Real Property Transactions:
Challenges of Modelling and Comparing

COST-Action G9:
Modelling Real Property Transactions
- participants: A, DK, SF, D, H, LV, NL, SLO, S, UK; E, GR
- MC-meetings (7 + 2)
- 3 Working Groups (4 + 2) since 2004
  - Law and Models
  - Cadastral Science
  - Economy
- Short Term Scientific Missions (? 10 + 4)
- http://costg9.plan.aau.dk

Memorandum of Understanding
- Improve transparency of real property markets
- Provide a stronger basis for reduction of costs of real property transactions
  - by
  - Preparing a set of models of real property transactions
    - Correct, formalized and complete
    - Assessing economic efficiency of these transactions
    - models also for education and (re-)engineering

Models (transaction)
- Verbal (semi formalized) descriptions
- Activity Diagrams
- Use Case Diagrams

Memorandum of Understanding
- Even neighboring pair of countries
- has remarkable differences,
- making it a challenge to elicit a common set of concepts and models (p. 4)
Activity Subdivision recorded in Cadastre and Land Registry.

Context
Owner sells a part of his real estate property (parcel).

Special context
The transfer of ownership of a whole real estate property means only the recording of the relevant deed and a change of name in the cadastral registration. This is carried out between the notary and the Cadastral Agency directly.

Actors
Buyer (new owner), Cadastral Agency ('registrar'), Cadastral Agency ('surveyor'), Notary, Seller (old owner).

Pre-conditions
1. The seller and the buyer come to an agreement.
2. Usually this will be followed by a written contract (soon mandatory between private citizens).
3. The chosen notary checks and verifies the contract and the status of the owner.
4. The notary draws up a notarial deed of transfer that includes a verbal description of the part of parcel (a sketch may be included as well).
5. The seller (and often the mortgage bank) has an existing mortgage (loan).
6. Seller, buyer and notary sign the deed.
7. The mortgage bank submitted to the Cadastral Agency ('register')
8. Transfer of ownership (in the case of a mortgage, the authority and Cadastral Agency record the mortgage transaction and introduce the new owners into the cadastral registration)
9. The new owner's name is added to the cadastral registration (including the sub-parcel numbers).
10. The old owner (seller) is informed of the changes in the cadastral registration.

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Parallel/jointly the development of the cadastral core domain model (see TS11.1)
- Static and dynamic depiction both are too limited on their own
- Perhaps a true "domain model" needs to be more abstract and holistic:
  - combining different types of elements:
Comparison

- In modeling diagrams were discussed with experts from at least one other country (mainly during STSMs) to challenge and deepen the diagrams.

- Comparisons between sets of countries:
  - e.g. SLO and SE: different role of surveyor became clear
  - level of detail vs. abstraction in comparison
  - perhaps more a functional analysis (cf. EULIS)

Transparency

- Describing the process in an understandable way
- Assigning authority and responsibility for certain activities to certain actors
- Dealing with less prescriptive countries (describe a 'normal' case), esp. UK (NL, ..)

Ontology

- Ontology focus of Bremen Workshop
  - provide common base for modeling
  - strong start at Bremen Workshop
  - Too large difference between 'ontologists' and 'cadastralists'
  - Towards a Cadastral Domain Model/Ontology
  - not as the base, but after a learning curve
  - from 'UseCases to Classes and back'
  - bottom up
Progress of Action

- Modeling completed to a large extent:
  - further formalization in some cases (e.g. UML)
  - bottom up emerging ontology
  - modeling should not be the goal
  - don’t keep refining
  - use the richness of the data gathered to answer research questions
  - from the Action MoU
  - new ones (e.g. risk attribution)

- UML (or other) only a tool for modeling
- Need to describe methods used → methodology (is this domain specific?)
- Participants had very different pre-knowledge of modeling; influenced progress, esp. in comparing and underlying terminology → domain ontology

Further Work

- every country will complete the national report
- use example cases for comparison
  - also for economic side
  - make comparison in comparable groups
- undertake iterative process to get to ‘bottom up’ ontology
- Action G9 will end December 2005
  - book and closing event are planned
  - ideas on continuation discussed

References of figures (all on http://costg9.plan.aau.dk)

- slide 7: Zevenbergen, WGLawModel, 2003
- slide 9: Vaskovich, STSM-report, 2004
- slide 11: Sumrada, WG 2, 2004
- slide 13: Stubkjær, WG 2, 2004 (originally ScanGIS 03)
- slide 15: Mattsson, WG 2, 2004