



LADM-based Israeli Country Profile: Towards Implementation of 3D Cadastre Registration

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Outline

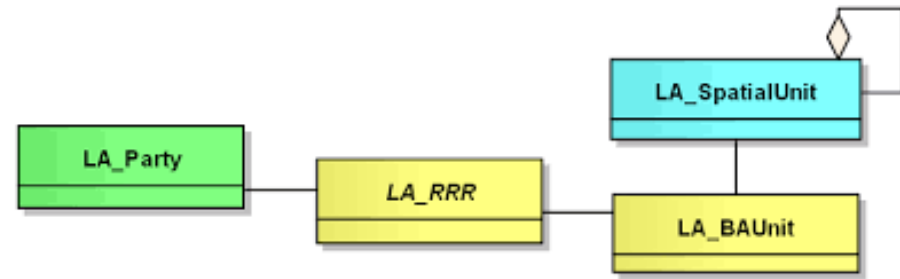
❖ Introduction

❖ Land Administration in Israel

❖ Development of Israeli Country Profile

- *Mapping of Concepts*
- *Current **2D** Country Profile*
- *Future **3D** Country Profile*

❖ Final Remarks & Future Work



Introduction

❖ Land is a **Scarc** Resource

- *High pressure on space*
- *3D complex Reality*

❖ **History** of 3D Cadastre Research

- *R&D project 2002*
- *Initial Country Profile - 2014*
- *Historic Example of 4D Cadastre*
 - ✓ *Temporal 3D Ownership*

❖ **Amendment** to the *Land Law* (1969)

- *Legal Foundation for 3D Registration* **12.2018**
- *Definition of 3D Parcel and Subtraction unit*



Land Administration In Israel

❖ Decentralized System

- *Ministry of Finance*

 - ✓ *Spatial Planning*

- *Ministry of Housing & Construction*

 - ✓ *Cadastral*

- *Ministry of Justice*

 - ✓ *Land Registry*



Ministry of Finance

משרד האוצר



Planning Administration



MINISTRY OF
**CONSTRUCTION
AND HOUSING**

❖ 3 Types of Registry

- *Title Registration*

- *Deed Registration*

- *Condominium Registration*



Ministry of Justice

Land Administration Domain Model ISO 19152 (LADM) cont.

❖ Main Goals

- Provide **conceptual** and **formal language** for semantic and spatial information **description**
 - ◆ On **National** level
 - ◆ On **International** level
- Establish a **foundation** for **Design & Development/Upgrade** of land administration system

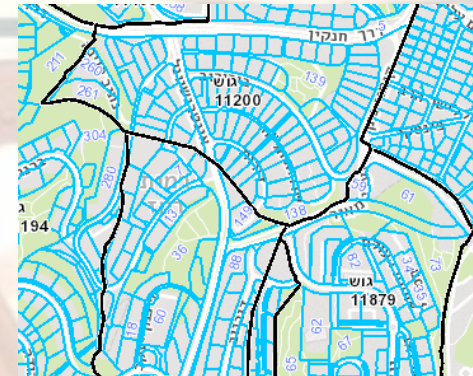


LADM Based Israeli Profile

Goal

❖ **Current - 2D Profile**

- *Conceptual Model of the Existing System*
- *A reference in case of Upgrade*
- *International Level*



❖ **Future - 3D Profile**

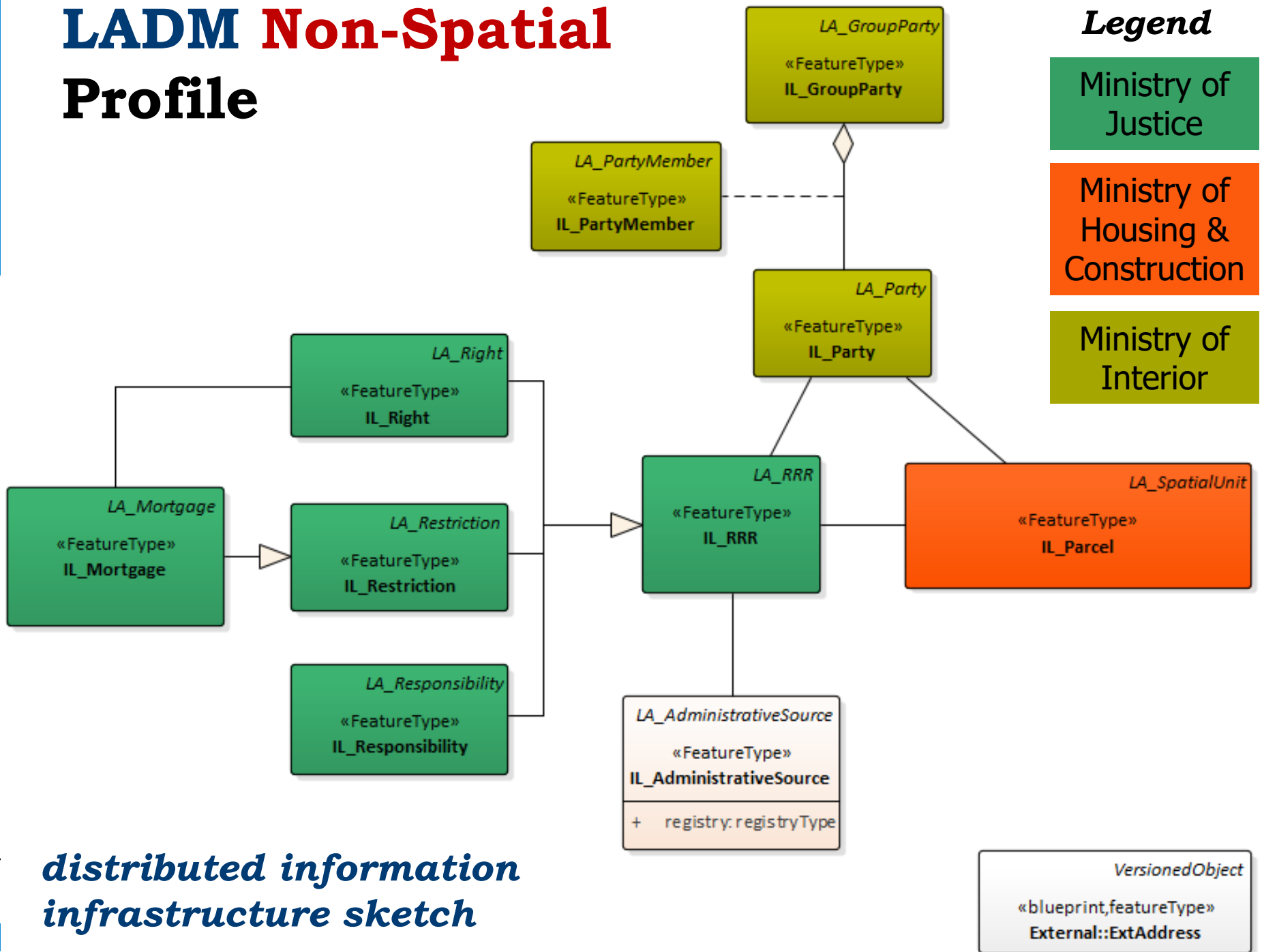
- *A Basis for Future System*
- *Tender Requirements*
- *National & International Levels*



Initial **Key Concepts** Mapping

NCDB*	LADM	Remark
IL_Block	LA_SpatialUnit Group	
IL_Parcel	LA_SpatialUnit	
IL_Point	LA_Point	
IL_Front	LA_BoundaryFace String	LA_BoundaryFace for future 3D
IL_SpatialSource	LA_SpatialSource	
IL_Administrative Source	LA_Administrative Source	In Scope of Land Registry
IL_SubParcel	LA_BAUnit	
IL_Condominium	LA_SpatialUnit Group	Needs further development

LADM Non-Spatial Profile



Types of 3D Cadastral Objects

- **Tunnels - "Carmel Tunnels"**
- **Underground Facilities**
- **Subway** (under construction)
- **Complex Constructions**



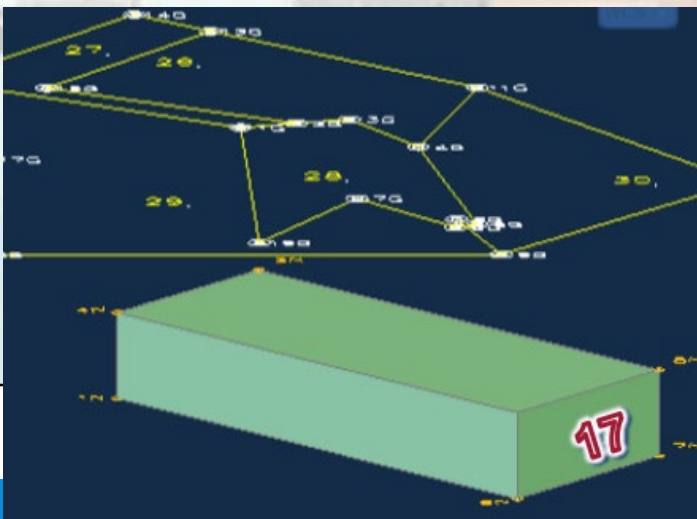
- **Unique Topology**
 - ✓ **Bridges above roads**
 - ✓ **Residential Buildings above roads & bridges**

LADM Based Israeli Profile

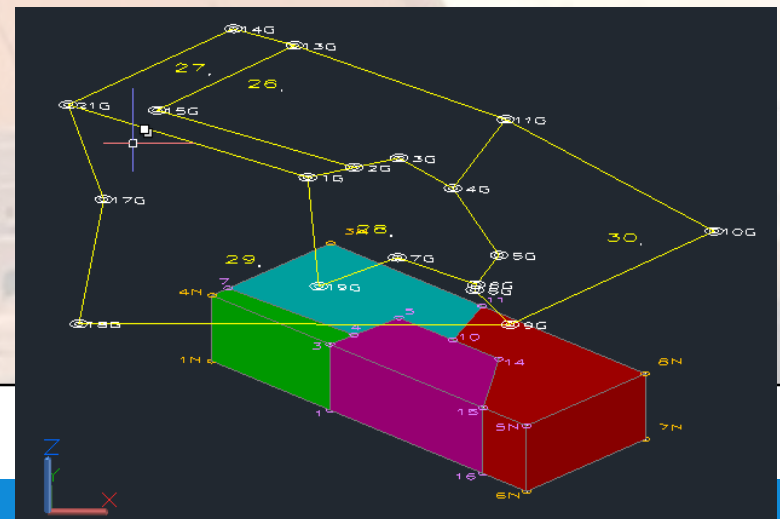
Specifics – Core Model Extensions

- *IL_Block*
- *IL_SubParcel*
- *IL_SubtractionParcel*
- *IL_DimentionalParcel*
- *2D Land Parcel – Unlimited Extent of Ownership*
- *3D Parcel – Limited Extent*

3D Parcel



Subtractions



LADM Based **Israeli Profile**

Final Remarks

- *Existing systems and legislation were examined*
- *Future 3D system requirements were analyzed and presented during a **workshop held in July 2019** with representatives from:*
 - ✓ *Survey of Israel*
 - ✓ *Ministry of Justice*
 - ✓ *Spatial Planning Authority*
 - ✓ *DB & software developers*

LADM Based **Israeli Profile**

Final Remarks cont.

❖ **Further Development**

- **Terminology**
- **Associations**
- **Adjustments**
- **Conversion to technical model**
- **Extension of the model**
 - ✓ **Infrastructure**
 - ✓ **Spatial Planning**
 - ✓ **Valuation**
- **3D Portal for data visualization & Query**

