The Swiss Cadastral System – well prepared for future challenges

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Dr. Daniel Steudler
Scientific Associate
Content

- **Switzerland**
  size, shape, structures

- **Cadastral system**
  legal basis, basic principles, organisation, geoinformation

- **Conceptual and technical elements**
  standards, data integration concept

- **PLR-Cadastre**
Content

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  • PLR-Cadastre
Size

SWITZERLAND

41'290 km²
26 cantons
~2350 municipalities
~8.1 million people
(~196 persons/km²)
~4.0 million parcels
Four official languages
Federal structure

1 Confederation
constitution, civil code, federal legislation, federal parliament, government, and administration

Areas of responsibility
Foreign affairs, security, customs, monetary system, law giving, defence, transportation

26 Cantons
cantonal legislations, cantonal parliaments, governments and administrations

Health care, education, culture, taxation

~2350 Municipalities
communal regulations, municipal board, administration and staff

Register of residents, civil protection, school, social services, energy, land-use planning, taxation

Principle of Subsidiarity
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Legal basis

Swiss Civil Code, 1912

Objectives of the legislator: Security of ownership, efficient land market, and mortgaging of real estates

Art. 942
1 All rights on real estates have to be registered in the land registry.
2 The land registry consists of the main book with its associated maps, the auxiliary registers (in particular the list of property owners), the deeds (records and evidences), the description of properties, and the day book.

Art. 950
1 Registration and description of the properties in the land register have to be done on the basis of a map, which as a rule, has to be the result of an official cadastral survey.
2 The Federal Council decides on which principles these maps have to be based upon.
Basic principles (as in civil code)

- No ownership without registration (art. 656)
- No registration without surveying (art. 950)
- No surveying without boundary definition (art. 669)

- Title registration system
- Title guaranteed by the government
Two components of cadastral system

- Land Register
- Cadastral Surveying

- Main book
- Auxiliary registers (in particular the list of property owners)
- Deeds (records and evidences)
- Description of properties
- Day book

Federal Office of Topography swisstopo
GWF 2014, Geneva, 8 May 2014
Organisations involved in cadastral system

Federal Level
- Dept. for Defence, Civil Protection and Sports
- Federal Office of Topography swisstopo
- Federal Directorate of Cadastral Surveying
- Licensing Commission for Surveyors
- Cantonal and Regional Land Registry Offices

Cantonal Level
- Cantonal Governments
- Cantonal Surveying Offices

Municipality Level
- Municipal Surveying Offices
- Private Notary Offices

Government
- Dept. of Justice and Police
- Federal Office of Justice
- Office for Land Registry and Real Estate Law
Organisation of cadastral surveying

<table>
<thead>
<tr>
<th>Level</th>
<th>Organisation</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confederation</td>
<td></td>
<td>Supervision, strategic management</td>
</tr>
<tr>
<td></td>
<td>Federal Directorate of Cadastral Surveying</td>
<td>approx. 15 employees</td>
</tr>
<tr>
<td>Canton</td>
<td></td>
<td>Operational management</td>
</tr>
<tr>
<td></td>
<td>Cantonal Surveying Offices</td>
<td>approx. 300 employees</td>
</tr>
<tr>
<td>Municipality</td>
<td></td>
<td>Execution</td>
</tr>
<tr>
<td></td>
<td>~270 Private Land Surveying Offices</td>
<td>approx. 3000 employees</td>
</tr>
<tr>
<td></td>
<td>~15 City Surveying Offices</td>
<td></td>
</tr>
</tbody>
</table>
Public-Private Partnership

Two Partners !!!
New ordinance in 1993, adding a new and extended purpose

Ordinance on cadastral surveying (1.1.1993)

Art. 1: Definition and Objective

1 In terms of the Civil Law, cadastral surveying is considered to be surveying – approved by the Confederation – for the purpose of operating the land registry.

2 The data of cadastral surveying shall serve as basis for the establishment and the operation of land information systems and shall be suited for public and private purposes.
Act on Geoinformation (2008)

Aim

• a uniform legal basis for all land information based on the various federal decrees

• incl. cadastral surveying, national surveying (topographic mapping), national geology, and the new cadastre for public-law restrictions on landownership rights (PLR-Cadastre)
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Conceptual elements of AV93

Clear definition of the product

Freedom of methods and systems (as basis for tendering)

Independent information layers (link between layers only through geographic location)

Standardized way of data description and data transfer (INTERLIS)
With the use of data modelling, the acquisition, use and exchange of digital data is independent from the brand of the GIS or software system.
Four basic principles for a common data integration concept:

1) to respect the legal / institutional independence of stakeholders
2) to use a standardized data modelling concept
3) to use a common geodetic reference framework
4) no logic relations to objects in different topic except through geographic location
Independent information layers

- Stakeholders can look after their own data sets, they only have to respect the defined basic principles.
- The fear of stakeholders losing control over their data can be overcome.
- Work flow and data flow can be clearly defined and managed for each stakeholder independent from the others.
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➤ PLR-Cadastre
FIG-Commission 7 -
Working Group 1 (1994-98):
• identify trends
• develop visions

→ booklet presented at the FIG-Congress 1998 in Brighton, England
→ translations into some 25 languages since

http://www.fig.net/cadastre2014/
Flood of restrictions

Landownership: the macro-economic dimension

The Swiss cadastral system helps to secure mortgages in the order of CHF 700’000’000’000 (~EUR 580’000’000’000).
Landownership: legal security

Landownership secured through Land register, Cadastral surveying

restricted by PLR
Aim of PLR-Cadastre

Zoning plan
Groundwater protection
...
Cadastre of PLR
Copy of data or crosslinking

Federal Office of Topography swisstopo
GWF 2014, Geneva, 8 May 2014
Start with 17 Public Law Restrictions
Introduction of the PLR-Cadastre

In two phases:

- **2012–2016:** 8 pilot cantons
- **2016–2020:** remaining cantons
PLR-Cadastre: data from 8 pilot cantons

→ www.cadastre.ch/be
   /ge
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Thank you for your attention!!!
Coverage of cadastral surveying data