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 municipalities (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

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

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

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 belong 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
- 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!