

## 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/TV-2-W1/145/2016/>

## Section A. General questions for property valuation systems in GREECE

Questions	Responses
1. Please indicate the organizations responsible for valuation of properties for property taxation purposes through name in national language and English translation.	Ministry of Finance of the Hellenic Republic (the Ministry has adopted a system for mass valuation in 1982, by the Law 1249/1982)
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.	Undeveloped land parcel, building, and individual units/apartments inside a building  Law 1249/1982
3. Please mention value type (e.g. market value, tax value, capital value) used by the responsible organization for property taxation?	Tax values as these are defined by the Ministry of Finance. The Ministry defines the "initial" tax value for each zone and then there are standardized forms with more detailed parameters that help the owners to calculate the tax value of their property according to those parameters and coefficients. e.g., age, size, type of construction material, floor, etc.
4. Please mention the public registry datasets (e.g. cadastre, land registry, building registry) which are used in valuation procedures, and their mutual functions?	-
5. Which methods are applied for collecting market data needed for valuation?	Tax offices used to collect some data through the comparative sales data method. <b>Nobody knows</b> how the Ministry defines the "initial" value for each zone. <b>There is NO access to that information.</b> The Ministry has its own political criteria for the definition of the "initial" tax value for all tax zones.
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.	The database of the Ministry of Finance named TAXIS system. The information is collected by self-declarations that all legal entities and individuals are obliged to submit together with their annual income declaration. It includes info about real properties and their tax value as this is calculated by the property owners according to the standardized forms provided by the Ministry of Finance.

<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>The Bank of Greece since 2008 keeps regular records with the assessed values of the properties (as assessed by all banks) and the Hellenic Statistical Service keeps records with information about the rent prices, number of sales, statistics on construction activity, construction costs, etc.</p>
<p>8. How frequently are general revaluations made?</p>	<p>Not regularly</p> <p>The system was initiated in 1982, and revised in 2001, 2006, 2007, 2016.</p> <p>In 1988 it was decided that the system would be revised every two years but this project has not been realized (there is no information available about a revision between 1988-2001, maybe it happened in 1993)</p> <p>Prices were then revised in 2001, 2006, and again in 2007 and was based on a market value research effectuated in 2005.</p> <p>According to the findings of our research there was a significant discrepancy between market prices and tax values.</p> <p>As a consequence of this the gradual increase of tax values in 2006 and 2007 was decided. Tax values remained as such until 2016, when the most recent revision happened.</p> <p>Since 2000, the mass valuation tax system is also applicable for the assessment of land parcels in the rural, unplanned areas.</p> <p>The system covers the entire Greek territory and its calculation base is the initial tax value, which is defined as the value per square meter of non-irrigated agricultural land with annual crops, not facing a national, provincial nor municipal road, and is located at a distance greater than 800 meters from the sea. For any other cases this initial tax value is modified accordingly.</p>
<p>9. Is there a system of indexation affecting property value between regular revaluations?</p>	<p>No. The economic crisis started in 2007. Since then the tax values were kept the same despite the fact that market values were dramatically decreased. In 2016 the</p>

	Ministry changed the tax values but again based on political criteria and not on the market values. No revaluation of properties happened.
10. Do taxpayers have a right to appeal against the appraised values? If yes, please indicate how disputes are resolved.	Yes, but through court appeals which are time and cost consuming. Several thousands of appeals are recorded in 2016 though. Disputes follow a judicial procedure.

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 GREECE

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 Ministry of Finance, to be used for taxation purposes.  PROPINDEX software is a mass appraisal system used by the banking sector. (Propindex company was formed by the banks to provide a mass appraisal system only for retail mortgaged properties.)
2. Is there any other use of the mass appraisal system than property taxation?	Yes, tax values are taken into account in cases of land expropriations, and are used to estimate the compensation as initial values, but since tax values differ significantly from market values they do not have much usability. The final compensation for expropriation is always defined by the court for each property individually.
3. Which CAD/GIS/CAMA (Computer-aided design / Geographic information system / Computer Assisted Mass Appraisal) software packages are used in mass appraisal?	NONE for taxation
4. Which geographical or spatial datasets are used in mass appraisal? Please describe the source of these datasets.	NONE
5. Which geographic or spatial analysis methods (e.g. visibility analysis, proximity analysis) are applied in mass appraisal?	Banks use proximity analysis
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.	Yes. Everything is standardized in forms and each parameter (e.g., floor) has a coefficient. The "initial" tax value is multiplied by those coefficients, in order to calculate the final tax value for each property.
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?	Multiplicative system used only by the Banks
9. Please indicate statistical analysis methods (e.g. multiple regression analysis, artificial neural network) applied in mass appraisal?	Multiple Regression Analysis used only by the Banks
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.	Urban planned areas, unplanned areas, forests, agricultural land (irrigated/non-

	irrigated), coastal zone, archaeological sites, pastures, etc.
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.	Distance from the sea, the location of property from the basic road network and if the property is within a forest. Source is mainly the declaration of the property owner (for the unplanned areas). For the planned areas the zones are defined by the Ministry
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.	Zone basic value, Floor, construction material, central heating, elevator, age, if the façade of the parcel faces more than one roads, etc. And other special conditions such as if the building is damaged by earthquake, if the property is under expropriation, etc.
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 GREECE

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).	<b>No single property appraisal is used for property taxation. Single appraisals are made for individual purposes privately.</b> E.g., investment, transaction, conflicts, court cases, etc.
2. Which geographical or spatial datasets are used for single property appraisal? Please describe the source(s) of these datasets.	none
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.	Ownership, co-ownership, construction permit, any illegalities in construction, severe land use restrictions by the state, etc. Such info is derived from the relevant agencies
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.	Archaeological, forest, coastal zone, city plan, or any other important restriction. Sources: relevant state agencies.

<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>Anything that may influence the value of the real estate (access to transport network, schools, hospitals, other services, protected areas, natural resorts, parks, expensive or important neighborhoods, brownfield areas, dilapidated areas, etc)</p> <p>Sources: On-site inspections, state agencies, private sources, research, etc.</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>Size, floor, faces to a road/square/park, number of units, central heating, individual heating, elevator, management, construction condition, material, age, construction regulations/code, special architectural characteristics/ recent renovation, view, energy efficiency improvements, permits, etc.</p> <p>Sources: on site visit, owner, manager of the building, local authorities, etc.</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>For the system of the banking sector, comparable data about real transaction prices are derived either from real estate agencies or notaries; comparable identifiers and monetary adjustment for time, are also recorded.</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>For the Bank system all related data are recorded e.g., construction costs, depreciations, rents, transaction data, etc</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>All recognized by international valuation standards and methodologies such as gross income, net income, capitalization rate, DRC, etc. are used depending on the type of property.</p>

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

<b>Questions X..Y</b> have been answered by	<b>Respondent</b>
1. Name	Potsiou Chryssy
2. Affiliation / position	Academic Professor NTUA
3. Country	Greece
4. E-mail	chryssy.potsiou@gmail.com
5. Comments	In collaboration with Greek appraisers 1. Vassilis Konistis, vkonistis@gmail.com 2. Maria Filippakopoulou maria.filippakopoulou@gmail.com

<b>Questions Z..A</b> have been answered by	<b>Respondent</b>
1. Name	Potsiou Chryssy
2. Affiliation / position	Academic Professor NTUA
3. Country	Greece
4. E-mail	chryssy.potsiou@gmail.com
5. Comments	In collaboration with the above Greek appraisers