International Journal Of Law And Criminology
(ISSN – 2771-2214)
VOLUME 04 ISSUE 02 PAGES: 42-46
SJIF IMPACT FACTOR (2021: 5. 705) (2022: 5. 705) (2023: 6. 584)
OCLC – 1121105677
Crossref doi Google Scholar WorldCat MENDELEY
Publisher: Oscar Publishing Services

OSCAR PUBLISHING SERVICES

Journal Website: https://theusajournals.com/index.php/ijlc

Research Article

THE ROLE OF 3D CADASTRES IN ENSURING THE INVIOLABILITY OF PRIVATE PROPERTY RIGHTS

Submission Date: February 06, 2024, Accepted Date: February 11, 2024,
Published Date: February 16, 2024
Crossref doi: https://doi.org/10.37547/ijlc/Volume04Issue02-07

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ABSTRACT

The article analyzes the possibilities of the history of the creation of a 3D cadastre - three-dimensional computer modeling. The author reveals the advantages of 3D cadastre over two-dimensional modeling and, based on the analysis of advanced foreign experience, analyzes the legal, institutional and technical aspects of the application of this type of artificial intelligence in the national cadastral system.

KEYWORDS

Artificial intelligence, 2D cadastre, three-dimensional modeling, GIS technologies, project "Cadastr-2014", best practices, legal regulation, land plot.

INTRODUCTION

The updated Constitution of the Republic of Uzbekistan has consolidated the norm on the inviolability of private property, according to which the owner cannot be deprived of his property except in cases and in accordance with the procedure provided for by law and on the basis of a court decision .

The legal basis of ownership of real estate is cadastral information, which includes environmental, legal and economic data about the object of the cadastre. The more reliable this information is, the higher the level of guarantee of the inviolability of property rights.

It is no secret that the reliability of cadastral data is directly related to the technologies used in its collection, processing, analysis, storage and provision. The most advanced technology is artificial intelligence, which has long been used in the foreign cadastre of technology in the form of three-dimensional computer modeling (3D cadastre).

A 3D cadastre is an image of an object in three planes, formed on a GIS technology platform. The main advantage of a 3D cadastre over a 2D cadastre is that it

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allows you to see the ground, aboveground and underground surface of the cadastral object. This type of cadastre allows you to prevent data loss for the entire period of its use, provides registration of plots, preserving the initial data on configuration, area and relief. These changes subsequently affect not only the land itself, but also nearby objects. In this case, the land plot acts as a basic unit for access and control of land use, infrastructure development. In addition, the 3D cadastre simplifies access to information. The technological basis of the 3D cadastre is 3D GIS, laser scanning, spherical panoramas, etc. These models appear both in a simplified (analytical map) and in a complex form (a set of calculated values). The application of this model expands the capabilities of cadastral systems by providing guarantees of property rights.

To date, more than 20 countries, including Sweden, Norway, Victoria and Queensland (Australia), Brunswick and British Columbia (Canada), and Shenzhen (China) have fully implemented 3D cadastres.

There is also a partial use of this cadastre, in particular, the Russian Federation has introduced a voluntary practice of implementing three-dimensional modeling based on an order, and in Sweden this model is used only within one or more land plots.

The application of a three-dimensional cadastre has three aspects: legal, institutional and technical. Let's look at each of these aspects.

This type of artificial intelligence technology is quite in demand in cadastral activities, therefore it is quite well studied in science. Scientific research in the field of three-dimensional cadastre began in the 90s of the last century, but they have gained special relevance over the past fifteen years.

The beginning of the practical application of 3D cadastres is associated with the implementation of the project "Cadastr-2014", designed for 1994-2014 on the initiative of FIG . As a result of this project, a lot of work was done to systematize the best practice of implementing 3D cadastres in the form of a separate work - "Best Practices 3D Cadastres. Extended version».

In Russian geodesic science, the possibilities of using three-dimensional modeling from a technical point of view have been studied to a certain extent, which cannot be said about legal research.

EU scientists have studied the application of the 3D cadastre in a fairly comprehensive manner.

In particular, Williamson And. he justified the need to switch to a three-dimensional cadastre , Ooster R. in his research revealed the advantages of a 3D cadastre over two-dimensional cadastres, highlighting its main and additional functions , in the collective work of Malaysian scientists, a hybrid version of a three-dimensional cadastre is proposed, combining the basic provisions of a two-dimensional cadastre with three-dimensional modeling , turkish researcher S.Motamadi highlights the main advantages of 3D cadastre , etc.

A separate issue is the study of the legal regulation of the use of 3D cadastre data as an object of artificial intelligence. Given the existence of different practices, there is still no single approach to this issue.

In particular, the first group of scientists proposes to regulate the use of artificial intelligence in the form of a 3D cadastre object concept, a separate regulatory act, as well as in the form of systematization of norms related to the use of artificial intelligence.

The second group of scientists substantiates the position of independent regulation of the legal status

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in the form of a separate legal act , the third group puts forward the idea of restrictive regulation , the fourth group of scientists considers the legal status of the 3D cadastre as a result of the interaction of public and private law , the fifth group of scientists puts forward the position of common property law , etc .

The most prominent proponents of the legal regulation of the use of the 3D cadastre by Van Oster, P. Stoter, J.Ploger, H. Thompson, R.Karkey justify the proposal on the need to recognize the 3D cadastre as an independent right along with such powers as to own, use and dispose .

Based on foreign practice, the following trends in the use of 3D cadastre can be identified:

1. the existence of a separate law regulating the application of the 3D cadastre. For example, China has a separate law on 3D cadastre, which, along with land plots in exclusive state ownership, registers buildings and structures;

2. There is no separate law, while amendments and additions have been made to the current legislation regulating the legal status of 3D cadastres. These countries include Australia (Queensland), Hungary, Sweden, the Netherlands, Poland, Turkey, etc. This system is very flexible by nature, as it is based on the use of land boundaries within a two-dimensional cadastre to generate information on a 3D cadastre object. However, there are disadvantages to this system. Thus, when generating information about one object within the 3D cadastre, information about several land plots within the 2D cadastre is used. This practice may fail in the future when the issue of legal recognition of 3D cadastres arises;

3. Despite its wide application in practice, the norms of current legislation do not allow the use of a 3D cadastre. In Greece and Cyprus, the use of 3D cadastre is contrary to the Civil Code.

An analysis of the foreign practice of legal regulation of the use of 3D cadastre shows the presence of a different approach.

In particular, Australia was one of the first countries to introduce 3D modeling in 1997 during the implementation of the first global cadastral project. Therefore, the information of the 3D cadastre has equal force on a par with 2D and 4D cadastral information. Paper cadastral information works in parallel with electronic information, while the first one has too many details, whereas 3D is just a graphic image. Thus, paper and digital cadastral information complement each other. All types of property rights can be registered in both 3D and 2D cadastres. In addition, three-dimensional modeling objects are singled out separately: bridges, underground spaces, parking easements, lease agreements, engineering networks, pipelines, stadiums, etc. A 3D plot can be an object of collateral, just like a regular plot, despite the fact that 3D cadastral information is not the last truth in the cadastre.

Argentine legislation is not ready to adopt a 3D cadastre, despite its widespread application in practice. In Austria, no matter how much they tried to completely switch to a 3D cadastre, the digitalization of the cadastre has not been fully completed. In Bulgaria, there is a partial application of 3D modeling, in Sofia a three-dimensional cadastre is considered necessary, and in other places it is not the main source of information, although legislation does not regulate this concept. The Canadian experience is distinguished by the daily updating of cadastral maps, books, reports, although in fact it is a multi-purpose cadastre, while there is no separate law on 3D cadastre, but the

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objects of the three-dimensional cadastre are separately regulated.

Thus, as foreign experience shows, certain technical and legal prerequisites are required for the full implementation of the 3D cadastre. These include the complete formation of cadastres, their digitalization, as well as equal regulation of the legal status of paper and 3D cadastral information.

As for the practical results of the implementation of 3D models in the field of inventories of natural resources of Uzbekistan, it should be noted that the creation of 3D models for certain types of minerals was envisaged back in 2020 within the framework of the cadastre of deposits, manifestations of minerals and man-made mineral formations.

Based on the above, it should be noted that the most optimal option for our country would be the gradual introduction of three-dimensional modeling in parallel with the operation of a two-dimensional cadastre with the previous complete set of cadastral data on the state of land, water, forest and subsurface resources and their complete digitalization.

REFERENCES

1. https://lex.uz/docs/6445147
2. Toshboeva Robiya. Cadastr-2014: results of implementation in Uzbekistan//The American Journal of Political Science Law and Criminology /2020/volume 04, p.56-61
3. http://www.gdmc.nl/3dcadastres/FIG_3DCad.pdf
4. Williamson, I. P., 1997, Strategic Management of Cadastral Reform – Institutional Issues, FIG Commission 7 Symposium on Cadastral Systems in Developing Countries, Penang, Malaysia.
5. Oosterom, P. Best Practices 3D Cadastres/ Extended version [Электронный ресурс] . /P. Oosterom //Delft, Netherlands,2018, http://www.gdmc.nl/,3D Cadastre/ The Theory of Evolution BIM 3D-7D. URL httrs//bimestimate.eu/en/the-theory-of-evolution-bim-3d-7d
6. S. HENDRIATININGSIH, Irawan SOEMARTO, Bambang Edhie LAKSONO, Iwan KURNIAWAN, Novi Kristina DEWI and Nanin SOEGITO, Identification of 3-Dimensional Cadastre Model for Indonesian Purpose Strategic Integration of Surveying Services FIG Working Week 2007 Hong Kong SAR, China, 13-17 May 2007 file:///C:/Users/Honor/Downloads/Identification_of_3Dimensional_Cadastre%20(1).pdf
7. Mohamed El- Mekawy, Jesper Paasch, Jenny Paulsson Integration of 3D Cadastre, 3D Property Formation and BIM in Sweden // 4th International Workshop on 3D Cadastres. 9-11 November 2014. Dubai, United Arab Emirates. P. 17-34.
8. Stoter, J. and Zevenbergen, J. 2001. Changes in the definition of property: A consideration for a 3D cadastral registration system. Proceedings of the FIG Working Week, Seoul, 2001. Accessed on 10 January 2013 at http://www.gdmc.nl/3DCadastres/literature/3Dcad_2001_01.pdf. Fendel, E. M. 2002. Registration of Properties in Strata: report on the Working Sessions. Digital report, accessed on 10 January 2013 at http://www.gdmc.nl/3DCadastres/literature/3Dcad_2001_05.pdf.; Karki, S., Thompson, R., McDougall, K., Cumerford, N. and van Oosterom, P. 2010. ISO land administration domain model and LandXML in the development of digital survey plan lodgement for 3D cadastre in Australia. Proceedings of the 2nd International Workshop on 3D Cadastres (pp. 65-84), 16-18 November 2011. Delft: TU Delft.
9. Stoter, J. and Zevenbergen, J. 2001. Changes in the definition of property: A consideration for a 3D cadastral registration system. Proceedings of the

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FIG Working Week, Seoul, 2001. Accessed on 10 January 2013 at http://www.gdmc.nl/3DCadastres/literature/3Dcad_2001_01.pdf.; Huml, M. 2001. How to define real estate: 2D or 3D? Legal view, conditions and experiences in the Czech Republic. Proceedings of the International Workshop on 3D Cadastres (pp. 293-299), The Netherlands: Delft University of Technology

10. Sandberg, H. 2001. Three-dimensional division and registration of title to land: Legal aspects. Proceedings of the International Workshop on 3D Cadastres, 2001, Delft, pp. 201-209.; Stoter, J. and Ploeger, H. 2003. Registration of 3D objects crossing parcel boundaries. Proceedings of 2003 FIG Working Week, Paris, France, April 13-17, 2003.; Tan, L. C. and Hussin, K. B. 2012. Establishing 3D Property Rights in Malaysia. Proceedings of the 2012 FIG Working Week, Knowing To Manage The Territory, Protect The Environment, Evaluate The Cultural Heritage, Rome, Italy, 6-10 May 2012. Retrieved from http://www.gdmc.nl/3DCadastres/literature/3Dcad_2012_03.pdf on 14 Jan 2013.
11. Navratil, G. 2012. Combining 3D cadastre and public law – an Austrian perspective. In P. Van Oosterom, R. Guo, L. Li, S. Ying and S. Angsüsser (eds.), Proceedings of the 3rd International Workshop on 3D Cadastres pp. 61-71, 25-26 October, Shenzhen, China 2012. Copenhagen, Denmark: International Federation of Surveyors.
12. Paulsson, J. 2012. Swedish 3D property in an international comparison. In P. Van Oosterom, R. Guo, L. Li, S. Ying and S. Angsüsser (eds.), Proceedings of the 3rd International Workshop on 3D Cadastres, Developments and Practices (pp. 23-40), 25-26 October 2012, Shenzhen, China. Copenhagen, Denmark: International Federation of Surveyors
13. Van Oosterom, P., Stoter, J., Ploeger, H., Thompson, R. and Karki, S. 2011. World-wide inventory of the status of 3D Cadastres in 2010 and expectations for 2014. Proceedings of the 2011 FIG Working Week, Bridging the Gap between Cultures, Marrakech, Morocco, 18-22 May 2011.
14. https://lex.uz/ru/docs/4435772