

# Quality Improvement of the Real Estate Cadastre in Serbia

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**Key words:** quality improvement, real estate information, quality assurance, Serbia

## SUMMARY

The concept of cadastral modernization in the Republic of Serbia was defined in 1992, and it is being implemented through the Project of Real Estate Cadastre establishment, as a unique and singular real estate and real estate rights registry. Within the Government institution Republic Geodetic Authority (RGA), Republic of Serbia, reform of the cadastral system is implemented through „Real Estate Cadastre and rights registration project“, financed by a World Bank loan and supported through various donor projects. At this moment, Real Estate Cadastre is established in 92.2% of the Cadastral municipalities.

Currently, within the Phase III of the Swedish International Development Cooperation Agency (SIDA) funded “Capacity Building for Serbia: Real Estate Cadastre and Registration Project” subproject Development of Quality Assurance and Quality Control Concept is starting with activities.

Modern quality assurance and control systems, based on ISO standards and acknowledged international practice are essential for the Real Estate Cadastre system sustainability. Quality assurance and control system is also important for migration of the existing cadastral and property rights data to the Real Estate Cadastre as well as for system maintenance using data from cadastral-legal procedures in RGA’s local offices, which are in some cases based on data delivered by private surveyors.

Implementation of the quality assurance and control system will upgrade quality of services to the public, assure data reliability and contribute to the Real Estate Cadastre system sustainability. For that reason, this project is in line with the Real Estate Cadastre and Registration Project and supports it.

The task is to improve and determine the necessary quality assurance and control concept that will be applied both by the RGA and private surveying companies. This concept shall be developed during the Project implementation period.

Quality assurance and control concept development shall be focused on changes which can be made according to the current legal framework. However, it will also review and propose necessary amendments of regulations framework for the purpose of better goal achieving in the field of RGA service provision.

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## 1. THE HISTORY OF THE SERBIAN CADASTRE

In the history of Serbian Cadastre different types of Land Administration, such as Land Cadastre, Land Book and Deed book, were used in different periods and in different regions.

Land Cadastre represents a land registry, containing data on parcels and buildings, with regards to their position, shape, area, culture, class, cadastral revenue and users. Land Cadastre contains alphanumerical data in digital form since 1970, with graphical data (cadastral maps) in an analogue form.

Land Book represents an ownership register, containing real estate registrations (land and buildings), real estate rights, encumbrances and limitations. Land Book is still maintained in an analogue form, manually, in the same manner as when it was first established, at the end of 19<sup>th</sup> century.

Deed book represents a public registry of land owners. Deeds are proof that a given person is the actual owner. In the Republic of Serbia, deeds are very rare, existing only in those areas where no Land Book system is present.

In a large number of cadastral municipalities there is a significant discrepancy between data registered with the Land Cadastre and Land Book. Additional differences were caused by “the principle of disposition”, i.e. voluntary registration, where Land Book registration was not mandatory.

One of the most important processes currently taking places in Serbia regarding land administration is finishing the project of Real Estate Cadastre establishment, i.e. integration of cadastral registers with rights registers. This idea started back in 1988, through legal concretization procedures. (Until 1988, Land Cadastre system was used in Serbia, while on 40% of its territory the Land Book has been established, as a registry of ownership rights. Further more, in a small part in southern Serbia, a deed system was present.)

In order to make procedures of the integrated registry (Real Estate Cadastre) more efficient, a new Law on State Survey and Real Estate Cadastre has been adopted in 1992. The work on establishing Real Estate Cadastre has been slowed due to the lack of resources. The Government of Serbia recognized the importance of such a registry and applied for a loan with the World Bank, in order to expedite this process. The loan was approved in October 2004, with planned project duration until November 2011.

At this moment, Real Estate Cadastre is established in 92.2% of Cadastral municipalities and will be completed for the entire territory by the end of this year. However, despite all efforts to work on improving quality and upgrading efficiency the establishment, there is still plenty of room for quality improvement and responding to new demands.

## 2. LAND ADMINISTRATION IN THE REPUBLIC OF SERBIA

Republic Geodetic Authority (RGA) is – according to the Law on Ministries – established as a special governmental organization, responsible for professional and public administration

affairs, concerning state survey, Real Estate Cadastre, Line Cadastre, basic geodetic works, Address Registry, topographic and mapping activities, real estate mass valuation, geodetic and cadastral information system and National infrastructure for spatial data, together with geodetic works in engineering and technical fields.

On a local level, RGA's activities are executed through 164 Offices for Real Estate Cadastre. Apart from RGA's local level organizational units, since 2002, survey and survey maintenance activities are also performed by approximately 800 private geodetic organizations with approx. 1500 licensed geodetic experts.

RGA is authorized to keep and maintain the address register, real estate cadastre, database of digital cadastral maps and digital orthophoto and other databases according to the Law on State Survey and Real Estate, 2009.

In this regard, many processes in the RGA include publication of data to stakeholders, but also receiving data from the private geodetic organizations. These activities are being controlled i.e. quality of process and quality of exchanged data. However, there is a need for control procedures to be standardized and improved.

### **3. DONOR AND LOAN FUNDED REAL ESTATE CADASTRE PROJECTS**

One of the Serbian Government's goals is to make Serbia member of the European Union. Entering into EU means that the Republic of Serbia would have to apply to directives issued by EU. The Government of Serbia recognized the importance of Real Estate registry and applied for a loan with the World Bank, in order to fulfil EU standards and demands for regulated property ownership rights and to follow the directives. And so began the reform of the cadastral system through the „Real Estate Cadastre and rights registration project“, financed by the World Bank, and supported through various donor projects, financed by EU member states. One of donor projects, most related to the improvement of quality within Real Estate Cadastre, is Swedish International Development Cooperation Agency (Sida) founded project "Capacity Building for Serbia: Real Estate Cadastre and Registration, phase III"

#### **3.1 Swedish International Development Cooperation Agency (Sida) founded "Capacity Building for Serbia: Real Estate Cadastre and Registration Project, phase III"**

Sida funded "Capacity Building for the Republic Geodetic Authority of the Republic of Serbia Project, phase III" has started 1<sup>st</sup> March 2010 and lasts two years. The Project is aiming at sustaining the results achieved during Phase I and II of the Capacity Building Project. Lantmäteriet (Swedish Mapping, Cadastre and Land Registration Authority) is providing technical assistance to RGA in the implementation.

The Project includes development of quality control system to assure the quality of data in the registers as well as digital archive system, mortgage system and concept for mass appraisal for real property taxation. These systems and concepts have their origin in the needs of the stakeholders and customers in land administration.

The overall development goal for the RGA development projects to be supported by

Lantmäteriet is as follows:

- Further improvement of sustainable land administration in the Republic of Serbia by
- Enhancing the capacity and competence in the RGA to provide the real estate market and stakeholders in land administration with customer oriented, efficient and effective service and product offer in cadastre and land registration, real property valuation, geodesy and National Spatial Data Infrastructure (NSDI); and
- Promoting and improving cooperation between stakeholders

### **3.2 Development of Quality Assurance and Quality Control Concept**

Modern quality assurance and control systems, based on ISO standards and acknowledged international practice are essential for the Real Estate Cadastre system sustainability. Quality assurance and control system is also important for migration of the existing cadastral and property rights data to the Real Estate Cadastre and system maintenance by data from cadastral-legal procedures in RGA's local offices, which are in some cases based on data delivered by private surveyors.

Implementation of the quality assurance and control system shall upgrade quality of services to public, assure data reliability and contribute to the Real Estate Cadastre system sustainability.

The task shall be dealing with necessary quality assurance and control concept, to be applied both by the RGA and private surveying companies. This concept shall be developed and implemented during the project implementation period.

Representatives of Private Surveyors Association had noted their satisfaction with the initiative to develop standards, formats and other elements for data deliveries by private surveyors to the RGA and for the quality assurance and control system development for the purpose of cadastre and property rights registration.

Quality assurance and control concept development shall be focused on changes which can be made according to the current legal framework. However, this subproject will also review and propose necessary amendments of regulations framework for the purpose of better goal achieving in the field of RGA service provision.

Project objectives are:

- Upgrading of administration, quality control and internal supervision in the RGA, in the field of quality assurance of products and services provided, working procedures, activities of private surveying companies and real estate data inputted in the register.
- Cost effectiveness, efficient, predictable and transparent processes with the objective of minimization of costs and time required for services provision.
- Quality control and assurance, with the support of an appropriate system for data storage and registration (REC system).

## **4. IMPLEMENTATION**

Implementation of subproject: Development of Quality Assurance and Quality Control Concept, with a delay due to objective reasons, began in October 2010. Project completion is

scheduled for March 2012. Bearing in mind the short time remaining and a limited project budget, and that this is a completely new sub-project started in the third phase of the project, it was decided that the scope should be the basis for further independent work to improve the quality of the Real Estate Cadastre, or starting point for potential new projects.

In this regard, objectives will be implemented through modelling of improved pilot process in the Real Estate Cadastre. The goal is to improve the process in the Real Estate Cadastre, and therefore products and results of that process. The vision for the future is to go to the next step of quality improvement, to apply the pilot modelling in the REC, to introduce the use of GML format for data exchange with the private geodetic organizations and to introduce ISO 27000 standards for information security.

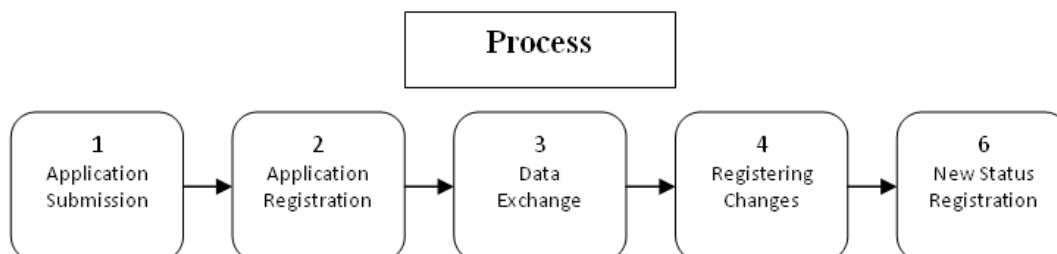
The project plan includes work on documents standardization within activities of application submission and the formation of objects in the registration of the application. In this stage of work, applications that RGA is using to process data in order to be harmonized with the planned standardization of data were successfully modified.

The modelling was started by creating a graphic overview of the process, and then each of the planned activities was outlined in detail.

#### 4.1. Process modelling within REC

All changes that are made to a real property must be done through a cadastral procedure i.e. process. New properties can be formed and existing properties reformed: a cadastral process can also involve checking boundaries and creating rights. Real property owners or holders of other rights who want cadastral process to be carried out must submit application to a Cadastre Office.

Within process modelling following activities were defined:



1. Application submission (application standardization and standardization of the required documentation)

2. Application registration (procedure of case formation and case allocation)

3. Data exchange with geodetic organizations (defining data that will be available via the internet, search method and data acquisition method)

4. Registering changes (registering changes in graphical form and registration in REC database)

5. New status registration (delivery of the resolution and finality of the registration)

Processes are now in analogue form. The idea is to make it digital and via internet and more automatic. Currently a lot of work is being done within these activities, and good results are expected during the project implementation period.

#### **4.2. Vision for the future**

The concept proposal for the future work on quality improvement in the following areas was made:

- Quality control for data migration. Data is available today in a very large number of local databases with real estate data, although built to a common standard but when they will be migrated to a common REC there are certainly a lot of issues and problems that arise. A first step might be to identify these problems in order to subsequently facilitate the migration.
- Another important measure is to start with quality improvement to existing data. It could begin with a feasibility study to estimate the extent of needs and, if possible, make an estimate of the cost of an increase in quality.
- Start work to develop procedures for creating and developing the transfer format in GML between RGA and Geodetic organizations, supported by FME as one step toward use of ISO standards.
- Control of information security based on ISO standard 27000 series as a part of quality assurance and quality control is another area in which interest has been shown.

#### **5. CONCLUSION**

Today the Serbian Real Estate Cadastre is almost done for the whole territory, will be finished this year and will be a well-functioning system, but in spite of all efforts to improve quality and efficiency during its establishment, there are still a large number of demands that remain to be fulfilled. The project has now been running for five months and the first results are expected at the end of 2011. This is very young project and the task of improving the quality within the Real Estate Cadastre is enormous and in some way a never-ending process. Implementation of the quality assurance and control system shall upgrade quality of services to public, assure data reliability and contribute to the Real Estate Cadastre system sustainability.

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## **BIOGRAPHICAL NOTES**

**Stojanka Brankovic**, Working in the Republic Geodetic Authority of Serbia (1995-2011)  
2008-present: Director Assistant for Technical and Administrative Supervision  
Previous positions at RGA: Head of organizational unit for Land Surveying Technical Supervision within Sector for Technical and Administrative Supervision, Supervision officer, Head of organizational unit for Land Consolidation within sector for Real Estate Surveying and other.  
1986-1995 was working in the Photogrammetric Authority of Serbia as leader of geodetic works in land consolidation and geodetic project engineer.

**Ivana Stankovic**, Working in the Republic Geodetic Authority of Serbia (2009-2011)  
March 2010 – present: Project coordinator "Capacity Building for Serbia: Real Estate Cadastre and Registration Project, phase III"  
August 2009 – March 2010: Digital orthophoto quality control, Department for Real Estate Survey, Photogrammetry unit, RGA  
January 2009 – August 2009: Production of Digital Topographic Map and Digital Terrain Model, private geodetic organisation.

**Nenad Tesla**, Working in the Republic Geodetic Authority of Serbia (1996-2011)  
July 2008 - Present: Director General of the Republic Geodetic Authority, Serbia  
Previous positions at RGA: Mart 2008 – July 2008: Assistant Director for Real Estate Cadastre  
2003 – 2008: Assistant Director for Real Estate Survey  
2002 – 2003: Advisor to the Director of the Republic Geodetic Authority  
1996 – 2002: was working at various jobs within different Cadastral Offices, 2000-2001 was working with private geodetic organisation in Libya as Chief Geodetic Engineer.

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