Legal independence, modularity and implementation of LADM using INTERLIS – case study of the Colombian ISO 19152 profile

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SNR
SUPERINTENDENCIA
DE NOTARIADO
& REGISTRO
La guarda de la fe pública

Agencia de Implementación
bsf swissphoto
INCIGE
INGENIERIA CIVIL Y GEODESIA S.A.S.

Proyecto
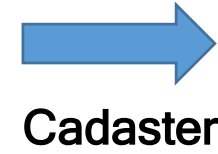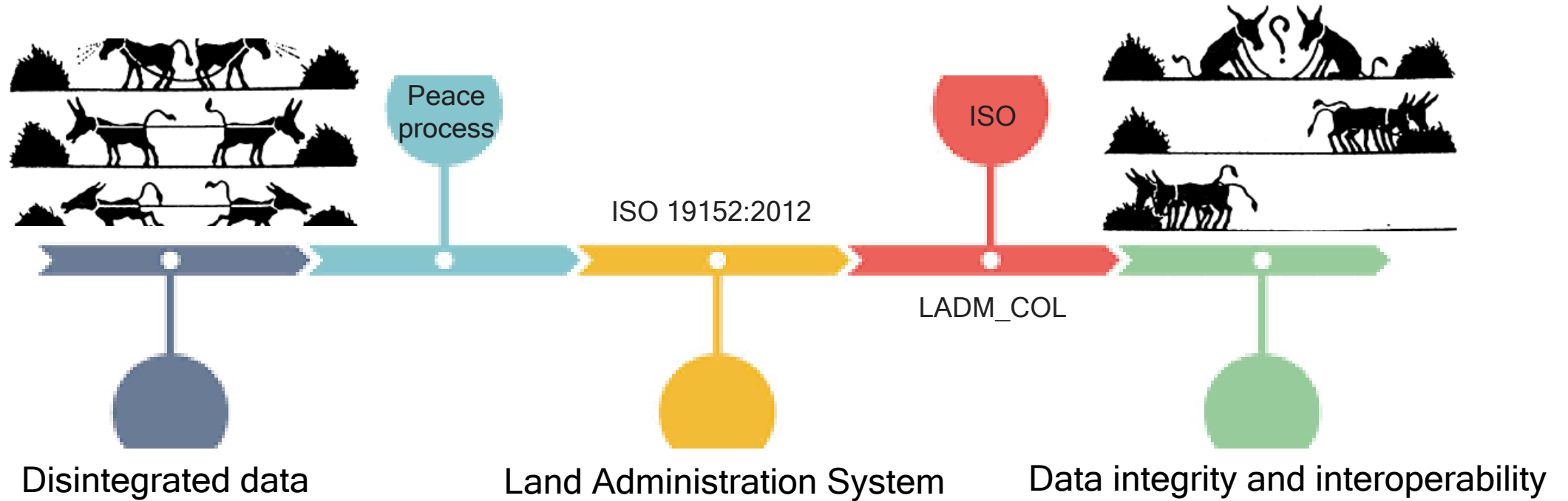Modernización de la
Administración de Tierras
en Colombia

Un Proyecto de:

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Embajada de Suiza en Colombia
Cooperación Económica y Desarrollo (SECO)

Colombia

Decentralized

Cadaster

Land Registry

Timeline

Peace process

ISO 19152:2012

ISO

LADM_COL

Disintegrated data

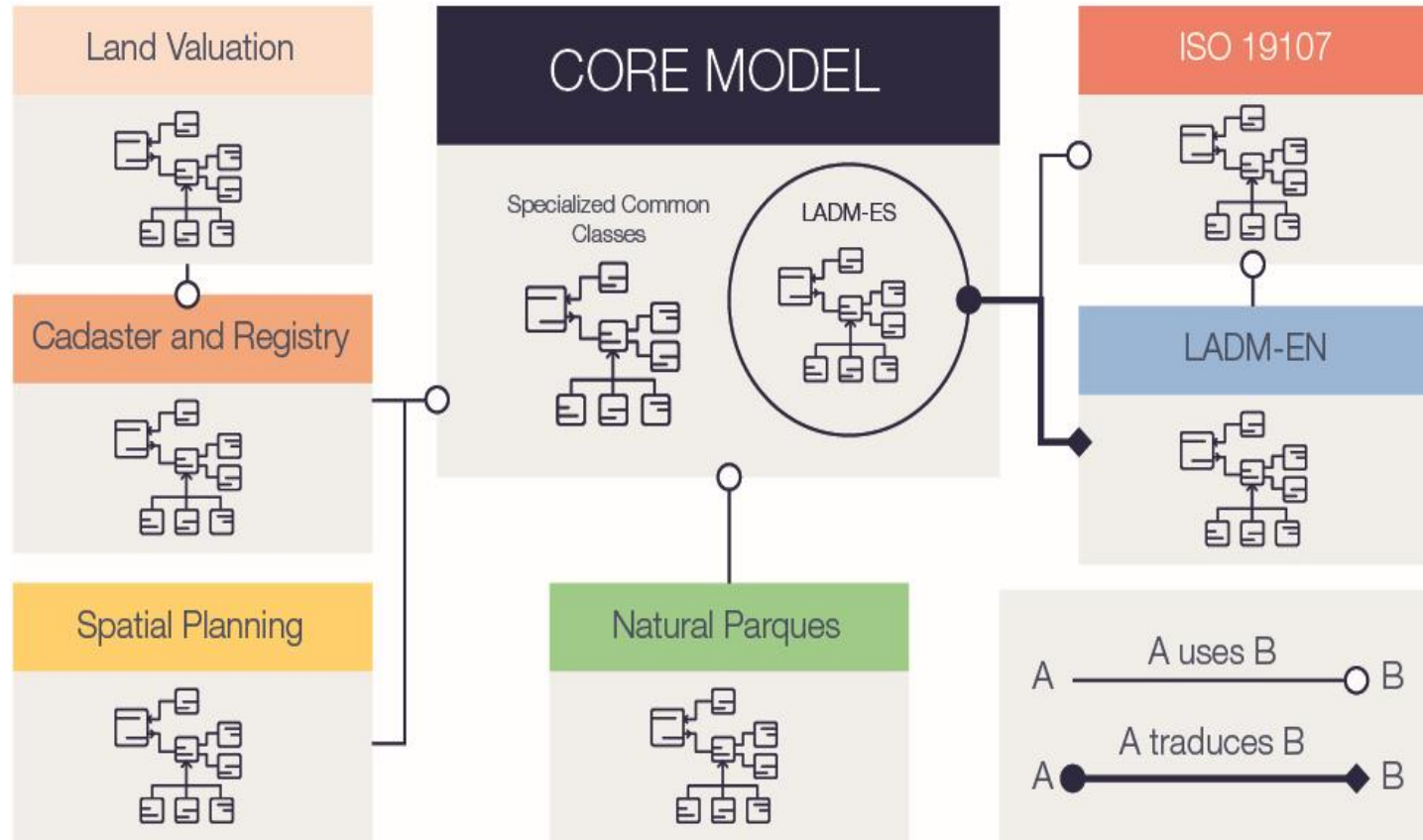Land Administration System
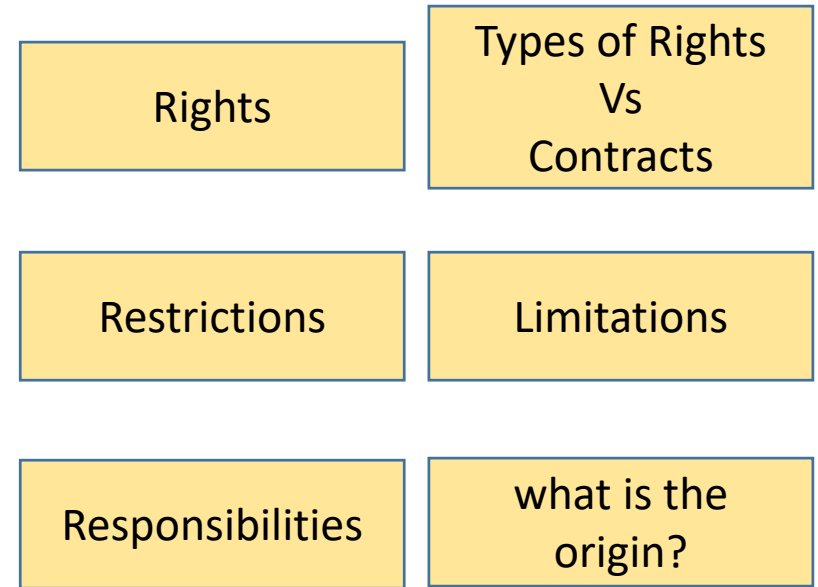
Data integrity and interoperability

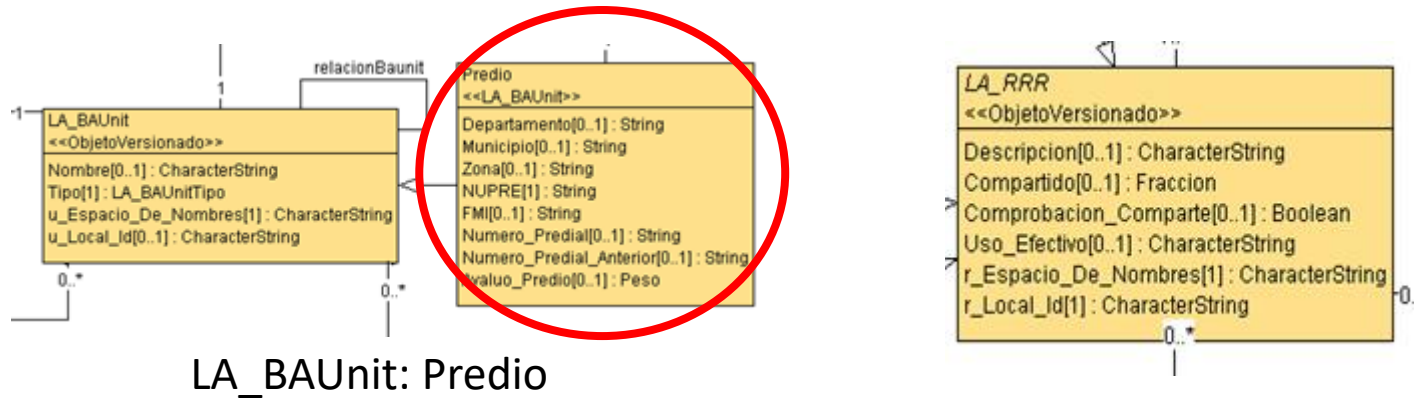# Legal independence

- The administration of each legal spatial object is unique and supported by its own legal framework which requires that each theme can be managed in isolation to the legal needs of the others.

- This necessary legal and/or institutional independence requires that each institution assumes the responsibility for its own data and an adequate way to guarantee interoperability.

Modules of Colombian LADM profile

Cadaster-registry module

LA_BAUnit: Predio

Rights

Types of Rights
Vs
Contracts

Restrictions

Limitations

Responsibilities

what is the
origin?

Particularities of the cadaster-registry module

These **alerts** are recorded as informative and do not in themselves establish neither a restriction nor right nor responsibility

Colombian ISO 19152 profile - suggestions

Right: LA_RightType

Type of right
Type of contract
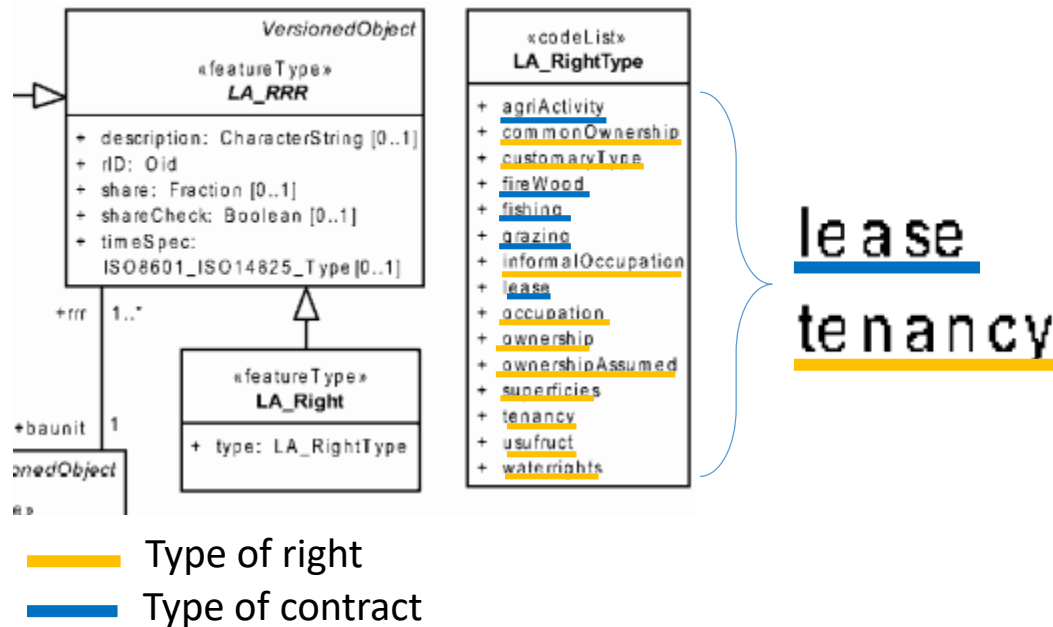
Relations

- **Responsibility** is directly associated with exactly <u>one (1) party and exactly one (1) basic administrative unit (BAUnit)</u>

- **Restrictions**, these will be associated with <u>zero or one (0..1)</u> party, and exactly one BAUnit

- In practical life it is found that a BAUnit does not always have an associated responsibility or a restriction

Colombian ISO 19152 profile - suggestions

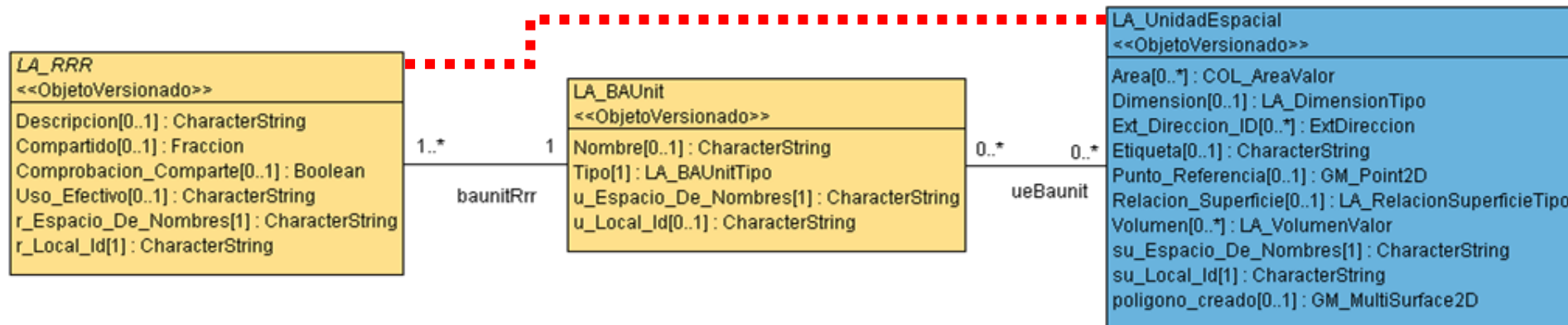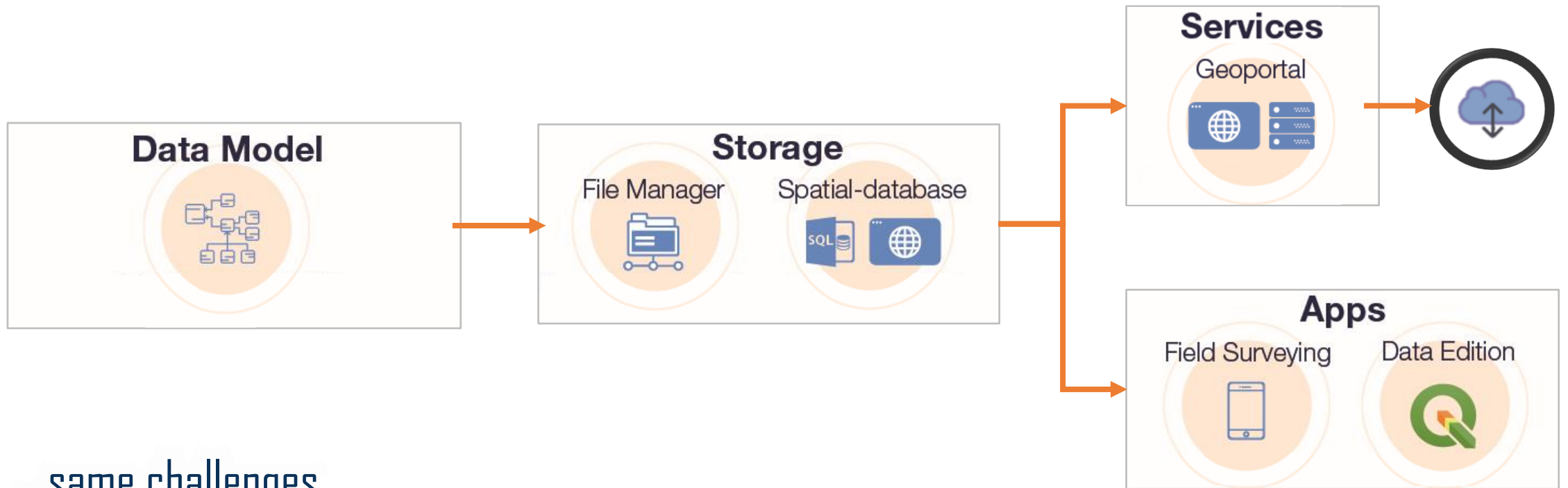How to spatially represent different land rights in one BAUnit?

→ Eventually with additional relationship RR to spatial unit

ownership

Tenancy

Informal Occupation

LA_RRR
<<ObjetoVersionado>>

Descripcion[0..1] : CharacterString
Compartido[0..1] : Fraccion
Comprobacion_Comparte[0..1] : Boolean
Uso_Efectivo[0..1] : CharacterString
r_Espacio_De_Nombres[1] : CharacterString
r_Local_Id[1] : CharacterString

LA_BAUnit
<<ObjetoVersionado>>

Nombre[0..1] : CharacterString
Tipo[1] : LA_BAUnitTipo
u_Espacio_De_Nombres[1] : CharacterString
u_Local_Id[0..1] : CharacterString

1..* 1 baunitRrr

0..* 0..* ueBaunit

LA_UnidadEspacial
<<ObjetoVersionado>>

Area[0..*] : COL_AreaValor
Dimension[0..1] : LA_DimensionTipo
Ext_Direccion_ID[0..*] : ExtDireccion
Etiqueta[0..1] : CharacterString
Punto_Referencia[0..1] : GM_Point2D
Relacion_Superficie[0..1] : LA_RelacionSuperficieTipo
Volumen[0..*] : LA_VolumenValor
su_Espacio_De_Nombres[1] : CharacterString
su_Local_Id[1] : CharacterString
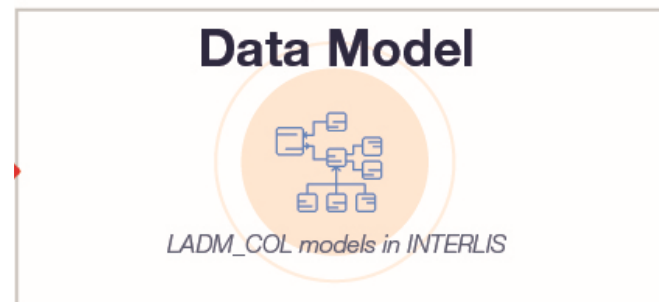poligono_creado[0..1] : GM_MultiSurface2D

LADM Implementation same industry requirements
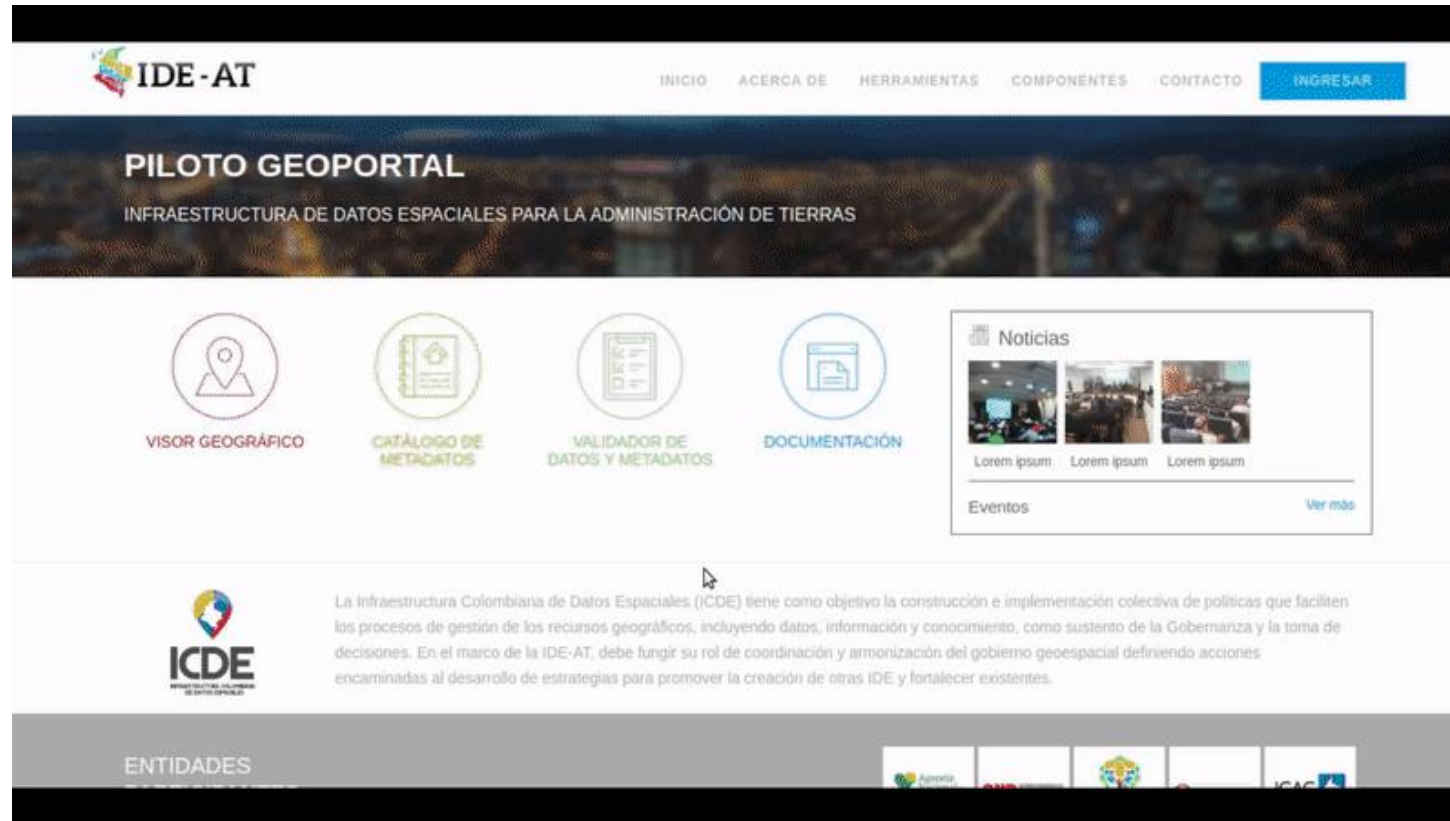

...same challenges

LADM Implementation using INTERLIS

Data model described in **INTERLIS** helps to create (semi-automatically) a fully Integrated Data Management System (**MDA** principle)

Data Model
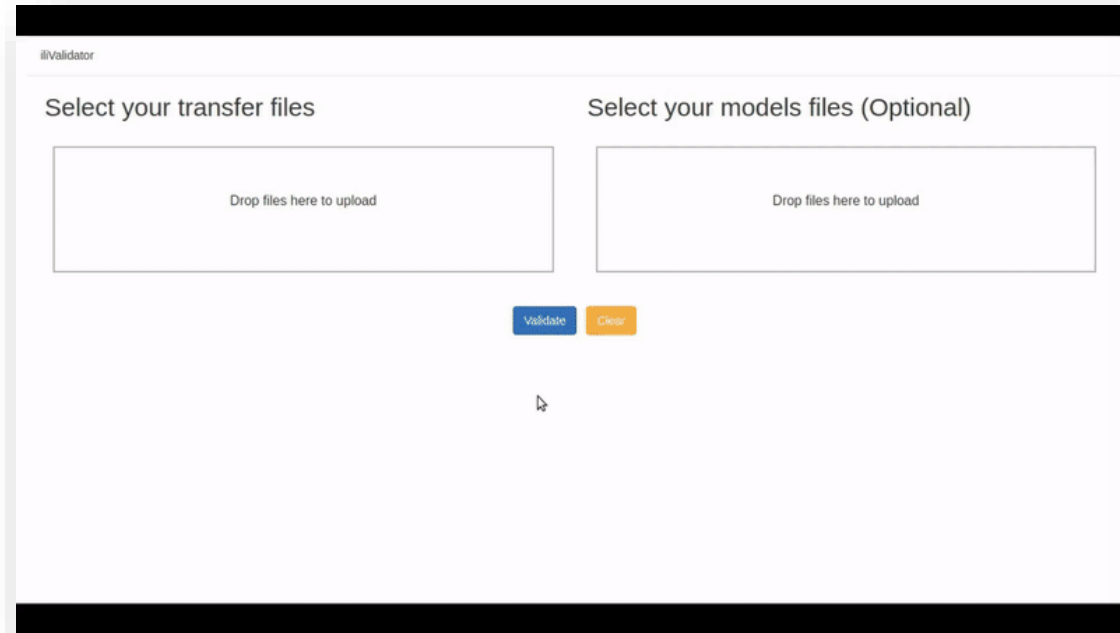
LADM_COL models in INTERLIS

*All based on FOSS

Web Portal (security, validation, data exchange, reports)

Web Viewer

- Centraliced Access point to Land Administration Info

- Bringing together all concerned institutions on one platform.

- Creates efficiency and transparency

Data Validation Service

On Error
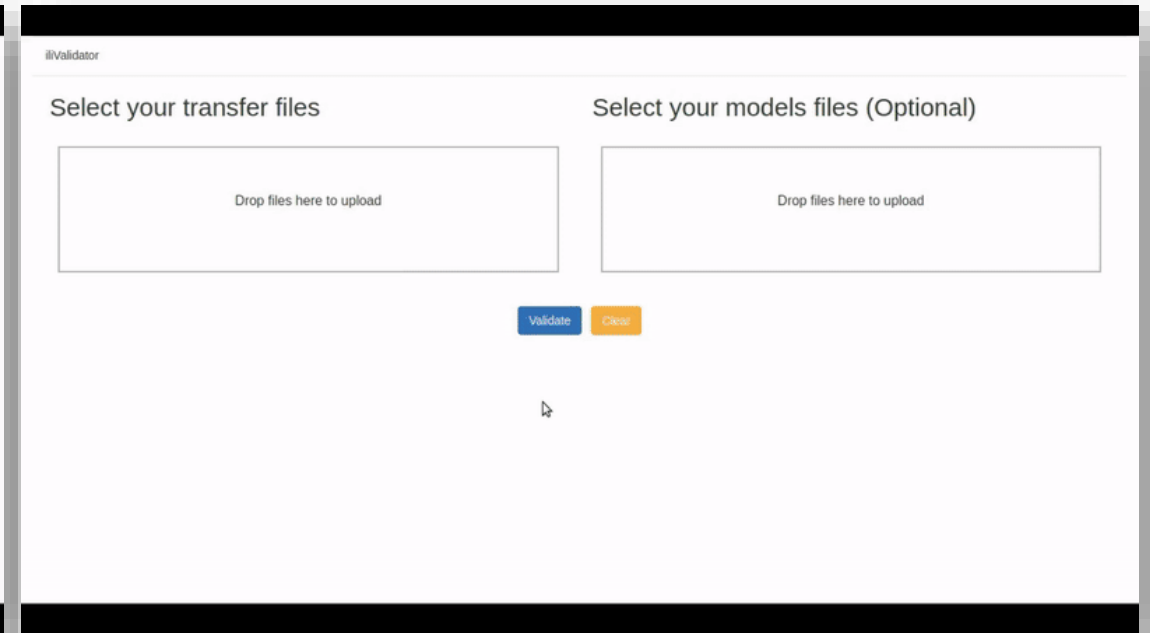
On Success

Summary

The introduced "**Modularity**" of the LADM-COL helped to meet the required **legal independence**, an institutional reality in Colombia.

The LADM-COL Cadaster-Registry model finds a particularity in the class "Publicity" that goes **beyond the RRR**, defining a new type of relationship between parties and basic administrative units.

The use of the object-oriented **INTERLIS** language facilitates the implementation of the legal independence principle. The ecosystem of reliable INTERLIS tools **now available**, facilitates implementation of **any LADM** country profile.

The developed **data validation service** increases productivity by automatically and massively checking data against a given model as well as the defined validation rules.

The developed Data Reception System is easily deployable by administrations with limited resources (e.g. Municipalities) and can be considered as a **generic information infrastructure of Land Administration**, with LADM as the underlying model.

THANKS

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https://www.proadmintierra.info/

https://github.com/AgenciaImplementacion