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DOCUMENTATION STAGES FOR THE SYSTEMATIC REGISTRATION OF A CADASTRAL SECTOR OF AN ADMINISTRATIVE-TERRITORIAL UNIT

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Abstract

The paper presents the field and office stages for the preparation of the technical documentation for the systematic registration of a cadastral sector, according to the regulations in force. The elevation of detail points in the systematic registration work was achieved using GNSS receivers, as they have increased accuracy, better performance and increased profitability.

The main stages of the systematic registration process are: carrying out the information campaign at the local level with the aim of informing citizens about the start of the systematic registration works in the established cadastral sectors and about the importance of these works; carrying out the work preceding the systematic registration process; carrying out specialized technical works within the systematic registration process; recording information from the sporadic cadastre and updating them, as appropriate, following the collection of information from the field; reception by the local office of technical cadastral documents; publication of cadastral technical documents; updating technical documents as a result of resolving requests for rectification and appeals; finalization of technical documents after the expiration of the appeals resolution period.

Key words**: **cadastral sector, documentation, systematic registration

INTRODUCTION

Currently, the National Cadastre and Land Registry Program (NCLRP) is being implemented in Romania, a program whose objective is the free registration of real estate in the integrated cadastre and land registry system, started by the National Agency for Real Estate Cadastre and Publicity (NARECP). This represents the process of transposing the real situation into a unified computer system of all buildings on the territory of Romania, with the aim of effectively managing the technical, economic and legal information of the buildings. The systematic registration process is carried out by cadastral sectors at the level of territorial administrative unit.

The cadastral sector is the surface unit delimited by linear elements stable over time – roads, waterways, canals, dams, railways, etc. which do not undergo current changes. A cadastral sector includes several fields (extra-urban) and/or quarters (intra-urban) within which several adjoining buildings are grouped. Real estate, in turn, can consist of one or more parcels, of different use categories, adjacent, with or without buildings, belonging to the same owner.

The cadastral sectors are determined by the territorial Real Estate Cadastre and Publicity Office (RECPO), according to the procedures established at the level of the National Real Estate Cadastre and Publicity Agency (NARECP), so as to ensure the efficient management of systematic registration works.

Within the National Cadastre and Land Registry Program, the territorial Real Estate Cadastre and Publicity Office together with the City Hall establishes the cadastral sector or sectors for which the public procurement contract for the systematic registration of real estate services within a UAT is made. The contracted sectors include buildings either only outside the city or mixed (intra-city and outside the city), the minimum number of buildings is 50 and the maximum number depends on the allocated amount. The objective of the systematic registration of buildings is: a) identification, measurement, description and registration in cadastral technical documents of all buildings in a UAT, creation of cadastral plans of the respective UAT, data storage on digital media; b) the opening of new land registers based on the identification of owners, owners, real estate holders and the registration of real rights.

MATERIALS AND METHODS

The paper presents the steps taken to prepare the documentation for the systematic registration, taking as an example a cadastral sector from Gavanesti Commune, Olt County.

The elevation of detail points in the systematic registration work was achieved using GNSS receivers, as they have increased accuracy, better performance and increased profitability. The points are chosen so as to avoid obstacles that mask the horizon, reflective surfaces, emission relays, electrical installations.

Positioning using the ROMPOS system was used in this case. It includes three types of services:

1. ROMPOS DGNSS - for real-time kinematic applications with positioning accuracy between 3m and 0.5m. It is used by: Geographic Information Systems (GIS), vehicle navigation, fleet monitoring, sea and air navigation, hydrography, support of public authorities (police, fire brigade, rescue), tourism, etc. The equipment required for this service is the single frequency receiver/field direct access to the Internet for connection to the server and NTRIP protocol.

2. ROMPOS RTK - for real-time kinematic applications with a positioning accuracy of up to 2cm. It is used in cadastre, information systems specific to different fields of activity (local administration, real estate-building, public units - water, canal, natural gas), disaster management, measurements in construction and engineering, scientific research, meteorology, measurements in construction and engineering , scientific research, meteorology, bathymetric measurements, etc. The required equipment is the receiver with two frequencies and direct access from the field to the Internet and NTRIP protocol. Single-frequency receivers can also be used, but they have certain limitations related to the distance from the reference station, the number of connected satellites, and others.

3. ROMPOS GEO (Geodesic) - for post-processing applications and positioning accuracy below 2cm. It is used in support and densification geodetic networks, support networks for tracing and time tracking of constructions, Geographic Information Systems (GIS), geodynamics, aerial photogrammetry, laser scanning, scientific research. Single or dual frequency receivers are required whose satellite measurements will be post-processed to the National Network of Permanent GNSS Stations.

The coordinates of the detail points (X, Y) are calculated in the Stereografic 1970 projection system, the calculation of the areas is done analytically, and at the end the area of the sector must be equal to the sum of the areas of all buildings in the sector.

RESULTS AND DISCUSSIONS

The main stages of the systematic registration process are:

- Carrying out the information campaign at the local level with the aim of informing citizens about the start of systematic

registration works in the established cadastral sectors and about the importance of these works. The campaign is carried out in two stages by the Provider with the support of the mayor's office, the stage corresponding to the period of the field works and the stage of publishing the technical documents of the cadastre. Information materials (posters and leaflets) are made available to the provider by territorial Real Estate Cadastre and Publicity Office.

- Carrying out the work preceding the systematic registration process. At this stage, the territorial office makes available to the provider the databases containing information on buildings in the UAT for processing. The interview sheets will be completed with the information taken from the public institutions and authorities and with those obtained from the fieldwork.
- Carrying out specialized technical works in the framework of the systematic registration process is the stage in which the locations of the buildings are identified in the field, measurements are made, the real right holders, owners and other holders are identified and the legal documents of the buildings are collected. The following are drawn up: the alphabetical index of the owners (opis); the cadastral register of buildings and the cadastral plan.
- Recording information from the sporadic cadastre and updating them, as appropriate, following the collection of information from the field.
- Reception by the local office of technical cadastral documents.
- The publication of technical cadastral documents is the stage in which, in the space provided by the town hall, the technical documents are displayed (cadastral plans, cadastral register of buildings and alphabetical list of owners). The information activity regarding the publication of the results of the systematic registration work is organized by the Service Provider, and within 60 days the owners, possessors and holders can submit requests for rectification accompanied by supporting documents.
- Updating of technical documents as a result of resolving requests for rectification and appeals.
- Completion of technical documents after the expiration of the appeals settlement period.

The delimitation of the sectors in UAT Gavanesti was carried out by OCPI according to Order no. 979/2016 regarding the approval of the technical specifications for carrying out systematic cadastral works on cadastral sectors with a view to the registration of buildings in the land register, financed by the National Agency for Cadastre and Real Estate Advertising, in application of the provisions of the Government's Emergency Ordinance no. 35/28.06.2016. UAT Găvănești was divided into 19 cadastral sectors of which: sectors 1, 2, 3, 4, 10, 13, 15 and 19 are exclusively outside the village, sectors 5, 6, 9 and 11 exclusively inside the village and sectors 7, 8, 12, 14, 16, 17 and 18 are mixed (Figure 1).

The documentation for carrying out systematic cadastral works in order to register the buildings in sector 8, Gavanesti in the land register includes: Technical report; Alphabetical list of real estate owners in the sector; The cadastral register of buildings in the sector; The cadastral plan of the sector; The cgxml and pdf files corresponding to the properties.

The main stages of the work were:

I. Organization and implementation of the advertising campaign

II. Carrying out the works preceding the sectoral cadastre;

III. Development of specialized works.

On the basis of the analog and digital data taken, trips were made to the field to establish the method of carrying out the work:

- the optimal technical solution for execution was chosen;

- the material and human resources necessary to achieve the objectives were established;
- the work execution program by stages and types of operations was elaborated;
- the plan of the main activities and the establishment of the estimated deadline for the realization of each activity were made.

The following data were used for the realization of the work: the color orthophoto plane; DGNSS measuring devices using the RTK method used to delimit road plots and buildings located in the inner city of the cadastral sector; parcel and cadastral plans existing at the Gălăneşti commune town hall; CGXML type files downloaded through the ETERRA3 application; real estate data provided by territorial Real Estate Cadastre and Publicity Office, City Hall and real estate owners/occupiers.

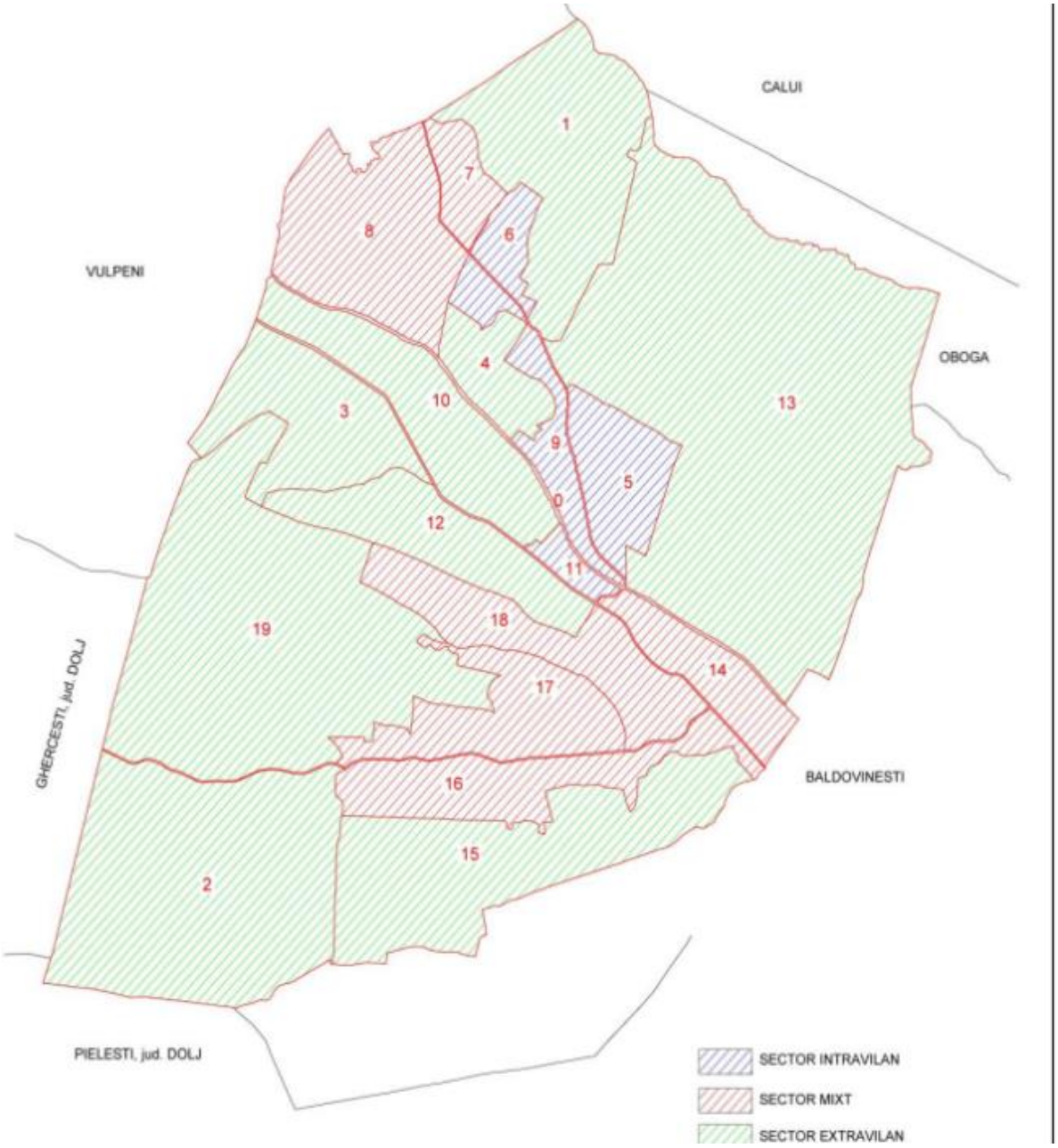

Figure 1. Outline of the distribution of UAT by sector

In order to create the situation plan of the sector, measurements were made with GNSS technology using the kinematic RTK method, using the ROMPOS service. In the outskirts of the village, the characteristic contour points of the fields were determined, and in the countryside, each individual building was measured.

The transformation of the coordinates from ETRS89 to STEREO 1970 was carried out using the Transdat 4.01 software, the radiated points were reported in the MapSys 10 program.

The calculation of the surfaces was carried out by the analytical method, using the coordinates of the points on the outline of the buildings

The data sheets were generated for each individual building, its model being the one specified in Annex no. 4 of ODG no. 979 /2016 of the NARECP Director and include: the territorial administrative unit (UAT) name; cadastral sector number; the property identifier; identification data of the property owner; information about the property; the name, surname and signature of the operator who collected the data.

The conversion of the data from the interview form into electronic format was carried out using the CG 3.0 data entry program and with the help of which the cgxml files of the buildings, the cadastral register of the buildings and the alphabetical list of the owners are generated. The digital plan and the topologies were created with the Mapsys 10 program. The cadastral plan drawn up at a scale of 1:2000 was completed with the AUTOCAD program.

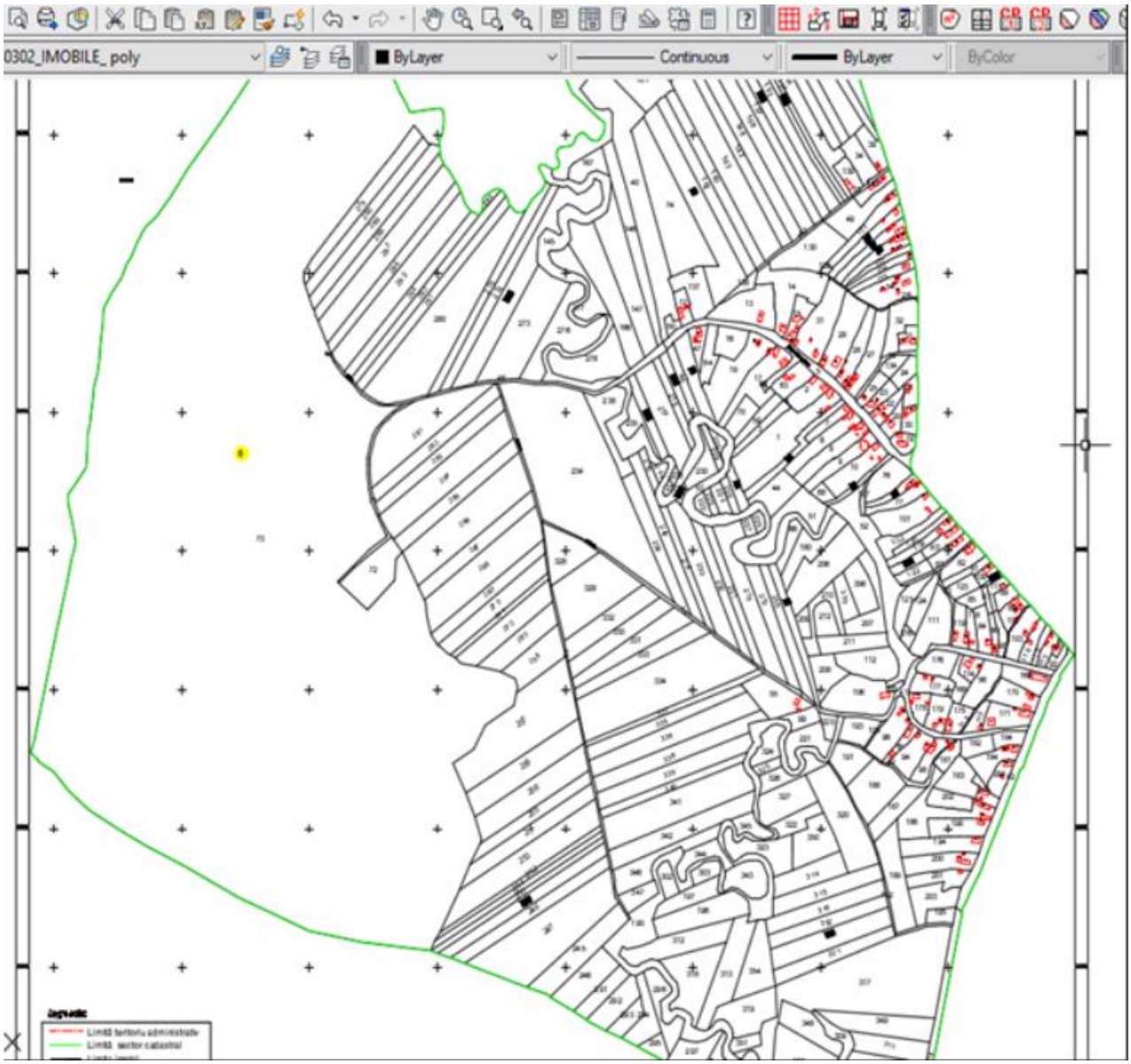

Figure 2. Extract from the sector 8 situation plan

Completing the database of the work is done through the CG 3.0 application and includes four stages:

- Entering the data related to the building
- Entering the data related to the plot
- Entering data related to constructions
- Entering the registration data

Each property will have an ID.cgxml file and an ID.pdf file associated with it, where ID is the identifier of the property. These will load into ETERRA 3.

CONCLUSIONS

The works of systematic registration of immovables are initiated by the administrative-territorial units (UAT), within the National Cadastre and Land Registry Program and aim at cadastral sectors composed of extra-village properties, intra-village properties or extra-village and intra-village properties, regardless of the right holder (owner), regardless of the holder of real rights over the immovable or the owner of the immovable.

The elevation of detail points in the systematic registration work was achieved using GNSS receivers, as they have

increased accuracy, better performance and increased profitability.

The computer programs/applications used also contributed to the increased yield of the documentation: ETERRA3, Transdat 4.01, MapSys 10, AUTOCAD, Microsoft Excel.

In the last 2 years, thanks to the National Cadastre and Land Registry Program, the number of properties registered in the Land Registry has increased in Romania.

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