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## Information Flow between the Land and Building Register and the Real-Estate Register

### 1. Introduction

The land and building and the real-estate registers are the two most important systems gathering, processing, updating and making available information on realties. The proper and effective operations of both these systems constitute the foundations of the country's stable social-economical development and the maintaining of spatial and legal order.

At the moment the realty cadastre and the perpetual-accountancy systems are basically separate. However, for the information thus contained they are complementary, and even significantly identical, and so specific legal mechanisms have been set up to theoretically guarantee a proper and complete information flow between these systems. And so the gathered in the systems data must be characterised by high credibility and proper accuracy level and quick and easy availability.

For the significant role of the cadastre and the real-estate registers in national economy these have been the subject of numerous analysis and scientific surveys, especially with regard to the uniform for the whole territory of Poland Integrating Cadastre System. Results show high discrepancies between data of both systems [1], [2].

The analysis of co-operation between the systems, in light of valid legal regulations, including the true rate of information flow and changes thus occurring within the last four years, is discussed in this survey.

The following abbreviations have been used in the article:

- **EG&B** – land and building register (realty cadastre),
- **KW** – real-estate register,

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- **pr g & k** – act of 17<sup>th</sup> May 1989 Geodesic and Cartography Law,
- **kw & h** – act of 6 July 1982 about the real estate register and mortgage,
- **IPE** – The Integrating Electronic Platform.

## 2. General description of the cadastre and real-estate registers

The land and building and the real-estate registers play a very significant role in creating and maintaining spatial-legal order and are a guarantee of proper real estate management. Both systems are commonly bound and have a mutual impact on processes occurring within them. Data gathered in the systems concerns objects substantially and notionally similar what may quite significantly cause endangerment of information excessiveness [3].

The basic difference between studied systems constitutes the purpose for their existence. For, disclosing of the true state of objects of the land and building register is the purpose of the cadastre, and the recording of the proper legal state of the realty is the purpose of the real-estate system. The dependence between the systems appears in their operation mode, meaning that the cadastre data constitute the basis for designating objects of the real-estate system. And so, an efficiently and effectively functioning cadastre system determines real-estate system operation correctness.

### 2.1. Scope, functions and purpose of the land and building register

The cadastre contains features allocated to spatial information systems, as data concerning recording objects: land, building and premises are of spatial and descriptive character.

Recording data are collected, stored, up-dated and made available within the cadastre system. These area characterised by a broad range of applications constituting the foundations for: realty management, tax assessment determinations and designating realties in the real-estate register.

Unambiguous determining of locations of recording objects in space is the cadastre's priority.

### 2.2. Scope, functions and purpose of the real-estate register

The real-estate register is a judicial institution which on the grounds of legally valid documents being adjudications, administrative decisions, notary deeds, registers a legal information on the realty. The real-estate-accountancy system constitutes a legal register run by district courts in which the realty is the basic object.

The legal register contains information on ownership and limited right in property, and other rights, liabilities and limitations in disposing of the realty and other present and future claims [3].

Data comprising the contents of the real-estate register is gathered in four sections, i.e.:

- section I – containing designations and a list of rights connected with the realty,
- section II – comprising recordings concerning ownership and hereditary use rights,
- section III – allocated for recording liabilities and limited rights in property,
- section IV – comprising mortgage recordings.

The basic purpose of the KW system is defining the legal state of the realty and for its characteristic features being durability, stability and warranty of public confidence, ensures safety in realty turnover.

### **3. Legal standards controlling the functioning of the cadastre and of the real-estate register**

As mentioned earlier in the article legal regulations control the cadastre and the real-estate-accountancy systems in principal autonomously, indirectly causing discrepancies between them. Also recordings standardising mutual co-operation of systems and so the proper information flow between them, are lacking.

#### **3.1. Legal basis for the land and building register system**

The Act of 17<sup>th</sup> May 1989 Geodesic and Cartographic Law [9] is the superior legislative regulation for land and building recordings. Whereas the executive act to the aforementioned is the Ordinance of the Minister of Regional Development and Building of 29<sup>th</sup> March 2001 about land and building register [6], containing recordings leading to the transformation of the EGİB system into a modern, fully valuable cadastre of realties being one of the main elements of the Integrating Cadastre System.

As the land and building register is an official register any activities connected with its management including those of technological and organisational character are subject to regulations under the Act Code of Administrative Procedures [12].

Instruction G-5 published on 3<sup>rd</sup> November 2003 by the Chief Geodesists of the Country [16] is the main technical instruction defining principles for technical-legal procedures connected with the running of land and building registers.

#### **3.2. Legal basis for the real-estate register**

The legal grounds for the KW system are set up in the Act of 6<sup>th</sup> July 1982 about the real-estate register and mortgage [13]. Legal principles for the functioning of real-estate registers, their contents, data source and purpose of entries are thus de-

fined. The currently valid executory provision to the Act is the Ordinance of the Minister of Justice of 17<sup>th</sup> September 2001 about running real-estate registers and collecting documents [7], significantly amended by the Ordinance of the Minister of Justice of 26<sup>th</sup> September 2003 amending the ordinance about running real-estate registers and collecting documents [8]. It controls, in detail, the running of the real-estate register, its appearance and contents and the making of entries. Whereas the course of the real-estate -accountancy procedure is defined by the Act Code of Civil Procedures [14].

The migration of real-estate registers is subject to separate legal acts. The process, in effect of which real-estate registers may be processed into electronic form, being a component of a modern realty cadastre is controlled by the act of 14<sup>th</sup> February 2003 about conveying the contents of the real-estate register run in electronic form [15]. The detailed mode of migration and the running of the real-estate register in electronic form, with distinction of the individual fields of the real-estate register and method of their completion is contained in the Ordinance of the Minister of Justice of 20<sup>th</sup> July 2003 about instituting and running of real-estate registers in electronic form [9] and its last amendment in the Ordinance of the Minister of Justice of 19<sup>th</sup> March 2007 amending the ordinance about instituting and running real-estate registers in electronic form [10].

#### **4. Characteristics of information flow between the cadastre and real-estate-accountancy systems**

The EG&B and KW systems interact and are mutually dependent. Both systems refer to the information about the land although in a different scope. The cadastre system registers the objects in the true state, whereas the real-estate-accountancy system is responsible for the registration of the legal state of the realty.

It should be emphasized that both said systems interchangeably perform the role of the sender or recipient of data of spatial and legal character.

Recordings in pr g & k [11] and in kw & h [13] are the legal foundations of information flow. The Geodesic and Cartographic Law Act [11] with its entry in art. 21 controls flow of spatial information from the EG&B system to the KW system in that the data collected in the register base constitutes the grounds for denoting objects of the real-estate -accountancy system. Whereas article 23 pr g & k [11] defines the reverse flow direction that is the flow of legal information from real-estate registers to the land and building registers.

By analogy, the act about real-estate registers and the mortgage [13] with its entry of art. 26 passage 1 controls the flow of spatial information from the EG&B system to the KW system stating that data from the realty cadastre constitutes the basis for denoting the realty in real-estate registers.

And so two principle streams of flow activity between the analysed systems may be distinguished. The first one refers to the changing of denotations of the primary objects of both systems lying in that the cadastre system denotes the realty in space to the real-estate register system, and is allocated, by the real-estate register system, the legal register number by which the given realty is disclosed, i.e. the real-estate register number. The second flow stream between systems is manifested by the cooperation of legal and spatial information, among others by realising legal-technical procedures or the equalizing of realty denotations in real-estate registers [4], [5].

The presented substance of the inter-systemic information flow is based on the properly functioning and fully integrated cadastre and real-estate -accountancy systems. As results show, for historical or formal-legal negligence information flow between the said systems is non-existent or is significantly limited.

## **5. Information flow between the EG&B system and the KW system**

Research on information flow between land and building registers and real-estate registers was based on the true data flow between the Geodesic Department of the City of Cracov, being the proper institution for running the land and building register within the city of Cracov on behalf of the President of Cracov, and Department IV of the Real-Estate Registers of the District Court for Cracov-Podgórze, running real-estate registers for Cracov and communes: Kocmyrzów-Luborzyca, Wielka Wieś & Zielonki.

Information flow analysis between the systems was conducted :

- for the District Court – from 2.11.2006 to 30.11.2006, and then completed between 28.03.2007 and 5.04.2007;
- for the Cracov Town Office – from 18.04.2007 to 23.04.2007, and then completed on 28.05.2007.

To present the problem further in a broader time interval research results were compared with results of similar surveys conducted in 2003 [4].

### **5.1. Scope and description of the research subject**

The notification about changes in the scope of individual system data constitutes the physical representation of information flow between the EG&B and KW systems.

To determine the speed of information flow between the EG&B and KW systems within Cracov city 324 applications for revealing changes to real estate registers were analysed. The most recent was dated 17.01.2007 and the oldest 16.12.2004.

A mutual denominator for both applications was that entries to the real-estate registers were made in January 2007; and information about changes in the legal register was sent to the Geodesic Department of the Town Office of Cracov.

For applications thus isolated, to disclose changes from the computer data base of the court the following were collected: date of input, date of outlining, date of mailing and perhaps the date of closing the case, whereas the closing date was not the superior criterion. The said applications were then found in the data base of the institution. The date of the document (that physically appearing on the notification), date of inflow to the office, date of registration and date of completing the case were thence collected.

Besides defining the value of the average duration of information flow between the systems, the defining of the true discrepancy duration between EG&B and KW data, thus invalidity of information being the effect of information flow speed, was also an important research goal.

For having access to analogical research conducted earlier (in 2003) a hypothesis about the improvement of information flow speed could be made.

## **5.2. The operation mechanism of activities of studied institutions while realising notifications about implementing amendments**

For research purposes, the mechanisms of conveying information in Department IV Real-Estate Registers of the District Court in Cracov-Podgórze and in the Geodesic Department of the Town Office in Cracov, were analysed.

Department IV Real-Estate Registers of the District Court in Cracov-Podgórze and the Geodesic Department of the Town Office in Cracov run their own computer registers of cases, including dates of performing individual activities connected with the processing of the notification.

In court the application with all respective documents is submitted to the correspondence register, then referred for detailed registration and further to a specific judge or a judicial official. If the real-estate register which the application refers to is not in electronic form it is subject to a migration procedure. Based on the said application the court clerk prepares a draft of the entry to the real-estate register which is then approved by the judicial official or the judge. The application procedure is completed after having sent the notification about making the changes in form of registered mail to the participants of the proceedings including the office for land and building register.

The work principles of the Geodesic Department of the Town Office in Cracov are analogous. The application is submitted to the correspondence registration and then referred for detailed registration. Then depending on the district it refers to (Nowa Huta, Śródmieście, Podgórze, Krowodrza) it is allocated to the proper record data base manager. At the instance of processing the application it is allocated

a number. Upon completion the application is returned to registration where from individual notifications are sent out and the application is returned to the data base manager. The process is completed by stamping and filing the documents.

### **5.3. Analysis of information flow between the EG&B and KW systems**

Flow of notifications being also information carriers about data changes is conducted – from the District Court to the Office in Cracov and in the opposite direction – via the post. It should be emphasized that under the act about conveying the contents of the real-estate register into electronic form [15] in future, after completing the process of real-estate register migration and after having modernised the recording data, traditional information flow in form of registered letters is to be replaced by electronic data flow. The Integrating Electronic Platform is to be the data transmitter and data aggregate.

The flow of notifications from the Court to the Office is as smooth as it is possible for registered letters. The tested sample of 324 notifications showed that the average duration for notification transfer is 8.3 calendar days, whereas 207 were registered in the Town Office within one week from the date of sending them from the Court.

There is no flow of notifications from the court to the town office. The notifications about changes in land and building records referred by the Office (Geodesic Department) to real-estate registers are not registered and are not punched into the computer system, but are referred *ad acta* without consideration. They can only be traced in the manually conducted by the secretariat of the Department General Correspondence Control Register. Lack of respective legal regulations is the cause of this state of affairs as the notification from the Department in the present form, without any enclosed documentation in form of an outline or an extract from the land and building register, does not constitute the grounds to disclose changes in the real-estate register.

### **5.4. Survey results**

The collected data allowed to determine the degree of discrepancy between data of the EG&B and KW systems quite precisely.

After having conducted statistical analysis the following, presented below, time values of individual inter-system stages of information flow have been obtained:

- average duration of processing the application in real-estate registers (from the instance of incoming to KW to dating the mail in KW);
- average duration of notification flow between institutions (from dating the mail in KW to incoming to EG&B);
- average duration of introducing changes in the land and building registers (from date of incoming to EG&B to the date of case closing in EG&B);



- average duration of invalid information (from date of realising the application in KW to case closing in EG&B) – i.e. the measure of non-synchronization between the discussed systems;
- the average duration of application processing (from incoming to KW to case closing in EG&B).

Upon completing the research (28.05.2007) not all applications have been fully processed – from registration in KW to disclosing in EG&B. Among the initially isolated 324 applications in the course of the survey 19 applications have never reached EG&B. As the procedure of application enforcement has not been closed in real-estate registers at the physical instance of dispatch but later, another 12 applications were rejected. Among the remaining 293 applications which have been registered in the land and building registers only 168, constituting 54% have been fully processed.

In light of the above, to avoid result counterfeit, it was necessary to calculate the average duration of information flow in the EG&B system while making two assumptions. And so in the first case values were based only on the 168 processed applications. In the other the closing date was assumed as double the time from the instance of application registration to research completion. The results are shown in table 1.

**Table 1.** A compilation of average duration of individual stages of information flow between land and building registers and real-estate registers

Studied value (duration of individual stages [days])	Sample size [number of applications]	Average population value [days]
duration of completing the application processing in KW	324	58 ± 3
duration of application transfer from KW to EG&B	305	9 ± 1
duration of introducing changes in EG&B (only completed applications)	168	47 ± 2
duration of introducing changes in EG&B (all registered applications)	293	109 ± 5
duration of complete application processing (only applications completed in EG&B)	168	108 ± 5
duration of complete application processing (all applications completed in EG&B)	293	173 ± 6
duration of information remaining invalid (only applications completed in EG&B)	168	68 ± 2
duration of information remaining invalid (all applications completed in EG&B)	293	128 ± 4



### 5.5. Comparison analysis of research results with those of analogous studies conducted in 2003

The previously determined values for individual inter-systemic stages of information flow were compared with values originating from analogous studies conducted in the same institutions in year 2003 [4]. The use of the statistical Fischer-Snedecor test to compare two populations gave answers to the question about changes that occurred in information flow quality between land and building registers and real-estate registers. Values originating from 2003, determined with reference made to a 25-element sample were compared with the corresponding parameters calculated for the 168-element sample and the 293-element sample.

The following assumptions were made while conducting statistical tests:

- the zero hypothesis assumed equality of tested parameters (standard deviations) for the studied population;
- the significance level was 5%, that means that the probability of error is 1%, so the rejection of the zero hypothesis is 5%;
- for sample size (one was smaller than 30) two model types were applied: model II for equal standard deviations and model IV where standard deviations are different. Results are shown in table 2.

**Table 2.** Results of individual statistical tests

Studied value	sample size 2007	Test conclusion	Interpretation
	sample size 2003	model type	
duration of application transfer from KW to EG&B	305	no grounds to reject the hypothesis about variance equality	duration of application transfer has been shortened
	25	model II	
duration of introducing changes in EG&B (only completed applications)	25	the hypothesis about variance equality to the benefit of the alternative hypothesis is rejected	duration of introducing changes in EG&B has been extended
	168	model IV	
duration of introducing changes in EG&B (all registered applications)	25	the hypothesis about variance equality to the benefit of the alternative hypothesis is rejected	duration of introducing changes in EG&B has been extended
	293	model IV	

Table 2 cont.

Studied value	sample size 2007	Test conclusion	Interpretation
	sample size 2003	model type	
duration of information remaining invalid (only applications completed in EG&B)	25	no grounds to reject the hypothesis about variance equality model II	duration of information remaining invalid has been extended
	168		
duration of information remaining invalid (all applications completed in EG&B)	25	the hypothesis about variance equality to the benefit of the alternative hypothesis is rejected model IV	duration of information remaining invalid has been extended
	293		

## 5.6. Comparison analysis of results

Results of statistical tests show that independent of the sample size assumed in 2007 and described assumptions considered when determining the average values for that year, both tests comparing the same value between 2003 and 2007 gave identical results.

This brings three conclusions:

- 1) The duration of notification flow between real-estate registers and land and building registers between 2003 and 2007 has been shortened.
- 2) The duration of introducing changes in the land and building registers based on notifications from real-estate registers between 2003 and 2007 has been extended.
- 3) The duration of information remaining invalid between 2003 and 2007 has been extended.

It should be emphasized that the quality of information flow between real-estate registers and land and building registers following procedures of studied institutions, has deteriorated. The duration of notification flow via mail has been shortened, but this following is to be replaced by electronic mail in the future.

## 6. Summary

This article presents the problem of information flow between the EG&B and KW systems. The conducted research allows a statement that the inter-system information flow, despite implementing new legal regulations and technical progress is still far from ideal.

Detailed conclusions are as follows:

- In real-estate registers entries discussing the precise mode of collecting data from EG&B and of data transfer to EG&B are missing. Thus notifications about changes in EG&B arriving from KW are generally not introduced what results in a growing number of discrepancies between the systems.
- Migration of real estate registers in their present form does not only extend the processing of the application in real-estate registers but also gives rise to new errors.
- The problem of correcting discrepancies has been conveyed onto the interested party and is conducted at its cost independent of the true reason for the occurrence of the discrepancy.
- There is no legal deadline for entering the notification into the real-estate register and its true speed is longer than standards anticipated for cases reviewed under the code of administrative procedures. However, not only work organisation but also the number of employees responsible for this function, is the reason.
- In the running of real-estate registers the court is strongly independent of the land and building registers and does not conduct any inspections and comparisons.
- In land and building recording mutual control of data is insignificant, whereas any presumable errors in KW remain uncorrected.
- Following statistical test results a conclusion can be drawn that the time needed to introduce changes to EG&B has extended in 2003. This is probably caused by an insufficient number of employees dealing with the up-dating process, as the procedure for introducing changes to EG&B is relatively short, contrary to the waiting to start the procedure.
- The governmental idea of the Integrating Electronic Platform which was to integrate data of both systems and remove discrepancies between them does not observe these goals. Mechanisms for finding and removing these discrepancies have not been introduced.
- The IPE is to manage notification flow between the said systems but so far does not perform this role and the flow is still conducted via Polish Post. The conducted statistical tests have shown that in comparison to year 2003 this time has shortened but still significantly extends information flow between KW and EG&B.

Summarizing, the current solutions of information flow do not improve quality, to the contrary deteriorate it. The situation when performing very important technical-legal procedures such as up-dating land and building recordings and migration of real-estate registers there is no obligation to generate discrepancy reports betwe-

en them, is inadmissible. This negligence effects in that responsibility for errors, infrequently being the fault of courts or offices is conveyed onto realty owners.

To change this unfavourable trend:

- migration of real-estate registers run by out-of-town centres should be abandoned; the real-estate register should be punched contents into the computer system by mother-courts while maintaining the real-estate-accountancy character of the first entry;
- while introducing the real-estate register contents into the computer system compliance of the real-estate register contents with information stored in EG&B should be checked and if necessary corrected *ex officio*;
- for the above purpose (and general common facilitation of access to data stored in the registers) a computer data base with mutual access should be run in both institutions, whereas chronologically the EG&B base should be the first to appear;
- resigning from the Polish Post services and sending the notifications via computer (the IPE is to perform this goal);
- legally settle the situation of notification flow from EG&B to KW to eliminate the problem of non-consideration of notifications from EG&B by KW;
- employ additional personnel responsible from introducing changes to real-estate registers and recordings survey;
- define by law, the deadline for introducing changes into the real-estate register from the instance of submitting the application;
- introduce legal regulations defining the principles for the functioning of the cadastre system within the territory of Poland; within it establish a more significant relation between real-estate registers and land and building register data, imposing at least a single control of compliance of section I-O of the real-estate register with data of the land and building register while making the entry.

Such solutions will allow to improve quality of information contained in both systems and to improve the flow itself including gradual elimination of data discrepancies.

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