



Interoperability Model for Land Registers

# IMOLA CLOSING CONFERENCE

Technical aspects of IMOLA Template



Brussels 28<sup>th</sup> January 2016

Jesús Camy Escobar





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Technical aspects of IMOLA Template



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**Jesús Camy Escobar**



# IMOLA Technical scope

- ❖ Define a semantic model for standardized land registry output.
- ❖ Develop a template for the European land Registry Document (ELRD) using XML standards (XML scheme and XSL).
- ❖ Unify access to National LR disclosure through E-Justice Portal: pan European vision.
- ❖ National LR Systems differences are respected: flexibility principle.
- ❖ Compatible with e.Codex Platform and aligned with ISA standards.
- ❖ Explanatory material linked to the template, including a thesaurus, to improve understanding and compare different legal systems.

# TENDER: Contractor activities

## Assessment

- The analysis of ABC semantic provided by WS1
- The analysis of requirements for the information model proposed

## Design

- Functional analysis of the Information Model
- Technical analysis and design of the proposed solution

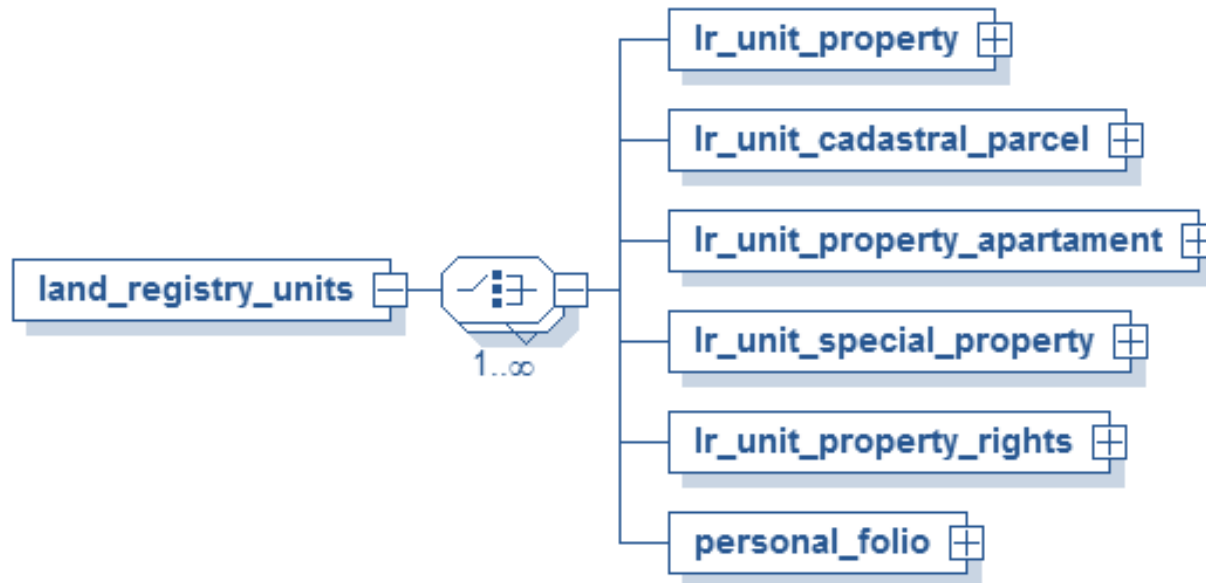
## Construct

- XML-Schema development
- Stylesheet for the ELRD layout development



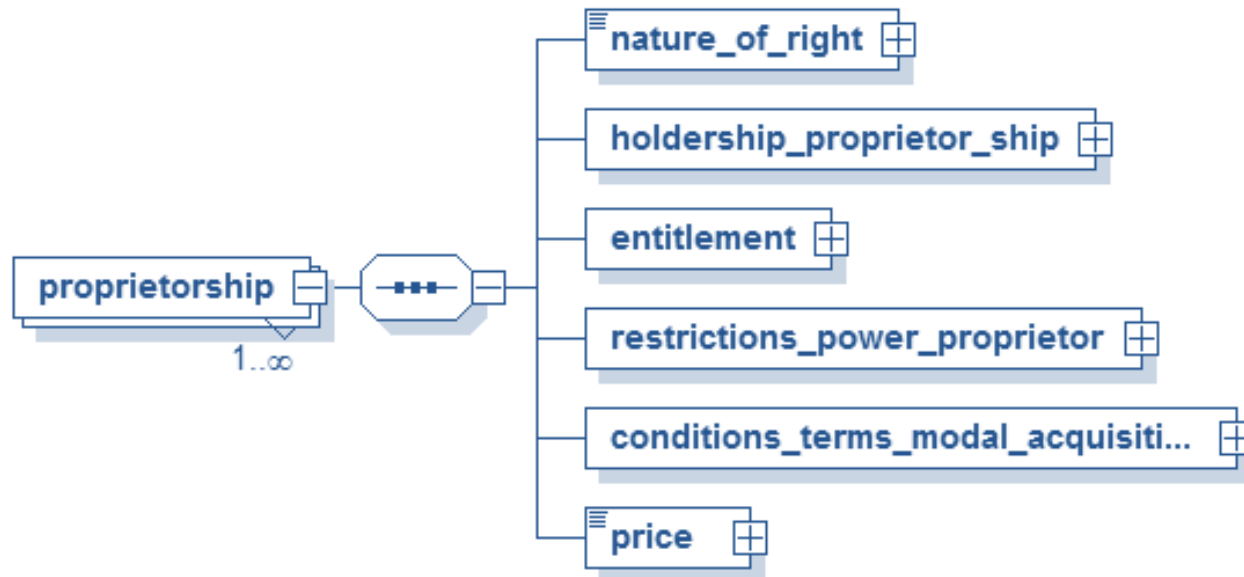
# The analysis of ABC semantic provided by WS1

## Section A: Land registry unit/connecting factor



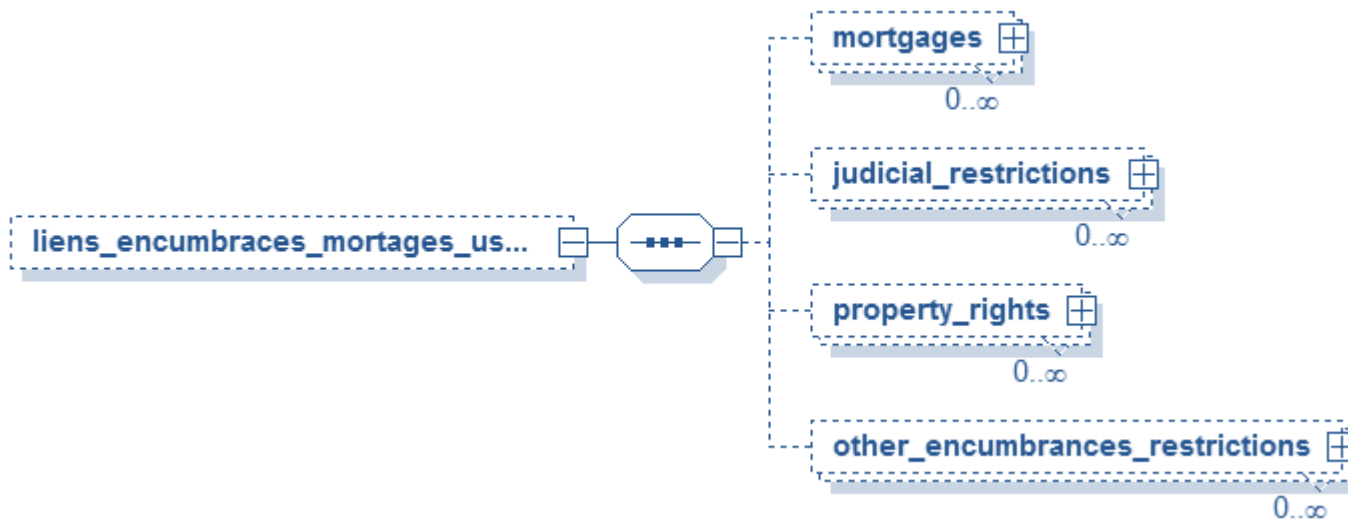
# The analysis of ABC semantic provided by WS1

## Section B: Proprietorship



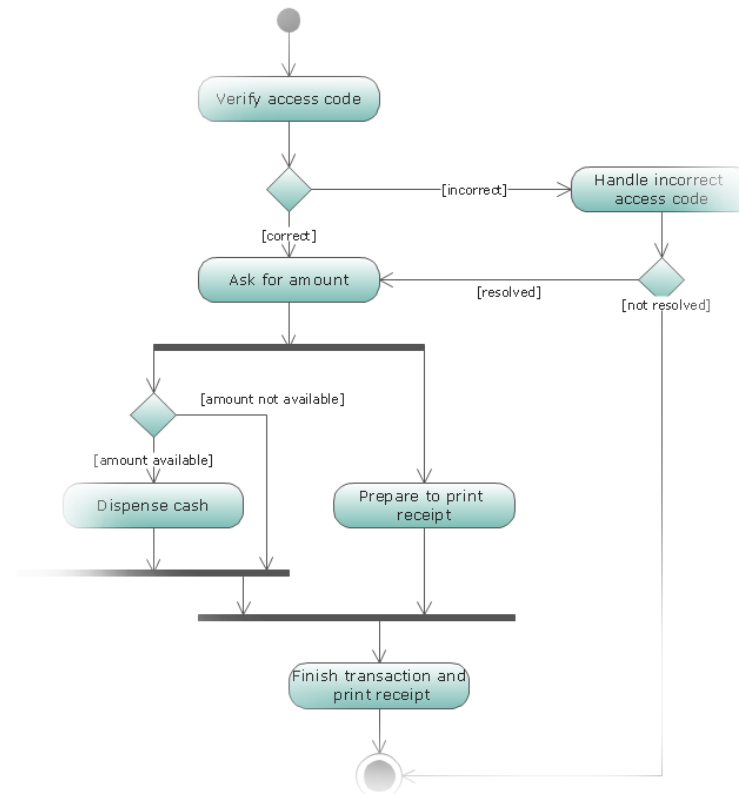
# The analysis of ABC semantic provided by WS1

## Section C: Mortgages, restrictions, liens and encumbrances



# Technical analysis and design of the proposed solution

The activity diagram

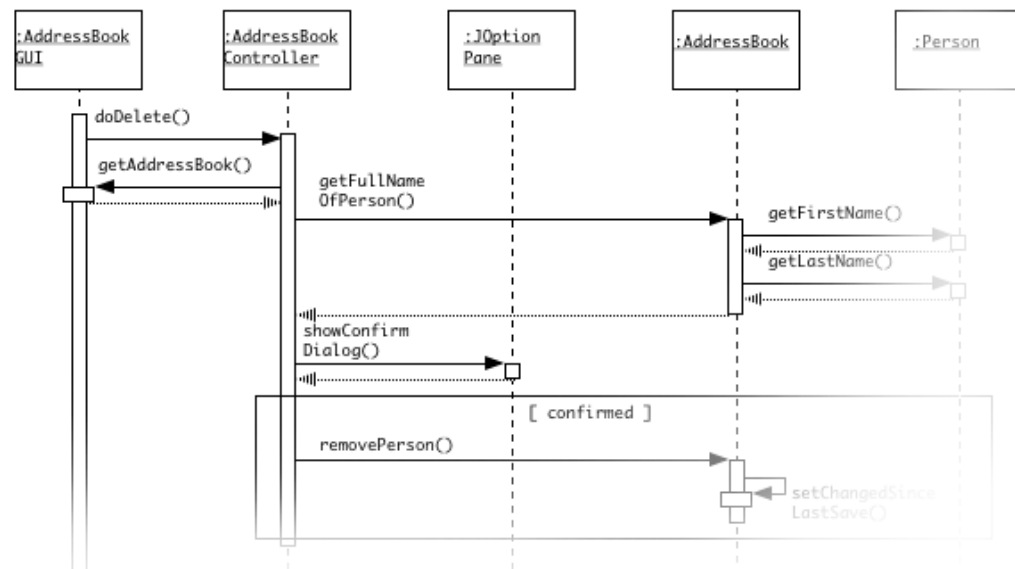






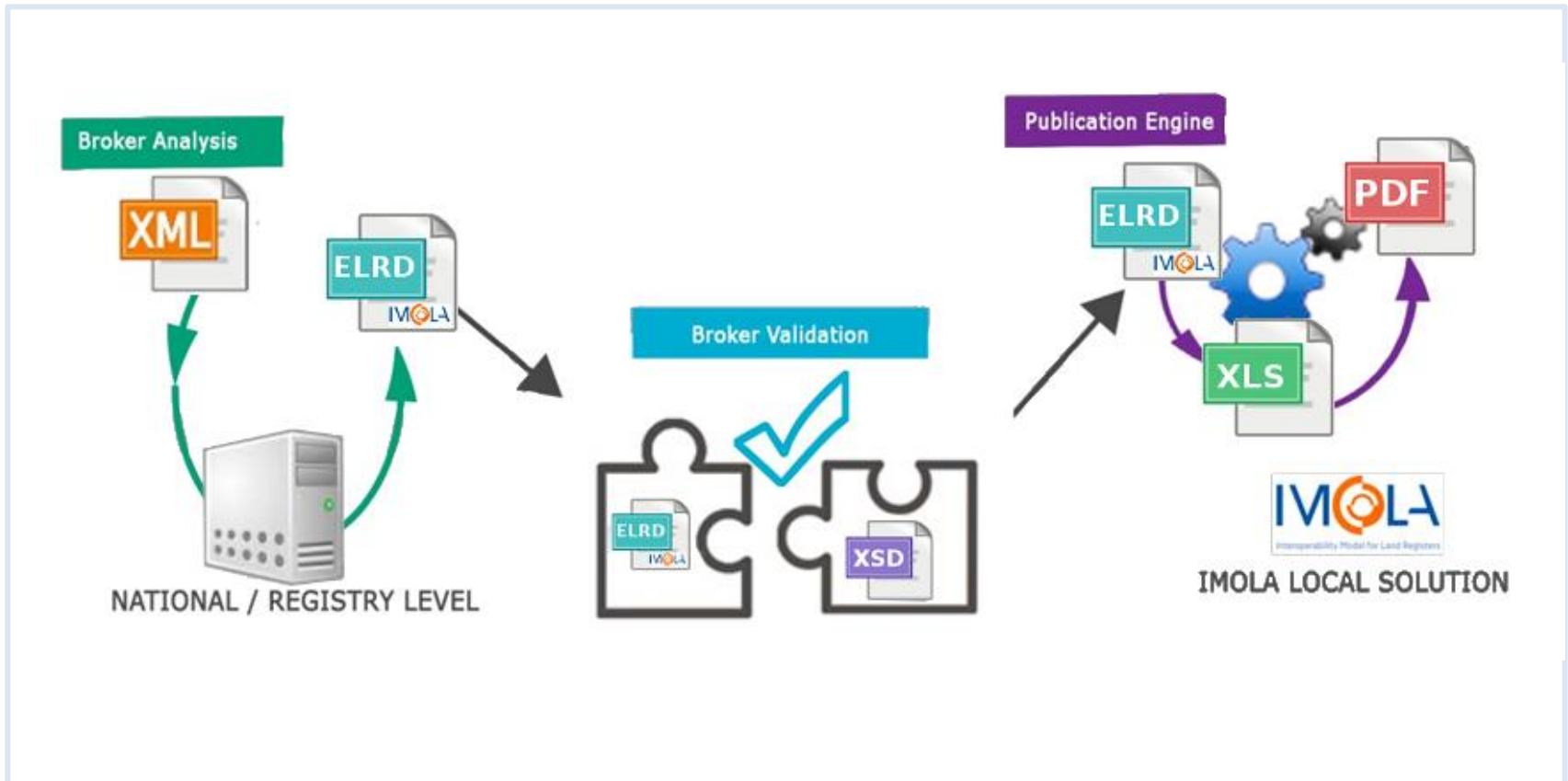
# Technical analysis and design of the proposed solution

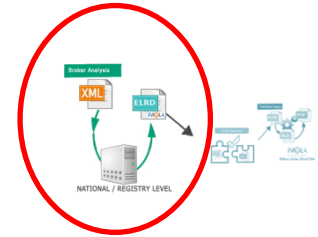
Sequence diagram



If there is no selected name, none of the above is done; instead, an error is reported

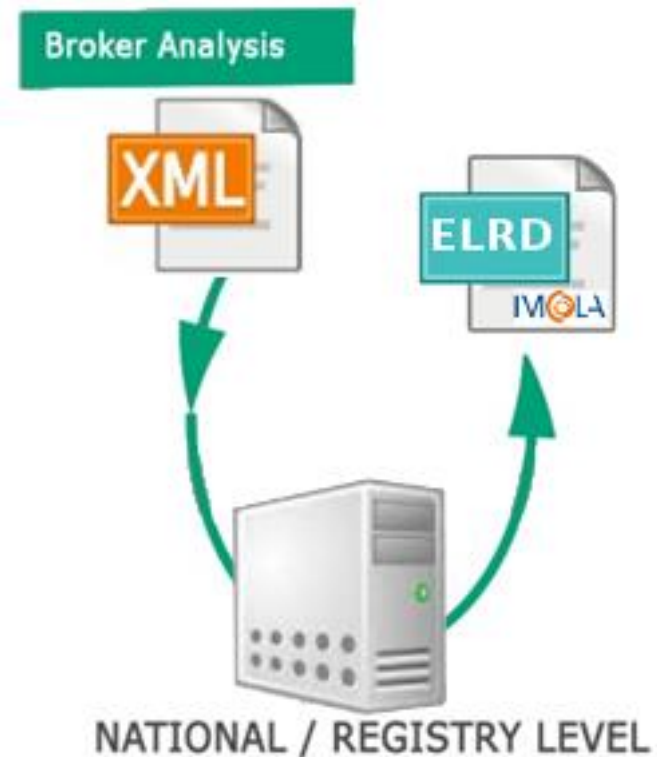
# IMOLA Broker Overview

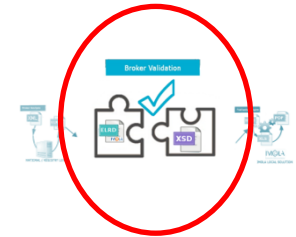




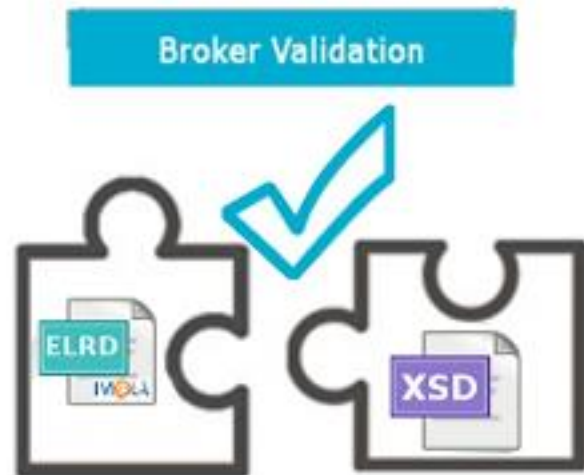
# Broker Analysis

- Receives the XML request from e-Justice via e-Codex gateway
- Parses and validates the XML request
- Adapts and completes the received data to query the National Land Registry database
- Queries the Land Registry database
- Receives the XML ELRD document from the Land Registry database

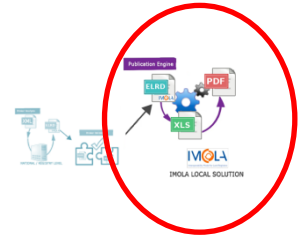




# Broker Validation

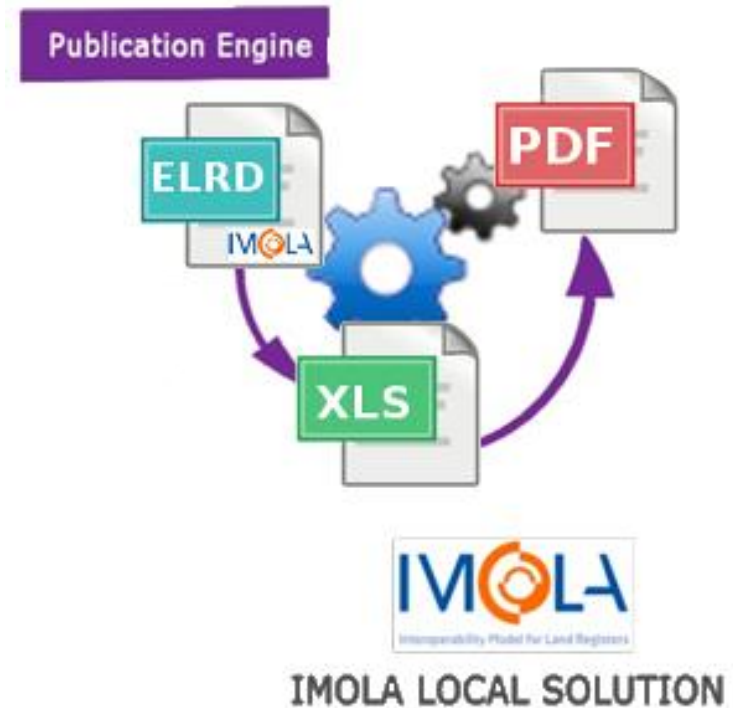


- Receives the XML ELRD document from the Broker Analysis
- Validates the ELRD document structure using the XML-Schema
- Validates the semantic of ELRD document applying a set of configurable validation rules
- In case of validation error, it identifies and reports the cause of it to the National Land Registry system

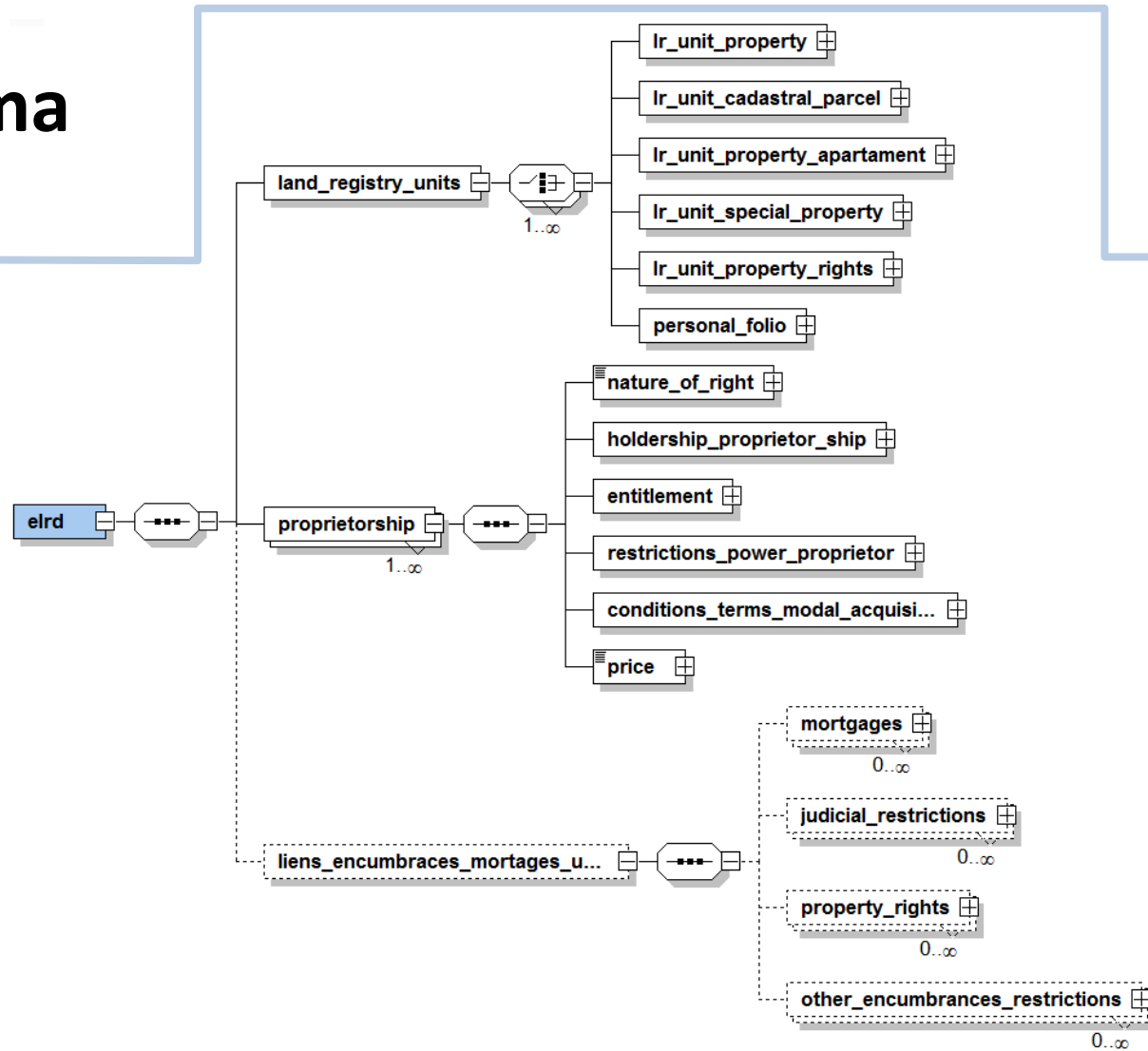


# Publication engine

- Receives the XML ELRD document from Broker Validation
- Using a XSLT or XSL-FO stylesheet, it converts the ELRD document to the selected format, e.g. PDF
- Sends the generated document to the final user through e-Justice Portal or a link to the information by email



# XML Schema



# XML ELRD

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- Document created with online XML Editor http://xmlgrid.net 2015/10/09 12:51:42 -->
<elrd>
  <land_registry_units>
    <lr_unit_property>
      <identifier lrld="18022000348769" cid="18096A048002590000SQ" key_reg_id="1" match_place_holder="1"></identifier>
      <location_address>
        <class_location property_admin_unit_1="Spain" property_admin_2="Granada" property_location_and_local_council="Guejar Sierra" property_geographic_name="Catifas" property_geometry="X=462.158 Y=4.110.157 X=462.318 Y=4.110.157" property_full_address="test attribute" property_thoroughfare="test attribute" property_address_area="Catifas" property_post_code="18160" property_po_box="test attribute" property_post_name="Guejar Sierra"/>
      </location_address>
      <land_use type="Agriculture Irrigated"></land_use>
      <natures>
        <nature type="Agriculture purposes">RUSTICA: Haza de tierra situada en la zona denominada Las Catifas, en término municipal de Güejar Sierra, con la extensión superficial de dosmil ochocientos sesenta y un metros cuadrados. En su interior, se ha construido, por su lindero sur, ocupándola en parte, una edificación, destinada a vivienda para uso propio, cuya descripción es la siguiente: Edificación aislada construida en tres plantas y bajo cubierta para el uso de vivienda y almacenes. Tiene una superficie total construida según medición reciente de cuatrocientos cinco metros, setenta decímetros cuadrados y útil de trescientos cincuenta y ocho metros, veintinueve decímetros cuadrados. Corresponden a la vivienda doscientos cincuenta y dos metros, noventa y un decímetros cuadrados construidos y doscientos cincuenta y dos metros, cuarenta y cuatro decímetros cuadrados construidos útiles y, a almacenes cuerdas y trasteros ciento cuatro metros, setenta y siete decímetros cuadrados y noventa y cuatro metros, treinta y un decímetros cuadrados útiles. Y consta de planta primera, baja y planta -1; y planta bajo cubierta. La ocupación del suelo de la parcela de lo edificado es de ciento sesenta y dos metros, sesenta decímetros cuadrados. Se encuentra a una distancia de nueve metros de su lindero sur y a más de treinta metros del barranquillo de Las Catifas.</nature>
      </natures>
      <boundaries land_registry_boundaries="North and East: resto de la matriz" neighbouring_lrld="123" cadastral_boundaries="test attribute" neighbouring_cid="123" conclusives_bondaries_place_holder="test attribute"></boundaries>
      <boundaries land_registry_boundaries="West: con el Barranco Seco, a una distancia de tres metros de su eje" neighbouring_lrld="123" cadastral_boundaries="test attribute" neighbouring_cid="123" conclusives_bondaries_place_holder="test attribute"></boundaries>
      <boundaries land_registry_boundaries="South: Carretera del Hostal del Duque" neighbouring_lrld="123" cadastral_boundaries="test attribute" neighbouring_cid="123" conclusives_bondaries_place_holder="test attribute"></boundaries>
      <size type="Square meters" >2781</size>
      <price value="0"></price>
      <public_limitations type="1" subtype="Public Mount">Public mountain preemptive right in favour of Regional government</public_limitations>
    </lr_unit_property>
  </land_registry_units>
</elrd>
```

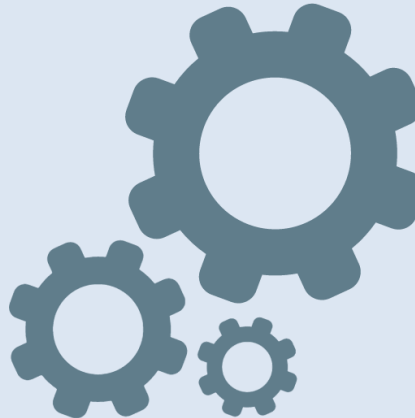


# Stylesheet for the ELRD layout

## XML Definition

ELRD(XML) + ELRD Stylesheet (XLS) = ELRD in PDF

```
<?xml version="1.0"
encoding="UTF-8"?>
<elrd>
<land_registry_units>
...
</land_registry_units>
<proprietorship>
...
</proprietorship>
</elrd>
```



# PDF ELRD

## LOCATION ADDRESS

[https://joinup.ec.europa.eu/asset/core\\_location/asset\\_release/core-location-vocabulary-100#download-links](https://joinup.ec.europa.eu/asset/core_location/asset_release/core-location-vocabulary-100#download-links)

Country name: **Spain**  
County/region/province: **Granada**  
Property location and local council: **Granada**  
Property geographic name: local name: **Granada**  
Property geometry: coordinates: **see extended information**  
Property full address  
Property thoroughfare  
Property Address area: local community: **local community**  
Property Post code: **18160**  
Property PO box: post office box number  
Property Post name: usually the city.

## LAND USE: Motorway

### IMOLA GENERIC GLOSSARY:

- **Placeholder:** land use
- **Definition:** Land use are understood as economic, social, or environmental purposes or objectives to what properties or plots, or land they are located, are intended or bound, even as arrangements, activities or developments undertaken in any given area of land, plot or property.
- **ELRA Fact sheet:** [http://network.elra.eu?page\\_id=2](http://network.elra.eu?page_id=2)

### NATIONAL PROPERTY LAW GLOSSARY:

- **Legal concept:** destino o uso del terreno
- **Definition:** the primary use of soil
- **National fact sheet:**

## NATURE:

**Administrative concession : Motorway**

### IMOLA GENERIC GLOSSARY:

- **Placeholder:** type of property
- **Definition:** Type of property such as buildings, apartments, houses, plots, dwellings, factories, as they are commonly understood. They may have any legal status such as empty building plots, vacant apartments, and traditional country houses.
- **ELRA Fact sheet:** [http://network.elra.eu?page\\_id=2](http://network.elra.eu?page_id=2)

### NATIONAL PROPERTY LAW GLOSSARY:

- **Legal concept:** uso al que se destina la edificación
- **Definition:** building use
- **National fact sheet:**

## MAP/GRAPHIC GEOLOCATION:

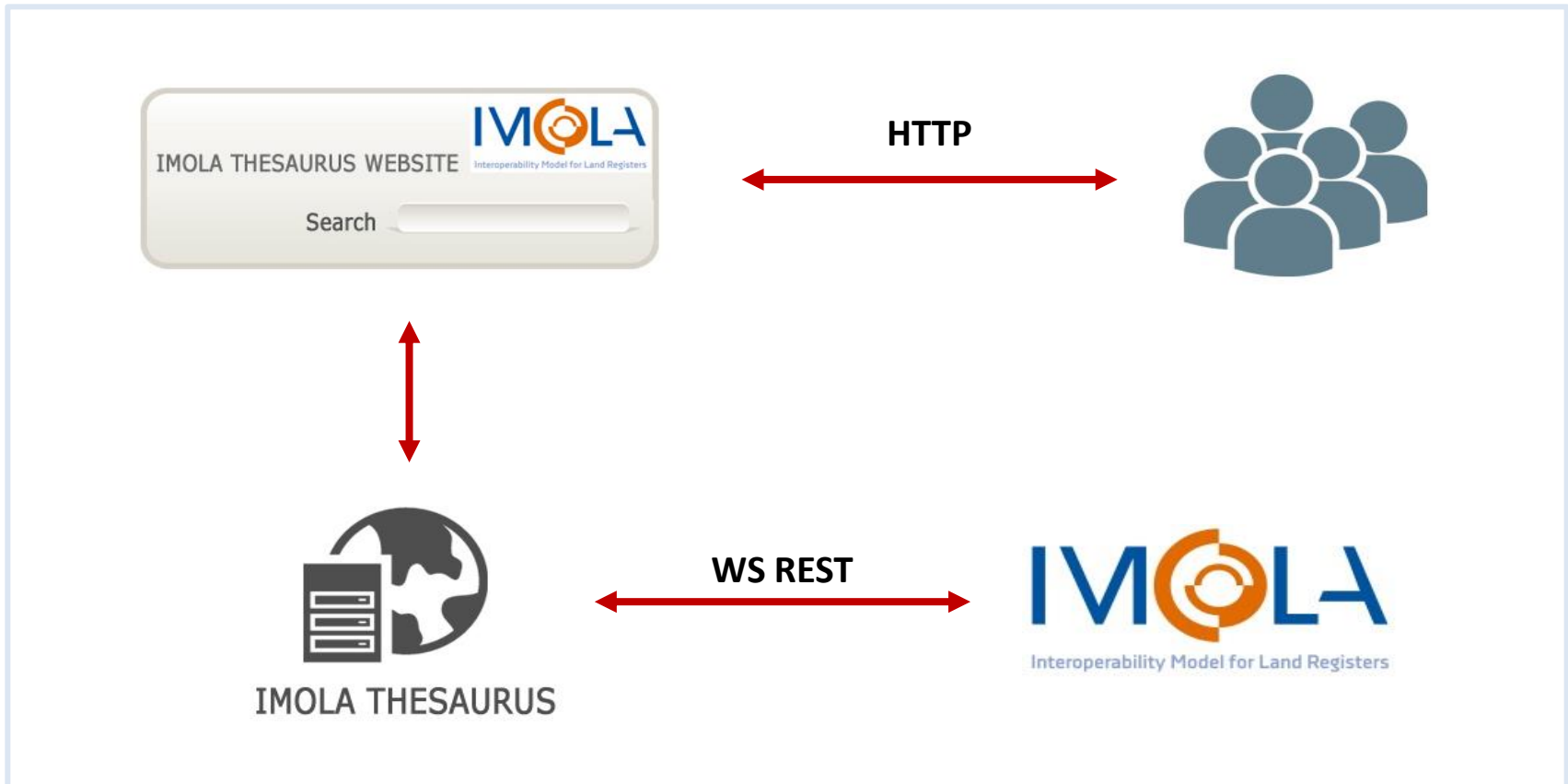


This project is co-funded by  
the European Union

## EXPLANATORY MATERIAL AND THESAURUS

- ❖ **Define** ELRD placeholders: IMOLA generic glossary and fact sheet.
- ❖ **Relate** ELRD placeholders with the legal concepts of each National LR System: specifics national glossaries and fact sheets.
- ❖ **Create** a website where users can check the meaning and legal effects of ELRD concepts in different MMSS.
- ❖ **Builds** a standard information model to be reuse in other projects. Future IMOLA LRI core vocabulary....?

# IMOLA Thesaurus functionalities





## Placeholder: Condominium

It is the form of housing tenure and other real property where a specified part of a piece of real estate (usually of an apartment house) is individually owned. “a piece of land or facility common to several property units.

**ELRA FACT SHEET:** [See ELRA glossary](#)

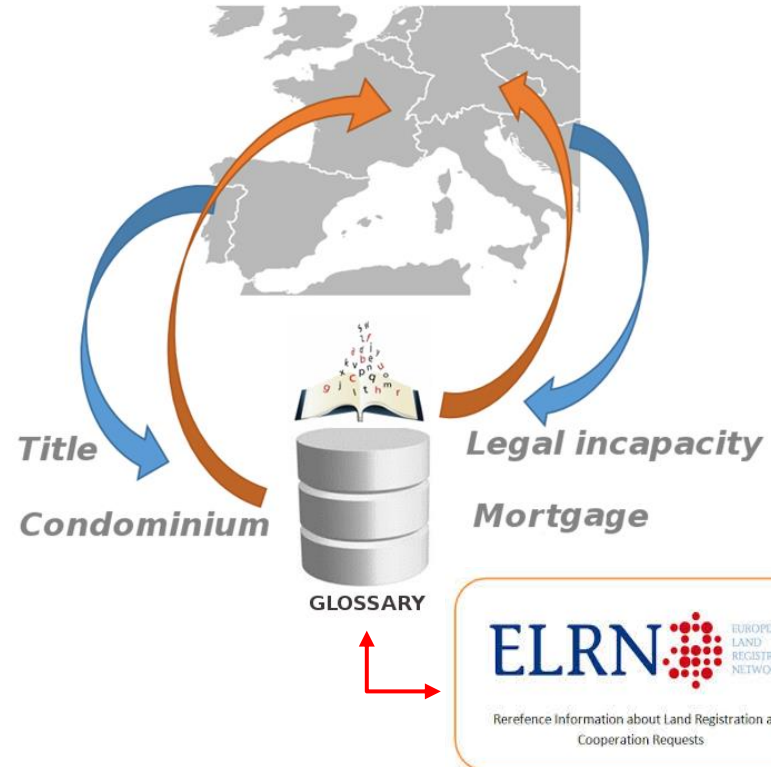
Netherland: Verklaring voor recht	Spain: Propiedad Horizontal	Lithuania: Susitarimas, pagal kurį nekilnojamas daiktas yra
<p>The Netherlands has no title system. The Land register gives evidence of recording of a deed. Based on these deeds, the court provides statements that give evidence of ownership</p> <p>The Cadastre (that is merged with the Landregister) contains names of supposed owners with the reference information that can be used to trace the deeds that are of relevance.</p>	<p>If property units are apartments, this legal situation or condominium is named “propiedad horizontal” or horizontal property. Apartments are singular and separately entered in the landbooks with their singular registry number and must have two indications which mean their relationship with a building horizontally divided: a special number of order in this latter and an quota or average in the common elements of the building. Anyway, each apartment real folio will keep its relationship with a building indicating data of source real folio or main entry of the building. There are more complex kinds of condominium or commonhold like “complejos urbanísticos” for organising ownership in housing estates. If ownership were divided not into apartments but quotas or averages, we’d refer to “comunidad de bienes”, “copropiedad” or “condominio”.</p>	<p>Such term does not exist in Lithuanian law.</p>
<p><b>NATIONAL FACT SHEET:</b> <a href="#">See Netherland glossary</a></p>	<p><b>NATIONAL FACT SHEET:</b> <a href="#">See Spain glossary</a></p>	<p><b>NATIONAL FACT SHEET:</b> <a href="#">See Lithuania glossary</a></p>

# Thesaurus: Words grouped together with the same meaning

## IMOLA mini-Thesaurus:

A generic IMOLA glossary

A specific glossary of each country integrated on IMOLA platform

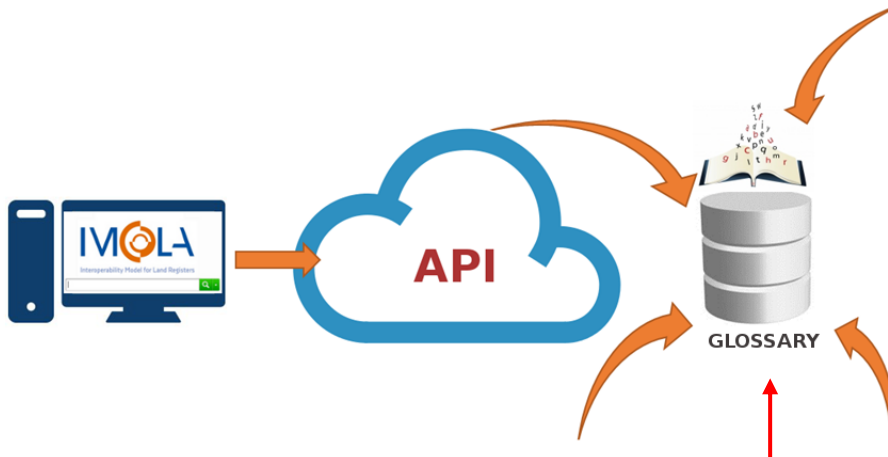


# IMOLA mini Thesaurus two main goals

Interoperability Model for Land Registers

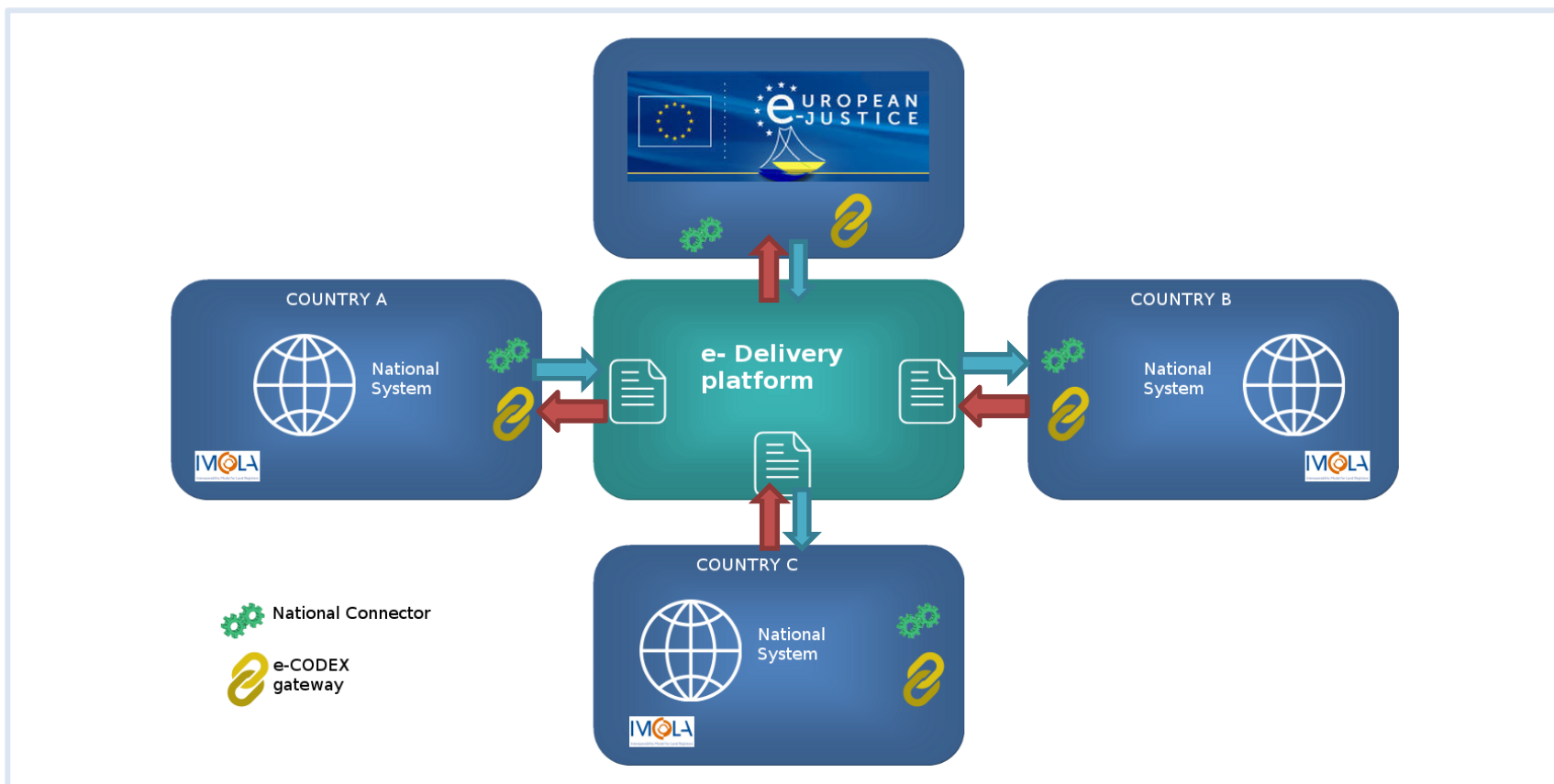
Web site where users search the meaning and relations of terms

API to be invoked by web services in order to make use of the Thesaurus information





# IMOLA a pan European Large Scale Project compatible with e.Codex main Building Blocs





# Interoperability

Interoperability Model for Land Registers

## Standard alignment with ISA and Core Vocabularies

### CORE PERSON

- Name
- Gender
- Date of birth
- ...

### PERSON CORE VOCABULARY

- Identifier
- Activities
- ...

### CORE LOCATION

- Address
- A geographic name or geometry
- ...

### IMOLA CORE VOCABULARY

- LRI property rights
- Semantic model
- Thesaurus

### CORE PUBLIC SERVICE

- Service offered by a public administration

# IMOLA Architecture overview

