

# On the development of a Pan European Strategy for open cadastral maps

*Panos Lolonis, Ph.D.  
Hara Papadaki  
Hellenic Cadastre*



HELLENIC REPUBLIC  
Ministry of Digital Governance

 Hellenic Cadastre

OME2



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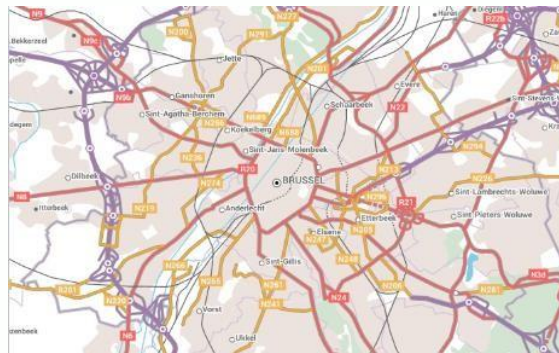


# Open Cadastral Maps for Europe



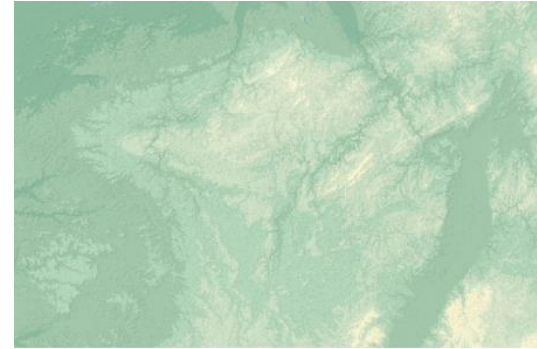
EuroGlobalMap

Multi-layer “open data” topographic maps 1:1.000.000



EuroRegionalMap

Multi-layer “open data” topographic maps 1:250.000



EuroDEM

Digital elevation model 1:100.000

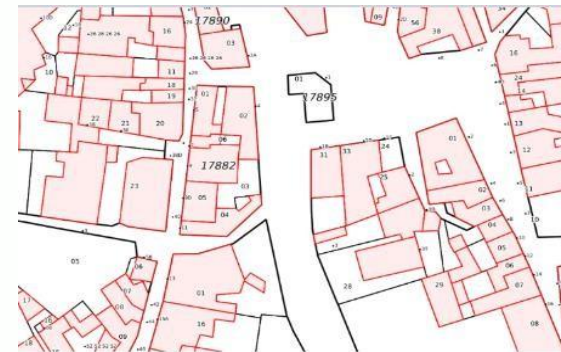


Pan-European Imagery

Satellite images, 10m GSD 2018



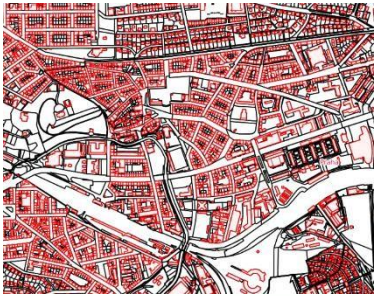
Open Gazetteer



Open Cadastral Map



# Open Cadastral Maps for Europe



Czech Republic



Denmark



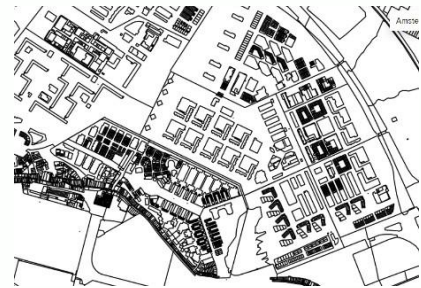
Greece



Latvia



Luxemburg



Netherlands



Poland



Slovakia



Slovenia



Spain

## Themes

- Cad. parcels
- Buildings
- Adm. Units
- Addresses

## Next

Five (5) additional countries scheduled for 2025

# Open Cadastral Maps for Europe



Source: <https://www.mapsforeurope.org/datasets/cadastral-all>



Source: <https://www.mapsforeurope.org/explore-map/cadastral-all>

## Next steps

- Incorporate five (5) additional countries
- Increase the harmonization of the access to cadastral data
- Develop a pan-European strategy for Open Cadastral Maps



# Purpose for developing a strategy

Open Cadastral Map  
Legend



	Administrative Unit
	Administrative Unit (from ERM)
	Condominium
	Cadastral Zoning
	Cadastral Parcel
	Building
	Building Part
	Address



## Motivation

Determine:

- what needs to be done
- How it should be done
- Who would do it and
- Why it needs to be done

to develop and sustain the Open Cadastral Map

An excerpt of the open cadastral map and its legend

Source: <https://www.mapsforeurope.org/explore-map/cadastral-all>

# Vision

To have a single point of accessing cadastral data at a pan-European scale



Spain



Luxemburg



Slovakia



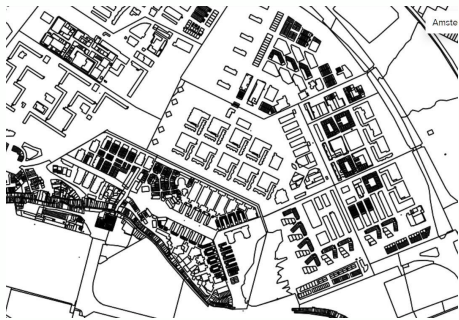
Slovenia



# Mission

To provide an open and user-friendly access to cadastral data of Europe

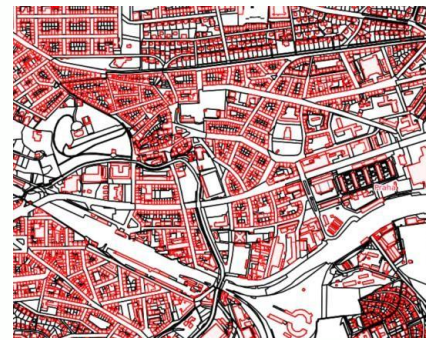
- NCMAAs are custodians of a very valuable, yet underused, resource
- Cadastral specialists are *cognoscente* of the domain and know its potential usefulness
- Modern day society needs cadastral information and we must provide it openly



Netherlands



Denmark



Czech Republic



Poland



# Goals-Objectives

- Sustain the operation of the Open Cadastral Maps (OCM)
- Increase geographical coverage
- Maximize use of the data
- Increase thematic coverage
- Increase functionality of the Open Cadastral Map
- Improve homogeneity and cohesion of the data
- Optimize the OCM production process
- Support major initiatives at the national and transnational levels
- Achieve financial sustainability by 2029



Greece



Poland



Spain



# PEST Analysis

## Political

- INSPIRE Directive
- Public Sector Information
- Open Data Directive
- High Value Datasets
- UN-IGIF
- Volatile
- Highly unpredictable and concerning
- Introverted

## Economic

- Generally, favorable in Europe but highly unstable due to various exogenous causes (pandemic, regional conflicts, accumulating political tensions, trade wars etc.)
- Shrinking purchasing power of the households and unrest for future prospects
- Squeezing of public funds due to the increases in demand in other sectors (e.g. defense, natural disasters, public health, etc.)

# PEST Analysis

## Social

- Increasingly polarized at the intranational and transnational levels
- Demographic instability (aging population, migration)
- Introverted societies (changing values)
- GDPR issues

## Technological

- Very favorable
- Outstanding advances in the ICT domain
- Advent of AI, IoT, B2B, G2B
- Cybercrime



# SWOT Analysis

## Strengths

- Cadastres are powerful social, political and financial institutions
- OCM builds on previous initiatives
- Existence of organizational infrastructure (Eurogeographics) and diversified support
- The initiative is supported by prominent agencies
- The core information is, to a large degree similar across countries
- Cadastral parcels:
  - constitute a stable data fabric
  - partition space at a very fine granularity, suitable for attaching other information and do geographical or other types of analyses
  - embody strong social and institutional agreements and concessions

# SWOT Analysis

## Weaknesses

- There are many members that have diverse policies, views and agendas
- Decisions to support OCM may be taken outside the cadastral institutions
- Too many members to undertake the task of operation
- No obvious way to finance development and operation of OCM
- Diversity in the institutional settings across countries (organizational structures, coding schemes, languages)
- No firm case that demonstrates usefulness.
- No proven financial benefit (particularly for the involved institutions)
- Previous efforts weren't sustainable
- Lack of big countries in the existing application



# SWOT Analysis

## Opportunities

- Elevate public prominence of the cadastral institutions
- Technological enablers (AI, ICT, IoT, B2B)
- Digitalization of cadastral information
- Could be used social stabilizing institution
- is enabler to other applications (urban zoning, licensing, monitoring)
- Catalyst for European cohesion
- In alignment and support of prominent EU Directives (INSPIRE, Open data, PSI, HVD)

## Threats

- Political instability and frequent changing of policies
- “*Tragedy of the commons*” situation
- Rapid changes in economic, social, political and technological environment which may not facilitate robust development of OCM
- Proliferation of similar or pertinent initiatives which may undermine the OCM or even act competitively
- Impact (actual or potential) of rivalry private sector benefactors

# Action plan

## Goal: Sustain the operation of the Open Cadastral Maps (OCM)

- Action 1
  - Engage with countries already in the OCM to commit continuation of support (providing and updating the data)
- Action 2
  - Secure IT facilities to store data and provide services
- Action 3
  - Secure facilitator for data updating and processing the data and managing operation



Source: <https://www.mapsforeurope.org/datasets/cadastral-all>



# Action plan

## Goal: Increase geographical coverage

- Action 1
  - Engage with countries that have readiness with respect to data and willing to participate
- Action 2
  - Engage with countries that have readiness with respect to data but hesitant or unable to participate
- Action 3
  - Engage with countries that are not ready with respect to data but need assistance to participate
- Action 4
  - Engage with the remaining countries to bring them on-board

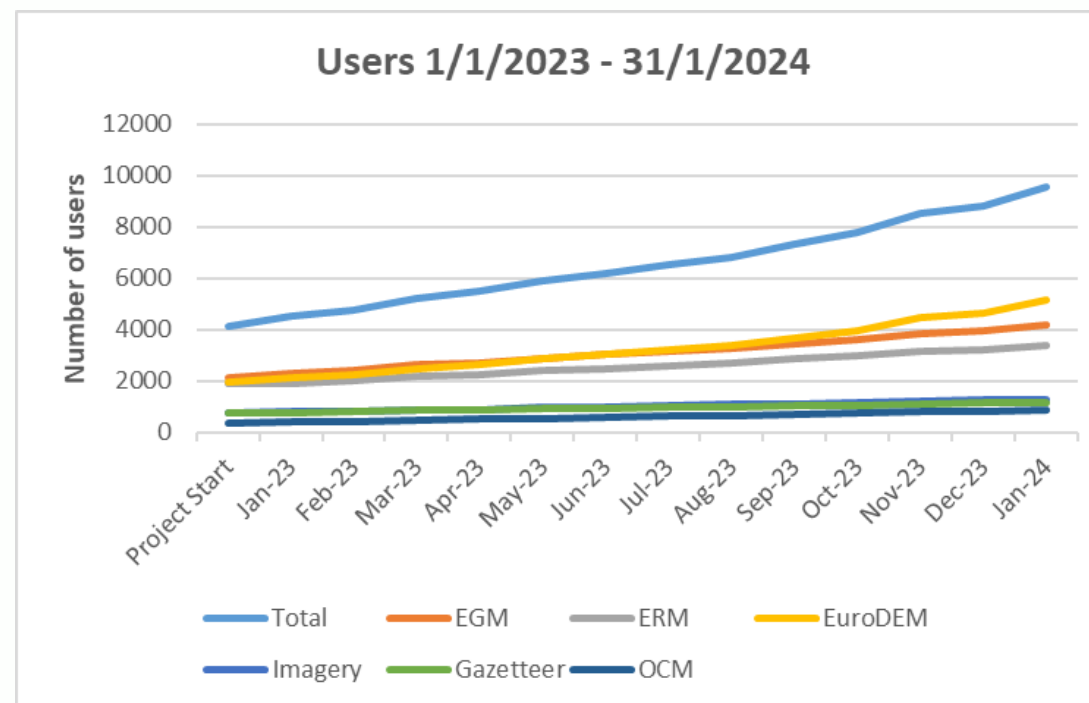


Source: <https://www.mapsforeurope.org/datasets/cadastral-all>

# Action plan

## Goal: Maximize use of the data

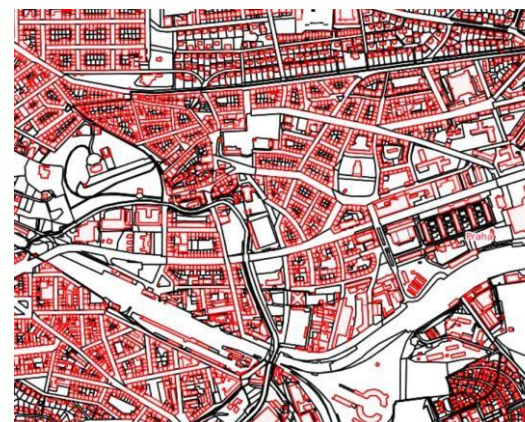
- Action 1
  - Make real world use cases (particularly in high profile applications e.g. disaster management, environmental monitoring)
- Action 2
  - Engage with major geospatial domain firms to make available the OCM to their users
- Action 3
  - Contact major stakeholders to incorporate OCM data to their functions and operations
- Action 4
  - Launch communication activities particularly highlighting success stories



# Action plan

## Goal: Increase thematic coverage

- Action 1
  - Engage with NCMA's to encourage them enrich their provided data with additional layers of information or themes
- Action 2
  - Launch activities for getting selected available data from alternative sources (e.g. open data repositories)
- Action 3
  - Launch activities promoting importance and usefulness of having homogeneity in the cadastral data across Europe

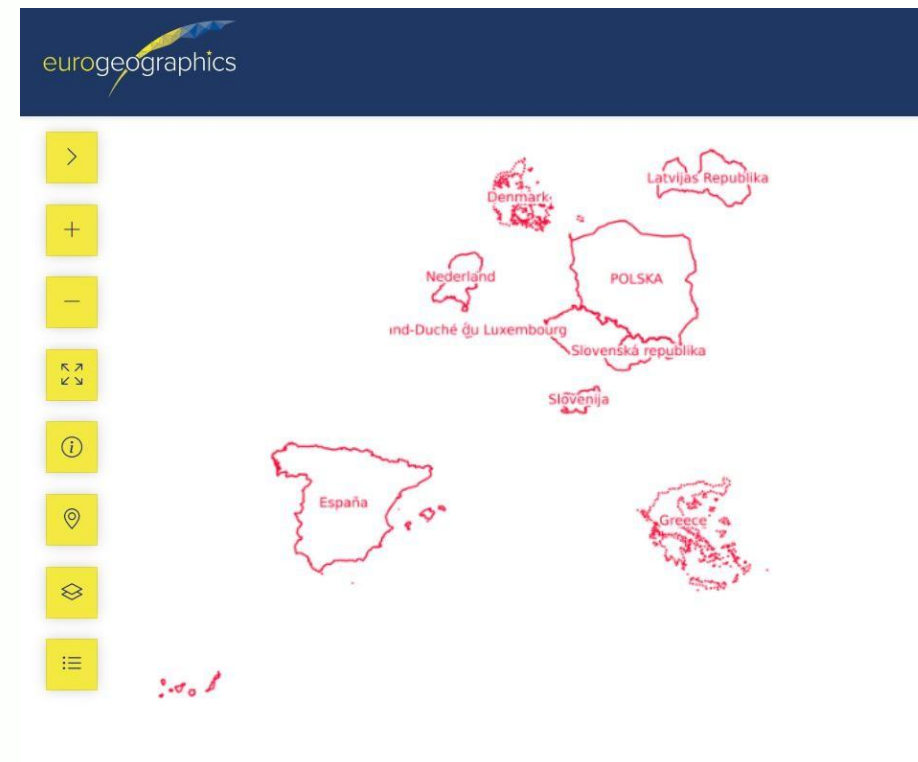




# Action plan

## Goal: Increase functionality of the OCM

- Action 1
  - Add new functions in the system (searching, selections, retrievals, translation)
- Action 2
  - Use novel technologies to enhance user experience (e.g. AI)



# Action plan

## Goal: Improve homogeneity and cohesion of the data

- Action 1
  - Make a study to identify aspects that can be improved with respect to homogenization of data and assess the feasibility of implementation
- Action 2
  - Implement the outcomes of the study



# Action plan

## Goal: Optimize the OCM production process

- Action 1
  - Identify steps in the process that can be improved, (elimination, by-passing, automation)
- Action 2
  - Expand the range of options for getting the data from their providers and streamlining them to the OCM platform
- Action 3
  - Incorporate new tools and technologies that speed-up the process





# Action plan

## Goal: Support major initiatives at the national and transnational levels

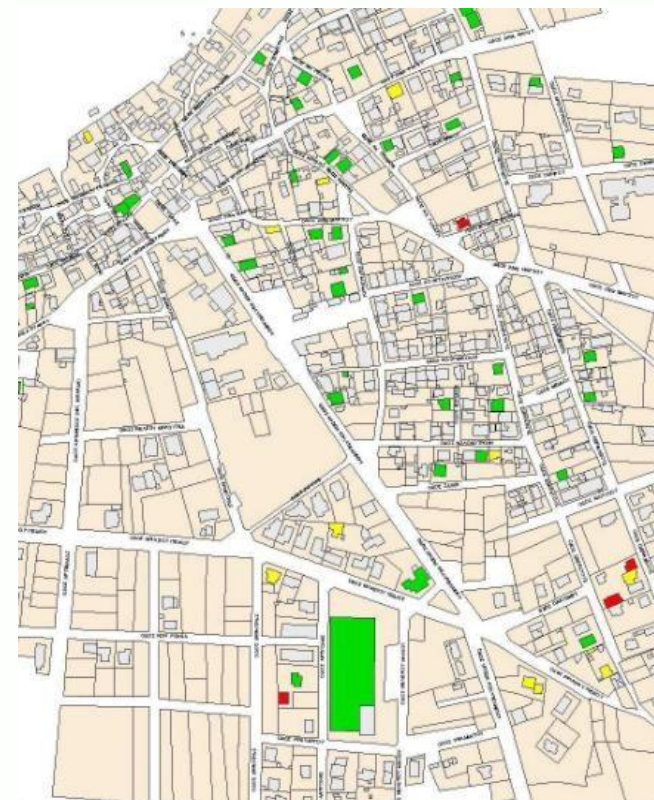
- Action 1
  - Monitor the development of major initiatives (e.g. HVD) at the transnational level and engage in placing or including the OCM data wherever it is appropriate
- Action 2
  - Provide support on the use of OCM data whenever there is request



# Action plan

## Goal: Achieve financial sustainability

- Action 1
  - Carry-out a study for identifying and assessing the various options
- Action 2
  - Reduce operational cost (or at least minimize increases)
- Action 3
  - Implement a short-term plan until the system matures and reaches a “critical mass” level
- Action 4
  - Implement a long-term plan



# Key Performance Indicators (KPIs)

- Number of overall updates annually ( $\geq 1$ )
- Number of new areas incorporated
- Number of OCM data users
- Number of communication activities for promoting OCM
- Number of geospatial domain firms providing OCM
- Number of thematic layers by country added in the OCM
- Number of thematic fields by country added in the OCM
- Number of new functions added
- Number of homogenization actions implemented
- Number of procedural steps involved in the updating process
- Number of alternative options provided for getting data for incorporation in the OCM
- Number of major transnational activities supported
- Annual OCM investment
- Annual OCM costs
- Annual OCM revenues



# Envisaged outcomes

- Establish the OCM as a single point of reference for finding harmonized, authoritative cadastral data at a Pan-European level
- Make the OCM a widely available tool for planning and decision-making at a trans-national level

# Timetable for developing the Strategy

Tasks in Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Develop a pan-European Cadastral Data Strategy	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25
Design of the plan of action																								
Development of the supporting information																								
Presentation and consultation of the strategy options with stakeholders																								
Collection and assessment of input provided during consultation																								
Drafting of the strategy document																								
Presentation of the result to various fora																								
Collection and assessment of new input																								
Incorporation of the input to the document																								
Delivery of the final outcome																								

D6.2  
Pan-European  
Cadastral Data  
Strategy

# Thank you for your attention!

Contact: [plolonis@ktimatologio.gr](mailto:plolonis@ktimatologio.gr)

[hpapadak@ktimatologio.gr](mailto:hpapadak@ktimatologio.gr)