

```

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    xmlns:gmx="http://www.isotc211.org/2005/gmx" xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:srv="http://www.isotc211.org/2005/srv" xmlns:geonet="http://www.fao.org/geonetwork" xsi:schemaLocation="http://www.isotc211.org/2005/gmd
      https://www.isotc211.org/2005/gmd/gmd.xsd http://www.isotc211.org/2005/gmx https://www.isotc211.org/2005/gmx/gmx.xsd http://www.isotc211.org/2005/srv
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        </gmd:PT_FreeText>
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      </gmd:PT_FreeText>
    </gmd:contact>
  </gmd:MD_Metadata>
</csw:GetRecordByIdResponse>

```

# Open Maps for Europe 2

## Open Cadastral Map – Metadata

EuroGeographics  
Members Webinar Series – OME2: WP6 Open Cadastral Map

September 19th, 2024

Javier Luque  
Spanish General Directorate of Cadastre



Digital Europe Programme  
Grant Agreement No 101100625





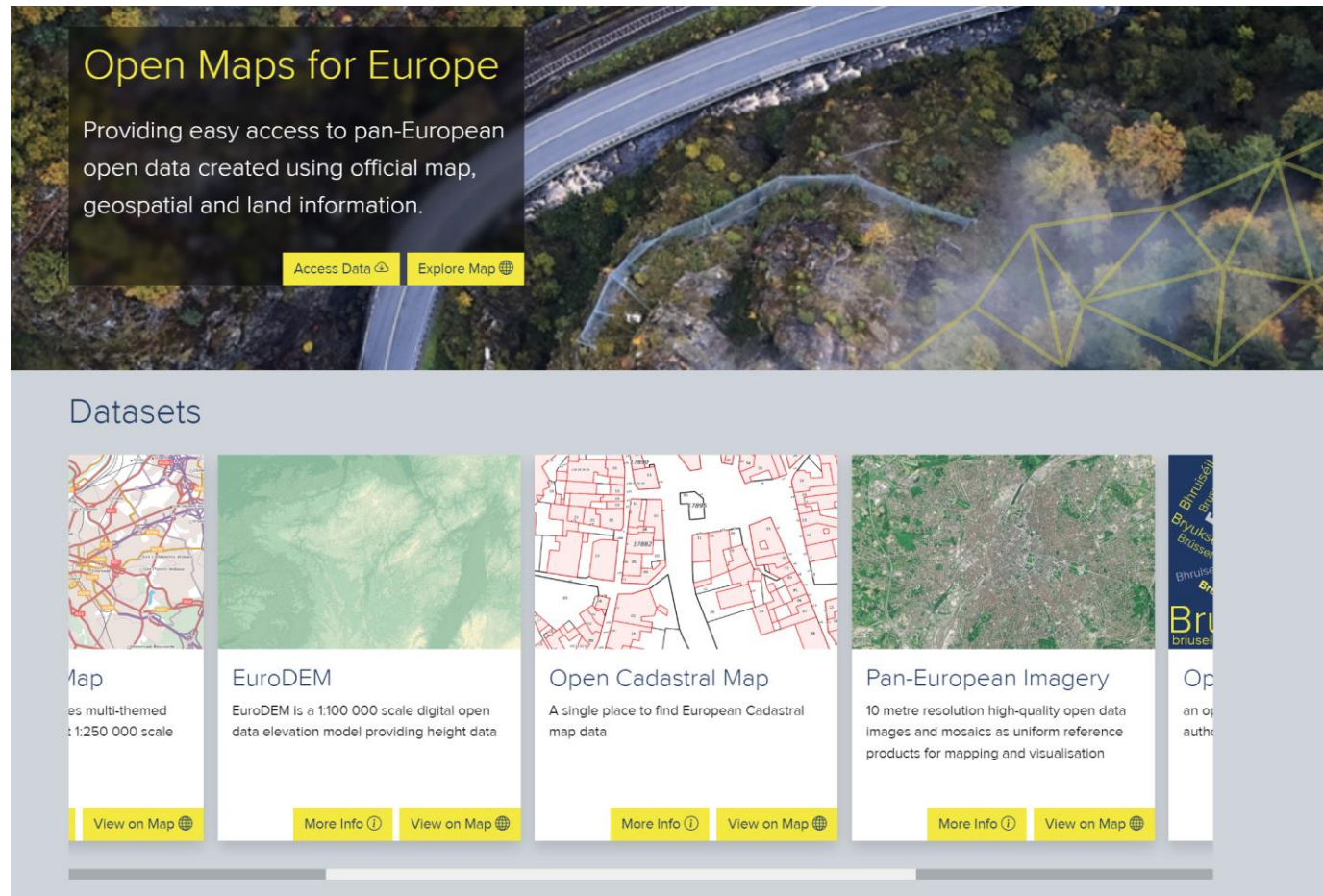
# Today's topics:

- Background
- Technical metadata
- Human-readable metadata
- Conclusions



# Background

- T6.1 - Produce Open Cadastral Map
  - ... make dataset discoverable from the European data Portal.
- T6.4 - Increase the harmonisation of the access to cadastral data
  - Develop a user-oriented description of the datasets offered by CIM, as well as, a description of their characteristics and differences.



**Open Maps for Europe**

Providing easy access to pan-European open data created using official map, geospatial and land information.

[Access Data](#) [Explore Map](#)

### Datasets

Dataset Name	Description	Actions
Map	es multi-themed : 1:250 000 scale	<a href="#">View on Map</a>
EuroDEM	EuroDEM is a 1:100 000 scale digital open data elevation model providing height data	<a href="#">More Info</a> <a href="#">View on Map</a>
Open Cadastral Map	A single place to find European Cadastral map data	<a href="#">More Info</a> <a href="#">View on Map</a>
Pan-European Imagery	10 metre resolution high-quality open data images and mosaics as uniform reference products for mapping and visualisation	<a href="#">More Info</a> <a href="#">View on Map</a>







# Metadata

**Metadata** → 'data that talks about data' → describes the content of the data sets. Types:

- Metadata that serves to discover and identify data, with information useful for searching and identifying datasets.
- Metadata that explains how the different components of a dataset are organised.
- Metadata that can refer to the source of the information: rights management metadata and preservation metadata.

Other **considerations**:

- Technical metadata → for the interoperability of digital systems.
- Accessibility metadata → specifically designed to make it easier for people with disabilities, or who are in a situation where they have difficulties, to access certain types of data that would otherwise be out of their reach. For example, text descriptions of the content of a photograph for visually impaired users.

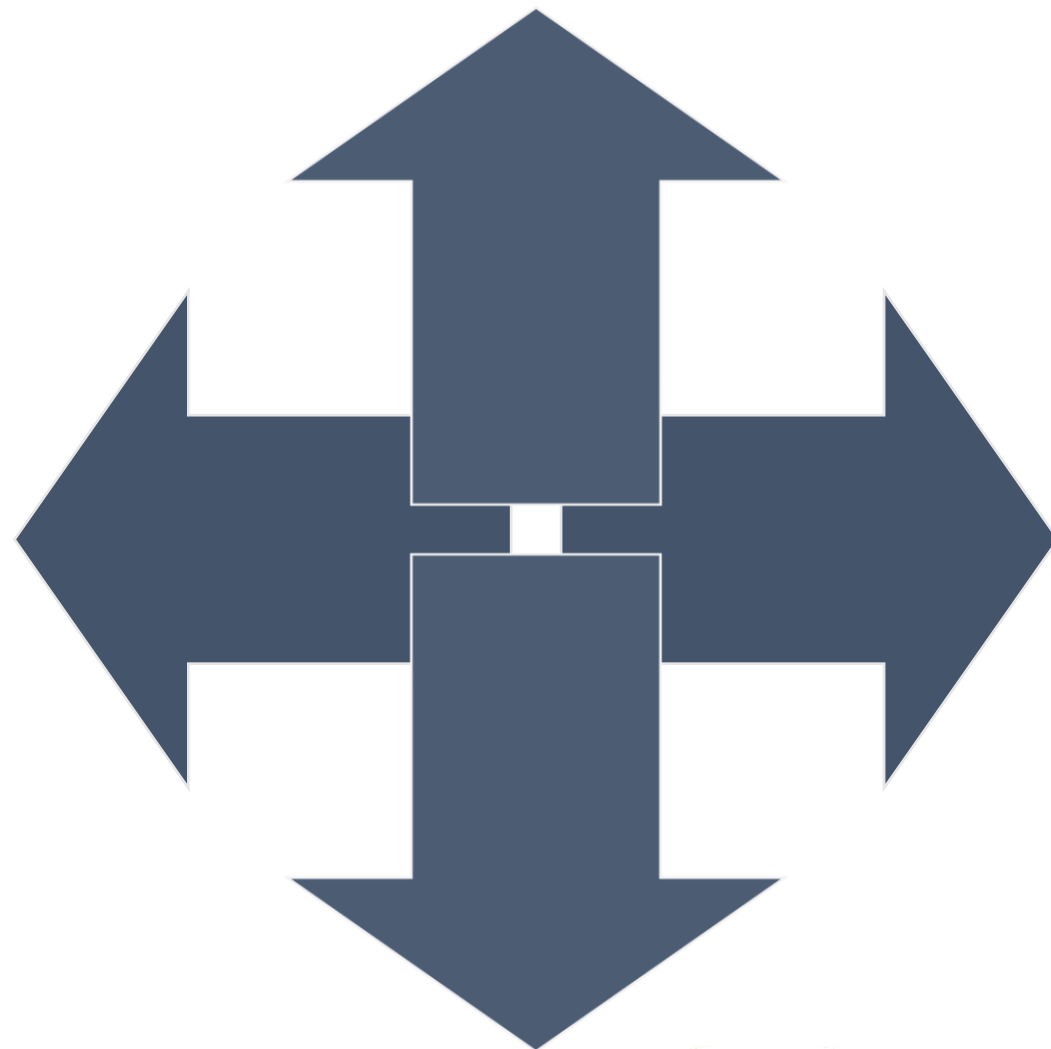




# Metadata

## OCM metadata implementation - Two axes:

- *Implementation of technical metadata to allow the discoverability of the OCM in the European Data Portal. → machine-readable metadata.*
- *Development of a human readable metadata to increase the accessibility to the OCM, making more understandable the content of the OCM.*



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# Machine-readable metadata

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<cs:cs:GetRecordByIdResponse xmlns:cs="http://www.opengis.net/cat/csw/2.0.2"
  xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:gco="http://www.isotc211.org/2005/gco"
  xmlns:gmml="http://www.opengis.net/gml" xmlns:gmw="http://www.isotc211.org/2005/gmw"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:geonete="http://www.fao.org/geonetwork" xsi:schemaLocation="http://www.isotc211.org/2005/gmd
  http://schemas.opengis.net/csw/2.0.2/profiles/apiso/1.0.0/apiso.xsd">
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    <gco:CharacterString>E5_S06C_CP</gco:CharacterString>
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  </gmd:language>
  <gmd:characterSet>
    <gmd:MD_CharacterSetCode codeList="https://standards.iso.org/iso/19139/resources/gmxCodeLists.xml#MD_CharacterSetCode"
      codeListValue="utf8">utf8</gmd:MD_CharacterSetCode>
  </gmd:characterSet>
  <gmd:hierarchyLevel>
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  </gmd:hierarchyLevel>
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        <gmd:PT_FreeText>
          <gmd:textGroup>
            <gmd:LocalisedCharacterString locale="spa">Soporte técnico INSPIRE</gmd:LocalisedCharacterString>
          </gmd:textGroup>
        </gmd:PT_FreeText>
      </gmd:individualName>
      <gmd:organisationName xsi:type="gmd:PT_FreeText_PropertyType">
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</cs:cs:GetRecordByIdResponse>
```

- Technical metadata focused on making OCM discoverable in the European Data Portal.
- Allow users to discover the existence of the dataset and find the way to access it.
- Use of Extensible Markup Language (XML).
- Developed using EuroGeographics' metadata profile.
- Based on the ISO 19115 standard, metadata for geographic information.



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# Machine-readable metadata

- **Goal achieved:** Sustain the new production process for Open Cadastral Map making dataset discoverable from the European data Portal.
- To increase the visibility of OCM, the dataset has been harvested by or incorporated into national spatial data infrastructures of some European countries like Spain, Belgium, Germany or Netherlands.

The screenshot shows the 'European data' portal interface. At the top, there's a navigation bar with 'Home', 'Data', 'Academy', 'Community', 'Publications', and 'Documentation'. Below this, a search bar contains the text 'open cadastral map'. To the right of the search bar, it says 'Datasets found (628 958)'. Below the search bar, there are several filter sections: 'High-Value Dataset' (set to 'HVDs only'), 'High-Value-Dataset Theme' (set to '- Any -'), 'Data scope' (set to '- Any -'), 'Provenance' (set to '- Any -'), and 'Publisher' (set to '- Any -'). On the right side, there are two main results sections: 'Discovery Service - Open Maps for Europe' and 'Open Cadastral Map'. The 'Open Maps for Europe' section includes a description of the service and a 'DISCOVER' button. The 'Open Cadastral Map' section includes a description of the map and an 'UNKNOWN' button. At the bottom right, there's a 'Co-funded by the European Union' logo.



# Human-readable metadata

User-oriented description of the datasets offered by CIM

Open Cadastral Map

Last Update  
November 2022

Themes  
Addresses, Administrative Units, Buildings, Cadastral Parcels

Scales  
Administrative Units: national to municipal  
Cadastral Parcels: zones from 1000 - 100000  
Buildings: 1000 - 100000  
Addresses: 1000 - 100000

Coordinate System  
Declared degrees: ETRS89-UTM30N

Available Formats  
Web Services  
WMS, WFS

Dataset Documentation  
Attribution Document

Data Provider Links

Czech Republic  
Denmark  
Netherlands  
Poland  
Slovenia  
Spain

Address, Building, Cadastral Parcel  
Administrative Unit

## Data Provider Links

Czech Republic

Address, Administrative Unit, Building, Cadastral Parcel

Denmark

Cadastral Parcel

Netherlands

Administrative Unit  
Building  
Cadastral Parcel

NGR Nationaal Georegister

Kadastrale Percelen (INSPIRE geharmoniseerd)

INSPIRE Services of Cadastral Cartography

datos.gob.es

Base de Datos de Divisiones Administrativas de España

Introduction



# Human-readable metadata

## Requirements:

- *Easy to read*
- *Focus on description and basic details*

## To achieve this:

- *Under INSPIRE regulation, each theme / dataset has its own metadata following the defined schema.*
- *Identify main questions that describe the information of each dataset: Main questions and guidance questions (sub-questions to help focus about the main question)*
- *Identify main parts from original metadata to be used as sources: Abstract, Purpose, Source, Lineage*



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# Human-readable metadata

## Cadastral parcels

- How is the cadastral information structured?
  - How many levels of information are there?
  - How are they named?
  - How are the levels related?
  - How is cadastral structure related to administrative units?
- What is the level of data coverage?
  - Is available the data for the whole country or focused on urban areas?
- How are they (the levels) defined / delimited?
  - What is the positional accuracy / reference map scale for these objects?
- Who is the responsible party and/or publisher?

## Administrative units

- What is the structure of administrative units in the country?
  - How many levels are there?
  - How are they named?
  - How are the levels related?
- How are they (the levels) defined / delimited?
  - What is the positional accuracy / reference map scale for these objects?
- Who is the responsible party and/or publisher?





# Human-readable metadata

## Buildings

- How are the buildings represented in the dataset?
  - What is the available level of detail LOD?
  - What is the available type of representation (footprint, roof edge, envelope, etc.)?
- What is the level of coverage?
  - What types of buildings are represented?
  - Is available the data for the whole country or focused on urban areas?
- How are they (the buildings) defined / delimited?
  - What is the positional accuracy / reference map scale for these objects?
- Who is the responsible party and/or publisher?

## Addresses

- What is the usual address structure in the country?
  - How is the address formed?
  - What are the usual address components?
- What is the usual level of geo-referencing of addresses (entrance, parcel, etc.)?
- What is the level of data coverage?
  - Is available the data for the whole country or focused on urban areas?
- Who is the responsible party and/or publisher?







# Human-readable metadata example

Cadastral Parcels – Questions	Human readable metadata - Denmark
<p>How is the cadastral information structured?</p> <p>How many levels of information are there?</p> <p>How are they named?</p> <p>How are the levels related?</p> <p>How is cadastral structure related to administrative units?</p>	<p>Parcels, Cadastral Parcel and CadastralZoning are part of the complete Danish cadastral register.</p> <p>Parcel: A parcel is a single surface formed from the boundary boundaries to which all property data is attached. It is uniquely identified by the parcel identification or the ownership code and cadastral number.</p> <p>Cadastral boundary: Line that is connected by two boundary points. A distinction is made between cadastral boundaries and cadastral borders. Cadastral boundaries are usually marked in the field with boundary markers, while cadastral borders are not marked due to their unstable nature. For cadastral boundaries, it is the conditions in the field that determine the actual boundary of a property at any given time, not the boundaries registered in the cadastre.</p>
<p>What is the level of data coverage?</p> <p>Is available the data for the whole country or focused on urban areas?</p>	<p>Denmark is divided into approximately 9000 ownership classes. Ejerlav is based on the original administrative division into lordships, parishes and market towns.</p>
<p>How are they defined / delimited?</p> <p>What is the positional accuracy / reference map scale for these objects?</p>	<p>The digital cadastral map is a coherent set of maps built on the basis of a common reference network. The cadastral map is constructed by inserting connected road measurements and major subdivisions into the map to form a kind of skeleton. The remaining boundaries are added to the cadastral map by digitising paper cadastral maps and a subsequent transformation over selected points. The boundaries shown on the cadastral map should therefore be regarded as indicative, as they are subject to an uncertainty of typically 0.1-4.0 metres (depending on the area, production method, age and any claims).</p>
<p>Who is the responsible party and/or publisher?</p>	<p>The Danish Agency for Data Supply and Infrastructure is responsible for the INSPIRE implementation in Denmark, which is carried out with the participation of the Danish state, regions and municipalities as well as the private sector, interest organisations, etc.</p>



## Conclusions

- OCM is findable now at European Data Portal thanks to technical metadata.
- “Human- readable metadata” provides a user-oriented description of the OCM content.
- “Human-readable metadata” is based on INSPIRE metadata, so...
  - As much detail is provided in them, better user-oriented description can be created.
- “Human-readable metadata” can be improved with your feedback





# Many thanks for your attention!

Javier Luque

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Spanish General Directorate of Cadastre



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EUROGEOGRAPHICS MEMBERS WEBINAR SERIES. SEPTEMBER 2024

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