

# ROLE OF THE LA\_ExtValuation CLASS OF ISO 19152 STANDARD FOR LAND ADMINISTRATION SUPPORT

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**Key words:** Immovable Property Valuation; ISO 19152:2012 Land Administration Domain Model (LADM), LADM Valuation Module

## SUMMARY

According to the standard ISO 19152:2012 Land Administration Domain Model (LADM) provides the existence of external classes, such as LA\_ExtValuation and LA\_ExtTaxation. The 7<sup>th</sup> and 9<sup>th</sup> FIG commissions have created a working group to prepare a new edition of ISO 19152:2012 with the description of information models of mentioned classes. The first results in this field have been reported on the FIG-2017 working week in Helsinki. The working group's research is based on semantic structure modulation approach of "Knowledge Organization Systems and Services" (KOS), international spatial data, real estate valuation and measurement standards. Authors agree with this approach, but they also offer to use the fit-for-purpose principle in order to find the solution to the problem and consider the demand perspectives for the E-government services by using the LA\_ExtValuation information resource. In the article it is offered to consider the following services: a) services in estimated activity management and its quality monitoring in real time; b) services of using the results of previous real estate valuations for a new estimation of property market values for any date; c) on-line services of automatic express property valuation; d) services in the choice of assessment performers; e) information collecting services for valuation of the unregistered land and real estate objects and so on. It is shown that to achieve such goals it is necessary to solve a number of tasks, for instance: to create the state registration system of estimated activity results and its necessary legal basis; to create national technical system with necessary software, information and organizational support as a part of E-government infrastructure; to develop a monitoring and assessment methodology of evaluation activity quality, certain experts included. The decision of such tasks is relevant for many countries. In our opinion, these services will be demanded by a wide group of users. On one hand, it will allow to control evaluation activities with respect for the principles of publicity and transparency that will undoubtedly increase its quality. On the other hand – this instrument will become irreplaceable instrument for government, banks, realtors, experts in the field of the real estate based on objective property market data.

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## **1. INFORMATION RESOURCES OF VALUATION ACTIVITY: PROBLEM AREA**

The formal description of the problem area, which is called "Land administration", contains the standard ISO 19152:2012 "Land Administration Domain Model (LADM)". According to ISO 19152:2012 LADM includes the external class LA\_ExtValuation, designed to store data on the valuation of Real Property. LA\_ExtValuation is associated with the class "LA\_BAUnit", which is modeling the Real Estate objects. The existence of LA\_ExtValuation is explained by several issues.

First, the value of property is one of its characteristics. Secondly, it is characteristic, which is continuously changing. Value property information, obtained through individual or mass evaluation, is an indicator of the Real Estate market. It should be remained for further analysis, resolution of disputes and quality processes of territorial management and their monitoring.

Many countries have special registers or databases for storage the information about valuations and Real Property transactions, providing statistical data on the Real Estate market. For example, in Denmark – the register of transactions and valuation. In Belarus, Germany, Slovenia – the register of prices and transactions. In Australia, we can find registers of valuations (<http://property.nsw.gov.by>, <http://valuegeneral.nsw.gov.au>). In Russia, in 2017 the data bank of state cadastral valuation was created. The fund includes information and materials in the form of electronic documents used in determining the cadastral value, as well as information obtained during Real Estate market monitoring. In particular, copies of decisions on mass evaluation; list of Real Estate objects liable to mass evaluation; reporting documents on the results of the evaluation; information on the procedure and deadlines for appeals; the results of error correction, etc. Information and materials are included in the data fund within five working days from the date of their receipt. In 2018 Ukraine has started creation of the "Uniform register of Real Estate objects' value" formed by evaluation results. The register provides placement, creation, storage and publication of information about Real Estate objects and their value. Information in the register will be entered from valuation reports by subjects of evaluation activity using the authorized electronic platforms. Valuation report, which isn't recorded in the register, will be considered as invalid. At the certificate of transactions, for which the current legislation of Ukraine has provided obtaining by notaries the valuation report on assessment, they will check its records in this register.

International Association of Assessing Officers (IAAO) Technical Standards provide development of automatic evaluation systems in public and private sector using CAMA and AVM models. In some countries (Denmark, Germany, Spain, Sweden, Great Britain) AVM are

already used in many purposes of valuation (Bidanset, P). The European countries have created the European AVM Alliance. The Alliance includes private companies in Great Britain, the Netherlands, Switzerland and Norway. The Alliance has its own portal: <http://www.europeanavmalliance.org>. Automatic evaluation is more often applied for a mortgage. The current state of the AVM market becomes quite steady in Europe. There is a question, whether the results of automatic evaluation have to find reflection in valuation registers. The Royal Institution of Chartered Surveyors (RICS) has prepared special operating instructions for AVM in Great Britain. Mainly, for the taxation purposes. Appraisal Institute of Canada (AIC), the Republic Geodetic Authority (Serbia) have joined the AVM IAAO standards.

The results of Real Estate evaluation are gradually integrated into national spatial data infrastructure and displayed in the form of thematic maps (Peltola R. 2017).

The tendency of evaluation registers development is obvious, as the lack of the uniformity of their creation. Processes of evaluation registers creation and maintaining belong to various institutions. In some countries – to the State property funds, in other countries – to the Ministry of Finance, municipalities, National authority of cartography or cadaster.

Commission 7 (Cadastre and Land Management) and Commission 9 (Valuation and the Management of Real Estate) of International Federation of Surveyors (FIG) have created a working group for new ISO19152 edition preparation with the description of LA\_ExtValuation information model. The work group's results were reported on the Congress «FIG Working Week 2017 «Surveying the world of tomorrow – From digitalization to augmented reality», Helsinki, Finland, May 29–June 2, 2017 (Çağdaş, V., 2017). The background of research has created an approach of modeling the semantic structure of LA\_ExtValuation based on «Knowledge Organization Systems and Services» (KOS), international standards in the field of spatial data, in Real Estate valuation and in the measurement of its characteristics. In (Kara, A., 2017) the results of constructing the LA\_ExtValuation infologic model, the semantics of evaluation information, extending the role of LADM to the fiscal purposes are presented. The offered model is intended for storage the results of mass and individual evaluation. Authors have carried out inventory similarity and differences between property valuation systems in different countries with the respondents from Croatia, Cyprus, Denmark, Macedonia, the Netherlands, Slovenia, Turkey and the United Kingdom.

At the FIG congresses, the prospects for the development of information systems for valuation activities were repeatedly considered, for example (see Razzak, M.A., 2014).

Despite intensive research in the development of LA\_ExtValuation, there is still a number of unresolved problems, which are discussed in detail below.

## **2. THE PROBLEMS OF LA\_ExtValuation MODEL**

The authors agree with the proposed approaches to the LA\_ExtValuation model specification. However, it seems that for more accurate specification of this class, we must have better answers and recommendations on the following issues that have not yet been clearly defined.

1. In order to be sure of the information model, it is necessary to specify more precisely the services that this resource should provide. The composition and content of services, along with the standards, will inevitably effect the specification of the information model. It should be understood, who and why is interested in creating LA\_ExtValuation. Who needs the information and what information of LA\_ExtValuation is needed, what is the added value of this information?

2. Perhaps it is advisable to determine who should carry out the functions of the owner of it's business-processes, who will be the best operator of the automated LA\_ExtValuation maintenance system. In ISO 19152:2012 the register is defined as an external resource. Is it correct? If yes, then should we take care of the requirements for the semantic compatibility of LA\_ExtValuation and other state information resources? If not, then the LA\_ExtValuation class of the next revision of ISO 19152 might need to be treated as an internal LADM class.

3. Another question is what exactly should motivate subjects of valuation activity to interact with the conducting LA\_ExtValuation business-process owner? It seems that it is necessary to develop recommendations for the legal basis for the existence of LA\_ExtValuation. Should LA\_ExtValuation be considered as part of the E-government infrastructure and the national spatial data infrastructure? Should it be classified as open data and from what sources the register should be funded?

4. It has already been noted, now the trend is evident for evolution from the expert individual evaluation processes into the automatic assessment using the AVM models, pointed out by the IAAO. What will be the future of LA\_ExtValuation as it evolves? Should automatic evaluations be kept in the evaluation register? What is the basis for their accounting? Who should be responsible for the damage caused by such evaluation because of the inadequate quality of CAMA and AVM models or low quality of the data source?

The author's opinion according to the solution to these problems is given below.

## **3. SOLUTIONS FOR SOLVING PROBLEMS OF LA\_ExtValuation**

### **3.1. LA\_ExtValuation SERVICES**

It is represented, that the LA\_ExtValuation information resource has to provide the following services.

1. Information providing service about earlier executed valuations for future estimates. The register of valuations has to execute this service together with services of registers of prices in transactions. This service is good because LA\_ExtValuation may contains information about still unregistered land and real estate objects, data which are absent in LADM.

2. The service of national evaluation activity and its quality. For example, according to such indexes as the number of appeals and their reasons (the actual mistake at data collection, the requirement of elimination of discrimination in sphere of valuation, suspicion on inexact valuation); or the rating of valuator's professionalism (for example, on intensity of the executed valuations of different type, on intensity of appeals); or the demand for valuation purposes (alienation, expropriation, a mortgage, etc.)

3. Audit service of property transaction prices veracity for the purpose of judgment about possibility of using that prices in individual or mass property evaluation; audit service of new registered valuation result.

4. Valuation performer's choice service.

5. The service of automatic real time assessment of new Real Estate evaluations quality.

6. Web services, providing thematic spatial information in the cloud of the national spatial data infrastructure.

### **3.2. THE OWNER OF LA\_ExtValuation ADMINISTRATION PROCESS**

It was noted above, that the world practice of responsibility for property valuation and storage results is assigned to various institutions in different countries.

It is represented that the best owner of process of maintaining LA\_ExtValuation is the owner of process of Land Administration Domain Model maintaining (Real Estate cadaster and the register). Such recommendation is caused by several circumstances. First, what is the value determined by assessment? It is an attribute of a Real Estate object of class LA\_BAUnit, which is connected by relations of class LA\_RRR with subjects of civil law LA\_Party of the LADM model. Why this attribute has to be considered by external system? Secondly, if LA\_ExtValuation is considered as an internal class, then its legal regulation will be carried out by the same legislation, as the Real Property registration systems. Such approach doesn't concern the results of (Çağdaş, V., 2017), (Kara, A., 2017). However, such recommendation contradicts to the ISO 19152:2012 standard, which considers this class as an external resource. We recommend considering the status of this class not as LA\_ExtValuation but as LA\_Valuation at new edition of the standard.

## **.2. LEGAL FRAMEWORK OF LA\_ExtValuation**

We suppose that legal basis of LA\_ExtValuation (or LA\_Valuation) have to become the legislation of the Real Estate registration, but not the legislation on evaluation.

The concept of such legislation concerning LA\_ExtValuation has to provide the following provisions.

1. The contents of the valuation register is the result of state registration administrative procedures based on valuation documents.

2. Subjects of the state registration are valuers and the state Registrars of real property.

There is an alternative option. According to it subjects of the state registration are information intermediaries, authorized by professional organizations in the field of valuation, and the expert automated system of state registration in real time.

3. The statement and documents, provided by national valuation standards (the report, the decision of valuation, the act of valuation statement, etc.) have to become the basis of the state registration.

4. The state registration has to be refused, if submitted documents don't correspond to the accepted criteria. For example, contradict the maintenance of LADM; or they were presented by not authorized person; or submitted documents contradict requirements of the legislation; or the presented valuation result is blocked by express-audit of state registration system.

5. Property valuation becomes legal and significant only by results of its state registration (the moment of application filling or the moment of record entering into the register).

6. The damage liability, in case of valuation result, recognized as incorrect, bears the organization of state registration. Subsidiary responsibility is born by the valuator, the information intermediary or the organization which has recognized the result of valuation as qualitative.

7. Appeals to assessment and their termination are subject to state registration as encumbrance of the executed assessment. The applicant of the state registration of appeals in the corresponding administrative procedure – the administrative structure authorized to carry out appeal to assessment during certain time from the moment of submission of the appeal or court.

## **3.3. LA\_ExtValuation AND AUTOMATIC EVALUATION**

The rule has to be established by the legislation according to which the AVM models which are carrying out legal and significant estimates have to provide the guarantees established for example, the IAAO standards (IAAO, 2003 and IAAO, 2013b). In this case, it is possible to designate as subjects of registration, the models by means of web services with the systems, which are carrying out LADM maintaining. The IAAO standards have provided formation of reports by the AVM models, which have to be applied to the request for registration. The damage liability from the low-quality valuation which is beyond the certified guarantees has to be assigned to the system of registration, and subsidiary responsibility on the organization

certifying model. At the same time, the developer of model and the organization, which certified model, have to be various organizations.

### **3.4. LA\_ExtValuation AND OPEN DATA**

It is clear, that the benefit from LA\_ExtValuation will be only if data are announced as public. Another matter if LA\_ExtValuation services paid or free of charge have to be there. We suppose that it is expedient to divide data of LA\_ExtValuation into two types: metadata and valuation data. Services of access to metadata on which it is possible to receive data on existence of valuations, their methods, types of value, dates, etc. undoubtedly have to be free of charge. As concerns documents providing services, and perhaps also property values, which can be used for commercial purposes, there is no unambiguous opinion in this case.

### **3.5. LA\_ExtValuation AND VALUATION ACTIVITY MONITORING**

Any monitoring is a process of feedback of a control system. We believe that it is necessary to standardize a technique of quality assessment of valuation activity in real time with a support on LA\_ExtValuation. Time series of monitoring indexes have to remain in the register.

## **4. CONCLUSION**

1. We recommend considering the LA\_ExtValuation class as internal class in the new edition of ISO19152.
2. We recommend maintaining LA\_ExtValuation class within the existing State Real Property registration system using special administrative procedure.
3. We recommend creating a legal basis of the mentioned State registration administrative procedure within the existing Real Property registration Acts.
4. According to the tendency of society digitalization, we recommend to save data in LA\_ExtValuation in some cases after automatic valuation produced by legal AVM.
5. We recommend using the valuation register as a tool of valuation activity monitoring system.
6. We recommend including some additional attributes in the LA\_ExtValuation class. Attributes, connected with the State registration (for example, the applicant, dates filing of application and registration, ID of the registrar, etc.). Attributes, connected with automatic valuation (ID of AVM, developer ID; the organization, certified AVM; AVM accuracy guarantees; reports of AVM, etc.). Attributes, connected with monitoring of valuation activity (indexes, the rating of valuator, intensity and validity of appeals, indexes of valuation accuracy, etc.).

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