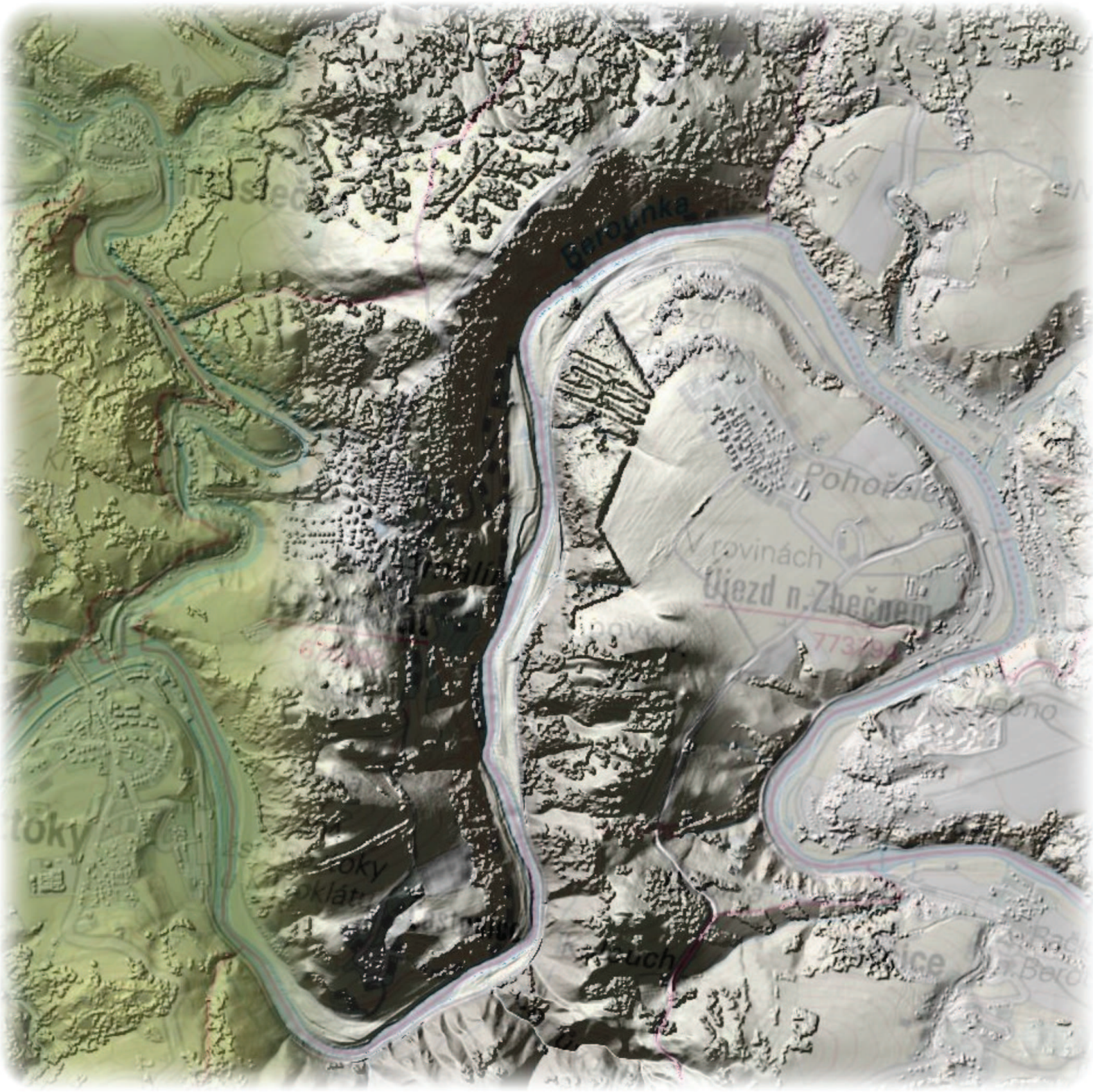
Český úřad zeměměřický a katastrální



ANNUAL REPORT

2016

Annual Report
Of the Czech Office for Surveying, Mapping and Cadastre
For 2016

Prague, 2017

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INTRODUCTION

State administrative bodies of the real estate cadastre managed by the Czech Office for Surveying, Mapping and Cadastre (ČÚZK) provide state administration of the real estate cadastre in the Czech Republic and ensure performance of surveying activities in the public interest given by the law.

In 2016 cadastral offices performed the records of ownership and other rights to real estate the third year according to new legal regulations of the real estate cadastre that occurred as a result of new Civil Code. Despite the short time since renewal of the principle that a building is a part of a parcel, since introduction of the right of building, increase of the number of registered types of material rights to 20 as well as increase of the number of notice types, it seems that accommodation to new cadastral services succeeded. In the daily practice some application problems still occur but they do not concern those most often solved cases. Registrations of rights to real estate were therefore performed without significant problems in 2016. Cadastral offices received 8 % less proposals for entry of owners´ and other rights to real estate in 2016 than in 2015, in total 1 004 636 proposals. Yearly decrease was caused by the lower number of registrations of executor liens securing small claims. Registrations of rights were performed in 23 days from the submission of the application on average, in comparison with 2015 the average time for performing the registration was reduced by 1 day. The time between proposal submission and its realization cannot be reduced more because of the new legal rule, containing a 20-day period during which the entry cannot be permitted as a measure for improving the security of real estate business.

The number of completed registrations or deletions based on record and notation reached 505 789. The number of delivered requests regarding the verification of the survey sketches reached 147 978. Data provision was realized mainly by the electronic way using the remote access to the real estate cadastre. At counters of cadastral offices the number of requests decreased by 8 % in comparison to 2015. Nearly 12 million requests for information were performed, representing yearly increase 21 %. Digitization of cadastral maps went on continuously in 2016. The number of cadastral units with digitized cadastral maps increased yearly by 622 and so the digital form of the cadastral map was available in 96.3 % of all cadastral units by 31. 12. 2016.

State administration of land surveying and real estate cadastre is responsible beside the cadastre for important land surveying products and services which co-create the national geoinformation infrastructure necessary for task fulfilment of the state and local administration. Significant result of the year 2016 was completion of new precise digital terrain models at the whole territory of the state. It is the result of the seven-year common project with Ministry of agriculture and Czech Republic Army. The care for classic ground and gravimetric control points has been carried out together with all planned land surveying works on the state borders in 2016. Both continuous and periodical update of the Fundamental base of geographical data (ZABAGED®) went on being provided both to the public administration and commercial use and serving also as a data source for state map series. In 2016 the Orthophoto ČR was updated on the eastern half of the state territory. Most products are provided via remote access from Geoportal ČÚZK.

More information on results of work of land surveying and cadastral offices in 2016 brings this detailed annual report.

1. Surveying, Mapping and Cadastre Sector in the Czech Republic

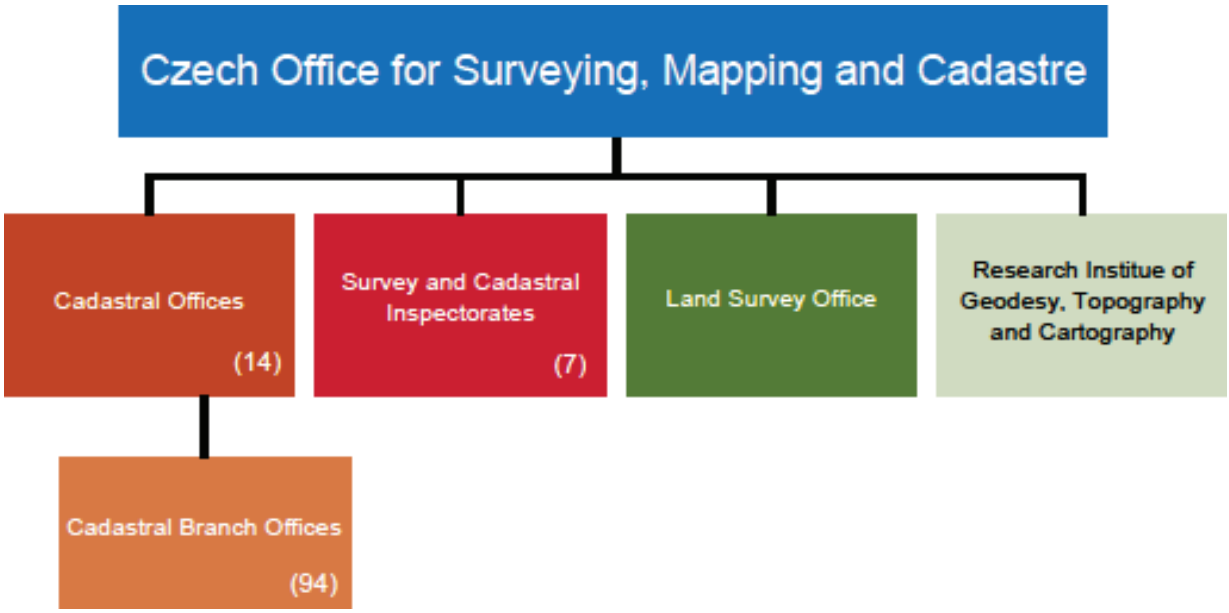
The real estate cadastre of the Czech Republic is a set of data about real estate in the Czech Republic, including their inventory and description and their geometric specification and position. Parts of it are records of property and other material rights and other legally stipulated rights to real estate.

State administration of land surveying ensures chosen land surveying products and connecting services from the whole territory of the state as stipulated by the Act No. 359/1992 Coll., on land surveying and cadastral bodies and by the Act No. 200/1994 Coll., on land surveying.

ČÚZK governs 14 regional cadastral offices, which have 94 cadastral branch offices in larger towns and executes state administration of the real estate cadastre; it further manages 7 survey and cadastral inspectorates that control cadastral offices and supervise some commercial activities, whose results are applied to the real estate cadastre and state documentation funds, and finally the Land Survey Office (ZÚ), which focuses on other land survey activities that are provided in the public interest. ČÚZK is also the founder of the Research Institute of Geodesy, Topography and Cartography, p.r.i (VÚGTK, v.v.i.).

Administration authorities in the branch of land surveying and cadastre have been set up by the Act No. 359/1992 Coll., on land surveying and cadastral bodies, which also specifies their subject-matter and territorial competence. 14 cadastral offices have the territorial scope as of the single regions. Cadastral offices set out their cadastral branch offices. The number of them has been step by step reduced to 94. Survey and cadastral inspectorates have usually the territory scope of two regions. Land survey office has the national coverage.

Organizational Structure of the Branch of Land Surveying and Cadastre



2. Administration of the Real Estate Cadastre

Current Czech real estate cadastre was established in 1993 and integrates the function of Land Registry Book (registration of rights) and former Cadastre of Lands (records of real estate) into one tool. On 1.1.2014 the Act No. 256/2013 Coll., on the Real estate cadastre (Cadastral Act) came into force, having replaced not only the Cadastral Act No. 344/1992 Coll., but also the Act No. 265/1992 Coll., on Registration of rights into the real estate cadastre. Both issues - real estate cadastre and registration of rights to the real estate cadastre - are now regulated in one act.

Real estate cadastre in the Czech Republic is administered with help of the information system. The Information system of the real estate cadastre - ISKN - is an integrated information support system for state administration of the real estate cadastre and for providing user services of the cadastre.

Since 2012 ISKN has been interconnected to the Information system of territorial identification – ISÚI – together representing the key agenda information systems serving for editing of the Registry of territorial identification, addresses and real estate – RÚIAN, which is one of the four basic registries of state administration. Launch of the system of basic registries has brought tangible results into the administration of real estate cadastre particularly in the area of checking up data on physical and legal persons compared to the registries of inhabitants and persons so as in the possibility of taking over the data changes from these registries (changes of addresses, surnames etc.).Since 2015 ISKN has been interconnected to the insolvency registry via web services thus enabling verification of the participants of the proceeding.

ISKN has used interconnection with Document management system (DMS) since 2015; both electronic and scanned paper documents used for registration to the real estate cadastre are stored in the DMS. These documents are interconnected with the proceeding in the ISKN with help of barcode. During 2015 the bulk migration of all older electronic documents and all documents to administration proceedings from 2014 and 2015 were scanned and are at present for disposal to the users of remote access service.

With force from 1st January 2014 the private law has been recodified and Cadastral Act came into force taking into account many new provisions regarding real estates. The principal change is the brand new definition of the term “real estate” and application of the principle “superficies solo cedit”, according to which the building is a part of the parcel. The new Civil Code also introduced many other material rights not existing yet, which have to be registered into the real estate cadastre from 1.1.2014. As from the same day the implementing rules of the Cadastral Act came into force, i.e. Decree No. 357/2014 Coll., on the Real estate cadastre (Cadastral Decree), the Decree No. 358/2013 Coll., on Information provision from the real estate cadastre and the Decree No. 359/2013 Coll., on Specimen form specification for submission of the proposal for institution of proceeding on entry permission. In the end of 2015 the Decree No. 358/2013 Coll., was amended by the Decree No. 354/2015 Coll., which specifies the conditions for information provision from the Set of documents of the real estate cadastre and the information about real estate prices achieved in electronic form. In the end of 2015 the List of cadastral branch offices of cadastral offices, their names, seats and territorial districts, in which they exercise their power, was published in the Collection of Laws under the number No. 384/2015 Coll., in the form of communication.

2.1. Main Tasks of Cadastral Offices and Their Statistics

Main task of cadastral offices is recording of proprietary and other rights to real estate and other data by means of entry or registration and record of notations and further recording of other data. Contractual transactions or setting up of material rights to real estate have been completed by the constitutional entry of right into the real estate cadastre till the end of 2013, whilst the records or deletions of material rights arising or extinct by the decision of the public authority organ, by law a. o. were performed in a simpler procedural way, by means of so called registration. Similar procedure was used for record of some other data, in particular for record of notations, which should inform the users of cadastral data on important facts regarding the real estate. Recodification of the civil law and connecting cadastral legislation has brought significant changes to this part of the agenda of cadastral offices since 2014.

Entries of Proprietary Rights into the Real Estate Cadastre

Two years after force of new legislation – Cadastral Act and Civil Code - regarding the real estates it can be said that the public has accepted new legal rules and there are no crucial problems in the daily practice. Registration of all material rights, rights agreed as material so as lease and tenure are being performed in the way of entry regardless of its constitution – either based on the contract or other way. Czech office for surveying, mapping and cadastre did not register any objections against registration of before mentioned rights in the way of entry, despite the fact that the number of registered rights into the real estate cadastre increased as well as did the number of rights, the application for their record is charged by the administration fee of 1000 CZK. It includes at present ownership right, right of building, easement, right of lien, future right of lien, right of sub-mortgage, pre-emptive right, future possibility of using the property after its transfer (type of easement), supplementary co-ownership, administration of trust fund, reservation of ownership right, reservation of the right to purchase back, reservation of the right of back sale, prohibition of alienation or encumbrance, reservation of the right of better purchaser, trial purchase arrangement, lease (based on the request of the owner or leaseholder with the approval of the owner), tenure (based on the request of the owner or the tenant with the approval of the owner) and surrender the right for damage compensation on the estate. Further the distribution of right to real estate into single ownership rights to units is registered by entry.

Cadastral offices coped well even with the fact, that in the process of inspection of the application document they have to differ whether it is a private document, public document, public document regarding legal proceedings or the document sent for registration by the court or court distrainor without proposal submission. Significant change in registration of rights of lien occurred in the amendment of the Execution order No. 139/2015 Coll., which newly regulates establishment of distrainor´s right of lien. This amendment stated with effect from 1st July 2015 that the distrainor´s right of lien on immovable property to ensure legitimate claims are initiated at the request of the legitimate claimer. In practice, it has brought a significant reduction in the number of distrainor´s rights of liens, because the legitimate claimers do not claim the low debts by this distrainor´s right of lien. Submitting a proposal on the establishment of a distrainor´s right is newly recorded by means of notation.

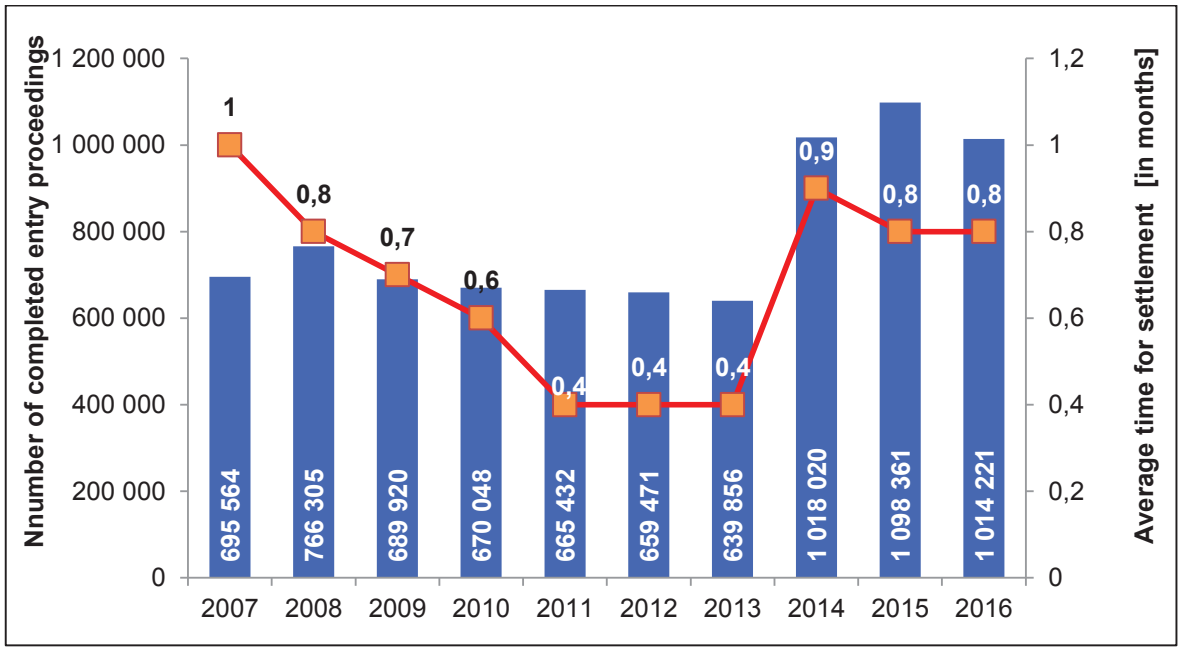
Implementation of informational obligation about labelling the affected property in the real estate cadastre - that the right is affected by the change – was expected with some fear because direct consequence is prolongation of the waiting time for registration of right. This measure causes problems only in such cases where more related transactions occurred (purchase, right of lien

etc.).Negative consequences persist caused by the demanding administration of the whole process connected with high expenses especially for postal services.

In 2015 the number of accepted proposals for entries of rights by cadastral offices was 1 088 264 which means increase of 6 % in comparison to 2014. Number of completed proposals for entry of proprietary right was 1 098 361, which means increase of 8 % in comparison to 2014 and so yearly average time for completing of application for entry decreased mildly.

The 30 day-time was exceeded only in cases containing some defects.

Registration of Rights to the Cadastre (Fig 1)



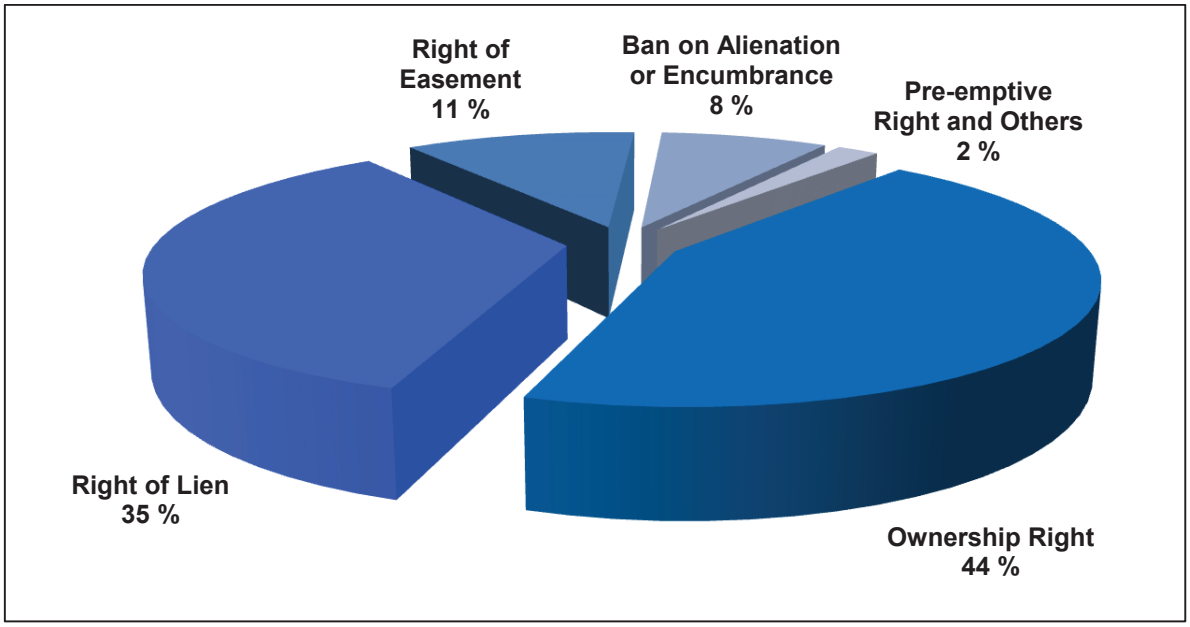


Fig 2: Share of Different Types of Rights Recorded by Entry into the Real Estate Cadastre

From the total number of yearly requests for entry in 2015, 95 % entries of rights were approved, the rest of administrative proceedings were refused or interrupted. In 2015 both absolute and relative number of refused entries decreased by 6.2 %, as you can see in Fig 3.

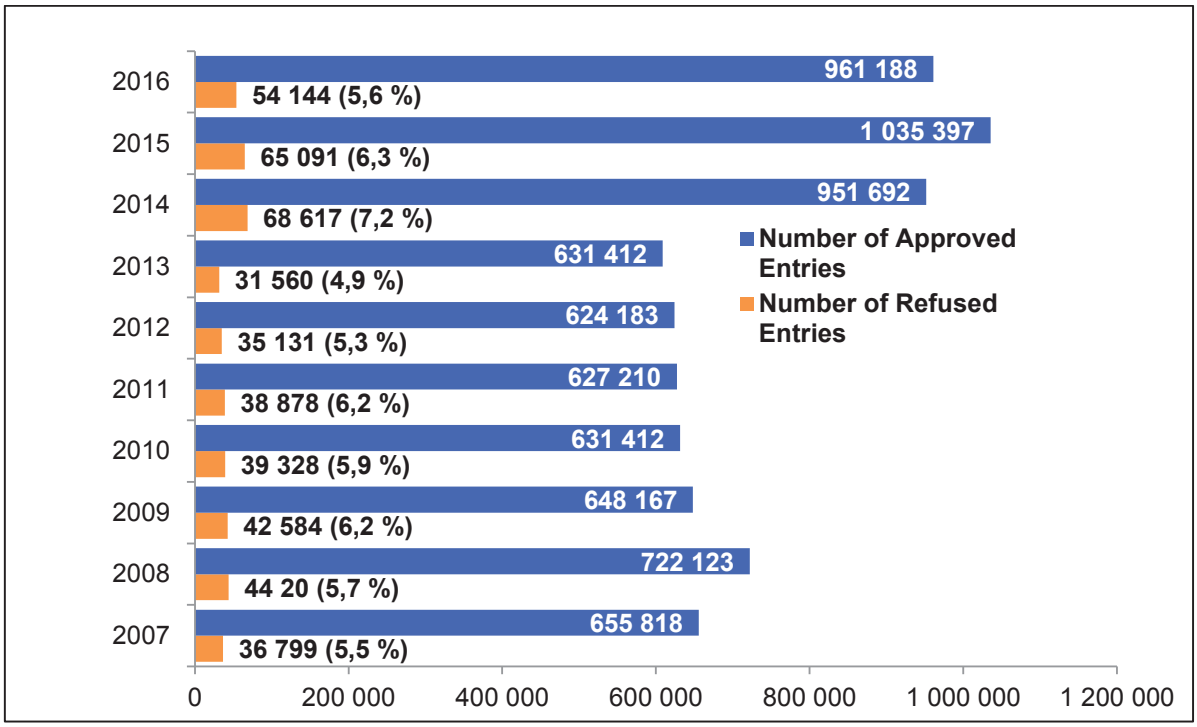


Fig 3: Development in the Number of Approved and Refused Entries

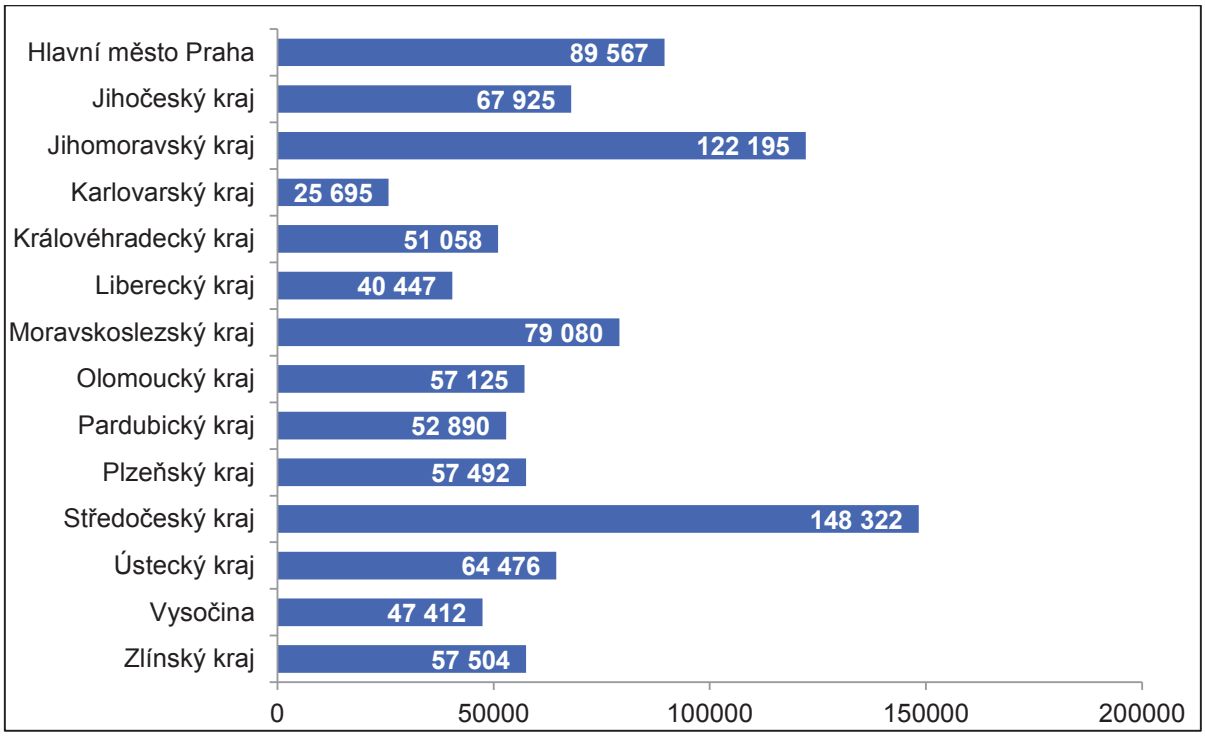


Fig 4: Number of Entries in Single Regions of the Czech Republic in 2015

Registration by Record and Note and Others

Cadastral offices performed also other registrations into the real estate cadastre. Since 2014 registering by record has not been used for registration of any material rights, it has been used solely for registration of rights derived from the proprietary right. Further types of registrations are the registrations by notes serving to denotation of legally stipulated facts or relations relating to the real estate or a person. Following data are recorded into the real estate cadastre regarding e.g. change of land type, real estate protection etc.

Whilst 605 356 submissions for registration by record and by note were delivered to cadastral offices in 2014 those submissions were proceeded delivered in a big amount before the change of legislation on 1.1.2014, and so in total 642 156 submissions were completed. In 2015 only 537 750 submissions were delivered and 543 972 completed. It means that average time for completion of this type of submission yearly decreased.

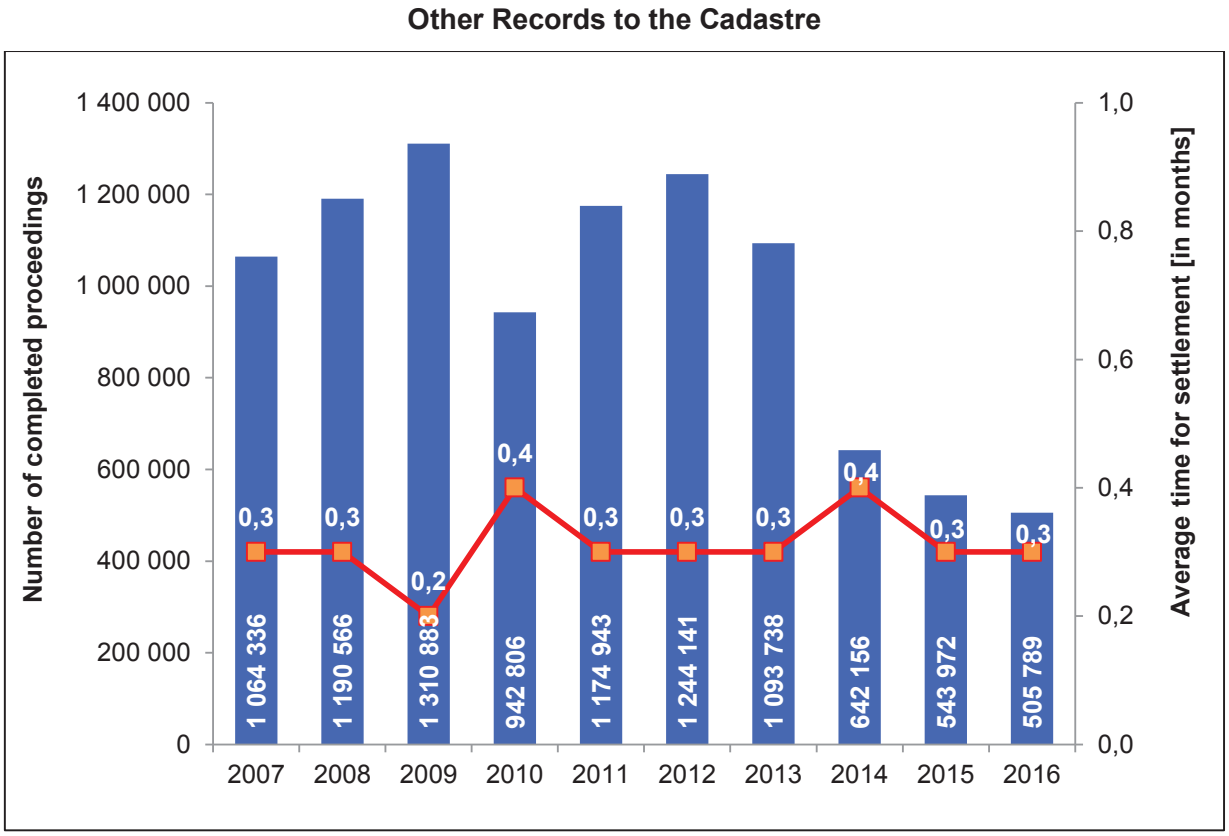


Fig 5: Number of Completed Submissions for Registration by Record and Notes

Certification of Survey Sketches

Survey sketches represent land parcel division, position of a building or change of its external outline in the real estate cadastre and some other changes depicted in cadastral maps. They are made solely by private geodetic companies. They create important part of documentation for maintaining of cadastral maps, thus every survey sketch must be certified by an authorised

surveyor who is officially authorised to certify the results of surveying activities by the ČÚZK under Section 14 of Act No. 200/1994 Coll. on Surveying and mapping. Survey sketch is created in electronic form; for the purpose of document creation the paper counterpart is created according to the before mentioned Act on Surveying and mapping.

The number of survey sketches is still very high in the Czech Republic. The average time for checking and certification of survey sketches by the cadastral offices was 8 days in 2016 as it was in 2015. In 2015 new web services were tested in a pilot project of ISKN for automatic acquisition of documentation for survey sketch creation, which has to be delivered into ISKN in electronic form. Operational run has successfully started in 2016.

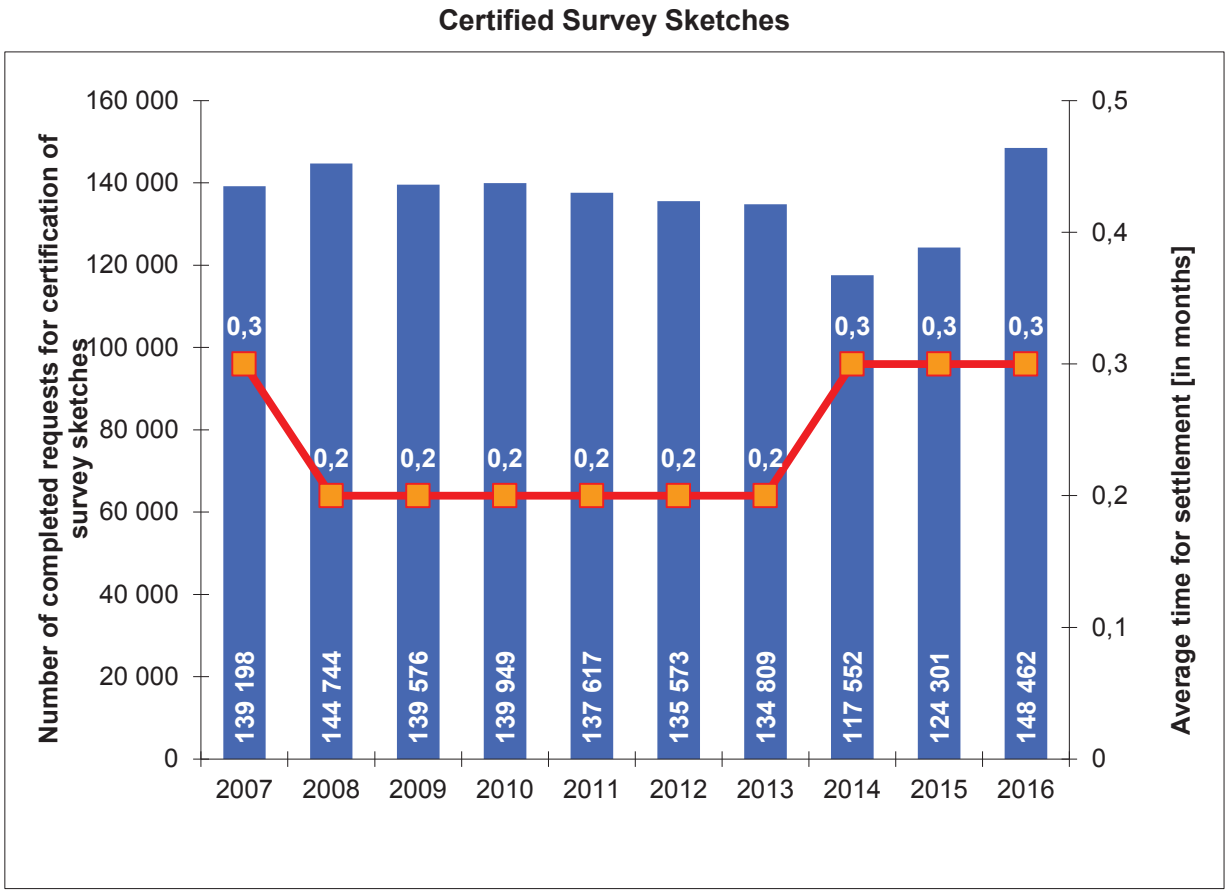


Fig 6: Development in the Number of Requests for Certification of Survey Sketches

Provision of Information from the Real Estate Cadastre

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 estate 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 made available allowing outputs from the cadastre by remote access, without visiting the cadastral

office. These services satisfy today most of continually growing demands for information from the real estate cadastre.

The number of completed requests for information provision at the counters of cadastral offices decreased yearly on further 8 % in 2016, while the total increase of completed requests for information from the real estate cadastre including remote access was more than 21 %. Therefore in 2016 95.3 % of applicants for information from the real estate cadastre were satisfied by electronic services. Big share on this high number of electronically provided services have permanently municipalities, regions and governmental bodies, because of free of charge remote access to the data from the real estate cadastre. On contact points of public administration (Czech POINT) 320 thousand outputs from the real estate cadastre and more than 10 thousand of map copies were issued in 2016. Professional users, such as banks and real estate agencies have been more and more oriented towards acquiring information by means of remote access via internet services, and so the trend of continuous decrease of information provided at the desks of cadastral offices goes on. The electronic statements from the real estate cadastre are since 2006 marked with an electronic mark and are considered as public documents. More in the chapter Electronic services of the real estate cadastre – Remote access.

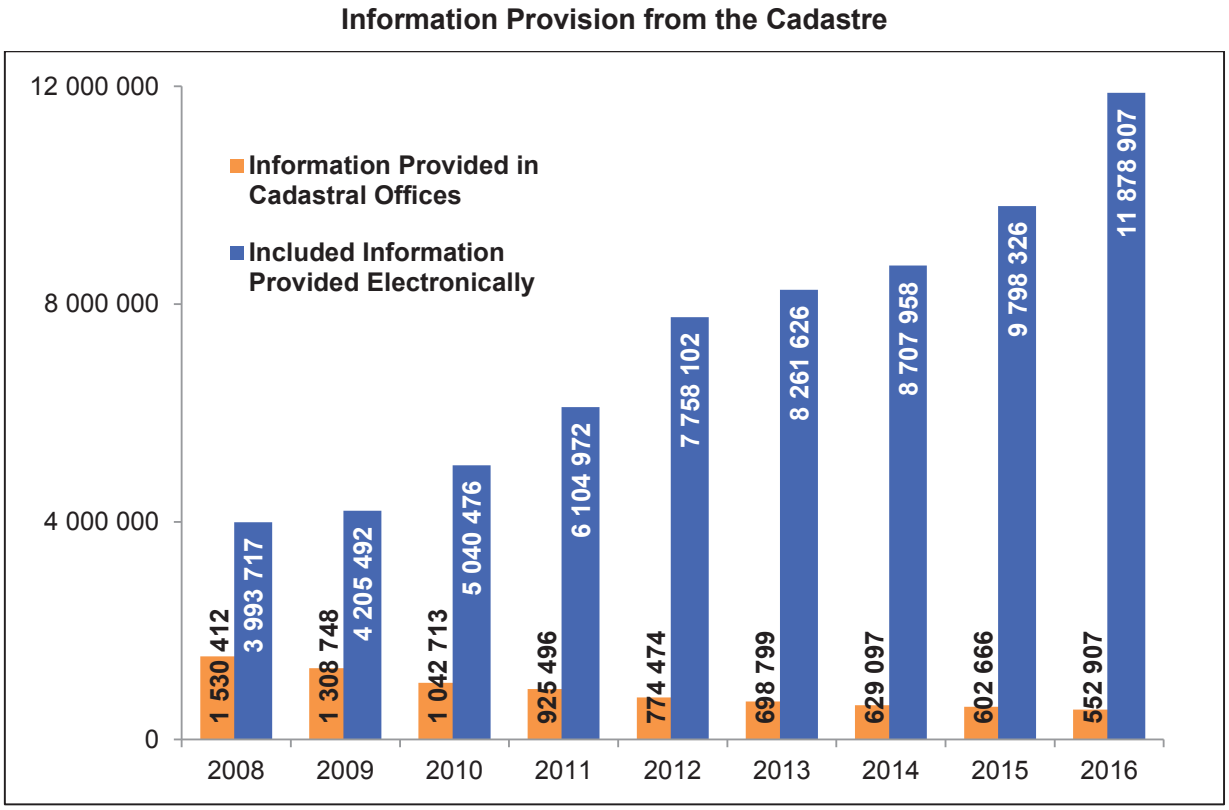


Fig 7: Development in the Number of Provided Information: over the Counter (number of requests), electronically (number of external outputs-reports)

2.2. Digitization of the Real estate cadastre

Digitization of the real estate cadastre has been step-by-step carried out since 1993 and is a basis for effective operation and administration of the real estate cadastre and for operative satisfaction of the users of the cadastral information. Cadastral maps in digital form are fundamental for administration and area decision-making. They serve not only for overview on the territorial range of material rights, but they are important as a basis for creation of information systems and applications relating to the territory as f.i. digital technical maps, spatial plans, price maps etc.

Digitization of the file of descriptive information of the real estate cadastre was realized in years 1993 – 1998, having created basic conditions for the transition to a higher version of the information system equipped with remote access to data in the central database of the cadastre.

Computerization of all important processes within the administration of the real estate cadastre was carried out gradually. Ongoing is the digitization of further parts of cadastral documentation such as the file of documents or results of land surveying activities.

Digitization of cadastral maps started after the completion of digitization of descriptive information of the cadastre. The capacities that cadastral offices could give to map digitization were very limited in view of the growth of volume of other activities and the pace of digitization was till 2009 only 2 to 3 % of the territory yearly.

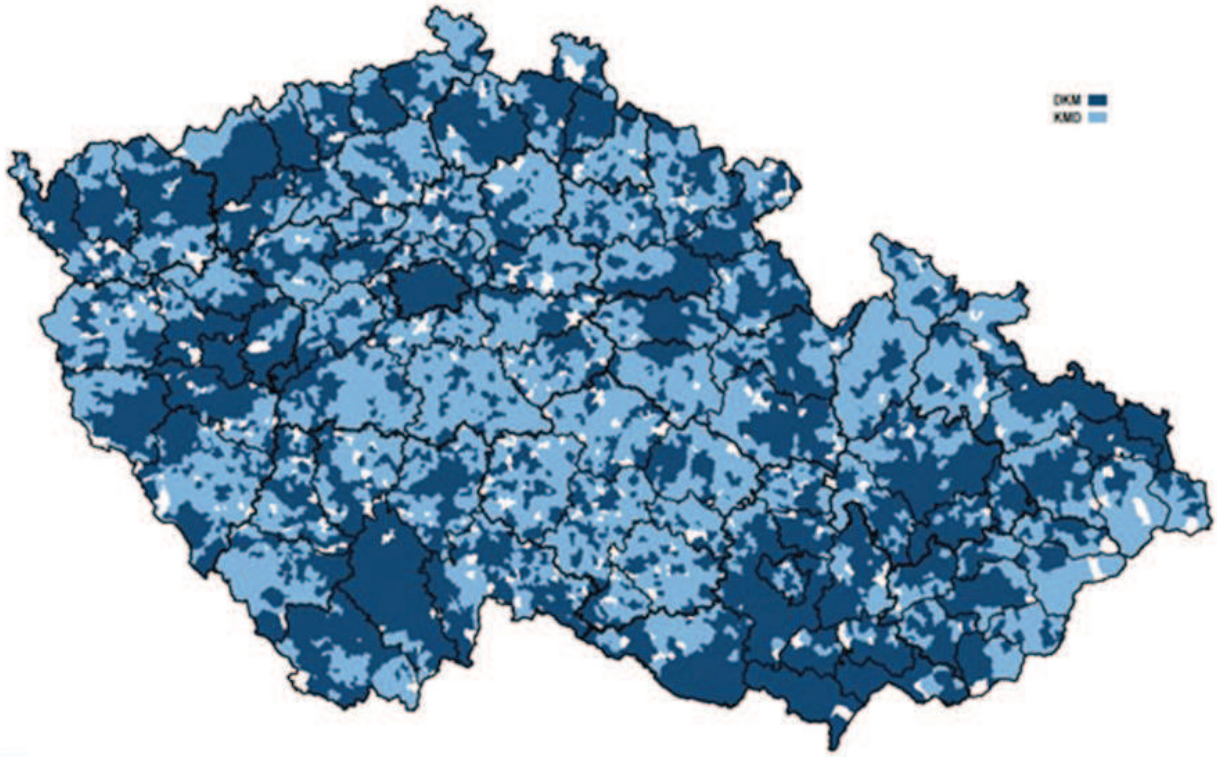
Development of Digitization of Cadastral Maps between 2003-2016

Year	Till 2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Digitization Completed	4121	279	263	313	763	1 106	1 094	1 127	1 074	910	877	622
Total in Digital Form	4121	4 400	4 663	4 976	5 739	6 845	7 939	9 064	10166	11121	11990	12612
Yearly Growth from the Total of 13 027 c.u.(%)	2,4	2,1	2,0	2,4	5,9	8,5	8,5	8,7	8,4	7,0	6,7	4,7
% from the Total Number	32	34	36	38	44	52,5	61	69,6	77,9	84,9	91,6	96,3

In 2009 the reversal occurred thanks to the provisions for acceleration of the digitization, accepted by the government in 2007. That is why the number of cadastre units covered by the digital form of map exceeded 8 % of the territory in between years 2010 and 2013. Because of forthcoming end of digitization of cadastral maps the increase of the number of cadastre units covered by the digitized cadastral map has been step by step decreasing and in 2016 it reached 4.7 %.

Results of Digitization in 2016

Cadastral offices have started the year 2016 with the goal of increasing the number of cadastral units with cadastral map in digital form by 616.The given task was mildly exceeded and the number of cadastral units increased by 622. Digitization of cadastral maps did use 198 results of land consolidation.



State of Digitization of Cadastral Maps on 31. 12. 2016

By the end of 2016 the cadastral map was in digital form in 12 612 cadastral units, which means 96.3 % from the total number in the CR by the end of 2016 (13 091 cadastral units). The fulfilment of the tasks of digitization of cadastral maps was running in 2016 in accordance with the long-term frame schedule and was successful.

Plan of Digitization of Cadastral Maps in Further Years

In 2015 the digitization plan for 2016 and 2017 was completed with the goal of move form digitization towards new mapping in selected cadastral units with the worst quality of cadastral maps or with unfinished land consolidation. It is undesirable to carry out the digitization of those cadastral units where the map should be replaced in a short time by a new map, whether it was the result of land consolidation or new mapping due to the very low quality of the original map. Such a procedure could not be considered economical and could provoke negative reactions by property owners. The number of cadastral units without digital form of cadastral map by the 31.12.2017 will be only 128, representing solely 1 % of their total number.

2.3. New Cadastral Mapping and Cadastre Revision

State administration of the real estate cadastre of the Czech Republic has been fulfilling long-term development concept since its establishment in 1993. Its goal is to fulfil the basic mission of the modern land registration based on ensuring reliable information on real estates and legal relations to them. High level of cadastral data reliability is necessary for rights protection,

development of real estate market and mortgages, territorial development and support of decision-making processes in the public administration. In connection with the upcoming completion of digitization of cadastral maps it is necessary to specify the main objectives for the future.

Whilst in the registration of rights to real estate and data connected with these rights the conceptual changes have been realized on 1.1.2014 in accordance with acceptance of the new Civil Code and Cadastral Law, regarding the technical data of the cadastre it is necessary to build on forthcoming completion of digitization of cadastral maps with further innovations. The users of cadastral information are pointing to two areas of shortcomings of existing real estate cadastre at present. The first one is lack of accuracy of the parcel boundaries in those areas where cadastral maps based on geometry from the 1st half of the 19th century are still used and the second one is insufficient updating of registered technical data as f.i. nature and mode of land use or real estate protection. Lack of boundaries accuracy complicates construction preparations to investors so as the activity of construction offices in the territorial or construction proceeding. It also brings problems in real estate transactions because of unclear area which is important parameter for setting the price and does not help to keep good neighbour relations regarding the boundary surveying in the field – the discrepancies can be in some cases in meters. Obsoleteness of technical data complicates the use of cadastral data, especially in some decision-making processes of public administration, in property valuation and administration of property taxes.

Mentioned insufficiencies can be solved by the tools embedded in the existing Cadastral Law, by the renewal of cadastral documentation based on new mapping and cadastral revisions, thus procedures not being used in practice sufficiently in previous years because of the digitization priority. In the frame of the cadastre revision the content of the cadastral map will be updated based on the investigated discrepancies after negotiation with the owners and based on their documentation; moreover renewal of the cadastral documentation based on the new mapping includes investigation of updated parcel boundaries in the field and their precise surveying.

New Mapping and Use of Land Consolidation Results till 2020

In 2017 the digital form of cadastral map will be for disposal at 99 % of cadastral units. Only in 128 cadastral units (from the total number of 13 091) digital cadastral map will not be completed and nearly all cases refer to cadastral units with land consolidation in rural areas in process or where the renewal of cadastral documentation will be in progress based on the new mapping and where the bad quality of original maps will not enable their transition into digital form in a simple way. Cadastral offices will follow the progress in land consolidation and the excluded part will be renewed by new mapping. It will prevent ineffective repeated renewal of the cadastral documentation in built-up area and real estate owners in these areas will not be burdened by similar administration acts (connected usually with submission of new real estate tax return) in a short time interval.

In further 473 cadastral units the digital maps have to be completed in smaller parts of them. It relates to areas touched by the ongoing land consolidation where either land consolidation will have to be completed or the renewal by the new mapping finalized in parts of cadastral units excluded from land consolidation, and thus by the end of 2020.

Cadastral Office for	Total number of c. u.	Without digital map		Digital map only at a part of c.u.		In process by 31. 12. 2017	
hl. m. Prahu	112	0	0,0 %	0	0,0 %	0	0,0 %
Jihočeský kraj	1 623	25	1,5 %	74	4,6 %	99	6,1 %
Jihomoravský kraj	897	4	0,4 %	54	6,1 %	58	6,5 %
Karlovarský kraj	575	9	1,6 %	3	0,5 %	12	2,1 %
Královéhradecký kraj	961	3	0,3 %	26	2,7 %	29	3,0 %
Liberecký kraj	508	9	1,8 %	14	2,8 %	23	4,5 %
Moravskoslezský kraj	614	1	0,2 %	8	1,3 %	9	1,5 %
Olomoucký kraj	778	2	0,3 %	20	2,6 %	22	2,8 %
Pardubický kraj	790	2	0,3 %	45	5,7 %	47	5,9 %
Plzeňský kraj	1 386	32	2,3 %	75	5,4 %	107	7,7 %
Středočeský kraj	2 084	18	0,9 %	68	3,3 %	86	4,1 %
Ústecký kraj	1 057	6	0,6 %	27	2,5 %	33	3,1 %
Vysočinu	1 263	16	1,3 %	48	3,8 %	64	5,1 %
Zlínský kraj	443	1	0,2 %	11	2,5 %	12	2,7 %
Total	**13 091**	128	1,0 %	473	3,6 %	601	4,6 %

New Mapping and Use of Land Consolidation Results – Long-term Outlook

Digitization of cadastral maps enables wide accessibility of maps ensures full conformity with descriptive data on real estates and high comfort in work with map was achieved included combination with other maps via web services. Nevertheless approximately 60 % of the territory of the Czech Republic will still be covered by cadastral map originated from the Stable cadastre surveying in the 1st half of the 19th century. Nor continuous complementing of changes and realized digitization could improve the accuracy of most boundary break points in comparison to national coordinate system, which remained on the level of 1 to 2 meters. In these cadastral units it will be necessary in the perspective of approximately 20 years to perform new cadastral mapping. The new mapping will cover virtually all built-up areas and forest complexes, thus areas excluded from the land consolidation. Those parts of cadastral units already solved during land consolidation will be renewed based on their results. This method enables to reach needed accuracy of all cadastral maps in comparison to national coordination system which is characterized by the coordinate positional accuracy m_{xy} =14 cm.

Above mentioned long-term plan will be realized supposing that land consolidation will proceed in the present range of approximately 200 to 250 cadastral units per year so as new cadastral mapping should. This work amount can be financed without extra budget claims provided the expenditure of state budget dedicated to these activities remains at the same level. Approximately two thirds of capacities of cadastral offices currently performing digitization of cadastral maps will be transferred to these activities.

The result of renewal of cadastral documentation by the new mapping will be the cadastral map depicting accurate parcel boundaries surveyed in the field with owners´ participation. Real estate owners´ involvement enables to use the renewed cadastral documentation even for property

settlement of various discrepancies (not solved changes of communications location and parameters, water courses regulation, water constructions or small constructions registered in the cadastre). In the frame of new mapping updating of nature and mode of land use will be realized and so the cadastral map can better serve for many decision-making processes of the public administration regarding the territorial administration.

Removing Discrepancies between the Cadastral Data and the Existing State of Real Estates

Real estate cadastre is based on the principle of data registration according to the submitted documents. For registration of legal rights moreover the constitutional principle applies (the right arises only after registration) and Bona fide protection is applied on these registrations and so the owners´ motivation not to postpone the registration is very strong. For other records (nature of land, its mode of use, preservation) only simple registration principle applies and so up-to-datedness of this information is negatively influenced because real estate owners do often not fulfil their notification duty. Sometimes it is even more advantageous for the owners not to update this information in the cadastre (f.i. because of lower property tax). It limits use of the cadastral data for many activities which should reflect the situation in the terrain.

With regard to existing capacities of cadastral offices it is possible at the beginning of 2018 to transfer up to 1/3 of employees performing digitization at present to the area of cadastre revision according to the § 43 of the Cadastral Act. In this way it would be possible to complete revisions in all cadastral units not included in renewal of the cadastral documentation by new mapping or based on land consolidation results by the end of 2030. Time schedule will be designed focusing on territories with greatest development.

Updating of Tax Data and Real Estate Data Protection

Real estate cadastre contains at present some data regarding the property tax, the real estate evaluation so as some selected data on real estate protection (protection of monuments, spas protection, nature conservation).Registration of this data are based on documents from the public administration organs responsible for these land specifications. In practice this notification duty seems to be not very practical and does not ensure sufficient consistency of registered data and real state. For example comparison of the real estate cadastre data and database of the Nature Conservation Agency of the Czech Republic showed that only at 75 % of parcels with stated nature conservation this information has been registered. To improve this situation it is necessary to implement more efficient procedures for this data updating. It could be realized with help of the basic Registry for territorial identification, addresses and real estate. Its launch in 2013 created the technical conditions for crucial innovation of these registration procedures. The public power organs responsible for tax data or real estate conservation can directly register these changes into the RÚIAN. Any possible taking over of these data into the cadastre or its provision from RÚIAN in one output together with the cadastral data is technically manageable.

3. Electronic Services of the Real Estate Cadastre

Some eServices have been launched in the area of the real estate cadastre, which enable to get a wide range of information from the cadastre to our customers. There are both free of charge services enabling to get some chosen data without any restrictions, as well as paid services providing verified documents serving as public documents, that is from the whole territory of the Czech Republic. Except for this, some other applications are for disposal facilitating the access to cadastral data and communication of inhabitants with cadastral offices.

3.1. Entry Proposals

From 2013 there is a legal obligation to submit the entry proposal on the given form. The objective of this measure is to reduce errors that still occurred in the proposals for entry of right and get structured data. In order to facilitate completing the form to the applicants an internet application was launched enabling creation of the entry proposal, which is interconnected to the cadastral database and leads the user through the entire process. The application is used; in 2016 more than 800 thousands entry proposals were created via it. In 2016 there was a significant increase of using web services of this application mostly by the state administration.

3.2. Service for Monitoring of Changes

The Service for monitoring of changes in data about real estates is provided by the Czech office for surveying, mapping and cadastre according to § 55, art.6 of the Act No. 256/2013 Coll., about the Real estate cadastre (Cadastral Act) to those persons who have real right to particular real estate or to participants of proceeding about such a right. The service automatically informs the user about the fact, that there occurred a change in the real estate cadastre regarding the monitored real estate. During 2016 modification of services were carried out with the goal of simplification and making sending notification messages more transparent. Number of this service users reached already 29 885 in 2016.

3.3. Remote Access to the Real Estate Cadastre

http://katastr.cuzk.cz/

Remote access (DP) enables to get the data from the real estate cadastre from the whole territory of the Czech Republic via internet. Outputs from the real estate cadastre, such as extract from the real estate cadastre and other compositions provided in this way, are formally and materially identical to the documents issued with the same timestamp by the cadastral office and are considered public documents.

The application enables provision of outputs not only based on input of basic parameters but it also supports the visual search based on digital cadastral map or on raster picture of cadastral map in areas, which have not been digitized yet, so as with help of orthophotomaps and topographic maps as navigation tools. During 2016 the modification of the users´ interface has been carried out.

DP outputs are charged, but numerous groups of users from public and local administrations receive the information from the real estate cadastre in this way free of charge. DP has been in operation since 2001 and since that the number of customers actively using it has been constantly growing. The yearly increase of users was 6 %. The number of accounts for users was 31 044 by 31.12.2016, 10 863 out of which were free of charge and 6 463 accounts were for verifiers, particularly in the frame of CzechPOINT project.

From 1.1.2016 it is possible to provide the documents from the file of documents via DP. During the first year more than 375 000 documents were downloaded via this application. Digital part of the file of documents contains nearly 8 million documents for disposal (completely available are documents from years 2014, 2015 and 2016). In case the document has not been scanned yet, it is possible to ask for it via inquiry form. More than 12 000 of such requests were solved in 2016. This process enables to deliver the document in digital form to the applicant within 2 working days.

ČÚZK was awarded the CNZ Prize for the project “Hybrid file of ISKN documents with the DP”, (CNZ means: ”WHAT IS LEFT AFTER US”?). This is a traditional award, which is awarded to IT projects that bring benefits for digital continuity.

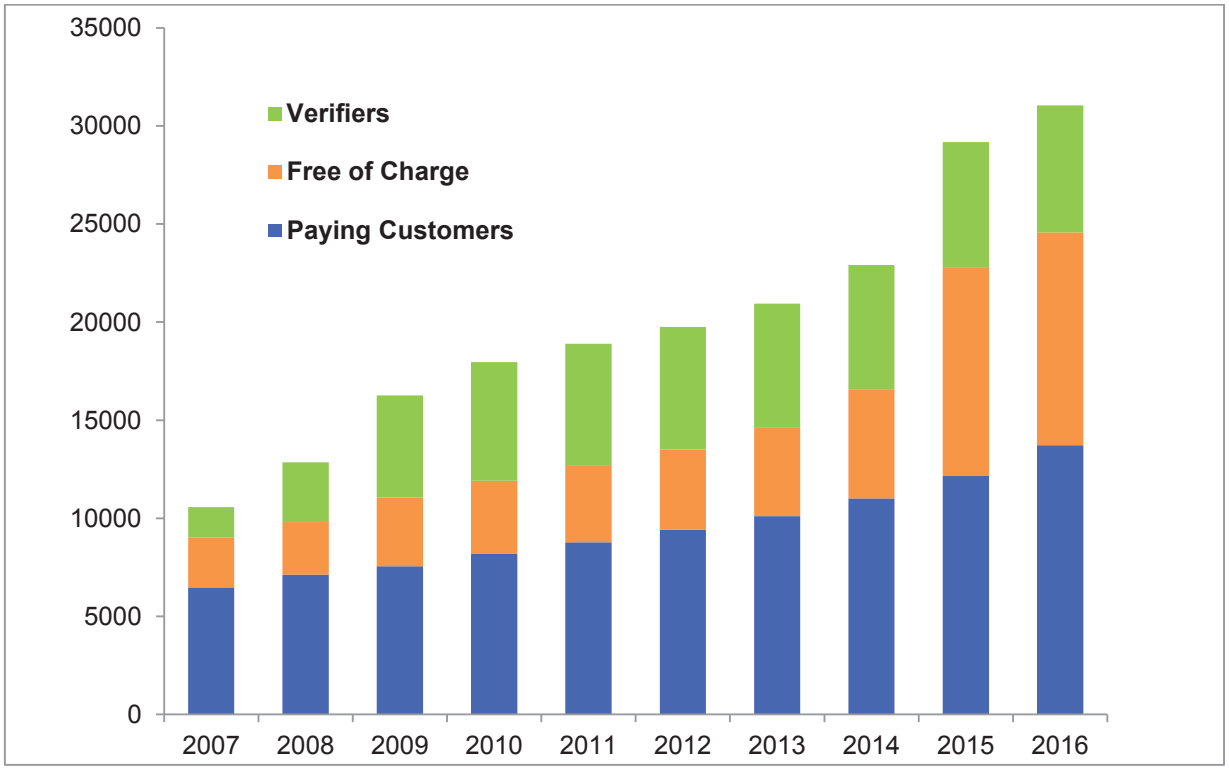


Fig 8: Development of the number of DP users as for the type of account

In the frame of CzechPOINT project it is possible to acquire the verified extract from the real estate cadastre, from the trade and commercial registries, from criminal record and others. The verified extracts from the real estate cadastre create in the long term approximately one quarter of all CzechPOINT outputs. In 2016 it was more than 330 thousand outputs.

At present it is possible to issue the extract from the real estate cadastre, registration of rights per a person and the cadastral map copy at CzechPOINTs.

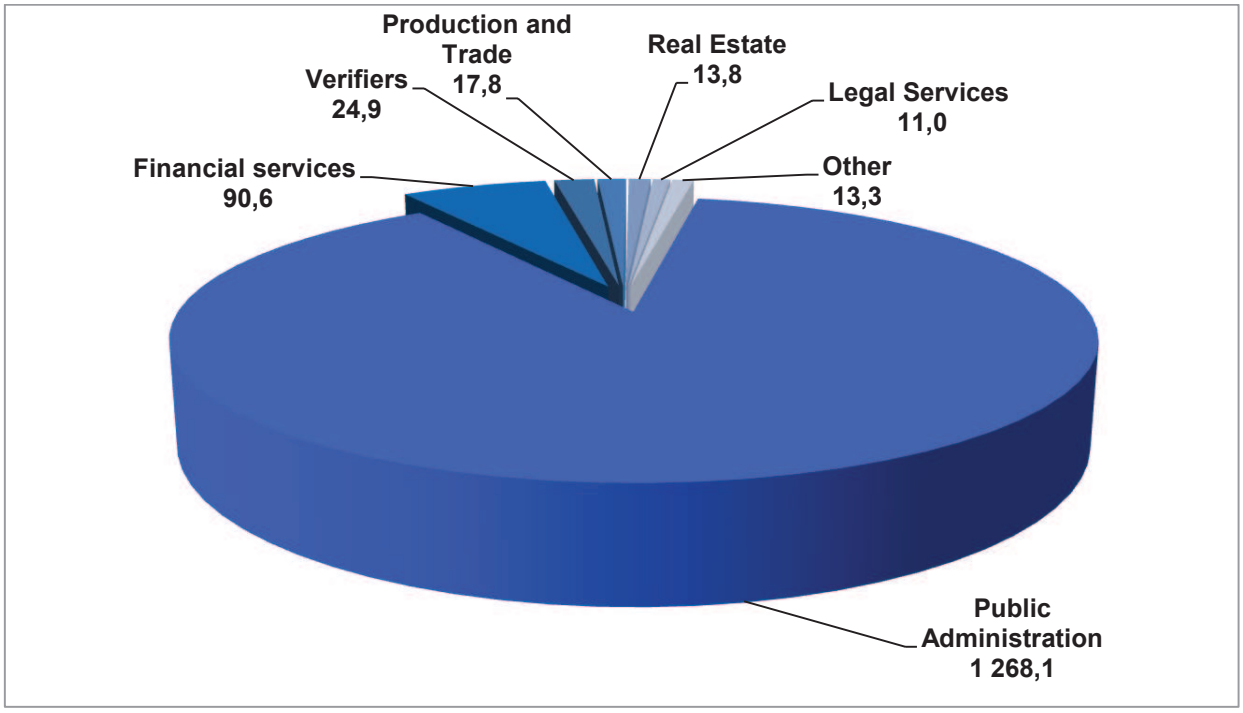


Fig 9: The biggest DP users – as for the data value in million CZ

The number of DP users has been growing constantly, so as the income for data provision via DP service. Income of the state budget from charged customers reached in total 171.6 million CZK. The biggest charged user of DP service is the bank sector, which uses it for acquiring of necessary documentation for mortgage provision. However, 88 % of data are provided free of charge to the public administration. DP is provided free of charge not only to municipalities and regions for performing their competency but also to governmental bodies, notaries and distrainors so as to insolvency administrators.

3.4. Viewing the Real Estate Cadastre

http://nahlizenidokn.cuzk.cz/

Probably the best-known eGovernment service, operated in the ČÚZK branch, is Viewing the cadastre. This internet service allows provision of selected technical data and data concerning ownership of parcels, buildings and flats. By means of viewing it is possible to find information on the state of particular proceeding. The viewing application is very intensively used by a wide range of users and has contributed in a significant way to increasing the transparency of the course of individual administrative proceedings.

The major changes made in 2016 include the possibility of getting the surveying documentation stored in cadastral office. This data are however available only to land surveyors authorized for survey sketches creation.

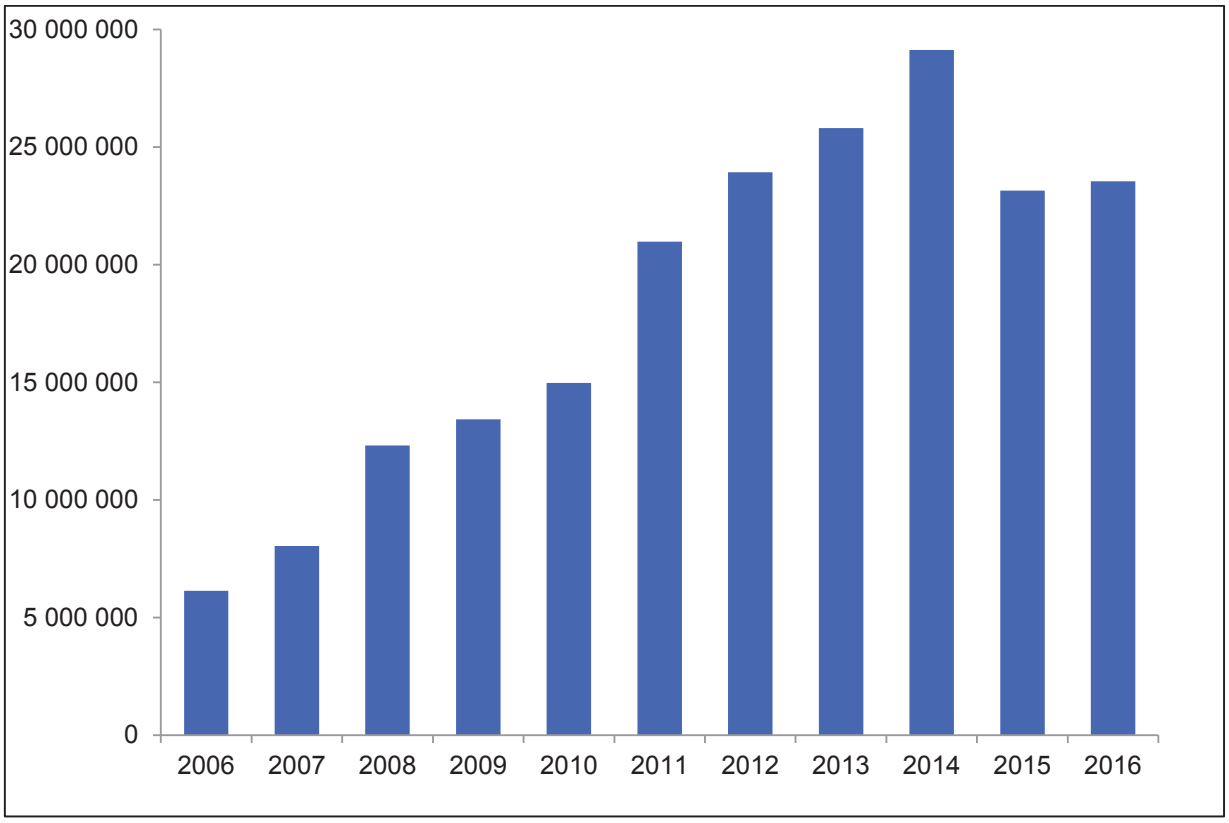


Fig 10: Development of the number of accesses via Viewing the cadastre

Viewing the cadastre is one of the most visited websites of Czech state administration. Since 2014 the application has been achieving a constant growth in the number of users with a mild decrease in 2015. This decrease was caused by implementing strict rules against prohibited automated data harvesting. In 2016 the number of accesses increased mildly to 23.5 million visits.

3.5. Web Map Services for Cadastral Maps

http://wms.cuzk.cz

Web map services for cadastral maps enable further possibility of work with cadastral maps; the user can combine the cadastral maps layer in his computer with other datasets. In that way he gets access to brand updated data via internet and has to take care neither about the storage of map copies in his data storage nor about their updating. This service is also free of charge. Yearly growth in the volume of provided data is 18 %.

3.6. Web Services for Creators and Verifiers of Survey Sketches (WSGP)

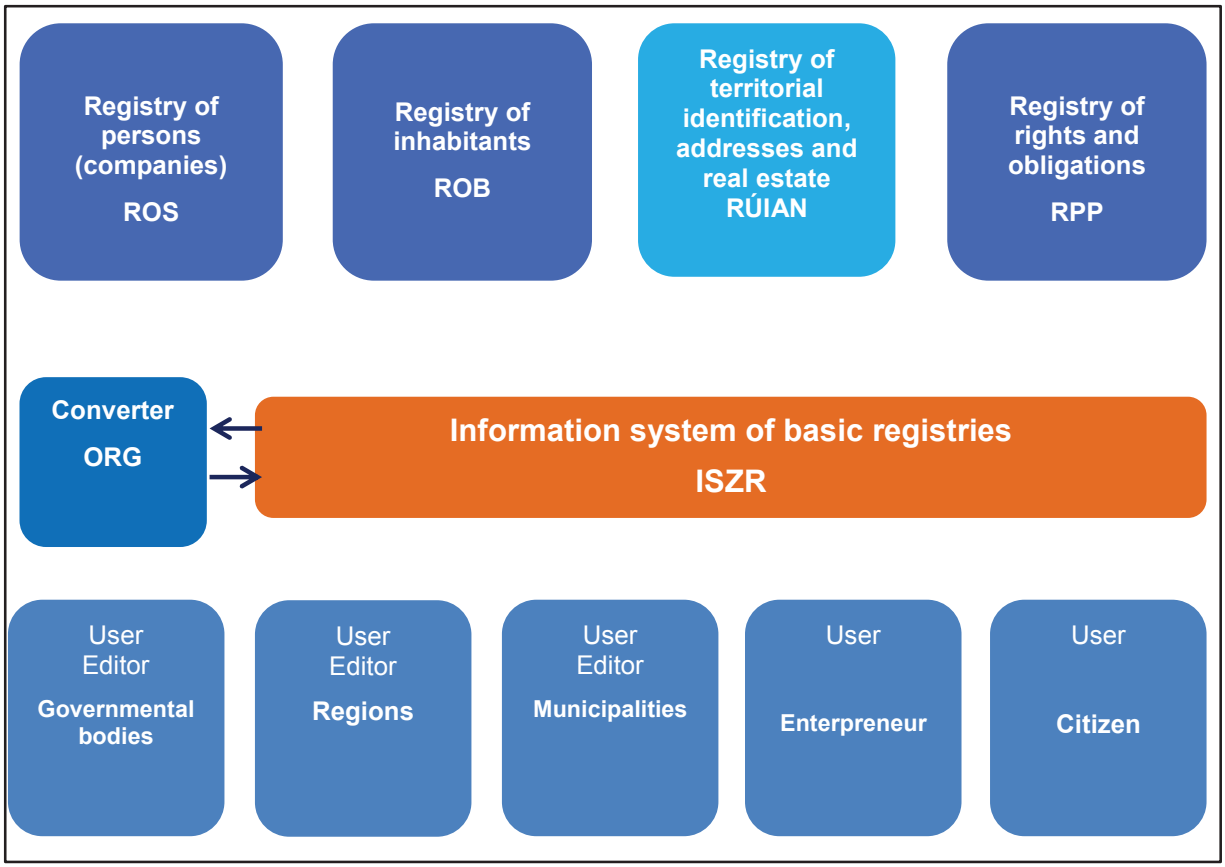
DP web services for creators and verifiers of survey sketches (WSGP) represent programme interface enabling access to cadastral data to creators of survey sketches (GP). It enables them to ask for documentation for creation of GP via internet and GP verifiers can send the verified GP directly to the particular cadastral branch office for its authorization. ČÚZK creates customer´s account based on the submitted application for the access to and work with services. The service is free of charge. Web service for data delivery (measurement documentation, VF data export) was launched in August 2015, and web service for data reception (application and GP authorization) was launched in October 2016. 521 WSGP customers´ accounts were created by 31. 12. 2016.

4. Registry of Territorial Identification, Addresses and Real Estate (RÚIAN)

http://www.ruian.cz

ČÚZK is the administrator of the registry of territorial identification, addresses and real estate (RÚIAN), which is one of the four basic registries of the public administration. The content of further basic registries as well as of RÚIAN and information system of territorial identification (ISÚI) is defined in the Act Nr.111/2009 Coll., on Basic Registries, stating also rights and obligations connected with creation, use and operation of basic registries. RÚIAN is edited by cadastral offices of ČÚZK in cooperation with municipalities, building offices and Czech statistical office.

Information System of Basic Registries – main scheme (more on http://www.szrcr.cz/)



In 2016, an amendment to the Act on Basic Registers (Act No. 192/2016 Coll.), which among other things extended the list of reference data on the type and type of use of the building and on location data on territorial registration units. The relevant implementing legislation, Decree No. 359/2011 Coll., on the Basic registry of territorial identification, addresses and real estate, was amended as well by Decree No. 415/2016 Coll. Both regulations came into effect on 1.1. 2017.

RÚIAN development focused in 2016 on new functionalities simplifying the editors´ work and implementing above mentioned regulations. The conceptual analyses for its further development was prepared and approved implementing further targeted territorial elements into RÚIAN.

In 2016 ČÚZK focused more on RÚIAN editors training. Together four general workshops were organized for editors from municipalities and building offices with participation of 340 editors. Beside also practical trainings were ongoing for smaller groups of editors held up in the ČÚZK computer training room. In frame of these trainings further 250 editors were instructed. Trainings were complemented by two special seminars for together 200 workers intended for RÚIAN coordinators at cadastral offices and for representatives from regional offices supervising data registration into RÚIAN in municipalities. Detailed information about RÚIAN project including detailed methodical instructions for editors and for public remote access to RÚIAN data are published on internet website www.ruian.cz. Methodical training either via training lectures or via internet website is important activity leading to unification of processes and eliminates so occurrence of errors in the RÚIAN database.

ČÚZK went on in checking of the RÚIAN data quality as well. Their results are published at the web site www.ruian.cz via application for RÚIAN data inspection. The number of errors has yearly decreased; f.i. the number of address points without definition points decreased by 22 % in 2016. Further the number of buildings without identification parcel decreased by 23 %.

The content of RÚIAN at 31.12.2016 for chosen items was following:

Subject	Number 2015	Number 2016
Municipality	6 253	6 258
Part of municipality	15 091	15 093
Cadastral unit	13 091	13 091
Building object	4 074 593	4 060 510
Building object with the orientation/registry number	2 830 498	2 831 384
Address point	2 901 459	2 902 690
Parcel	22 123 328	22 514 604
Street	80 571	81 110

In connection with the project European Location Framework (ELF) was RÚIAN together with the system of basic registries promoted in the European context. ČÚZK prepared in cooperation with the Ministry of Interior of the CR the report about the state of basic registries in the CR for European Commission comparative study.

5. Land Surveying Activities in the Public Interest

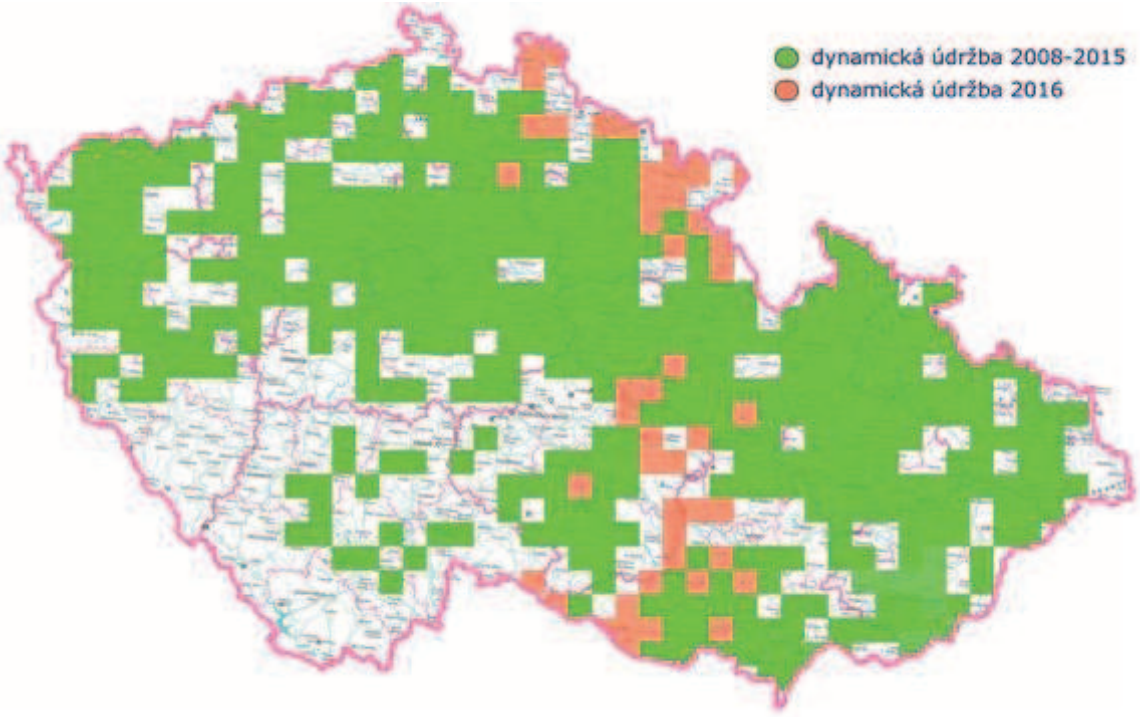
Main task of the state land surveying service is administration of national geodetic control and creating basic standardized geographic datasets and map products particularly for support of activities of the state and local administration of the Czech Republic. Fulfilling this task in the ČÚZK branch is in responsibility of the Land survey office (ZÚ).

5.1. Geodetic Control

Geodetic control is a set of theories, equipment, technologies and services enabling spatial and time assignment and documentation of geographical objects and features in binding reference systems with defined accuracy. Basic frame for the geodetic control of the Czech Republic are fundamental geodetic control points (ZBP) being divided into horizontal, vertical and gravity geodetic control. Taking into account the development of technologies of global navigation satellite systems (GNSS) the fundamental geodetic control comprises also the points of the network of permanent stations GNSS CR (CZEPOS) that create the fundamental reference frame for horizontal and time assignment of geodetic surveying by means of satellite geodesy.

By the end of 2016 the database of geodetic control points included 74 962 centres of trigonometric and densification points and 35 415 associated points, further 1 313 levelling lines of the Czech state levelling network being in total 24 711 km long, 119 526 levelling points (82 722 out of them are fundamental vertical control points and 463 gravimetric points).

In the area of ZBP administration ZÚ focuses at present particularly on so called dynamic maintenance based on defects reporting on single ZBP points sent to ZÚ by private surveyors. In 2016 in total 2 186 cooperating surveyors were registered and 220 ZBP points were renewed.



Dynamical maintenance of ZBP points in past years

In the frame of fundamental vertical control, resp. levelling networks, the reconnaissance of the fundamental levelling network (ZNS) Ostrava was realized in length of 310 km. Administration and development of the fundamental gravity geodetic control points (ZTBP) was ensured by completing the Uniform gravimetric network with the results of relative gravimetric surveying from 2015; further the maintenance of 61 gravimetric points was realized.

Using new technologies of satellite geodesy enables continuous accuracy improving of reference systems both at the continental and global levels. Parallel activities occurred for integration of national reference systems with the goal of realization of unified reference frames both at the European and global levels. ZÚ as the administrator of geodetic control in the CR ensures both theoretical and practical activities, some supporting documents and data with the goal of positioning points of geodetic control in new reference systems, particularly, in the frame of European projects, publishes information about realized reference systems and provides the development of transformation services that enable precise transformation of points coordinates between geodetic reference systems mandatory in the state territory and reference frames in European Union.

In the frame of international relations and cooperation ZÚ participates in projects dealing both with geodetic control initiated by the sub commission of International geodetic association for European reference systems (EUREF) and with European network of permanent stations GNSS (EUPOS). For purpose of unified adjustment of coordinates of EUPOS stations the EUPOS processing centre was regularly provided with bulk data from GNSS surveying (SINEX) from the CR territory based on the CZEPOS monitoring. ZÚ participates significantly in this way on the definition and accuracy improvement of the European geodetic frame.

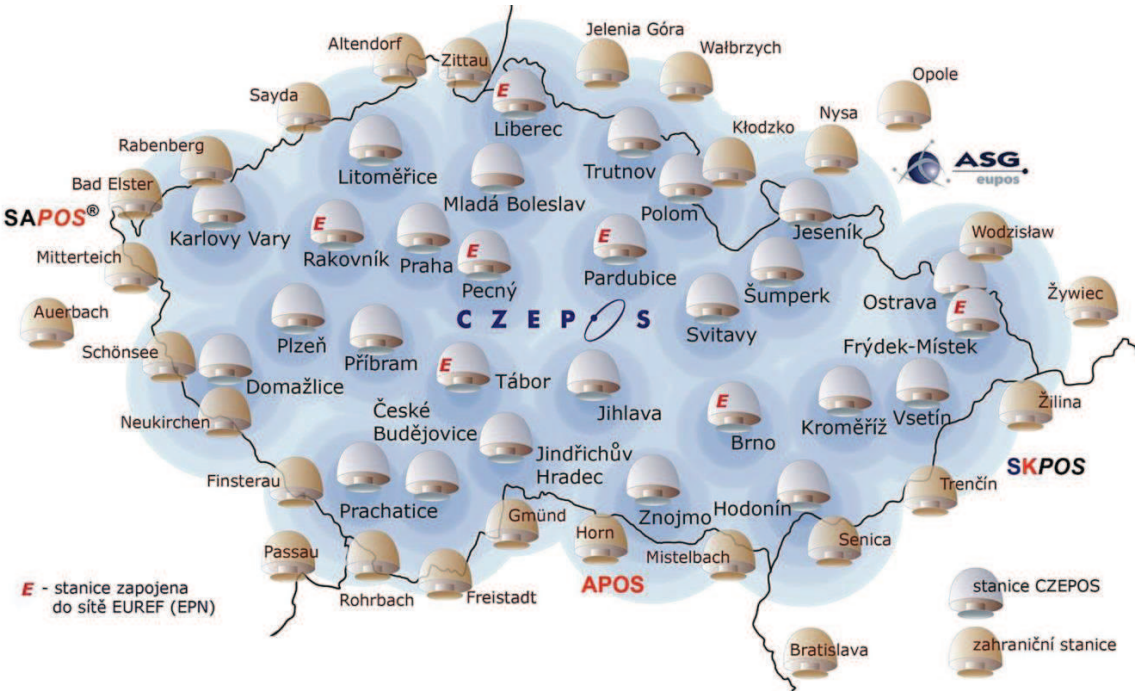
Czech Positioning Network GNSS - CZEPOS
http://czepos.cuzk.cz/

CZEPOS is the network of GNSS permanent stations spread on the whole territory of the Czech Republic. CZEPOS stations are installed on roofs of buildings in which cadastral offices are located and record the data from GNSS signals in the interval of 1s for 24 hours a day. Users are provided with them in the form of corrections enabling to specify GNSS measurements. CZEPOS services are provided in continuous operation since 2005.The network solution uses data from together 55 stations, 28 of them located on the territory of the Czech Republic and 27 in the cross-border areas of neighbouring countries.

CZEPOS services are compatible with all accessible satellite systems, i.e. American navigation satellite system (NAVSTAR GPS), Russian global navigation satellite system (GLONASS) so as with European navigation satellite system (GALILEO).

Availability and quality of the provided CZEPOS services and products can be verified on the internet website in on-line regime by the users. There were 1 490 registered CZEPOS network users by 31. 12. 2016, it means grow of 100 users in comparison to the end of 2015.

In the frame of international cooperation the data exchange between border GNSS CZEPOS stations and state GNSS networks of surrounding countries (Austrian APOS, Polish ASG-EUPOS, German SAPOS and Slovak SKPOS) has been carried.



Overview CZEPOS map

Database of Geodetic Control Points
http://bodovapole.cuzk.cz/

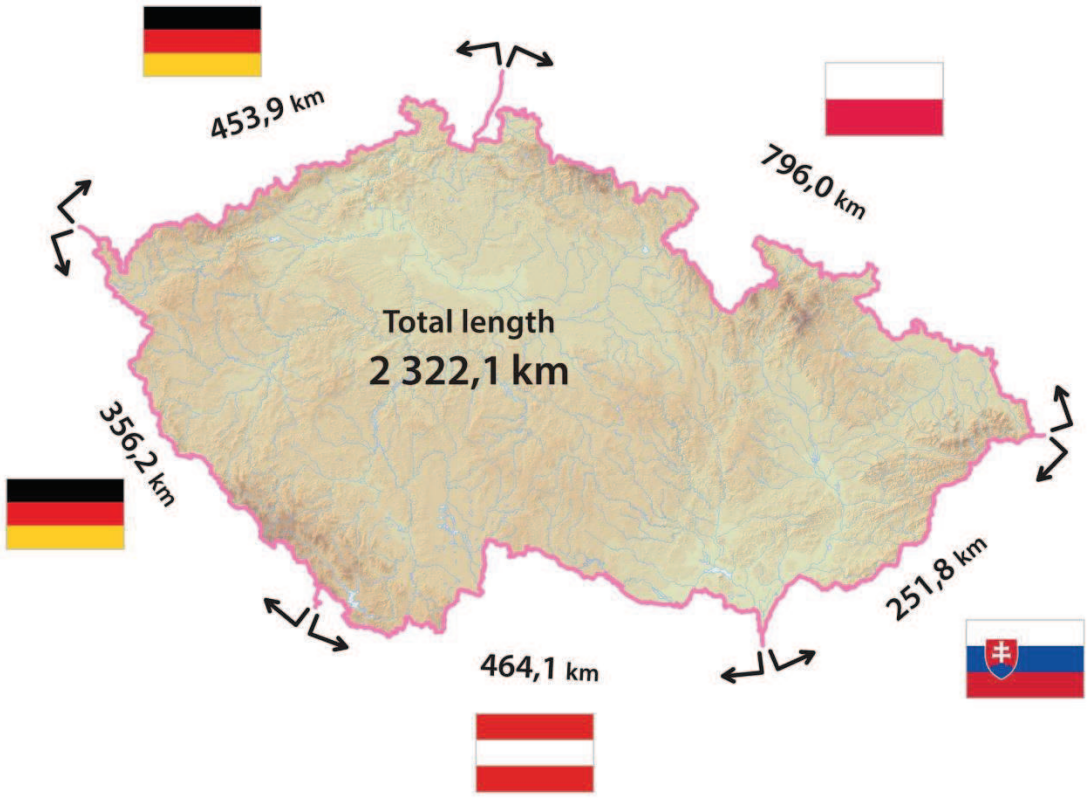
Database of geodetic control points (DBP) contains geodetic data on points of fundamental horizontal, vertical and gravimetric control, data on densification and minor vertical control points.

Database serves either as the basic tool for CR geodetic control administration or for the geodetic public providing them with basic reference data for follow-up geodetic surveys and setting-out in the territory of the CR.

The database is published on the internet; access to data is public and free. Users can also inform about the defected points of horizontal and vertical control via implemented application so as view the Statistic of provided geodetic data according to the categories of respective points in another application.

5.2. Maintenance and Documentation of the State Border

Land survey activities for maintenance and verification of state borders are carried out based on agreement with the state border documentation administrator, which is the Ministry of Interior. 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. All state borders have just been under regular examination. Besides regular examination of the stability of state borders according to international agreements precise geodetic surveying with the goal of interconnection of geodetic data on state borders into a uniform geodetic reference system ETRS89 is in the process.



5.3. Fundamental Base of Geographic Data (ZABAGED®)

ZABAGED® is a digital geographic model of the territory of the Czech Republic. ZABAGED® content represents at present 120 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) contain in its descriptive part the identifiers (integration keys) for the connection to the databases of their expert administrators.

In 2016 the regular updating of ZABAGED® at the whole territory of the state went on with use of orthophotos, aerial photos and field investigation on 745 map sheets of the Base map CR in the scale of 1 : 10 000 (ZM 10). The updating cycle of ZABAGED® is less than six years. The ZABAGED® content was being simultaneously improved by continuous updating of more significant types of features; roads, administration boundaries, buildings etc. are updated based on the changes gained from their cooperating administrators. In 2016 systematic accuracy improvement of the position of roads, highways, railroads, watercourses and further ZABAGED® elements based on the data of a new altimetry model of the Czech Republic went on. Roads were improved on 738 map sheets of ZM 10, watercourses on 890 map sheets and chosen points and lines of the terrain on 905 map sheets of ZM 10. Newly in 2016 web version of ZABAGED® Catalogue of Objects was published on the ČÚZK Geoportal enabling so easier access to the updated content of the ZABAGED®.

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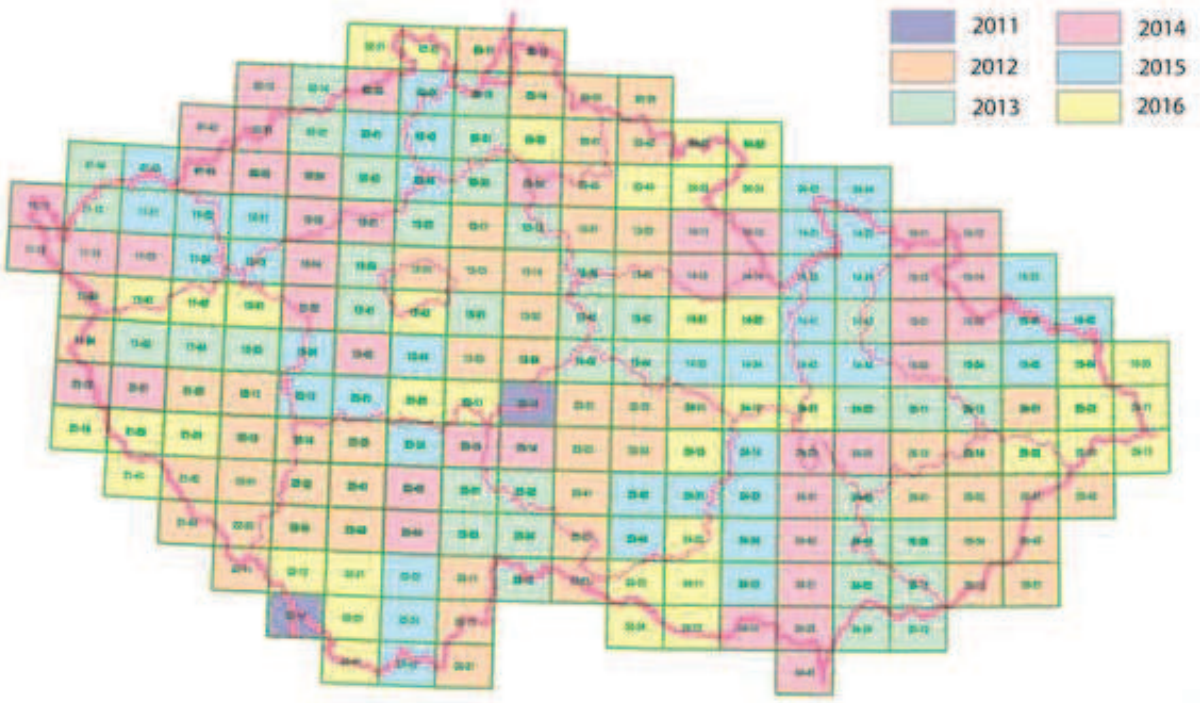


State of aerial updating of ZABAGED® by the end of 2016

5.4. Altimetry

In 2016 Digital terrain model of the 5th generation (DMR 5G) and Digital surface model of the 1st generation (DMP 1G) based on the data collected via airborne laser scanning (LLS) were completed at the whole territory of the Czech Republic. On the multiannual common project of Ministry of Agriculture and Ministry of Defence participated more than 50 employees of ZÚ and Military geographical and hydro-meteorological office (VGHMÚř). DMR 5G is the digital terrain model in the form of knot points in the irregular triangular network (TIN), which is used f.i. for creation of contour lines in state map series, for improving of ZABAGED® topography or for creation of flood maps. DMP 1G represents the Earth surface including the objects above it and is used mostly for visibility analyses and further military applications.

Web application Altimetry launched in 2015 enables expressing of the terrain in different way, as for instance slope steepness, orientation towards cardinals or different kinds of shaded terrain. The possibility of reading the point height in the map and dynamic function of altimetry profile of chosen route is also for disposal.

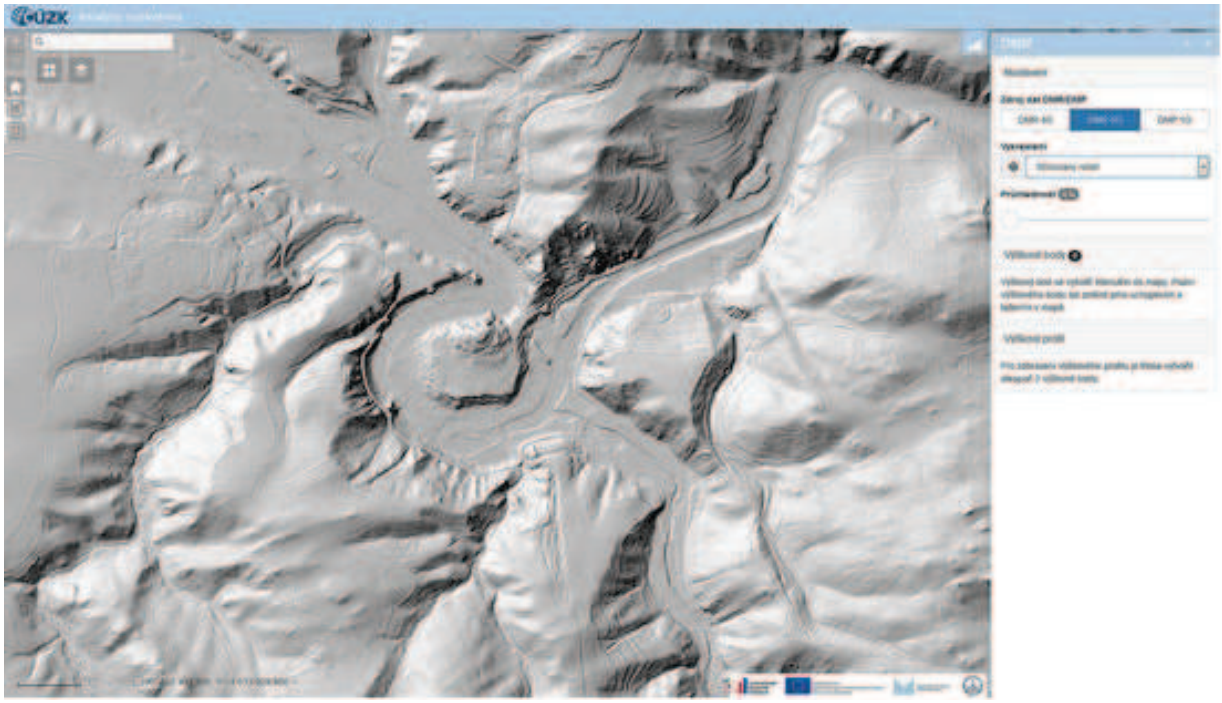


Illustration of the DMR 5Gfrom the application Altimetry analysis

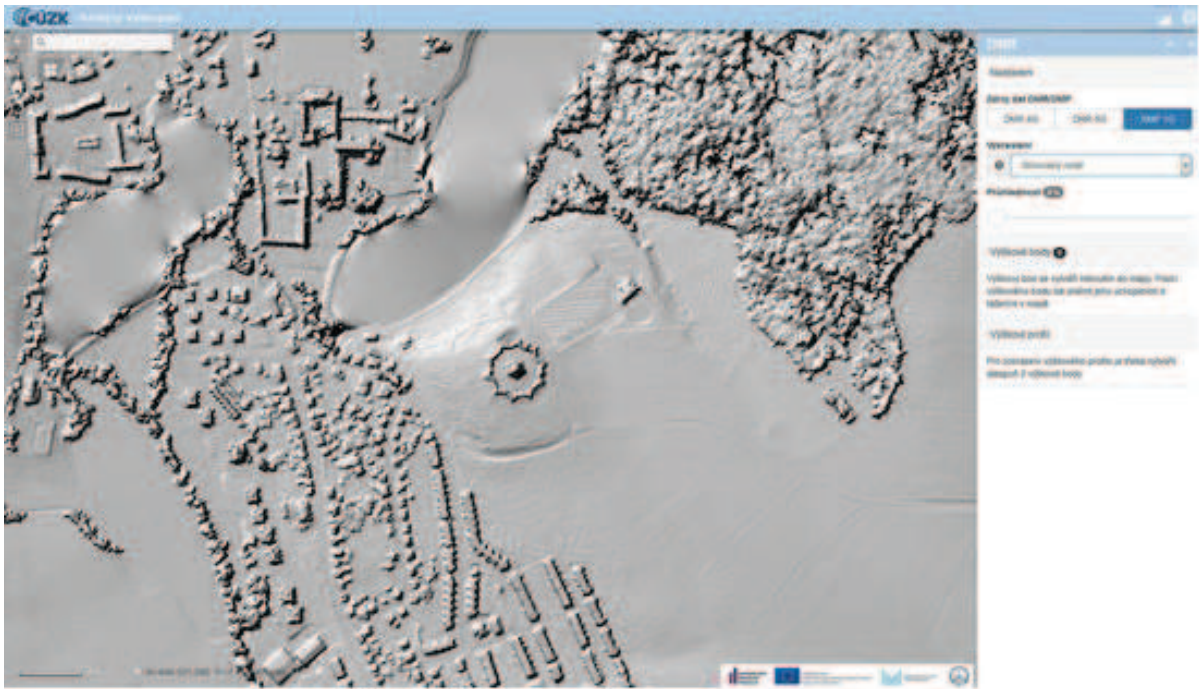


Illustration of the DMP 1Gfrom the application Altimetry analysis

5.5. State Map Series

Apart from cadastral maps state map series represent sets of basic and thematic map series. The base state map series is a cartographic work with a widely usable content, coherently showing the territory according to unified principles, created and issued by the state administration body in the public interest. The sources of topographic content of the base state map series are ZABAGED® and Geonames, in particular. Modern technology of database cartography and digital print ensures processing of the quality of map outputs and gradual reduction of their updating cycle.

Base maps of the Czech Republic (ZM) at scales 1 : 10 000 to 1 : 100 000 have been created since 2010 from two digital databases, Data 10 and Data 50, which are part of the modern information system of state map series. In 2016 following map sheets were created: 1 091 map sheets of ZM 10, 193 map sheets of ZM 25, 60 map sheets of ZM 50 and 15 map sheets of ZM 100. In accordance with the publishing plan following map sheets were updated: 26 m. s. of Overview of trigonometric and densification points, 26 m. s. of Overview of the levelling points, 10 m. s. of the Road map of the CR all in the scale of 1 : 50 000 and finally 58 m. s. of the Map of municipalities with enlarged administrative competencies in scale of 1 : 50 000. In accordance with regular updating of data bases of small scales the Map of the CR 1 : 500 000 and the Map of administrative division of the Czech Republic in scales 1 : 1 000 000 and 1 : 2 000 000 were issued in renewed edition.

Overview of raster ZM 10 and raster ZM 25 publishing

Overview of raster ZM 50

In 2016 production of the new edition of the State map 1: 5 000 (SM 5) was going on with the intention of serving especially for the purposes of urban planning. The conception of the new SM 5 is an automate visualisation of chosen object types based on the data from the real estate cadastre, ZABAGED® and Geonames. In 2016 in total 15 795 update map sheets were published with the validity of 1.1.2016. In April 2016 the preparation of the new map series – Basic topographic map in the scale of 1 : 5 000 (ZTM 5) – started based on the Development concept of land surveying in 2015 – 2020.

5.6. Orthophotographic Representation of the Czech Republic

Orthophotos created by the orthogonalization of aerial photographs find more and more uses in various fields of activities. Colour aerial photography is being taken throughout the territory of the Czech Republic in cooperation with the Ministry of Agriculture and Ministry of Defence of the Czech Republic. At present the aerial photographs have been taken solely by means of digital scanning, which enables simplification of data processing and improvement of their photo interpreting quality. Since 2012 the aerial photographing of the CR territory has been realized in two-year cycle, in 2016 the east half of the CR was completed.

Orthophoto CR is provided in datasets on map sheets of the State map 1 : 5 000 (5 sq. km) via viewing services and in print form. Data are in raster format JPEG or TIFF newly with the resolution of 0.20 m on the ground and are georeferenced in the coordinate system S-JTSK. The data sets for coordinate system WGS 84 are also provided. Beside the up-to-date orthophoto also file data of the archival black-and-white orthophotos from years 1998 – 2001 and colour orthophotos from years 2003 – 2009 are provided. Archival orthophotos are published via WMS viewing service as well.

Comparison of black-white Orthophoto from 2000 with the coloured one from 2015

ZÚ cooperates with VGHMÚř in the area of scanning of old aerial photographs besides provision of updated aerial photos and Orthophoto CR. In 2016 49 598 photos were scanned and in total already 173 288 were completed. The application Archives of aerial photographs for their detailed viewing has been launched.

5.7. Geonames Database

The Geonames database provides a complete set of information on standardized geographical names and names of territorial units (in total 165 types of designated objects) and names of settlement units. The Geonames database facilitates the access to terminological data, allows their analysis for the needs of onomastic and historical research. It is increasingly used in map portals, web applications and search services. Alongside with the ZABAGED® data it provides users with an integrated view of the territory of the Czech Republic. It is a source for publishing state map series in different scales.

In 2016 updating of the Geonames database was going on in cooperation with municipalities harmonized with updating of ZABAGED® together with digitization of cadastral maps. After completing the data integration in both mentioned applications geographical names have been connected directly to the objects and set into the database only once and not in the number of their occurrence in the map.

5.8. Archival maps

http://archivnimapy.cuzk.cz

Central archives of land surveying and cadastre (ÚAZK) is a public specialized archive, the main activity of which is taking over and registration of branch archival documents, their proceeding and systematic digitization which enables making them public in the largest range both to the professional and non-professional public.

Funds and collections of the ÚAZK were enriched by many valuable pieces not only from the current ZÚ production (mandatory copies) but also from the discarding procedures or as gifts from institutions and private persons. In 2016 in total 76 710 maps were scanned. Scanning of State map 1 : 5 000 single sheets went on together with further original maps of Stable cadastre. The archival documents can be viewed via application Archival maps ÚAZK. The most significant change of this application in 2016 was unification of its appearance and functionality with the application Archive of airborne and surveying photos and completion of another important file of archival maps, so called Maps of crops of Stable cadastre between 1837 and 1844. The archival documents are available in the data file as well. The most used archival documents are still imperial mandatory prints of the Stable cadastre from 1824 to 1843 in scale of 1 : 2880, included 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. Even so called indication sketches are available there, which are physically stored in other archives. Via Geoportal of the ČÚZK it is possible to order copies of archival documents or digital sets in printing quality.

Part of the ÚAZK creates also a public research room enabling to study the archivals directly from the originals. In 2016 there were 188 visitors in the research room visiting the archive for 457 times. In the frame of their visits 1 379 archival copies in total were created for them at place and further 750 copies were sent to the customers based on their written request.

Approximately half of the archival transported to the newly reconstructed depositary in Pardubice in 2015 were in 2016 stored into shelves and map crates. The second half will be stored in 2017 and moving of the depository will be completed.

Extract from the Map of crops of Stable cadastre

5.9. INSPIRE

ČÚZK branch is a key provider of basic datasets for infrastructure for spatial information in the EU INSPIRE (see Directive 2007/2 / EC). According to the Act No. 123/1998 Coll. and § 4 of the Act No. 200/1994 Coll. ČÚZK provides basic data sets, which are harmonized in accordance with the INSPIRE data specification in GML format. Above these datasets network services are created enabling searching, viewing, downloading or transformation and provided via Geoportal ČÚZK. Datasets and services are described in metadata which are shared both on National and European geoportal. Data sets and services handed over by ČÚZK in frame of his obligations to both mentioned portals are in accordance with the existing quality requirements and are successfully validated by available tools.

From the ISKN database the theme parcels is published, from RÚIAN database buildings, addresses and administration units, from the ZABAGED® transport network and hydrology datasets, from Geonames the geographic names, from DMR 4G the theme altimetry and orthophotos from orthophoto database. The themes reference systems and coordinate networks are being prepared from the data of geodetic control. All datasets are continuously updated. Based on the approved INSPIRE strategy ČÚZK is gestor of approximately one third of National INSPIRE datasets.

Network services are provided in accordance with the requirements for performance, availability and capacity. INSPIRE data and services are the first step in building the European Location Framework (ELF) described in more detail in Chapter 9.

In 2016 new schemas 4.0 were implemented in the whole range of provided themes. Further new download services were created for the pre-prepared data ATOM in accordance with the technical instructions.

ČÚZK has committed to enlarge the INSPIRE data content for chosen specifications based on his participation in the ELF project; more in the chapter 9. The modification was carried out in 2016.

5.10. ČÚZK Geoportal

http://geoportal.cuzk.cz/

The ČÚZK Geoportal enables centralized access to map products and services of the branch. It is possible to find information (metadata) on spatial data, services and applications in responsibility of the branch in one place, enables viewing and ordering of electronic or printed data and services. Network services are used also in geographic information systems, map portals and web applications of other providers.

Via ČÚZK Geoportal the results of the obligations resulting from the INSPIRE Directive are provided to the National INSPIRE Geoportal and from it information is being harvested to the European INSPIRE Geoportal. By means of the internet shop it is possible to order data not only in existing vector and raster formats, but also, for example, in GML format (ZABAGED®, Geonames and INSPIRE themes data). The client has the possibility to select required data according to the sheet line system or according to square units for direct files. The most demanded data sets are ZABAGED®,Orthophoto CR and raster form of the Base map of the Czech Republic 1 : 10 000. The biggest data amount is provided to users from the public administration.

To simplify the processing of orders or their payment the payment portal is for disposal to users. Data can be provided based on a license agreement agreed simply by clicking on the published use conditions. Order of the provided data can be solved very quickly; however, the main significance lies in the possibility of distribution raster cadastral map and newly also the vectorial cadastral map.

Use of data via network services and applications has been growing during last years. Available data are provided with maximum up-to-date content and defined service quality (SLA).

During the year 2016, partial modification of applications and websites of the ČÚZK Geoportal were carried out. Links to new services were added and metadata were continuously updated including information texts.

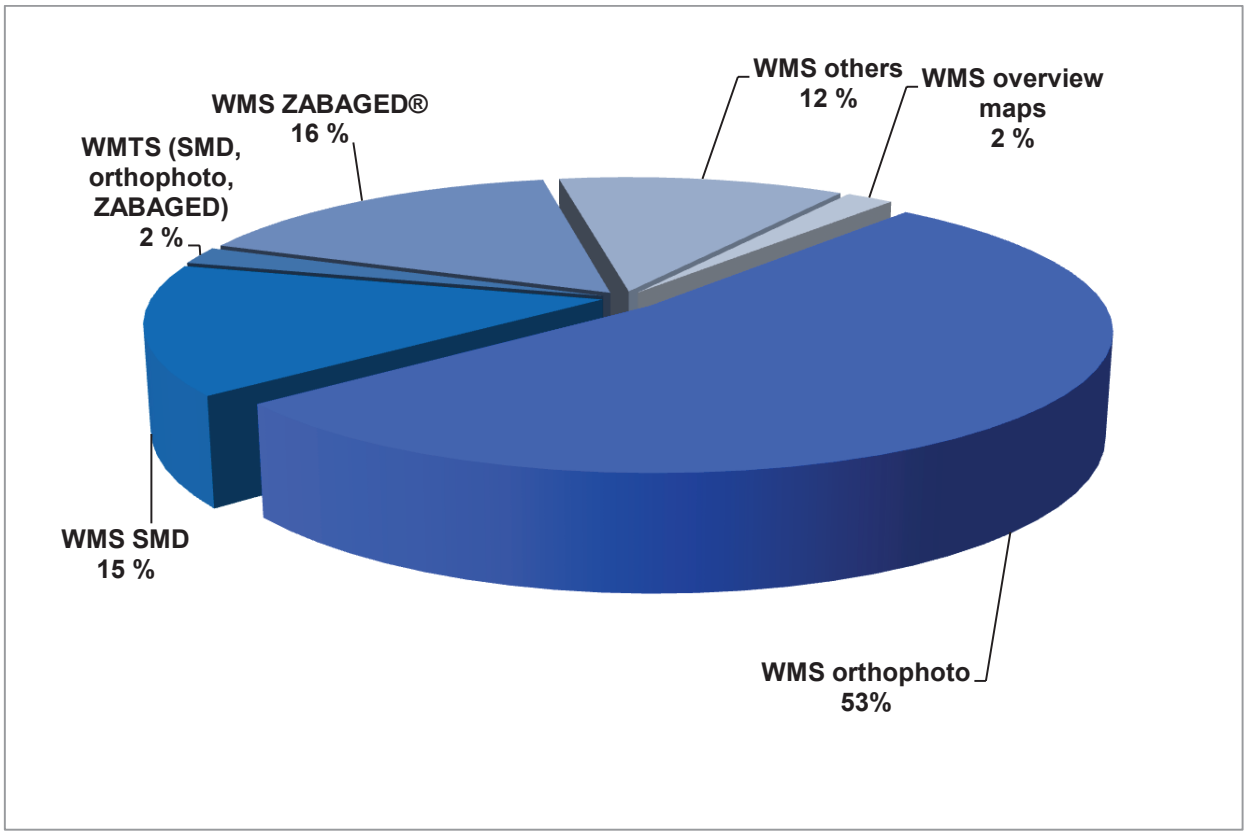


Fig 11: Use of viewing services in 2016 – shares of single groups from the total number of requests

Application Altimetry analyses won in May 2016 the appreciation of the Czech cartographic society in the category "Digital cartographic products and application on internet". In November the updated version of this application was published enabling newly the visibility analyses not only surface one from one viewpoint, but also between two points in a line.

Newly the interactive Catalogue of objects ZABAGED® has been published on the ČÚZK Geoportal – application enabling searching and viewing the ZABAGED® objects and attributes.

6. Economics and Human Resources

6.1. Employees and Education

Whilst the year 2015 was influenced by the gradual implementation of the Act No. 234/2014 Coll., on Civil service (further only Act), the year 2016 can be characterized as a year of full application of this Act.

By 31.12 2016 together 5 090 persons were employed in the ČÚZK branch, 4 705 out of them were civil servants and 385 employees. Nor educational and age structure nor the share of women in the branch has significantly changed in the long-term perspective. Traditionally prevailing share in educational structure have employees, who reached the secondary school education (52.3 %), second place belongs to the employees with University degree (36.3 %) where a mild increase occurred in comparison to 2015.The most numerous age group was created by the employees aged 41-50 (36.3 % from the total number).

ČÚZK Branch	Age Structure						Women	Graduated
	do 30	31-40	41-50	51-60	61 and more	In total		
Civil Servants	409	859	1 747	1 414	276	4 705	75.2 %	38.3 %
Employees	9	50	103	167	56	385	73.2 %	11.7 %
Total	418	909	1850	1581	332	5 090	75.0 %	36.3 %

Physical state of employees by 31.12.2016

One of crucial tasks in the area of human resources management was to carry out the tenders in accordance with the Act. In 2016 in total 513 tenders were announced in the ČÚZK for vacant service positions (at some positions repeatedly); based on their results 343 service positions were occupied. Together 4 tenders were completed (from the total of 22) for heads of service offices according to the § 186 paragraph 4 of the Act. At one cadastral office and two inspectorates the current directors did not participate in tenders and so there were changes of head of the service office.

In accordance with § 188 paragraph 6 of the Act further 592 tenders for occupancy of 574 service positions of directors of sections, heads of departments and heads of divisions were carried out. 518 of them defended their positions, 56 superiors were newly appointed (46 of them did not participate in tenders and 10 of them did not defend their positions).

By 31.12 2016 the number of women in managerial positions was 336 (55.4 %) in the ČÚZK branch from the total number of 607. Positive change was the fact that based on the results of the tenders the number of women in higher managerial levels increased.

Management Type	Civil Servants			Employees		
	Number of Heads	Women out of Them	Women Share	Number of Heads	Women out of Them	Women Share
Head of the Staff Office	23	4	*17.4*	0	0	*0*
Section Director	14	8	*57.1*	0	0	*0*
Department Director	135	64	*47.4*	1	1	*100.,0*
Division Director	419	249	*59.4*	15	10	*66.7*
Total	**591**	**325**	***55.0***	**16**	**11**	***68.8***

Share of women in leading positions by 31.12.2016

During 2016 287 civil servants and 90 common employees terminated their employment. The rate of fluctuation was 7.4 % in 2016 that is less about 2.3 % than in 2015.

Year	Terminated Employment	Rate of Fluctuation
2016	377	7.4 %
2015	497	9.7 %
2014	359	6.8 %

Fluctuation rate in previous years

In accordance with § 155 and § 156 of the Act the first official assessment of civil servants for the calendar year 2015 was carried out in the first quarter of 2016. In the ČÚZK service offices 1 462 civil servants were evaluated, who performed the civil service in 2015 for more than two months. 27.4 % of them were assessed, with excellent evaluation results, 56.3 % with good results and 16.3 % of the total number of evaluated public servants with sufficient results. No civil servant was evaluated with unsatisfactory results for calendar year 2015.

Civil Servants	Number to 31.12.2015	Number of Assessed	Assessment Results			
			Excellent	Good	Satisfactory	Unsatisfactory
Superiors	592	581	266	310	5	0
Other Civil Servants	4 036	881	134	513	234	0
In total	4 628	1 462	400	823	239	0

Official assessment of civil servants for the year 2015

Another main priority in the area of the human resources was education of employees. It was carried out in 2016 based on the approved plan of education in the Czech Office for Surveying, Mapping and Cadastre in accordance with stated individual goals for personal development of civil servants. Personal departments of individual administrative offices prepared a lot of educational activities for their employees focused on the problems of real estate cadastre, human resources management, legislation and law, economics and accounting, IT and other areas of professional education. Moreover the ČÚZK personal department realized 17 specialized team workshops for chosen workers from all branch offices. The crucial part of educational activities in 2016 was realized with use of internal lecturers from the ČÚZK staff who are familiar with the trained branch issues.

In the period from January 1 to December 31, 2016 in total 669 tests from general part of civil service tests were carried out in the ČÚZK, 28 of them were employees from other administrative offices and 5 were persons meeting the requirements of the civil service. In the same period 97 tests in total were carried out from the professional part of civil service tests namely branch No. 70, land surveying and real estate cadastre which falls within the scope of ČÚZK. Another 25 employees (15 of them together with the general part) passed civil service tests from other branches in other offices during the year; two of them passed the tests from two branches of these tests.

6.2. Granting Official Authorization for Verification of Results of Land Surveying Activities

Within granting official authorization for certification of the results of surveying activities professional competence exams for authorization were held in four terms in 2016 in accordance with section 14 of the Act on surveying and mapping (March, June, September, and December).

In the year 2016 the total number of completed applications was 64 (13 of them from 2015). Based on the professional competence exams official authorization was newly granted to 44 applicants and 5 applicants enhanced their existing authorization. The other cases were solved as follows: 2 applicants did not meet the legal requirements for granting official authorization or request to end the proceeding, 2 applicants did not pass the exam repeatedly, 9 participants did not succeed but are going to repeat the exam in 2017 and 1 applicant apologized from the exam. One applicant who submitted the application in the end of 2015 will be invited to the exam in the beginning of 2017. In 2016 no official authorization was deleted from the registry.

2 523 persons have been registered on the updated list of officially authorized land surveying engineers administered by the ČÚZK by the end of 2016.

6.3. Economics

Approved state budget of the Czech Republic for 2016 specified revenue of CZK 700 million and expenditure of CZK 2 958 million for the chapter 346 ČÚZK.

Revenue collection, coming to the budget from the administrative fees, was prescribed in the amount of CZK 550 million; its fulfilment reached CZK 657.7 million which is 119.6 %. Non-tax revenues were in 2016 approved in the amount of CZK 150 million and were fulfilled by the amount of CZK 271 million, meaning 181 % fulfilment. These revenues contain also EU

revenues from previous year's projects, namely –"Acquisition of airborne sensors" realized within Integrated operational programme (IOP- CZK 37.7 million) and European Location Framework (ELF) realized within the Communitarian programme CIP (CZK 1 million).

The budget for expenditure was modified in 2016 by nine budgetary measures of the Ministry of finance (MF). The budget was increased by CZK 24.8 million in total. The increase dealt in particular with the salaries and connected expenditures in the amount of CZK 18 million, which enabled to increase the salaries in November and December on 5 %. Further it was CZK 7.4 million moved from the Ministry of agriculture and Ministry of defence for ensuring aerial survey photographing. On the other hand CZK 0.7 million were moved from the ČÚZK budget to the budget of Ministry of interior. MF further approved the budgetary measure for refining of the budget for salaries of both employees and civil servants in accordance with the Act on civil service. Beside these measures in competence of MF in total nine budgetary measures were carried out in the branch competence used mainly for shifting expenditures between programmed actions.

Total expenditure in 2015 was CZK 2 982 million. The biggest part was used for the salaries of civil servants and employees, other payments for agreed work and connected expenditures, in the total amount of CZK 2 185 million, which created 73.3 % of the total expenditure of the branch. The average monthly income achieved in 2016 reached CZK 27 239 per civil servant and CZK 22 342 per employee.

The second biggest expenditure group of the chapter 346 ČÚZK were other material ones in the amount of CZK 584 million; postal services were received in the amount of CZK 136.1 million from it. These services showed yearly decrease of CZK 6.2 million in 2016 after some previous years with increase only and what´s more some quantity discount were provided, which can be compensated only in 2017. Except for postal services mainly further services were purchased in 2016 included particularly data processing services and services related to information and communication technologies (CZK 110.5 million), acquisition of small SW (CZK 56.8 million), data and voice telecommunication services (CZK 21.3 million), further on public tenders regarding services for digitization of cadastral maps (CZK 6.9 million) and for catering allowance of all employees (CZK 22.6 million). Further expenditure were given to energy purchases, heating, gas, fuel and water in the amount of CZK 64.7 million, to property repair and maintenance in the amount of CZK 32.9 million, and for purchase of material (CZK 52.3 million), travel costs (CZK 11.6 million), and compensations during illness (CZK 6.8 million).

Significant part of the expenditure (CZK 211.8 million) were those used on financing of programmes administered in the information system of programmed financing, it means the expenditure allotted for procuring and modernisation of sector tangible and non-tangible property. The share of these expenditures has been yearly mildly decreasing, in 2016 it was 7.1 % particularly due to the priorities given to the operational expenditure of the branch. Further important part of the programme expenditure were those used for ICT; in total it was CZK 133.8 million, from it especially HW acquisition (CZK 61.6 mill), SW acquisition (CZK 35.1. million) and data processing and services connected to ISKN (CZK 32.9 million). Other items were the programme investments for building reconstructions (CZK 62.1 million) and renewal of the transport (CZK 10.1 million) and surveying means (CZK 5.5 million).

Index/ Year	2011	2012	2013	2014	2015	2016
Income of the chapter	**439 481**	**599 126**	**721 424**	**1 160 637**	**950 029**	**929 130**
Out of it: revenues for administration fees	67 239	348 866	503 369	542 068	632 582	657 597
Income from EU budget	135 802	18 703	723	420 624	82 287	38 730
Total expenditure of chapter	2 785 290	2 753 079	2 787 362	2 826 373	2 882 336	2 981 920
Out of it: projects co-financed from EU budget	59 518	130 494	97 518	87 717	55 621	912
Current expenses without non-investment	2 145 791	2 082 017	2 477 766	2 558 418	2 624 142	2 624 142
Including: wage resources[1)]	1 427 387	1 412 214	1 426 590	1 462 339	1 532 404	1 613 019
Insurance and FKSP	498 865	493 133	498 743	511 031	535 852	572 228
Other material expenditure	219 539	176 670	552 434	587 207	555 886	584 881
Program expenditure	617 428	682 196	314 192	267 955	258 233	211 793
Including: non-investment	444 627	433 124	56 455	49 280	57 167	40 079
Investment	172 801	249 072	257 737	218 675	201 066	171 714
Research and development expenditure	34 391	0	0	0	0	0
Including: operational	34 391	0	0	0	0	0
Investment	0	0	0	0	0	0
Number of employees in Sector[2)]	5 258	5 130	5 070	5 096	5 062	4 995
ČÚZK	155	150	147	146	138	137
Cadastral Offices	4 618	4 498	4 450	4 486	4 459	4 398
Land Survey Office	394	392	384	378	380	375
Survey and Cadastral Inspectorates	91	90	89	86	85	85

7. Inspection and Supervision Activity

7.1. Professional Inspection and Supervision

Inspection of state administration of the real estate cadastre, supervision over the certification of results of land survey activities used for the real estate cadastre and state map series, and decision-making on appeals against first instance decisions of cadastral offices (KÚ) are delegated by law to the 7 surveying and cadastral inspectorates (ZKI).

Only some data from the complete ZKI activities statistics for the year 2016 are published here. ZKI received 42 complaints in total and 393 other submissions. It means yearly decrease of more than 19 %.The extent of decision-making agenda on appeals against decisions of KÚ

decreased on 18.8 % (506 appeals delivered in 2016 as opposed to 623 appeals delivered in 2015). The quality of decision making activities of cadastral offices as first step organs remained practically the same in comparison to 2015. The number of appeals in matters regarding correction in cadastral documentation decreased on 23.8 % in comparison to 2015 (260 appeals delivered in 2016 as opposed to 341 delivered in 2015), the number of appeals in matters regarding objections against the content of renewed cadastral documentation decreased on 3.7 % (158 in 2016 as opposed to 164 in 2015) and the number of delivered appeals against procedural decisions of KÚ decreased by 31.6 % in 2016 in comparison to 2015 (78 in 2016 as opposed to 114 in 2015).

ZKI performed in total 1 322 documented inspection actions (the decrease of 3.1 % occurred in comparison to 2015, when 1 364 inspections were performed). In the framework of supervisory activity regarding certification of the results of land survey activities ZKI performed in total 302 documented supervisory actions in 2016 (increase by 6.3 % in comparison to 2015, when 284 actions were performed). In 18 cases (32 in 2015) in the subsequently conducted administrative proceedings ZKI decided that the verifier of the result of land surveying activities had committed an administrative offence of infringement of order in the sphere of surveying and imposed fines at a total of CZK 259 thousand (CZK 571 thousand in 2015).Particular cases of discovered insufficiencies were specified and commented in ZKI half year analyses which are systematically organized according to unified concept and regularly handed over to other ČÚZK departments for further utilization. Internal branch publicity has been ensured via branch intranet.

Systematic inspection activity of ZKI in 2016 focused mainly on following prescribed technological proceedings during the renewal of the cadastral documentation and on acquiring information about possible problems connected with their follow-up utilization and with maintenance of digitized cadastral maps. In case of supervision of results verification of land survey activities the supervision focused on cases not fulfilling the requirements, technological procedures or reached accuracy given by generally binding legal regulations.

Information about the ZKI inspections in 2016 is published on their websites in accordance with § 26 of the Act No. 255/2012 Coll., on Inspection (Inspection Rules).

ČÚZK (as relevant central administrative office) performed in 2016 inspection of delegated powers entrusted to the regional authorities and the capital city of Prague in the area of the Registry of territorial identification, addresses and real estate (RÚIAN).These inspections were in 2016 realized in 6 regional offices (Zlín, Moravia-Silesia, Ústí nad Labem, Hradec Králové, Plzeň and Central-Bohemia regions). General information on their results are published on the ČÚZK website in accordance with the § 26 of the Inspection Rules.

Complaints

Inspectorates	Not resolved at 1.1.	Received after 1.1.	In total	Forwarded	Legitimate	Not legitimate	Still being resolved
in Brno		7	7	3	1	2	1
in Č. Budějovice	-	2	2	1	-	1	-
in Liberec	-	4	4	2	-	2	-
in Opava	-	8	8	3	2	3	-
in Pardubice	-	5	5	2	-	3	-
in Plzeň	1	3	4	-	-	4	-
in Praha	-	13	13	6	1	6	-
In total	**1**	**42**	**43**	**17**	**4**	**21**	**1**

Other Submissions according to the Part IV of the Inspection Rules

ZKI	Not resolved at 1. 1.	Received after 1. 1.	In total	Referral for no jurisdiction	Resolved	Still being resolved
in Brno	3	71	74	15	59	-
in Č. Budějovice	4	129	133	6	113	14
in Liberec	-	12	12	-	12	-
in Opava	-	57	57	5	51	1
in Pardubice	3	49	52	1	48	3
in Plzeň	-	19	19	4	15	-
in Prague	-	56	56	12	44	-
In total	**10**	**393**	**403**	**43**	**342**	**18**

ZKI Decisions on Appeals against KÚ Decisions

Matters	Not resolved at 1.1.	Received after 1.1.	In total	Appeal rejected	KÚ decision changed	KÚ decision repealed and proceeding terminated	KÚ decision repealed and returned to KÚ	Decision annulled	Still being resolved	Faulty and Forwarded proceedings
Correction of errors in the cadastre	40	260	300	157	18	6	88	-	25	6
Objections to revised cadastral documentation	18	158	176	90	10	-	55	1	15	5
Infringements of order in the sphere of the cadastre	-	-	-	-	-	-	-	-	-	-
Procedural	9	78	87	36	1	3	36	1	8	2
Changes in the boundaries of cadastral districts	-	-	-	-	-	-	-	-	-	-
Administrative fees	-	6	6	4	-	2	-	-	-	-
Rejection of applications for submission of information	-	-	-	-	-	-	-	-	-	-
Other	-	4	4	2	-	-	-	-	-	2
In total	**67**	**506**	**573**	**289**	**29**	**11**	**179**	**2**	**48**	**15**

7.2. Financial Inspection

ČÚZK performed financial inspections according to the Act No. 320/2001 Coll. on financial inspection (further only Act), in subordinated bodies in 2016.

According to the approved plan of public administration inspections for the year 2016 č.j.: ČÚZK-00490/2016 -10 from January 20, 2016 the inspection group of ČÚZK carried out public administration inspections at following 12 inspected bodies:

KÚ for the Region Ústí nad Labem, KÚ for the Region Karlovy Vary, KÚ for the Region Zlín, KÚ for the Region Olomouc, KÚ for the Region Vysočina, and all seven ZKI, 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. Inspection authorization and order was issued by the president of the ČÚZK in accordance with section 13 art. 1 of the Act with reference to section 4 of the Act no. 255/2012 Coll., on the Control (Control Rules), as amended.

The main goal of realized inspections was to verify the financial management of inspected persons, following the binding legislation, economic and internal rules, functioning of internal managing systems and creation of the conditions for economical and efficient performance of the public administration.

Inspection of accounting documents verified not only their requirements as of material and formal point of view, but in particular realisation of the previous, continuous and ex-post check. All inspected organizations were proved as of observance of the efficiency, economy and usefulness of public resources utilization for fulfilment of given goals in accordance with the section 2 art. m) - o) of the Act. The inspection included checking of the call for public tenders and their realization, the correct amount of administration fees, payments and prices for provision of data from the real estate cadastre and results of land surveying activities.

In 2016 the inspections focused among others on fulfilment of provisions, being adopted to eliminate insufficiencies from previous inspections and inspections performed in the ČÚZK branch by external audit organizations particularly financial offices and financial directorates. A regular part of public administration inspections was fulfilment of the tasks of the ČÚZK Anticorruption programme and dealing with damage caused within exercising of the public power. Public administration inspections of some inspected persons in 2016 found less serious formal and objective shortcomings emerging from the inconsistent compliance with some provisions of ČÚZK economic rules, some partial shortcomings in records of assets and in provision of information from the real estate cadastre. Measures taken to perceived inadequacies of conducted public administration inspections mainly concerned legislative changes of the accounting reform of public finances and their reflection into the internal regulations of the inspected persons, budgetary adjustments and their links to data in the Treasury. Furthermore it dealt with implementation of management control, accounting, and registration of easements, property management and inventory, compliance with the terms of the tender documentation, reimbursement of travel expenses for business trips of employees and data provision from the real estate cadastre. No serious shortcomings were discovered that would unfavourably affect the activities of inspected persons. All documents from carried out inspections were delivered to the president of the ČÚZK together with proposed measures and he then imposed measures to inspected persons to eliminate existing insufficiencies and prevent them from repetition, in accordance with section 18, art. 2 of the Act.

After written information about measures taken by the inspected persons for elimination of insufficiencies, the inspections were terminated properly. Final report about results of financial inspections in the CUZK branch for the year 2016 was submitted to the Ministry of finance.

7.3. Internal Audit

Internal audit is a part of the system of financial inspection in the ČÚZK branch. Internal audit is carried out by authorized employees - internal auditors. Systemized job positions are established in ČÚZK, Land Survey Office and in all 14 cadastral offices. Organizational rules ensure full independence of the auditors and their separation from managerial and executive structures. The function of internal audit has not been set up in cadastral inspectorates, because it was substituted there by yearly public administration inspection. The internal auditors are directly subordinated to heads of particular offices. 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.

The activity of internal auditors results from the medium-term and yearly plans. Planning of audits is based on the risk evaluation and is focused on priority processes in activities of particular offices. The parts of the plans of internal audits are also further tasks in compliance with Standards for the professional practice of internal auditors. Internal auditors carry out methodical and consultation activities and take part in the creation and amending of internal regulations. Integral part of auditors´ activities is their professional development. 10 out of the 15 internal auditors in the branch 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 for 2016 internal auditors performed together 89 internal audits. From this total number of internal audits 24 were financial ones focused on the proof of the economy of particular offices, 33 were audits of systems proving the administration of public resources and property, 16 were audits of operation dealing mainly with the functioning of the internal inspection system and 16 were other audits.

Performed audits inspected the functionality and efficiency of the internal inspection system, existing state of the fulfilment of suggested recommendations stemming from completed audits and inspections in previous year. Further the audits evaluated whether the standards and internal regulations have been issued and whether the anticorruption measures have been implemented and monitored. Internal auditors evaluated also corruption risks in ČÚZK and job positions with higher corruption risk based on the task of Departmental internal anti-corruption program (RIPP).In 2016 the internal auditors focused also on the evaluation of public tenders published on the profile of the contracting authority – ČÚZK – with the aim of quality improvement and reducing gaps in published information within particular tenders. Conducted audits inspected and updated created risk analysis and maps of risks, verified procedures connected with submission of public tenders, managing of state property, accounting administration and dealing with budgetary resources. The reports of internal auditors proved, that the activities of subordinated offices in the branch were provided fluently without bigger problems even using the economic measures.

Performed audits were completed in the written reports with recommendations, most of which were accepted. In 2016 performed audits proved that internal inspection system is effective, identifies possible risks and diminishes probability of their occurrence in ČÚZK activities. Internal system of inspection is able to inform about possible insufficiencies at all managerial levels thus meaning limitation of necessity to realize measures for their improvement.

8. International Cooperation

ČÚZK actively participates in the work of some international organizations being active in the field of cadastre, land registration and land surveying administration. Beside that it also actively cooperates with all neighbouring countries in the area of mutual data and information exchange based on bilateral agreements.

ČÚZK is an active member of the pan-European organization EuroGeographics (EG), which associates map agencies and cadastral offices of European countries. EG enables experience exchange and mutual cooperation; it systematically develops the cooperation with the European Union bodies at building of the united infrastructure for spatial data in Europe. EG contributes to it by creating of pan-European products with harmonized parameters for all European countries, f.i. EuroRegionalMap, EuroBoundaryMap, EuroGeoNames, ESDIN, and EuroSpec. EG negotiates experts involvement from member organizations into preparations of harmonization provisions included implementing rules of the Directive of the European Parliament and the Council for establishing of the Infrastructure of Spatial Information (INSPIRE) and helps to implement them on the particular member states level.

Since March 2013 the project European Location framework (ELF) was in operation. Its goal was to prepare the unified frame for provision of European reference geoinformation data and services. ČÚZK actively participated on activities of some working groups as a project partner, provided sample data for pilot testing and organized a workshop and management board meeting in March 2016. The project was successfully completed in October 2016 and should be used for creation of European Location Service (ELS) in which ČÚZK will participate as well according to his possibilities. 2016 was next year of work in the European section of the United Nation commission for Global geospatial information management. Its 3rd plenary meeting took part under the auspices of the EG association in Budapest just following its General Assembly.

In 2016 work on implementation of the INSPIRE Directive went on and ČÚZK participated in connection to it in some conferences and many workshops dealing with updating of implementing rules and experience from current implementation progress. One of the events was 10th INSPIRE international conference that was held in Spanish Barcelona.

ČÚZK regularly monitors the activities of the Working Party on Land Administration (WPLA), working under the auspices of UNECE, which is engaged in land and real estate information and related thematic. In 2016 the representatives from the ČÚZK took part in one WPLA meeting being organized in cooperation of UN European Economic Commission and Spanish registration authority Registradores de Españave. The theme of the workshop was detailed information provision about the models of the land administration and registration of rights in different countries and their comparison.

The first meeting of the Permanent Committee for Cadastre in EU (PCC) in 2016 was held in Amsterdam as a common conference of five partnership associations – signatories of the Common Vision Agreement from the 2013 being as follows: EuroGeographics, EULIS, PCC, CLGE and ELRA. The event was organized by the Netherland Kadaster and ČÚZK actively participated in the programme. The second meeting of the PCC was held in Bratislava in the frame of the Slovak presidency of the EU.

33rd meeting of cadastral service providers of succession state of the former Austro-Hungarian Empire, namely Croatia, the South Tyrol, Austria, Slovakia, Trentino, Hungary and the Czech Republic was held in Trenčianské Teplice in Slovakia in May 2016. The main theme of this

meeting was Information provision from the cadastre including Open data and Mechanism of error corrections in the real estate cadastre.

In the area of geographical names ČÚZK was represented in the 29th session of UN experts for geographical names (UNGEGN) held by the UN Statistical division, economic and social matters department in Bangkok in Thailand. The aim of these sessions is to raise awareness about standardization of geographical names, to support collection and authorization of geographical names and contribute to the international and regional cooperation in this area.

Further international activities dealt with participation on professional seminars, scientific-technical conferences, information technologies conferences and preparation of the scientific professional magazine Geodetic and Cartographic Review (GaKO).

9. Structural Funds of European Union

ČÚZK utilizes the Integrated operational programme of EU to finance some of its projects important for further development of the branch and for realization of the part of its responsibility for creation of basic registries of the state administration. In previous years following projects were completed: “Building of the Registry of the Territorial Identification, Addresses and Real Estate” (RÚIAN), “Complex Electronic Document Service follow-up the system of data boxes” and “Document Management System ČÚZK” following the implementation of the electronic conversion of documents and data boxes (DMS). All three projects are being maintained and developed to enable full utilization of provided applications. In 2016 the last project European location framework (ELF) financed from the EU budget was completed.

European Location Framework (ELF)

ELF is a strategical project of the consortium of 30 European mapping and cadastral offices associated in EuroGeographics being supported by European Union in the frame of the CIP PSP programme. The main goal of the project was to provide step-by-step seamless, updated data sets and services based on updated reference spatial data of European national mapping and cadastral offices and provide them to users in a sustainable way. Practical use of such European range data is then demonstrated with help of various thematic applications of further providers with participation of private sector. Unified shape of data and services will be ensured using the technical rules of the INSPIRE Directive. Results of European projects ERM, EGM, EGN, ESDIN a. o., which were being solved by EuroGeographics in previous years, were used. The three-year project was launched on 1. 3. 2013 and in the first period together 15 European countries included the Czech Republic participated.

In the last year of the project further 10 organizations – data providers – connected f.i. from Lithuania, Hungary, Serbia and Portugal.

In 2016 ČÚZK team of specialists actively participated in comments and testing of ELF technical specifications for data and services, in cooperation with Polish GUGiK realized a pilot regarding data analyses and preparations for cross-border data provision and provided harmonized data and interoperable network services according to the INSPIRE rules and /or ELF specifications for the needs of the project. In the frame of the project some international expert meetings were held in Prague. The project was successfully completed in October 2016 and final meeting was held in November 2016 in Luxembourg. Practical use of the project ELF results is in preparation for creation of the European Location Service (ELS) in future years.

10. Research and Development

ČÚZK performs the function of the founder of the Research Institute of Geodesy, Topography and Cartography (VÚGTK), v.v.i. The main activity of the VÚGTK is applied and basic research in the land surveying and cadastre branch, development and testing of new methods, procedures and programs and specialized consultations in the area of creation and management of the ISKN, photogrammetry and remote sensing of the Earth, geodesy, geodynamics, engineering, metrology and standardization, state map series creation and maintenance, development of special tools, equipment and measuring systems. In the frame of metrological requests for the ČÚZK branch and activities connected with its membership in international association EURAMET accredited calibrating laboratory is in operation in VÚGTK together with the authorized metrological centre. The Institute is also the accredited educational body and operator of the Land surveying library®.

Basic and applied research in geodesy and geodynamics has been ensured on the long-term basis by the research department of geodesy and geodynamics located in the Geodetic observatory Pecný in Ondřejov. In 2016 the gravimetric laboratory participated with its superconductive and absolute gravimeter in the international projects in the area of gravimetry, geodynamics and metrology. In 2016 the activity of operational, data and analytical centres included into the services of the International association of geodesy and world meteorological services went on. The basic research focused on the Earth gravity field modelling, solution of gravity field parameters from satellite missions and interpretation of the Earth gravity field in other branches (f.i. in geophysics or tectonics), GNSS "real time" data processing, using of GNSS observations for solution of parameters describing the state of the Earth atmosphere (troposphere and ionosphere) and on analyses of DORIS system data. Applied research aimed at software development for GNSS data in the regime of precise determination of the location, development of metrological bases for gravity and GNSS measurements and stability monitoring of the network of reference GNSS stations in the CR.

VÚGTK solved in 2016 some projects for ČÚZK in the frame of the "BETA" programme of the Czech technological agency. In the area of GIS and real estate cadastre VÚGTK concentrated in 2016 mainly on the project solution "Integration of new technique and technology into the process of the renewal of the cadastral documentation by new mapping". This project shall result in the modernized technology and software for the needs of boundaries investigation and planimetry surveying within new cadastral mapping. In July 2016 the project "Research and development of methods for cartographic generalization of state map series of medium scales" started, its goal is to help to automatize the cartographic creation of medium scale maps. In the frame of cooperation with further public research institutions VÚGTK has been solving following BETA program tasks: for the Ministry of transport it is "Safety increasing of the railway traffic on secondary lines using the GNSS satellite systems" and for the Ministry of agriculture it is the project EPSILON "Use of digital technologies for archival aerial photos processing for real surveying of drainage structures in S-JTSK system". Beside these projects VÚGTK ensured in 2016 development of specialized software for the work with digital cadastral maps which has been fully used in the conditions of KÚ.

Land survey library® has a unique and exclusive status not only in the Czech Republic but also in the international scale as for its documentation fund and specialization in the branches of geodesy, geography, geodynamics, metrology and real estate cadastre. It is connected to many activities of interlibrary cooperation and provides scientific information resources from the area of

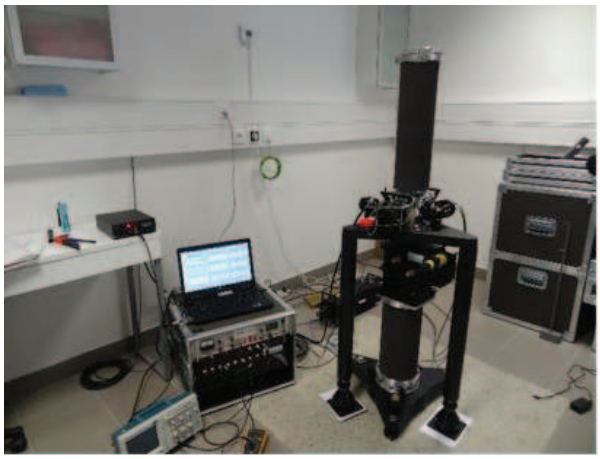
its competence. The library provides the background for scientific activities not only for all employees of the institute but also to professional and general public.

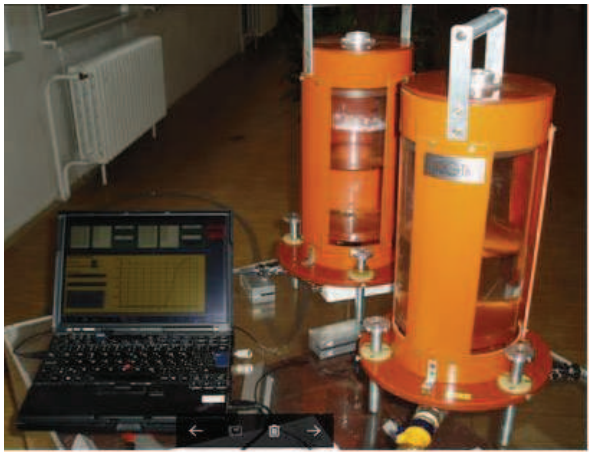
Departments of metrology and engineer geodesy have solved in 2016 the projects for Czech technological agency. To ensure the research needs of the branch project BETA “Metrological continuity of measurements in the Basic geodynamic network” was solved in cooperation with the department of geodesy and geodynamics resulting in the certified method being used in the ČÚZK branch.

For the needs of the “Czech office for standards, metrology and testing” (ÚNMZ) the project “Keeping of national standard of great lengths” was solved. This project was solved in the frame of the programme of the metrology development. Further the work on the proposal of the metrological conception in the ČÚZK branch for the next five years has started for ÚNMZ.

In the frame of the public tender the development of the mobile measuring hydrostatic system for measurement and inspection of the altimetry discrepancies was carried out for the Transport research centre in Brno intended for the use within the reconstruction of the highways in the CR.

The calibration laboratory was equipped with the automatization of the measuring processes following the previous reconstruction. In 2016 in total 1 609 calibrations were carried out there in the frame of 639 contracts and continuous administration and maintenance of standards went on.





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