IMPLEMENTATION OF THE SYSTEMATIC CADASTRE IN SECTOR NO. 6 OF GĂNEŞTI COMMUNITY, MUREŞ COUNTY, ROMANIA

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ABSTRACT: *The work is part of the systematic cadastre (of the cadastre and land registry program - PNCCF), representing an operation regulated by Order no. 1/2020 for the implementation, verification and reception of systematic cadastre works and the ex officio and free registration of real estate in the land registry, through which the identification of real estate owners is carried out, the measurement of real estate located within cadastral sector no. 6 of the Ganeşti Territorial Administrative Unit, the registration of real estate in the land registry and at the same time their representation on cadastral maps and plans free of charge.*

Keywords: *Systematic cadastre; cadastral sector; Găneşti UATs; integrated cadastre and land registry system; Sub Pădure locality;*

1. Introduction

The importance of the systematic cadastre, following the completion of the works, is given by the provision of data regarding the measured real estate, namely: the number of the plot in which it is located, the parcel number, their surface area, their address, the identifier, the cadastral number and data regarding the ownership/possession of the real estate (this data results from the cadastral register of real estate).

The benefits of PNCCF are: free registration of all properties and free development of the cadastral plan for each property; completion of the process of restitution of real estate at the level of the UATs; registration of the public/private domain of the UAT and the Romanian State, registration of real estate owned without documents (possessors), issuance of heir certificates, all of which are carried out in order to improve the land strategy, increase land productivity and their efficient administration (Koncsag Magdolna Eva, 2019).

Considering that the systematic cadastral works are in full swing on the territory of Romania, it is necessary to carry them out with better dynamics.

The buildings of this work are part of the cadastral sector number 6, which is located both in the built-up area and in the extra-built area of the Sub Pădure locality, belonging to the Găneşti administrative territorial unit (UAT), in Mureş county, Romania, the relief shape being a plateau, and the predominant use category in this cadastral sector is arable land, hayfield and forest. The neighboring sectors are: to the north - the Ogra administrative-territorial unit; to the east - sector 7; to the south - sector 8; to the west - sectors 5 and 9 (Fig. 1).

The work goes through a series of stages: data entry and analysis of input data, information campaign, spatial data collection, property title

Fig.1. Location of cadastral sector number 6 in U.A.T. Găneşti

collection, data processing, delivery of documents to the cadastral office, error correction, public display of documents and receipt of complaints, resolution of complaints, final delivery of documents (Vlad Păunescu, 2024).

2. Material and methods

Data collection was carried out with the help of representatives of the city hall and the O.C.P.I. Mureş through documents such as: the boundaries of the U.A.T. and the component urban areas; the U.A.T. orthophoto plan; parcel plans approved by the local commission and received by the O.C.P.I.; .pdf files extracted from the database of property titles and textual data from the D.D.A.P.T.; copies of existing land books; active PADs from the sporadic registration of buildings in the cadastral sectors; .cgxml files with data from the e-Terra application database, related to buildings with associated geometry.

The measurements were carried out in RTK mode, using a Trimble R2 device with a TDC 600 controller, using permanent reference stations from the ROMPOS system (Romanian position determination system that ensures precise positioning in the European Terrestrial Reference System 1989 (ETRS89). ROMPOS uses signals from the following satellite systems: GPS, GLONASS and GALILEO using a network consisting of 86 CORS.), for the creation of the cadastral plan, AutoCad together with TopoLT was used and for the creation of the systematic registration documentation, CadGen (Fig. 2).

3. Data processing

Data collection was carried out with the help of representatives of the city hall and the O.C.P.I. Mureş through documents such as: the boundaries of the U.A.T. and the component urban areas; the U.A.T. orthophoto plan; parcel plans approved by the local commission and received by the O.C.P.I.; .pdf files extracted from the database of property titles and textual data from the D.D.A.P.T.; copies of existing land books; active PADs from the sporadic registration of buildings in the cadastral sectors; .cgxml files with data from the e-Terra application database, related to buildings with associated geometry.

During this stage, the owners of the buildings in cadastral sector 6 and the areas owned by them in the sector were identified, data that were recorded in the data sheet of the building. For the people who owned land in this cadastral sector, but did not have a title of ownership, at the time of data collection, Minutes of Taking Possession were drawn up based on the approvals obtained and were provisionally registered in the Land Registry, with the subsequent definitive registration of the ownership right after obtaining the title of ownership.

The properties with unidentified owners were provisionally registered in favor of (the property) of the Găneşti Commune, and when the owners are identified (based on the title deed), the property right will be transferred back to the rightful owner.

Fig. 2. Trimble R2 with TDC 600 controller

The fieldwork included a public information campaign, land reconnaissance, measurements, and data collection. All stable elements over time were identified in the field, and the plots in the sector were established. Topographic surveys were carried out on all the boundaries and details of the cadastral sector. A GPS device was used to perform field measurements, with measurements being made in RTK mode, using permanent reference stations from the ROMPOS system.

To identify the owners, information was requested from OCPI (old land titles, access from the property title database, geometries of old buildings received, old cadastral/topographic/land title maps, access to .cgxml via USER PRESTATOR CADGEN - only for systematic cadastre), and through the land fund service within the city hall, copies of property titles, possession protocols and possession certificates were requested. The parceling of the sector was done together with the city hall representatives, by correlating the position of the building on the ground and the existing documents relating to it. There were situations in which the plots were entered with the wrong number in the Property Title, in which case the information existing in the city hall archive was consulted and the owners were contacted directly or by phone to remedy the mistakes and the correct positioning within the cadastral sector.

The used R.T.K. (real-time kinematic) measurement method made it possible to calculate the coordinates in real time, and the data download from the control unit was done by connecting with a data cable to the computer.

Following the field measurements, the field notebook was obtained which was subsequently processed, resulting in the inventory of coordinates of the points of interest. The data from the work were organized and stored, in a personalized folder, on the hard disk and CD, with files of the .csv, .doc, .dxf, .pdf, .tiff type, to be submitted to OCPI for verification and approval, in analog and digital format according to the regulations in force.

The cadastral plan of sector no. 6 was drawn up at a scale of 1:2,000, using the atlas of conventional signs for topographic plans, edition 1,978, exporting the coordinate inventory points to the graphics program and then joining these points using the Autocad program. ANCPI has placed on the institution's website the software used to draw up .cgxml files. CADGen is a software application dedicated to the cadastral sector, designed to automate and streamline the creation of documents required for general and systematic cadastral projects. It works in the AutoCAD environment, allowing the rapid generation of standard files (such as .cgxml) and documents required for ANCPI (Fig. 3).

Fig. 3. Cadastral plan, sector no. 6, UAT Găneşti

Topology verification was done with CadGen: (Fig. 4)

Fig. 4. Checking the topology of sector no. 6, Găneşti UATs

The preparation of the documentation for registering real estate in the land register was carried out in accordance with the Regulation on the implementation, verification and reception of systematic cadastral works and the ex officio registration of real estate in the land register, these being called deliverables: Delivery 1 - representing the Technical Documents of the cadastre for publication and Delivery 2 - Final Technical Documents of the cadastre. The pieces included in the documentation of Deliverables 1 ("Certificate regarding the countersigning of documents, as appropriate in .pdf format; Technical memorandum with the description of the works carried out, including the public information campaign carried out in .pdf format; Real estate data sheets in .pdf format; Documents collected as part of the systematic cadastral works in .pdf format; .cgxml files in .xml format; Cadastral register of real estate in .pdf format; Alphabetical list of real property rights holders, possessors and other holders in .pdf and .xls format; Cadastral plans in ..tiff georeferenced, .pdf, .shp, or .dxf format; Plan of cadastral sectors (for works carried out at the U.A.T. level) in .tiff georeferenced, .pdf, .shp, or .dxf format" (ANCPI, 2020)) were sent to OCPI, in the eTerra application (ANCPI application that manages the integrated cadastre and land registry system in Romania). Thus, the related .cgxml and .pdf files, which contain the property data sheet, identity documents and legal documents (property title, possession report, possession notation certificates) of the properties in the cadastral sector, were verified from a technical and legal point of view. The cadastral plan, the cadastral register of properties, the alphabetical list of owners, the technical memorandum, documents in .dxf, .pdf and .tiff formats were also attached to the CD.

The verification was carried out, and after the errors were found, a completion report was drawn up, in order to correct them (Fig. 5).

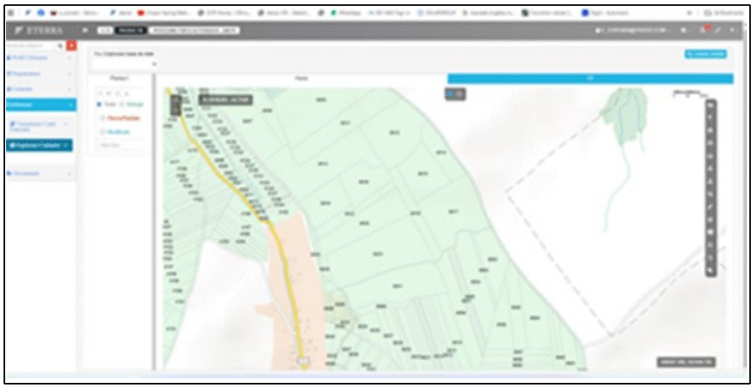

Fig.5. eTerra

The reception committee within the O.C.P.I. determined the number of properties and established the list of properties to be verified, as follows: the number of properties delivered (NT) is made up of the number of land-type properties with or without construction, which is equal to the number of .cgxml files of the delivery.

The total number of properties to be verified (N) is made up of N1+N2, where: N1 = the number of properties that contain information in Part III of the land register; N2 = 10% of NT-N1- a number N2 of IDs will be randomly selected (10% of properties to be verified from properties that do not contain information in Part III of the land register).

The checks were carried out by OCPI in ArcGis for topology, and validation of the buildings in the sample established in eTerra (Fig. 6, 7, 8).

After the sector was admitted, steps were taken to publish the documentation at the city hall and on the A.N.C.P.I. website for a period of 60 days, during which any interested person could submit complaints regarding the technical and legal situation of the buildings. In the case of the documentation related to sector no. 6, UAT Ganesti, there were a number of 6 complaints regarding the location, the registration of the minutes of taking possession and the notation of possession. These were resolved by the commission composed of representatives of OCPI, representatives of the City Hall and the provider, through minutes of resolving the request for rectification with admission. The documents were restored in accordance with the results of the minutes following the appeals.

After restoring the deliverables, the reception commission checked all the resubmitted IDs.

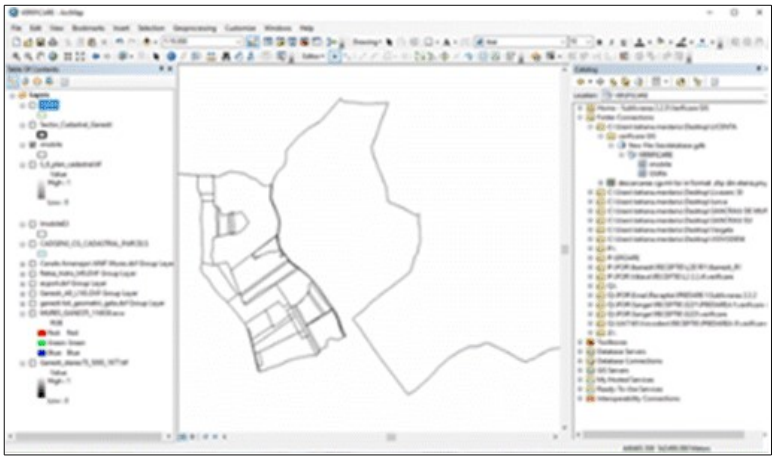

Fig.6. Checking the topology between the loaded buildings (.cgxmls) and the boundary of the Ogra U.A.T. (neighboring the studied sector)[1]

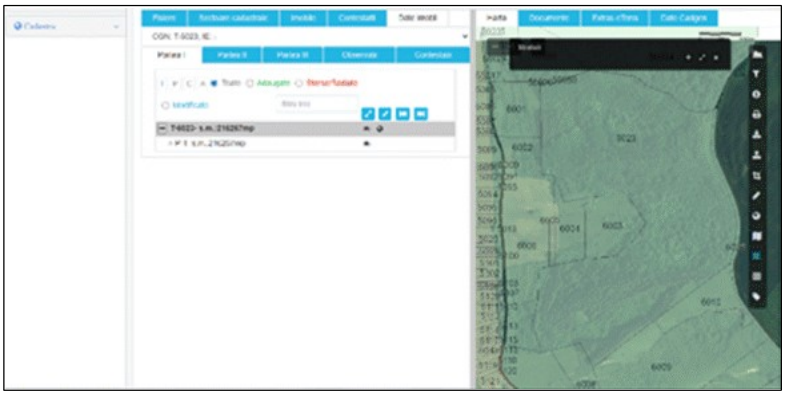

Fig.7. Verification of the geometry of the building with ID 6023 (building under the management of SC Romsilva SA, Owner Romanian State) uploaded to eTerra

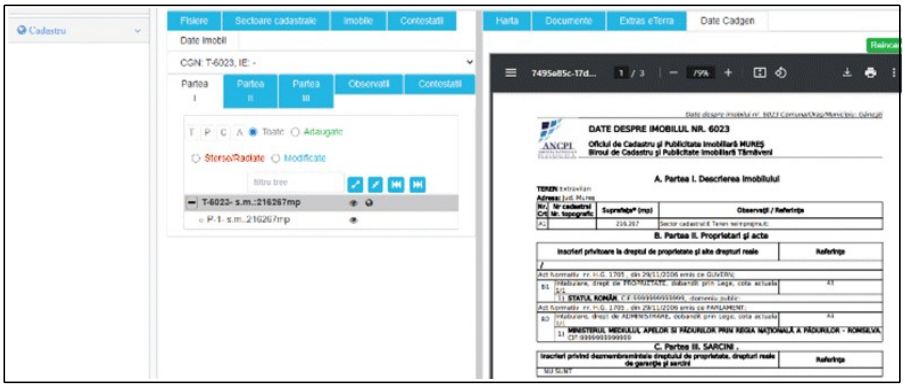

Fig.8. Checking cgxml in eTerra

The pieces included in the documentation Deliverable 2 were attached on a CD (cadastral plan, cadastral register of real estate, alphabetical list of owners, documents in .dxf, .pdf and .tiff format, .cgxml and .pdf files of the contested real estate) (Fig. 9).

The second stage verification at OCPI was carried out only on the properties with rectification requests, after which the acceptance report of Delivery 2 was drawn up and the registration in the land register was carried out.

After the registration in the land register of the properties, based on the report, the land registers of the owners/possessors were issued to the city hall.

4. Conclusions

The completion of the systematic registration works related to the cadastral sector number 6 U.A.T. Gănești brought a benefit to the owners by registering their properties in the integrated cadastre and land registry system, clarifying the legal situation on private and public real estate, thus the goal established by the National Cadastre and Land Registry Program was achieved.

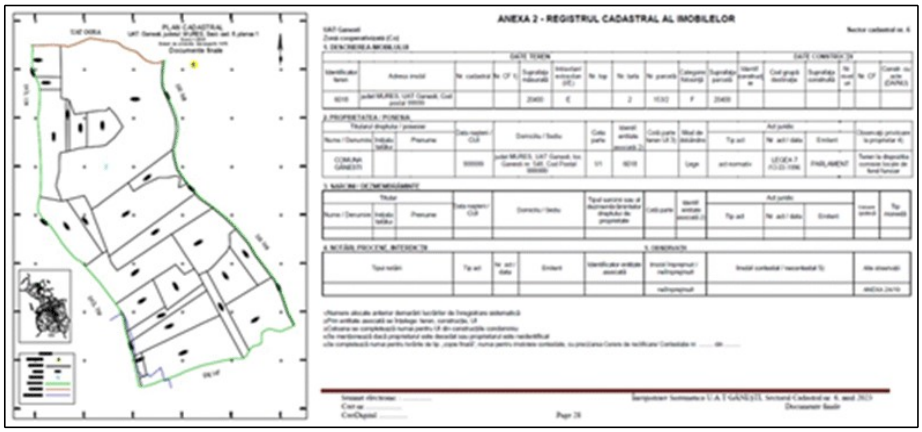

Fig.9. Plan and cadastral register of real estate after resolving the appeals

Notes

[1] Stud. Breban Florentina, *Stages and topo-cadastral works carried out in order to create a systematic cadastre of real estate in cadastral sector number 6, Găne ti territorial administrative unit, Mure county*. Bachelor's thesis 2025, "1 Decembrie 1918" University of Alba Iuia, Scientific Coordinator Assoc. Prof. Dr. Eng. Koncsag Magdolna – Eva.

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