

# Harmonization of Land Registry and Cadastre in Croatia

Mario BLAŽEVIĆ, Croatia

**Key words:** Land registry, cadastre, harmonization process, cadastral survey, LDB, Land Data Base, IGEA,

## SUMMARY

Land register and cadastre are competence of different institutions in Croatia. The data is mostly not harmonized between those registers and doesn't match the actual situation on the ground. Harmonization of land register and cadastral data into one unique Land Data Base as integrated Land Register and Real Estate Cadastre is a goal. It is an extensive and time consuming process with many involved parties within various stages of a harmonization. Phases of harmonization are: preparation of data and planning of new cadastral survey, performing new cadastral survey and data acquisition on a designated area, public display of data collected by cadastral survey altogether with renewal/establishing of land book, forming an initial state of data in LDB. What remains at the end of every harmonization is maintenance of data in Land register and Cadastre in order to keep the achieved situation harmonized in future use. Thus, the whole process is yet not fully legally regulated and is performed in various phases by various actors, usage of a unique support brings up an order to a process and establishes certain standards. Considering the fact that company IGEA ltd. provides support to a various stages/phases of harmonization, but not being part of the system, we can provide a technical insight to a whole process from outside. The paper describes the main phases of common process of harmonization, with an overview on various situations that could be found on the field. These situations vary, depending on availability and condition of inbound cadastral and land register data, from totally disharmonized data between Land register and cadastre to a harmonized data between themselves. Depending on a situation, process of harmonization can be: new survey, re-survey or just a renewal of data found in land register and cadastre. It is also trying to address, based on accumulated experience, the issues found out in more than hundred of harmonization processes that we supported already.

# Harmonization of Land Register and Cadastre in Croatia

Mario BLAŽEVIĆ, Croatia

## 1. INTRODUCTION

Land register and cadastre are competence of different institutions in Croatia. Cadastral records are located at the municipal cadastre offices (*deconcentrated regional and branch offices of the State Geodetic Administration, in total 116 offices*), while the land registry function is handled by 104 Land Registry Offices of the Municipal Courts. Harmonization of land register and cadastral data into one unique Land Data Base (*LDB*) as integrated Land Register and Real Estate Cadastre is a goal.

It is an extensive and time consuming process with many involved parties within various stages of a harmonization. Phases of harmonization are: preparation of data and planning of new cadastral survey (*if necessary*), performing new cadastral survey and data acquisition on a designated area, public display of data collected by cadastral survey altogether with renewal/establishing of land book, forming an initial state of data in LDB. What remains at the end of every harmonization is maintenance of data in Land register and Cadastre in order to keep the achieved situation harmonized in future use.

Thus, the whole process is yet not fully legally regulated and is performed in various phases by various actors, usage of a unique support brings up an order to a process and establishes certain standards. Considering the fact that company IGEA Ltd. provides support to a various stages/phases of harmonization, but not being part of the system, we can provide a an insight to a whole process from outside. The paper describes the main phases of common process of harmonization, with an overview on various situations that could be found on the field. These situations vary, depending on availability and condition of inbound cadastral and land register data, from totally disharmonized data between Land register and cadastre to a harmonized data between themselves. Depending on a situation, process of harmonization can be considered trough: new survey, re-survey or just a renewal of data found in land register and cadastre.

It is also trying to address, based on accumulated experience, the issues found out in more than hundred of harmonization processes that we supported already.

## 2. SITUATION BEFORE HARMONIZATION

### 2.1 History

Croatia belongs to the Austrian-Hungarian tradition of property registration systems, and has had a parcel based registration system and the associated cadastre system since the 1880s. The key laws governing land registration in Croatia are: the Land Registration Act

(NN91/96), the Slate Survey and Real Estate Cadastre Act (NN 128/99), and the Property and Other Material Rights Act.

The information in the land registry is often out-of-date by decades. In some cases, parcel maps date back to 1905, and few have been updated since the nationalization in 1945.

As in many other countries of Central and Eastern Europe, property registration and cadastre systems were poorly maintained in Croatia up until 1996.

## **2.2 Current Situation**

Most land is now privately owned, but problems related to the outdated land registration and cadastre systems make ownership rights unclear. The ownership of land becomes even more unclear in some areas because of the practice of transferring land without registering the transaction in order to avoid transfer taxes (5 percent of the property value) and, in earlier times, substantial inheritance taxes.

Many of the problems in land and real estate markets and in efficient implementation of the property laws can be traced to the condition of the registries. These conditions are direct consequence of unprecedented increase in numbers of transactions since privatization started in 1992, and the related failure to maintain the link between the land book and the cadastre systems during the communist time, which has resulted in significant discrepancies between the official records and the actual state of title on the ground. Many real properties in Croatia are not on the cadastre, and many houses do not have building permits.

In Croatia, the process of ascertaining ownership of property rights, acquiring land and registering it is particularly difficult for foreign investors, and it compares poorly to other countries. It takes 5 to 25 weeks to register land in Argentina, 6 to 36 weeks in Bulgaria, and between 2 to 120 weeks or longer in Croatia depending on which municipal court handles the transaction and the type of transaction.

## **3. WHY HARMONIZATION?**

The objective of harmonization of land register and cadastre is to build an efficient land administration system with the purpose of contributing to the development of efficient real property markets.

Harmonization will bring following benefits:

- Faster registration in both the cadastre and real property registration systems.
- Harmonize data between the two systems and ensure that they match with reality by undertaking cadastre re-survey where necessary, and land book registration correction and renewal in a systematic manner in selected areas of the country.
- Improve customer relations and service provision, as well as organize awareness campaigns among stakeholders, aimed at supporting professionals, financial institutions, and real property holders.

The magnitude of other benefits is very likely to become substantially higher than the direct benefits described above. For instance, reduced mortgage rates will result in increased housing construction, and land consolidation in farming areas. It would also result in the social benefits of more affordable housing. Harmonization process will result with reliable information for formulating and administering land policies and land use regulations, environmental protection and sustainable development.

### **3.1. Targeted Population**

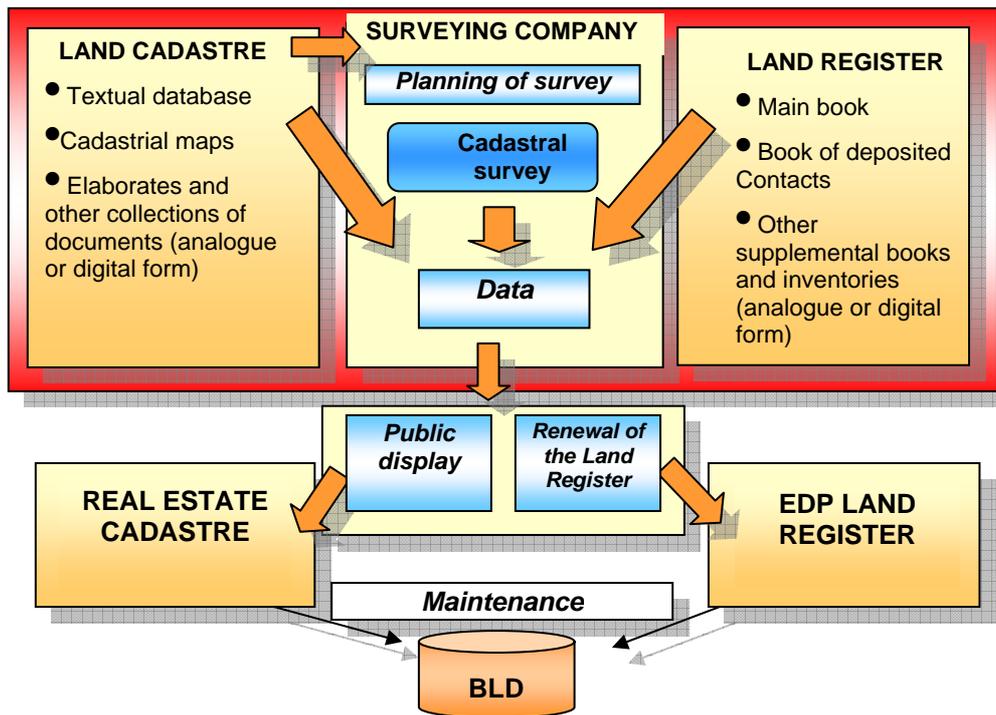
The target population that will be affected comprises of actual and potential real estate owners, private investors in agriculture, housing and industry, commercial banks, public bodies such as municipalities and other users of land information. There are additional benefits for individuals, private companies and government agencies with other interests such as making more secure rights of access, easements, and water and mineral exploitation.

## **4. PHASES OF HARMONIZATION PROCESS**

Harmonization of Cadastre and Land Register is an extensive and time consuming process with many involved parties within various stages of a harmonization. Depending on a situation, process of harmonization can be considered as:

- new survey,
- re-survey or
- renewal of data found in land register and cadastre.

In further text, each phase will be displayed simplified with most common tasks within.



**Figure 1.** Simplified representation of making BLD as a result of harmonization process

Participants in the process, altogether with abbreviations:

State Geodetic Administration – SGA,

Ministry of Justice – MOJ,

Local municipal unit – LMU,

Contractor of field survey – CON,

Municipal Court - Land Registry Department – MC-LRD,

Cadastral Regional /Branch Office – CR/BO,

IGEA – IGEA

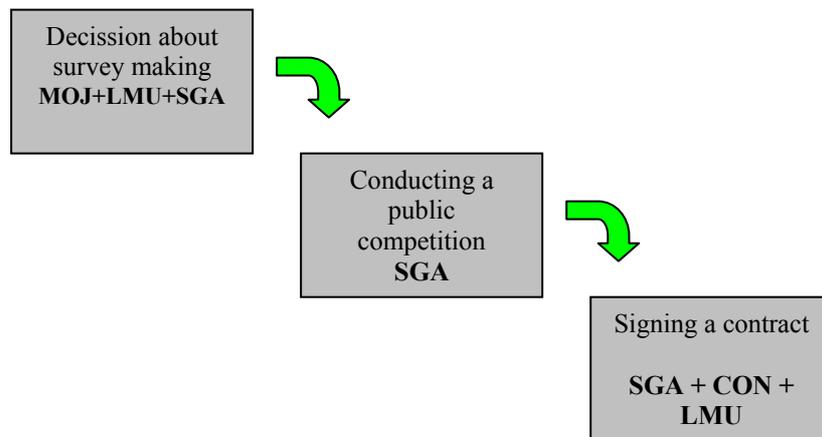
**Phases in harmonization process are as follows:**

- preliminary phase
- preparation of data that is to be harmonized
- planning and performing new cadastral survey
- preparations on a public display of data collected by cadastral survey
- public display of the cadastral survey followed by establishing/renewal of a land book
- forming an initial state of data in LDB
- maintenance phase

## 4.1. Preliminary Phase

Preliminary phase mainly consists of tasks concerning decision making and planning of what and how to do something in future that relates to a harmonization. In this phase is also important to find proper funds for all future jobs. All tasks during the whole process are mostly dependent one on other, and next task cannot start without prior task finishes.

Decision about starting survey/re-survey/renewal of data in cadastre and land register for desired cadastral county. This decision is brought together by LMU, SGA and MOJ and is followed by public competition for selecting the best contractor (*surveying company*). After selecting contractor, SGA signs contract with CON. (*green arrows represents work flow from one subphase to other*)

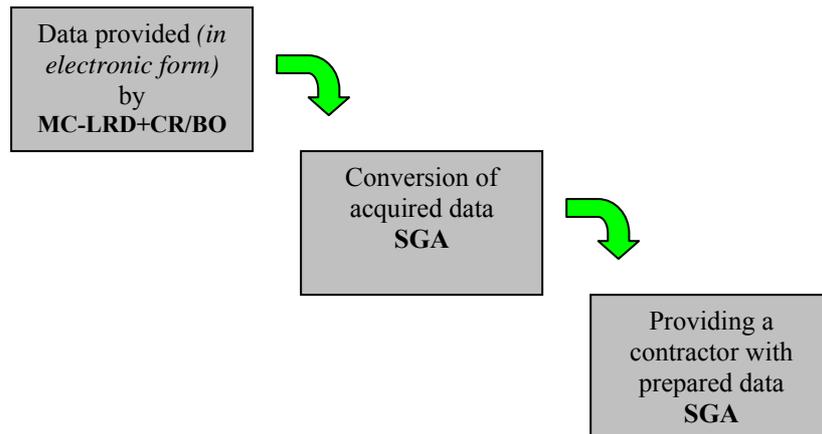


**Figure 2.** Preliminary phase

In real life, approximate time needed for the preliminary phase is 55 days. Final product of this phase are legal and technical details about further harmonization of data for desired cadastral county, all put together into contract.

## 4.2. Preparation of Data that is to be Harmonized

After all the preparations concerning of finances, contractor, scope of job, etc... are done, next step is to prepare data necessary for further smooth performing of future tasks on site and on later public display. It includes collecting available data from Cadastral office, Land registry office and providing contractor with all of that data in form of specialized programs used for field survey.



**Figure 3.** Phase of data preparation

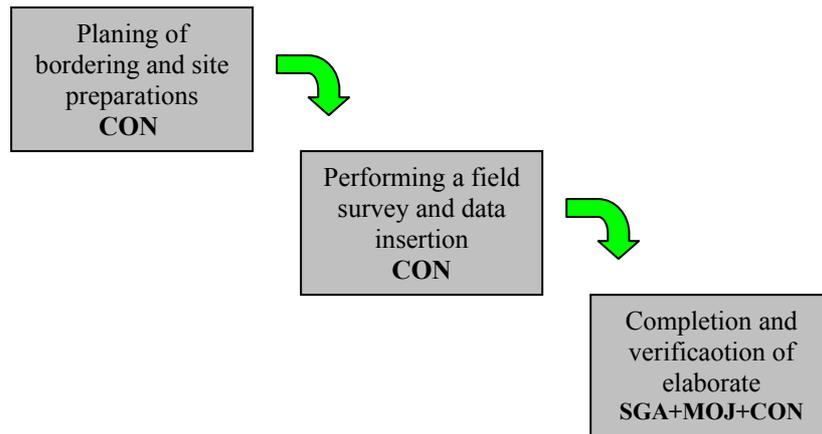
In real life, approximate time needed for this phase is 30 days (*if the main book is electronic form in land registry*). Final result of this phase is contractor equipped with all necessary data needed for the field survey.

#### 4.3. Planning and Performing New Cadastral Survey

This phase mainly depends on a contractor and his surveying company on site, depending on a situation on field and range of work signed in a contract, this phase can consume a considerable amount of time.

Job is divided into two parts:

- Planning of setting parcel borders and survey on desired area, sending invitations to owners for setting borders of parcels in their property.
- Field surveying using various geodetic methods (Tachymetry, aerophotogrammetry, GPS etc..) and inserting parcel data in database in form of property sheets.



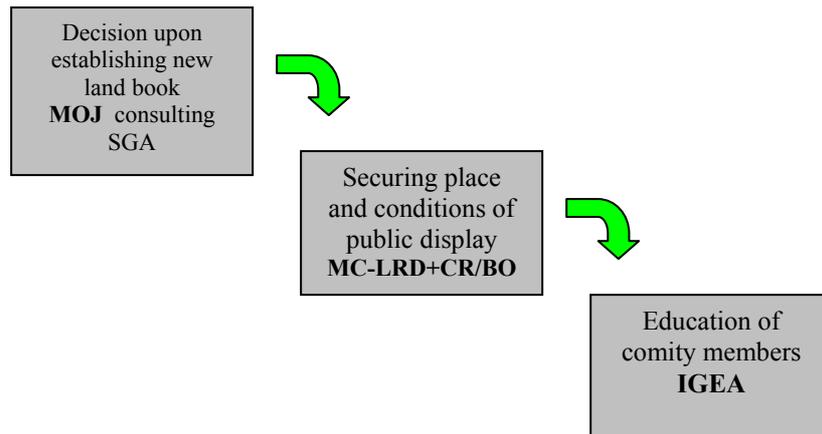
**Figure 4.** phase of planing and conducting field survey

This phase, depending on a size of cadastral county, number of parcels, field configuration etc... can last up to one year and even more. Final result of this phase is elaborate with the technical data necessary for further public display, made by contractor.

#### **4.4. Preparations on a Public Display of Data Collected by Cadastral Survey**

After the field work is done, all data collected and prepared for a public display, follows forming of a two commissions, one of them (*cadastral comity*) that will conduct public display of cadastral data, and other (*land registry comity*) that will form a proposal of a new state in land book (*altogether with owners, mortgages, and similar rights or info on certain parcel*) with the parcels that have been displayed before by cadastral comity.

Important aspect of this part of job is PR towards inhabitants which is task to be done by LMU, convincing and informing people that it is in their best interest to come and settle down the situation on site. In this phase IGEA provides software support and user education for using a system of public displaying of cadastral survey. One more important note is that public display is usually performed somewhere dislocated from cadastral or land registry office.

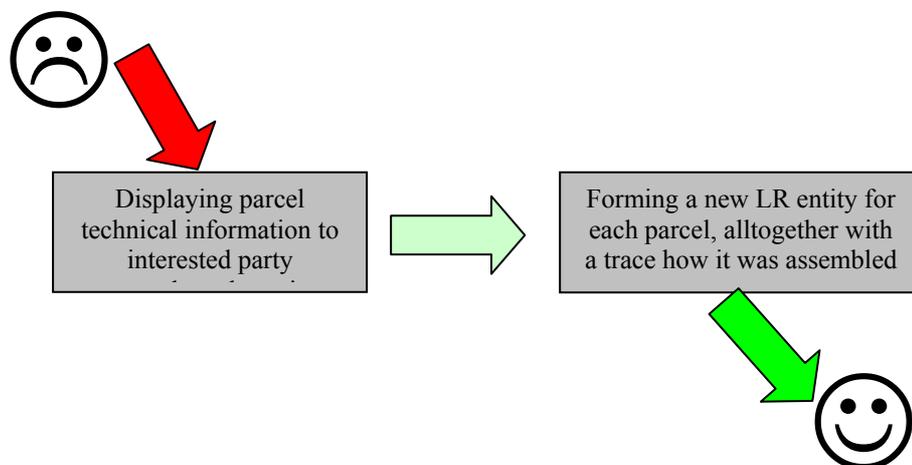


**Figure 5.** Phase of preparing a public display

This phase usually lasts 10 to 20 days and results with educated and prepared people with data to be displayed ready for the next step.

#### 4.5 Public Display of the Cadastral Survey Followed by Establishing/Renewal of a Land Book

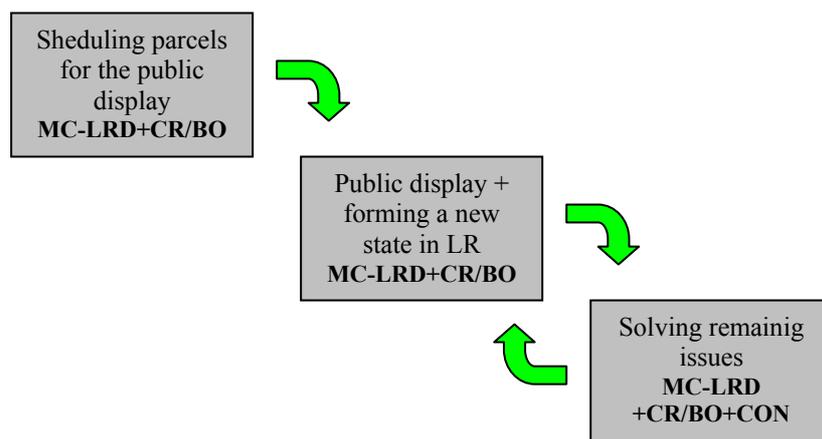
Main idea of public display is to act as one-stop-shop for interested parties to settle down ownership and parcel data on their property. That means that party arrives firstly to a cadastral comity, and if he is agreed with status of displayed parcel he proceeds to a land registry comity. Path of involved party is displayed in a picture bellow.



**Figure 6.** tracking party's path trough harmonization

Public display of data acquired from field survey is performed in two main phases:

- 1 Scheduling parcels in certain timeframe to be displayed to interested parties (*property holders, owners, and others*), identifying parcels gained from survey with former parcels in cadastre and land book.
- 2 Public display together with forming a new Land book:
  - Public display of parcels to involved parties and carry into effect display of parcel properties (borders, shape, area, buildings...). Accepting objections on properties of certain parcels, follow up objections to a contractor and resolving remaining parcel issues based on contractors additional survey. All of that is done by the cadastral comity.
  - Forming an initial state in a land book by the land registry comity. For each parcel is founded new LR entity (*Land registry entity*) in which are documented parcel information, owners, and various additional information in C section of LR entity (mortgages, right of servitude, etc...). Together with creation of new LR entity, a record is created with information about former state of parcel, former owners, and information about what happened in process of making a new LR entity accompanied with documents used in forming a new status.



**Figure 7.** phase of performing public display

This phase can last approximately 200 days, depending on size of area, number of objections and additional surveying, that time could be lesser or greater. Final result of this phase is proposition of initial state, both in cadastre and land book.

#### 4.6. Forming an Initial State of Data in LDB

Upon finishing public display, data considering ownership on certain parcel is written in cadastre (*from land book*), and data considering technical details is written in LR entity (*from cadastre*). There is still six month period which is designated for corrections in Land book and that time is called “validation process”. During that time anyone who has some objections on ownership, and manages to prove it is able to correct contents of LR entity.

#### **4.7. Maintenance Phase**

After “validation process” of land book, it becomes legally valid and ready to use. Only thing that remains is to keep data in land register and cadastre in harmonized state.

#### **5. CONCLUSION**

All things mentioned in this paper that are concerning process of harmonization of land registry and cadastre lead us to a main conclusion: It is a time and resource consuming process which involves various parties and various methods of work in different stages. It is even harder to conduct whole process because of the various institutional and historical obstacles. Nevertheless, harmonization process will provide security to real property rights and establishing an easy and safe mechanism for real property transactions, harmonization will assist Croatia in the development of a real property market. security of tenure should help intensify investments in and use of land for agricultural, residential, industrial and commercial development and construction. It will also foster economic growth by encouraging a more intensive use of real property to access cheaper credit via mortgages.

#### **REFERENCES**

Act on public display of data from cadastral survey and classification of land (NN41/1978)  
Document of World Bank - Project appraisal document on a proposed loan in the amount of Euro 26 million to the republic of Croatia for a real property registration and cadastre project, August1, 2002, World Bank publication  
The Land Registration Act (NN91/96),  
The Slate Survey and Real Estate Cadastre Act (NN 128/99)

#### **BIOGRAPHICAL NOTES**

##### **Mario Blažević**

Academic experience: Bsc degree in Informatics, University of Zagreb, Faculty of Organization and Informatics, Varaždin

Current position: research and development engineer in IGEA ltd., 2005-

Practical experience: work on harmonization of cadastre and land registry project, work on CRCD project for SGA, user education

## CONTACT

Mario Blažević  
IGEA INFORMACIJSKI SUSTAVI ltd.  
Trg kralja Tomislava 3  
42000, Varaždin  
CROATIA  
Tel. + 385 42 398 316  
Fax + 385 42 398 313  
GSM + 385 91 13 98 318  
Email: [mario.blazevic@igea.com](mailto:mario.blazevic@igea.com)  
www: <http://www.igea.com>