

Regarding Bringing in General Cadastral Survey in Romania

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Abstract: *Our country has not, to date, a filing system, cadastral and real estate advertising, modern system, which causes serious difficulties and disturbances in social, economic and financial. A clear strategy, a methodology for achieving the basic cadastral plan at the national level is difficult shape, although, in principle, the solution adopted was to use existing plans. Since no technical rules for the introduction of cadastre in Romania (2007) are not sufficiently explicit in this area, and points are subject to discussion some aspects that could be considered.*

Keywords: *Cadastral general, strategy, technical rules.*

1. Introduction

The terrestrial survey system in our country is being dominated, for almost two decades, by the general cadastral survey problems, that came back to present after more than half of a century. Almost all of the experts in this domain, surveyors, cartographers and/or fotogrammetrists are dedicated, after '89, to three very urgent jobs: restoring real estates to the old owners, according to the properties law, introducing the cadastral accounts according to the new laws and approaching some theoretical, modern problems linked to this domain. The second, in which the others are indirect included, is the most important because of the total lack of a cadastral account. This necessity is a very important one at a national level and it is also a requirement of the European community.

Introducing cadastral survey in Romania means accomplishing an unique and imperative technical, economical and juristical evidence system of all the real estates of a country, including juristical papers and deeds linked to them. This action means accomplishing some cadastral documentation for each administrative-territorial unit that afterwards is sent to the real estate office for the tabular rights registration. Nowadays we do not have such an evidence and we are still at the phase of the year of 1983, when the law nr. 23rd of Voicu Nitescu, that had the same goal, but was applied too little because of the approach of the war and of the communism, that was completely against private property. This problem came back to actuality after the events on '89, by the appearance, a little bit too late, of the Cadastral and Real Estate Law nr. 7/1996, emphasised by the Technical Norms for Introducing the General Cadastre in Romania (1999).

The importance of the cadastre and real estates, as an integrated landed evidence system, is unanimous recognised, as the base of a right modern state, of a veritable democracy and of a market economy that can guarantee the property right and mortgage, including the establishing of some equitable taxes and social peace. The necessity of such an evidence is shown by the fact that it lasts for more than three thousand years, as simplified forms, as a basis for the taxes collect. This action is still actual and is recognised by the experts. So Mircea Miclea said in 1996 that 'there can not be democracy where there is no property right and there can not be property right without the institutes that defend it'. N. Bradeanu (1938) said that the real estate office is 'a register of civil state real estate'. More recently D.M. Cosma (2007) said that 'Beyond the inconvenient of the implementation and irrespective of the modifications and integrations that would occur in time, The Law nr. 7/1996 is the Constitution of the landed found in Romania for the future'. Considering these conditions The Technical Norms for Introducing the Cadastre become procedures of the penal and civil code.

Introducing the cadastre in Romania, as an action at a national level, was initiated a little bit too late by the Law nr. 7/96, in the conditions of a high number of known difficulties: the huge volume of works and important expense at the state level, the zero point where we started as an inherit of the past, the old way of thinking regarding the new situations and moreover the urgency of applying the property law, that has no end. In the same time we had and still have willing laws and administrative-territorial laws, an exceptional and modern equipment, the needed software and a big number of experts that took advantage of the privatization work. We have to admit, though, that despite these conditions, the work is hard, the results are modest, in the general rhythm of implementing new reforms.

In the same spirit and taking in consideration the action of introducing the cadastre, we have the right to make some observations and findings that we felt during our activity. These could be the subject of the discussion that could have some benefits also. These can be grouped into three main aspects:

- the national geodesic network, a modern one, GPS, linked to the European one;
- technical norms of applying the Law nr, 7/96, doubled by the execution instructions;
- the basic cadastral plan, as a main part of the cadastral documentation.

The modern geodesic network, as a support for all of the later work, was hardly conceived, based on the Navstar-GPS system and it is divided into stages of a decade and a half and it is its way to being finished. Finally, the national geodesic network, with its two components, the points network, land marks placed on the ground, classes A..D, and the permanent stations, doubled by the ROMPOS programs. These will assure and ease the thickness of the network, without considering the available logistics. The delay and bad function in the work part that last more than 10 years can not be justified nor extended whereas we have to move to the GNSS Galileo system and to the European datum.

The basic cadastral plan is the key, the main part of the cadastral documentation, that has to represent the position (location), form and dimensions of the real estates on the 3141 UATs. Depending on this representation the surface of the real estates is calculated, the category of use is indicated, the neighbors and after that the cadastral registries and the large cadastral plan. Generally, a modern basic cadastral plan has to assure the following:

- a specific content of the general cadastre, that has to allow the identification of all the real estates
- a proper precision, defined by the tolerances of the outline points
- the digital format, for presentations, compatible with the computer and the adopted informational system
- the framing in the modern geodesic GPS network and in the national horizontal datum
- a higher economical efficiency, the results are obtained in short time and in a cheap way

Each condition is a decisive one but it is important that, considering the situation of our country, a balanced solution has to be found, without imposing economical solutions that could do badly to the other demands.

2. Some observations concerning bringing in the cadastral in Romania

2.1. Concerning the Romanian option of the cadastral plan

Mainly, the basic cadastral plan of our country can be obtained, without something else, with the use of direct photogrammetric measurements, that are doubled by the geotopographic measurements, with the use of nowadays technology. As it was shown before, because of the little time and because of economical reasons, we use the old plans, that exist and are available, including orthophotoplans. The solution, that was officialised by us, was surely chose because of the existent conditions and the future will let us know if it is a good one.

Practically, using the actual norms, the methodological considerations are needed for assuring the unity and homogeneity of the work all around the country, because the actual laws are not enough, but evasive and confuse, and sometimes completely missing. Our intervention is motivated also by the work that are in the present at the converse of the existent plans that will be integrated into the index cadastral plan.

According to the technical norms, the general cadastral work can be executed with the use of old plans and their actualization, but also with the use of new works, or based on the ortophotoplans (art. 5.3 and art. 5.4). The form is not clear because:

- the cadastral plan, and not the general cadastral work, can be accomplished with the use of old works or with the use of existing representations
- in available materials that can be used are included the existing plans but also the ortophotoplans, that fill in each other and have the same purpose, so they can not be considered independent actions.

The index cadastral plan, that has been launched for a decade, as a ‘new concept, that provide efficient cost solutions’, probably experimented in some UATs ‘is obtained by the correct vectorisation of the digital ortophotoplans limits’ and ‘contains the graphical representations in digital format’ of all the general cadastral elements (real estates limits, infrastructure elements, cadastral georeferential indicators). Next the insertion of the index cadastral plan and documentation plans for attributing temporary cadastral numbers (!), those for the property laws appliance and for the Government Decision nr. 834/91. The work details are vague, sometimes incorrect, including the examples in the table. Without the necessary control of such an operation, at the third edition, a work scheme that should be followed by the whole country was not possible to be suggested.

Our proposal was divided into three stages with its own work components (fig. 1):

1. The acquisition of the reference digital plans, on trapeze, at a scale of 1/5000, accomplished by C.N.G.C.F.T. – Bucharest, with the topographical basic planes of the country and are given back photogrammetrically, and the infrastructure elements are mentained (hydrographical network, transport installations, important buildings etc.)
2. Terrestrial measurements cadastral delimitations, of the UAT, of the intravilan and of the cadastral sectors or groups of sectors.
3. Accomplishing the frame of the plan by the transposition of these delimitations on the reference plan, in which the real estates and their plots are introduced
4. Collecting, verifying and converting the existing plans that are usable, in digital plans. The details are located in the national, planimetric, reference system.



5. The vectorisation on the ortophotoplan of the real estates limits, of the components and infrastructure (roads, railroads, waters, drainage).
6. The assemble of cadastral details, obtained by one of the means presented higher and the insert of them in the frame as a delicate operation, specific to the chosen option.
7. The actualization of the places with changes from the used plans, eventually filling in for the empty ones with topographical measurements and obtaining the primary cadastral plan.
8. The finalization of the cadastral plan by collecting and writing the descriptive – attributive data through land work. With this occasion, the cadastral plan is verified, and, as a final step, the real estate cadastral numbering is done.

The motivation of this proposal is simple because:

- the cadastral delimitation of UAT and of the intravilans can not be done without following the given procedures in technical norms, with a deep juridical character. As a result, the lands can not be taken from the ortophotoplan
- the constraint, on the surface, can not be missed, being specific for the adopted procedure, and the final verification, on the UAT, is too far , so that the errors can not be located and correctly removed.
- The control on the cadastral sectors, or on groups of 2-3 sectors, allows the framing of the existent plans and vectorised elements of the ortophotoplan, with a higher precision, restricting the huge adjusts and the distribution of the errors on the surface.

It is obvious that this method lengthens and expenses the works of introducing the cadastre but they grow the trust and assurance of the position of the administrative territory and of the real estate that are in it. Theoretically and practically, these elements are affected by the means of work, specifically and against the topogeodesical principles that oblige the successive passing from a superior order to other inferior ones and not the other way around.

2.2. Regarding the cadastral units and their numbering

A) The village, could be, formally, cadastral units. Taking in consideration the high number of real estates in the villages, the identification of them would be easier if the village would receive an aisle of numbers, of correspondent and roundness values, that are formally established for this purpose.

B) The new cadastral numbering has been and still is a controversial operation, generated by the difficulties of the C.F. system in which the primary numbers were divided for a number of times, remains a controversial operation. With the help of the new system the cadastral numbers are attributed by the UAT with the presentation of the documentation giving at the first subscribe but also at the next operations, new numbers, after the last one. Their currency in the UAT makes difficulties at the pursuit and establish of the history of a building. These difficulties remain valid even if, through the finalization of the cadastral plan, the real estates are renumbered in their normal following even if there is an informational implemented system, because it is not available to all.

2.3. Regarding the cadastral lexicon

The official terminology used in present, in writing, is, in most of the cases, confusing and ambiguous, becoming sometimes hard to understand and generating confusions. Some examples demonstrate some existing destitutions that last for too much time.

A) The elementary units were, in the past, the parcel as a surface of the land with the same using category for cadastre and the belonging corps (of property) that is made by the parcels that are

subscribed under the same number of order in the funcial book, that belongs to the same owner, no matter if they were next to each other or not.

In present, according to the laws the situation is confused because:

- the general cadastre considers the parcel as a basic entity of the system but also ‘the evidence of the real estates through form, dimensions and attributes and moreover by ‘expedite measurements for delimiting the parcels from inside the property corps’. The sketch and paper of the property corps are talked about.
- The funcial book has in present as a basic unit the real estate, always talked about in the Law nr. 7/96.

Real estate means, according to this law ‘one or more parcels next to each other, with or without buildings, that belong to the same owner’ and in the technical norms, where it is reminded more secrecy, it is defined as ‘a parcel of land with or without buildings’. The conclusion comes from itself, including the necessity of reconsidering the basic cadastral entities, the parcel, construction and owner, nominee in present. The real estate, the property corps can not miss.

B) Geodesic networks and special cadastre are also presented in an unconvincing way in the actual technical norms.

The first are named incorrectly because of the holding network that is a result of the growing of the superior network. So they can not be named separately, and the measuring network is not mentioned. Surprisingly, ‘the growing and measuring networks is made using known methods: triangulation, trilateration, triangulation – trilateration, polygonometric road networks or GPS technologies’. In addition to this ‘the geodesical holding network for the general cadastral measurements is made of the sum of the points determined in reference systems.’ (art. 3.2.1.), including the ones for drumuire and radiate, we can justify the necessity of taking a look at the National Technical norms, 2007.

By the unification of the lexicon we propose the term ‘geodesical networks’, in which the European, national GPS networks, the ‘geotopographical’ holding network that is a result of the growing of the national one and the topographical measuring network, that are made both with the GPS system and with the total station. The order is the normal one, the passing from the superior to the inferior and the intermediary title comes from the competence, that is linked to the geodesist and/or topographs.

The specialty cadastre has an interesting state in the funcial found evidence system and appeared in the Law nr. 7/1996, ‘depending on the states interests and the specific needs of some of the national economy sectors.’ These had to be done in ministries, regions and had a very well outline of their state, being subordinate to the general cadastre, to which they delivered and received the specific data.

With the use of the governments O.U. the specialty cadastre were replaced by the ‘informational evidence systems’ and now reappeared in The technical norms, 2007. Practically they were made and still are made continuously, as a proof of the roads, waters, edilitar-urban cadastre. As a result, they have to be rehabilitated as fast as they were stopped, as being necessary and irreplaceable.

III. Conclusions

- 1.) Introducing the general cadastre, with the central problem regarding the accomplishment of the basic cadastral plan, represents the main problem of our sector. With the use of this, an unitary and needed technical, economical and juridical evidence system of the funcial found of the country.
- 2.) The official option, based on the use of the existing pieces, that are taking part this moment, is now at the point of verifying and conversion of the old plans, but does

not have a clear and well outlined methodology. The existent norms have obviously lacks that are necessary for a national action in specially concerning the control elements.

- 3.) In this paper some proposals are made, coming from the didactical and practical activity of the authors, that can be took into consideration or not. The authors consider themselves pleased even if they cause only some discussions.

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Epitome

Introducing the cadastre in Romania, with the central problem of accomplishing the cadastral plan, with the use of the existing plans and ortophotoplans, involve all the specialists. Because of the official methodology is weak outlined and with a lot of lacks, the authors have some observations and proposals that come from their own experience and can be discussed and took into consideration.