

FIG
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6-11 May 2018, İstanbul

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EMBRACING OUR SMART WORLD WHERE THE CONTINENTS CONNECT:
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6-11 May 2018, Istanbul

Towards Turkish LADM Valuation Information Model Country Profile

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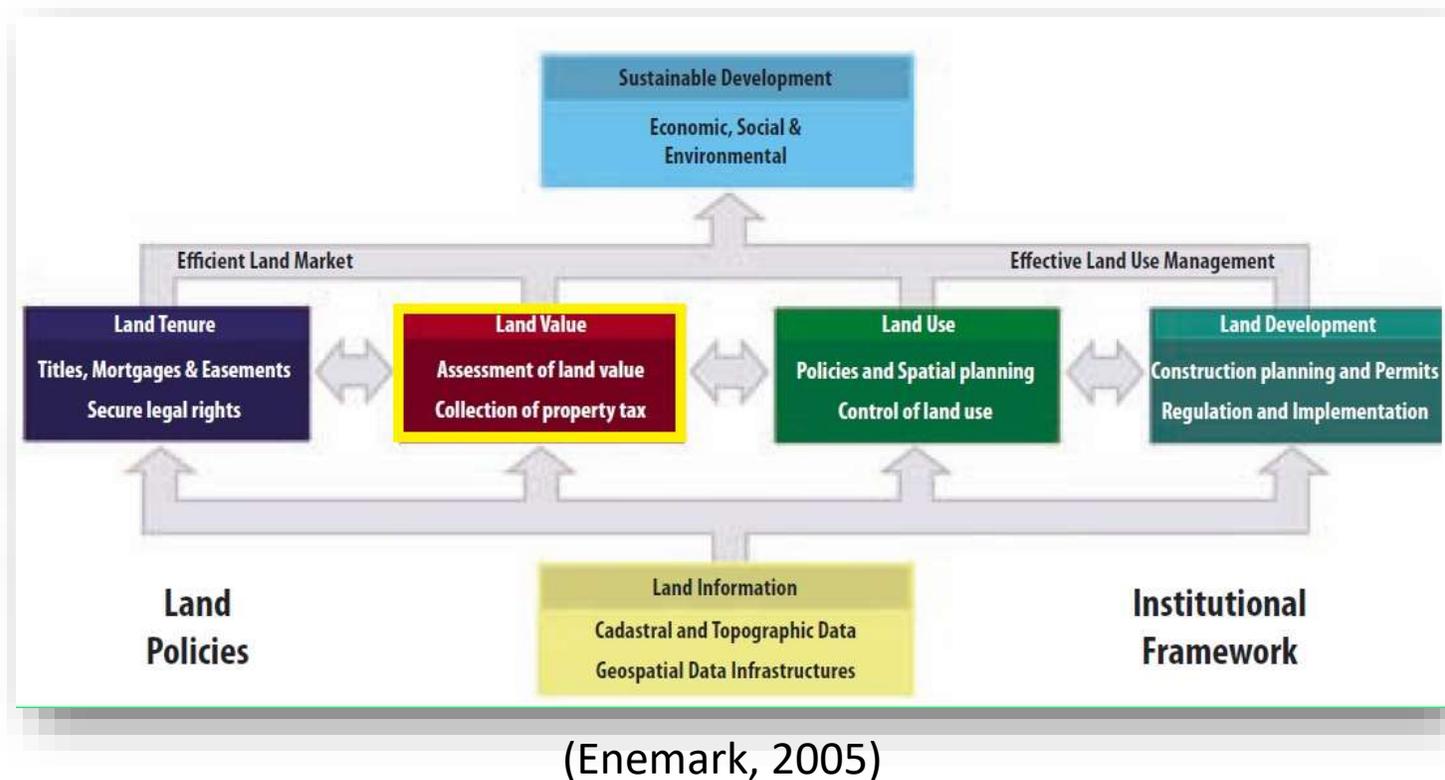


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Land Administration and Valuation

- **Land administration** is the processes of determining, recording and disseminating information about the ownership, **value** and use of land (FIG, 1996).
- There is no **internationally accepted information model** that defines the **semantics of property valuation registries** and specifies semantic relations amongst valuation related registries.
- But there is one for LA: LADM



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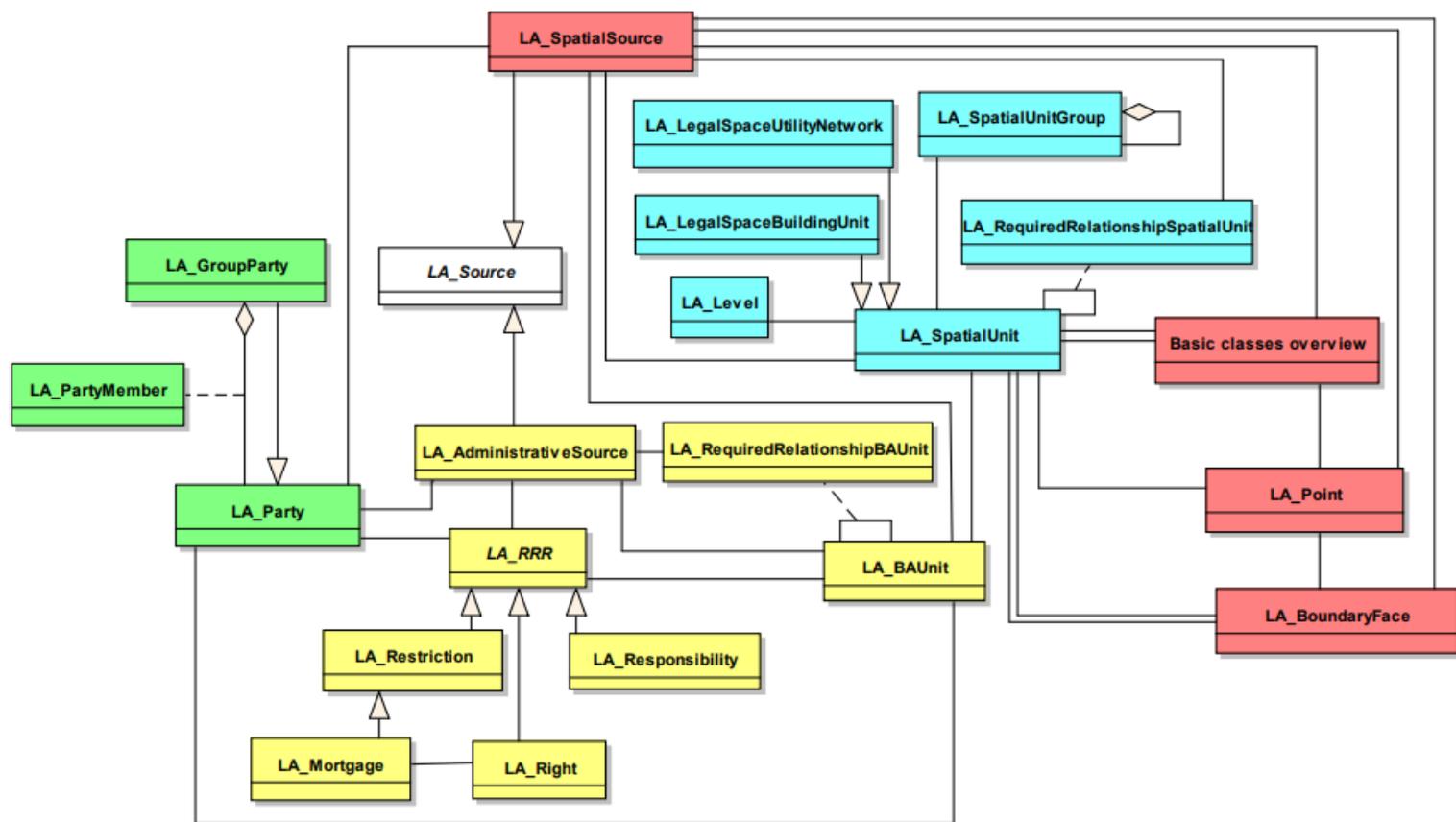


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Land Administration Domain Model (LADM)

- 19152:2012 Land Administration Domain Model (LADM)** is based the relationships between 'people–land'. It is built upon the the concepts of the **continuum of land rights**. There are 3 packages: **Parties** (people and organisations); **Basic administrative units** and **RRR** (ownership rights); **Spatial units** (parcels, and the legal space of buildings and utility networks) with a sub package for surveying, and representation (geometry and topology) (Lemmen et al., 2015).
- Not only specifies semantics of LA related registries but also relations between them.



(Lemmen et al., 2018)

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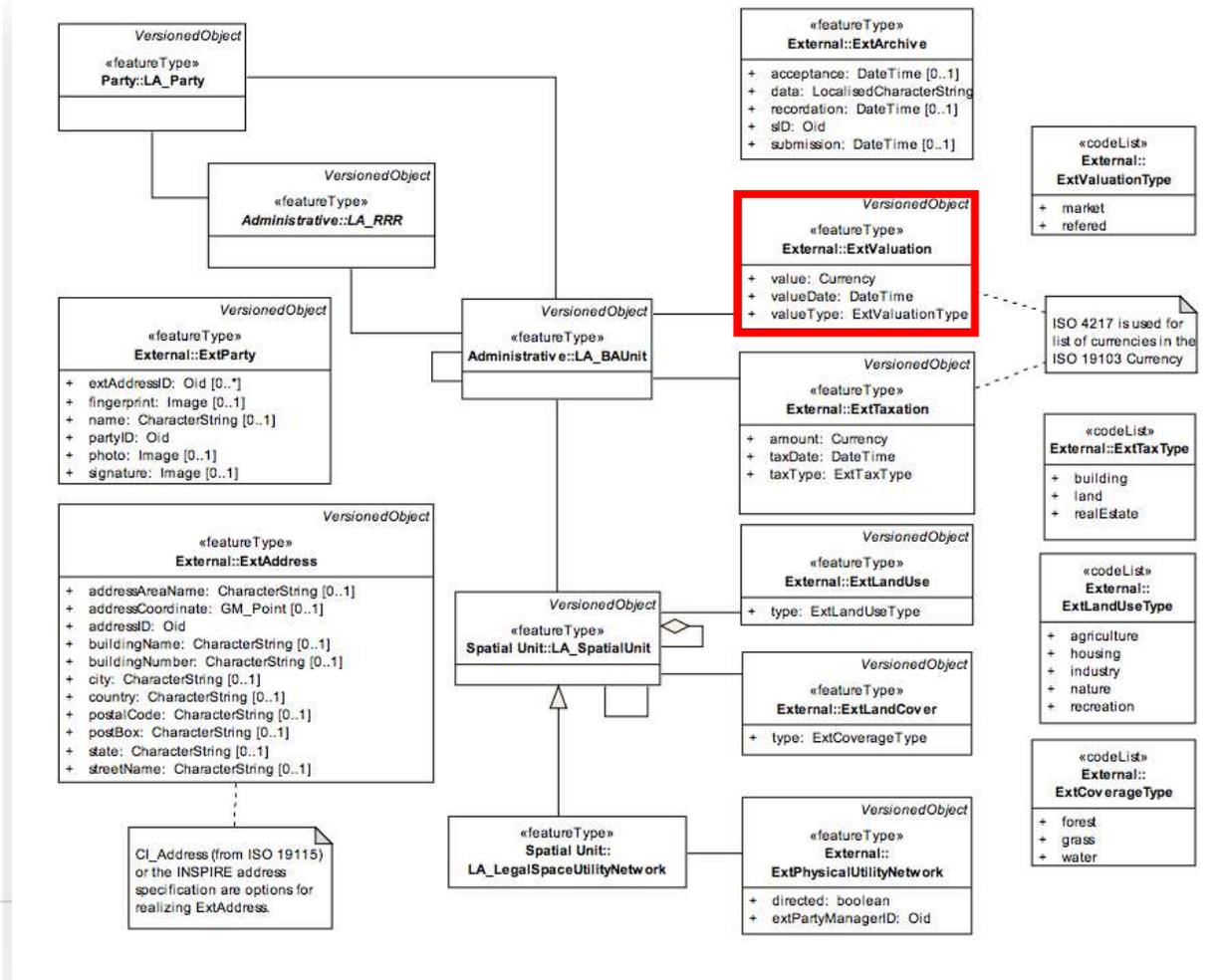
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LADM Valuation Information Model

- **Property valuation** was considered **out of scope** of the ISO 19152:2012 LADM but it is referred in **External classes (external registries)**.
- A recently started joint activity under **FIG Commission 9 and 7** has started development of an information model for the **specification of valuation information** maintained by **public authorities** especially for **property taxation**.



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Developing methodology of LADM Valuation Module

- **Valuation Standards**

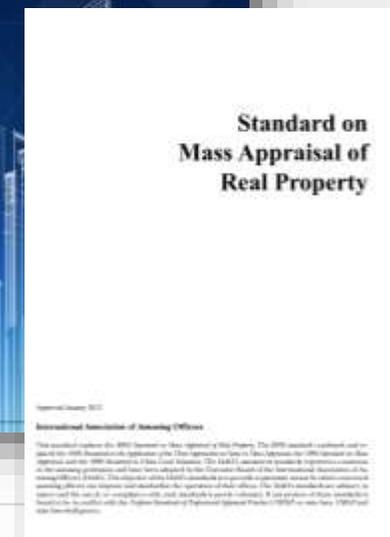
(IVSC, IAAO, TEGoVA, RICS)

- **Property Measurement Standards**

(IPMS, RICS, ISO 9836, CEN 15221-6)

- **Geographical Information Standards**

(ISO LADM, INSPIRE, OGC's CityGML, LandInfra)



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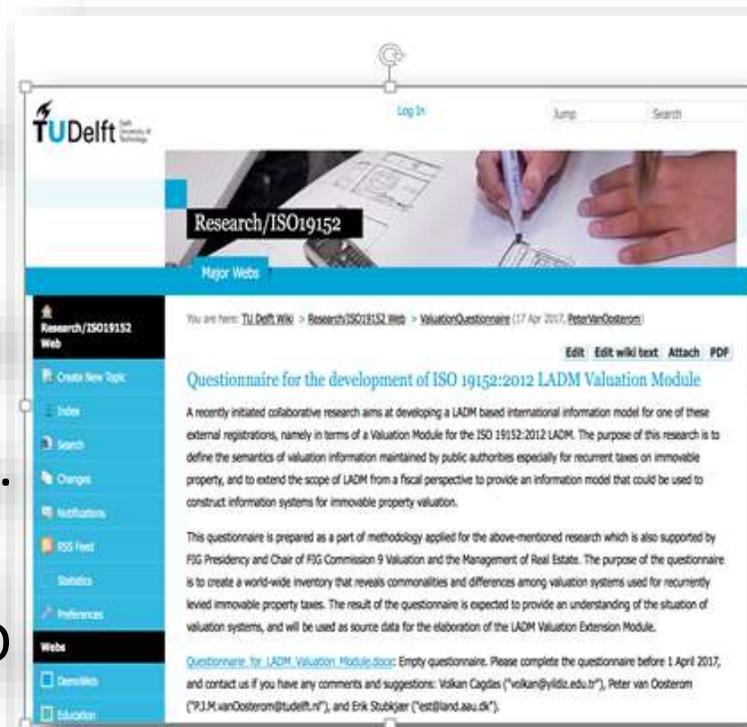
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Developing methodology of LADM Valuation Module

- The thesaurus derived from glossaries and main text of the international valuation standards issued by **IVSC**, **TEGoVA** and **IAAO**.
- A questionnaire based dataset has been obtained from delegates of FIG Comm. 9 and 7, available at <http://isoladm.org/ValuationQuestionnaire>.
- A comprehensive literature survey including World Bank, FAO, Lincoln Institute, and OECD publishings was conducted to determine public property valuation activities.



Assessor

Respondents

1. Argentina (D. A. Erba, C. A. Basilio)
2. Bolivia (J. G. A. Flores)
3. Brazil (E. Silva)
4. Colombia (D. R. Gutiérrez)
5. Costa Rica (J. M. Díaz)
6. Croatia (H. Tomić)
7. Cyprus (A. Aristidou)
8. Denmark Erik (E. Stubkjaer)
9. Denmark Manohar (M. Velpuri)
10. Ecuador (F. R. Bueno)
11. Greece (Chryssy Potsiou)
12. India (M. Velpuri)
13. Latvia (R. Pētersone)
14. Macedonia (V. Miskovski)
15. The Netherlands (R. Kathmann)
16. Poland (P. Parzych, J. Bydłoz)
17. Singapore (M. Velpuri)
18. Slovenia (D. Mitrović)
19. South Africa (M. Velpuri)
20. South Korea (L. Young-ho, K. Bong-Jun)
21. Spain (A. Velasco)
22. Turkey (V. Çağdaş, A. Kara)
23. UK Ben (B. Elder)
24. UK Pete (P. Wyatt)

Real estate appraisal

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VM_ValuationUnit represents basic recording units of valuation databases (e.g. Land, building).

VM_ValuationUnitGroup clusters valuation units according to zones that have similar characteristics.

VM_SpatialUnit specifies cadastral parcels, and sub-parcels.

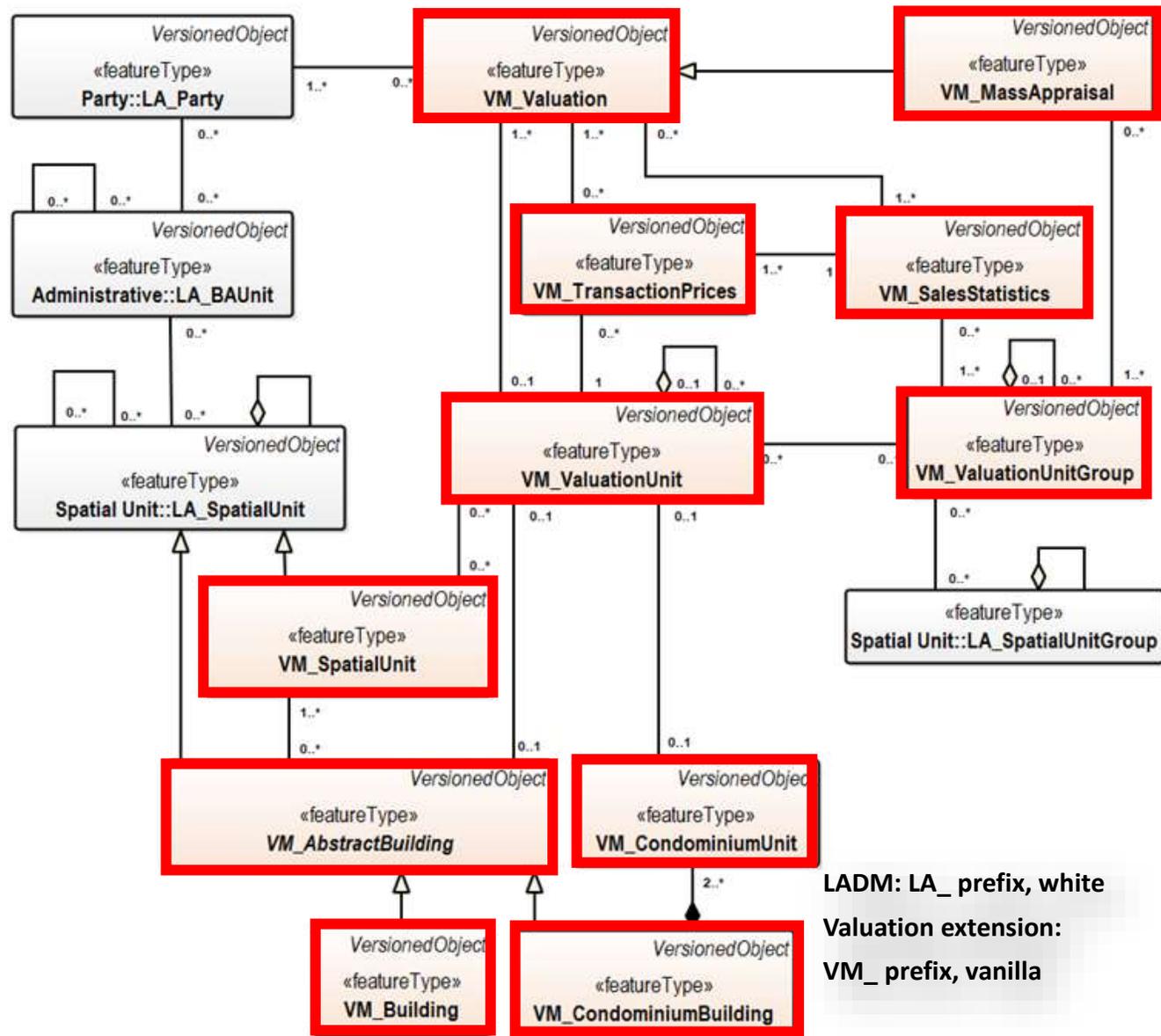
VM_AbstractBuilding, **VM_Building**, **VM_CondominiumBuilding**, **VM_CondominiumUnit** specifies physical aspects of buildings, condominium buildings, condominium units.

VM_Valuation defines input and output data used and produced within single or mass appraisal processes such as valuation method used.

VM_MassAppraisal specifies mass appraisal-related information.

VM_TransactionPrices defines information content of transaction contracts or declarations provided by parties.

VM_SalesStatistics represents information related to price statistics produced through analysis of transaction prices.



LADM: LA_ prefix, white
Valuation extension:
VM_ prefix, vanilla

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Property Valuation Practices in Turkey for Taxation

- There are 2 different valuation objects: **improved property** (land and improvements together as condominium property) and **unimproved property** (rural and urban parcel).
- There are 2 different taxes: **land** and **building taxes** that are levied according to the **'tax value'** of properties.
- The tax values of improved and unimproved properties are currently calculated by the following equations according Property Tax Law and Tax Assessment Statute.

- $V_{imp.pro.} = [(A_{impr} \times C_{impr}) \times (1 - o) \times (1 + (e + h))] + (A_{parcel} \times V_{Parcel})$

- $V_{unimp.pro} = A_{parcel} \times V_{Parcel}$

Sales comparison approach
(if not applicable then)
Cost approach
(if not applicable then)
Income approach

$V_{imp.pro.}$ = tax value of improved property
 $V_{unimp.pro.}$ = tax value of unimproved property
 A_{impr} = area of building
 A_{parcel} = area of parcel
 V_{Parcel} = the unit price per square meter of parcels
 C_{impr} = cost of construction per square meter
 o = physical obsolescence of improvements
 e = availability of elevator
 h = heating/air conditioning in improvements

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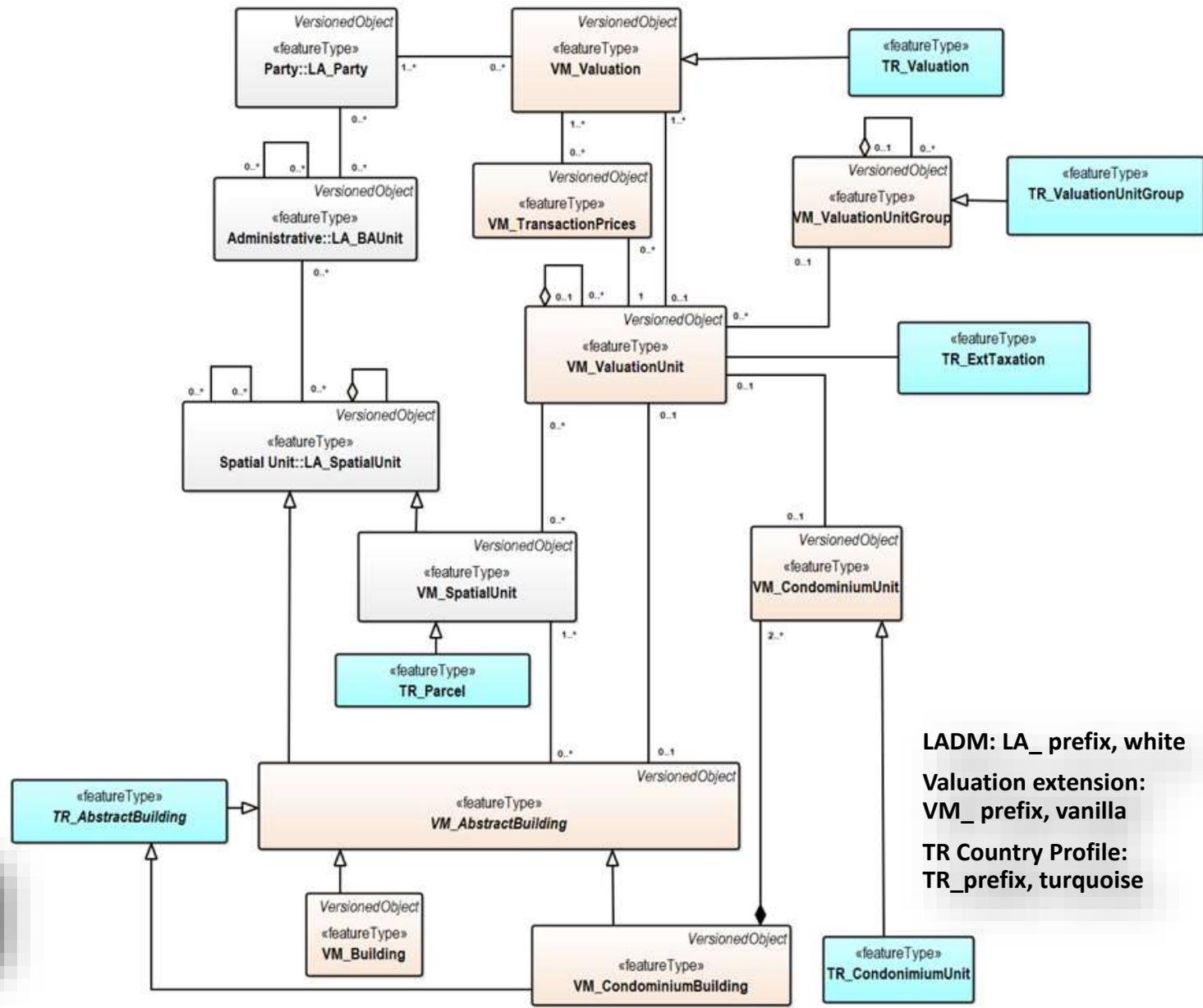
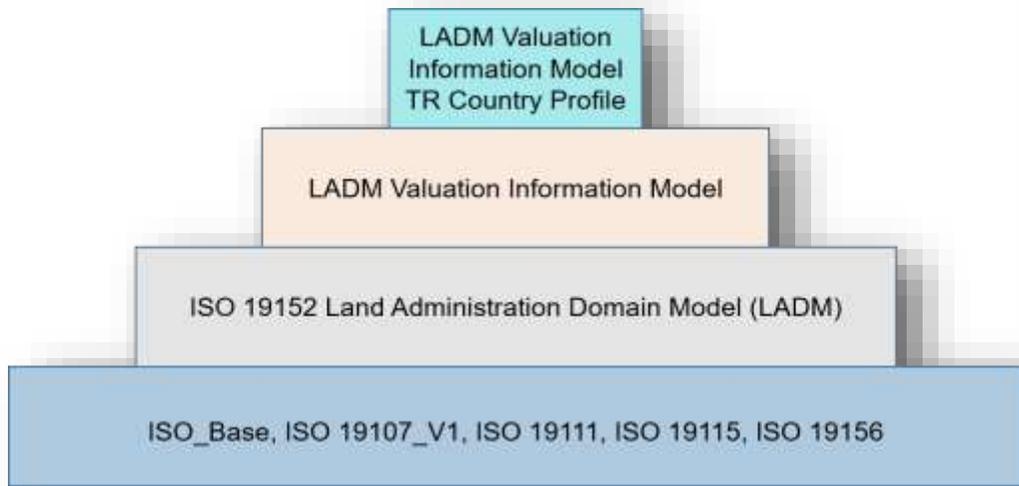


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LADM Valuation Information Model Turkish Country Profile

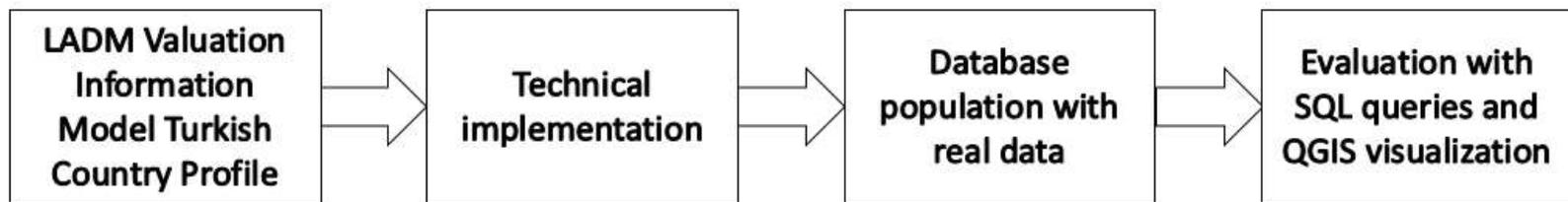


LADM: LA_ prefix, white
 Valuation extension: VM_ prefix, vanilla
 TR Country Profile: TR_ prefix, turquoise





A Prototype for LADM Valuation Information Model Turkish Country Profile



Fatih, İstanbul



Mamak, Ankara

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LADM Valuation Information Model Turkish Country Profile



The time series of tax values of condominium units (improved properties) in Akdeniz Street, Fatih, from 2014 to 2018; unimproved urban parcels with annual tax amount in 2017 are higher than 400 TRY in the selected area of Mamak District, Ankara.

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LADM 2018 Workshop

Working Group 1 - LADM Valuation Information Model Extension



Participants:

- Chrit Lemmen
- Jesper Paasch
- Abdullah Kara
- Marjan Ceh
- Brent Jones
- Miodrag Roić
- Mateja Krivic
- Lina Victoria Baron
- Jaroslav Bydlosz
- Mehmet Alkan

7th International FIG workshop on the Land Administration Domain Model, 12-13 April 2018, Zagreb, Croatia

LADM Valuation Information Model Extension

- **New Urban Agenda** - *We will support local governments and relevant stakeholders, through a variety of mechanisms, in developing and using basic land inventory information, such as a cadaster, valuation and risk maps, as well as land and housing price records ... needed to assess changes in land values ... (Clause 104).*
- All the participant joined the working sessions agreed that an international property valuation information model is needed.



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LADM 2018 Workshop

Some discussed topics on LADM Valuation Information Model in the workshop as follows:

- (1) Integrating model to LADM OR (2) Separate package in LADM (formative or informative part) OR (3) A Separate standard
- What should be the **content of such a valuation information model**? Should all purposes for valuation be included in the valuation model: Taxation, Mortgage, Compulsory acquisition, Transaction, Insurance, etc.
- **Quality of valuation data** should be considered in property valuation, for example, up to date data collection, meta data of quality data, etc.

For more information please visit: <http://isoladm.org/LADM2018Workshop>

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Concluding remarks

- The flexible framework of LADM provides basis for the development of Valuation Information Model and country profiles for property valuation activities.
- The prototype developed shows that the Turkish LADM Valuation Information Model Country Profile is feasible in terms of information management aspects of valuation activities for Turkey.

Future works

- LADM Valuation Information Model should be tested with further use cases, for example, mass valuation and other country profiles (NL Country Profile for property valuation is in progress.)
- 3D aspects in property valuation activities should be investigated in the context of LADM Valuation Information Model.
- Officially propose (submit) to ISO TC211 as part of revised version of ISO LADM.

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Thank you for your attendance!

Any comments and questions?

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