

State of the real estate cadastre in Slovakia and progress achieved in the course of 2013

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Abstract

Evaluation of the achieved level of the real estate cadastre in Slovakia to the time horizon of January 2014. Achieved results in this area during 2013, in particular the change in the organizational structure and changes to the geodetic data files of the real estate cadastre with the solution of complete projection of adopted numerical measurement results to appropriate vector cadastral maps.

1. Subject of the real estate cadastre

The subject of the real estate cadastre (hereinafter "KN") administered by cadastral authorities in Slovakia at the district level by its 72 departments to 1.1.2014 is evident from Table. 1:

Tab. 1

Districts	79
Municipalities	2 927
Cadastral districts	3 559
C-register parcels	7 111 558
of which % of parcels with registered ownership relation in the ownership document (OD)	79 %
E-register parcels	8 080 740
Houses with a register number	2 257 859
Flats owned by juridical persons	62 142
Flats owned by individual persons	848 070
Ownership documents (the average extent of OD is 4 pages)	4 356 425

Nature of land use of parcels administered in the real estate cadastre to 1.1.2014 is evident from Table. 2:

Tab. 2

Arable land	1 413 129 ha
Hop fields	513 ha
Vineyards	26 750 ha
Gardens	76 447 ha
Fruit orchards	16 793 ha
Permanent grasslands	868 061 ha
Forest land	2 015 368 ha
Water areas	94 864 ha
Built-up areas	233 305 ha
Other areas	158 301 ha
SLOVAKIA	4 903 531 ha

2. Set of cadastral maps

Assortment of composition of cadastral maps to 1.1.2014:

- a) cadastral maps in imperial scales (Hungarian coordinate systems) 33.9% of the territory
- b) cadastral maps in metric scales (horizontal datum of unified trigonometric cadastral network S-JTSK) 66.1% of the territory.

In practice it represents an administration of 4,149 files of vector cadastral map (hereinafter the "VKM") in the following segmentation:

- 1,796 files of numerical vector cadastral map (hereinafter the "VKMč"),
- 1,894 files of transformed non-numerical vector cadastral map (hereinafter the "VKMt") with the synchronic administration of adopted measurements files (hereinafter "SPM"),
- 459 files of non-numerical vector cadastral map with implemented numerical results (hereinafter the "VKMi").

The number of individual vector map files and their classification may change due to further gradual registration of other land consolidation projects (hereinafter the "PPU"), possibly as a result of the reclassification of map update methods.

Proceedings under the Act no. 330/1991 Coll. on land consolidation, ownership right arrangement, land offices, land resources and land communities - creation and registration of PPU in the KN (formerly "consolidation") is a long term continuous task. Land consolidation is a rational layout of land ownership in a specific area and other associated immovable agricultural and forest property administered in the public interest in accordance with the requirements and conditions of environmental protection and the creation of a territorial system of ecological stability, agricultural landscape features and operational and economic aspects of modern agriculture and forest management and rural development support. Land consolidation includes detection and a new arrangement of ownership and usage conditions as well as related

tenure in the land consolidation perimeter and new division of parcels (consolidation, separation or other land modification), as well as technical, biological, ecological, economic and legal measures related to rearrangement of legal relations. To 1.1.2014 land consolidation projects of 260 cadastral districts (full or partial) as well as simple land consolidation projects (JPU) of 36 cadastral districts were entered in the KN

3. Target status of the real estate cadastre

From the perspective of KN functionality the most important is an achievement of sustained target status which is the functioning of local government authorities in the area of the cadastre - and thus achieving and guaranteeing of countrywide long term comprehensive functionality of all 72 cadastral authorities in all the various tasks stipulated by generally legally binding regulations and sanctioned by procedural deadlines arising from the following acts and regulations:

- The Act no. 162/1995 Coll. on the real estate cadastre and entering of ownership and other rights to real estates (hereinafter the "Cadastral Act"), as amended,
- The Act no. 215/1995 Coll. on geodesy and cartography (hereinafter the "Act on GaK"), as amended,
- The Act no. 180/1995 Coll. on some measures for land ownership arrangements, as amended,
- The Regulation of Geodesy, Cartography and Cadastre Authority of the Slovak Republic (hereinafter the "UGKK SR") no. 461/2009 Coll., implementing the Act on the real estate cadastre and entering of ownership and other rights to real estates, as amended (hereinafter the "Regulation on the KN ')
- The Regulation of the UGKK SR no. 300/2009 Coll., implementing the Act on geodesy and cartography (hereinafter the "Regulation on the GaK"),
- The Regulation of the UGKK SR no. 157/1996 Coll., implementing the Act on some measures for land ownership arrangements, as amended,
- The Regulation of the UGKK SR no. 22/2010 Coll., issuing the Administration of regulation for land registry offices and cadastral registries.

Periodic evaluation of this functionality allows monitoring the functionality development on the time axis and to compare the functionality of individual cadastral authorities among each other in the Slovak Republic, so that it will be possible to adopt the necessary correctives according to the assessment periods (in the field of personnel building, instrument building, technological and methodological guidance and in other fields as well) to achieve sustained target status. The common denominator of selected core tasks is to support building up of legally consistent state, increasing the legal confidence of owners and other authorized persons and development of the real estate market as an integral part of the market economy.

Quantification of the achieved level of KN administration to a specific date is best expressed by the combination of assessment of technical condition level of the core component of the

cadastral documentation - the cadastral map (more correctly, the whole geodetic data file of KN) to the date of the examination and evaluation of contemporary levels of functionality of the cadastral authorities. Ensuring of individual types of a specific type of administrative procedure – the cadastral proceeding, which have their procedural deadlines set at a level of generally legally binding regulations. It can be stated that to 1.1.2014 the level of KN administration was good with an improving trend.

4. Purpose of the real estate cadastre

The real estate cadastre in Slovakia serves mainly the legal purposes such as the protection of rights to real estate, tax purposes, fee purposes, valuation of properties - parcels in particular, protection of agricultural land resources and forest land resources, formation and protection of the environment, protection of mineral resources, protection of national cultural heritage and other cultural sites as well as protected areas and natural formations and for building-up other information systems on real estates. In principle, the data base of the real estate cadastre represented in particular by the geodetic data file and the descriptive data file is publicly available (except for exceptions defined by law) and serves either directly a large number of targets or indirectly as a basis for creation of other territorially-oriented information systems.

5. Strengths and weaknesses of the cadastral system in Slovakia

To the strengths of the cadastral system in Slovakia belong: state guarantee of the decision to authorize the contribution of ownership right and other tenure in the KN and legal security case when it's proven the wrongdoing or misconduct of cadastral authority; quick service to the client; complete coverage of the national territory by cadastral documentation; complexity, responsibility and safety of the system; automated electronic management of the system; digital data; the system also serves to other purposes e.g. as a base for other information systems on territories, the possibility of integration with other systems; land registration and cadastral mapping in a single organization; a legal basis of system activity; a good foundation for new cadastral mapping and thematic mapping of the relevant scale; a sufficiently decentralized system; a structured system; a system involving private sector; a system suited to the economy; a system with centralized management. The weaknesses of the cadastral system in Slovakia can include: a low budget; differentiated (as well as low) accuracy of maps; inflexible system in adapting to the market; since 1.10.2013 an impaired pyramidal organizational structure and hence a liability structure.

6. Important technical trends affecting the real estate cadastre

Development of the cadastre in Slovakia was significantly affected by the following technical trends: system automation, scanning, digitizing, networking, the application of global navigation satellite system (GNSS) in geodetic measurements.

7. Novelties in administering of the real estate cadastre in 2013

7.1 Change in the organizational structure

In the course of 2013 a very serious change took place in the organizational structure and thus also in the responsibility for the operation of the real estate cadastre authorities. Management of activities of the real estate cadastre (including decision making about the creation, modification and termination of ownership rights and other tenure to real estates) at the central level (nationwide) and at the level of local government authorities was until 30.9.2013 included in one public institution (Geodesy, Cartography and Cadastre Authority of the Slovak Republic) in the pyramidal hierarchical organizational structure. Since 1.10.2013, on the basis of the Act no. 180/2013 Coll. on organization of the local government, the competence of cadastral registries was moved to the district office cadastral departments, which are not directly subordinated to the Geodesy, Cartography and Cadastre Authority of the Slovak Republic in the organizational structure. The competence of the district office in the area of real estate cadastre is prescribed by the Act no. 180/2013 Coll. on organization of the local government and the Cadastral Act. The county district office carries out the state administration of the second stage in the matters in which the administrative proceedings are decided in the first stage by the district office, which is located within the territorial jurisdiction of a county. State administration in the field of cadastre that is carried out by district offices is managed and controlled to the extent provided by special laws by the Geodesy, Cartography and Cadastre Authority of the Slovak Republic. Up to now, evaluation of this new organizational structure is contradictory and reserved. Advantages, disadvantages and complex functionality of this new organizational structure in the field of cadastre is closely monitored and evaluated.

7.2 Adoption of the regulation no. 87/2013 Coll. – on complete projection of adopted numerical measurement results to the appropriate VKM according to their assortment composition, i.e. to the VKMč or to the VKMi or to the SPM

Adoption of the regulation no. 87/2013 Coll. (amending and supplementing the Regulation on the KN which implements the Cadastral Act as amended by regulation of the Geodesy, Cartography and Cadastre Authority of the Slovak Republic no. 74/2011 Coll.) must be mentioned as a very important step in administration of the real estate cadastre in Slovakia in 2013. The new regulation came into force on 1.5.2013. This regulation amendment deals with complete projection of adopted numerical measurement results to the appropriate VKM according to their assortment composition, i.e. either to the VKMč (numerical vector cadastral map) or to the VKMi (non-numerical vector cadastral map with implemented numerical results) or to the SPM (adopted measurements files). The regulation no. 87/2013 Coll. has enabled and defined such measurements of parcel boundaries and map administration that all correctly made measurements can get into the appropriate map with the possibility of their unlimited spatial and time field reconstruction, even within the lowest accuracy maps which are stored in the KN. This task is related to the need to address further improvement and refinement of the geodetic data file and to the need of a more sophisticated definition of error correcting process in the geodetic data file including its legislative framework.

This provision consolidates and simplifies the handling of numerical measurement results in cadastral areas with a non-numerical map. Part of these results is in the general documentation in paper form only and cannot be provided electronically. One part of the results is in many files in the S-JTSK coordinate system, the other part is in the files prepared after 1.4.2011 in the JTSK03 coordinate system. This provision regulates registering of all exploitable measurement results adopted into the valid state of cadastre in a single file, respectively a single plan.

Gathering of adopted numerical results into a single adopted measurements file will greatly facilitate the provision of information from the real estate cadastre for carrying out geodetic and cartographic activities and improve the process of official verification of survey sketches and geodetic data file updating in the conditions of cadastral authority.

The essence of a new comprehensive technology of cadastral map administration is an interconnection of a precise measuring method of parcel boundaries, related calculations for documenting an unambiguous position of boundary break points and a complex method of vector cadastral map making and their updating. This technology allows for the first time in the history of cadastral administration to incorporate precise measurements of parcel boundaries made solely in the conditions of the European Terrestrial Reference System (ETRS89), which is about 60,000 measurements per year and their definite documentation in the state reference system used for cadastral surveys since 1928 (S-JTSK) and their implementation into valid cadastral maps of any quality i.e. to the latest maps as well as to the maps of cadastral territories mapped in Hungarian historical systems in the 19th century. The technology is ensured by a sophisticated network of about 30 permanent ground stations of the Slovak spatial observation service (SK POS) operated since 2006 by the Geodetic and Cartographic Institute in Bratislava, allowing positional determination through the use of international satellite systems with an accuracy fitting the needs of the cadastre. For documenting this technology uses a single coordinate system, which substantially reduces the impact of human factor on localization data quality. This way (unlike previous attempts) it was possible to link the use of the latest technologies with data base developing for over 150 years in various geodetic systems. After 2 years of positional determination via global navigation satellite systems in the JTSK03 coordinate system we reconsidered the procedure and fixed two transformations in practice: ETRS89 ↔ JTSK03 ↔ JTSK. The objective of this reassessment was to allow the use of GNSS and linking with previous measurements which used the JTSK coordinate system in the range of 27 million detailed survey points (in order that individual points, measurements and cadastral districts were not determined in differentiated implementations of the coordinate system). To ensure functionality of the system the UGKK SR drafted an amendment to general legislative regulations and a whole series of related technical standards.

7.3 New categorization of vector cadastral map files

In 2013, after determining the number of existing (as well as expected) vector cadastral map files to 4149, the UGKK SR analysed the quality of these files and in accordance with updating technology of vector cadastral maps valid from 1.5.2013 split these files into three groups according to their updating method, so that each new and older measurements of parcel boundaries carried out correctly in the national reference system for positional determination could be implemented by specified technology without local "after-transformation" into the appropriate vector cadastral map. The division of the files was as follows:

1,796 files of numerical vector cadastral maps - a set of maps with suitable accuracy for the cadastre made especially after 1971 (they present accurately about 3.4 million parcels in the national reference positioning system).

459 files of non-numerical vector cadastral maps with implemented numerical measurement results (these are the maps that respect the current method of their updating while their precision allows integration of new most accurate measurements and the current map content adapts to these measurements during the map updating).

1,894 files of non-numerical transformed vector cadastral maps, the content of which does not allow the integration of new measurements, as in the previous group of files, but each such map is updated with so called adopted measurements file with inserted accurate measurements without unwanted distortion. At the same time there is a presumption of future redefinition of a certain part of these maps to non-numerical vector cadastral maps with implemented numerical measurement results. The second and third group of files together display about 3.7 million parcels.

It is worth noting that in 2013 the validity of 510 files of vector cadastral maps were finalized and declared, which represents the highest number of finalized files in one year, and the total area of these 510 files represents 12.3% of the Slovak Republic territory. In 2014, it is envisaged the completion of the last 450 files depicting 10.8% of the Slovak Republic territory. This task, in the case of non-numerical vector maps with implemented numerical results and transformed vector maps, does not include insertion of correct coordinates in the reference system obtained by field measurements, but it is a creation of vector computerized derivatives of the original paper map sheets, digitized as precisely as possible to the original paper. Contribution of such vectorized maps to their electronic provision, to work in the area of computer technology and to build-up an information system of the real estate cadastre would surely be unnecessary to emphasize. In this context it is particularly favourable that since 1.5.2013 the task of numerical measurement registering in the cadastral districts with non-numerical vector cadastral map was successfully launched, which enabled accurate registering of numerical measurement results carried out also within non-numerical maps. It should be noted that for several years the accurate determination of parcels in any type of maps and thus in the least accurate maps has been a legal obligation, but the previous technology did not allow the integration of these measurements into non-numerical maps without undesirable distortions and in accordance with this morally obsolete technology the accurate measurements would never get into relevant maps.

7.4 Principles of adopting previous numerical measurement results in the areas with non-numerical VKM administration

The regulation no. 87/2013 Coll. has further instructed that in the cadastral districts in which the non-numerical vector cadastral map is administered, detailed principles for adoption of previous numerical measurement results are defined in order to be ensured the explicitness in points numbering and link to the previous measurement results precision of which meets the technical standard. Furthermore, the existing provisions on identical points have been replaced. The unambiguous criterion for assessing the point identity has been introduced and the rules for verifying the identical points for the purposes of numerical and non-numerical vector cadastral maps updating have been laid down. Existing provisions defining the terms of use of the survey net points for detailed survey were replaced. The use of supply survey points from the previous measurements that had been connected to the active geodetic control was enabled. The accuracy characteristic on determination of supply survey points was laid down. The updating method of numerical and non-numerical vector cadastral map, vector map of determined documentation was supplemented as well as the documentation of numerical measurement results in cadastral districts in which the cadastral map is administered in paper form. And finally the quality code list of detailed points was adjusted in relation to earlier provisions.

7.5 Optimizing the number of vector cadastral maps files

In 2013, respecting the boundaries of technical territorial units (cadastral districts) of which in the Slovak Republic are 3,559, the UGKK SR began optimizing of the number of vector cadastral map files, in which the parcels and other content of the cadastral map are presented. After analysing all factors such as map accuracy, the method and quality of cadastral map making and updating, their scales etc., the actual number of vector cadastral map files covering the entire territory of the Slovak Republic was determined as 4,149 files, which represented a reduction about 1,168 files. Each connection of two or more files meant unifying of the reference scale to 1:1000, which triggered a need for laborious cartographic adjustment of each map (adjustment of about 2 million parcels). Without this adjustment optimization of the information system and later more sophisticated automated update of vector cadastral maps would not be possible. Another desired result of optimizing the number of vector cadastral map files for surveyors was an effort to simplify creation of such files and simultaneously their reduction in number and unification of electronic documents form for vector cadastral map updating which surveyors create in the process of survey sketch documentation making.

7.6 Setting out of parcels boundaries supplemented by vector geodetic data

The regulation no. 87/2013 Coll. brought another remarkable change: in the cadastral district where the non-numerical vector cadastral map is administered, the resulting documentation of parcel boundary setting out is supplemented by vector geodetic data, which ensures documenting and subsequent usage of numerical measurement results in the way that the numerical determination of set out boundary break points could be through the vector geodetic data implemented into non-numerical vector cadastral maps, respectively to the adopted measurements file.

7.7 Registers of renewed land evidence (ROEP)

A long term and extensive task - proceedings under the Act no. 180/1995 Coll. on some measures for land ownership arrangements (creation and entry into the registers of renewed land evidence) is of nationwide scope just before its completion. This register is actually the result of the first phase of land consolidation, i.e. the documentation of findings of ownership and usage conditions as well as other related tenures in the land consolidation perimeter. During the proceedings on certain renewed land evidence and legal relationship to it, data available on land and legal relationships is detected, and on that basis the Registry of renewed land evidence is compiled and approved. The subject of these proceedings is parcels defined by the ownership relations or tenure which are not yet registered or are registered incompletely under the special regulations in the geodetic data file and in the descriptive data file of the real estate cadastre.

Since 1995, for the purposes of compiling renewed land evidence for the original land the respective registers have been compiled. These registers are processed by contracting bodies while the administrative authority according to the Act no. 180/1995 Coll. is the Cadastral Department or the Land Department of the District Office. Thanks to the helpful attitude and acceptance of the importance and necessity of completing this task on the part of the Slovak government in 2013 we managed to finish registers in 230 cadastral districts, which are so far the most completed registers in one calendar year. To the month of May of this year 215 cadastral districts need to complete these registers and then the entire task will be completed.

One of the ROEP products is vector maps of determined documentation which display the original real estates. To 10.1.2014 there were 7,111,951 parcels registered as C-register parcels in the real estate cadastre, of which 5,494,638 (78.71%) with ownership relation entered in the

ownership document. 1,617,313 of the remaining parcels are mainly merged agricultural or forest lands or parcels with another configuration as were the original real estates. These parcels are within the ROEP compilation examined and rights relations are established (so-called E-register parcels). To 10.1.2014 there were 8,081,043 such E-register parcels with established ownership relations that are administered on the ownership documents in the real estate cadastre. Each of them is also displayed in the so-called vector map of determined documentation and forms a special file for each cadastral district. In 2013 the validity of vector maps of determined documentation was declared in 457 cadastral districts, which is so far the largest number of such files finished in one calendar year.

7.8 Web transformation service

In 2013, by the decision of the president of the UGKK SR, a free web transformation service was launched. This service allows unambiguous two-way transformation between the coordinates of ETRS89 to its mathematically expressed planar equivalent, which in Slovakia is the Horizontal Datum of Unified Trigonometric Cadastral Network (defined as the "JTSK03 Implementation"). In addition to this functionality this service also allows another very important transformation step - through a model derived from the position of 670 points relatively evenly distributed over the territory of the Slovak Republic an unambiguous two-way transfer to the coordinates of the so-called JTSK implementation, which is very close to the original results of land measurements (about 27 million detailed boundary break points) carried out during almost the whole 20th century. This fact made it possible to remove the effects of random local "after-transformation" that surveyors used for connecting older measurements with those carried out by means of GPS technology, because there was no unambiguous transformation until the launch of the web transformation service. Part of this project was the calculation and compilation of Conversion interpolation table that allows execution of that transformation directly in the geodetic satellite signal receivers, which are used by surveyors to measure parcel boundaries. The UGKK SR under the name of *UGKK_TS_11* has made freely available simple transformation software between the mentioned coordinate systems and any user can at any time install it on their personal computer.

7.9 Optimization of the Number of Ownership Documents

In 2013 we started editing a technology that is essential to optimize the number of ownership documents. Historically, some regions did not proceed consistently when setting up new ownership documents. In some regions cadastral administrative authorities entered the newly acquired real estates into the existing ownership documents (if they had already been set up for the identical owner / owners in the cadastral district). In other regions the authorities almost always set up another ownership document, which unnecessarily burdens the information system of the real estate cadastre and owners must pay an administrative fee for each ownership document extract which they need to declare the ownership for legal purposes. After merging ownership documents with the same legal relation and owner/owners in one cadastral district, this problem will cease to exist.

7.10 Daily (24-hour) update of the Cadastral Portal

In 2013, the UGKK SR started daily (24-hour) update of the cadastral alphanumeric data, which are available at the public well-known Cadastral Portal. In the time between 18:00 and 22:00 the system automatically downloads from 72 district offices and immediately checks more than 32,000 database files containing cadastral data, including data on cadastral proceedings. Between 22:00 and 8:00 these are converted by a contractor to another database so they can be publicly accessible and free of charge in the morning hours. Graphical data are updated in seven-day intervals, every Saturday. For this purpose more than 14,000 large graphic files are downloaded every Friday. This service is extremely valuable and represents a huge benefit for both individual owners as well as financial institutions, which on the basis of this provided data enable quicker provision of loans which has a positive impact on the credit market and the improvement of business environment. For illustration, this task is comparable to the data transfer from the election results of parliamentary elections, except that the amount of cadastral data is much bigger and more complexly structured.

8. Tasks in the field of the real estate cadastre for the next period

- To incorporate all the numerical measurement results carried out during the process of making survey sketches into vector cadastral maps, which was not happening in the cadastral districts with the so-called non-numerical vector cadastral map; it is necessary to incorporate data from approximately 500,000 measurements into maps (coordinates of detailed boundary break points are on the paper medium, in different directories on computer data mediums and unfortunately, in different coordinate systems as well).
- To complete the digitization of vector cadastral maps in the way, that there were not more than two to three files in every cadastral district (one for the numerical vector map, one for the non-numerical vector map and according to the type of non-numerical maps a file of adopted measurements as well).
- To create a freely available updated information system containing basic information about the quality of geodetic data file in each cadastral district, mainly containing data of adopted land consolidation projects, data about registers of renewed land evidence, the year and a cadastral map making method, data about vector maps and definition of files to be given out in a particular locality when making survey sketches.
- To improve the quality of making survey sketches and to eliminate individual and regional differences in their making and their authorization and official verification. From the perspective of a citizen as well as societal perspective, it is necessary to enhance the technical and hence the legal certainty in position determination of boundary break points of registered parcels. Another clear reason for increased attention to be given to this task is the current restriction of cadastral documentation renewal by new mapping fact, that at 60,000 survey sketches made annually far more than 200,000 numerically determined parcels get into the cadastre, which corresponds to 200 built-up areas of municipalities renewed by new mapping.
- To complete compilation and taking over registers of renewed land evidence (proceedings under the Act 180/1995 Coll. on some measures for land ownership arrangements), which requires completion of the last 215 registers out of 3542 in total.
- To complete manually updated paper originals of ownership documents and focus on purely electronic management of ownership documents, which assumes integration of

the database with the ownership document originals, and completion of a reliable system for retrospective analysis of the descriptive data file.

Note: other parts of the descriptive data file are administered in the electronic form only.

- To optimize the number of ownership documents (individual regions did not proceed consistently when setting up new ownership documents. In some regions cadastral administrative authorities entered the newly acquired real estates in the existing ownership documents (if they had already been set up for identical owner/owners in the cadastral district). In other regions the authorities almost always set up another ownership document, which unnecessarily burdens the information system of the real estate cadastre).
- To optimize ownership shares registration in fragmented ownership relations (counting of ownership shares).
- To eliminate as many shortcomings as possible in the structure and quality of cadastral data, arising out of inconsistencies in updating procedures (historical and regional differences) and due to human errors in the area of migration commission and the commission for cleaning cadastral data.

Tasks for the next two to five years:

- Continuation in adopting of land consolidation results (proceedings under the Act no. 330/1991 Coll. on land consolidation, ownership right arrangement, land offices, land resources and land communities, as amended).
- Analysis of possibilities of the central database solution of the information system.
- Interconnection of the real estate cadastre information system to other information systems of state administration.
- Renewal of the cadastral documentation by new mapping in built-up areas of municipalities (everywhere where there is a non-numerical vector cadastral map) in the cadastral districts with adopted land consolidation projects, depending on budget.

In 2013, the Act no. 305/2013 - Law on e-Government was adopted, which essentially controls part of the problems associated with interconnection of the information systems of public administration and imposes the obligation to carry out public authority electronically.

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