

Ownership Data in Cadastral Information System of Sofia (CIS – Sofia) from the Available Cadastral Map

Lydmila LAZAROVA, Bulgaria

Key words:

ABSTRACT

CIS Sofia is created and maintained by GIS Sofia ltd, which is a successor of the former cadastral office of the city of Sofia. Basic data source for CIS is the available cadastral map and supporting documents.

Ownership data sources:

- Cadastral map of the city of Sofia – basic, but not topical and complete information, because of the unimportance of ownership in the near past in Bulgaria.
- Other offices, which possess ownership information: “State properties”, “Municipality properties”, Registry Office for the Sofia court district.

Ownership data from the available cadastral map:

These are initial ownership data in CIS-Sofia. They are from cadastral books of ownership and from hand sketches.

Cadastral books of ownership are lists of owner’s names and descriptions of ownership documents for certain real estates. Each book is corresponding to a “cadastral region” and each property has got a unique number within this region.

Work technology can be described in the next steps:

- Creating an autonomous ownership data base – supported by appropriate checks for correcting input information
- Defining the graphical scope of each cadastral book of ownership (respective to the scope of the cadastral region, but not quite equivalent). Solving this problem is complicated because of the land restitution and not always correct defining the place of a property within all cadastral regions.
- Matching the text database of ownership to the graphical cadastral model. This step is iterative. Some checks are done and some errors in cadastral map and input data are corrected.

CONTACT

Lydmila Lazarova
GIS- Sofia Ltd
25 Dobromir Hriz str
1124 Sofia
BULGARIA
Tel. + 359 87 251 800
Fax + 359 2 980 58 52
E-mail: Lazarov@bulnet.bg

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1. INTRODUCTION

The present paper looks at the issues of setting up and maintenance of the ownership data about land and buildings within the Cadastral Information System for the Sofia Capital City municipality –

The territory of the Capital City municipality encompasses a surface area of 1 300 sq. km and comprises 24 administrative wards (communities), which include 3 towns, 39 villages and the compact city.

The process of designing and setting up the geographical information system of the Capital City municipality – SOFCAR – is ongoing for several years now. Following a modular principle, it is implemented in the GIS SOFIA Ltd. on the basis of the available century-old archive within the cadastral office of the city. SOFCAR phases in a gradual coverage of additional information from other offices and survey enquiry data – addresses, further data about the buildings, terrain relief, street network, infrastructure, advertising facilities, etc.

The ownership data for the territory and the buildings is one of the key elements in the establishment of SOFCAR.

2. SOURCES OF OWNERSHIP DATA

The state of affairs with regard to ownership was rather complicated prior to the input of ownership data into SOFCAR, due to various reasons including historical ones.

2.1. Types of ownership

According to the Constitution of the Republic of Bulgaria, which was in effect before 1991, there were seven types of ownership in our country: state, municipal, cooperative / collective, of public organisations, of other legal entities, private, and personal. Since 1991 these have been transformed into three types only – state, municipal and private (of natural persons and legal entities). Various laws deal with and explain these types of ownership and their subtypes.

2.2. Archives and documents

The number of institutions, that have administered transformation or transfers of ownership and issued ownership documents in the course of years, is large. These are the courts of law (with the real property transactions), the ward administrations (with their acts / deeds for state and municipal real property), the National Forest Administration, the Rural Lands Board at the Ministry of Agriculture, the Land Commissions, and other (former and present) bodies and institutions of the state and the (Communist) Party.

All of these have administered transformations or transfers of the various types of ownership in different periods of time, have established real property objects and issued documentary evidence of ownership.

In the typical case no coordination took place between them. There was no uniform centre to register all changes of ownership, either. Moreover, there was no link between them and the graphic records in the cadastral office. Often the documentary evidence gives only a narrative description of the location of the property that is neither clear, nor unique.

регистър	А К Т № 1405 ЗА ОБЩИНСКА СОБСТВЕНОСТ <div style="border: 1px solid black; padding: 2px; display: inline-block;">частна</div> (ПУБЛИЧНА, ЧАСТНА)
картотека	
досие (РЗ) 1405	
на недвижим имот, находящ се в гр. София, м. бул. "Сливница" ул. "Красино" №5	
1. Дата на съставяне	06.06.2001г., гр. София
2. Правно основание	чл. 59 от ЗОС
3. Вид и описание на имота	1/2 ид. ч. от им. пл.1434 от 270 кв.м., съставляващ част от п-л VII 1434, 1435, кв. 21, м. бул. "Сливница", целият от 620 кв.м. площ - жилищна сграда в северната част със застроена площ от 68 кв.м.
4. Бивш собственик на имота	
5. Съсобственици - име, адрес	Владен Манолов Беловски - 1/2 ид.ч.от им.пл.№143 Вера Петрова Николова - 1/2 ид.ч. от им.пл.№143
6. № и дата на съставени по-рано актове	
7. Местонахождение на имота	гр. София, р-н "Връбница", ЗПИ Бул. "Сливница" одобрен със Зап. №РД-09-50-340/23.06.98г. ул. "Красино" №5

Fig. 1

An act / deed for the acquisition of municipal property

An act / deed for the acquisition of municipal property is shown on Fig. 1, where paragraphs 3 and 7 give the description of the location of the property. In this particular instance the identification numbers pointed out are related with the urban planning regulation scheme, but there are numerous cases where acts / deeds from the past years contain a description which is not that clear.

Fig. 2 shows a notary deed for the acquisition of property by a natural person, which also has no graphic evidence attached, and the location of the object is described only by the names of the neighbours.

декара присъседи: Бр. Заневи, Бр. Тренцини от две страни и мът.
 3. Нива в местн. "Илиня Църква" от около /1.9/ един декара
 и девет ара при съседи: Бр. Заньови, Бр. Иванови, н-ците на
 Цветан Тренцафилев и н-ците на Митко Колев.
 4. Нива в местн. "Коначето" от около /2.2/ два декари и
 два ара при съседи: Бр. Заньови, Бр. Иванови, Петър Манев и
 Братя Мутрави.
 5. Нива в местността "Даната" от около /3.9/ три декари
 и девет ара при съседи: Бр. Иванови, бр. Мазарови, Стоимен
 Георгиев и Христо Ангелков.
 6. Нива в местн. "Под убреца" от около /2.8/ два декара
 и осем ара при съседи: Бр. Иванови, Трайчо Спасев, Бр. Спасеви
 и река.
 7. Нива в местн. "Под убреца" от около /2.8/ два декари
 и седем ара при съседи: Бр. Иванови, Иванка Дудова и река.
 8. Нива в местн. "Реките" /барите/ от около 1.1/ един де-
 какара и един ара при съседи: Дочин Борданов, Стойка Трайкова,
 бр. Иванови и река.
 9. Нива в местн. "Могилата" от около 4.7/ четири декари
 и седем ара при съседи: Стоимен Микелов, Бр. Иванови от две
 страни и река.
 10. Нива в местн. "Могилата" от около /3.6/ три декари и
 шест ара при съседи: Бр. Иванови, Дудо Белев, Стоян Тонев и
 мът.
 11. Нива в местността "Риданата" от около /2.1/ два де-
 какари и един ара при съседи: Бр. Иванови, Пемо Иванчов и река.
 12. Дивани в местн. "Под село" от около /4.6/ един декара
 и шест ара при съседи: Бр. Маневи, Бр. Стоименов, Бр. Микелови
 и река.

Fig. 2

A notary deed for a transaction with private property

The problems are similar also in the other offices that issue and keep ownership documents.

Since 1989 - 1990, with the launch of democratic changes in our country, the situation with ownership data became more complicated. Intensive conveyance and property transactions was set off by the regulations of a number of laws, of which most important are: the Law on Reinstatement in the Ownership on Forests and Lands in the forest Domain, the Law on Reinstatement in the Ownership on Some Expropriated Properties, The Law on Ownership and Use of Farming Lands, the Law on Reinstatement in the Ownership on Nationalised Real Properties, etc.

As a result of this, we had several archives available in Sofia in different offices, containing ownership documents with differing structure and relevant to various types of ownership.

There was even no mention about any automated data bases for these archives some years ago. About 10 years ago, the Capital City municipality tried to make an inventory of its own real property – land and buildings, that proved to be very difficult in terms of identifying the location of objects. Even the cadastral office had difficulties in performing the task (on its part it had incomplete ownership data about the properties shown on its graphical records).

2.3. Identification of the objects

It was mentioned above that in some ownership documents the property location is referenced by some of its identifiers. A review of different numbering systems used in our city for the objects of ownership is set out below.

- **Identification by cadastral plan**

The territory of the Capital City municipality is divided into cadastral districts with unique numbering; within their bounds the landed properties are numbered consecutively with unique numbers. Cadastral districts have complete coverage of the territory with no gaps or overlaps.

This is how (Fig. 3) a part of the territory looks like – covered by the cadastral districts, and the properties within these districts with their pertinent cadastral numbers.

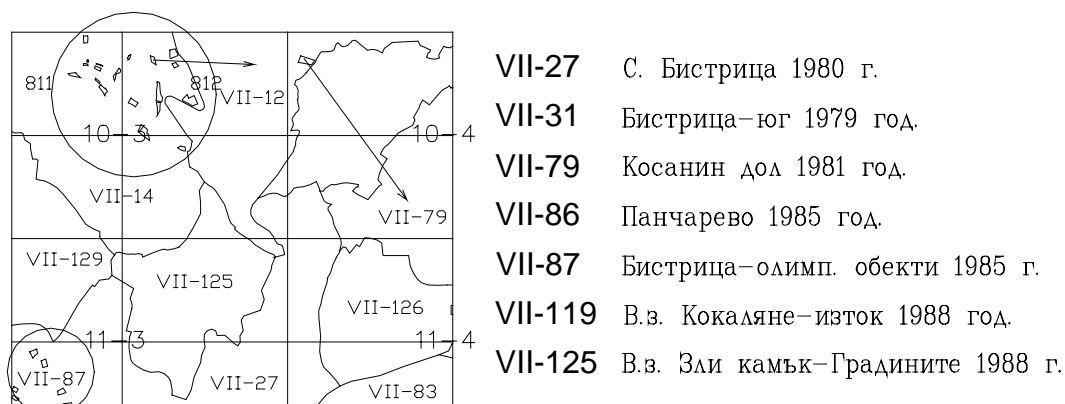


Fig. 3
Cadastral districts

- **Urban Planning Identification**

An urban planning regulation scheme (for spatial planning purposes) is shown on the following Fig. 4, with the numbering of regulated parcels in it.

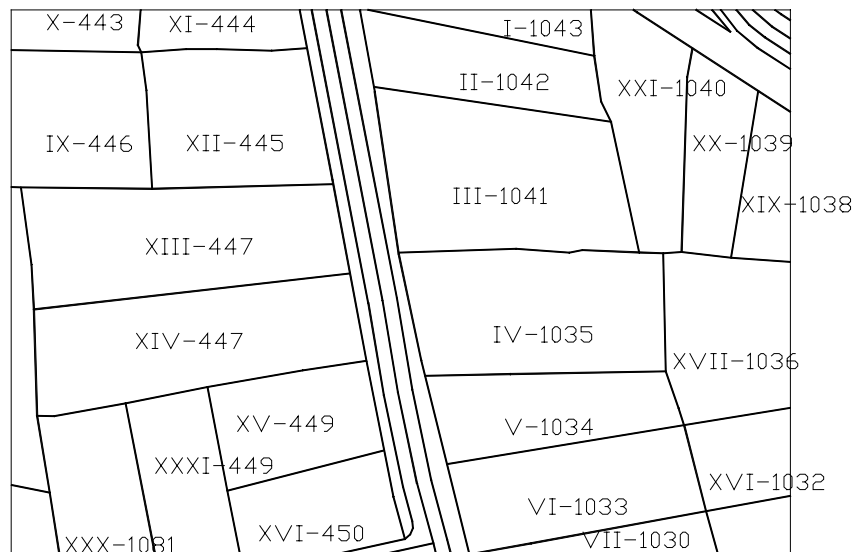


Fig. 4

An urban planning regulation scheme

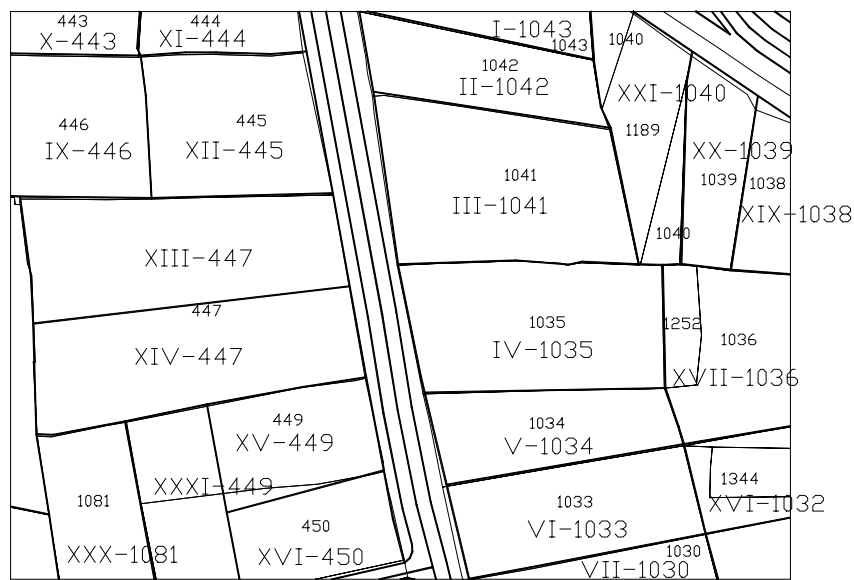


Fig. 5

A cadastral plan with an urban planning regulation scheme

On Fig. 5, have been superimposed the cadastral plan and the urban planning regulation scheme for one and the same territory with their relevant numbers of the objects. The urban planning regulation scheme and its numbering are drawn in thicker lines than the ones on the cadastral plan.

Ownership documents are sometimes referenced by the black numbers, sometimes – by the red numbers, and sometimes – by both.

The methods of identification by cadastral plan and by urban planning regulation scheme refer to urbanised territories only (that is, for properties located within the legal zoning boundaries of built up areas in settlements).

- **Identification by (farming or forest) land reallocation scheme**

Land outside the legal zoning boundaries of built up areas in settlements is an object of mass property transactions and ownership transformation since 1989. The land reform in the country has reverted state (prior to 1991 – mainly cooperative / collective) ownership and reinstated in the land ownership rights its former owners, or their heirs, thus transforming it into private ownership. This is implemented by means of (farming or forest) land reallocation schemes, where individual landed properties have unique numbers within one TBS (i.e. territory belonging to a settlement – either village or town). The ownership documents for such land are issued and kept by the land commissions and are graphically referenced to the identifiers on the land reallocation schemes.

- **Identification by narrative description**

For all types of territories, as mentioned above, there are available ownership acts / deeds (especially for state, municipal ownership and for ownership of public organisations), where the objects are identified only by narrative description – by the names of neighbours, localities and by their extent, which in many cases does not correspond to real areas.

In this way, as a result of the various identification systems, the lack of coordination between different offices issuing ownership documents, and the lack of reference to the graphical evidence materials it came out that there are many properties for which legitimate ownership documents were issued at different times and to different persons. Now all these persons solve their problems by litigation at court.

3. WORKFLOW

All above listed issues had to be overcome while designing the technology for unification of ownership data and its input to the GIS. The technology design started after the completion of the digital map model for the territory, and was conducted in phases, as follows:

3.1. Establishing the Uniform Numbering of the Properties

Uniform numbering is established for the landed properties and the buildings on the territory of the Capital City municipality. We call it “OTIE” numbering (in Bulgarian, abbreviated from “basic territorial information unit”). The numbering is uniform for the territory both within and beyond the legal zoning boundaries of built up areas in settlements.

In this way each object of ownership within the territory of the Capital City municipality has been assigned a unique identifier, independent from the administrative subdivision of the town. The numbers according to the cadastral plan, the urban planning regulation scheme and the (farming and forest) land reallocation scheme now appear only as attributes of the landed property.

3.2. Ownership Data from Field Sketches

Field sketches are a graphical and textual material on paper media. They are attachments to the cadastral plan and are stored in the cadastral archive for more than 100 years. For a large part of the territory these were destroyed, but for the central, downtown city part of Sofia these are still preserved. In some cases the information in them is updated by the cadastral office. They contain data about the owners and the ownership documents for landed properties and buildings, put down on the relevant object. They enable us to input directly into the GIS available ownership data referenced to the geographic location of the properties. A field sketch is shown on the following Fig. 6.

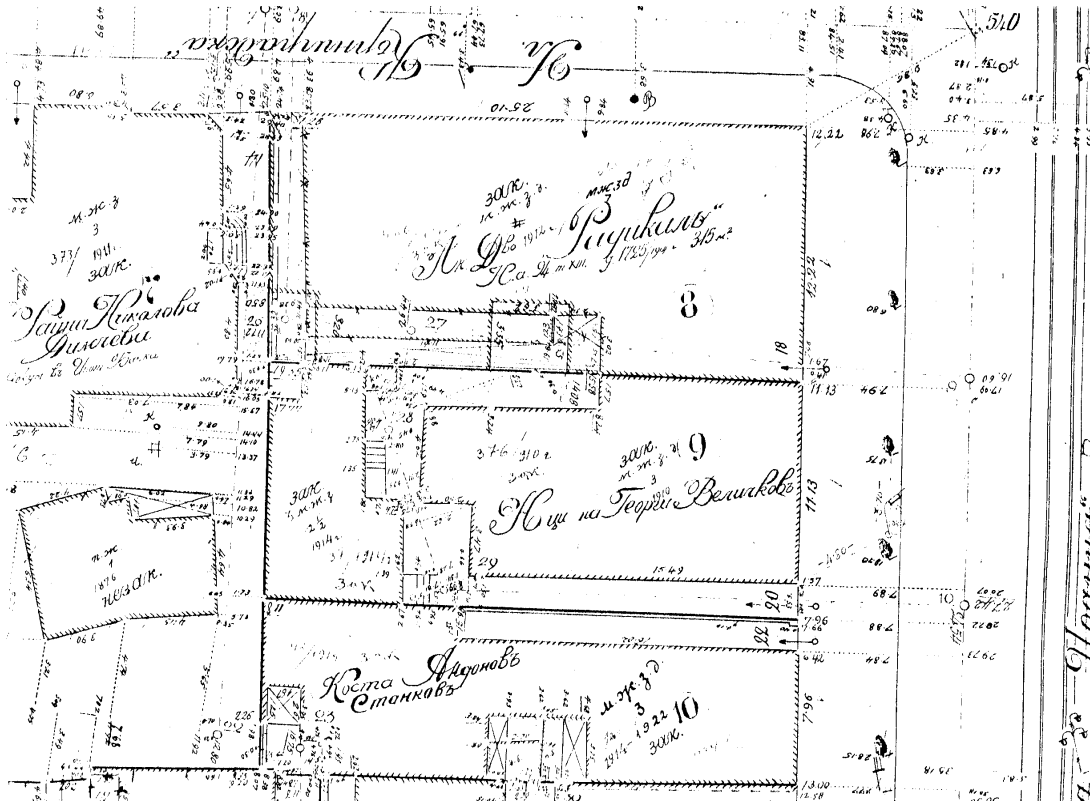


Fig. 6

Field sketch

3.3. Defining the Boundaries of Cadastral Districts

Cadastral districts are territories where properties have unique numbers. Before 1989 (when the booming property conveyance started) and prior to the emergence of the GIS, the boundaries of the cadastral districts had no particular importance for the technical activities in the cadastral office. They were not very clearly defined and it was not crucial for a landed property whether it belongs to one cadastral district or another. The introduction of the GIS

lead to the need for sorting out and refining everything, including also the boundaries of cadastral districts. The following outcomes occurred:

- the cadastral district may not be a compact territory, and may be composed of two and more parts;
- amidst a cadastral district, as an island / enclave, there may be another cadastral district.

In the end of the day, defining the boundaries of cadastral districts turned out to be a slow process. A comparison was carried out of all the available mapping material and documentary evidence in the cadastral archive – both on conventional media and in digital format, as elements of the GIS which were already entered.

As an output we arrived at a digital map model on the territory of the Capital City municipality, which is compactly covered by non-overlapping closed polygons, which we call cadastral (or land surveying) districts.

3.4. The «Record Listings» Data Base

The owners data from the «records listings» in the cadastral archive were input in the data base simultaneously with determining the cadastral districts. These are lists with the field survey records of owners and ownership documents, referenced to properties in the cadastral plan. Each cadastral district has its own «record listing» which is kept current by the cadastral office. Fig. 7 is a folio from a «record listing».

2	3	4	5	6	7	8	9
	157		Васил Стоянов	Реш. по делу № 4423/92			
	к.п. 487		Гоцев	от. 28.05.94	2242,30 м ²	АГ-94-209/10.02.98	
				Реш. по делу № 4451/92		08-10-72/11.02.98	
				от. 31.12.94		с. 32	
				Реш. по делу № 2255/95			
				Реш. по делу № 4464/94			
	158		Н.ц.п. на Янео	Реш. № 2276/13.02.97		АГ-94-03985	
	к.п. 52/545		Стоянов Арнаутски	ПЛ см. Драганович		13.04.98	
				13096 м ²		08-10-26/15.01.98	
						с. 32	
	159		Атанас Стоянов	Протокол г.д.		АГ-94-03324/15.05.98	
	к.п. 497		Гоцев	дело № 170/76 юр		08-10-210/22.05.98	
			Емилия Стоянова	Решение по делу № 1788/97		с. 32	
			Гургиева	4133 м ²			

Fig. 7

A folio from a «record listing»

The «record listings» data base is set up and maintained by GIS SOFIA Ltd.

3.5. Referencing the «Record Listings» Data Base to the Geographic Location of the Properties

It involves two stages – initial referencing and verification. Initial referencing is done automatically on the basis of the cadastral districts defined in terms of geographic coverage, the geographic location of the properties in CIS and their cadastral identifiers. The next stage – verification is carried out iteratively. It is necessary as the process of referencing reflects

all errors that occurred in the previous work phases – the production of the graphical material of the cadastral plan, the numbering of the properties in the plan and in the «record listings», the conversion to a digital format of the «record listings» data base, the incorrect defining of the boundaries of cadastral districts and the incorrect assigning of a property to a cadastral district.

In order to carry out this activity, we had to set up a special team and as an output we guarantee the correctness of the relevant data within SOFCAR to the maximum extent.

3.6. Data Bases with Other Ownership Documents

In a way similar to the «record listings», we produce textual data bases for municipal property, state property, and transactions in the registry office at the court. Due to its specific content, each one of them was produced by means of its own application software, and jointly by professional experts from the relevant office, GIS SOFIA Ltd., and a lawyer.

The data bases are produced and maintained current in the premises of the relevant offices.

3.7. Referencing the Data Bases in 3.6. to the geographic location of the properties

It is done “by hand” based on the description of properties in the acts / deeds of ownership and the possibly available graphical evidence material attached to them. The process is slow and labour intensive, and identifies many imprecise and unclear detail, related with the documents. It is done with the mandatory attendance of professional experts from both sides.

3.8. Transfer to SOFCAR of Ownership Data for Lands Beyond the Urbanised Territory

The ownership data for this type of properties is kept in computer format within the land commissions – offices established in relation with the land reform in our country. These are converted in a standard format and are directly put in SOFCAR.

4. ANALYSIS AND CONCLUSIONS

In the course of work, several changes and modifications of the designed technology were made. These were called upon by specific issues in the practice.

Despite the recently passed legislation, the manner of work established in the course of many years is difficult to overcome. There is still no sound and permanent link set up between SOFCAR and the other offices.

Due to the wide scope of knowledge and skills necessary for the performance of the tasks, a need emerged for additional training of professional land surveyors. They were further trained in application software and work with various ownership documents and their requisite attributes.

The above listed issues determine also some of the main lines along which our work will continue:

- current improvement of elements in the technology of work;
- maintain high level of professional qualification;
- building up an efficient system of links between the separate data bases and SOFCAR to maintain the currency in each moment;

- gradual, phased in coverage by SOFCAR of the whole available information about ownership.