

## CONTRIBUTIONS TO ACHIEVE AN INFORMATIONAL SYSTEM SPECIFIC FOR REAL ESTATE CADASTRE

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**Abstract.** The paper presents considerations regarding the realisation of an informational system specific for real estate cadastre in the town Sărmașu, more precisely for the cadastral sector no. 15, for which are detailed just the real estate cadastre and urban issues and the implementation of a GIS in this area.

**Keywords:** real estate cadastre, GIS, systematization

### INTRODUCTION

Considering the development and computerization of cadastre in Europe and the importance they have land registers and real estate records in Romania, being a country member of the European Union, which in future will have to develop the information society and cadastre will be the main territorial database, this paper represent a step toward computerized developing of urban and rural localities in Romania.

The real estate cadastre is a speciality cadastre through which is achieved the systematic inventory and records, in terms of quantity, quality and legal of all real estate properties in the territory of each locality (Boș, 2003).

Programs for the systematic planning of territory and urban-rural localities rises to a higher level the complexity of this particular cadastre, by the necessity of knowing, in detail, in terms of quantitative and qualitative elements of territorial balance, with all components of the surface structure and infrastructure (Legislația privind cadastrul și publicitatea imobiliară, 2010).

The real estate cadastre becomes the catalyst for socio-economic development of the country and boosts the growth through: promoting the security of property; facilitating civil housing market and mortgage lending market; supporting urban planning; encouraging private sector development; implementation of the tax system; efficient management of land resources.

### MATERIAL AND METHOD

For achieving the informational system specific for real estate cadastre, the area taken into study was the town Sărmașu more precisely the cadastral sector no. 15, for which are detailed just the real estate cadastre and urban issues and the implementation of a GIS in this area.

Sărmașu is a town in Mures county, is situated geographically in the center of the country. With the acquisition of the title of city in 2003, Sărmașu and its component localities go through a period of continuous development of social and economic order. The local authorities are focusing its efforts to improve the living standards of the population, and local economic development.

The GIS technology can be used in various scientific fields such as resource management, environmental impact studies, mapping, route planning. GIS is a specific way of organizing information managed. There are two types of information: one graphic (which can be raster or vector) indicating the spatial distribution of elements studied and another one in form of a database to store attributes of these elements (Toderaș, 2007).

The Geographic Information System is an essential operational tool of urban and rural management which ensures the authenticity, information accuracy and objectivity of assessments for implementing development policies and strategies and for taking decisions and control the urban and rural areas.

The aims of this program for implementing the information system specific for real estate cadastre and urban data banks in cities, towns and villages are:

- Urban and rural infrastructure development;
- Attracting international capital;
- Development and consolidation of mortgage credit;
- Determining the value of real estate necessary for a fair system of taxes;
- Formulating policies on sustainable development in the towns and regions;
- Reform of public administration by implementing an effective information management by providing cadastral plans of settlements in digital format and the constitution of urban data banks (Toderaș and Răducanu, 2002).

## RESULTS AND DISCUSSIONS

Creating a database involves the determination of: study area, the coordinate system used, the layers necessary for studying the elements (geographical objects) included in each layer, the attributes necessary for the description of each item type, method of coding and organizing attributes.

For Sărmașu database were proposed following layers:

- Buildings: Topology is made polygonal.
- Parcels: Topology is made polygonal.
- Streets: The topology is realized in the form of line.
- Electric network: The topology is realized in the form of point.
- Gas network: topology is realized in the form of point.

Creating the database was achieved in three steps:

- 1) identifying the graphical objects and their attributes and organizing them on layers;
- 2) defining attributes;
- 3) ensuring the coordinates records between layers.

After completing the operations performed in ArcCatalog regarding the creating of database, data classes and fields by using ArcMap, where after setting the work sheet in the coordinate system necessary for this work, is imported the plan which is under extension “.dwg” and includes vector data (fig. 1).

Georeferencing this plan is not necessary because ArcMap application, when adding a Cad file, takes its coordinate system.

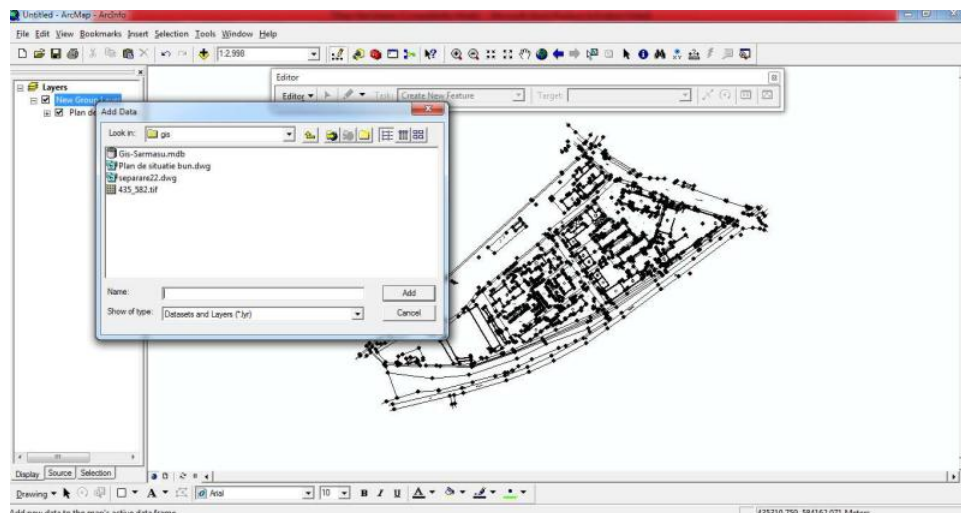


Fig. 1. Adding the plan in .dwg extension

Attribute data editing is done in according to each drawn entity, which automatically receives a code when its drawn in ArcMap application. Assigned to each field in the database will achieve the attribute data tables with data obtained from the descriptive documents (fig. 2).

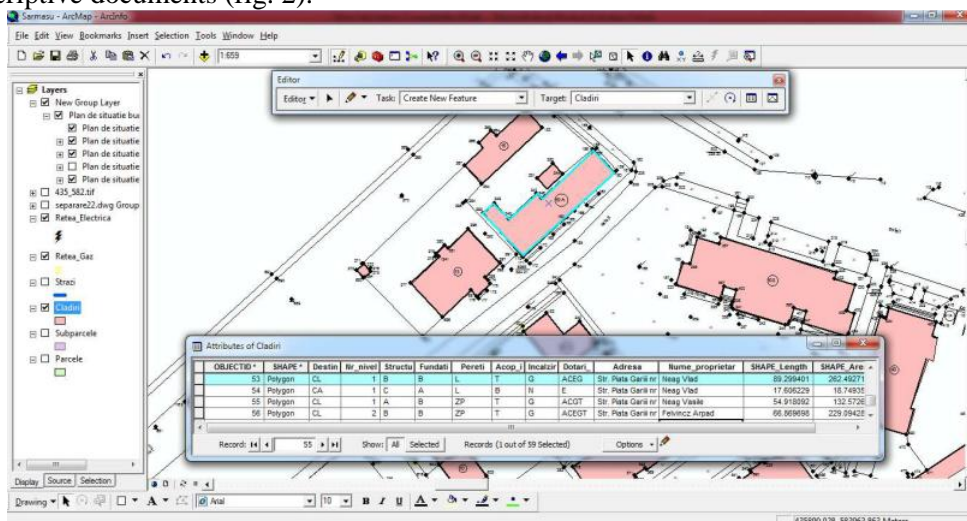


Fig. 2. Editing the attribute data of Buildings layer

After completing the final plan, digitized and filled out with all the details needed to continue this project, it can be exported from ArcMap under more extensions. This can be done in order to introduce the project, whether it is public on websites or simply in computer memory.

After setting the page from the menu bar, it can be chosen different models of the plan according to orientation, the place where it wants to be positioned the title etc. These models also attach to sheet all the necessary items such as North direction, legend, ladder diagram (fig. 3).

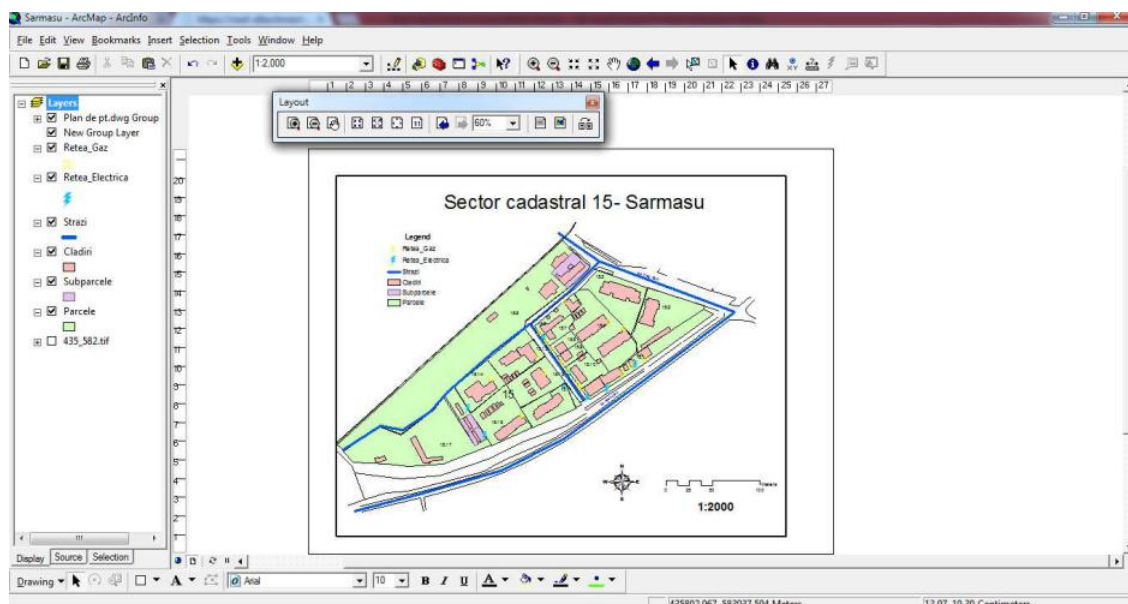


Fig. 3. Achiving the graphic component

## CONCLUSIONS

The advantages of using a GIS over traditional methods are numerous: improving service quality, optimizing circuit information between organizations, producing interactive maps, the ability to produce standardized maps, avoiding duplicate data maintenance banks.

These information systems are a necessity for a number of companies or institutions working with geographic data.

Aligning our country to the European Union policy requires Romania to compliance with European standards, which is impossible without the new technologies. One of these technologies is the GIS - Geographic Information System.

Using cadastre information system will facilitate efforts (time, financial, relational and human) to obtain data/information.

The principles for achieving the cadastre that must be considered are:

- To be flexible to changes in the legal and technical terms;
- To protect and ensure ownership;
- To be simple, clear and accessible;
- To provide current and reliable information at a low price.

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