SOME ASPECTS REGARDING THE IMPLEMENTATION OF THE INTEGRATED SYSTEM ON CADASTRE AND REAL ESTATE PUBLICITY E-TERRA

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Abstract: Obvious need of cadastral records and real estate publicity appeared as a need for registration of land and buildings, regardless of size, nature or type of property, to establish fair taxes, ensuring property rights, its transmission and ensure social peace. The paper presents some aspects of implementation of the integrated cadastre and real estate publicity e-Terra. The article discusses the main problems encountered when crossing the Land Register application to application e-Terra also are problems with implementation of integrated e-Terra system in Cadastre Service. Conclusions of this paper shows that an integrated system of cadastre and land book was more than necessary and do a SWOT analysis on the implementation of integrated system on cadastre and real estate publicity e-Terra.
Keywords: cadastre, land book, real estate publicity, e-Terra

1. Introduction

In the year 1999-2000 the graphical and alphanumerical databases of the informatic system of cadastre were in training, visa granted by the Director and the specialized inspector confirm the registration and entry in the register of owners of each locality the following information: cadastral number, strip ground, parcel, surface, owner name, virtually a copy of the property record. Reception of documentation is made from the technical point of view. Record verification and acceptance work consists in applying a rubber stamp signature OJCGC on the documentation of location and demarcation plans of properties with date, name and surname of the person who made registration (Article 31 of Decree 450/1999 - Rules on the Reception of geodesy, cartography, cadastre, photogrammetry and remote sensing works).

In early 2001 it formed a graphical database, represented in AutoCAD and a textual database using Microsoft Access.

Textual database include: cadastral number, strip ground, parcel, owner name, SIRUTA code, city, address, area, authorized person with his license number, date of execution of work, name of inspector who verified the documentation, the date of documentation verification , receipt number, number of cadastral register and observations. Since the end of 2004, cadastral documentation was prepared on the basis of ownership documents (certificates, minutes of formal ownership, inheritance certificates) attached in duplication and because the documentation is not complete with registration in the cadastral register, the textual database wasn't loaded with a section that highlights the property deeds. Cadastral documentation checks until year 2001 were made in accordance with Art. 9.2.3, 10.2, 13.2.1 of Order 452/1999 on technical standards for the introduction of general cadastre,

taking into account the correlation between surface recorded in property deeds, the area derived from measurements and the sworn statement of the owners where they recognize property boundaries as defined by the authorized person.

By Decision 1210 / 29.07.2004, art. 19. - estate records and archives of the former authentic acts of state notary, which were administered by the land registry offices of courts ceases activity, will deliver to the district courts in whose territorial area is and the cadastral documentation will follow an integrated flux (grant cadastral and land book number) since 2005.

In early 2007, the entry into force of Order 634/2006 which brought with it the obligation of drawing up cadastral documentation in stereographic coordinate system 1970, were made available to the Local Offices of Cadastre and Land Registration orthophotoplans. Checking documentation could be done now in their base.

In 2008 the archives have been digitized aimed the conversion of plans and transfer from analogue to a digital format, creating a digital archive and database. The conversion from analogue to digital cadastral information was made to existing data in the system of land records generated after January 1, 1990.

2. General aspects regarding the integrated cadastre and real estate system e-Terra

A data model is an essential component of any functional GIS system and has major implications for the types of functions that can be performed and the results that can be obtained. The focus of any GIS is the data model, which is a set of constructive elements for representing objects and processes in the digital environment. Users interact with functional GIS systems to undertake tasks for making maps, queries the database and perform various analyzes.
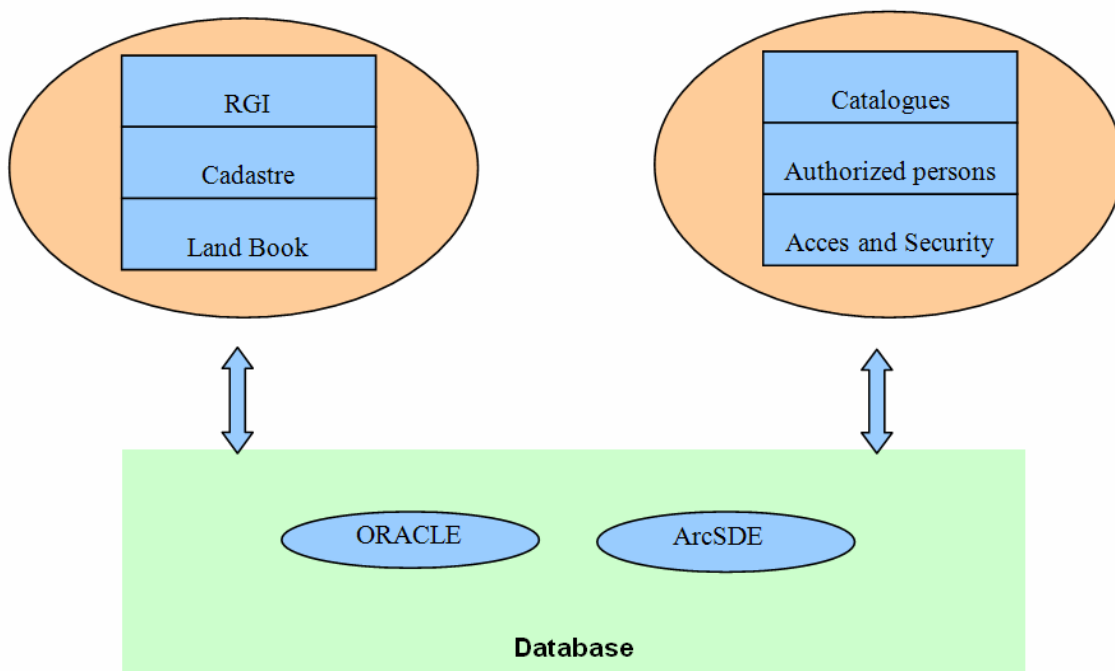

Figure 1. Arhitecture of e-Terra program

E-Terra is an integrated evidence system of property dedicated to activities of the Local Offices of Cadastre and Land Registration. A GIS should allow displaying results in a variety of formats, such as maps, reports and graphs. Since the foundation geospatial GIS is an expensive component in terms of cost and time resources, data entry is one of the main considerations to be taken into account. E-Terra integrates a variety of data from different sources. Data entry is via RGI program. Data entered should be in a cpxml format.

The program works with thematic layers of spatial data and gives feedback by comparing different thematic layers. The information in the cpxml file format are stored as a collection of thematic layers related to geographic information. Each layer contains spatial operations with similar attributes such as buildings, terrains, which is in the same geographical area.

E-Terra has been specifically designed to streamline, standardize and synchronize activities in the Local Offices of Cadastre and Land Registration.

This program is based on the following principles:
➢ any record is made on a request that is inserted through RGI's system;
➢ request is to a single building;
➢ a Land Book refers to a single real estate;
➢ information in the database are accurate (as far as is known).

On submission of documentation, in a first step, it will receive a registration number by RGI program and according to the requested service, it will be distributed on the flow for approval and registration of property.

The second stage will consist in reviewing and approval in cadastral terms. This operation requires nomination by the program for a cadastral inspector who will study the documentation and allocate a cadastral number which will be the unique identifier of the terrain. The next step consists in taking the case by an assistant registrar who will check the documentation from the legal point of view. The documentation path is recorded in the institution, so it is always know in what stage of work is the documentation. Once the work has been solved, the releases must process (or procedure is not complete).

Any action commenced on cadastre ends at the land registry, also attributes of the terrain (location, address, description) are unique and are determined by cadastral documentation.

3. Aspects regarding the transition from Land Register application to e-Terra application

Regarding the transition to the new application e-Terra, the application "Land Register" used since 2006, reported the following issues and problems:
➢ In the case of a land book conversion with more entries (about 20), if a mistake is found among the entries, this can be rectified only by deleting all entries after the error.
➢ The land books with access roads, if are required more authentication statements, by several notary offices, for different owners and for different rates, in the land registry remains stored only the first statement made. In this situation will lose any information on the statements made and issued for further periods.
➢ If more assistants registrars working in one land book (eg land book with access roads with entries on the odds), the program e-Terra saves only the first entry and it needs to perform additional operations, namely the introduction of manual entries .

➢ The notation of cadastral dismemberments performed with PADs conversion by the Cadastral Service, the program e-Terra crashes. Also in terms of cadastral dismemberments were seen situations where e-Terra program automatically does not allow the dismemberment operations in a greater number of lots.

The procedure for any work requires, first of all, the conversion in e-Terra format of each land book needed for the respective work. Since this procedure will result in giving up the current database and converting all these land books by hand, it will automatically lead to an unacceptably long time to carry out any work (land book extracts, tabulation, etc.). Were taken into account the conversion of simple land books with a single entry and conversion of land books related access roads tabulated, or collective books, where there are numerous entries (sometimes reaching about 800). The time required for conversion of such land books will result in blocking an assistant registrar for several hours to be able to issue statement or conduct relating to registration of demand. In normal working conditions the number of applications in progress at each assistant registrar, is between 30-40 works, and the above figure is exceeded on an active market, with an increased deal flow, so that it becomes impossible to convert these books in time.

After analyzing and seeking solutions to convert in the e-Terra format all the land books, without reaching such bottlenecks listed above, is required to convert the database structure used to date on the existing E-Terra application on land books.

4. Aspects of implementation of integrated e-Terra system in Cadastre Service.

Regarding the transition to the new application e-Terra, have been reported following issues and problems:

➢ To allow tolerance of ± 20 cm in enclosed estates and ± 40 cm for fenceless estates, in the case of other cadastral documentation than the first registration, with no need to be updated the cadastral information.

➢ The documentation of terrains reunion and cadastral dismemberment, the graphical parts of processed properties are archived and cannot be played back. There are many situations that requested history of documentation that came into the annexation / detachment.

➢ In case of several buildings on the same estate, it cannot be made for all buildings dismemberments in apartments in the same documentation, leading to failure the verification of quotas for the land.

➢ To be a warning from the e-Terra program when in a strip ground, cadastral numbers are given for the same plot.

➢ The graphical environment cannot make dimension operations, display coordinates, necessary for checking situations or attached to the completion note.

➢ How to make virtual corrections in the e-Terra application.

➢ Because there are so many checks of plot plans with approved documentation, e-Terra not allows comparison between cadastral documentation with the plot plan.

➢ There are a lot of works like PUZ, PAC, topographical studies that cannot be verified in the graphical environment, which means double check and record.

➢ At first registration of an individual unit it is necessary to display the individual units that have already been entered in that building.

> ➢ There have been problems such as loss geometries for some properties, this problem can be solved only the team dealing with database administration, which has greater access to the infrastructure program.
> ➢ Failure to provide more services together, such as: change limit / surface and registration of building, or land use category and cadastral dismemberment;
> ➢ Following the initiation of the award procedure for cadastral numbers in accordance with Art. 21.5 of Decree 415/2009 and that the e-Terra application released a report which shows only surface, strip ground, parcel and number of the title of property, appeared the following problem: unable to issue a site and demarcation plan accompanied by coordinated and dimensions at the request of the owner.

5. Conclusions of this paper

In retrospect, one can see the permanent concern of the legislature for improving the real estate advertising. The dynamics of civilian circuits of properties, disappearance of legal limitations regarding the alienation of land, socio-political and economic context, are factors which directly influence the real estate advertising system.

On the other hand, as already noted, rigorous system of real estate advertising is crucial for a stable business environment, since the largest share of collateral commonly used in business relations, are the ones that have as object the immoveable properties. This is because the land registry system provides additional safety to credit and property market from other record systems.

An integrated information system of cadastre and land registration was even more necessary, so ANCPI implemented in the Land Office of Cadastre and Land Registration the e-Terra application.

Large volume of data and information provided by cadastre on real estate is an important support in decision making by management bodies, planning and forecasting, in all sectors of national economy. The efficiency of this support increases if the processing and analysis of the cadastral data and information are made automatically.

News of these data and information is very important because the dynamic movement of real estate in a society based on market economy leads to continuous changes in all cadastral data on: the shape, area, owner or category of use of such immovable property.

Therefore currently in every Local Office of Cadastre and Land Registry works both this integrated cadastre and land book e-Terra and other filing systems which is a big disadvantage.

The current situation is in accordance with state economic development: the records are incomplete, without a material base unit, insufficient computerized and partly and partially surpassed by international standards. Achieving a cadastral records to eliminate these obvious shortcomings, requires a great effort, with major works, modern logistics, performance and qualified staff to provide a higher yield and recovery delays.

These changes should be made in the cadastral documents so the decision-makers have continually updated information available, which reference can be done quickly, which is possible given that these documents are computerized.

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