

## 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 property<sup>1</sup>, 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 11<sup>th</sup> 3D Geoinfo Conference<sup>2</sup>.

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:

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<sup>1</sup> 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>)

<sup>2</sup> 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 England

Questions	Responses
1. Please indicate the organizations responsible for valuation of properties for property taxation purposes through name in national language and English translation.	Valuation Office Agency
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.	A unit of occupation, known as a 'hereditament'
3. Please mention value type (e.g. market value, tax value, capital value) used by the responsible organization for property taxation?	For non-domestic hereditaments, 'Rateable value', a statutory definition of market rent. Domestic dwellings are assigned to value bands, based on their 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?	The 'Rating List' for non-domestic hereditaments and the 'Council Tax List' for domestic dwellings.
5. Which methods are applied for collecting market data needed for valuation?	Various. The Government has the power to obtain information on lease transactions from non-domestic occupiers. Dwelling transaction prices are publicly available from the land registry. Information on taxable units is also collected from the local authorities.
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.	Yes. It is maintained by the Valuation Office Agency (VOA). I am not sure of its name.
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 there is. Refer to the VOA website. There are separate dissemination portals for non-domestic and domestic units.
8. How frequently are general revaluations made?	For non-domestic hereditaments it is supposed to be every five years and this has been the case since 1990 except the 2015 revaluation was delayed until 2017 (to move it away from the general election). Council Tax bands have not been reassessed since their introduction in 1993.
9. Is there a system of indexation affecting property value between regular revaluations?	Not affecting property values but the amount paid by tax payers does vary year

	to year because for non-domestic hereditaments the Uniform Business Rate (UBR multiplier) is indexed and for domestic dwellings local authorities can raise the payment for each band each year (but capped).
10. Do taxpayers have a right to appeal against the appraised values? If yes, please indicate how disputes are resolved.	Yes. Firstly by negotiation, then Valuation Tribunal, then the courts.

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 England

Questions	Responses
1. Do you have a (computer aided) mass appraisal system in your country? If yes, please indicate also responsible authorities.	Not in the sense that you may be thinking but there are various algorithmic routines for valuing different types of land and property.
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.	
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### Section C. Questions for single property valuation procedures in England

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).	Comparison, income and cost approaches are used. The list of different types of taxable units is very long. A good place to start would be my website ( <a href="http://realestateappraisal.co.uk/?page_id=2447">http://realestateappraisal.co.uk/?page_id=2447</a> ). For the detail on non-domestic land and property types and methods see <a href="https://www.gov.uk/government/publications/valuation-office-agency-rating-manual">https://www.gov.uk/government/publications/valuation-office-agency-rating-manual</a>
2. Which geographical or spatial datasets are used for single property appraisal? Please describe the source(s) of these datasets.	Ordnance Survey large scale (1:2,500 and 1:1,250) mapping is used.
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.	Anything that is considered value significant. Given that non-domestic hereditaments are assessed on the basis of rental value, lease details are very important when analysing comparable evidence.
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.	There are no 'land use zones' as such. The extant planning permission is obviously the main consideration here.
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.	Locational factors are certainly taken into account but reflected in the analysis of comparable evidence.
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.	Anything that is considered value significant. Again, as with legal characteristics, this is important when analysing comparable evidence but not so important when assessing value as the statutory definition makes simplifying assumptions regarding legal and physical 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.	There is but it is an internal VOA database.
8. If there is a special valuation database, please indicate which cost method related data (e.g. type	As above

<p>and source of cost price, chronological age, depreciations) are kept in this database.</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>As above</p>

#### Section D. Information concerning respondent(s)

All questions have been answered by	Respondent
1. Name	Pete Wyatt
2. Affiliation / position	Professor of Real Estate Appraisal
3. Country	England
4. E-mail	<a href="mailto:p.wyatt@reading.ac.uk">p.wyatt@reading.ac.uk</a>
5. Comments	A few years ago I was involved in some projects that sought to link the information systems maintained by the VOA (responsible for tax valuation) with those maintained by local authorities (responsible for tax billing) and encountered many of the information processing issues that you raise in your paper.

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