



Country Profile for the Cadastre of the Czech Republic Based on LADM

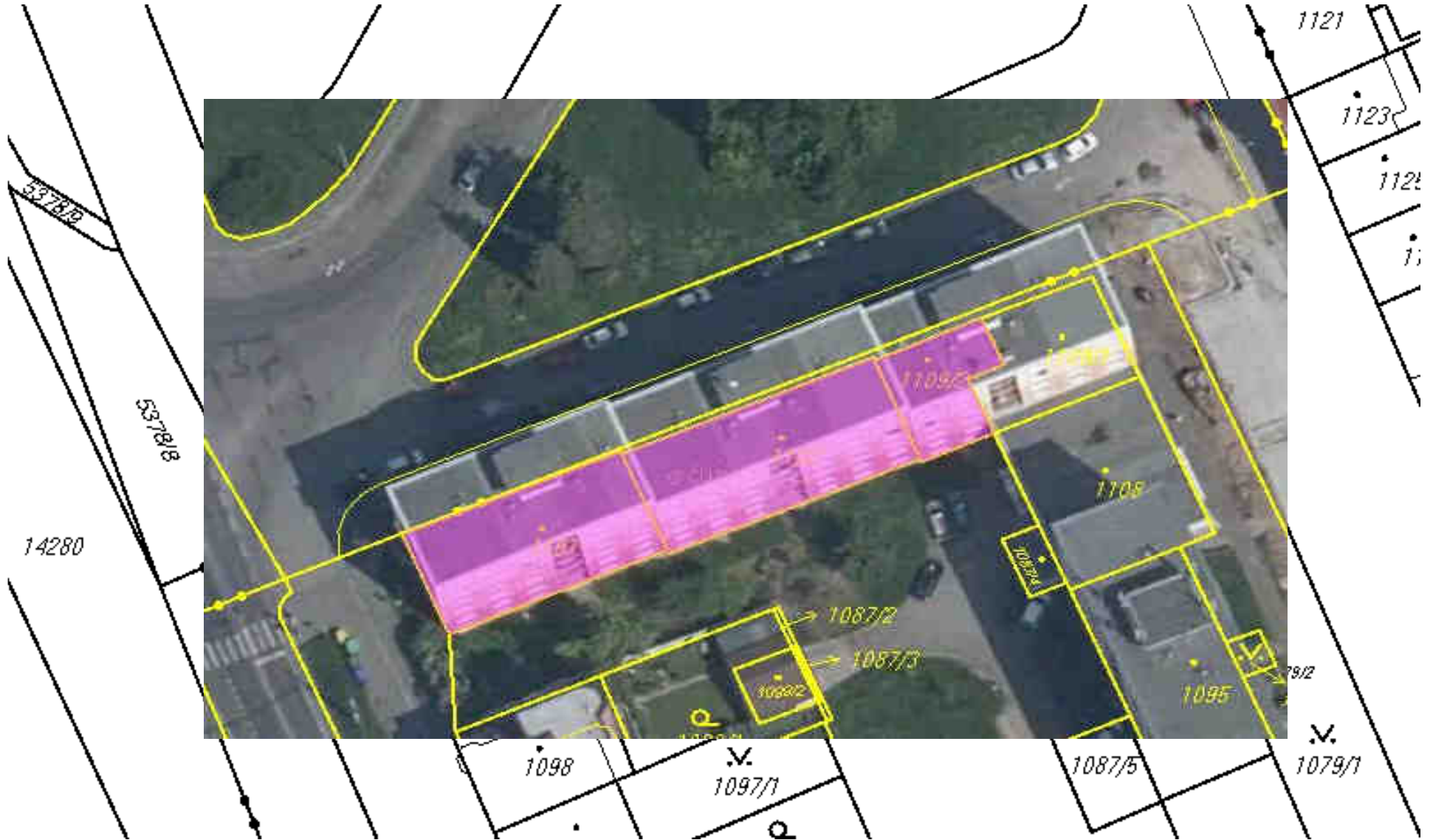
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Motivation for LADM country profile

- **Building of the Czech National Spatial Data Infrastructure**
- Considering the adoption of the ISO 19152 (LADM) standard in various government initiatives -> **there is a need for LADM knowledge**
- **Feedback** received during presentations and interviews
- e.g. Czech Union of Surveyors and Cartographers (a member of FIG) -> **there is a need for 3D cadastre**
- **Discussion** between members of the National Mirror Committee 122 Geographic information/Geomatics
- Czech version of ISO 19152 exists since October 2013
- -> **there is a need for the country profile based on LADM**

GeoInfoStrategy

- In October 2014, the Czech government approved the conception of **The Strategy for the Development of the Infrastructure for Spatial Information in the Czech Republic to 2020 (GeoInfoStrategy)**
- There is a strong emphasis on the creation of **National Set of Spatial Objects in the GeoInfoStrategy (NSSO)**
- NSSO is defined as the source of guaranteed and reference **3D geographic data at the highest possible level of detail** for selected objects of the real world, covering the whole territory of the Czech Republic

GeoInfoStrategy & LADM

- The set of measures for development of the regulatory framework in the field of spatial information were defined in the GeoInfoStrategy Action Plan
- ISO 19152 is recommended:
 - Measure O65 Further development of the **Register of territorial identification, addresses and real estates**
 - Measure O68 Feasibility study of the **Register of passive infrastructure**

LADM based country profile - Aims

1. To determine a compatibility between LADM and Czech cadastral data model.
2. To have a LADM based country profile reflecting the current cadastral registration **with possible extension to 3D in a standardized way.**

Design of the Czech profile based on LADM

0) Physical model is not known (to public)

1) Reverse engineering: Physical model -> Logical model -> Conceptual model

2) Mapping of Czech tables (classes) on LADM classes where possible

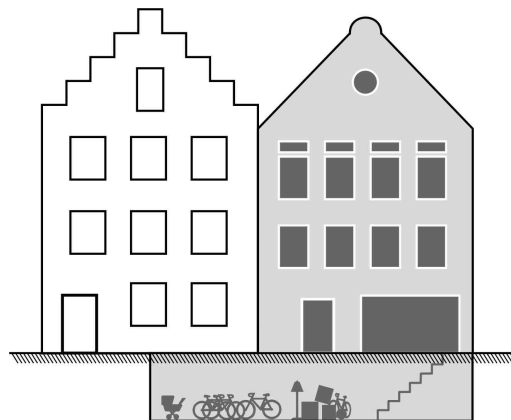
3) Inheritance from LADM classes

The new Civil Code & cadastre

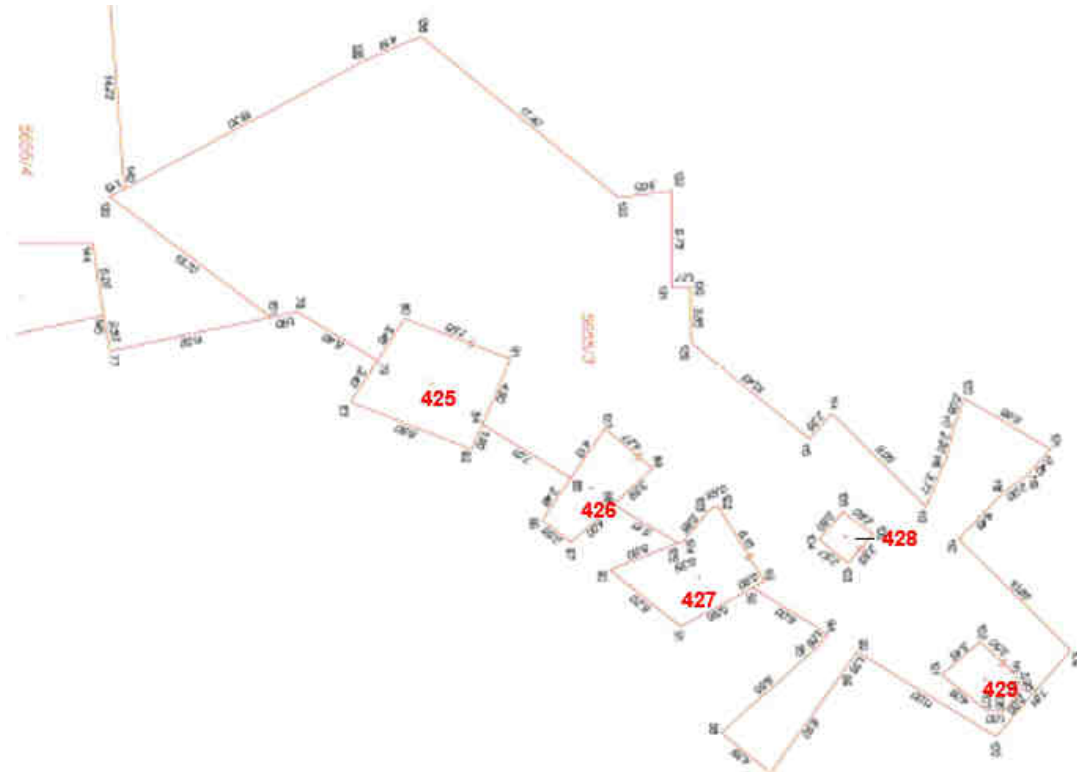
- 1. 1. 2014 The new Civil Code
- It contains and defines, for example:
 - a **superficies solo cedit** rule,
 - a **right of building** as a new type of right,
 - a **supplementary co-ownership** as a new type of ownership.

The new Civil Code & 3D cadastre

- Real estates are
 - land (inc. **3D space** above and below the surface), and
 - **underground construction** with separate special-purpose use (e.g. metro, collectors, wine cellars,...)
- If an underground construction is not a real estate, then it is a part of the land, even if it affects (lays below) the other land.



(Stoter, J. 3D Cadastre. Ph.D. Thesis. TU Delft, 2004.)



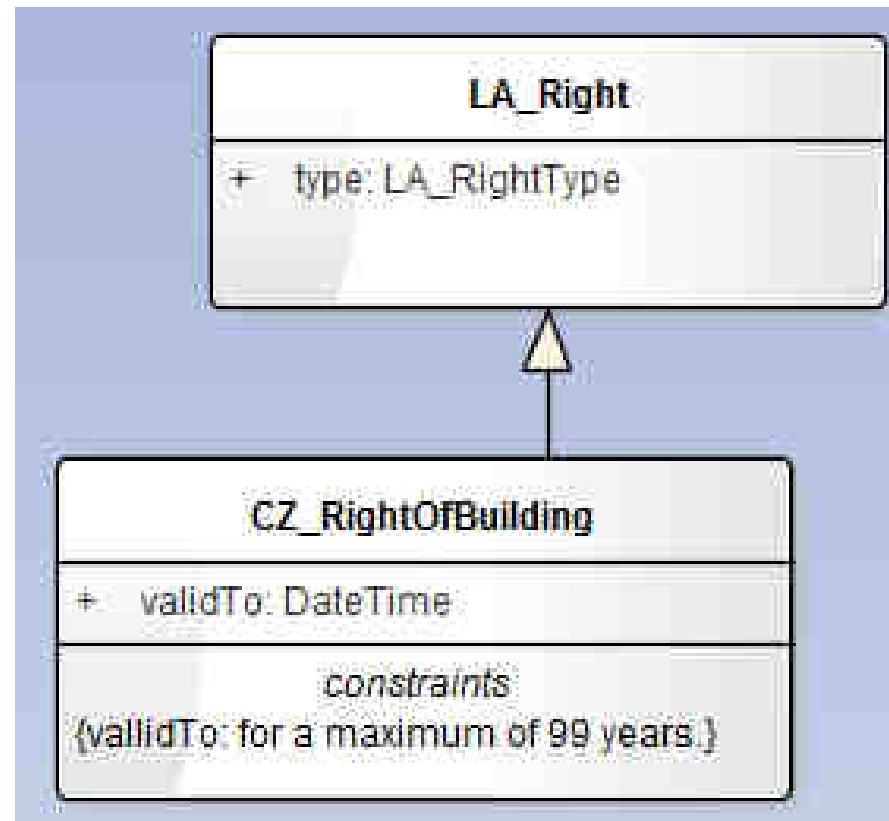
Registration of buildings

- Buildings were registered separately in the period 1951-2013 by the Civil Code from 1950's.
- According to the law the plot and the building on the plot are two separate things.
- In spite of this, cases came up, in which the owner of the building was not the same as the owner of the land on which the building was located.
- **Superficies solo cedit** (new Civil Code § 506)
 - that is that the ownership of a piece of land generally comprises also the ownership of all buildings erected on the land.

Right of building

- As a consequence of registering buildings as separate properties, the need to deal with cases of new development on the land of another owner has increased.
- It is possible to conclude an agreement on the establishment of building right between the land owner and the builder.
- The new building becomes a part of the building right.
- **The building right is something that has to be registered in the cadastre of real estate as a property as well.**

Right of building



Supplementary co-ownership

- There are some owners of their own property, who are allowed to use it only together with some shared property (e.g. a driveway).
- The ownership of that shared property names supplementary co-ownership.
- Ownership of property in supplementary co-ownership is inextricably linked with the ownership of properties for whose use property in supplementary co-ownership serves.
- Separate transfer of such property is not possible.

Supplementary co-ownership

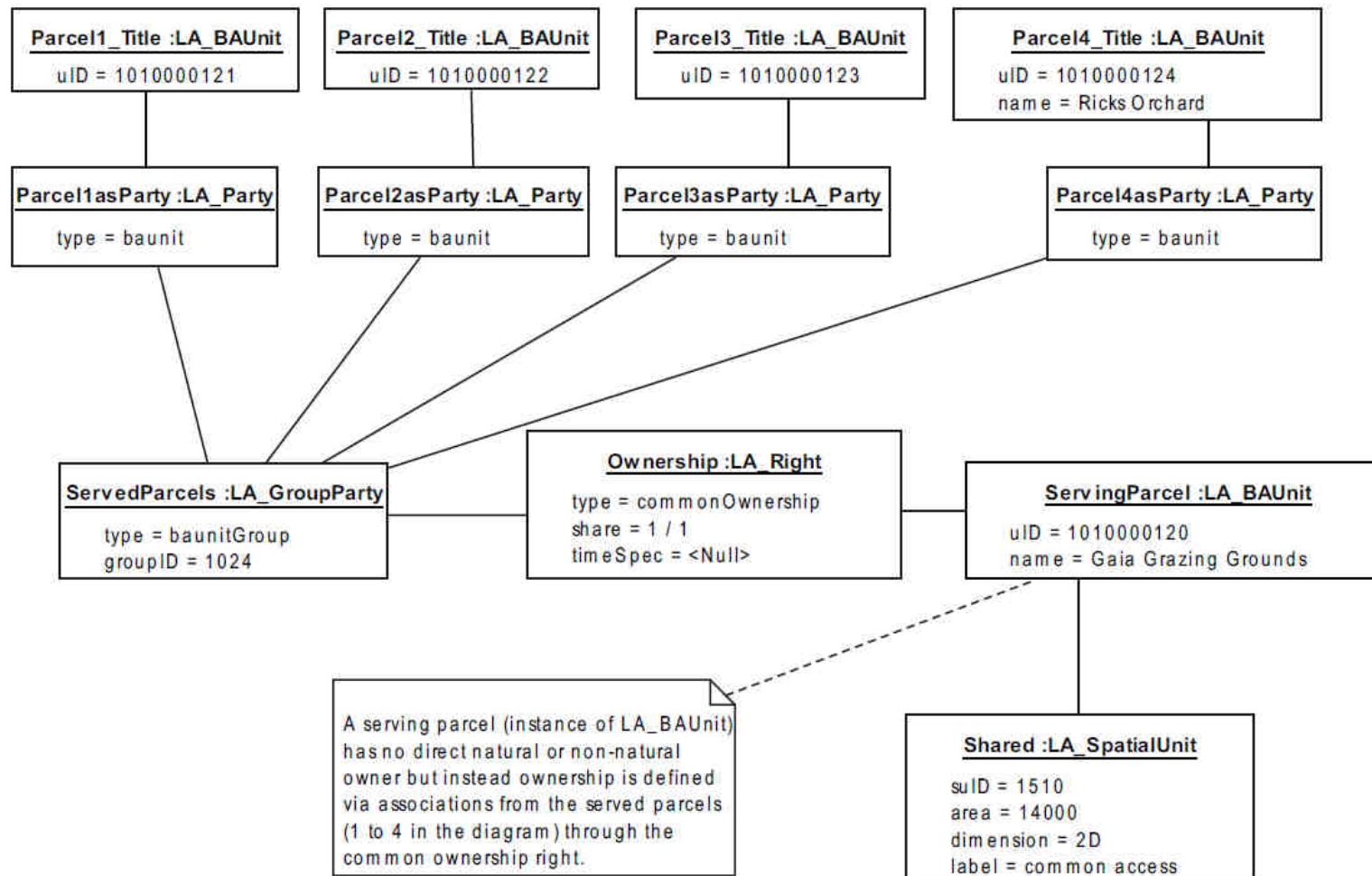
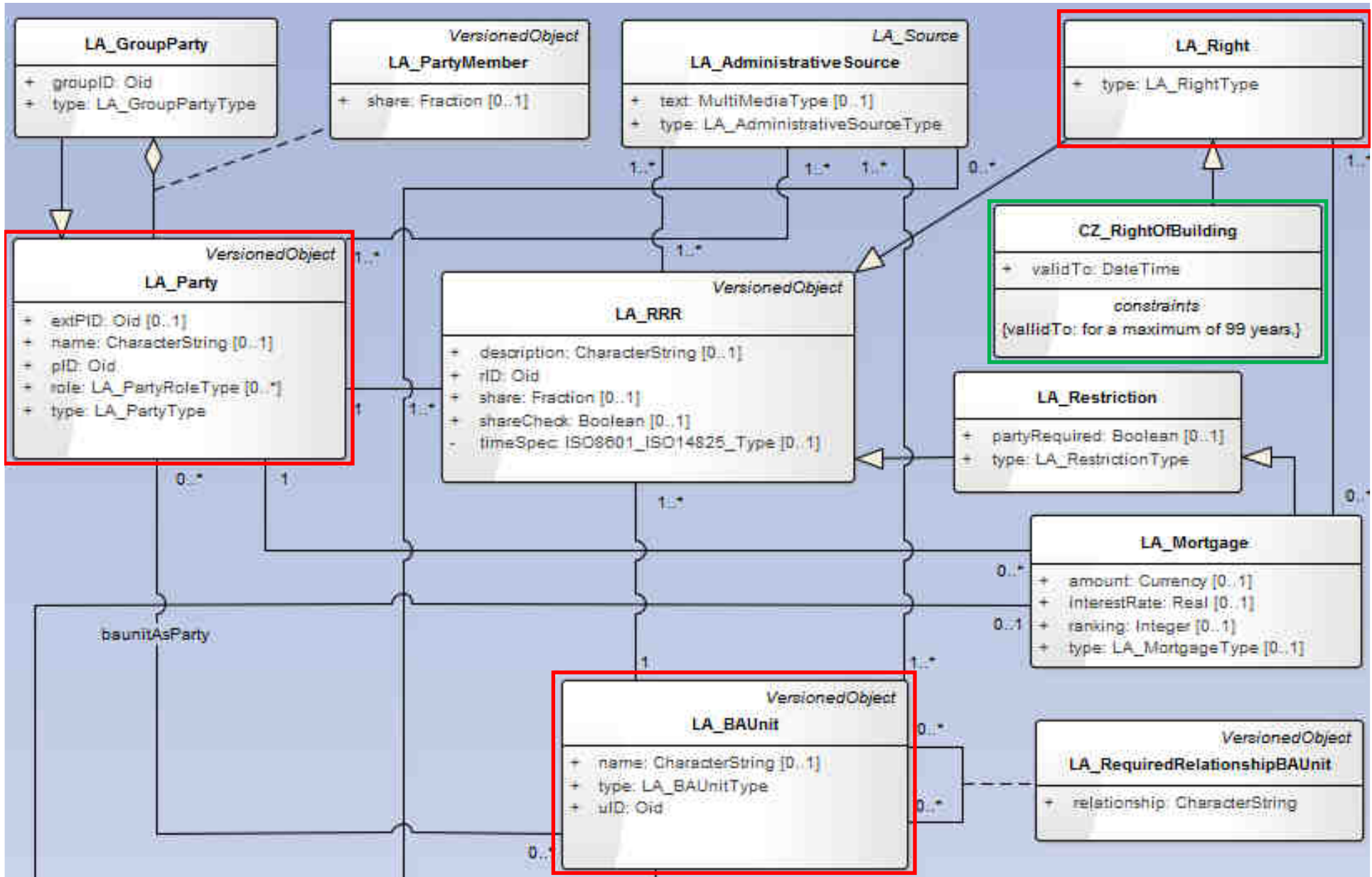
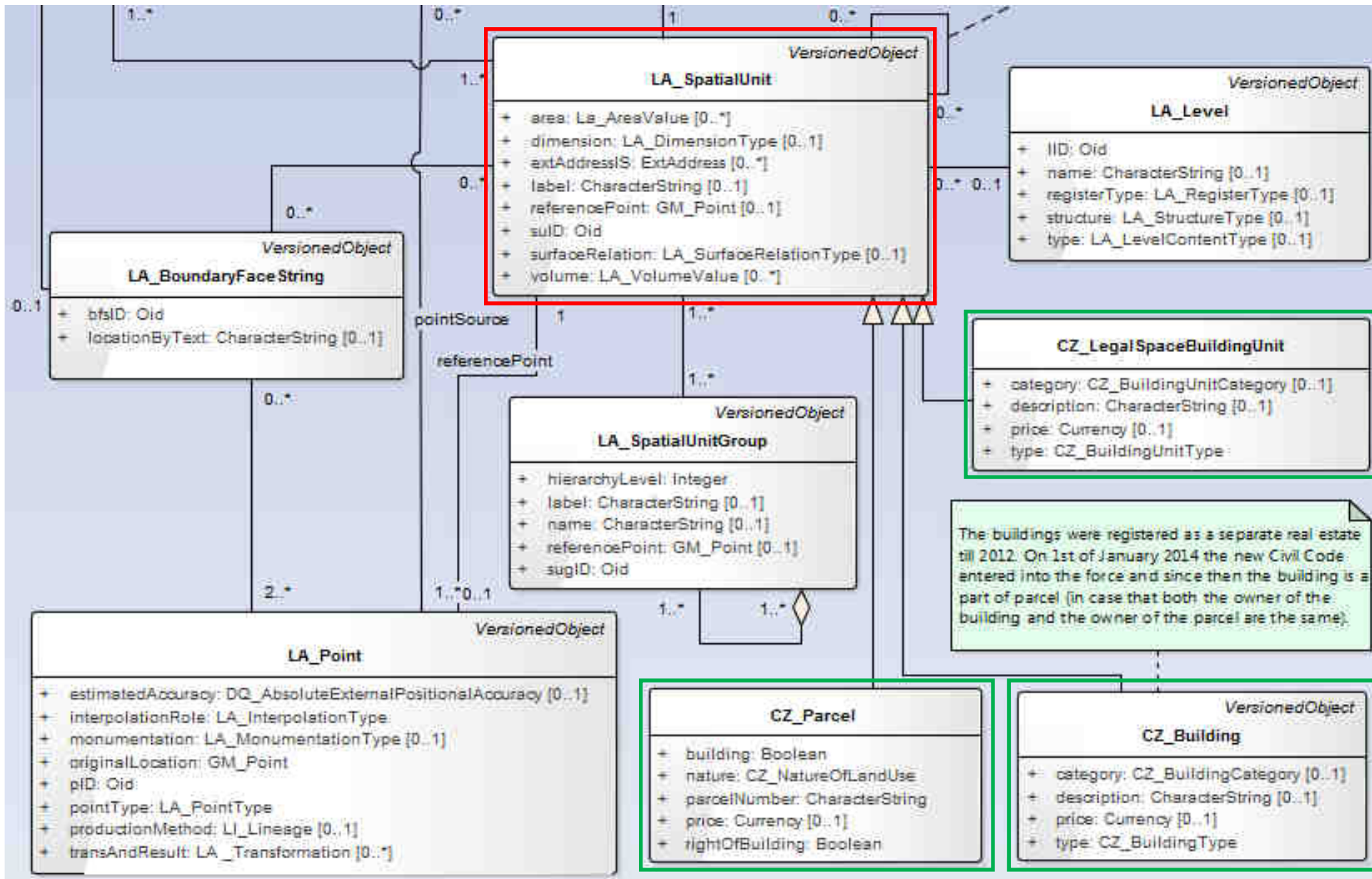


Figure C.3 — Serving parcel – owned by neighbours

(source: ISO 19152 LADM, 2012)





Conformity testing

- ISO 19152 Annex A - Abstract Test Suite
- Table A.1 gives an overview per package to check for LADM compliancy.
- Possible ways to document the positive results:
 - 1) Show inheritance structure between the LADM and the tested model (elements), or
 - 2) Show mapping of elements between the LADM and the tested model.
- **The Czech profile is conformant with LADM at level 2**

Thank you for your attention!



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