

**Tatiana Kozlova<sup>1</sup>**  
**Yana Burdilna<sup>2</sup>**  
**Maria Pismenna<sup>3</sup>**

## **CORRESPONDENCE BETWEEN CADASTRAL-REGISTER SYSTEM OF UKRAINE AND STANDARDS OF SIMILAR EU SYSTEMS**

National Aviation University  
Kosmonavta Komarova avenue 1, 03680, Kyiv, Ukraine  
E-mails: <sup>1</sup>t\_kozlova@ukr.net; <sup>2</sup>yana91burdilnaya@mail.ru; <sup>3</sup>mashka91ne@mail.ru

**Abstract.** *The experience and main trends of development, modernization and standardization of cadastral-register systems in Europe are presented. Current practice and EU requirements for creation of cadastral-register systems are analyzed. Correspondence between cadastral-register system of Ukraine and standards of similar EU systems is defined. Such basic criteria as efficiency, accuracy and reliability, customer orientation, service efficiency, the minimum cost are determined.*

**Keywords:** cadastral-register system; land registry; law; registration of rights; self-sufficiency; standards.

### **1. Introduction**

Ukraine's access in EU is defined as main priority and strategic goal of Ukraine at the highest level. Ukraine has chosen the strategic direction of integration into European economic and legal politics space.

Creating an effective Cadastre and Registration System (CRS) is one of the most important prerequisites for the development of land market relations and their legal regulation.

On Land Registry is relied the task of keeping of all units of land ownership, based on it a real guarantee of land property rights in land cadastre for the assessment of fiscal and regulatory purposes is made.

Thus, the creation of modern CRS that would meet the standards of similar systems in the EU is one of the main objectives in the nearest future.

### **2. Analysis of studies and publications**

Taking into account the urgency of creating the legislative framework for the construction of CRS the Law of Ukraine N 3613-VI "On State Land Cadastre" was adopted by Verkhovna Rada on July 7, 2011, which builds on the best achievements of foreign countries practices to ensure an open access to public land cadastre. In addition, the Parliament has made significant amendments to the Law of Ukraine "On State Registration of Rights to Real Estate and their Encumbrances" from 01.07.2004 N 1952-IV. However, at this time in Ukraine there is no integrated cadastre and registration system that would be effective basis for regulation of land relations, property evaluation, registration, real-estate, monitoring and control of natural resources.

Virtually all parts of cadastre are formed with significant challenges, and cadastre can not be considered as a source of essential, reliable and timely information about land resources.

According to research conducted by Razumkov Center [Cadastre...2011], now in Ukraine institutional formation and creating of State Land Cadastre (SLC) and the registration of property (both regulatory and organizational) significantly is behind the needs of and practice of land reform and regulation of property relations.

The problems of building and developing of cadastre-registration system in Ukraine at various times were investigated by A.M. Tretiak [1999; 2011], M.G. Lyhohrud [2001], A.S. Danilenko [Danilenko, Lyhohrud 2003], M.S. Fedorchenko [2007], A. Kubah [2011], P.G. Cherniaga [2011] et al.

**Purpose** of this article is to establish the level of accordance between the principles and criteria in building cadastre registration system in Ukraine and similar standards in EU.

### **3. Creation of modern practice of EU cadastre and registration systems**

Historically, cadastre was made over 2000 years ago as primarily instruments of fiscal policy and registration of transactions with land. Society functions of cadastre development were also developed. The development of these functions has led to the existence of two related tools of land management resources: land cadastre (land registry) and legal registry (registration systems).

Formalization of land rights is extremely important for sustainable economic development and natural resource management in both urban and rural areas, which are an integral component of an

effective inventory system (UNO, Bogor Declaration of 1996). A system of property rights is meant as the combination of such elements:

- the means of identification and description of land and property (inventory);
- means of proof of land and property title (registry);
- the means of rights exchange (land market and real estate);
- financial institutions and financial instruments (banks, credit unions, mortgage and mortgage bonds);
- protective bodies of these rights and disputes (court system).

First of all two elements of the system acquire crucial meaning – cadastre and registry, because these elements can convert land into asset, that is fit for circulation in the market.

In some countries one component (only one) is built cadastre and registration system, so the functions of cadastre and registration of rights are provided by one institution (Albania, Armenia, Czech Republic, Greece, the Netherlands, Italy, Lithuania, Luxembourg, Slovakia, England and Wales, Sweden, Scotland). In other countries cadastre and registration is separated (two-component system):

- in Spain and Portugal the registration is made by private loggers, subordinated to the Ministry of Justice, under the Ministry of Finance of inventory and performs primarily fiscal functions;
- in France, Scandinavia, Poland, Slovenia, Croatia, Estonia and Bulgaria the registration is made by public institutions – courts or notaries who are under Justice, cadastral maps are led by different organizations under different mini or even municipalities by the Ministry;
- in Germany, Austria, Latvia, Switzerland the registration is entrusted to a special organization of public law (Pozemel book offices that have status equal to the court), cadastral maps are other organizations, which are subordinated to different ministries.

According to the UNO Economic Commission for Europe (UNECE UNO) in 38% of European registries under the Ministry of Justice, there are 23% – ministries of natural resources, 11% – Ministry of Finance, in other cases under different institutions. There are examples of unified cadastre and registration system under the legal authorities (courts, notaries, legal authorities).

So Europe is used as a single and two-component (dual) model building cadastre registration system, although lately it may be noted trend to unified

cadastre and registry systems under the auspices of inventory (such reform is undertaken in Italy, Romania, Norway, Iceland).

The two-component model minimizes inter conflict of interest, because the formation and registration of real estate rights are divided.

One-component model can contain the risks of excessive concentration of power, but it has a significant advantage in overcoming the reluctance of possible cooperation between cadastral and registration services. Having a unified cadastre the registration system provides a higher degree of specialization of key functions of registration and cadastre, as well as an extensive system of checks and balances of each unit of other actions, while ensuring the integrity and uniformity of factual information environment, with full coincidence of cadastre and land registration data and functions and their constant updating. The main principles of the unified system are:

- maintenance of registration of property on the basis of land records (land and immovable property is considered as a single property);
- registration of land and real estate rights in one register rights;
- registration of rights and cadastral maps by the same institution;
- registration of rights is an administrative function (state registration of rights to be separated from the court and/or notaries);
- service-oriented systems, primarily for the user;
- a system of title registration shall be self-supporting.

Despite the differences in registration systems in different European countries their common basic features are shown [Larsson 2002]:

1. Cadastral systems are constantly changing with the change of economic situation.
2. The system is based on carefully designed legislation.
3. Registration procedures are worked out in detail and legislated.
4. The system is centralized state and delegating certain powers to the field.
5. The system consists of cartographic and documentary (text) parts.
6. Registers are based on large-scale official maps.
7. Most systems support common standards for data exchange.
8. Routine work performed by self-financing, modernization - with the support of the state.

9. Registers are open to the public (although in some countries the available information on the cost and security).

The experience of countries that summarizes and extends UNECE UNO, services for the cadastral registration and registration of real estate rights are crucial for the functioning of outstanding land and property. In addition, each country shall create and ensure the system within their own social, economic and cultural environment, as each country has a unique history and experience.

Experience in establishing national systems of cadastral records, according to the Commission, firstly shows the superiority of the framework of laws over the laws, having a lot of technical details. Secondly, the “right to privacy” should be guaranteed. These cadastres shall be protected and accessible to users at the same time. Cadastre system shall take into account the need to balance between the right for information and the right for personal data protection.

The important issue is funding of cadastre and registration system. There is a common practice in the EU: the vast majority of systems are studied by UNECE UNO or fully funded by customer payments (56%), or combining customer payments and government funding (42%) and only the bare minimum is funded entirely by the government (2%) [Tretiak 2011].

However, despite the existence of significant differences between the cadastre and registration system of the EU, there are clear common basic practices:

- automatic registration of every transaction, available at the local level;
- systematically and automatically tied to inventory information about each section titles in the registration system which is operated by a single, self-financing institution of property management;
- a high degree of user friendliness, transparency, completeness, accuracy, availability, warranty.

#### **4. European requirements for cadastral and registration systems creation**

Significant technical progress, changes in social life and increasing of globalization of business relations with their legal consequences and impact on environment have left their mark on the traditional cadastral systems, so many European countries have reformed their systems. Cadastral reform and requirements of modern cadastre and registration

systems occur in accordance with recommendations of the concept of “Cadastre 2014: A Vision of future cadastral systems” [Kauffman, Steudler], which is a result of Working Group of the International Federation of surveyors (FIG). “Cadastre 2014” has established the basic definition of land cadastral registration and land records. According to recommendations of land registration and cadastre they usually complement each other and they function as agreed (interactive) systems.

Special EU legislation concerning cadastre and registration system creation does not exist, and there is no law model or a set of guidelines for its construction and operation. However, certain provisions may be interpreted as some minimum standards of such systems.

EU legislation contains provisions to create more land cadastre, focusing on agricultural lands. Thus Member States should implement GIS based maps in order to create a tight control over the issue of subsidies for farmers, prepare a register that lists location, characteristics and applicable law and implement a system of integrated administration and control (IACS). According to Art. 4 number of Council of Europe 3508/92 (for Eastern European countries) the creation of digital identification system for agricultural parcels using cadastral maps and documents, and other cartographic materials, aerial and satellite images, or other equivalent material or combinations these elements shall be ensured.

In 2003, the European Council Regulation 1782/2003 amended this provision by adding the reduced requirements for items to be made to IACS, namely (Article 18 of Regulation):

- automated database;
- system of land identification;
- system of identification and registration of persons who are eligible for subsidies;
- application for assistance;
- integrated control system;
- only one system of registration identity of each farmer who submits an application for assistance.

Therefore, Member States shall introduce a system of identification of land parcels (LPIS) as part of IACS in a way that they choose themselves. Technical requirements for the LPIS are:

- information must include identification land number, its space and destination;
- it shall cover an area of consistently using the same system;

– with regard to mapping accuracy, it requires measuring at least in scale of 1:10 000 and a maximum error of 1 m on the ground based on photo plans;

– system and its relationship with bank details of the Integrated System (IAMS GIS) to provide interconnection between graphical and numerical data banks, and effective use of graphic information in all procedures: information dissemination to citizens, administrative checks with immediate transfer of all information, the use of local or inspectors on the ground or equipment operators with space positioning;

– system must be updated regularly: at least once a year, on the basis of information obtained as a result of inspections. Photo plans shall be updated to ensure the consistent nature of overall quality of information. Five-year cycle was generally defined, but the actual update varies from three to seven years or more, according to the stability of the land use.

Thus, except the land identification, Member States shall prepare a graphic identity lands and the system should be automated.

One of the conditions for the admission of new countries to the EU is the establishment of a free market economy, which is parallel to those existing in Western Europe. One of the main tasks is land privatization and introduction of an effective land market [Bogaerts et al. 2002]. In other words, compliance with EU legislation provides that the cadastre and registration system of the country shall be implemented in such a way as not to interfere with real estate market.

At least 20% of the GDP of developed countries in Europe comes from the land market and real estate. A cause of poverty in developing countries, and post-communist countries is that the land and property worth billions of dollars is a “dead capital”. The right to the property does not have a form that allows them to turn and bail. Based on this we can make a forecast for the next 150 years to 25 the most developed countries likely to join those countries that create a system of property rights are securely protected by law.

In recent years actively creation of a unified cadastre system in EU is discussed. EULIS – European Land Information Service (European Service Information about the Land) was created. One of the main goals of project is that EULIS levels the borders on services providing information about land, enables search for information via the Internet in a mode on-line in the cadastral registers

of European countries. Hope to and easily accessible information on the ground – one of the reasons for development of the single market, EU free movement of goods, persons, services and capital [Agreement...].

EULIS system that was started in 2006, combining real-time cadastral systems of Sweden, the Netherlands, Lithuania, England, Wales, Norway, Austria, Finland, Scotland and Ireland. This website also includes background information storage, editing tools, which allows for all information up to date, and storage billing users.

To join EULIS it is needed to have a well functioning cadastre registration system, exhausting the list of requirements which does not exist, because in EULIS the working group of experts help to prepare cadastral registration system for integration.

In the nearest future such countries as Belgium, the Czech Republic, Estonia, Finland, Iceland, Italy, Latvia, Northern Ireland, Scotland, Serbia, Slovakia, Slovenia and Spain will join to this service.

Thus, there are existing conditions for establishment of effective integrated land information service of the European Union and provide comprehensive information on real estate on-line.

An effective system of registration has the following characteristics as simplicity, accuracy, timeliness, availability, warranty. The effectiveness of cadastral registration systems is determined primarily by availability and convenience of their services to the user, authenticity and openness of information that contains in database. The main characteristics of any cadastre registration system shall be transparent, quality and accessibility of information for landowners and land users.

## **5. Compliance of cadastre registration system in Ukraine with similar standards of EU**

Much attention in the scientific debate about building cadastre and registration system was paid to study and implementation on Ukraine territory of experience of countries with developed market economies, and the creation of such systems. However, none of foreign systems can be fully implemented in Ukraine, as the registration system reflects national traditions and mentality of nation, degree of economic development, national approach to registration of property and rights, especially identification of objects and rights identity, presence (or absence) of the Institute of notaries and state of completion of the creation (development) of national systems [Cherniaga 2011].

Over past ten years in Ukraine the accounting system and property rights registration system developed independently, being run by various levels of governmental and different agencies. This structure is inconsistent with the purposes of the real estate market requires a large and unnecessary costs as the state and property owners [Danilenko, Lyhohrud 2003].

According to the World Bank under the project “titling land ownership in rural areas and Cadastre development” unified cadastre and registration system within which conducts land cadastre and register rights to land and other property in one by the same rules shall be implemented in Ukraine . This corresponds to the initiative “Cadastre 2014”.

At present, our country is implementing two-component system: registration of rights to property and land cadastre, which are administered by the Ministry of Justice and the State Agency for Land Resources of Ukraine, which is enshrined in the law of Ukraine “State registration of immovable property rights and charges (as amended) and the law of Ukraine” and “State Land Cadastre”. According to the latest maintenance of law the administration of SLC conducts the State Agency for Land Resources of Ukraine. It is supposed to create cadastre mapping information in Internet with regime of open access for each user. Search, view, copy data cadastre, as reflected in the Internet will be free. According to the principle of “one window” the interaction of citizens with the state cadastre, i.e. communication with officials is shortened to minimum.

Law of Ukraine “State Registration of real estate rights and their encumbrances” in Ukraine provides for a uniform system of land rights registration and other real property and encumbrances. The system of rights state registration is central executive body of rights state registration– the Ministry of Justice of Ukraine, that realizes the governmental policy on state registration of rights and its territorial bodies, which are main body for rights state registration. State Holder registry is a specially authorized central executive body of state registration of rights – the Ministry of Justice of Ukraine.

Cabinet of Ministers of Ukraine “About information interaction of the body that carries out the state land cadastre and state registration” N 118 of 22.02.2012 approved procedure for providing information on registered land of state registration body rights and registered real rights to land authority conducting State Land Cadastre. This

Order regulates in detail the provision of information on registered land and determines the precise list of information to be transferred between agencies responsible for maintaining of State cadastre and registration of rights to immovable property. In addition, pursuant to the law “On State Land Cadastre” Cabinet of Ministers determined the order of the State Agency for Land Resources of Ukraine access to view cadastral maps.

The decision to build one or two-component cadastre and registration system is crucial prerequisite for the success of its operation and compliance with the requirements and principles of EU, since, as noted above, in many EU countries, there are two-component systems. In addition, for the countries with economies in transition, where the risk of corruption is high, there is crucial two-component system, because the formation and registration of real estate rights to them correspond to different organizations.

Also the question of funding cadastre registration system was raised. The exposure of the European Union specified cost recovery cadastre and registration system, but with the Law “About State Land Cadastre”, while voting was seized norm of self-sufficiency of the State Land Cadastre, however, does not exclude services paid by the State cadastral registrar. Therefore, the most important task of the SLC shall be removal of cadastral procedures and non-governmental agencies conceptual reorientation of cadastre for-profit and self-sufficiency to meet consumer needs in information about objects cadastral records. In addition, expenses of people seeking to register the ownership of land must include identification of the location areas, measurement limits areas, creating plans of land and buildings, etc., the cost of which is not specified in the law.

Building an effective cadastre and registration system is a long-term government investment in economy infrastructure. Efficient cadastre registration system should have the following characteristics, as simplicity, quality, timeliness, availability, reliability, safety and economic efficiency. It is important to ensure that integrity of the system in terms of involvement of different institutions organize high cooperation and formalizes data exchange, association database integration and accumulation of information. It follows that the land registry should be full basis for conducting sector cadastre (urban, forest, water, natural medicinal resources, natural areas resorts,

fauna, flora, territories and natural reserve fund of Ukraine) as is the case in other European countries through the creation of multi cadastre that combines large amounts of data from different areas and directions. However, now it should be noted the complete independence of these information resources maintained on a departmental basis and are combined into a single information system.

## 6. Conclusions

On the basis of European experience in creation, standardization and modernization of cadastral and registration systems presence trends in the transition to a single-component model of their construction are demonstrated.

It was proved that despite a European trend for Cadastre Registration System of Ukraine at this stage of development realization of a two-component model and to define principles of its creation is appropriate.

The basic eligibility criteria for the cadastre and registration system of Ukraine to the principles of building similar systems in EU: efficiency, accuracy and reliability, orientation guide, usability, efficiency and minimum maintenance costs. According to study it can be argued that Ukraine has made major steps toward unification of CRS and its compliance with these requirements, which is a key and important factor of European integration of Ukraine, responsible for strategic objectives and interests of national policies and prospects for its effective implementation.

In the future, Ukraine needs to develop legislation and institutional support of CRS so as to be in compliance with the norms and standards of the European Union and international law, and the process of adaptation of requirements of EU took place in accordance with the law of Ukraine "About national program for adaptation of Ukraine to the European Union" from 18.03.2004 N 1629-IV and taking into account national peculiarities. The strategic vision of the adaptation process must be clearly defined, including financial costs. Thus the authors see their promising direction for further research in the development of the methodology for operational efficiency analysis and monitoring existing and created the legislative framework aimed at the development and implementation of Ukraine CRS on each of the key stages.

## References

*Agreement on a Common European Economic Space*. Available from Internet: <http://www.europe.eu> (in Ukrainian).

Bogaerts, T.; Williamson, I.P.; Fendel, E.M. 2002. *The Role of Land Administration in the Accession of Central European Countries to the European Union*. Land Use Policy. N 19: 29–46.

*Cadastre registration system in Ukraine: current state and prospects*. 2011. Razumkov Centre analytical report. National Security and Defence. N 6: 2–27 (in Ukrainian).

Cherniaga, P.G. 2011. *Training Module "State Land Cadastre"*. SLC, "Issuance of Land ownership in rural areas and Cadastre Development". Kyiv. 184 p. (in Ukrainian).

Danilenko, A.S.; Lyhohrud, M.G. 2003. *Fundamentals introduction in Ukraine cadastre registration system*. Land Surveying Paper. N 1: 22–27 (in Ukrainian).

Fedorchenko, M. 2007. *The relationship between the state cadastre and rights registration: positive and negative aspects of different ways of situation development*. Round table "Development of Land Relations in Ukraine. Prospects for the agricultural land market". Kyiv. Available from Internet: <<http://www.myland.org.ua>>.

Larsson, Gerhard. 2002. *Registration of rights to land and cadastral systems*. Resources for land information and land management. V. Novgorod. 209 p. (in Russian).

Kauffman, J.; Steudler, D. *Cadastre 2014: a vision for a future cadastral system*. Available from Internet: <<http://www.swisstopo.ch/fig-wg71/Docs/Cad2014/toc.htm>>.

Kubah, A. 2011. *Inventory system or registry? What and for whom?* National Security and Defence. N 6: 44–47 (in Ukrainian).

Lyhohrud, M.G. 2001. *Automated State Land Cadastre of Ukraine (concept creation)*. Engineering geodesy. Kyiv, KNUCA. N 45: 123–141 (in Ukrainian).

Tretiak, A.M. 1999. *Land Registry XXI century*. Foreign and domestic views on the development of cadastre. Kyiv. 115 p. (in Ukrainian).

Tretiak, A. 2011. *Ukrainian paradoxes and problems of State Land Cadastre*. National Security and Defence. N 6: 52–55 (in Ukrainian).

**Т.В. Козлова<sup>1</sup>, Я.В. Бурдільна<sup>2</sup>, М.В. Письменна<sup>3</sup>. Відповідність кадастрово-реєстраційної системи України стандартам аналогічних систем країн ЄС**

Національний авіаційний університет, просп. Космонавта Комарова, 1, Київ, Україна, 03680

E-mails: <sup>1</sup>t\_kozlova@ukr.net; <sup>2</sup>yana91burdilnaya@mail.ru; <sup>3</sup>mashka91ne@mail.ru

Наведено головні тенденції розвитку та модернізації кадастрово-реєстраційних систем країн Європи. Проаналізовано сучасну практику їх стандартизації. Систематизовано вимоги ЄС щодо створення кадастрово-реєстраційних систем. Визначено основні критерії відповідності кадастрово-реєстраційної системи України аналогічним системам країн ЄС.

**Ключові слова:** законодавство; земельний кадастр; кадастрово-реєстраційна система; реєстрація прав; самоокупність; стандарти.

**Т.В. Козлова<sup>1</sup>, Я.В. Бурдильная<sup>2</sup>, М.В. Письменная<sup>3</sup>. Соответствие кадастрово-регистрационной системы Украины стандартам аналогичных систем стран ЕС**

Национальный авиационный университет, просп. Космонавта Комарова, 1, Киев, Украина, 03680

E-mails: <sup>1</sup>t\_kozlova@ukr.net; <sup>2</sup>yana91burdilnaya@mail.ru; <sup>3</sup>mashka91ne@mail.ru

Представлены основные тенденции развития и модернизации кадастрово-регистрационных систем стран Европы. Проанализирована современная практика их стандартизации. Систематизированы требования ЕС к созданию кадастрово-регистрационных систем. Определены основные критерии соответствия кадастрово-регистрационной системы Украины аналогичным системам стран ЕС.

**Ключевые слова:** законодательство; земельный кадастр; кадастрово-регистрационная система; регистрация прав; самокупаемость; стандарты.

**Kozlova Tatiana.** Candidate of Engineering. Associate Professor.

Department of Land Management and Cadastre, National Aviation University, Kyiv, Ukraine.

Eduacation: Kyiv Institute of Civil Aviation Engineers, Kyiv, Ukraine (1985).

Research area: research and analysis of principlless of land relations in their reformation stage.

Publications: 70.

E-mail: t\_kozlova@ukr.net

**Burdilna Yana.** Magister.

National Aviation University, Kyiv, Ukraine.

E-mail: yana91burdilnaya@mail.ru

**Pismenna Maria.** Magister.

National Aviation University, Kyiv, Ukraine.

E-mail: mashka91ne@mail.ru