



Quality Improvement of the Cadastral Information in Sweden

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Vision


You can always trust on the Real Property Register

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General Facts about Sweden

- From 55 degrees N to 69 N degrees N
- 450 000 sq km
- About 9 million citizens
- 21 counties, divided into 290 municipalities
- Private persons, companies, organisations or the state own all land
- 3,3 million real property units in the Swedish Real Property Register

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The Swedish Real Property Unit

- All land and inland water except the four largest lakes are divided into real property units.
- About 3,3 millions units with 1 or more parcel of land, water, building, trees and other fixtures in or on the ground.
- Since 2004 lawfully permitted to creat 3D properties (very few)
- Joint property Units
- Every real property unit has an unique administrative identifying name and number, e.g. Härnösand Byn 2: 40

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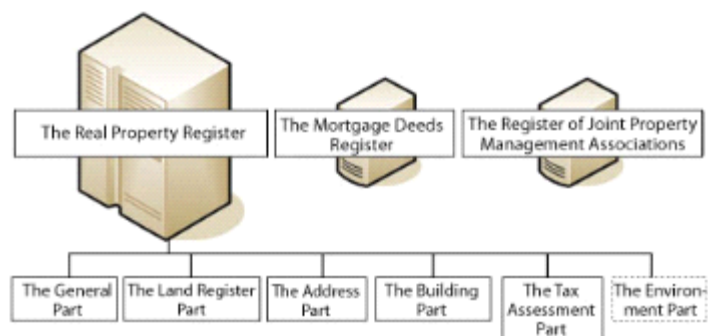
Cadastral History

- Originate from the 16th century
- Nation wide small-scale maps from 1628
- Land consolidation and real allotment during 19th century
- The whole country is divided into real property units

- 1969 one register for both urban and rural properties
- 1995 the text part was completely computerised
- 2006 Cadastral index map completely computerised

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The Real Property Register



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Content of the General Section of the Real Property Register

- Administrative identity
- Extension, central coordinate position
- Share of joint property unit
- Easements resulted from cadastral procedure or from expropriation or other compulsory purchase
- Plan, regulations and other information from the register of plans
- Index map
- NOT the digitized archive

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The Swedish Real Property Register and Index Map



Cadastral Index Map

Geographic representation of the Cadastral Data

Objekt	Adress	Ägare	Yta	Skatt	Övrigt
1:1	1:1	1:1	1:1	1:1	1:1
1:2	1:2	1:2	1:2	1:2	1:2
1:3	1:3	1:3	1:3	1:3	1:3
1:4	1:4	1:4	1:4	1:4	1:4
1:5	1:5	1:5	1:5	1:5	1:5
1:6	1:6	1:6	1:6	1:6	1:6
1:7	1:7	1:7	1:7	1:7	1:7
1:8	1:8	1:8	1:8	1:8	1:8
1:9	1:9	1:9	1:9	1:9	1:9
1:10	1:10	1:10	1:10	1:10	1:10

Real Property Register


Description of the Cadastral Data, text format

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The Governmental Agency Lantmäteriet

- Responsible for the register
- Decide on the management and governance of the Real Property Register should be led
- Contents and structure in the register according to law
- Carry out property formation procedure (80 cadastral authorities)
- Supervise cadastral authorities in the 38 largest cities which have own property formation

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A new Real Property Register

- New clients have new demands
- Easier and cheaper to maintain
 - A better compliance between the register and the digital cadastral map
 - An object oriented structure adapted to the Land Administration Domain Model (LADM)

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New Clients – new Demands

- Better geometric quality (GIS functionality)
- Complete information rights, joint properties
- Correct information
- Need of metadata
- Use of standards
- Boundary-coordinates with legal status



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Objectivs for the General Part of Real Property Register

- Part of the national infrastructure
- Cost-effective administration
- Flexible for new demands
- A corner-stone in e-government

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Strategic objectives

- Content
- Actuality
- Completeness
- Correctness
- Quality-marking and metadata

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Strategic objectives - contents

For real property and joint unit all information about

- definition
- range
- encumbrance (easement) and dominant property unit
- relations between objects

Is registered according to legal resolutions


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Strategic objectives - actuality

The information in the system is updated every day

All information is available as soon as the legal resolution has come into force

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Strategic objectives - completeness

- All real properties
- All joint units with its participating property units
- All easements decided by an official agency and their dominant property unit (about 500 000 are missing)
- All joint facilities including participating property units (about 150 000 are missing)
- All property units, joint units, easements and joint facilities have a geographic representation
- All land and water parcels
- All resolutions with date, property formation action, dossier

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Strategic objectives - correctness

Different quality-levels and goal have been defined. The levels can vary for different parts of the country and between rural and urban areas.

This levels are not yet defined

Correctness is when the real property, joint unit, joint facilities and easements reach its defined quality level

"Correct from me"

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Strategic objectives – quality marking and metadata

- The quality is published and described. The objects are quality marked and metadata is available
- The metadata is connecting to ISO-standard
- The users must understand and accept the quality marking
- When the quality-marking have been introduced and accepted, it can be possible to introduce legal coordinate cadastre in some defined quality-levels

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Strategic platform

- Increase the understanding of quality improvement
- Guarantee a long time financing
- Develop regulations and methods
- Prioritize with consideration
- Formulate clearly quality goals
- Long-time cooperation
- Rely on long-time competence
- Quality control before updating



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Strategic platform – understanding of quality improvement

- Make a cost benefit analyze (internal and external benefits)
- Long term organization
- Establish approval for the work

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Strategic platform – long time financing

- Governments grant, discussion with the politicians
- Users of the General Part of the Real Property Register
- Users of other parts of the Real Property Register
- Interested parties in a property formation
- Cooperation with users

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Strategic platform – regulations and methods

- Liquidation of older easement and property units not in use
- Methods studies and improvements
- Legal cadastral coordinate

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Boundary – the Swedish System



Proofhierarchy

1. Boundarymarks
2. Cadastral plans or other documents in cadastral dossiers
3. Possessions or other circumstances

...
digital cadastral index map



Technisk beskrivning:
Svechtäckningsplan

№:	X	Y	Markering
7378	23248.00	29446.78	
8293	23214.22	29221.08	Stenmark
8294	23068.30	29432.37	Stenmark
8802	23218.25	29271.11	Stenmark
8806	23055.59	29405.06	Stenmark
8807	23263.34	29427.92	Stenmark
8848	23071.67	29430.99	Stenmark
8869	23004.48	29427.04	Stenmark

Stensättill given: 24gränslängd
Svechtäckningsplan: 25 mm, 1:25000
Kommunstyrelsen M-0-91
Svechtäckningsplan: 5225403, 5225403



New boundaries today

- Marking on the ground with iron posts or pegs
- No markings in central urban areas – coordinates notes on the cadastral plan (cm –level)
- Kind of marking/no marking is made clear in the written document of the survey
- Digital archives are linked to the public Real Property register
- ***Old cadastral dossier often lack coordinates or other numeric information***

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Strategic platform –prioritize with consideration

- Users groups
- Former prioritizing
- Principles for prioritizing
 - a whole theme, nationwide
 - a defined geographic area, all information
 - costs
 - available personnel

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Strategic platform – measurable quality goals

- Formulate measure for the strategic goals:
 - Content (part of in %)
 - Actuality (updating day/decision day)
 - Completeness (part of in %)
 - Correctness (area register/map < 10 %)
 - Quality-marking and metadata (part of in %)
 - Quality -levels

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Strategic platform – long-time cooperation

- Money
- Personnel
- Data

Decide on a policy

Develop agreement models and routines

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Strategic platform – long-time competence

- Formulate the required competence for the future (older statutes, investigation, surveying, database etc)
- Inventory on the existing competence
- Make it attractive to work with this tasks
- Organize a special group of people connected to the property formation and information-handling for long-time

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Strategic platform – quality control

- Control in updating the Real Property Registers after property formation
- Base-level in property formation surveying
 - Understandable
 - Unambiguous
 - Reconstructable
 - Documentation

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Strategic platform – step by step

Many questions remain

Draw up a long-time plan
Planning steps: 1 – 3 – 10 years

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Conclusion

- Formulate a vision (the status of the register)
- Where are we today?
- Formulate a strategy to reach the vision
- Gain approval for the vision and strategy
- Draw up a long-time plan
- Financing - alternative

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Vision

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Futher information

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