LADM Implementation in Colombia
– Process, Methodology and Tools developed and applied
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Requirements for Land Administration in Colombia

- **Peace Accords**: Cadastre in support of Land Tenure Regularization and Restitution Process


- **Public Policy Document on Multipurpose Cadastre**: Principals
  - Interoperability, standardization (ISO 19152 – LADM)
  - Legal independence
  - Outsourcing of cadastre operation
  - Freedom of Methods
LADM Country Profile – Applied Modelling Process

0. Introductory Training on MDA, LADM
   - Understanding of MDA and LADM, best practices, other country profiles

1. Common Reference Frame
   - Documented and reviewed Definitions Agreements and Conventions

2. Draft conceptual LADM
   - UML of conceptual LADM-COL, detailed documentation (use cases)

3. Core LADM Model
   - Adjusted LADM based on Feedbacks WB Pilot Project, Core Model

4. Specialized LADM Models
   - Specialized Models based on LADM Core, Methodology and Documentation
LADM Country Profile – Modular Approach

Core Model

Cadaster & Registry

Protected Areas

Spatial Dev. Plans

Formalization

Fallow Land

Etnic Territories

LADM - COL
LADM Implementation with INTERLIS – why?

Transfer Rules
(model-based Exchange)

INTERLIS Model

UML LADM

DB Schema
(fisical model)

XTF
LADM Implementation with INTERLIS – why?

- it allows to precisely describe data models (as an ASCII text),
- it is compatible with relevant international standards (UML, XML), but: includes also geometry types;
- it includes a system neutral (XML) exchange format derived from the data model…
- …this allows to check data against INTERLIS models, (automated quality control);
- and, the LADM base model (ISO 19152) is ready to use, enabling implementation of any country profile.
INTERLIS Model Implementation – used Tools

Data Modelling

- UML/INTERLIS Editor
- Model file
- INTERLIS-Compiler
- Validate model
- Generate fisical model
- PostGIS DB schema (empty tables)

Data Validation

- INTERLIS transfer file
- Validate data
- Export data
- non-valid data
- DB Schema & Data Generation

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Integration of INTERLIS Tools – MDA and Web based System
Integration of INTERLIS Tools – Validation Module
Integration of INTERLIS Tools – QGIS Plugin for Data Capture
Lessons Learnt – Regarding the applied Modelling Process

- Achieve consensus on a set of **common initial definitions and agreements**
- LADM is a conceptual model: **involving thematic specialists in the modelling process** is therefore essential
- **Prioritize**: focus first on the Cadastre – Registry Topic; identify first the BAUnits
- **It’s an Iterative process**: the conceptual model is just one step (implementation!)
- Provision of adequate trainings to **understand the LADM as a conceptual model**
Lessons Learnt – Regarding the used INTERLIS Approach

- **INTERLIS fully supports the Modular Approach for the LADM**, which is a clear advantage in a complex institutional setting as in the case of Colombia.

- **A freely available Ecosystem of Tools is available**, to fulfills all the requested tasks of implementing the LADM with INTERLIS.

- The **Modularity** of the tools **provides great flexibility for integrating** them into hybrid GIS environments (FOSS/proprietary, web/desktop).

- **Build-up adequate know-how**: implementing LADM using INTERLIS must be accompanied by expert courses and on-the-job training in the language.
Conclusion – *ready to use Toolkit for LADM Implementation*

- Modelling Process and Methodology
- INTERLIS base Models
- Software and Tools (free available, Open Source)
- Detailed Documentation
Thank you