

# The social side of the Cadastral System

A philosophical analysis

Bamberg/Conference on Standardization in the Cadastral Domain

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# What, why and who

- Why and where (I think) Cadastre 2014 and the Core Model run into problems
- I study socio-technical systems by doing case studies to test, learn and adapt, and gain more insight in the nature of these systems
- I am in a research studying complex engineering systems from a philosophical perspective

# An analysis of the cadastral system: A social basis

- Most engineering systems have a technical basis (e.g. physical transportation needs physical (technical) elements)
- The cadastral system is based on property and ownership which are purely social concepts, they are socially defined

# An analysis of the cadastral system: Social (non-technical) aspects

- Real estate, Ownership, Owner are social concepts
- Ownership can be declared non-existing, certain rights might change
- Both owner and what is owned are socially defined and can (will) therefore change over time
- For example: trees can be declared owner of the land they stand on, or property can be defined by natural boundaries or ancient landmarks, or even related to the moon

# An analysis of the cadastral system: Technical elements

## 1. Technology to determine coordinates

- Boundaries are based on coordinates, if the technology fails, the cadastral system will fail, disputes can no longer be solved
- 3D cadastre possible because of technology
- Problems arise when the land shifts (islands do)

## 2. Database technology

- Choices for modelling the cadastral system based upon possibilities in ICT

# An analysis of the cadastral system: Dynamic aspects (I)

- Owner and property can change, but also kind of owner, kind of property, kind of rights
- Social elements are fluid
- The cadastral system is also about *how* someone can own, about procedures

# An analysis of the cadastral system: Dynamic aspects (II)

- Malfunctioning of a technical system traced back to laws of nature
- Disputes (malfunctioning of cadastral system) will be solved on the basis of information from the cadastral system
- Laws of nature do not allow exceptions, nor can we change them as we see fit

# An analysis of the cadastral system: Conclusion: a socio-technical system

- Modern Cadastral systems depend on technology and social elements for their functioning
- These elements are strongly integrated and dynamic
- What are implications for designing and modelling?

# Implications for designing

- Since basis is social and social elements differ from technical elements, notion of design probably different
- The review of Cadastre 2014 in 2004 shows that statements that require most social change are most behind schedule
- Several 'social design methods' emphasize that social elements are negotiated (ANT, CTA, MAS)  
(more study needed..)

# Implications for modelling

- Where to draw boundaries?
  - Although social elements are fluid, not all possible changes are worth modelling (like abolishment of ownership)
- What are the elements and relations?
  - Sufficient notion should be paid to the nature of the elements
- What about procedures?
  - Very important for cost-recovering aspects, technology can decrease costs for (non-legal) information retrieval, but to decrease cost for legal procedures technology alone doesn't suffice

# Conclusions

- Cadastre 2014 and the Core Model pay no sufficient attention to socio-technical nature of Cadastral System
- Therefore it seems the Cadastre 2014 goals are based on incorrect assumptions about the make-ability of the Cadastral System
- The Core Model does not lead to standardization in the Cadastral Domain since it hardly pays attention to the social core of the system
- Both lack in (helping) gaining insight in costs

Thank you for your attention