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MANAGEMENT



The LADM
based on INTERLIS

Michael Germann, Jürg Kaufmann, Dr. Daniel Steudler Switzerland
Dr. Christiaan Lemmen, Prof. Dr. Peter Van Oosterom, Kees de Zeeuw The Netherlands

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Overview

1. Introduction
2. INTERLIS Concepts
3. Integration with LADM
4. Comparison with other Standards
5. Future Work
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Introduction

- The Land Administration Domain Model (LADM) and the conceptual schema language INTERLIS share the same MDA principles
- Swiss Land Management (SLM) combined those standards and presented first results to Dutch Cadaster International in November 2014
- It was decided spontaneously to promote this approach as an interesting alternative to implement LADM

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INTERLIS Concepts

Short History of INTERLIS

The first version of the Swiss cadastral model was introduced in 1993 and revised in 2001

With the introduction of the Swiss Geo Information Law **160 new data models** will be completed by end of 2016

INTERLIS is the common modelling language to define all models of the Swiss GDI (since 1993)

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INTERLIS Concepts

INTERLIS Key Features

System neutral modelling language to describe relational or object-oriented data models

XML based data exchange

Directly processable by modern software tools

Compatible with the relevant international Standards (UML, XML)

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INTERLIS Concepts

Available Software Tools for INTERLIS

Compiler	Tests the syntactic correctness of INTERLIS models (free).
Checker	Validates XML data sets against a model (free & commercial).
Other	DB-Generator, Translators, UML-Editor, etc. (free & commercial).

see also www.interlis.ch for more information

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Integration with LADM

ISO19152 / LADM

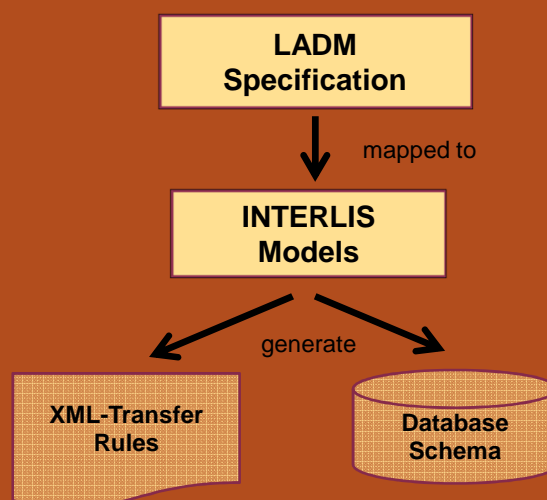
- Conceptual model covering basic information-related components of land administration
- Basis for the development and refinement of efficient and effective land administration systems
- ISO Standard since December 2012

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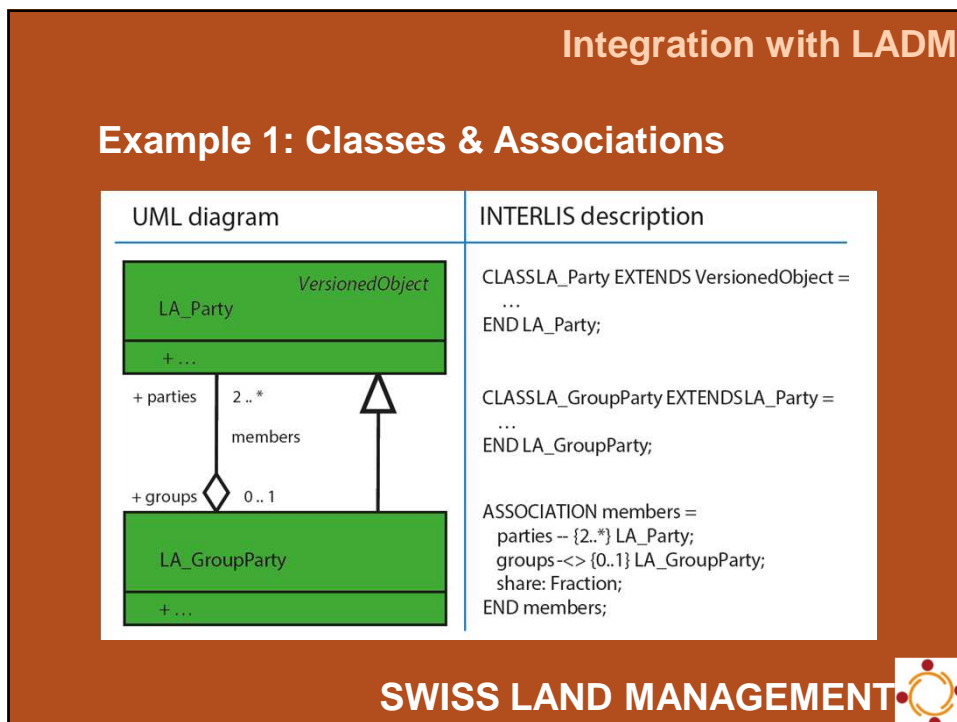
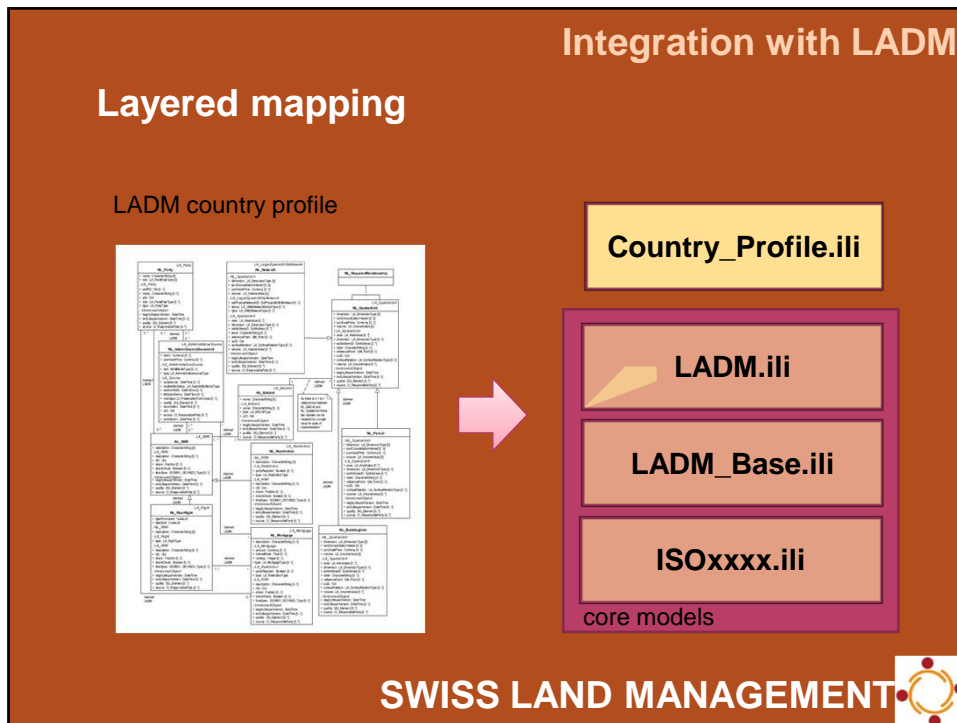
Integration with LADM

The LADM / INTERLIS Approach



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Integration with LADM

Example 2: Constraints

```

CLASS LA_SpatialUnit EXTENDS VersionedObject =
  area: LIST {0..*} LA_AreaValue;
  dimension: LA_DimensionType;
  extAddressID: LIST {0..*} LADM_Base.External.ExtAddress;
  label: CharacterString;
  referencePoint: GM_Point;
  suID: MANDATORY Oid;
  surfaceRelation: LA_SurfaceRelationType;
  volume: LIST {0..*} OF LA_VolumeValue;
MANDATORY CONSTRAINT
  !! if dimension=2D then volume not specified
  NOT (
    dimension == #2D
  )
  AND (
    DEFINED(volume)
  )
END LA_SpatialUnit;

```

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Comparison with other Standards

Benefits of the LADM / INTERLIS Approach

In General reduced complexity by concentration on the most basic tasks (modeling and data exchange)

To UML great tool to document all phases of software development, but no geometric types or data exchange

To GML a flexible transfer but no modeling language

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Future Work

Work in progress

Swiss Country Profile sponsored by Federal Office of Topography swisstopo

INTERLIS 2.4 better constraints formulation and other language improvements

Improved LADM description coverage of all spatial types

3D Support

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Conclusions

- ✓ By translating LADM to INTERLIS we get directly computer process able data models and data exchange formats
- ✓ We can use all available INTERLIS tools (compiler, checker, translators) for LADM
- ✓ Translated models can be downloaded from the SLM website at

swisslm.ch

for free

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FIG Working Week Switzerland 2019



Get to know us

Come along, have a drink, and get surprised!!!

**Wednesday, 20 May,
17h30-18h30
at
"Culture Beat"**

