Refining legal Land Administration-related aspects in LADM

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Overview

I. Introduction

II. LADM legal aspects: related developments

III. LADM I & LADM II: ongoing revision

IV. Refinement of LADM I Legal Profiles: aspects to consider

V. Conclusions & Future Work
INTRODUCTION | MOTIVATION

- informal and customary tenures?
- formal, informal and customary land systems?
- hierarchy in RRRs?
- ...
specific parts are further modelled and included in the informative Annexes

Annex F – Legal Profiles

- legal profile for Rights
- legal profile for Restrictions
- legal profile for Responsibilities

[Fig. F2, ISO 19152, 2012]
Specialisation of the LADM LA_Restriction legal profile

Extended profile for privately and **publicly imposed restrictions**

Specialisation of LADM code lists, using Legal Cadastral Domain Model & Social Tenure Domain Model

RRRs representation on a more detailed level, including informal RRRs

*slide from Kitsakis et al., 2018*
PLRs can be registered according to:

- Integrated in cadastral systems.
- Maintained by an individual responsible authority.
- Development as “themed” cadastres, dedicated to specific PLRs.
- Development of a special registry for PLRs (PLR cadastre).
ISO 19152:2012
Geographic information — Land Administration Domain Model (LADM)

LIFE CYCLE

NOW

PUBLISHED
ISO 19152:2012

A standard is reviewed every 5 years
Stage: 90.92 (To be revised) ~

WILL BE REPLACED BY

UNDER DEVELOPMENT
ISO/AWI 19152-1
Part 1: Fundamentals
Stage: 20.00 ~

20 Preparatory ~

20.00
New project registered in TC/SC work programme

20.20
Working draft (WD) study initiated

20.60
Close of comment period

20.99
WD approved for registration as CD

UNDER DEVELOPMENT/Submitted
ISO/ WI 19152-2
Part 2: Land Registration

3 6

UNDER DEVELOPMENT/Not Yet Submitted
ISO/ WI 19152-3

LADM Edition II
Legal Profiles

LA_SpatialUnit
LA_Party
LA_RRR
LA_BAUnit
LA_Right
LA_Restriction
LA_Responsibility
LA_Mortgage
LA_AdministrativeSource
LA_RequiredRelationshipBAUnit
LA_GroupParty
LA_PartyMember
LA_Level
LA_SpatialUnitGroup
LA_LegalSpaceBuildingUnit
LA_LegalSpaceUtilityNetwork
LA_RequiredRelationshipSpatialUnit
LA_Source
LA_SpatialSource
LA_Point
LA_BoundaryFace

Basic classes overview

LADM Edition II
Multipart

PART 1 — Land Administration Fundamentals
PART 2 — Land Registration
PART 3 — Marine Space
PART 4 — Land Valuation
PART 5 — Spatial Planning
PART 6 — Implementations
REFINEMENT OF LADM I LEGAL PROFILES: ASPECTS TO CONSIDER

- the new model should be **backwards compatible** with Edition I
- avoid complexity | keep the model simple
- apart from the refinement of the classes, the increasement of the **semantic capabilities** of the model via code list values shall be explored
- awarding new classes with a shadow class at both the legal & the spatial side to be identified.

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MODELLING

- the refined legal model should be helpful **both within** and **across** jurisdictions
- the model should be **aligned with other novel governmental information systems**.
I. Rights registration in various systems

Title as being framed by three key elements:

1. the party (the who) that benefits from
2. the ownership right (the what) over and
3. a plot of land (the where).

Originally Land Registers registered DEEDS: the legal facts of a transaction. The purpose of a deed is not to describe a full party-right-land relationship; instead, a deed describes a transactional change to a party-right-land state.

DEEDS

A deed registrable in a Land Register is a legal instrument that describes real right transactions that result in the creation, variation or discharge of party-right-land relationships.

TITLES represent the consequences of the legal facts represented in deeds. Title by registration means that the consequences of the change articulated in the deed are registered rather than the deed itself (although the deed can also be archived as part of the application process).

Title is demonstrated by examining the sequence of prior deeds back to a ‘good root of title’.
I. Rights registration in various systems

The registration process represents how the Registrar implements the relationship between state change (e.g. deeds and applications) and state (e.g. products, such as derived searches and Titles).

Title by registration and the recording of deeds are not competitive systems, rather they reflect different positions on the representation of party-right-land relationships.

Land Registers have a requirement to articulate state change (the facts of change: Deeds) and state (the consequences of change: Titles).

High quality deed systems need to generate an ‘unambiguous identification of the subject unit of land’ to support a "uniform system for identification of properties." 

That said, from a conceptual perspective it is of course possible for a Deed Register to be LADM based but can also not be LADM compliant.

Clearly, efficiently supported in LADM Edition I to this is a requirement for any modelling of Deeds Registers using LADM.
II. Detailed classification of Rights, Restrictions and Responsibilities (RRRs)

- RRRs implied by Private Law | Public Law
- Jurisdiction dependent → a set of ownership and non-ownership rights which are recognised by the state and are legally formalised
- Differences in the categorisation
- Depending on the ‘view’ the jurisdiction looks differences are presented between their definition, organisation & implications
- Various models designed to represent the rights and the relationships between them
III. Modelling restrictions as rights?

They are rights which encumber owned land and their implications are articulated through the duality of the rights relationships between the right holder and the landowner through land (as an owed duty). Hence, when viewed from the perspective of the landowner, the encumbering rights held by third parties are either a responsibility or a restriction.
PLRs IN LADM EDITION II

- Legal differences depending on jurisdiction
- Deriving from multiple authorities

✔ Classification
✔ Organisation based on LADM Edition II

2 main criteria:

- Should PLRs be modelled at the legal part of the LADM or at the spatial part?
- Should subclasses to organise the various PLR categories, or a structure with semantically enriched code lists with hierarchical structure?

*slide from Kitsakis et al., 2018

<table>
<thead>
<tr>
<th>Sector</th>
<th>Description</th>
</tr>
</thead>
</table>
| Mining areas | ▪ Health and safety provisions
▪ Restrictions on activities related to the ownership of minerals/quarry material |
| Cultural Heritage | ▪ Restrictions to avoid harm of underground antiquities (e.g. in-situ preservation of antiquities; restrictions due to construction of infrastructures or other activities)
▪ Restrictions in constructing new buildings, alteration, restoration and use
▪ Restrictions in maritime activities within or in the vicinity of marine antiquities |
| Building Regulations and Spatial Planning | ▪ Construction Regulations/Building restrictions (e.g. Restrictions on building height for landscape protection; Restrictions on materials, scale, colour, size, architectural style of constructions to match surrounding landscape, etc.)
▪ Urban, zone and spatial planning provisions (e.g. land uses, zoning plans, Shoreline and coastal zones, forest zones etc.) |
| Civil Aviation | ▪ Non-military manned air vehicles (e.g. definition of special flights’ rules such as non-flight zones; definition of general minimum flight height; definition of obstacle limitation surfaces, designating the airspace around an airport where restrictions apply to constructions’ or physical objects’ heights)
▪ Unmanned Air Vehicles (e.g. fly under permission above specific heights; flight prohibition over infrastructures or correctional facilities; Definition of maximum flight height) |
| Environment protection | ▪ Natural protection zones (such as restrictions on forest protection; natural habitats; biodiversity and protected areas)
▪ Soil (restrictions regarding soil contamination (deriving from soil geological or chemical characteristics); mitigation measures on contaminated soil)
▪ Water (restrictions regarding the protection of surface and groundwater bodies)
▪ Air (such as restrictions for the protection of public health from contaminants in the air; restrictions regarding radio waves propagation to ensure efficient communication and broadcasting as well as protect public health and the natural environment from extended exposure to electromagnetic
III. Legal refinement via semantically rich code lists

**REFINEMENT OF LADM I LEGAL PROFILES: ASPECTS TO CONSIDER**

**LADM Edition II**

explicit proposal for the formalisation of code lists and their values

a **metamodel** for the semantic description of code list values using the Simple Knowledge Organisation System notation to represent LADM code lists & is extended to support **versioning**, **hierarchical relationships between concepts**, **textual definition with source reference** [Kara et al., 2022]

Facilitator for the relation of the country profile code list values to the LADM code list values

**structured code lists**

provision for **hierarchical code list values** (parent-child relationships), short code list values & longer descriptions of code list values, & **versioned code list values** in order to support possible changes.
CONCLUSIONS & DISCUSSION

Do we need a refinement on the legal part of LADM Edition I?

--if yes, which one..?
CONCLUSIONS & DISCUSSION

 ✓ **indexing is critical**: to unambiguously identify the **party-right-land triples** which are to change is critical in deeds’ register → LADM could be extended to **recognise the relationship between state and change elements** and **how these are articulated within a single deed**. Hence, while it is recognised that **party-right-land indexing is important**, deed and title indexing is of equal importance

 ✓ to add an extra attribute at the Administrative Package of the LADM to supporting the need to go back to the ‘**good root of title**’ in deed systems

 ✓ to **include explicit links** between deeds (chain of source documents), another attribute will be added to provide the **link between their IDs**.

 ✓ the use of an **extensible code list** is proposed via **semantic technologies**

 ✓ the increasing amount & importance of **PLRs** as tools for social change calls for attention.
Thank you!