

Transforming the

3-2-2010



ISO/TC 211
Geographic information/Geomatics

Contents

- Introduction

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Introduction

- **There are supposed to be huge differences between cadastral and land registry systems (around the world)**
- **Look to the common area's:**
 - **Standardised Model (adaptable, extensible)**

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Land Administration Domain Model

- **Workshops on Standardisation in the Cadastral Domain, Enschede, The Netherlands, 2002**

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- **Social Tenure Domain Model is a Specialisation of LADM**

Background ISO TC211 geographic information

- **over 60 member countries (participating + observing)**

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Formal approval International Standard (IS), via Draft IS (DIS) and Final Draft IS (FDIS)

scope
lly

ISO TC211 and CEN TC287



- close cooperation arranged via resolutions

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ISO 19152 Project Team (PT)

- PT Members from: Australia, Canada, Denmark, Finland, Germany,

and,

also

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- **Committee Draft (CD)**, Molde, Norway, May 2009 meeting

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ISO 19152 Scope

This International Standard:

- defines a reference Land Administration Domain Model (LADM) covering all basic information-related components of Land Administration (including the surface
- provides a terminology for land administration, based on various national and international systems, that is as simple as possible in order to be useful in practice. The terminology allows a shared description of different formal or informal practices and procedures in various jurisdictions
- provides a basis for national and regional profiles
- enables the combining of land administration information from different

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(geometry and topology)

sources in a coherent manner.

Outside the Scope

The following is outside the scope of this International Standard:

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ta,

LADM

expects from these external sources, if available.

Review History

<i>Version</i>	<i>Date</i>	<i>Comments</i>
WD19152.1	01-Feb-2008	Equal with ISO/TC 211 N 2385
[REDACTED]		
WD19152.0	01-Oct-2008	Comments Delft, The Netherlands, 22-25 September 2008
CD19152.0	25-May-2009	Comments Tsukuba, Japan, 1-2 December 2008
CD19152.1	30-Jun-2009	Comments Molde, Norway, 25-26 May 2009
CD 19152	10-Jul-2009	Comments CD19152.1

UN-HABITAT and the STDM

Social Tenure Domain Model

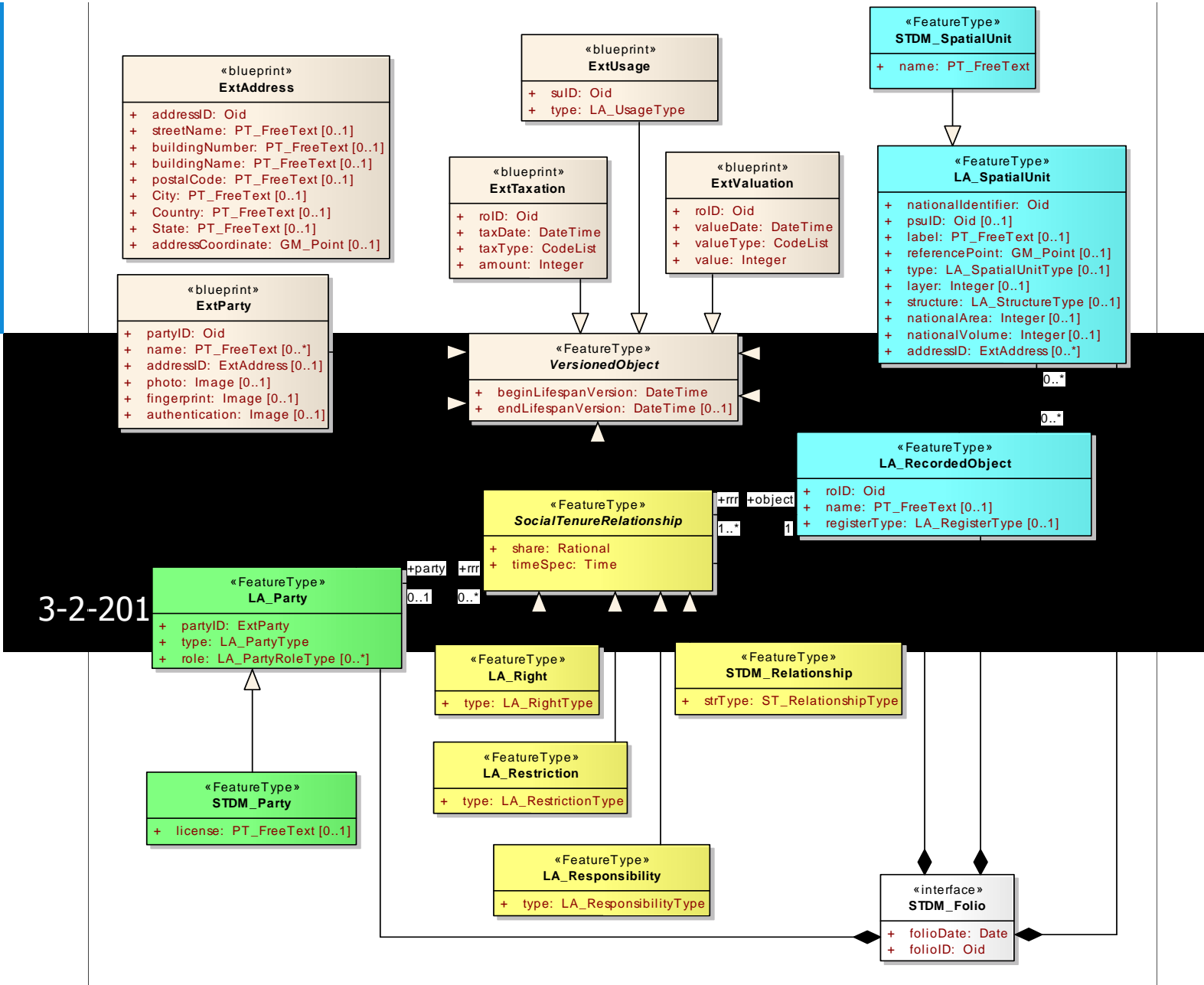


SHELTER FOR ALL

United Nations Human Settlements Programme

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- **STDM IS a specialization of LADM and will be included as informative annex B of ISO 19152**
- **ITC develops STDM based prototype for Ethiopia in close co-operation with FIG and UN-HABITAT**



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INSPIRE

Cadastral Parcels (CP)



- harmonizing geo-information in Europe → ESDI

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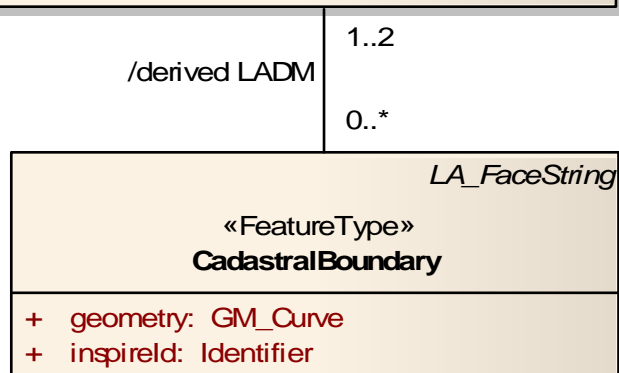
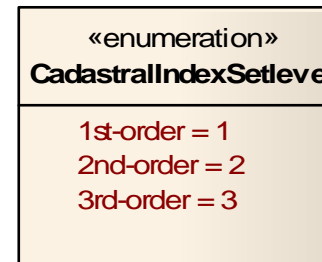
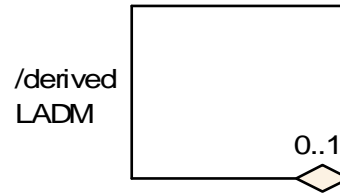
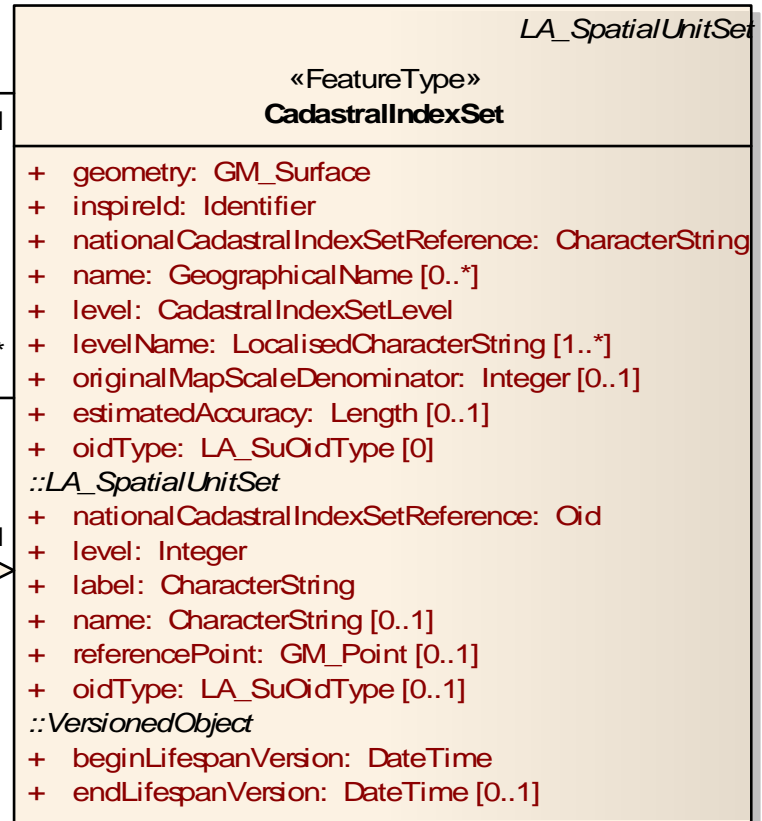
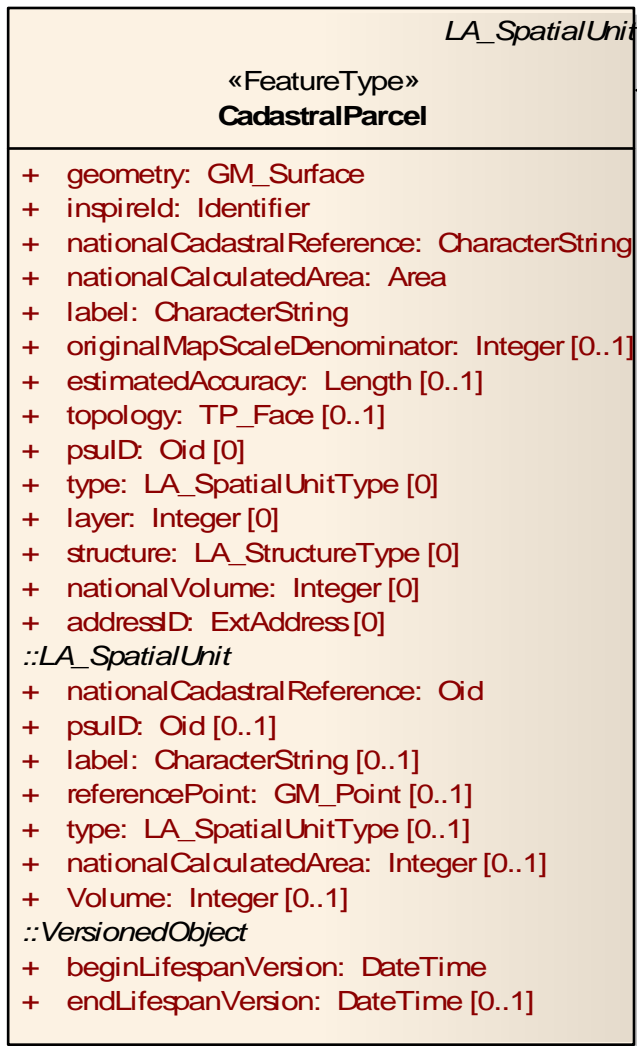
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of detail), borders

- **LADM based INSPIRE cadastral parcels: select of relevant classes, use inheritance and add attributes and constraints**
- **ISO 19152 / LADM and INSPIRE cadastral parcels have different scope, but the overlap does fit**



Note:

The LADM attributes inherited by INSPIRE can have a more specific data type or cardinality in INSPIRE (compared to LADM). This has been

Instance level diagrams

- LADM at high abstraction level

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Case 1: ownership and leasehold

object AnnexC Case01

«FeatureType»
Joe :LA_Party
type = naturalPerson

«FeatureType»
Fruit Co. :LA_Party
type = nonNaturalPerson

3- «FeatureType»
LongLease :LA_Right
type = lease
share = 1/1
timeSpec = 25 years

timeSpec is from the
date of registry

«FeatureType»
Ownership :LA_Right
type = ownership
share = 1/1
timeSpec = <Null>

timeSpec should be
interpreted as a
permanent right

«FeatureType»
Record_Joe :LA_RecordedObject
roID = 100
name = Joe's Farm

«FeatureType»
Parcel_Joe :LA_SpatialUnit
suID = 100
Area = 1234
type = 2D

Development (schedule) of LADM

- **New Working Item Proposal (NWIP):** was in February 2008

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- **International Standard (IS):** June 2011

ISO 19152 Annexes

References (informative)

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Annex G. LADM and INSPIRE (informative)

Annex H. LADM and LPIS (informative)

Conclusion

- **consensus process → acceptance by wide community**

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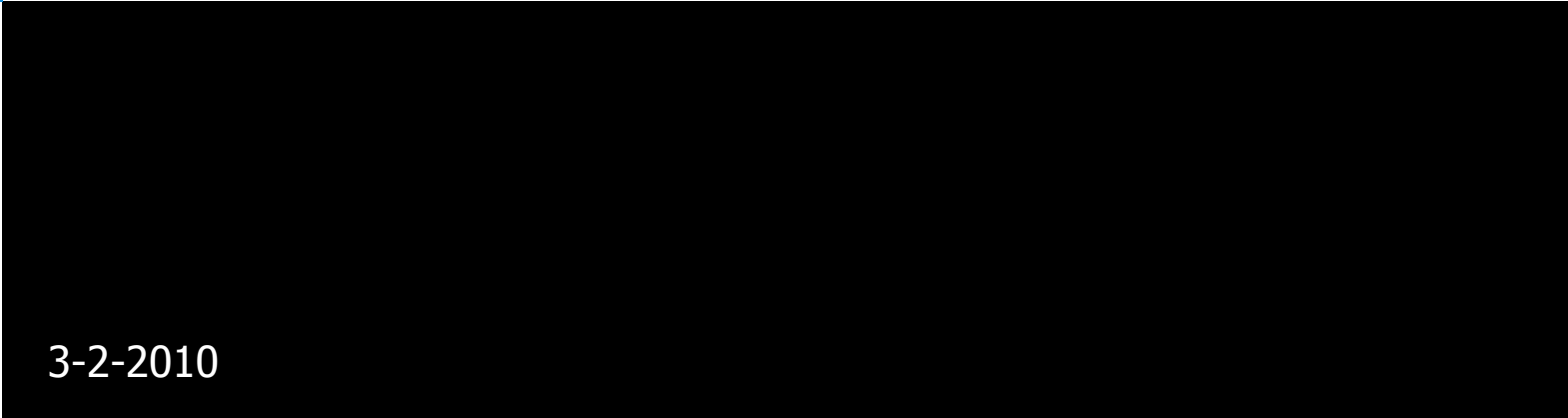
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- **LPIS (not mentioned in presentation: EU agricultural parcels)**
- **Land Administration should become one of the cornerstones of the Spatial Information Infrastructure (SII)**
- **progress has been made**



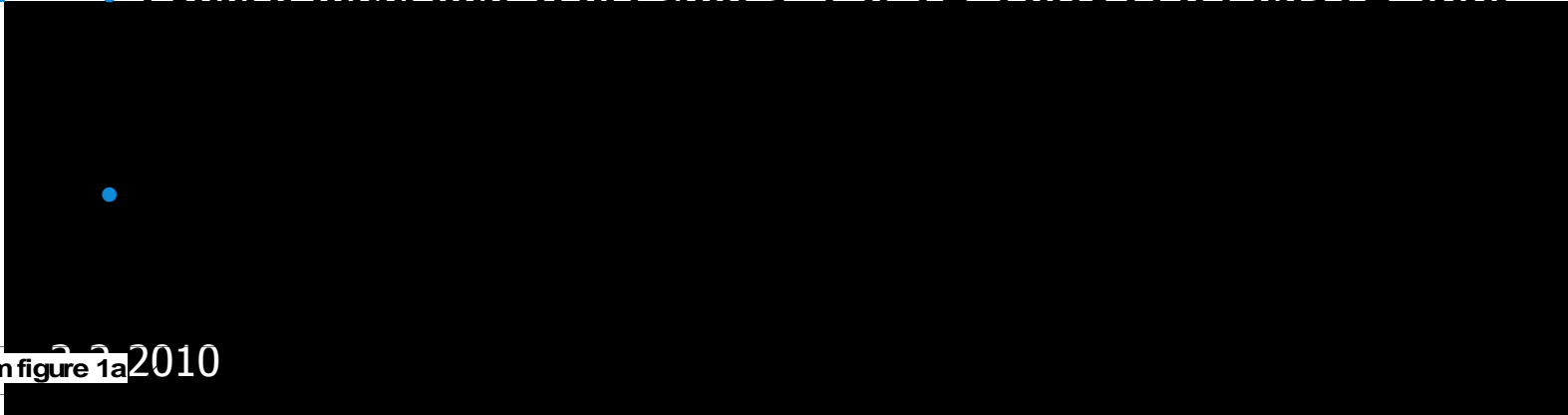
Thank you



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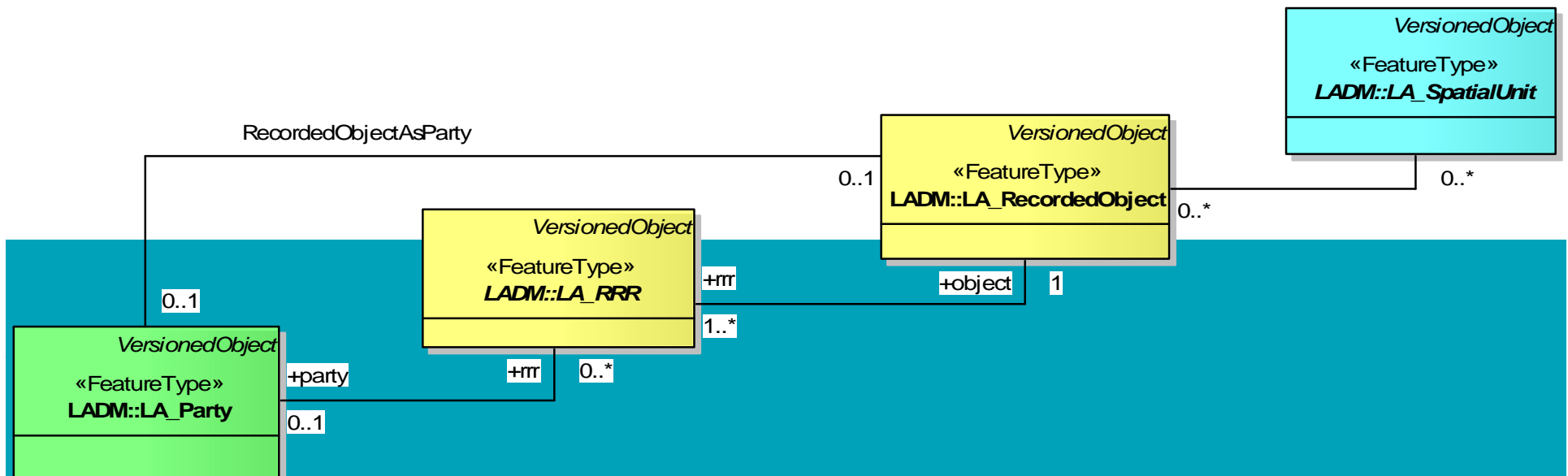
LADM core: LA_RecordedObject added

- Explicit modeling 'real estates': e.g. LA_Party Peter has LA_RRR



parcel

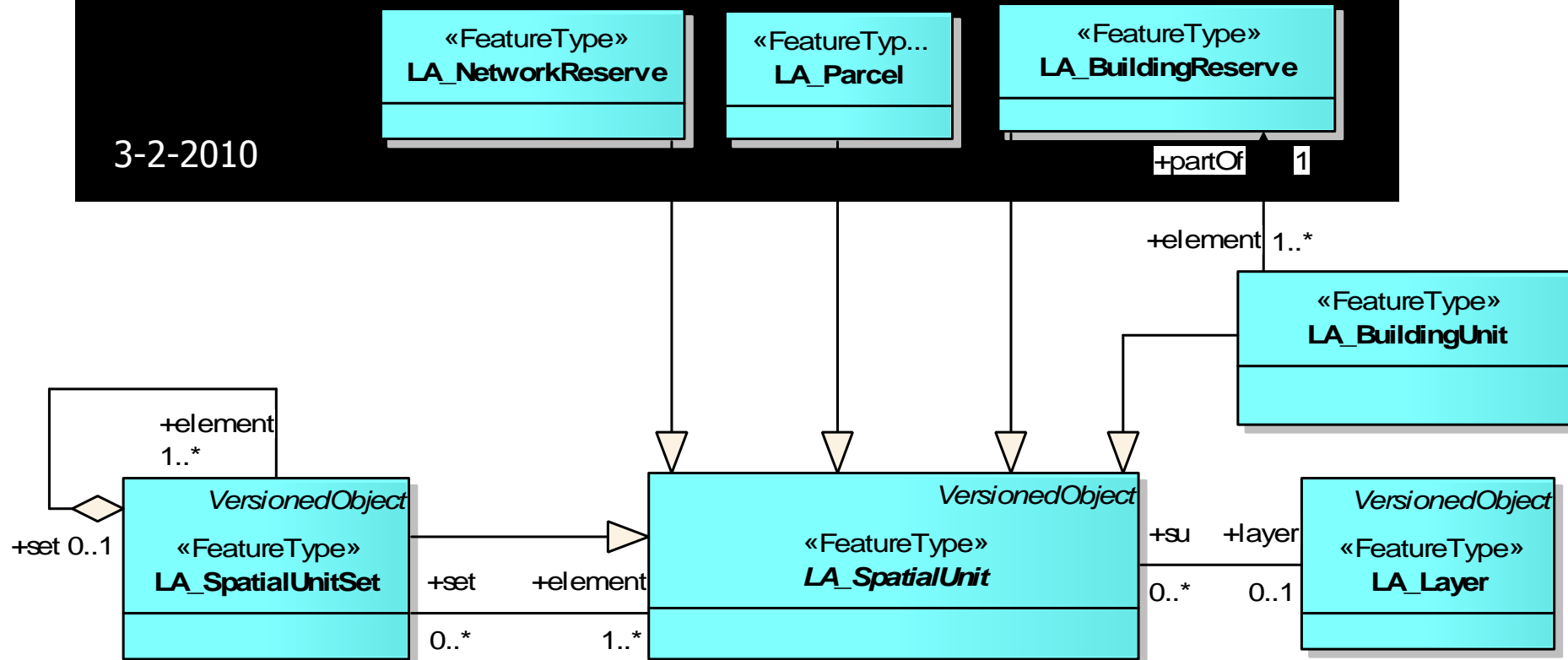
iss ladm figure 1a 2010



LA_SpatialUnit refined

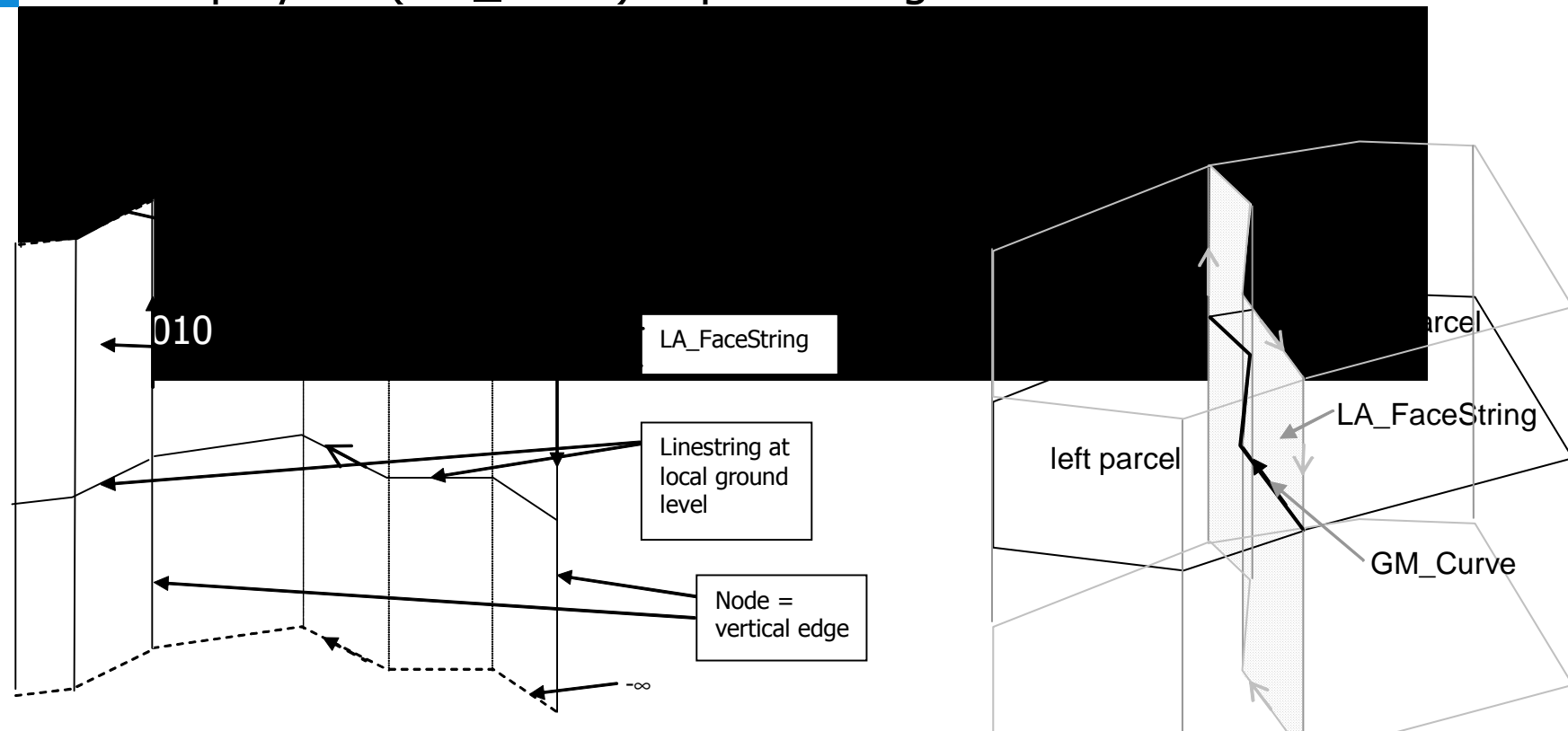
- LA_SpatialUnit specializations: parcel, network, building(unit)
- organized in LA_Layer based on structure or content
- 5 types: **point, text (unstructured) line, polygon, and topology**

class ladm figure 3b



2D and 3D integration

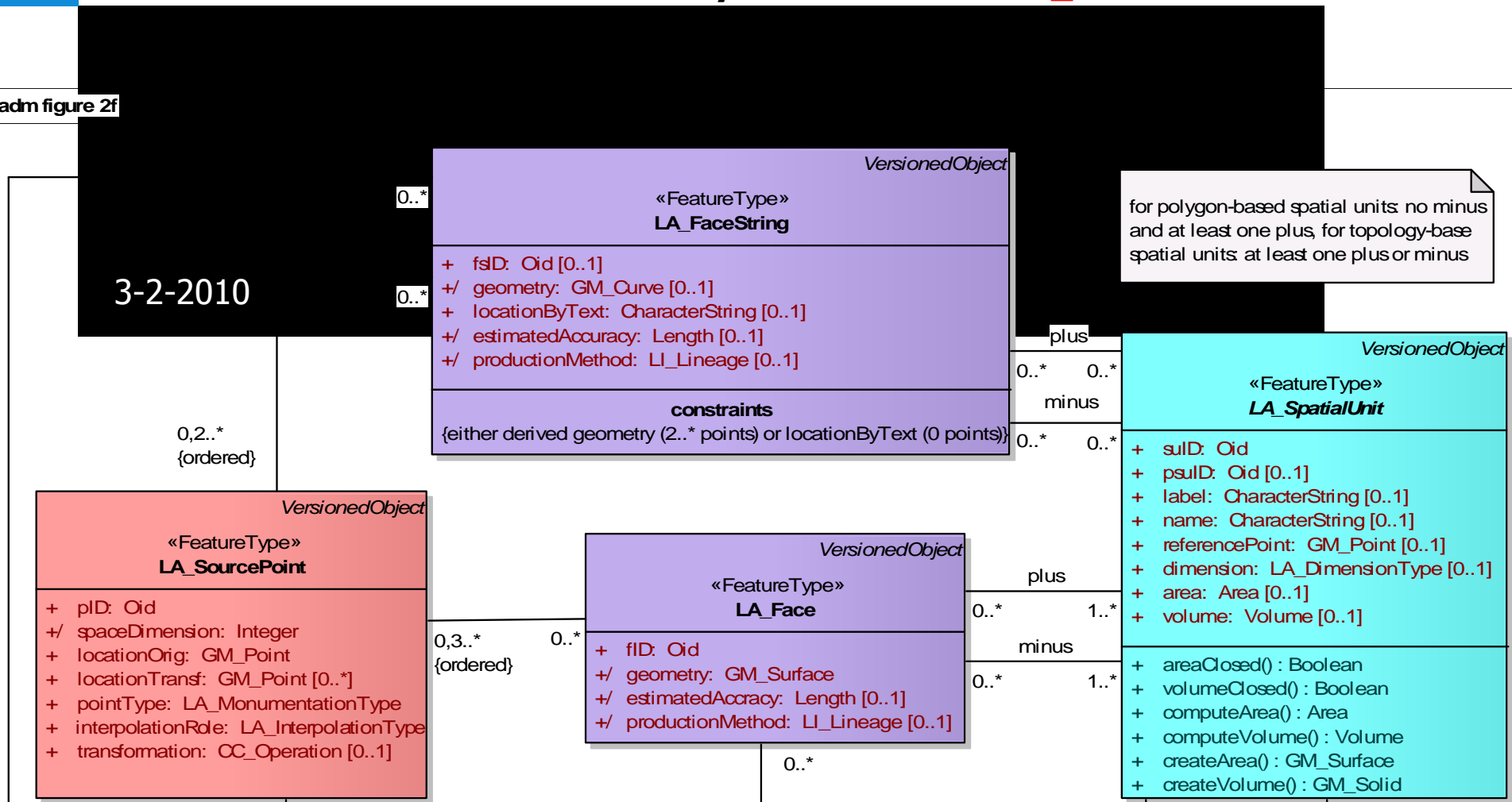
- observation: 2D description implies 3D prismatic volume
- 2D polyline (GM_curve) implies string of vertical faces



2D and 3D integration

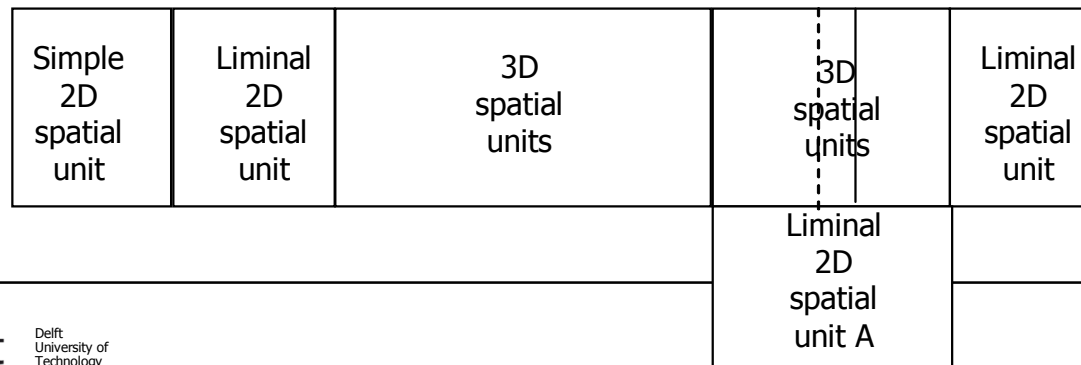
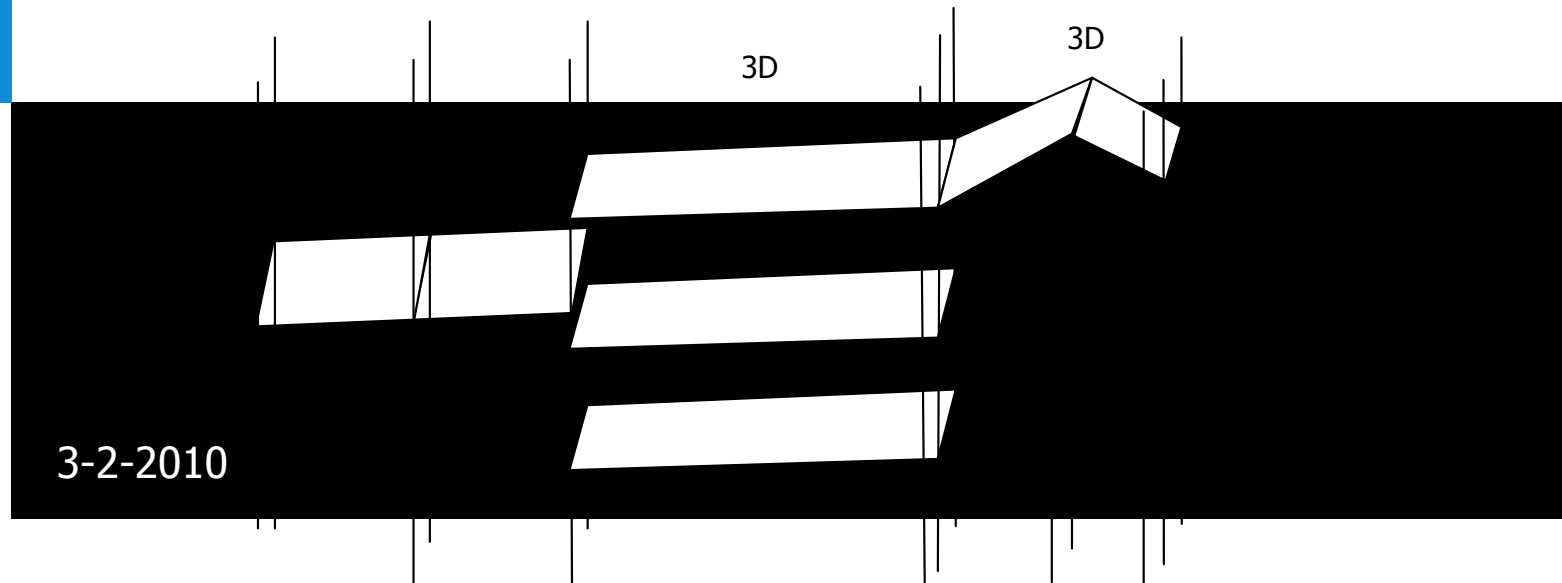
- 2D polyline (GM_curve) implies string of vertical faces: **LA_FaceString**
- true 3D described with arbitrary oriented faces: **LA_Face**

adm figure 2f



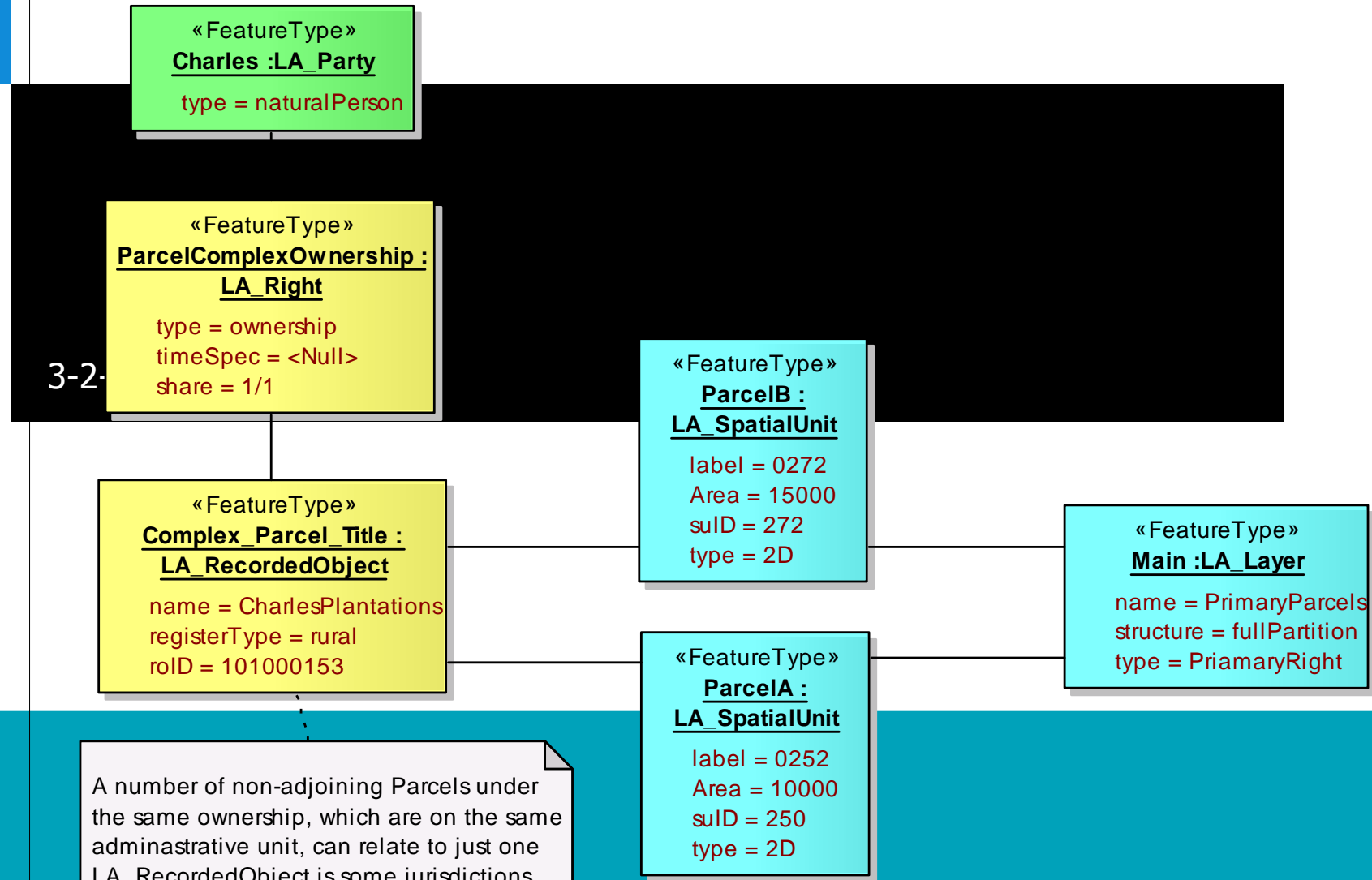
2D and 3D integration

- Between 2D and 3D spatial unit transition via **liminal** spatial units



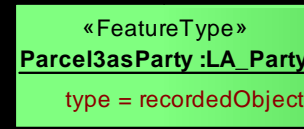
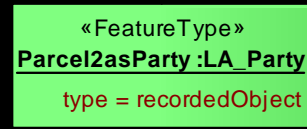
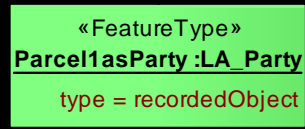
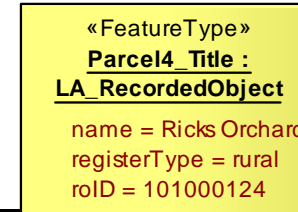
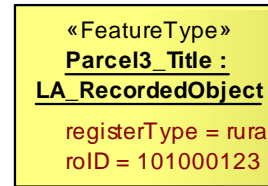
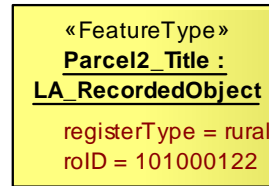
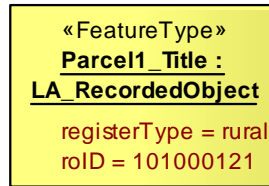
Case 2: parcel complex with one owner

object AnnexC Case25

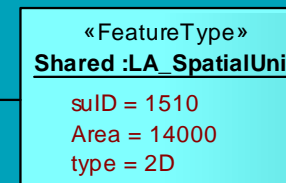
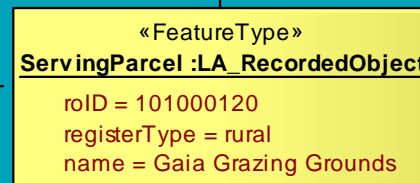
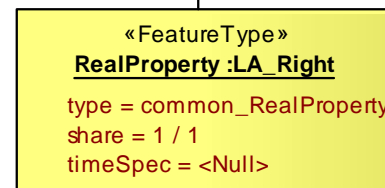
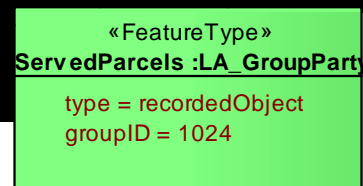


Case 3: serving parcel

object AnnexC Case04



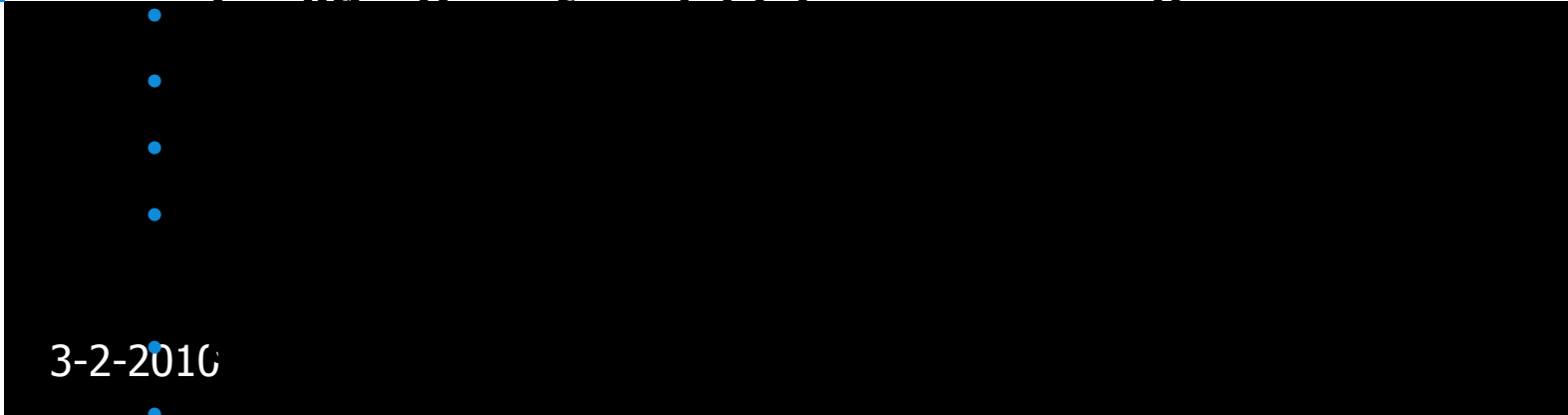
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A serving parcel (instance of RecordedObject) has no direct natural or non-natural owner but instead ownership is defined via associations from the served parcels (1 to 4 in the diagram) through the common Real Property right.

LADM changes in Committee Draft

- **due to consensus-process: comments and resolutions**
- **ISO versions WD1, WD2, WD3, CD**
- **most important changes:**



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- **new layer concept**
- **seamless integration of 2D and 3D**