



Permanent Committee on Cadastre  
in the European Union



# “Ci!- Cadastre iNSPIREd!”

**Final report of the Project**  
**Brussels, 10<sup>th</sup> December 2010**

**Julius Ernst, Austria**





Permanent Committee on Cadastre  
in the European Union



# Contents

- Objectives
- Benefits, purpose
- Scope
- Questionnaire
- Conclusions



“Cadastre INSPIREd!– Ci!”

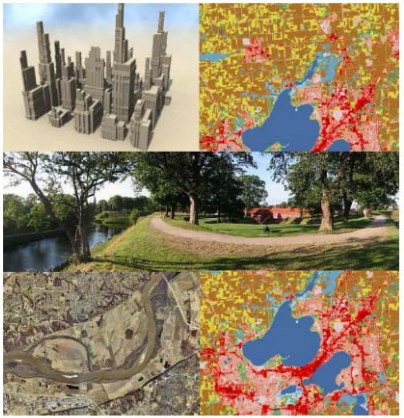
---

The benefits of Cadastral Information for  
themes in INSPIRE Annexes II and III

---

Joint PCC and EuroGeographics working group

---



**December 2010**



Permanent Committee on Cadastre  
in the European Union



# Joint Working Group of EuroGeographics and the PCC

- Julius Ernst (chair, Austria)
- Amalia Velasco (Spain)
- Pierette Fraisse (Belgium)
- Frederic Mortiere (Belgium)
- Ewa Wysocka (Poland)
- Roger Ekman (Sweden)
- Francis Kaell (Luxembourg)
- Wilhelm Zeddies (Germany)
- Arturo Angelini (Italy)
- Pekka Halme (Finland)





Permanent Committee on Cadastre  
in the European Union

eurogeographics

## Objectives

- influence the development of the INSPIRE data specifications of Annexes II and III
- contribute to the development of the INSPIRE- Data specifications
- be involved in an early stage of the process
- Final report at PCC Meeting in Brussels





Permanent Committee on Cadastre  
in the European Union



## Benefits, Purpose

- European Commission has to consider the importance of the cadastre
- the result shows, that the cadastre is very often used as a locator for a lot of information
- To establish Cadastral parcel an essential element in N(E)SDI
- Cadastral experts to be involved in an early stage





Permanent Committee on Cadastre  
in the European Union



# The Scope

- Screening the INSPIRE themes in Annexes II and III
  - Part of cadastral information or strong connected to it
  - Identify the themes related to the cadastral information and
  - Identify the information the Cadastre can provide
- Prioritisation finally resulted in
  - land cover (Annex II)
  - land use (Annex III)
  - buildings (Annex III)
  - Orthoimagery (Annex II)

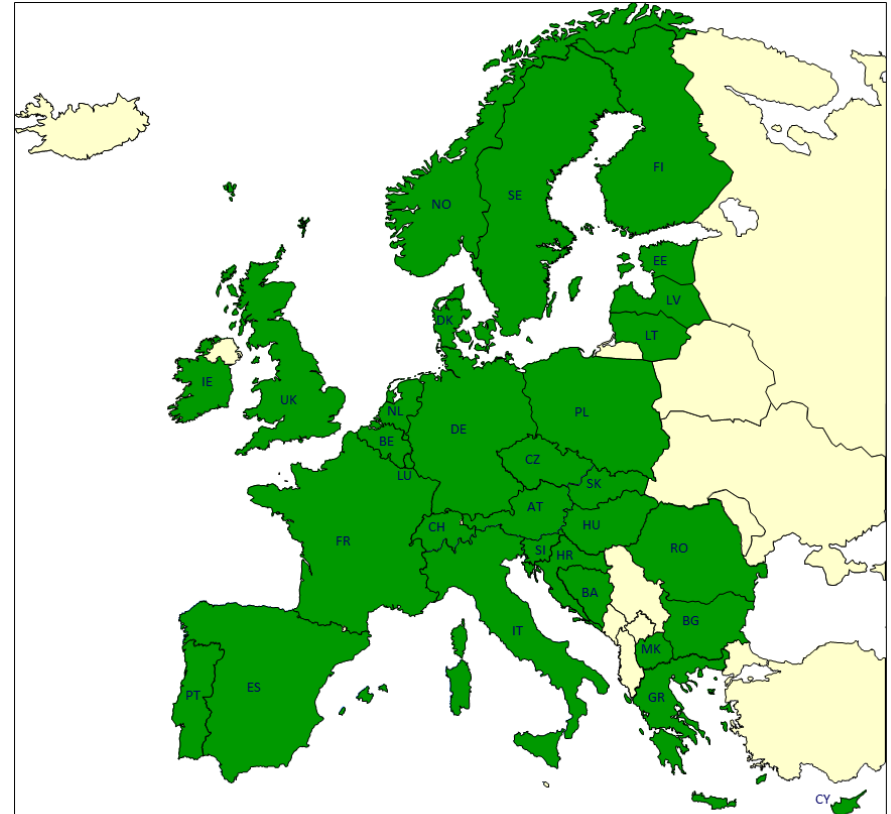


Permanent Committee on Cadastre  
in the European Union



## The survey...

- Survey based on a questionnaire
- Great interest members of EuroGeographics and the PCC
- 32 Cadastral organisations responded
- Representative picture of situation in Europe







# The questionnaire: buildings

- Method of data capture
- Terrestrial surveying, from aerial images, data quality
- Responsibility for gathering and maintaining the information
- Updating procedure
- life cycle, coverage (%)
- Information about ownership available ?

Can the cadastre in your country provide the following features and/or attributes of a building?	Land cover	Land use	Buildings	Orthoimagery
size (area)			Yes	
If information about the area is available, please specify the level of detail information			<input type="checkbox"/> footprint (building area) <input type="checkbox"/> floor area (total sum of floor space)	
height of a building or number of floors			<input type="checkbox"/> height of the building <input type="checkbox"/> number of floors <input type="checkbox"/> none	
condition of a building (ruin, under construction, functional)				
function of the building (industrial, commercial, agricultural, residential,...)				
nature of a building (school, museum, church, hospital,...)				
Information about ownership available ?				
Do you have information about the different units of buildings ?				
Do you have information about tenants / occupants ?				



# The questionnaire: accessibility of data

- How do you provide your data
  - Analogue form
  - Offline
  - web portal
- Conditions for access to data (legal, technical,..)
- Pricing issues (fees, free access for authorities,..)

Accessibility	Land cover	Land use	Buildings	Orthoimagery	Your comments, explanations
How do you provide your data?					
Are there any conditions concerning the access to the data?					
In the case of "yes"...					
Please specify the level of conditions					
Access is limited to ...					
Are there fees for accessing the data ?					
Are there special fees for public authorities ?					
Apart from pricing issues, are there different conditions for public authorities than for the general public ?					

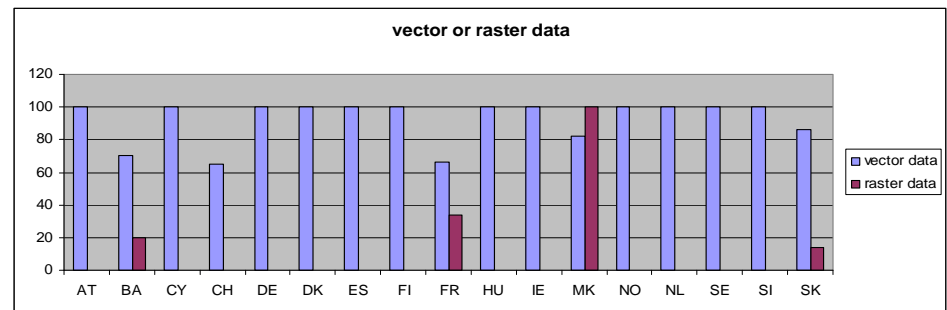
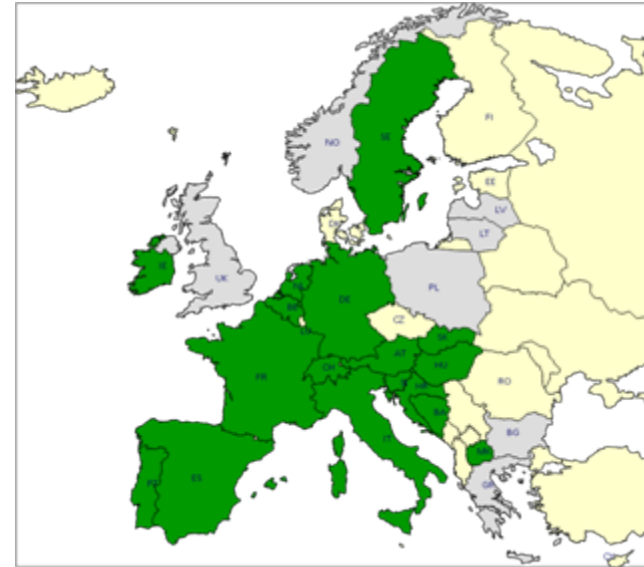


## To be mentioned...

- Very different tasks and responsibilities of the responding organisations
  - National Cadastral Agencies (NCA) or responsible for land registry as well as for topography
- Careful elaboration / interpretation of the answers is needed
- Results presented in maps: **Yes**, no or no answer !!
- *“... there may have been some misinterpretations of the questions, but this has not a major impact on the overall view of the situation of the cadastres in the European countries and the conclusions have been drawn.”*

# Conclusions: land cover...

- Almost half of the countries provide information about land cover
- In most of the countries you can get the information of land cover in vector format

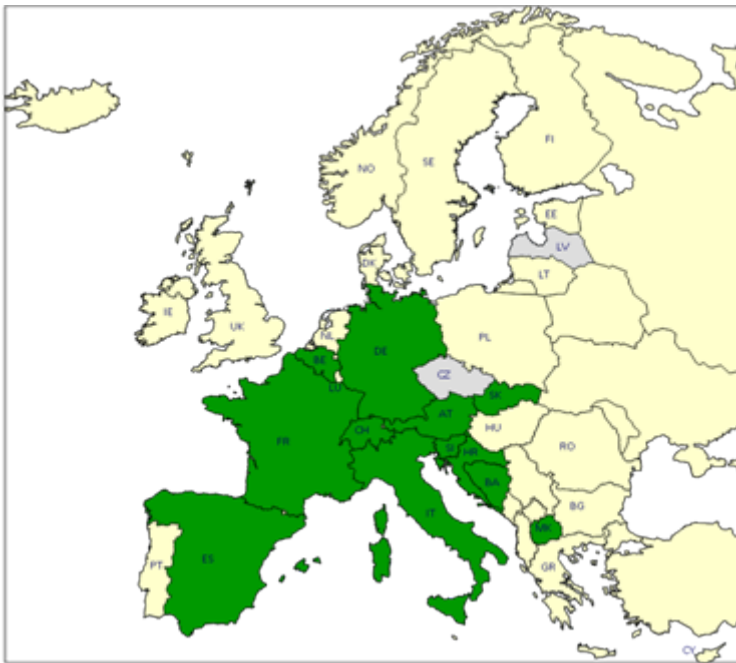




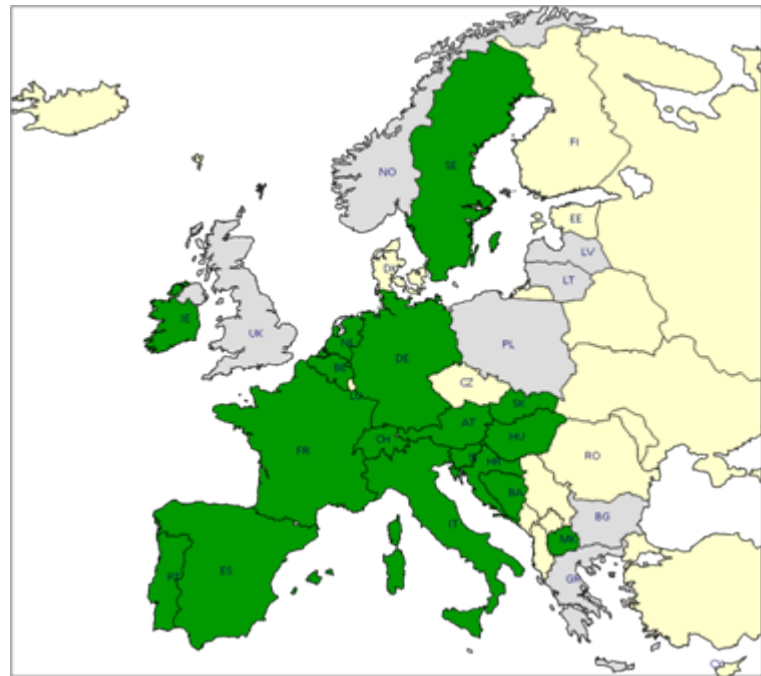
Permanent Committee on Cadastre  
in the European Union



# Conclusions: land cover



part of cadastral data set

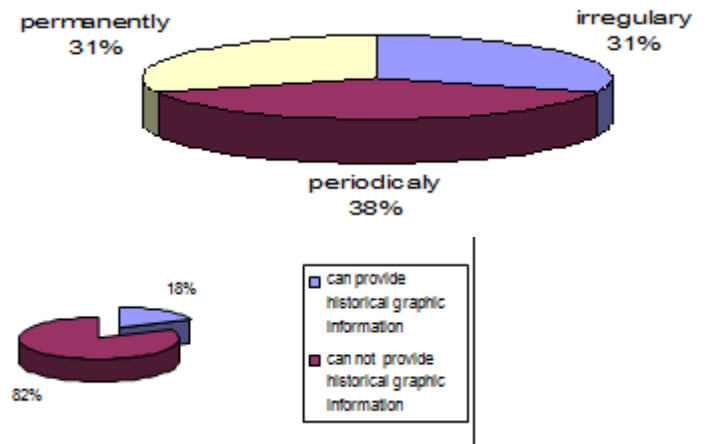


legal Task to provide the data



# Conclusions: land cover

- updating frequency of land cover:
- Availability of historic graphic information about land cover
- Almost all countries providing “Land Cover” as a spatial object



Is this information in your data model a spatial object (feature) or an attribute of the parcel?	Spatial object	AT BA BE CY CH DE ES FI FR HU IE MK NO NL SK
	Attribute	AT BA* DE EE FR GR HR HU IT PT SK SI

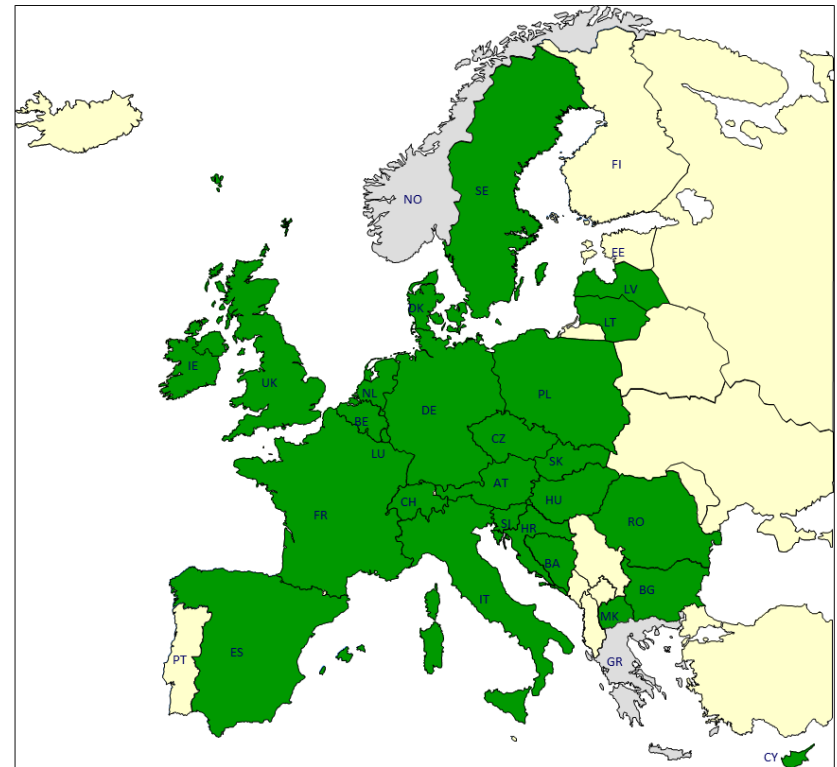


Permanent Committee on Cadastre  
in the European Union



## Conclusions: buildings

- Most of the countries provide information of buildings
- Even if it not the legal task there is a strong connection to the cadastral information



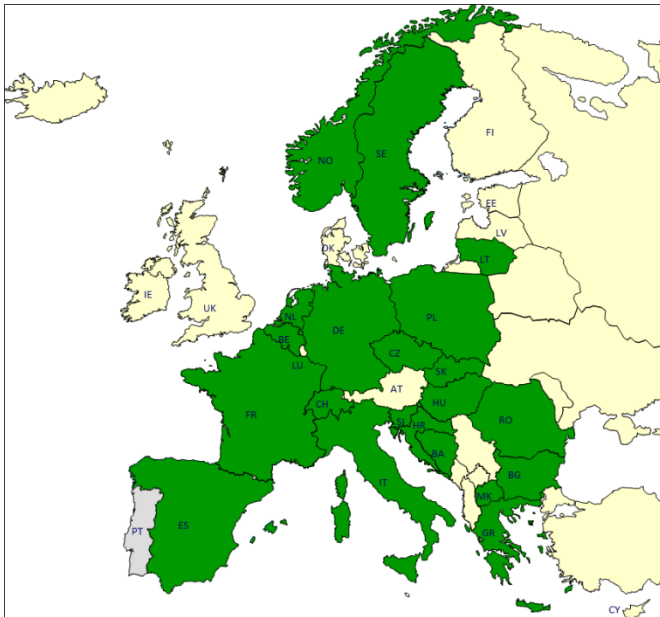




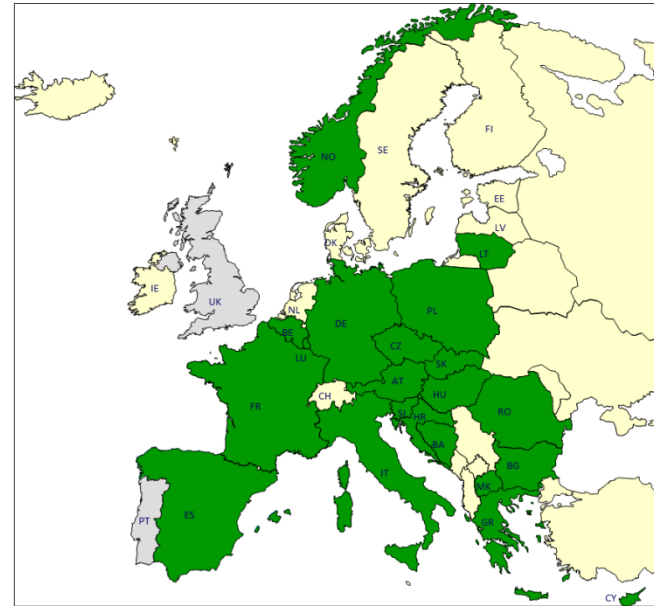
Permanent Committee on Cadastre  
in the European Union



# buildings: additional information to buildings



Function of a building



Information about ownership



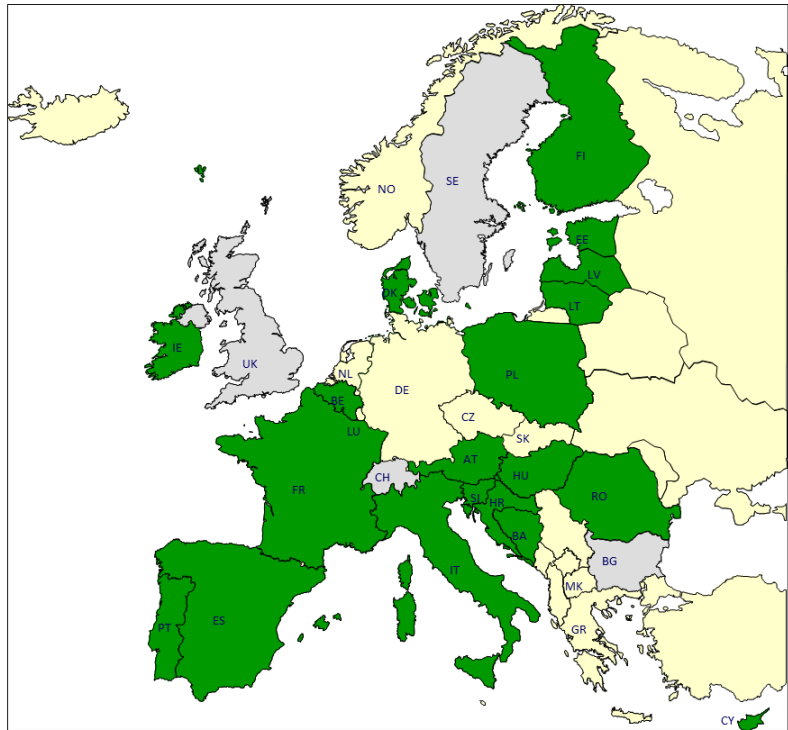
# Conclusions: buildings

- The additional content for buildings varies a lot from country to country
- Most countries provide the area derived from footprint
- Sometimes “2,5D” - information is available (not fully 3 D)

Condition of a building (ruin, under construction, functional)	BA* BE BG CY CH DE ES GR HR IT LT MK NO NL PL SK SE
Function of the building (industrial, commercial, agricultural, residential,...)	BA BE BG CZ DE ES FR GR HR HU IT LT MK NO NL PL RO SK SI SE
Nature of a building (school, museum, church, hospital,...)	BA BE BG CY CZ DE ES FR GR HR HU IT LT MK NO PL SK SI SE
Information about ownership available?	AT BA* BE BG CY CZ DE ES FR GR HR HU IT LU LT MK NO PL RO SK SI SE
Do you have information about the different units of buildings?	BE BG CY ES FR GR HR IT LU LT MK NO NL PL RO SI SE
Do you have information about tenants / occupants?	BA** BE LT MK SK

# Conclusions: orthoimagery

- in most of the countries orthoimagery is not part of the cadastral data set
- many countries use it for improving the quality of the cadastre
- use for deriving other information from it, e.g. land cover etc. or to provide combined products.



.. for quality improvement of the cadastre



## Conclusions: accessibility of information

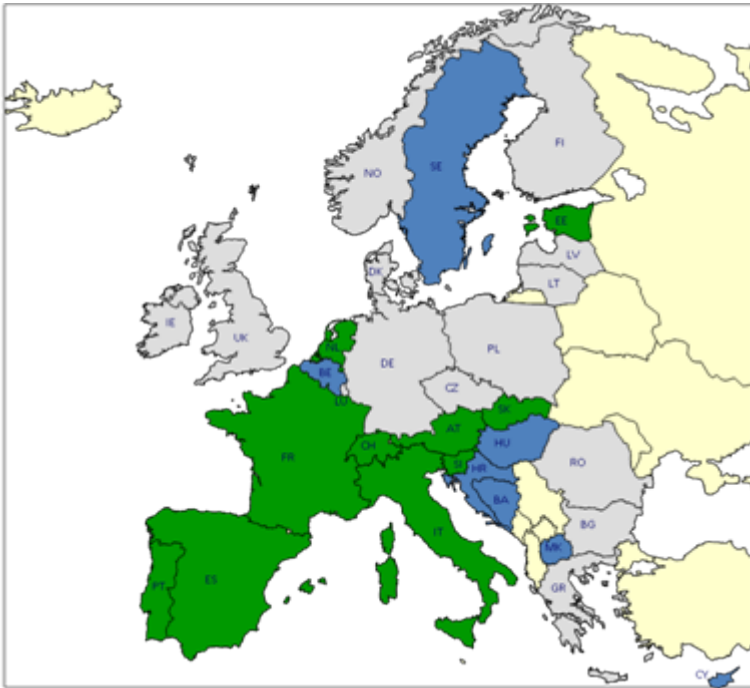
- big variety in the access to the data depending on legal and/or technical restrictions
- In some countries citizens have open free-of-charge access to data, in other countries the access to data and information is very strong restricted
- Usually access to personal data is restricted by law
- in some countries different rules to access the data are applicable for private persons and governmental or administrative organisations



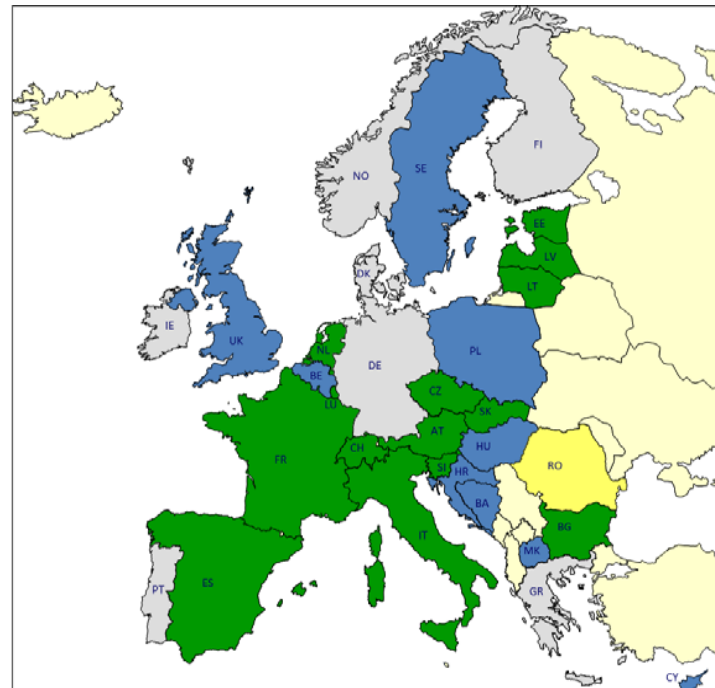
Permanent Committee on Cadastre  
in the European Union



# Access to information via web portal



Access to land cover



Access to buildings



# The other themes .....

- the result of the survey to **the other themes of Annex II and III** underlines the important role of the cadastre as a source of information
- the cadastre is used as a locator for many other information

Additional questions to selected themes of Annex II and III			
Official definition of the themes according to Annex II & III of the INSPIRE directive.	Do you use some of this information?	Do you provide some of this information?	
<b>Elevation:</b> digital elevation models for land, ice and ocean surfaces. Includes terrestrial elevation, bathymetry and shoreline.	BA* CY CH CZ DE DK EE GR HR HU IE LU MK NO NL SI SE	BA* CY CZ DE DK EE UK GR HR HU IE LU MK NO NL RO SI SE	
<b>Geology:</b> geo-referenced image data of the Earth's surface, from either satellite or airborne sensors.	CY EE IE LV	CY EE IE LV	
<b>Statistical units:</b> units for dissemination or use of statistical information	BA BE CY HR IE MK NO PL SI	AT BA BE FR HR IE MK NO SI	
<b>Soil:</b> Soils and subsoil characterised according to depth, texture, structure and content of organic material, stoniness, etc. appropriate mean slope and erodibility storage capacity.	<b>Agricultural and aquaculture facilities:</b> Farming equipment and production facilities (including irrigation systems, greenhouses and stables).		CY EE ES FR ES FR
<b>Utility and governmental services:</b> Includes utility facilities such as sewerage management, energy supply and waste management, and social governmental services such as public administrations, civil sites, schools and hospitals.	<b>Area management / restriction / regulation zones &amp; reporting units:</b> Areas managed, regulated or used for reporting at international, European, national, regional and local levels. Includes dumping sites, restricted areas around drinking water sources, nitrate-vulnerable zones, and regulated airways at sea or large inland water, areas for the dumping of waste, noise restriction zones, prospecting and mining permit areas, river basin districts, relevant reporting units and coastal zone management areas.		CY EE ES GR LV EE ES
<b>Environmental monitoring facilities:</b> Location and operation of environmental monitoring facilities includes observation and assessment of emissions, of the state of the media and of other ecosystem parameters, by or on behalf of public authorities.	<b>Natural risk zones:</b> Vulnerable areas characterised according to natural hazards (all atmospheric, hydrologic, seismic, volcanic, and wildfire phenomena that, because of their location, severity and frequency, have the potential to seriously affect society) e.g. floods, landslides and subsidence, avalanches, forest fires, earthquakes, volcanic eruptions.		CY CH ES
<b>Production and industrial facilities:</b> Industrial production sites, including covered by Directive 86/61/EEC of 24 October 1986 concerning integrated pollution control and water abstraction facilities.	<b>Energy resources:</b> Energy resources including hydrocarbons, hydropower, bio-energy, solar, wind, etc., where relevant including depth/height information on the extent of the resource.		CY ES LV ES
	<b>Mineral resources:</b> Mineral resources including metal ores, industrial minerals, etc., where relevant including depth/height information on the extent of the resource.		CY EE ES ES



Permanent Committee on Cadastre  
in the European Union



# Final conclusions

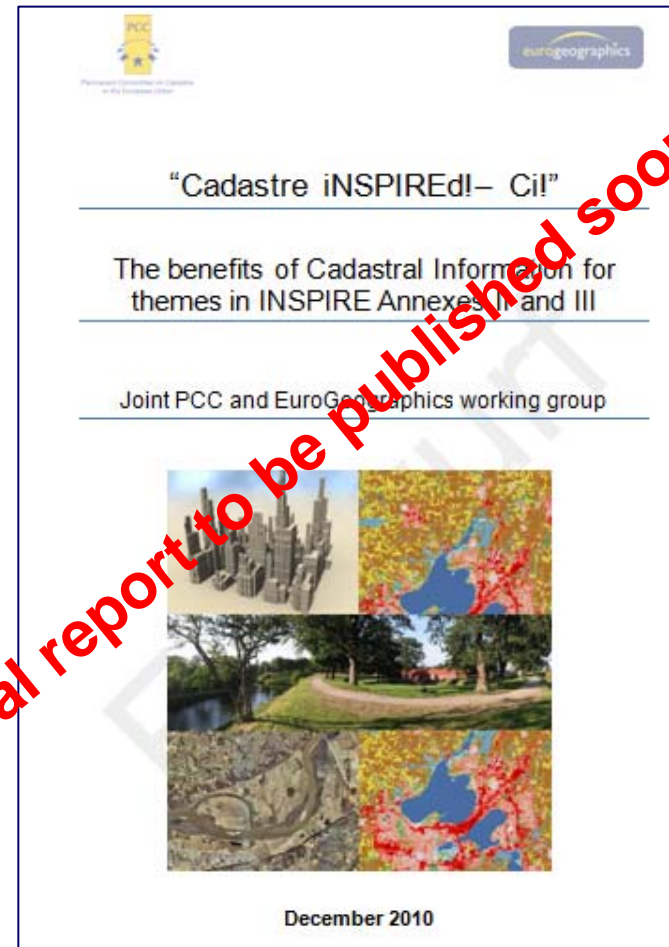
- Huge variety (legal, technical) in Cadastre in Europe
- EC has (to) consider(ed) the importance of the Cadastre

Benefit from Cadastre for INSPIRE ??

*Cadastre is INSPIREd...*

- *important reference information*
- *a locator for other information*

**Final report to be published soon!**

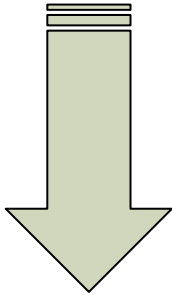




Permanent Committee on Cadastre  
in the European Union



**Cadastre INSPIREd?**



**INSPIRE “cadastred!!”**

**Thank you for  
your attention !**

**[julius.ernst@bev.gv.at](mailto:julius.ernst@bev.gv.at)**