

Questionnaire for the development of ISO 19152:2012 LADM Valuation Module

The ISO 19152:2012 Land Administration Domain Model (LADM) presents a conceptual schema for the specification of property units and their legal and geometric characteristics recorded at cadastre and land register, and relates these datasets with other property related datasets (e.g. addresses, utility networks, building (units), valuation, taxation, land use, land cover) recorded at external registrations.

A recently initiated collaborative research aims at developing a LADM based international information model for one of these external registrations, namely in terms of a Valuation Module for the ISO 19152:2012 LADM. The purpose of this research is to define the semantics of valuation information maintained by public authorities especially for recurrent taxes on immovable property¹, and to extend the scope of LADM from a fiscal perspective to provide an information model that could be used to construct information systems for immovable property valuation. The preliminary results of this research were documented at the 11th 3D Geoinfo Conference².

This questionnaire is prepared as a part of methodology applied for the above-mentioned research which is also supported by FIG Presidency and Chair of FIG Commission 9 Valuation and the Management of Real Estate. The purpose of the questionnaire is to create a world-wide inventory that reveals commonalities and differences among valuation systems used for recurrently levied immovable property taxes. The result of the questionnaire is expected to provide an understanding of the situation of valuation systems, and will be used as source data for the elaboration of the LADM Valuation Extension Module.

Please reply the following questions, and contact us if you have any comments and suggestions:

Volkan Cagdas: volkan@yildiz.edu.tr

Peter van Oosterom: P.J.M.vanOosterom@tudelft.nl

Erik Stubkjaer: est@land.aau.dk

¹ Recurrent taxes on immovable property covers taxes levied regularly in respect of the use or ownership of immovable property. These taxes are levied on land and buildings, in the form of a percentage of an assessed property value based on a national rental income, sales price, or capitalised yield; or in terms of other characteristics of real property (e.g., size or location) from which a presumed rent or capital value can be derived. They can be levied on proprietors, tenants, or both; they can also be paid by one level of government to another level of government in respect of property under the jurisdiction of the latter (The OECD classification and interpretative guide 2015, <http://www.oecd.org/tax/tax-policy/oecd-classification-taxes-interpretative-guide.pdf>)

² For more information, see: <http://www.isprs-ann-photogramm-remote-sens-spatial-inf-sci.net/IV-2-W1/145/2016/>

Section A. General questions for property valuation systems in Slovenia

Questions	Responses
1. Please indicate the organizations responsible for valuation of properties for property taxation purposes through name in national language and English translation.	Geodetska uprava Republike Slovenije (GURS) The Surveying and Mapping authority of the Republic of Slovenia
2. What are the types of objects of valuation for property taxation (e.g. unimproved parcel, building)? Name and date of the ordinance to be listed.	The Property Taxation Law is being prepared and is not implemented yet. Types of objects of mass appraisal are classified in 21. valuation models: <ul style="list-style-type: none">- Valuation model for apartments,- Valuation model for houses,- Valuation model for garages,- Valuation model for restaurants and bars,- Valuation model for offices,- Valuation model for industrial buildings,- Valuation model for heavy industrial buildings,- Valuation model for vineyards,- Valuation model for agricultural buildings,- Valuation model for public use buildings,- Valuation model for other buildings,- Valuation model for construction land,- Valuation model for building land,- Valuation model for agricultural land,- Valuation model for wooded land,- Valuation model for other land,- Valuation model for power plants,- Valuation model for mines,- Valuation model for harbours,- Valuation model for gas stations,- Valuation model for special real estate.
3. Please mention value type (e.g. market value, tax value, capital value) used by the responsible organization for property taxation?	For property taxation is used generalized market value.
4. Please mention the public registry datasets (e.g. cadastre, land registry, building registry) which are used in valuation procedures, and their mutual functions?	<ul style="list-style-type: none">- Land Cadastre- Building Cadastre- Real Estate Register- Cadastre of Public Infrastructure- Land Register- Real estate valuation database,- Real estate market database.
5. Which methods are applied for collecting market data needed for valuation?	Ministry of Finance and Real Estate agencies report market data into Real Estate Market database, which is maintained and updated by The Surveying and Mapping authority of the Republic of Slovenia.
6. Is there any special valuation database for storing datasets <i>used in</i> (e.g. property characteristics) or <i>produced with</i> (e.g. sales statistics) valuation procedures? If yes, please give the name of database, indicate responsible	Real Estate valuation Database is a collection of data valuation models and documents describing the procedures of mass valuation. Responsible authority: The Surveying and Mapping

authority, and describe its content.	authority of the Republic of Slovenia Content: It describes models of valuation for different types of objects. and documents describing the procedures of mass valuation. With the help of models and methods of mass valuation are calculated the generalized market value for all real estates in Slovenia.
7. Is there a web-based dissemination of valuation information? If yes, please indicate which data (e.g. sales statistics) is open to the public.	Yes. Web application “Public access into Real Estate data” and Collection of Real Estate valuation (ZVN). Data open to the public: Value of real estate, Valuation models, Value zones, Value tables and Value factors.
8. How frequently are general revaluations made?	Real estate valuation models are checked on the basis of data on the real estate market, at least every 4 years.
9. Is there a system of indexation affecting property value between regular revaluations?	Yes. Value zones and value levels.
10. Do taxpayers have a right to appeal against the appraised values? If yes, please indicate how disputes are resolved.	Yes, at the moment taxpayers could appeal against data about real estate used for valuation, but they could not complain against values. This process is currently under revision and it will be modified in next law changes. Right to appeal is also allowed in case of special occasions, which increase (pools, villas, ...) or reduce (damage on property, close to the main roads, micro location, ...) the value of property.

Please continue with Section B, if mass appraisal procedures are applied in your country for immovable property taxation. If single property appraisal methods are used -even if as complementary part of mass appraisal, please answer questions given in Section C.

Section B - Questions for mass appraisal procedures in Slovenia

Questions	Responses
1. Do you have a (computer aided) mass appraisal system in your country? If yes, please indicate also responsible authorities.	Yes. The responsible authority is The Surveying and Mapping authority of the Republic of Slovenia
2. Is there any other use of the mass appraisal system than property taxation?	Yes. <ul style="list-style-type: none"> - verification of the tax base for assessment of taxes on income and tax assessment on property sales. - for the purposes of assessing eligibility, approval of social assistance, scholarships, ... - monitoring of real estate price index for the entire territory of Slovenia. - Statistical Office of Slovenia

	<ul style="list-style-type: none"> - Banks - Owner or buyers of Real Estates - ... odkupi pri državnih investicijah ?
3. Which CAD/GIS/CAMA (Computer-aided design / Geographic information system / Computer Assisted Mass Appraisal) software packages are used in mass appraisal?	In mass appraisal they use their own (in-house) mass appraisal calculation software.
4. Which geographical or spatial datasets are used in mass appraisal? Please describe the source of these datasets.	<ul style="list-style-type: none"> - Land Cadastre - Building Cadastre - Cadastre of Public Infrastructure - Register of spatial units and addresses - Land use - Planned land use - Actual land use
5. Which geographic or spatial analysis methods (e.g. visibility analysis, proximity analysis) are applied in mass appraisal?	<p>Visibility analyses are not implemented.</p> <p>Proximity analyses are not implemented.</p>
6. Is three-dimensional (3D) data used in mass appraisal? Please describe source of 3D data (e.g. floor plans). Does Valuation objects include condominium, strata title, freehold flats or other 3D units.	No. 3D data is not directly used. But building parts (i.e. apartments) are included in the mass appraisal system on the base of attribute data.
7. Is there any relationship between the CAMA system and other public registers (e.g. cadastre, land registry, building registry, ...)?	Yes. Land Cadaster and Building Cadaster data is a direct input to mass appraisal system. The value of RE is assigned to properties registered in Land Cadaster and Building Cadaster.
8. Please describe the statistical models (e.g. additive, multiplicative) applied in mass appraisal according to type or functions of properties?	Valuation model (valuation zones, valuation tables, additional valuation factors) were created using statistical models (mainly regression analyses).
9. Please indicate statistical analysis methods (e.g. multiple regression analysis, artificial neural network) applied in mass appraisal?	A multiple regression analysis is used for creation and update of valuation zones, valuation tables and additional valuation factors.
10. Which land use characteristics (e.g. land use zones) are used as variables in mass appraisal models? Please describe the source(s) of these characteristics.	Planned land used is used for the classification of land.
11. Which environmental and locational characteristics (e.g. location nuisance, distance to points of interest / POIs, environmental risks) are used as variables in mass appraisal models? Please describe the source(s) of these characteristics.	<p>Main land location characteristics:</p> <ul style="list-style-type: none"> - Location (defined by zoning) - distance from electrical power lines, highways and railways, ...
12. Which building or improvement characteristics (e.g. number of unit, construction type and material) are used as variables in mass appraisal models? Please describe the source(s) of these characteristics.	<p>Main building characteristics:</p> <ul style="list-style-type: none"> - type of property (apartment, house, commercial property, agricultural land, ...), - effective age (calculated on the basis of the construction, reconstruction of facades, restoration of windows in renovation installation, renovation of roofs), - the quality of the property (the number

	<p>of dwellings in the block, water, electricity, heating type)</p> <p>The source of these characteristics is Real Estate Registry.</p>
13. Does valuation legislation prescribe an investigation into the general quality or performance analysis (e.g. 'ratio study') of the mass appraisal system? If yes, please describe the indicators used in the performance analysis.	No.
14. Please indicate whether single property appraisal is applied for improving accuracy of mass appraisal estimations.	No.

Section C. Questions for single property valuation procedures in Slovenia

Questions	Responses
1. Which valuation methods are used for single property appraisal for property taxation? Please relate valuation methods with the type of valuation objects (e.g. sales comparison approach for unimproved parcels).	Valuation methods for single property appraisal are not used for property appraisal in Slovenia. Valuation methods for single property appraisal are used for appraisers to assess the market value of single property or specify the price that would be achieved in the real estate market.
2. Which geographical or spatial datasets are used for single property appraisal? Please describe the source(s) of these datasets.	/
3. Which legal property characteristics (e.g. property rights) are taken into account for single property appraisal? Please describe also the source of these characteristics.	/
4. Which land use characteristics (e.g. land use zones) are taken into account for single property appraisal? Please describe also the source(s) of these characteristics.	/
5. Which environmental and locational characteristics (e.g. location nuisance, distance to POIs, environmental risks) are taken into account for single property appraisal? Please describe the source(s) of these characteristics.	/
6. Which building or improvement characteristics (e.g. number of unit, construction type and material) are taken into account for single property appraisal? Please describe the source(s) of these characteristics.	/
7. If there is a special valuation database, please indicate which sales comparison method related data (e.g. comparable property identifiers, monetary adjustment for time, physical differences) are kept in this database.	/
8. If there is a special valuation database, please indicate which cost method related data (e.g. type and source of cost price, chronological age, depreciations) are kept in this database.	/
9. If there is a special valuation database, please indicate which income valuation method related (e.g. gross income, net income, capitalization rate, discount rate) are kept in this database.	/

Section D. Information concerning respondent(s)

Questions X..Y have been answered by	Respondent
1. Name	mag. Aleš Šuntar
2. Affiliation / position	Director at Igea d.o.o.
3. Country	Slovenia
4. E-mail	ales.suntar@igea.si
5. Comments	

Questions Z..A have been answered by	Respondent
1. Name	
2. Affiliation / position	
3. Country	
4. E-mail	
5. Comments	