



MAANMITTAUSLAITOS
NATIONAL LAND SURVEY OF FINLAND

Hazard Management from cadastral informations point of view - Natech Disasters in Finland

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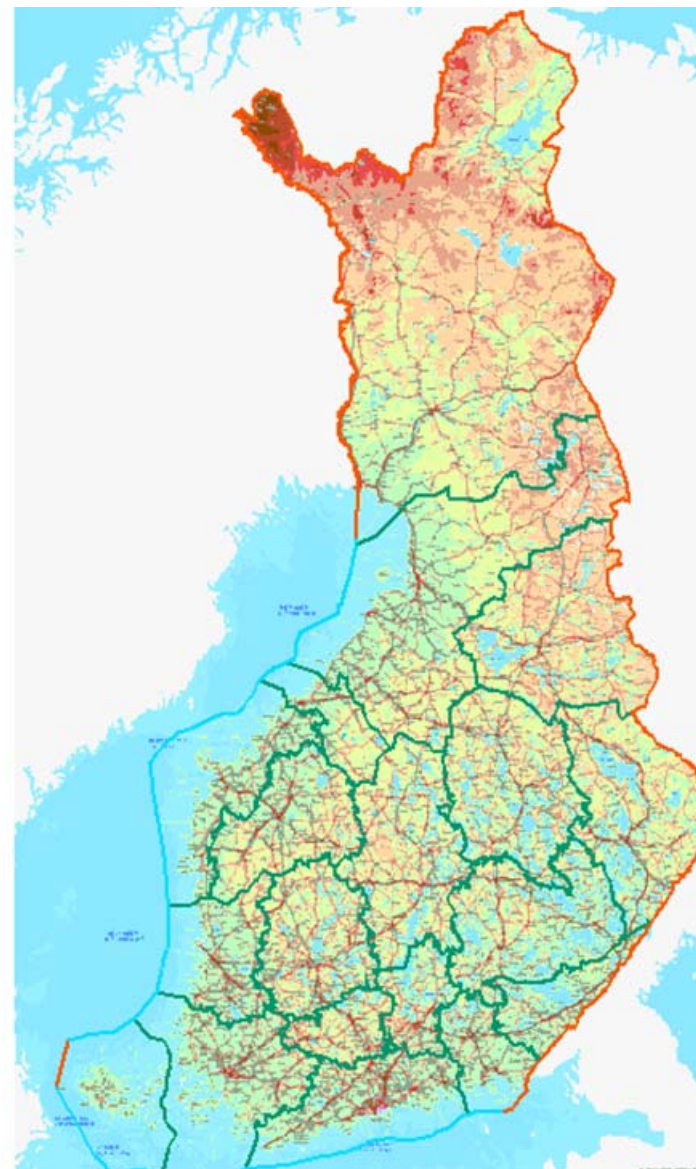




Natech Disasters in Finland - Are There Any?

Natech =

Natural Hazard
Triggering
Technological
Disasters



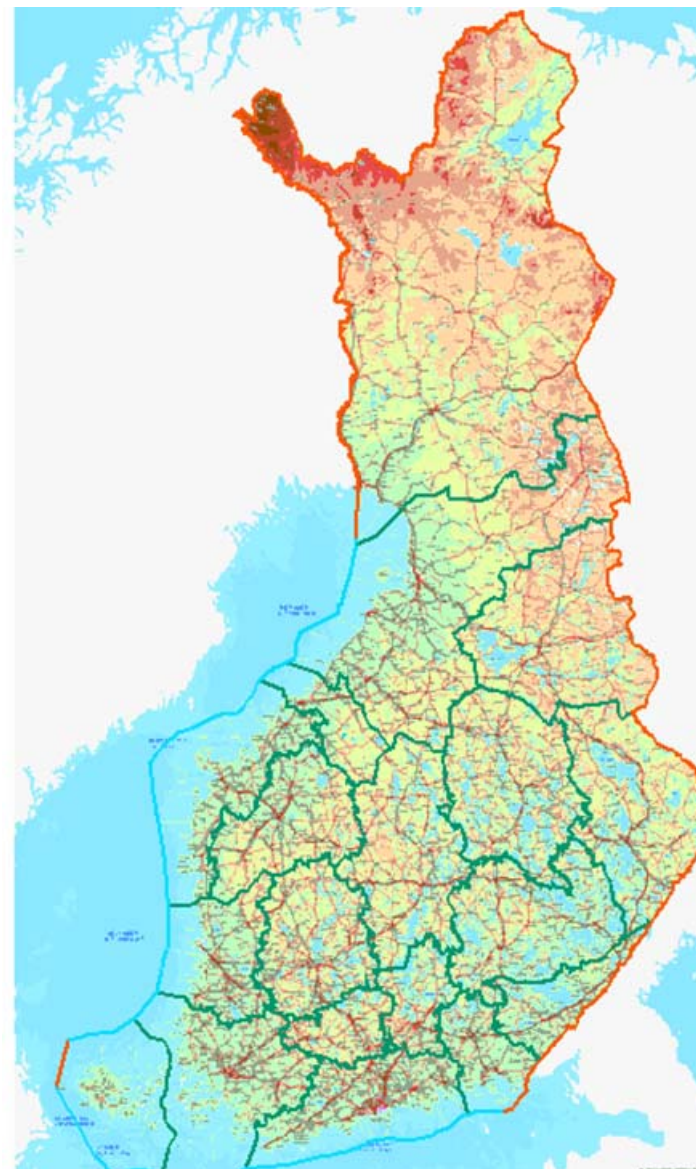


Natural disasters in Finland?

- No volcanoes
- No tornados
- No tsunamis
- No big avalanches

But

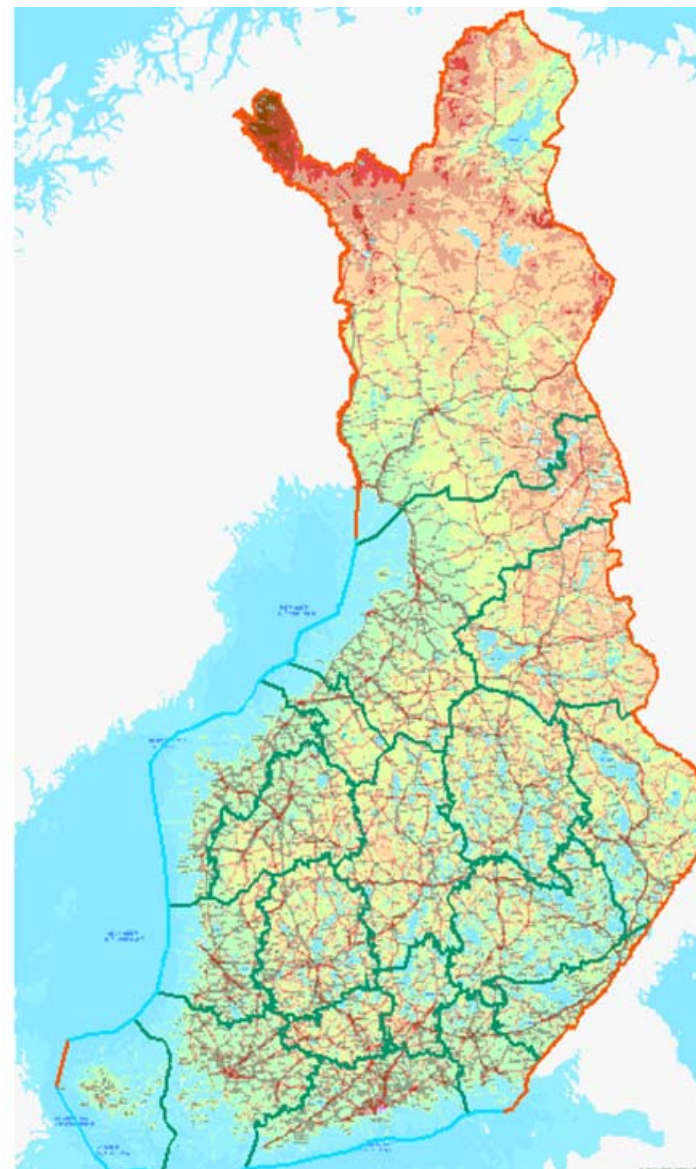
- 10 – 15 earthquakes annually, all < 4 richter
- Strong winds
- Floods: spring floods annually, big floods seldom
- Severe winters: cold, ice, snow
- Forest fires; small





Winter conditions

- Baltic Sea freezes in winter
 - Max thickness up to 90 cm
 - Also ridget ice
 - Risks to merchant navy, especially oil transportation
- Power cuts
 - In rural areas, when snow builds up on overhead cable network
- Cold weather is an additional risk on any accident or disaster













Prevention and mitigation strategies

- Building and land-use standards and legislation
 - Land use act: when assessing the construction site's suitability for building, the risks of flooding, landslides and avalanches must always be considered
 - Strength requirements on structures for snow and wind load
 - Storage of chemicals and oil products
 - Eurocode pre-standards in national documents: strength requirements in cases of loads from collisions explosives
 - International legislation and EU directives
 - Oil transportation on double-bottom ships
 - Legal acts against bilge wastewater pumping to sea
- Funding: oil protection fund
- Other arrangements:
 - Maritime: Gulf of Finland Vessel Traffic Monitoring and Information System (VTMIS), Automated Identification System (AIS)





Preparedness Strategies



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- Strategy: Natech preparedness is a part of overall preparedness

- Monitoring: Finnish meteorological institute, Environment authorities, forest fires (airplanes, satellites)

- Alerting population
 - Siren network
 - National radio and TV broadcasting company: override all radio broadcasts

- Fire and Rescue Services: rescue services preparedness; strategy 2015

- National Preparedness Act: all authorities and enterprises are responsible for preparedness measure in their field

- Oil spills preparedness: vessels, material



NATIONAL LAND SURVEY – DOWN TO EARTH

Rescue Services Strategy 2015



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- The main purpose of the Rescue Service Strategy 2015 is to establish a common platform for long term planning and development for the entire rescue services sector

- The main priorities are
 - Accident prevention
 - Personnel performance
 - Preparedness for major accidents and emergency condition
 - Research and development

- The implementation programme describes in general terms the main duties of the rescue services and the responsibilities of various actors for these duties

- The details of duties are presented in the operational plans of each agency and organisation

- Ministry of the Interior has the responsibility for the strategy and its implementation



NATIONAL LAND SURVEY – DOWN TO EARTH



Operations and responsibilities of National Land Survey of Finland (NLS)



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- NLS produces and provides information on and services in real estate, topography and the environment for the needs of citizens, other customers and the society at large.
- NLS is responsible for Finland's cadastral system, land registration and general mapping assignments
- NLS also promotes and develops the shared use of geographic information
- NLS consists of 12 district offices, six national operational units and the central administration
- NLS has staff of 2000, of whom 80% are employed in the District Survey Offices
- NLS is a governmental agency subordinate of the Ministry of Agriculture and Forestry



NATIONAL LAND SURVEY – DOWN TO EARTH



Cadastral Information in Disaster Management in Finland

- Cadastre is one of the base registers in our society
- But the cadastral information itself is not enough in disaster management, because we need at the same time
 - Topographic information
 - Address information
 - Owner information
 - Ortophoto information
- When we have a risk for flooding or forest fires or snow / ice problems, we need to know as soon as possible
 - Where the risk has realized
 - What has happened and what may happen next
 - Why something has happened
 - When can you get up-to-date information





Approach in Finland

- Land Information System links cadastral information and land registration information
 - Where is the cadastral parcel situated and who is its owner? What is the address of the cadastral parcel and also owners address?

- Land Information System and terrain data base are created on the same GIS-platform
 - Topographic information and land information are available at the same time; information is as up-to-date as possible

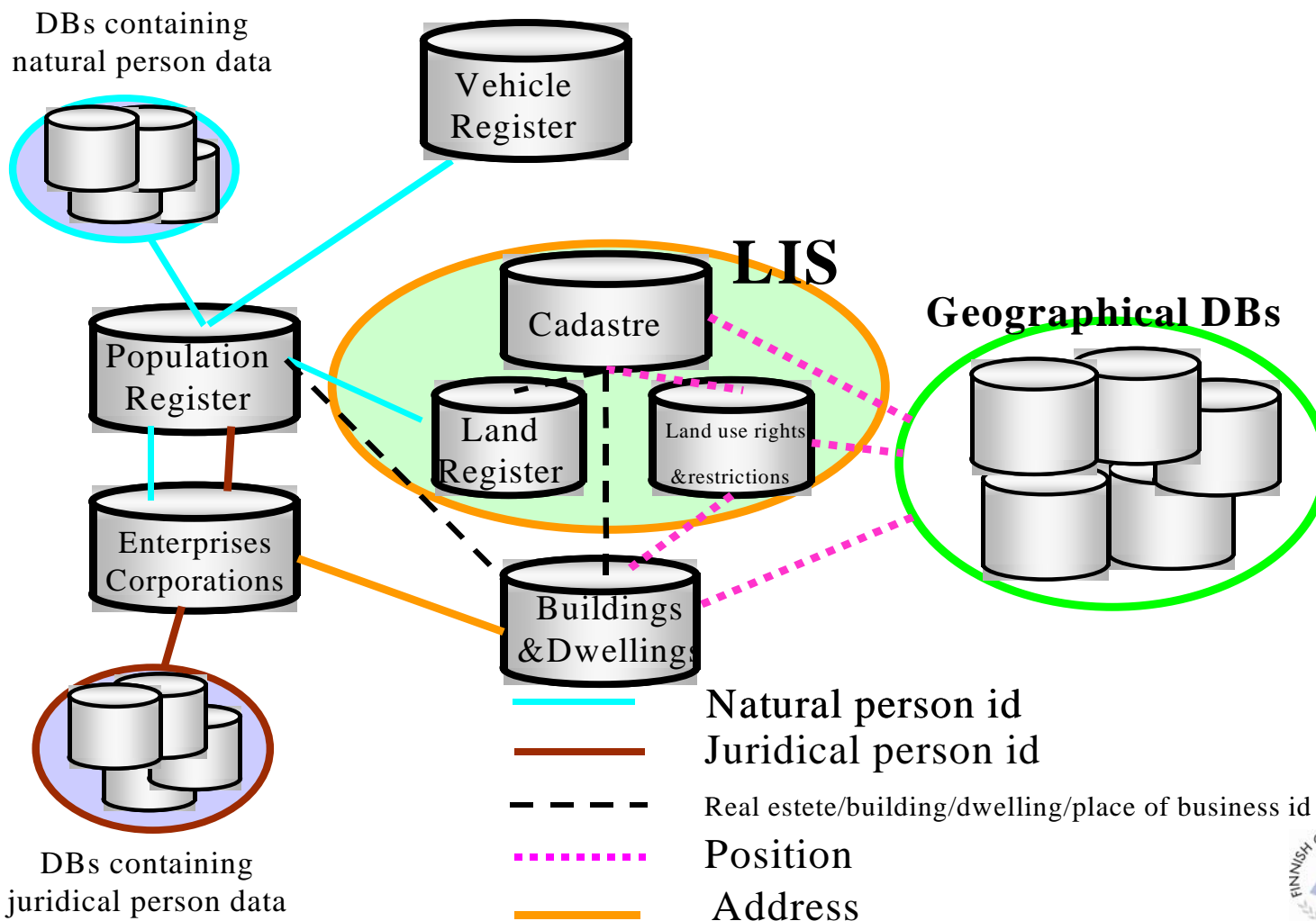
- Ortophotos can be linked to land information
 - This information covers the whole territory of Finland and can be reached via NLS's Mapsite
 - Authorities also have other possibilities to get this information





The Base Registers

Integration register data using IDs and position as links





Our experiences

- Emergency authorities must get all needed information as easy as possible
- Information must be up-to-date
- If needed it is important to take new ortophotos immediately
- Cadastral information is crucial data for contacting people and their real property, when disasters occur or may occur





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Thank you for your interest!



Recognised for excellence
5 star

