

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 Stubkjær: 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 XX country

Questions	Responses
1. Please indicate the organizations responsible for valuation of properties for property taxation purposes through name in national language and English translation.	<i>Ministarstvo financija - Porezna uprava / Ministry of Finance – Tax Administration</i>
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.	<p>The taxation of real property in the Croatian tax system is carried out through taxation of real property transfer tax¹ (all common types of real property: unimproved agricultural, forest or building parcel, buildings or parts of the buildings: residential, commercial or other buildings) and real property ownership taxation.</p> <p>Periodical taxation² of real property ownership includes only one, relatively small, category of real property – holiday home tax (periodical utility fee).</p> <hr/> <p>¹ Real Estate Transfer Tax Act (Official Gazette No. 69/97, 26/00, 127/00, 153/02, 22/11, 43/14)</p> <p>¹ The Value Added Tax Act (Official Gazette No. 73/13)</p> <p>^{1,2} General Tax Act (Official Gazette No. 147/08, 18/11, 78/12, 136/12, 73/13, 26/15, 44/16)</p> <p>² Act on the Financing of Units of Local and Regional Self-government, (Official Gazette No. 117/93, 69/97, 33/00, 73/00, 127/00, 59/01, 107/01, 117/01, 150/02, 147/03, 132/06)</p> <p>² Decision of the city/municipality on urban/municipal taxes</p>
3. Please mention value type (e.g. market value, tax value, capital value) used by the responsible organization for property taxation?	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?	<u>Cadastral dataset</u> is used in order to spatially identify real property and its boundaries. <u>Land Book data</u> , based on cadastral identification of real property, is identifying legal rights, restrictions and responsibilities on the property.
5. Which methods are applied for collecting market data needed for valuation?	Querying the eProperty (In Croatian: <i>eNekretnine</i>) database in order to gather needed data to use Sales Comparison Approach or checking the current prices of materials and installation costs in order to use Cost Approach Method.

<p>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 authority, and describe its content.</p>	<p><u>Yes, there is eProperty database</u> (In Croatian: <i>eNekretnine</i>). Database stores sales statistics together with some additional property characteristics (type of property, sale date, area, year of re/construction, state of infrastructure, etc...). The database is developed by Ministry of Construction and Physical Planning (In Croatian: <i>Ministarstvo graditeljstva i prostornog uređenja</i>). The data is collected by registration of real property tax data by Ministry of Finance – Tax Administration.</p>
<p>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.</p>	<p>Yes, it supports both alphanumerical and spatial querying. It is available only to authorized users: authorized valuers and property agents.</p>
<p>8. How frequently are general revaluations made?</p>	<p>It is not known.</p>
<p>9. Is there a system of indexation affecting property value between regular revaluations?</p>	<p>No.</p>
<p>10. Do taxpayers have a right to appeal against the appraised values? If yes, please indicate how disputes are resolved.</p>	<p>Yes, taxpayer can appeal against the appraised value. According to Real Estate Transfer Tax Act, Tax Administration is authorized to make property re-valuation. There are clearly defined jurisdictions for dispute resolution if the appeal is not solved on the first instance.</p>

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 XX country

Questions	Responses
1. Do you have a (computer aided) mass appraisal system in your country? If yes, please indicate also responsible authorities.	No
2. Is there any other use of the mass appraisal system than property taxation?	/
3. Which CAD/GIS/CAMA (Computer-aided design / Geographic information system / Computer Assisted Mass Appraisal) software packages are used in mass appraisal?	/
4. Which geographical or spatial datasets are used in mass appraisal? Please describe the source of these datasets.	/
5. Which geographic or spatial analysis methods (e.g. visibility analysis, proximity analysis) are applied in mass appraisal?	/
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.	/
7. Is there any relationship between the CAMA system and other public registers (e.g. cadastre, land registry, building registry, ...)?	/
8. Please describe the statistical models (e.g. additive, multiplicative) applied in mass appraisal according to type or functions of properties?	/
9. Please indicate statistical analysis methods (e.g. multiple regression analysis, artificial neural network) applied in mass appraisal?	/
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.	/
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.	/
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.	/
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.	/
14. Please indicate whether single property appraisal is applied for improving accuracy of mass appraisal estimations.	/

Section C. Questions for single property valuation procedures in XX country

Questions	Responses
<p>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).</p>	<p><u>Sales Comparison Approach</u> is used to determine market value of unbuilt or built-up building parcels. <u>Cost Approach</u> is used if there is not enough comparable data to make sale comparison or it is not possible to determine income on commercial property using <u>Income Capitalization Approach</u>.</p>
<p>2. Which geographical or spatial datasets are used for single property appraisal? Please describe the source(s) of these datasets.</p>	<p><u>Cadastral data</u> is used to identify property spatial extent (Cadastral database is maintained by State Geodetic Administration and available through web portal: www.geoportal.dgu.hr). <u>Physical planning documentation</u> is used in order to determine zoning, infrastructure and other regulations (available through Physical Planning Information System: ispu.mgipu.hr, maintained by Ministry of Construction and Physical Planning).</p>
<p>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.</p>	<p>Property rights and connected restrictions are taken into account – they are registered in Land Book.</p>
<p>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.</p>	<p>Physical planning documentation datasets are used in order to determine zoning, infrastructure and other regulations (available through Physical Planning Information System: ispu.mgipu.hr, maintained by Ministry of Construction and Physical Planning).</p>
<p>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.</p>	<p>The environmental/locational characteristics web services are available, but they are mostly not taken into account for single property appraisal. Influences of different POI depends on the experience of the appraiser.</p>
<p>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.</p>	<p>Building or improvement characteristics are examined and valued on the site by the appraiser.</p>
<p>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.</p>	<p>In the eProperty database, sales prices and other property identifiers are stored: total area, type of property, date of sale price, year of construction.</p>
<p>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.</p>	<p>In the eProperty database, types and sources of cost price are not stored. However, year of construction and some other data important for calculation of price depreciations are stored.</p>
<p>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.</p>	<p>In the eProperty database, there are fields which concerns income rates, which are available only for commercial property types.</p>

Section D. Information concerning respondent(s)

Questions A.1..10, C.1..9 have been answered by	Respondent
1. Name	Hrvoje Tomić
2. Affiliation / position	Assistant Professor at University of Zagreb Faculty of Geodesy, Chair of Spatial Information Management
3. Country	Croatia
4. E-mail	htomic@geof.hr
5. Comments	