Land Administration Standards and their implementation in practice

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Land Administration Standards

- Implemented Standards (examples):
  - INTERLIS (Switzerland)
  - MSZ 7772-1 (Hungary)
- Quasi standards:
  - AutoDesk DXF,
  - ESRI Shape
  - OPEN Geospatial Consortium (GML, WFS, WMS, WCS etc.)
- ISO Standard proposal:
  - Land Administration Domain Model

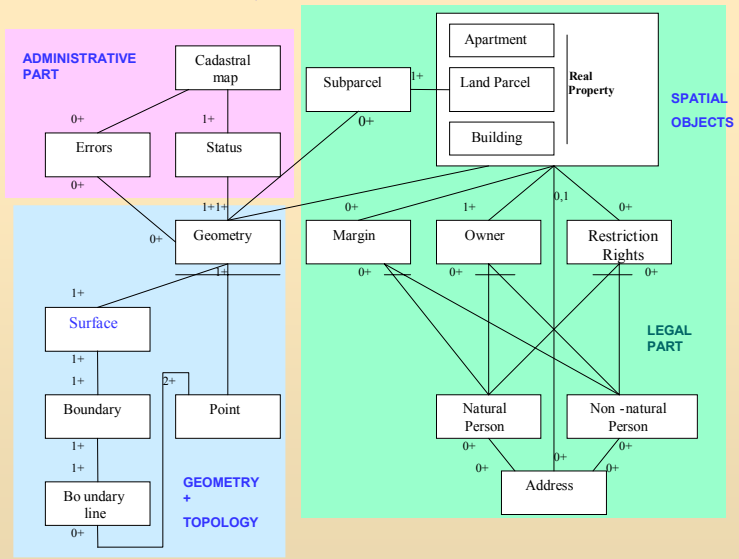
Unified Hungarian Land Registry, present situation

- Unified Land Registry was established in 1972
- Land registry and Cadastral Mapping integrated in the same organization: Land Office Network
- Since 1997 all land registry data available in digital form
- From 2008 all cadastral maps are available in vector form in the same projection system
- IT developments of Land Office Network was started in the mid of 90's
  - TAKAROS (Land Registry IT system) (fin. 2000)
  - TAKARNET (Network of Land Offices) (fin. 2002)
  - Integrated Land Information Services for registered users (from 2003) via Internet
- All IT developments and support in LO Network is the responsibility of FÖMI

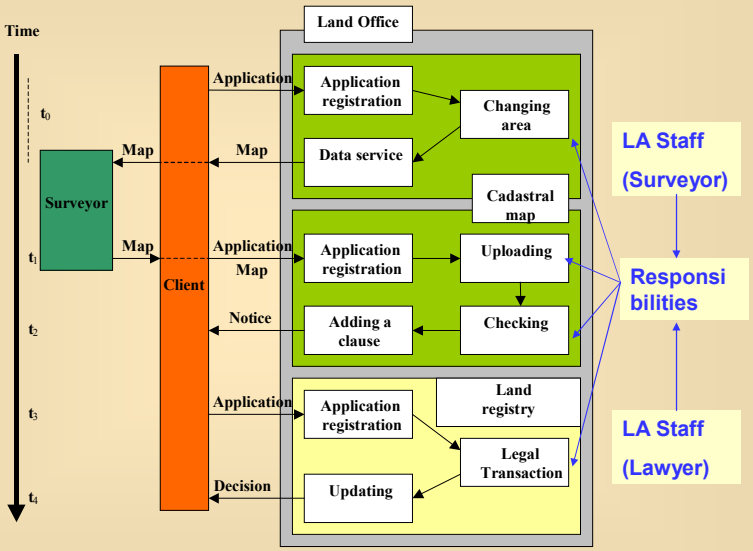
Model of the Hungarian Unified Land Registry

- Basis: MSZ 7772-1 Standard (Digital Base Map – Conceptual Model) in Cadastral Domain since 1996 and DAT Regulation since 1997
- Visions:
  - Map all the principles of Unified Land Registry
  - Compatible with the Standardized Domain
  - Authentic updating of legal and geometry part of Unified Land Registry
  - Independency from any commercial GIS solutions
  - Full integration of the legal and geometric part of the Registry

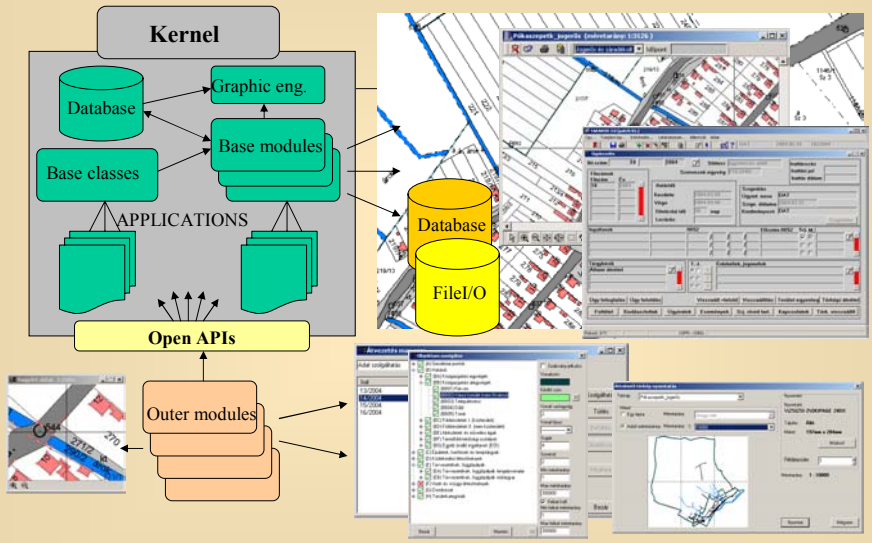
DATR, Core Data Model



Administrative workflow in LA



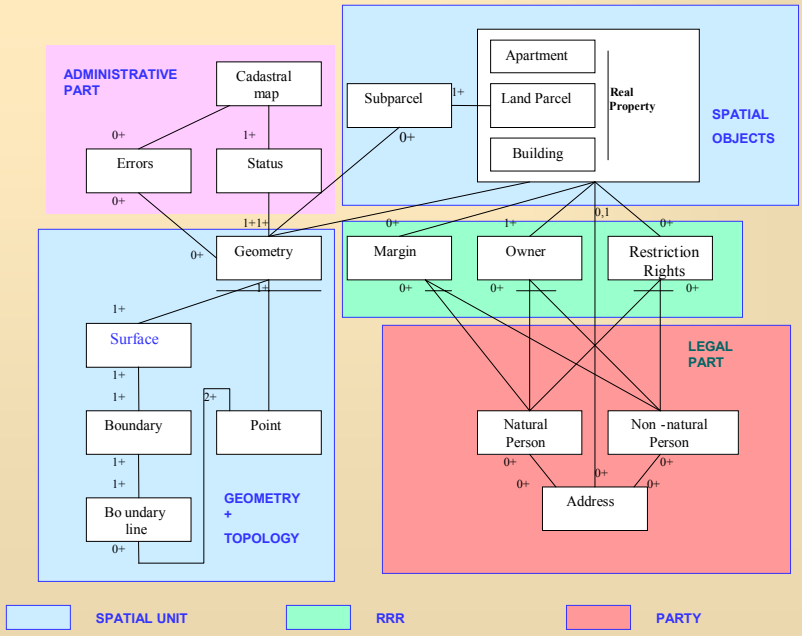
DATR Architecture



ISO LADM & DATR

- ISO LADM core model (3 classes):
  - Spatial Unit
  - RRR (Rights, Restrictions & Responsibilities)
  - Party

ISO LADM & DATR



ISO LADM & DATR

- Spatial Units: DATR supports 3D, but only 2D capacity is used
- SpatialUnitSet: DATR supports, based on the original surveying methods (built-up, rural and garden areas)
- Surveying package: SurveyPoint used
- Geometry and Topology Package: DATR modeled the same way
- Party package: similar in DATR
- Administrative Package: modeled
- Documentation: is not modeled yet

DATR, International Version

- Because of the flexibility of the system, FÖMI decided to share this software with the land administration community
- All modules have a lingual description in XML format. Therefore customization is very easy
- By the use of open APIs the system can be modified to any legal and technical environment
- New interface to Open source MySQL RDBMS (beside the existing ORACLE interface)
- If client needs any SQL based interface can be developed
- Full technical and professional (not only IT, but LA) support and guidance

Conclusions

- DATR is an object-oriented approach and a flexible solution for authentic unified land registry management as a practical example for the utilization of Land Administration Standard
- DATR International version will be published as a freeware software, only registration needed
- FÖMI's capacity both in IT and land administration professionals guarantees the long-term maintenance and support of the system
- Customization of the system is very easy via linguistic descriptions
- Open APIs help anyone to customize the system into his legal and technical environment
- FÖMI is ready to undertake the task of customization and/or professional guidance for the users of DATR, as well

Thanks for your attention

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