

The Development Strategy for Cadastre and Land Register in Finland

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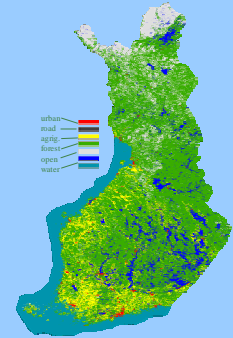
Facts and figures of Finland

- land area 304 530 km²
- water area 33 615 km²
- total area 338 195 km²

- population 5,2 million
- 17 inhabitants per km²
- 67 % live in towns
- 444 municipalities

- 187 888 lakes
- 179 584 islands

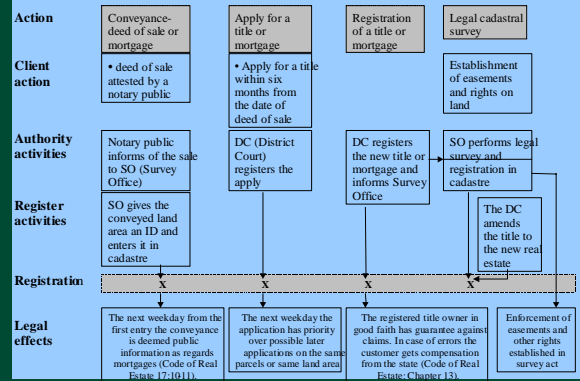
- 2,1 million cadastral units
- 5,0 million parcels



Characteristics of LA in Finland

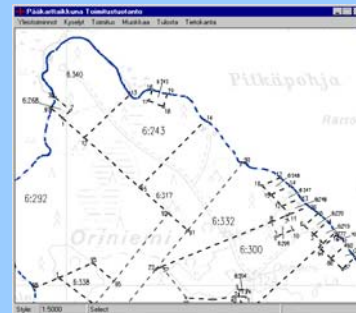
- Main systems: Cadastre and Land Register
- Cadastre is updated by the NLS (98 % of territory) and by 86 municipals (2 % of territory)
- Land Register is updated by district courts
- Conveyances are attested by notaries public
- It is obligatory to apply for a title of a conveyance
- Transfers of part are first titled, the survey starts then automatically

Land transaction and registration process chart



Introduction of IT into Cadastral applications

- A start to transfer Cadastre into computer in the late 1970's at the NLS
- A start was made in 1985 to digitise the cadastral index map at NLS
- The most advanced municipalities followed the same trends but a little bit later than the NLS

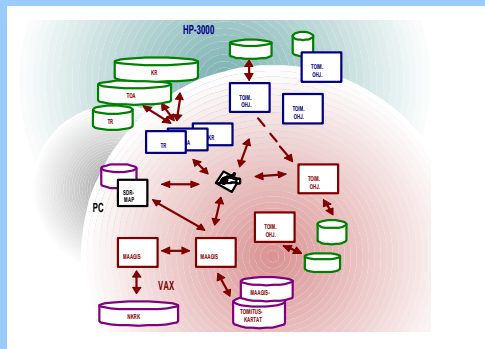


Introduction of IT into Cadastral applications

- Survey processes
 - production line principles in use till 1998
 - even small surveys were performed by teams, several persons each
 - specialisation in a narrow sector was predominant

Introduction of IT into Cadastral applications

- Problems with old data systems
 - data was divided into many applications and data files or databases
- data transfer between different systems was not an easy task
- updating of many applications and hardware platforms was difficult and expensive



Development of National LIS

- In 1984 started the implementation of a nationwide LIS that included
 - data from cadastres of the NLS and municipalities
 - data of the Land Register
- Cadastral data was completed in 1994
- Land Register was completed in 1999

JAKO –the second generation cadastral system at the NLS

- Development started in the early 1990's
- Implementation in 1998

Main ideas of the JAKO system

- One seamless database including
 - cadastral attribute data
 - cadastral map data
 - survey management data
 - basemaps (raster data)

Main ideas of the JAKO system

- Updating the Cadastre with surveys
 - the source data for the survey is collected from the Cadastre (database)
 - all data of the survey is processed by the system
 - all documents are produced by the system
 - registration is made by the system when the survey is completed

Main ideas of the JAKO system

- Information services
 - integration of map and attribute data provides great possibilities that have been benefited
 - map user interface
 - combination of attribute and map predicates in queries

Experiments of the JAKO system

- Technically the system has functioned satisfactorily
- The system is sophisticated; familiarisation of the staff has taken more time than expected
- New work processes require more extensive knowledge of the survey than earlier

Development of next generation LIS

- The existing LIS was introduced in 1984; it will be obsolete in ten years or so
- Investigations of user needs for the new system started in 1995 as well as design of technical solutions

User needs for the new LIS

- Map shall be added in the data contents
- Better description of land use rights and restrictions
- Better updated data on ownership
- Access to building data
- Easy access by the Internet

Proposed technical solutions

- The LIS would be renewed in two phases
 - only the renewal of cadastral part would provide all needed features set by users
 - the renewal of the Land Register part would be postponed some years
 - the JAKO system would be cheapest and fastest feasible solution in realisation of the cadastral part of the system
 - using the JAKO system would be the easiest way to solve problems arising when updating data from municipal surveys

Reconciling interests of the state and municipalities

- Municipalities liked to use their existing systems in surveys
 - updating of data from municipalities by using messages only has not been solved (updating of topology)
- municipalities liked to be real registrars and perform the update of the register independently
- new working groups were established in order to reconcile the interests
- it was evident that also legislative means must be used in order to safeguard a functioning result

Development of legislation

- The establishment of the LIS system in 1984 was made without any law on the system
- The importance of the system for the society is great and responsibilities of parties must be clear

The main features of the law on LIS

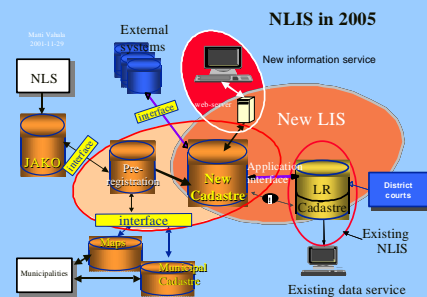
- The state is responsible for the implementation and maintenance of the system
- The act must contribute to the reliability of the data in the LIS
- Administration, development and data services of the system belongs to the NLS
- Data of the system is public but personal data must be protected
- The law has been valid from January 1, 2003

Amendments of the law on the Cadastre

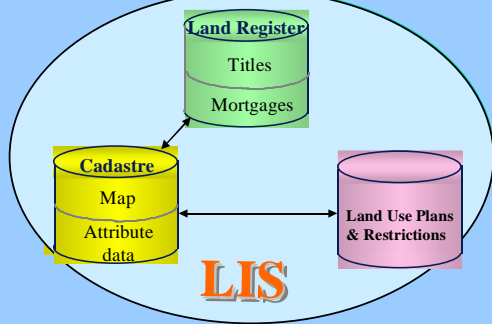
- Digital Cadastral Index Map will be part of the Cadastre
- Data producers are liable for map errors as far as topology is concerned
- The cadastral part of the LIS is the only official Cadastre
 - 87 decentralised cadastres cease their existing status
- The amendment will come into force June 1, 2005

Solutions of the new LIS

- The renewal will be started by rebuilding of the cadastral part of the system by June 1, 2005
- The existing LIS's cadastral part will survive as a parallel technical system till the Land Register part will be renewed



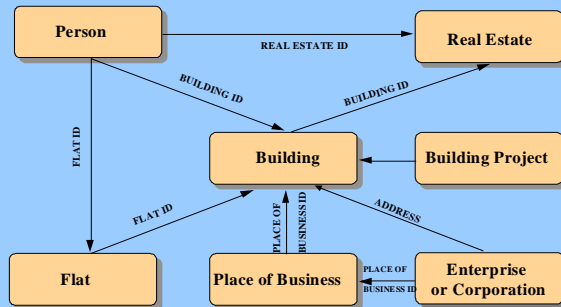
LIS after complete renewal



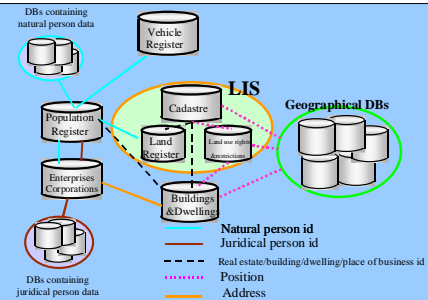
LIS and other Base Registers

- Base Registers contain data on the basic units of the society
- Characteristics
 - broad coverage
 - reliability
 - versatility
 - data protection
 - systems provided by law
- The Base Registers are
 - Personal Information System
 - Business Information System
 - Land Information system
 - Information system on Buildings and dwellings

Integration Base Register data



Integration register data using IDs and position as links



• Conclusion

• The Finnish approach

- Development of applications and systems in different LA organisations for sub processes in the 1960's – 1980's
- Building LIS in the 1980's – 1990's
- Make use of GIS technology and renewal of the Cadastre of the NLS in 1998
- Renewal of the cadastral part of the LIS in 2005
- Widen data contents of the LIS with detailed data on land use rights and restrictions 2006 ->
- Improve processes outside the LIS with services provided by LIS 2006 ->
- Integrate the LIS with other Base Registers in real time applications and develop related information services 2006 ->

Thank you for your attention!