TITLE: Land Administration Domain Model Standards Working Group Charter

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DATE: 2023-11-14

CATEGORY: SWG Charter

To:  OGC members & interested parties

A new OGC Standards Working Group (SWG) is being formed. The OGC members listed below have proposed the OGC Land Administration Domain Model (LADM) SWG.  The SWG proposal provided in this document meets the requirements of the OGC Technical Committee (TC) Policies and Procedures.

The SWG name, statement of purpose, scope, list of deliverables, audience, and language specified in the proposal will constitute the SWG's official charter. Technical discussions may occur no sooner than the SWG's first meeting.

This SWG will operate under the OGC IPR Policy. The eligibility requirements for becoming a participant in the SWG at the first meeting (see details below) are that:

* You must be an employee of an OGC member organization or an individual member of OGC;
* The OGC member must have signed the OGC Membership agreement;
* You must notify the SWG chair of your intent to participate to the first meeting. Members may do so by logging onto the OGC Portal and navigating to the Observer page and clicking on the link for the SWG they wish to join and;
* You must attend meetings of the SWG. The first meeting of this SWG is at the time and date fixed below. Attendance may be by teleconference.

Of course, participants also may join the SWG at any time. The OGC and the SWG welcomes all interested parties.

Non-OGC members who wish to participate may contact us about joining the OGC. In addition, the public may access some of the resources maintained for each SWG: the SWG public description, the SWG Charter, Change Requests, and public comments, which will be linked from the SWG’s page.

Please feel free to forward this announcement to any other appropriate lists. The OGC is an open standards organization; we encourage and welcome your feedback.

# Purpose of the LADM Standards Working Group

LADM is a multi-part Standard published by ISO / TC 211. The purpose of LADM is to present the fundamental notions and define the basic components and relations in land administration/georegulation. LADM is a conceptual model, but an encoding Standard is desired to facilitate the adoption of LADM in the community. The LADM SWG is chartered to create an encoding Standard of all Parts of the ISO LADM Standard as an additional Part to the LADM Standard.

From the ISO LADM Standard (ISO 19152-1:2024), the following text describes LADM.

*“The first goal of this document is to enable involved parties, both within one country and between different countries, to communicate, based on the shared vocabulary implied by the model. This document does not aim to replace existing systems, but rather to provide a formal language (the Unified Modelling Language, UML) for describing them, so that their similarities and differences can be better understood.*

*The second goal is to provide an extensible basis for the development and refinement of land administration systems, based on a Model Driven Architecture (MDA). This document is relevant for creating standardized information services in a national or international context, where land administration domain semantics have to be shared between organizations, regions or countries, in order to enable necessary translations. Four considerations during the design of the model were:*

1. *it will cover common aspects shared by objects created by land administration/georegulation;*
2. *it will be based on the conceptual framework of "Cadastre 2014" of the International Federation of Surveyors (FIG);*

*NOTE 1 The principle of legal independence from Cadastre 2014 can be implemented with complete separate LADM implementations of Cadastre 2014 per layer or with only the spatial unit package of LADM per layer.*

1. *it will be as simple as possible in order to be useful in practice;*
2. *the geospatial aspects will follow the ISO/TC 211 conceptual model, i.e. basic types are defined in ISO 19103, geometric elements are defined in*[*ISO 19107*](https://www.iso.org/obp/ui/en/#iso:std:iso:19107:en)*and the General feature model used in this document is defined in*[*ISO 19109*](https://www.iso.org/obp/ui/en/#iso:std:iso:19109:en)*.*

*This document defines the Land Administration Domain Model (LADM).”*

The SWG will work to ensure that land administration requirements of OGC members are considered and incorporated as part of all aspects of the development of the encoding standard. The SWG will consider whether formal profiles, extensions, or Best Practices are necessary to realize Land Administration requirements from the OGC community.

# Business Value Proposition

The LADM Development team is aware of approximately 50 country profiles, 10 country implementations, and 17 STDM (Social Tenure Domain Model, a LADM specialization) implementations (mainly in developing countries with support of UN-Habitat). There is also more attention from the geospatial software and consulting industry. This interest has been discussed in the Land Administration Domain Working Group and during various LADM Workshops.

This interest in the use of LADM drives the need to develop an encoding Standard to assist the implementing community. Currently, countries implementing LADM have to develop or procure technical encodings before arriving at an operational system. This is because ISO 19152 is just a conceptual model, specific LADM implementation standards are missing. As this is done by every country individually (except form STDM countries), there are many different solutions, which reduces interoperability. This situation also increases implementation cost when adapting LADM. For solution vendors, an encoding would increase the possibility to reuse their LADM software in multiple countries (jurisdictions).

This approach ensures that the LADM conceptual model is implemented, while also integrating insights from the OGC community. Such collaboration guarantees that the encoding remains versatile to accommodate a wide range of use cases.

# Scope of Work

The initial scope of the LADM SWG will be the following:

1. Establish methodology to develop LADM country profiles;
2. Technical model / encoding according to one or more formats (e.g., JSON);
3. Management/maintenance rules for semantically rich code list values (based on SKOS); and
4. Workflows/procedures of the most important Land Administration processes.

The LADM SWG will develop an encoding Standard (or multi-part Standard) of the five Parts of the ISO LADM Standard (some Parts currently under development). The content of the encoding Standard will derive requirements from the conceptual model items in the source LADM Parts. One or more encoding formats will be considered, referencing international Standards such as Geography Markup Language (GML), GeoJSON, Features and Geometries JSON (JSON-FG), and others.

The five parts of LADM include the following scope.

1. Part 1 – Generic Conceptual Model is a high-level umbrella standard that supports all the other parts of the LADM Edition II. Part 1 includes the fundamental notions and defines the basic components and relations shared by objects created for land administration and provides an overview of all Parts. The core classes are LA\_VersionedObject, LA\_Source, LA\_Party, LA\_RRR (Rights, Restrictions, Responsibilities), LA\_BAUnit, and LA\_SpatialUnit.
2. Part 2 – Land Registration concerns the scope of the ‘old’ LADM, ISO 19152:2012; it is further refining the core classes with attributes, association (types), multiplicities, and constraints. In addition, it contains the LA\_Mortgage (subclass of LA Restriction), specialization of spatial units (legal spaces for parcel, utility network, building units, civil engineering infrastructure works), and a refined spatial source model (including design sources and a range of survey sources).
3. Part 3 – Marine Georegulation is the ISO counterpart of IHO Standard S-121 ‘Marine Limits and Boundaries’, which is based on the LADM core classes.
4. Part 4 – Valuation Information specifies the characteristics and semantics of valuation registries maintained by public authorities. The main classes of the Valuation Information Package are VM\_ValuationUnit, VM\_ValuationUnitGroup, VM\_SpatialUnit, VM\_Building, VM\_CondominiumUnit, VM\_Valuation, VM\_MassAppraisal VM\_TransactionPrice, VM\_SalesStatistic, and VM\_ValuationSource
5. Part 5 – Spatial Plan Information includes planned land use (zoning). This package has the following classes: SP\_PlanBlock, SP\_PlanUnit,, SP\_PlanGroup, SP\_PlanUnitGroup, and SP\_Permint.

## Statement of relationship of planned work to the current OGC standards baseline

Geographically-referenced land administration units are often encoded using OGC Standards. Further, the OGC LandInfra Conceptual Model Standard (<https://www.ogc.org/standard/infragml/>) includes a subset of LADM in its depiction of the LandDivision Requirements Class and as implemented in the OGC InfraGML Part 7 Standard.

The LADM SWG will coordinate with the LandInfra SWG to determine whether an update to the LandInfra and InfraGML Standards should be updated to accommodate the ISO LADM revision as expressed in the LADM encoding to be developed by the LADM SWG.

## What is Out of Scope?

The LADM SWG will not develop further conceptual model parts of the LADM Standard. However, if adjustments to the LADM approach are realized through ongoing ISO processes that require new conceptual models, the SWG will consider undertaking conceptual model development at that time.

## Specific Contribution of Existing Work as a Starting Point

The ISO LADM Standard Parts (ISO 19152-1 through -5) will be the source of the requirements logic. OGC or other international Standard encoding formats will be considered for the encoding format(s).

## Is this a persistent SWG?

√ Yes No

## When can SWG be inactivated?

The SWG can be inactivated when the encoding Part is complete and if no further revisions to the source ISO LADM Standard are actively in work. Note that inactivation ensures that all files, wikis, emails, and so forth are archived and available for future viewing and use.

# Description of Deliverables

## Initial Deliverables

The initial deliverable will be an encoding Standard fully implementing the requirements in the LADM Conceptual model in a Standardized encoding format (likely JSON).

## Additional SWG Tasks

After the initial deliverable of a JSON encoding, the next deliverables are:

1. Methodology to develop LADM country profiles;
2. Other Technical model / encoding(s) than JSON;
3. Management/maintenance rules for semantically rich code list values (based on SKOS); and
4. Workflows/procedures of the most important LA processes.

# IPR Policy for this SWG

√ RAND-Royalty Free. RAND for fee

# Anticipated Participants

The SWG is expected to include representatives of national cadaster and mapping agencies; land administration experts; academia; and geospatial technology providers.

# Domain Working Group Endorsement

The Land Administration DWG endorses the creation of this SWG.

# Other Informative Remarks about this SWG

a. Similar or Applicable Standards Work (OGC and Elsewhere):

The following Standards or in-development Standards are relevant to the SWG's planned work as a source for the encoding requirements (currently under development at ISO TC211 at various stages, CD, DIS):

* ISO 19152-1:2024 LADM – Part 1: Generic conceptual model
* ISO 19152-2 LADM – Part 2: Land registration
* ISO 19152-3 LADM – Part 3: Marine space georegulation
* ISO 19152-4 LADM – Part 4: Valuation information
* ISO 19152-5 LADM – Part 5: Spatial plan information

The SWG will leverage the liaison agreement between OGC and ISO/TC211, the organization maintaining the above works.

b. Details of the First Meeting

The first meeting of the LADM SWG will occur within two weeks of the approval of the charter.c. Projected On-going Meeting Schedule

The work of the SWG will be carried out primarily by email and conference calls, possibly every two weeks, with face-to-face meetings likely at each of the OGC Member Meetings.

d. Supporters of the Proposal (Charter Members)

The following people support this proposal and are committed to the Charter and projected meeting schedule. These members are known as SWG Founding or Charter members. The charter members agree to the SoW and IPR terms as defined in this charter. The charter members have voting rights beginning the day the SWG is officially formed. Charter Members are shown on the public SWG page. Extend the table as necessary.

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| --- | --- |
| Name | Organization |
| Javier Morales | Univ. Twente |
| Anthony Beck | ISO/TC 211 |
| Amir Bar-Maor | Esri |

e. Convener(s)

Name of individual(s) who started the SWG process. Could be the lead for an RFC submission, an OGC staff person, or an individual who believes it is time for a revision to an adopted standard.

Peter van Oosterom, TU Delft (Netherlands)

Eva-Maria Unger, Kadaster (Netherlands)