Schweizerische Eidgenossenschaft
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wissen wohin
savoir où
sapere dove
knowing where

swisstopo

Management of geological data at the Swiss Geological Survey

22. Mai 2018

Nils Oesterling

Marcel Pfiffner

Agenda

1. New **Data Strategy** of the Swiss Geological Survey

2. Geological **data of national relevance** – the main interest of swisstopo

3. Existing **data models**, standards for data harmonisation

4. Data-accessibility: **map.geologyportal.ch**, **strati.ch geocat.ch**

1) Data strategy

Prinicpal points

- Identification of stakeholders

- Definition of core business

- New strategic orientation Swiss Geological Survey for data collection and management

- Definition of specific workflows

  → **Paradigm shift**

Collecting all		Selected data
incomplete		complete
partly digital		entirely digital
restricted access		open access (if possible)

1) Data strategy

Data management process

Third party	Swiss Geological Survey	COGIS
Collection	*Transfer* — Production	Storage — Preparation — Distribution

GIPS (Geological Information and Production System)

Production systems for
- Boreholes
- Digital geol. map
- Geophysical data
- …

Information systems:
- geologieportal.ch
- strati.ch
- map.geologieportal.ch
- geocat.ch

Interface outside -> inside

- Which data? (national relevance)
- Quality?
- Harmonised?

→ Standardisation, data models

→ **Exercise III – Afternoon session**

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2) Data of national relevance

Selected data from …

- Projects with federal contribution

- Projects of companies with federal contribution (SBB, Alptransit etc)

- Studies of the Geotechnical and Geophysical Commission

- Prospection and exploration of energy-ressources, e.g. geothermal energy

- Deep geological repositories

- Private projects of national importance, e.g. cargo sous terrain
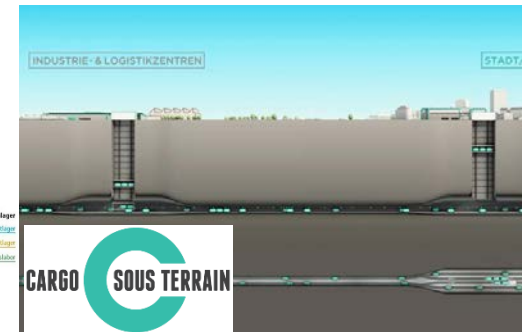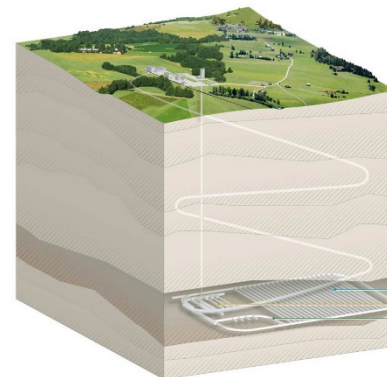
2) Data of national relevance

Data types:

- Borehole data > 100m

- Geophysical data

- Maps and cross sections

- Reports

- Drill cores and cuttings

- Samples and Analysis
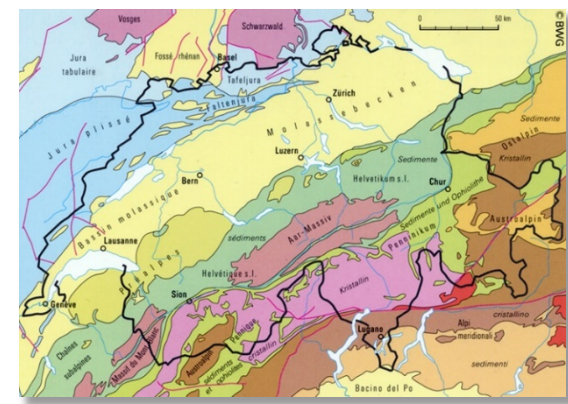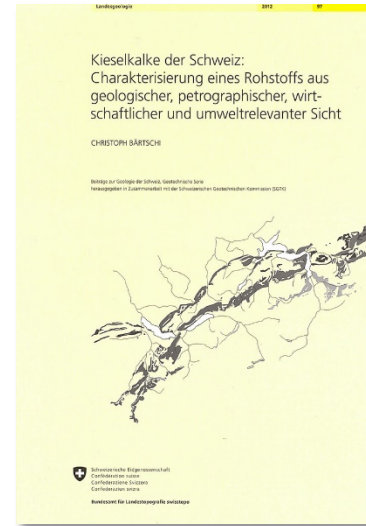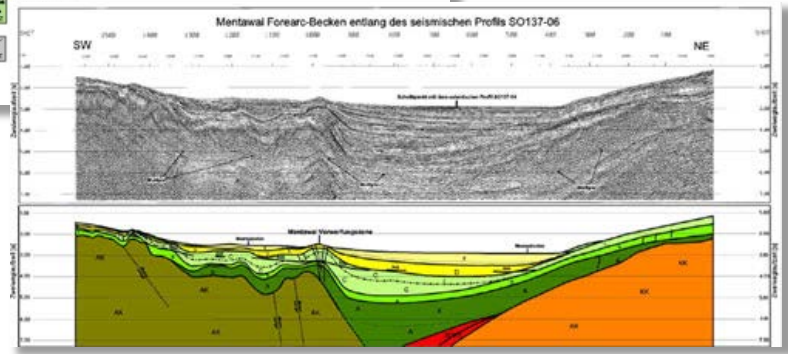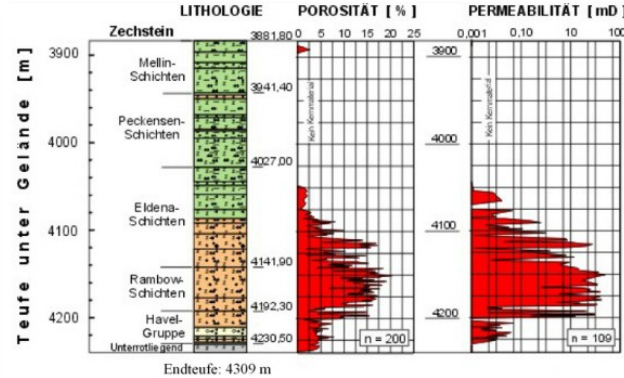
2) Data of national relevance

And what about Research Data?
Example: SCCER-SoE Grimsel ISC Project

High level meta data
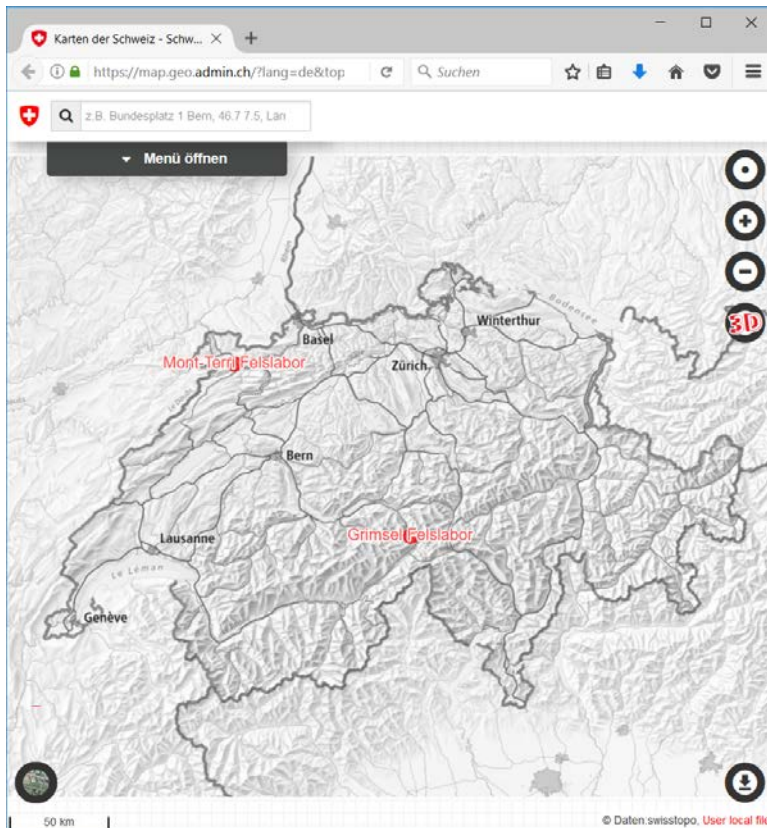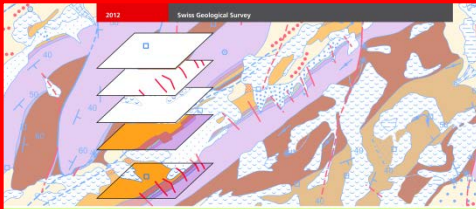
Detailed Research Data
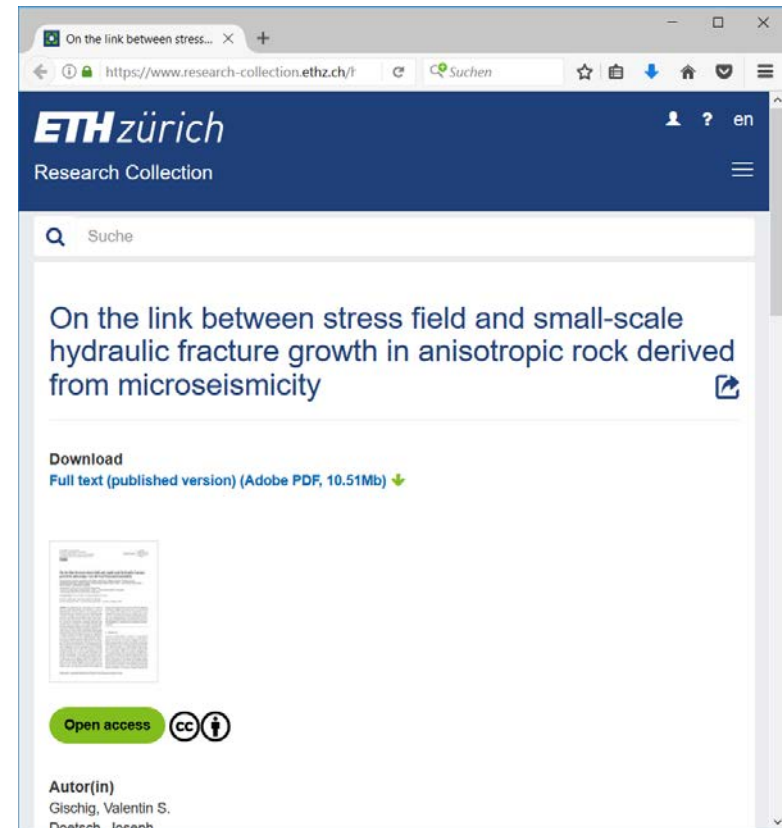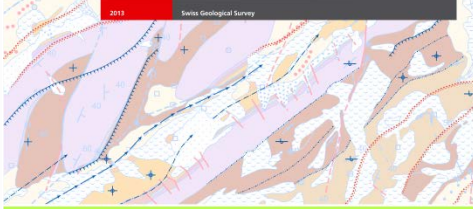
3) Data models, standards for exchange

Data Model Geology

Description in UML Format and Object Catalogue, Version 2.1

October 2012

Schweizerische Eidgenossenschaft
Confédération suisse
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Federal Office of Topography swisstopo

Portrayal Model Geology

Feasibility Study about Swiss Geological Symbols using the system-independent OGC SLD/SE Standards

July 2013

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Federal Office of Topography swisstopo

Data Model 3D Geology

Extension of the Data Model Geology Version 2.0

Datenmodelle der nicht-vektoriellen Geobasisdaten der Landesgeologie: geologisches, geophysikalisches und geotechnisches Kartenwerk (Pixelkarten)

Objektkatalog und Beschreibungen in UML, XML und INTERLIS2, Version 1.0

Dezember 2011

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Bundesamt für Landestopografie swisstopo

Datenmodell Bohrdaten

Beschreibung des Kernmodells mit Objektkatalog und UML-Modell Version 2.0

September 2014

Schweizerische Eidgenossenschaft
Confédération suisse
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Bundesamt für Landestopografie swisstopo

3) Data models, standards for exchange

Data Model Geology
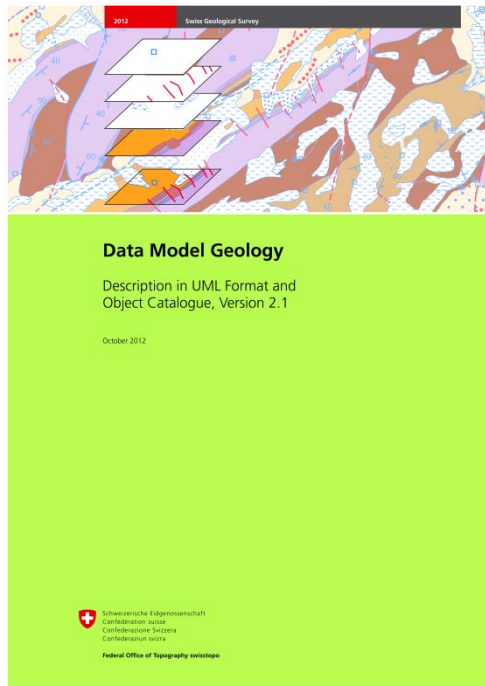
Structure and content of geologcial maps based on Geol. Atlas 1:25'000
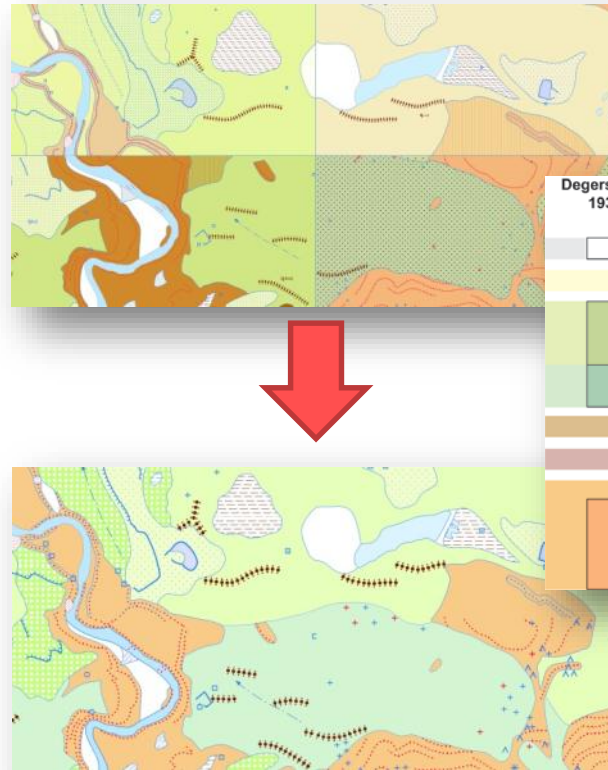
Harmonised stratigraphie

3) Data models, standards for exchange

Harmonised lithologie / stratigrafie from Data Model Geology

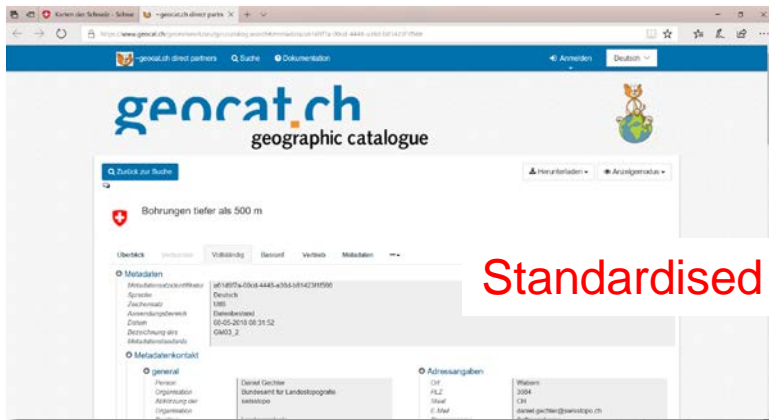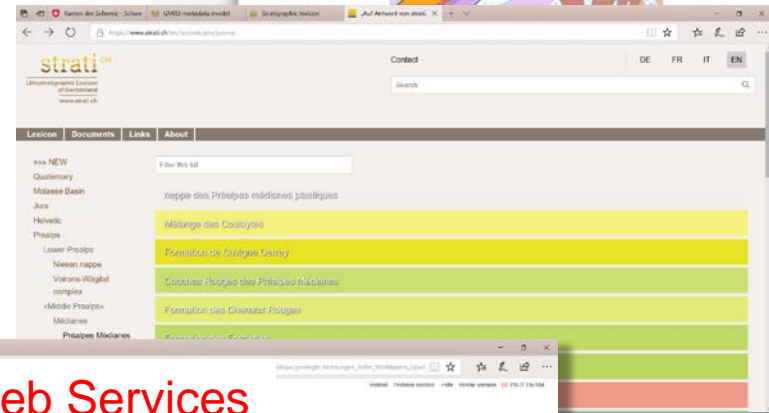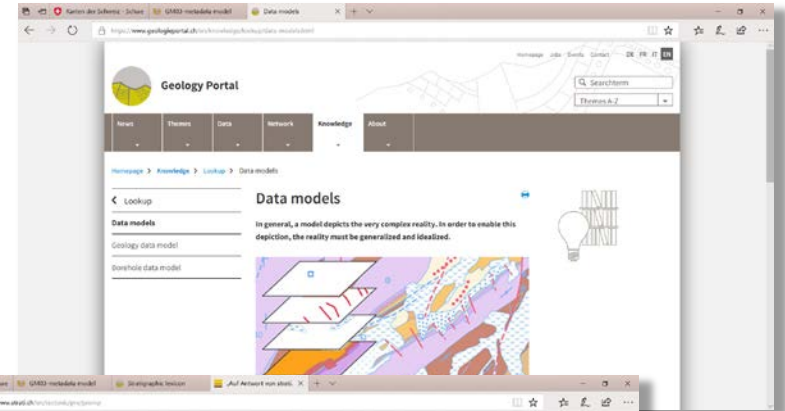## Data Model Borehole Data

Harmonised structure for …

- Location and description of boreholes
- Layer stack (lithologie, stratigraphie)
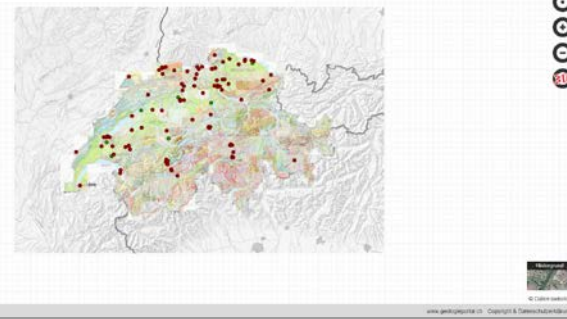- Drill path
- Samples
- Deep wells, etc
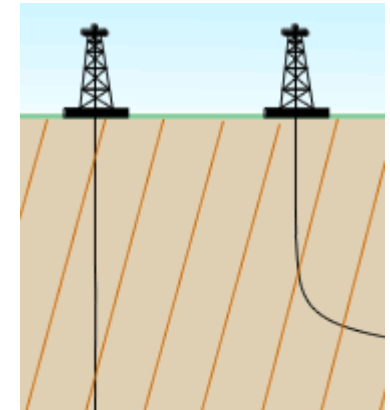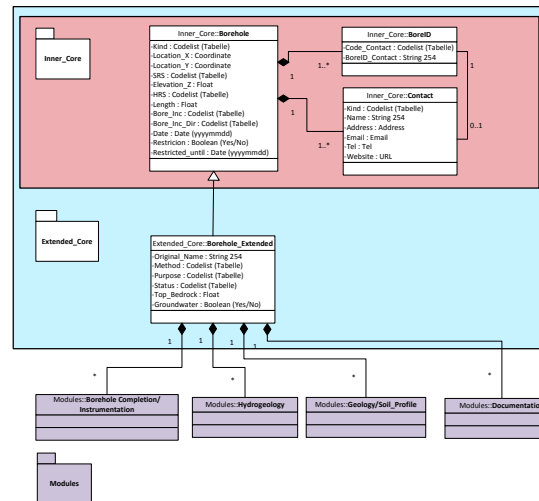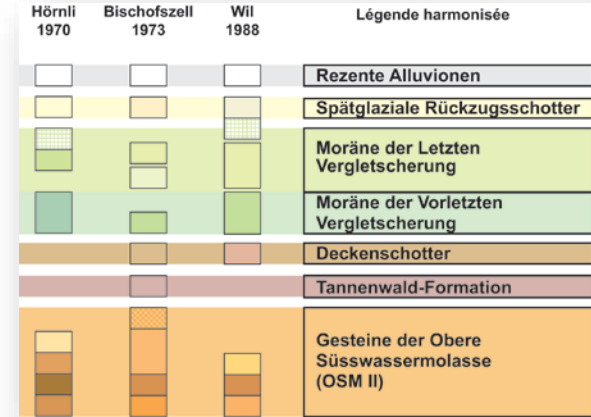
4) Data accessibility

- www.geologyportal.ch

- www.strati.ch

- map.geologyportal.ch

- www.geocat.ch

Standardised Web Services

Summary / Conclusions

- swisstopo ist collecting **selected data** → complete

- **Standardisation / harmonisation** is crucial for an efficient data mangement

- Use of **data models** facilitate data exchange and data integration

- Data models are **free accessible**

- **Visualisation and access of data via web** (standardised web services)

→ Exercise III – Afternoon session

Thank you for your attension!

Questions ?...
... during lunch break

4) Data accessibility

www.geologyportal.ch

4) Data accessibility

www.strati.ch

4) Data accessibility

map.geologyportal.ch

Standardised Web Map Services: WMS, WMTS

4) Data accessibility

4) Data accessibility

- Meta data
- Data download
- Link zu external ressources

4) Data accessibility

www.geocat.ch

Standardised Discovery Service: Catalog Service for Web (CSW)