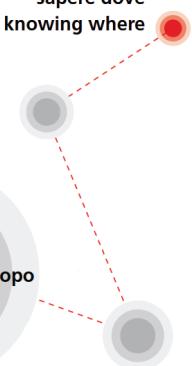




Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

**Federal Office of Topography swisstopo**

wissen wohin  
savoir où  
sapere dove  
knowing where



# Official street name index:

## From data acquisition to web availability

April, 24th 2019

**Federal Office of Topography swisstopo:**

Grégoire Bögli, Patrick Ibele, Elias Raymann, Stefan Neudeck

**Federal Statistical Office:**

Fabian Trees

**Swisscom:**

Peter Vogt, Beat Egger



# Agenda

- The goal
- The first release
- The technology
- The register for buildings and apartments
- Userstory Swisscom
- Federal Spatial Data Infrastructure FSDI



# What is the right spelling?

Thalstrasse or Talstrasse?  
Glatttalstrasse or Glatttalstrasse?



# Background and history

Switzerland is one of the last European countries without an official address register. Why?

2012: Meeting with 5 parties:

- Federal Statistical Office (register for buildings and apartments)
- Federal Office of Topography (Direct supervision of cadastral surveying)
- Federal Office for Spatial Development
- Federal Office for the Environment
- Swiss Post (commercial address-product)

2015 Petition on second homes

2017 Revision of the “regulation on geographical names”



# Purpose of the project

- To provide an official address directory / register to
  - Administrations
  - Business
  - Citizens
- This information is binding for the authorities.
- The register is published as open data
  - free of charge
- The provision of geo-services enables easy distribution and use.



# The registers

There will be two registers:

1. Register of street names
2. Register of addresses

The legal basis is

**Verordnung**

**über das eidgenössische Gebäude- und Wohnungsregister**

**(VGWR)**

**431.841**

vom 9. Juni 2017 (Stand am 1. Juli 2017)

*Der Schweizerische Bundesrat,*

gestützt auf Artikel 10 Absatz 3<sup>bis</sup> des Bundesstatistiken  
9. Oktober 1992<sup>1</sup> (BStatG).

**510.625**

**Verordnung**

**über die geografischen Namen**

**(GeoNV)**

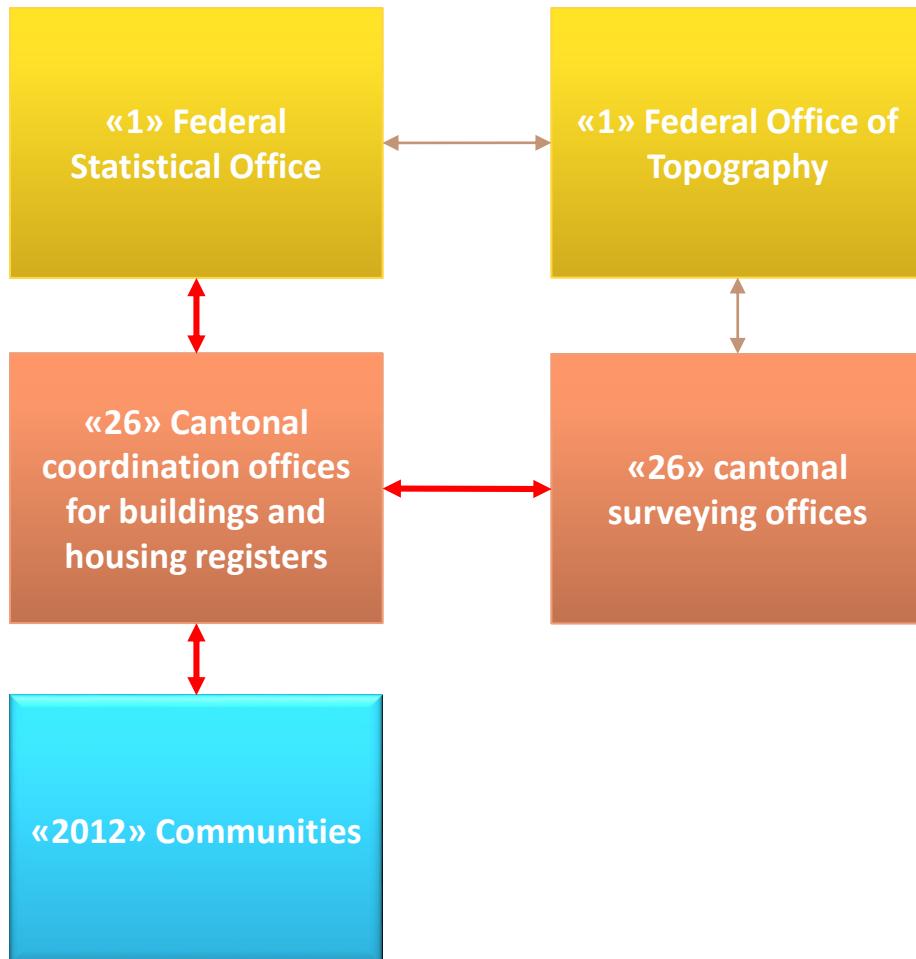
vom 21. Mai 2008 (Stand am 1. Juli 2017)

*Der Schweizerische Bundesrat,*

gestützt auf Artikel 20 des Registerharmonisierungsgesetzes vom 23. Juni 2006<sup>1</sup>,  
die Artikel 5 Absätze 2 und 3, 7, 22 Absatz 3 und 29 Absatz 3 des  
Geoinformationsgesetzes vom 5. Oktober 2007<sup>2</sup>  
und Artikel 6 Absatz 2 des Transportgesetzes vom 4. Oktober 1985<sup>3</sup>,

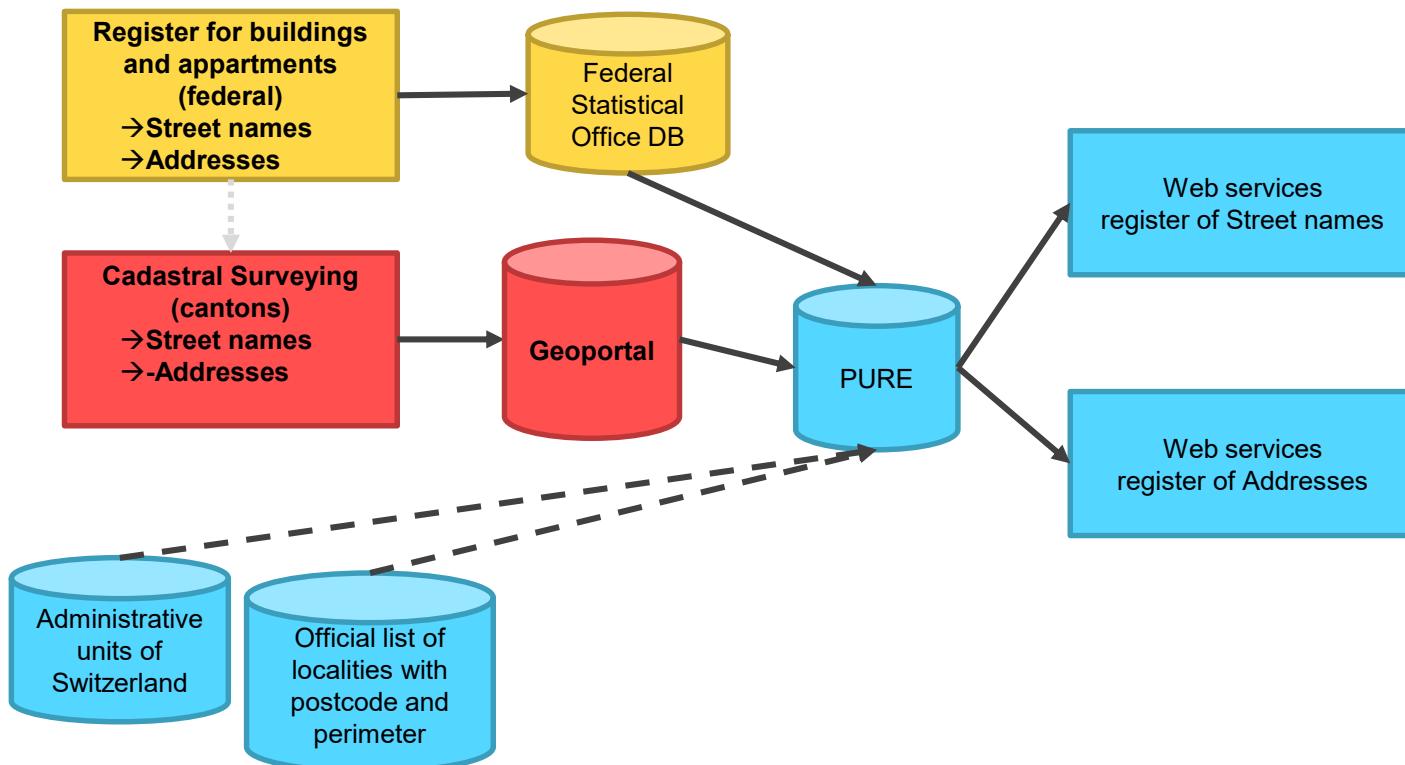
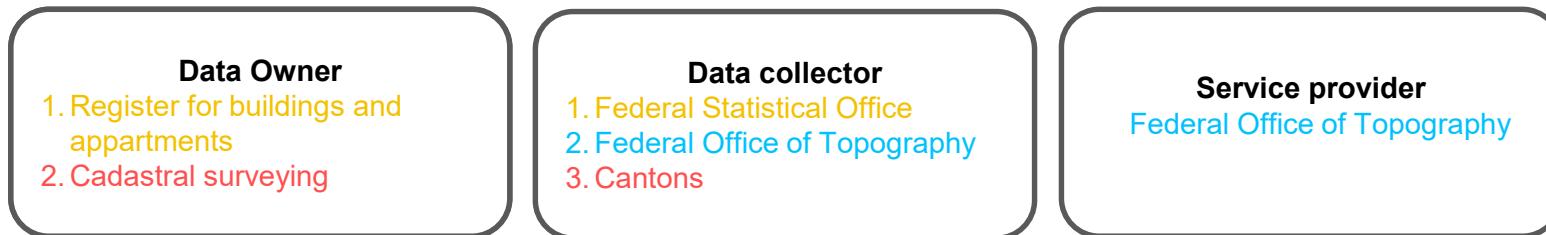


# Organisation



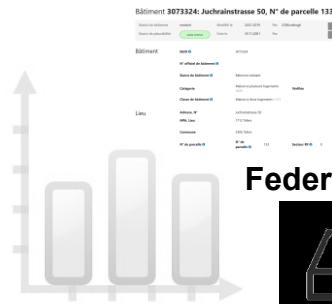


# Responsibilities and competences





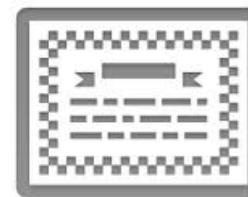
# Different models and objects



Federal Office for Spatial Development



Bank



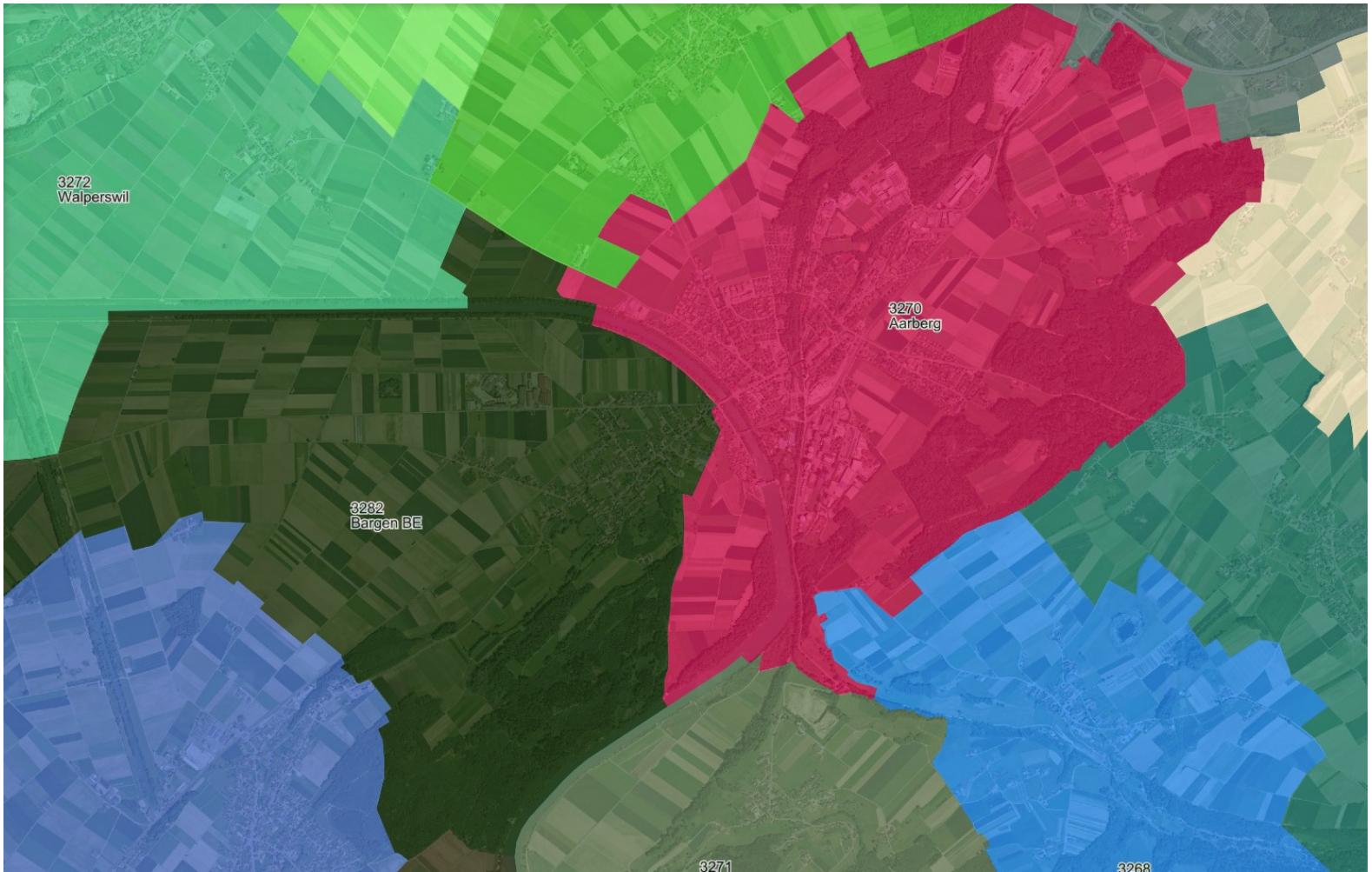


# Initial situation





# Data synchronisation: Postal Codes



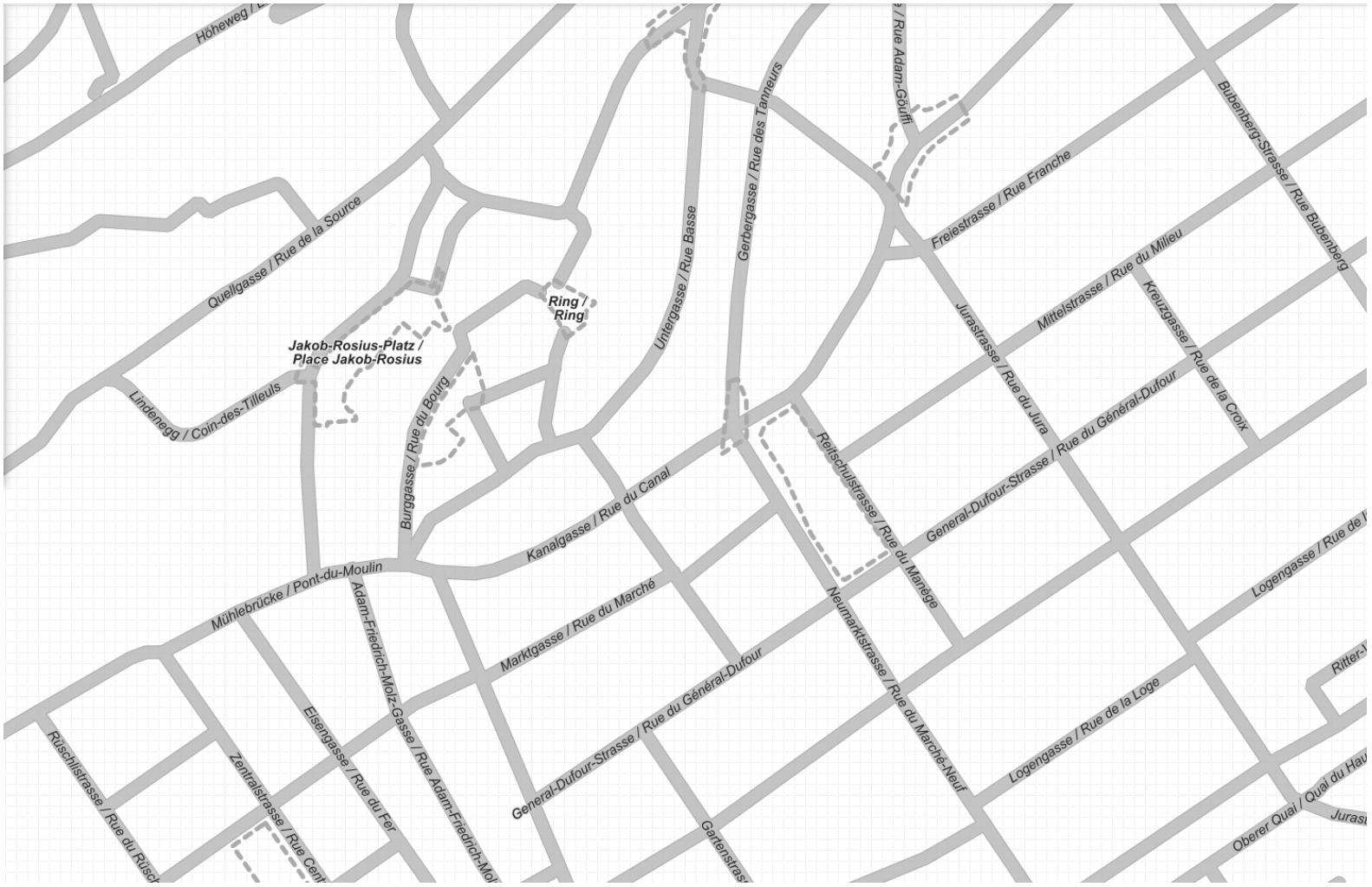


# Data synchronisation: Street Name Cadastre



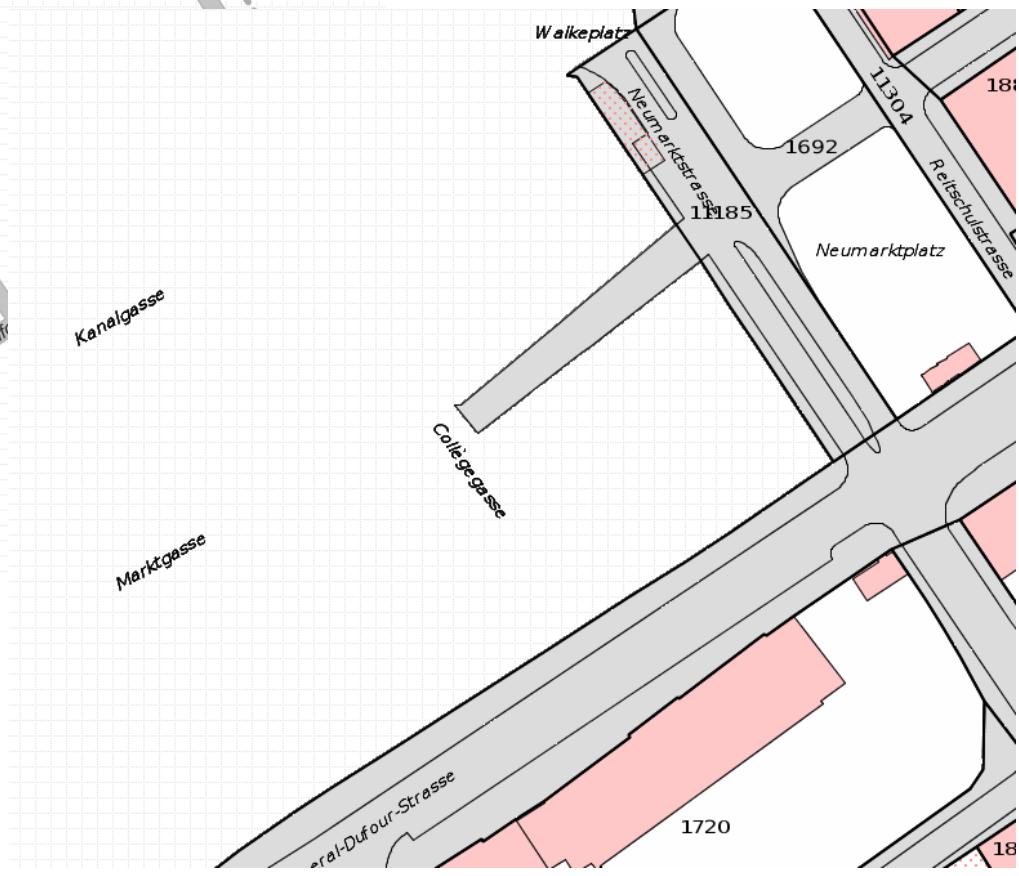
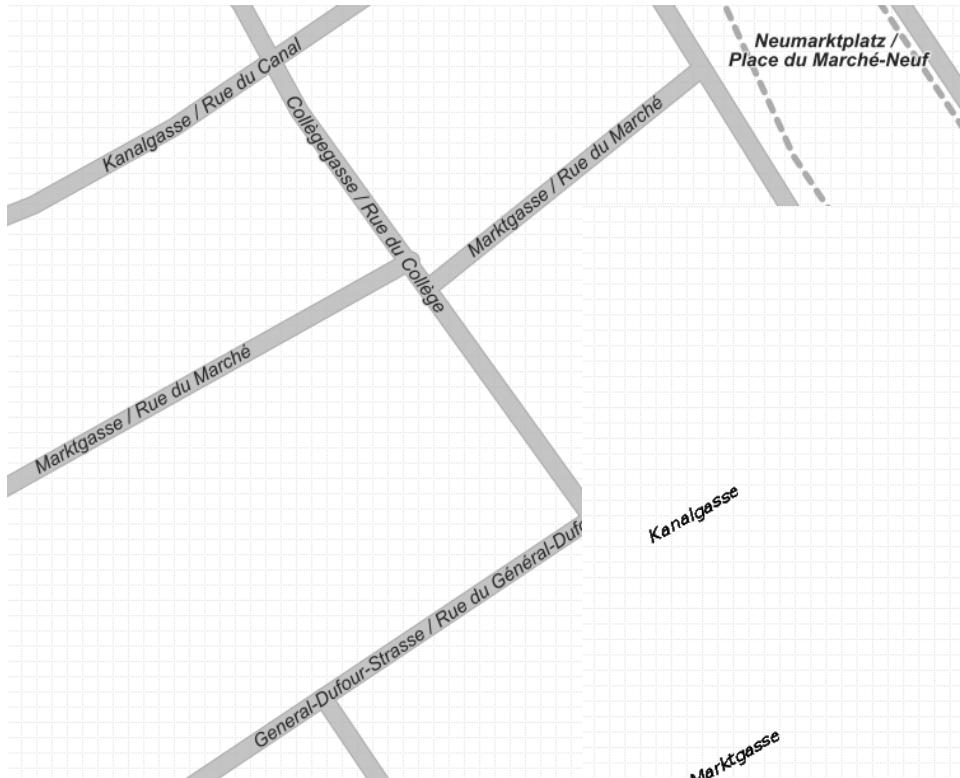


# Data synchronisation: Street Name Register for Buildings



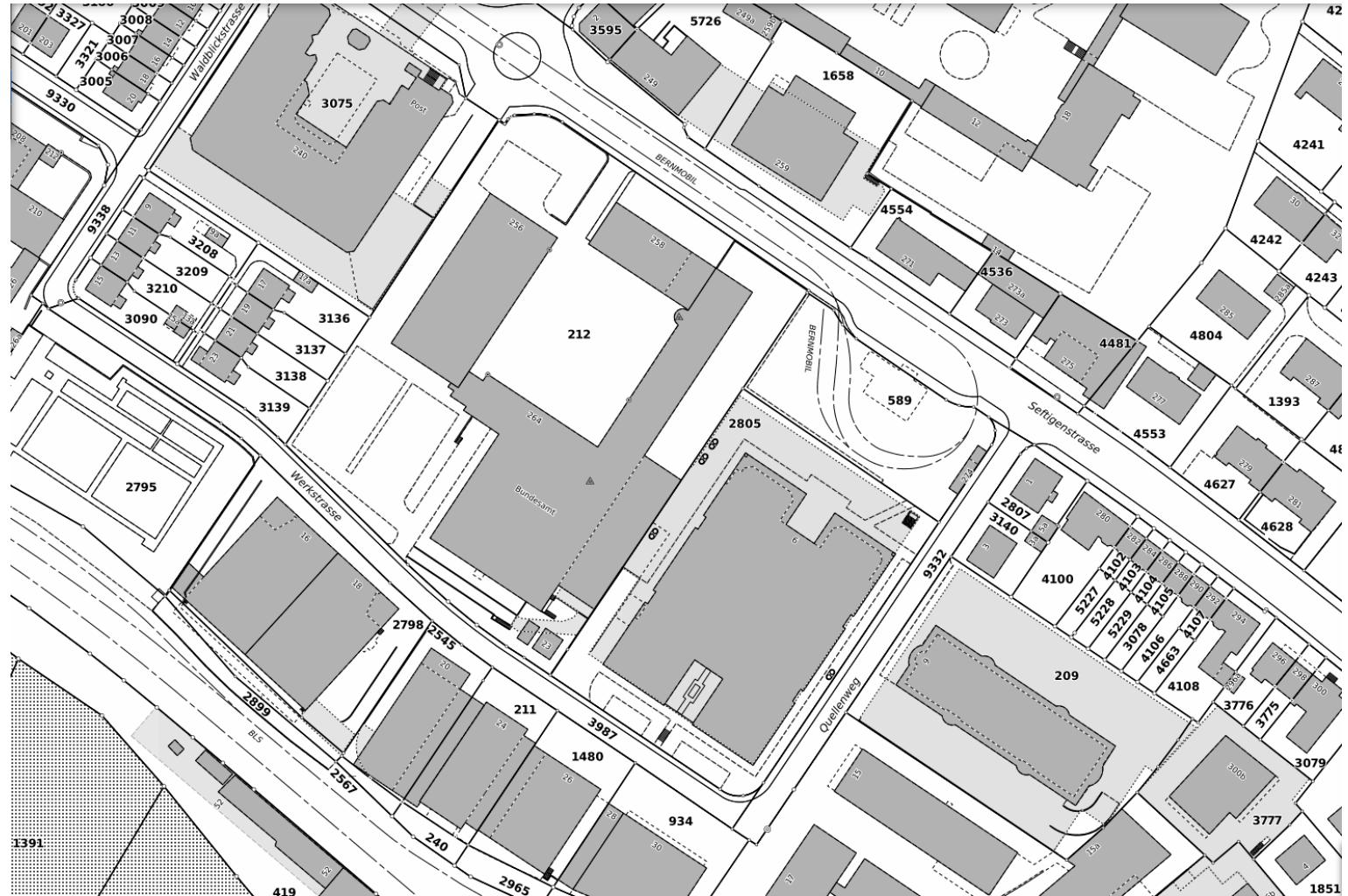


# Multilingualism





# Data synchronisation: Address-Cadastre





# Data synchronisation: Address-Register for Buildings





# Future enhancement: Register for buildings

Buildings without residential usage





# Schedule

## Data synchronisation

1. Postal code	03.2019
2. Street names	08.2019
3. Buildings	12.2019
4. Adresses	12.2019

enhancement

2021



# The first release: Documents for validation

The screenshot shows the cover page of a Swiss cadastral document. At the top left is the Swiss flag. Logos for the Swiss Confederation and the Federal Office of Topography (swisstopo) are at the top right. The title 'Amtliches Verzeichnis der Strassen' is in the center. Below it is the subtitle 'Umsetzungs- und Validierungsprozess'. A note at the bottom states 'Version von 10.01.2019'. A section titled 'Änderungen seit der veröffentlichten Version vom 03.05.2018' lists two changes: 'Anpassungen Kapitel 4.1.1.6 (Nicht offizielle Strassen basierend auf Flurnamen)' and 'Anpassungen der Farben für PLZ Issues und Whitelist (PLZ Issues: Neu Violett, Whitelisteinträge: Neu Dunkelgrün)'. At the bottom, contact information for the publisher is provided, including a phone number, fax, email, and website.

**Amtliches Verzeichnis der Strassen**

**Umsetzungs- und Validierungsprozess**

Version von 10.01.2019

Änderungen seit der veröffentlichten Version vom 03.05.2018

- Anpassungen Kapitel 4.1.1.6 (Nicht offizielle Strassen basierend auf Flurnamen)
- Anpassungen der Farben für PLZ Issues und Whitelist (PLZ Issues: Neu Violett, Whitelisteinträge: Neu Dunkelgrün)

Herausgeber  
Bundesamt für Landestopografie swisstopo  
Geodäsie und Eidgenössische Vermessungsdirektion  
Seefeldstrasse 264, Postfach  
CH-3084 Wabern

Tel. +41 58 469 01 11  
Fax +41 58 469 04 59  
infod@swisstopo.ch  
www.swisstopo.ch / www.cadastre.ch

This document contains:  
Examples  
What should I do?  
.....



# The first release: Lists for validation with link to issue

[Kt]\_Streetnames\_All  
[Kt]\_Streetnames\_AV\_only  
[Kt]\_Streetnames\_Issues  
[Kt]\_Streetnames\_listed

DE_GDENR	STR_ESID	AV_STN_STRNAME	COMMENT
385		Mühlemattweg	Inherits from longer line
385		Oberer Mühleweg	Inherits from longer line
717		Les Bouleaux	Inherits from longer line

		4932-00	<a href="#">link</a>	Rappechopf
		4922-00	<a href="#">link</a>	SBB
		3066-00	<a href="#">link</a>	Kartonfabrik
		3043-00	<a href="#">link</a>	Aspilawdweg
implausible, French name only	2504-00		<a href="#">link</a>	Autobahn A5
implausible, French name only	2555-00		<a href="#">link</a>	Autobahn A5
implausible, French name only	2503-00		<a href="#">link</a>	Autobahn A5
	2606-00		<a href="#">link</a>	
	2333-00		<a href="#">link</a>	
	2576-00		<a href="#">link</a>	Allme
	2576-00		<a href="#">link</a>	Butte Aulne

STR_ESID	STRNAME	LINK	DE_STN_STRNAME
10079002	1016359 3270-00	<a href="#">link</a>	Kappelenstrasse
10051836	1016364 3250-00	<a href="#">link</a>	Leimern
10004686	1016398 3273-00	<a href="#">link</a>	Zelgliweg

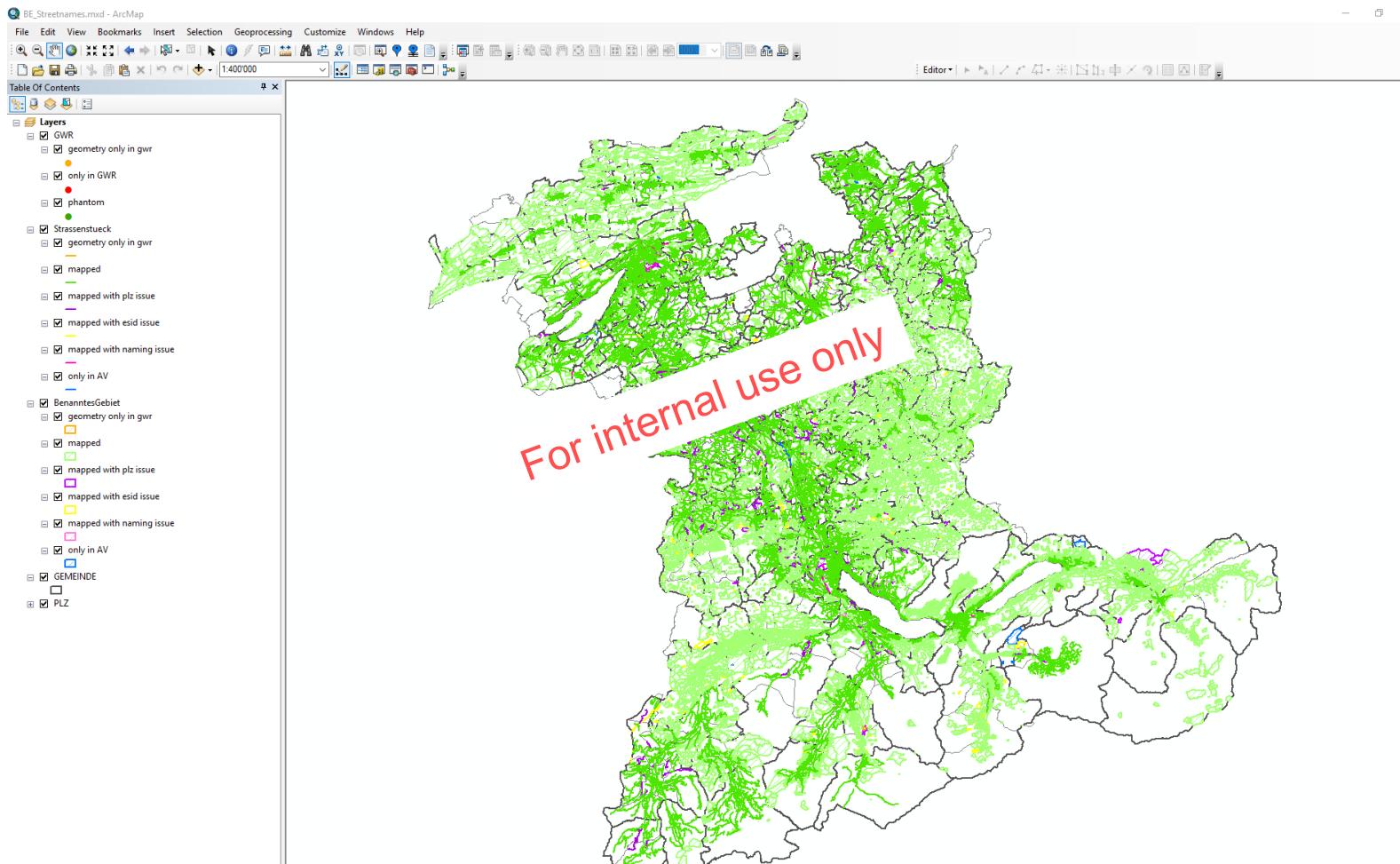


# The first release: KML-Files hosted on S3





# The first release: ESRI FGDB and ArcMap MXD





# The first release

- All data are every night reprocessed
- All lists, .kml's and the FGDB's are every night reprocessed
- Issues are categorised

	Available in cadaster	Not available in cadaster
Available in register for buildings and appartments	<p>Mapped</p> <p>Mapped with plz issues</p> <p>Mapped with naming issues</p> <p>Mapped with esid issues</p>	Only in GWR
Not available in register for buildings and appartments	Only in AV	New



# The validation process 1/4

common	Street part crosses 8841-00 which is not registered in GWR	10065323	1054305	8840-00	link	Birchli	keine Korrektur
common		10019359	1054306	8840-00	link	Birchlimatt	
common		10019360	1054307	8840-00	link	Birchlistrasse	
common		10065324	1054308	8840-00	link	Birkenhainweg	
common	ESID used for multiple streets	10115665	1054309	8836-00	link	Birkenweg	Birkenweg, 8836 00 Bennau, <b>neuen ESID vergeben.</b>
common	ESID used for multiple streets	10115665	1054309	8840-00	link	Birkenweg	Birkenweg, 8840 00 Einsiedeln ist korrekt.
common		10065325	1054310	8846-00	link	Bisigshalden	



Adaptions and corrections by the register for buildings and appartments



Nightly validation by swisstopo





# The validation process 2/4

Completion «Black-» and «Whitelisting»

A	B	C	D
GDENR	ESID	NAME	COMMENT
%	%	namenlos%	Namenlos ignoriert
1323 %	Bergweg		Nicht benötigtes kurzes Strassenstück

6623	10102482	Route de Ferney		Gleiche ESID für mehrere nicht zusammenhängende Strassenstücke
6623		Route de l'Aéroport	1215-00	Manuelle PLZ Zuweisung
6623		Route des Morillons	1218-00	Manuelle PLZ Zuweisung
6623	10222170	Route Douanière		Gleiche ESID für mehrere nicht zusammenhängende Strassenstücke
6623	10041211			10048167 Strasse in Nachbargemeinde
6624	10124224			10222105 Strasse in Nachbargemeinde
6626	10235339	Place du 700e		Schreibweise korrekt
6628	10046834	Chemin du 1er-Août		Schreibweise korrekt
6628		Esplanade de Pont-Rouge	1227-00	Manuelle PLZ Zuweisung
6628	10175627	Passage du 1er-Août		Schreibweise korrekt
6628	10096030	Place du 1er-Août		Schreibweise korrekt
6628		Rampe QUIDORT	1227-04	Manuelle PLZ Zuweisung
6628	10046841	Route des Jeunes	1227-04	Manuelle PLZ Zuweisung; Gleiche ESID für mehrere nicht zusammenhängende Strassenstücke
6628		Route du Grand-Lancy	1212-00	Manuelle PLZ Zuweisung
6628	10048146			10082196 Strasse in Nachbargemeinde
6628	10096035			10046933 Strasse in Nachbargemeinde
6628	10096045			10048671 Strasse in Nachbargemeinde
6628	10178329			10096341 Strasse in Nachbargemeinde

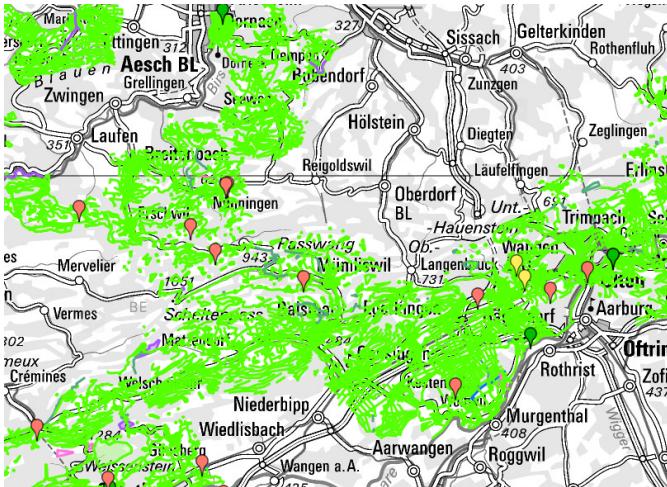


Validation by swisstopo





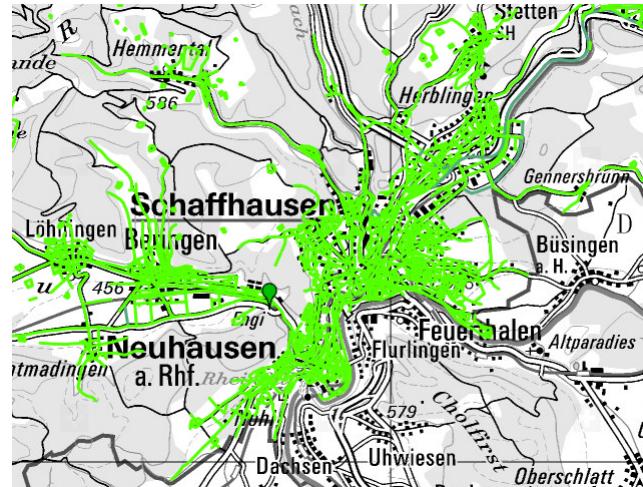
# The validation process 3/4



Issues found



Consulting with cantons and / or the register for buildings

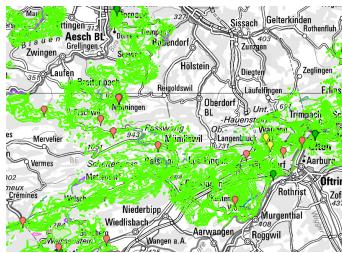


No issues





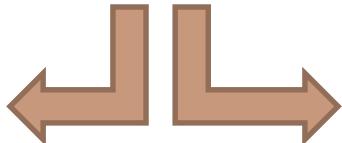
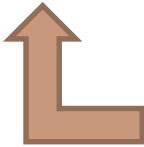
# The validation process 4/4



Fix the data or «black-/white-list»



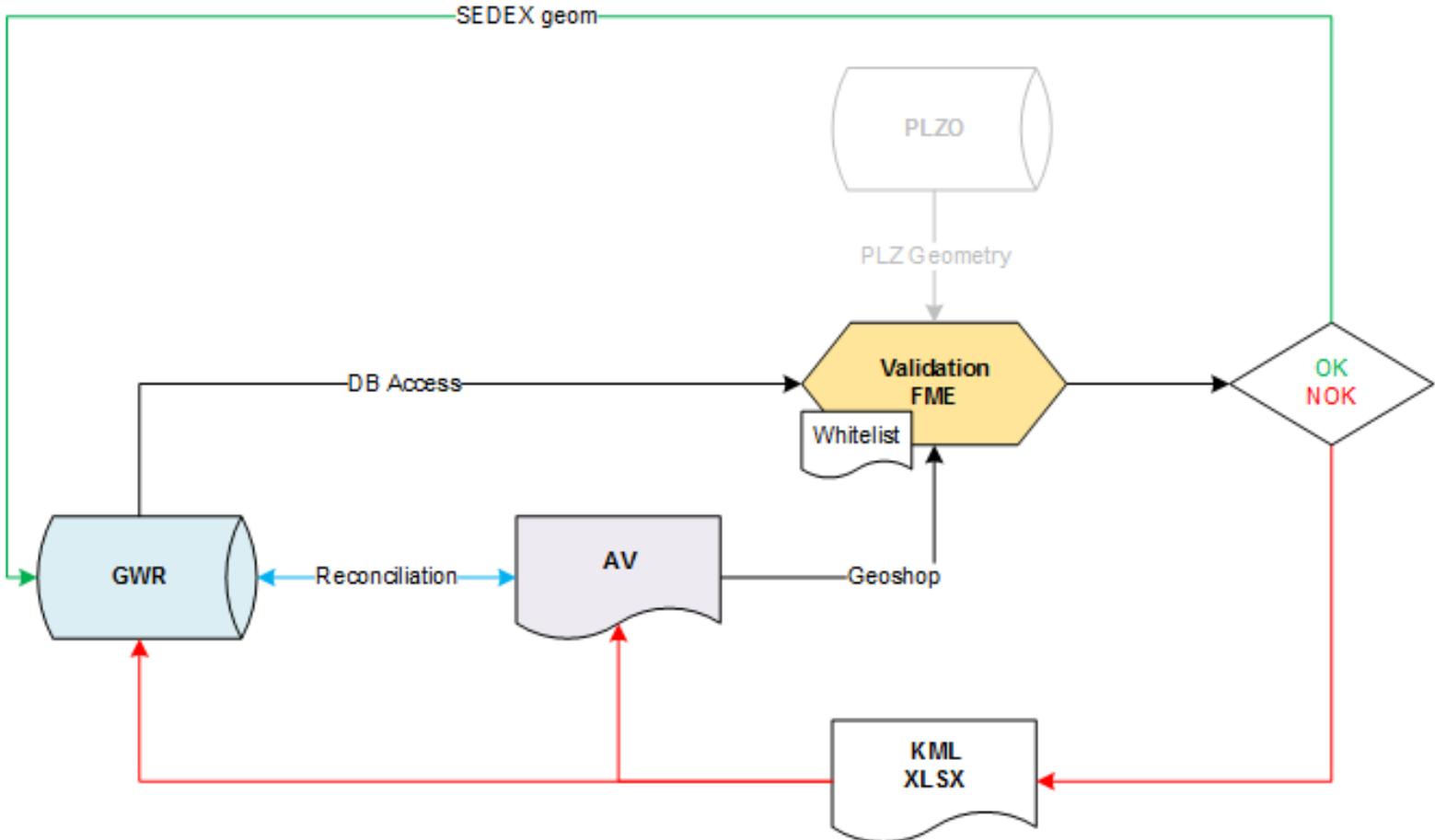
Validation by swisstopo



**Streets** are considered validated  
Change the attribute at the register for  
buildings and apartments



# The technology: The idea





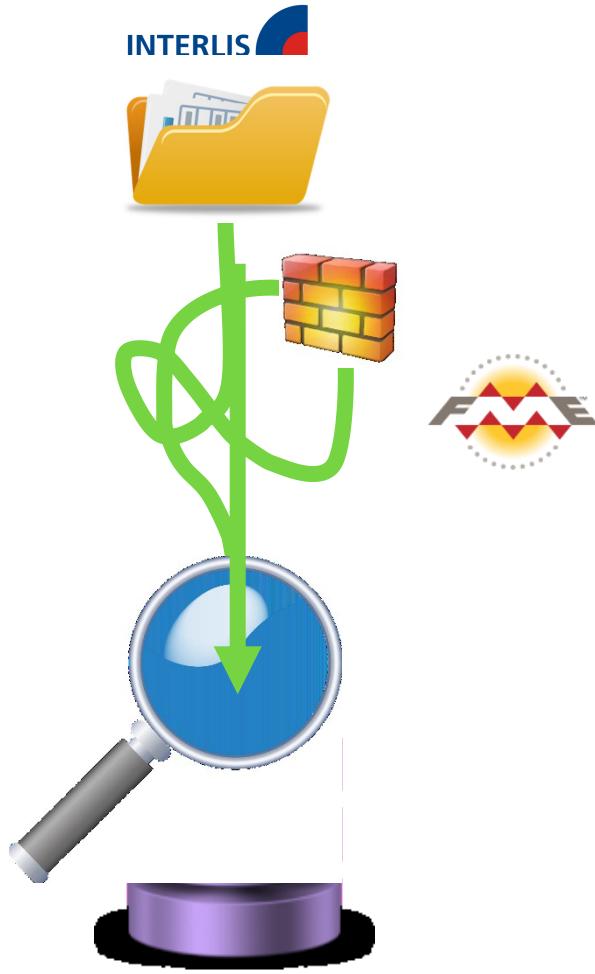
# The data sources

The register for buildings and  
appartments



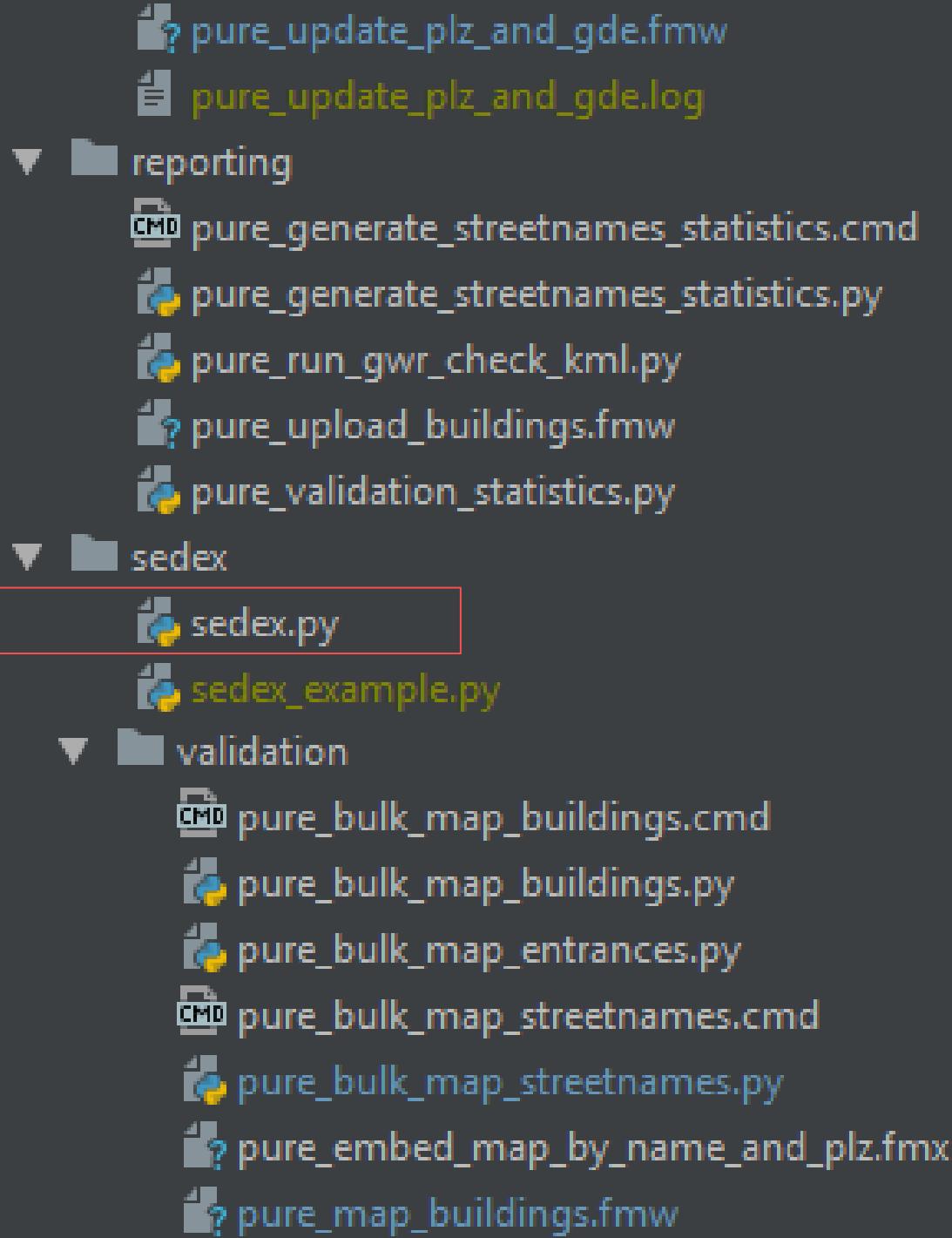


# Get the data



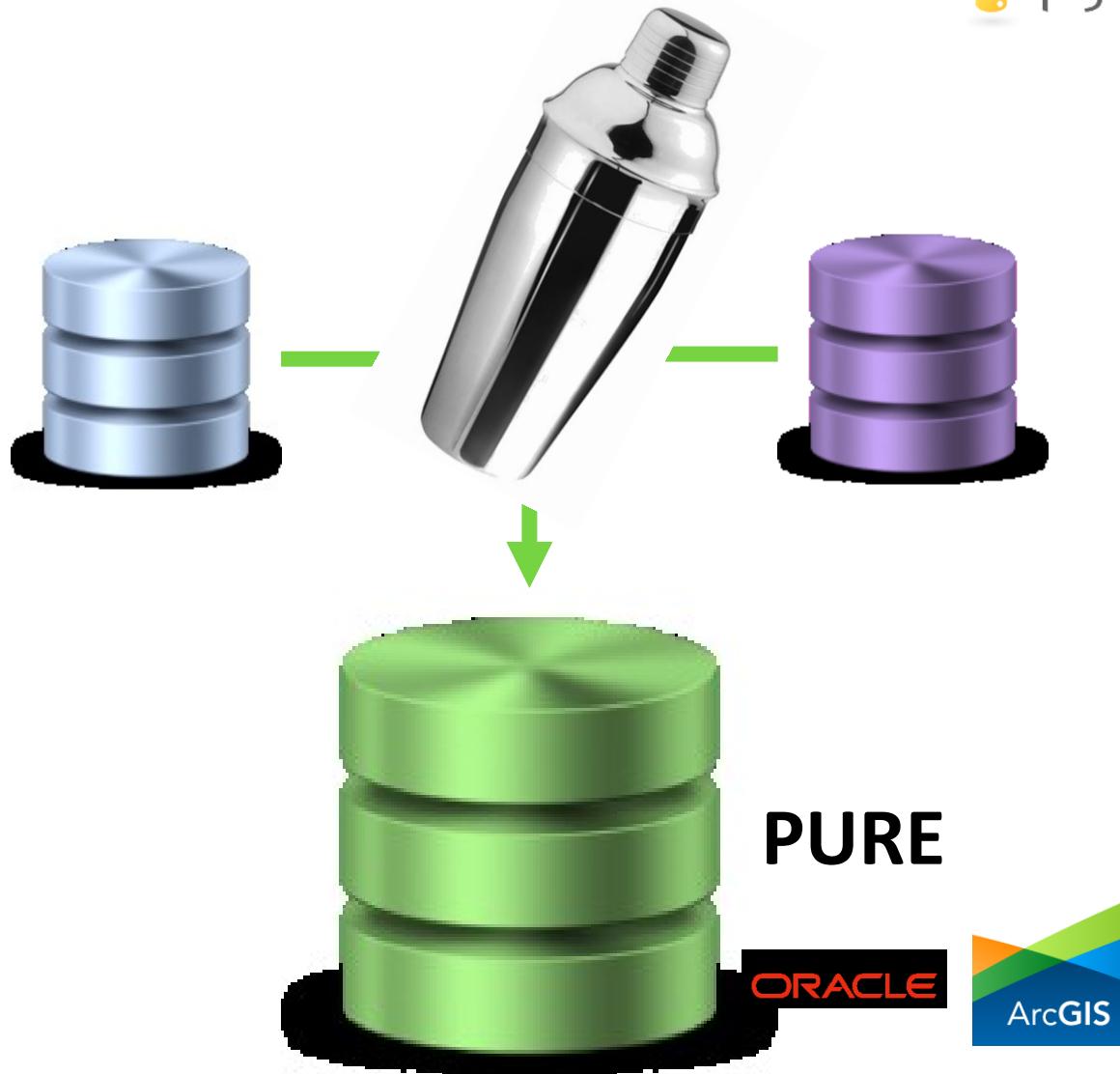


# The engine



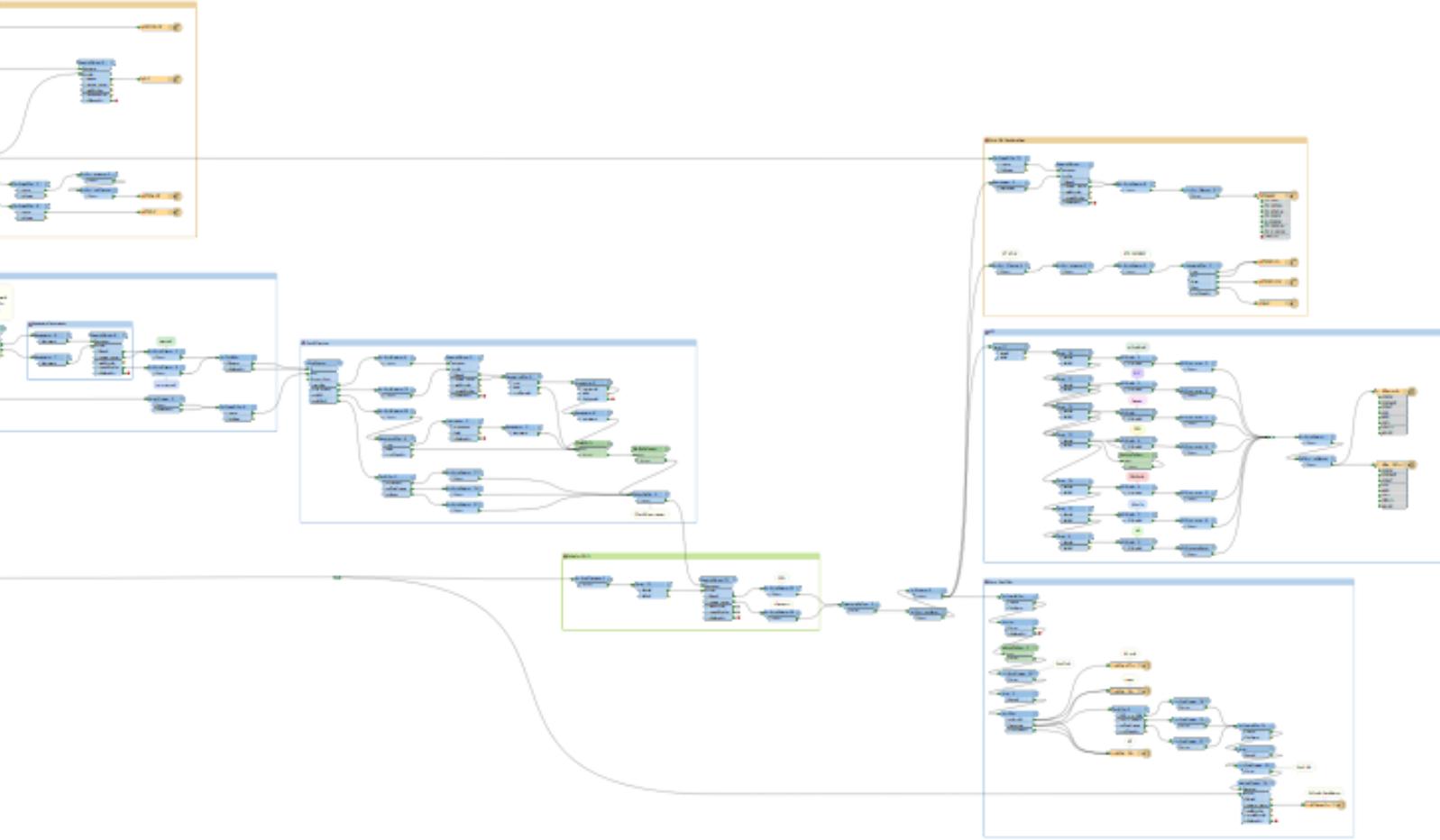


# Shake the fairy dust



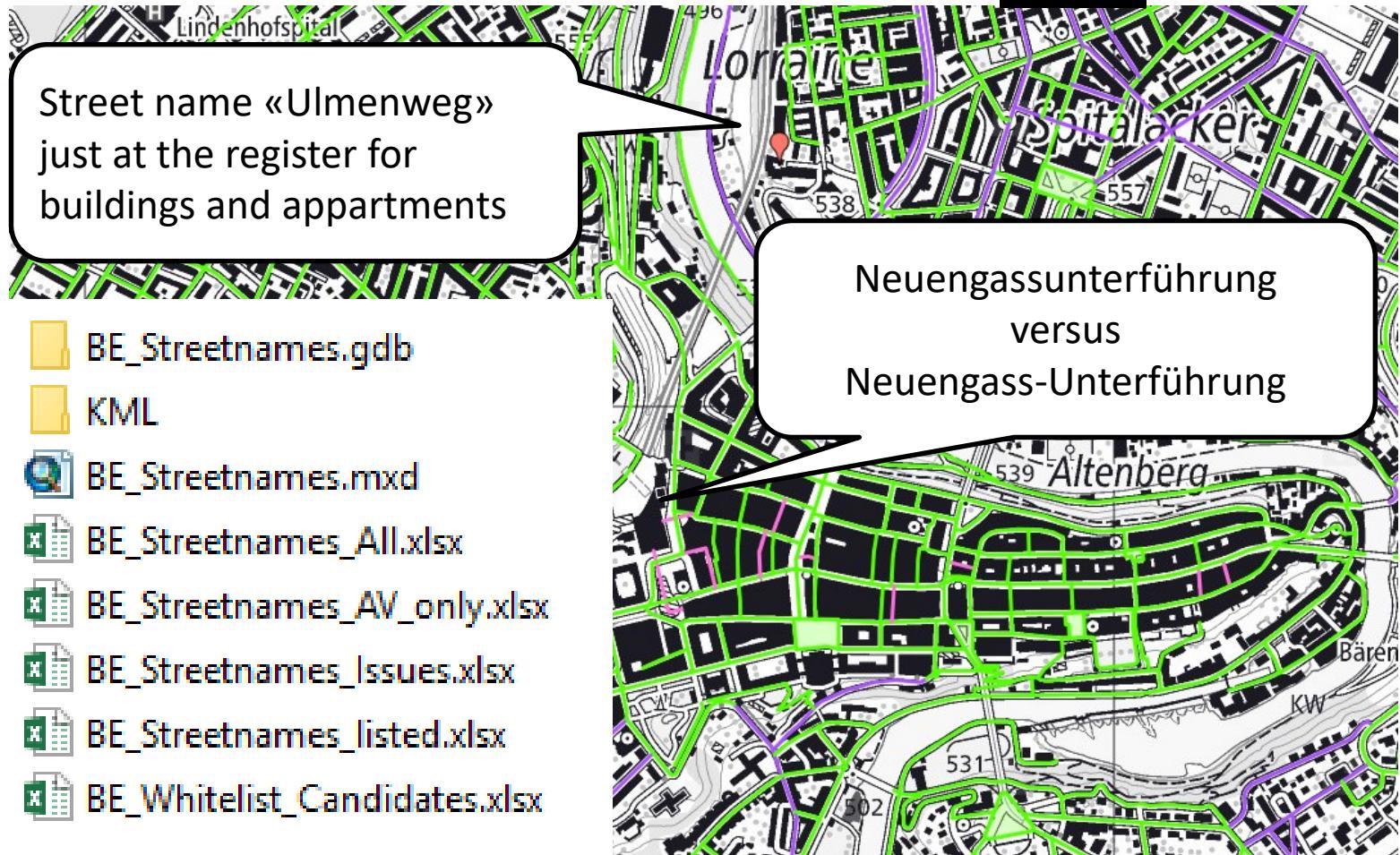


# The overnight-flow



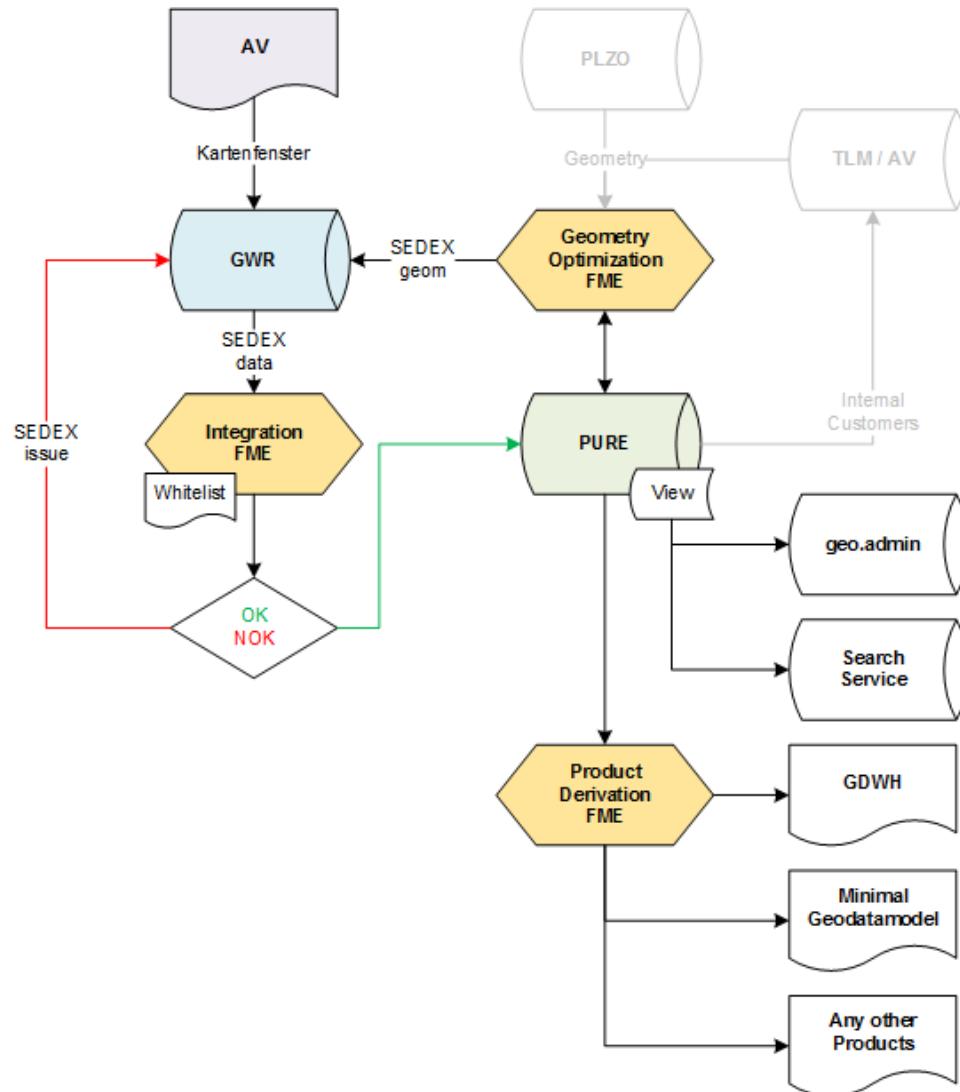


# “Every” morning the results





# Behind the scenes: PURE



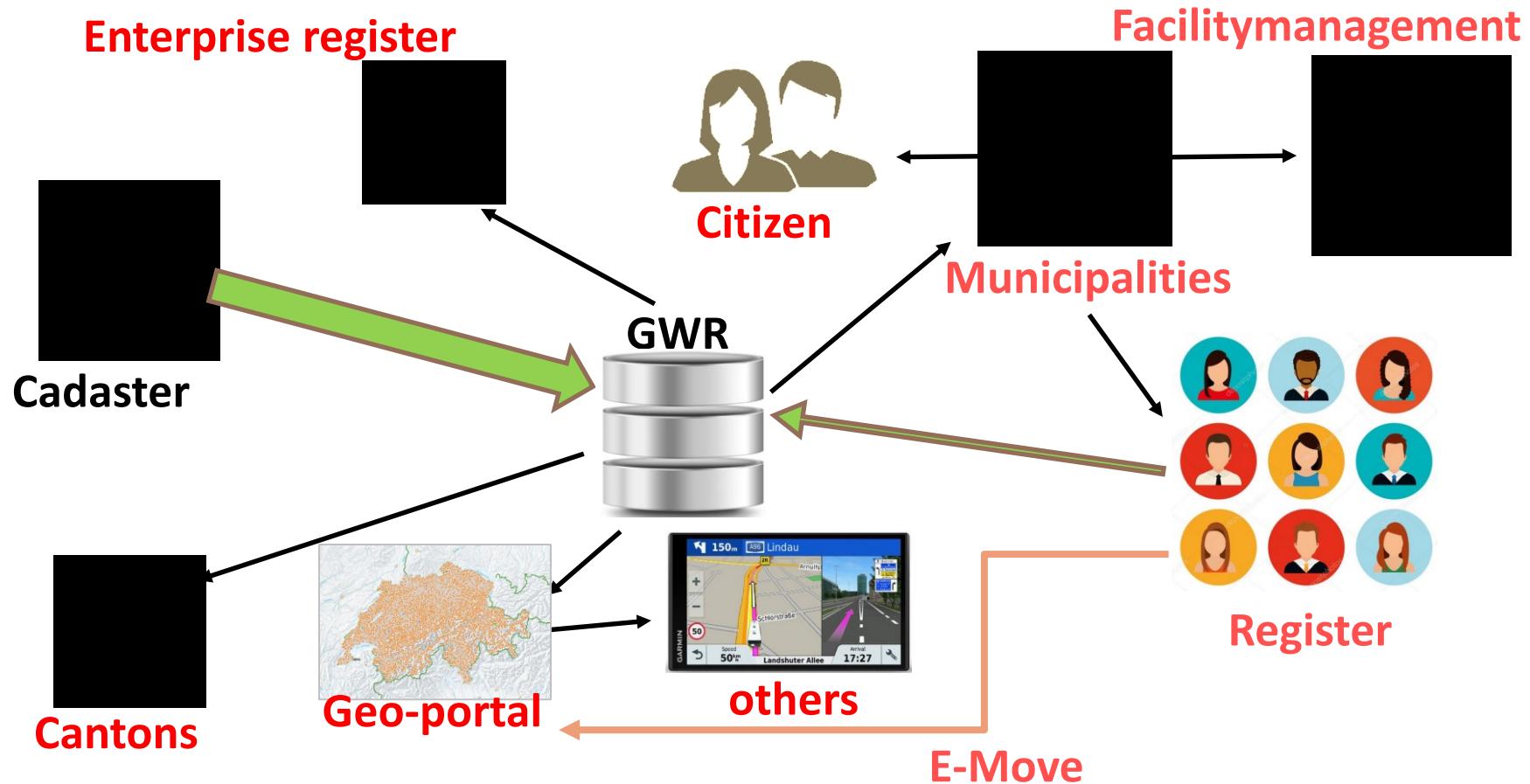


# The register for buildings and apartments: 4 Usecases

1. Add new street name
  - Easy, there was «nothing»
  - Normally this case does not occur because the street names have already been added from the cadaster.
2. Delete street name
  - If there is no building attached no problem
  - If there is a building attached the address has to change
3. Split existing street name
  - delete one add two or more
  - If there are buildings attached the old street, first the addresses has to change
4. Change existing street name



# The register for buildings and apartments: Stakeholder / Dataflows



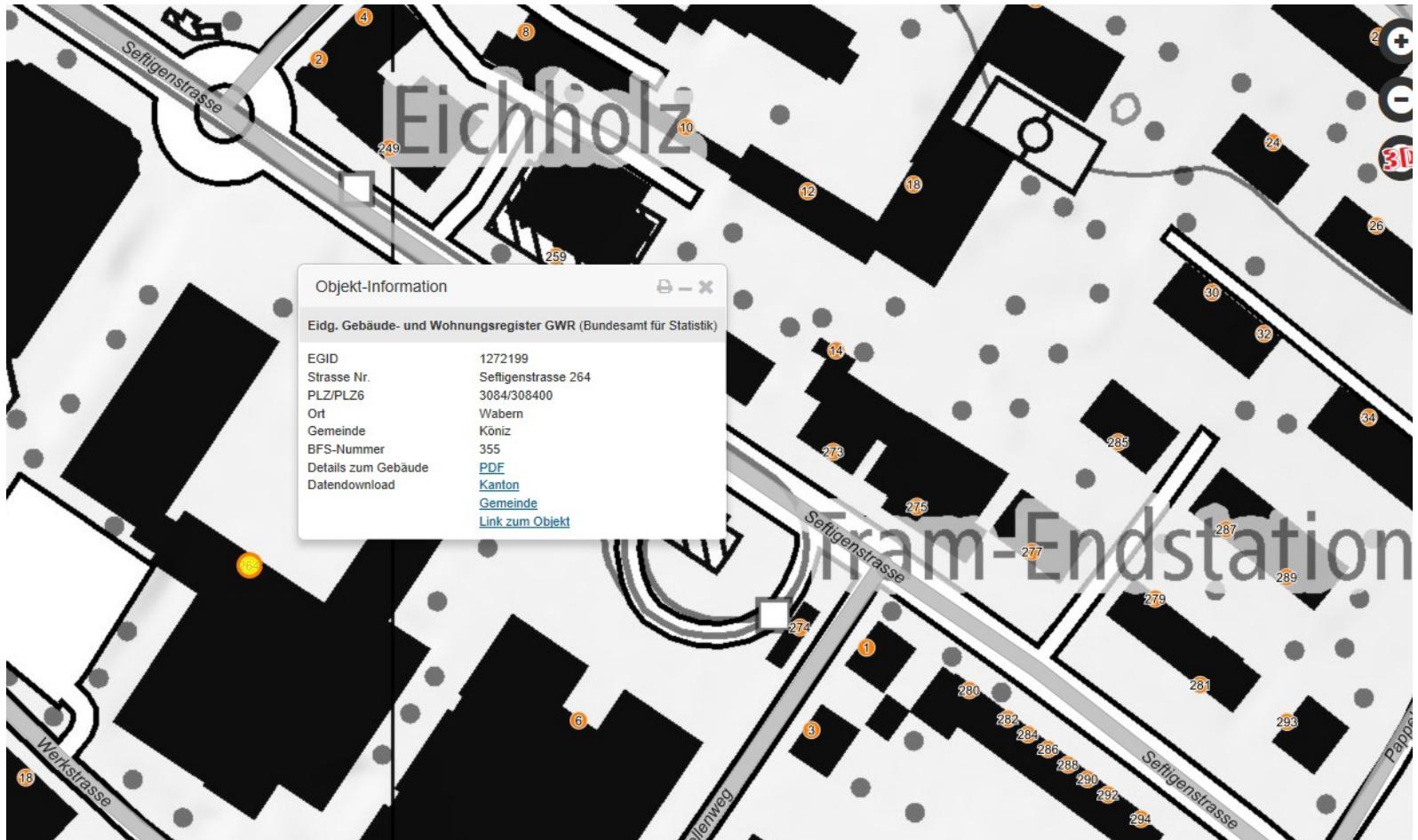


# Addresses are emotional

- <https://www.srf.ch/news/regional/bern-freiburg-wallis/hochdeutsche-strassennamen-walliser-sorgen-sich-um-dorfcharakter>



# Next step addresses more than 80% ist ok





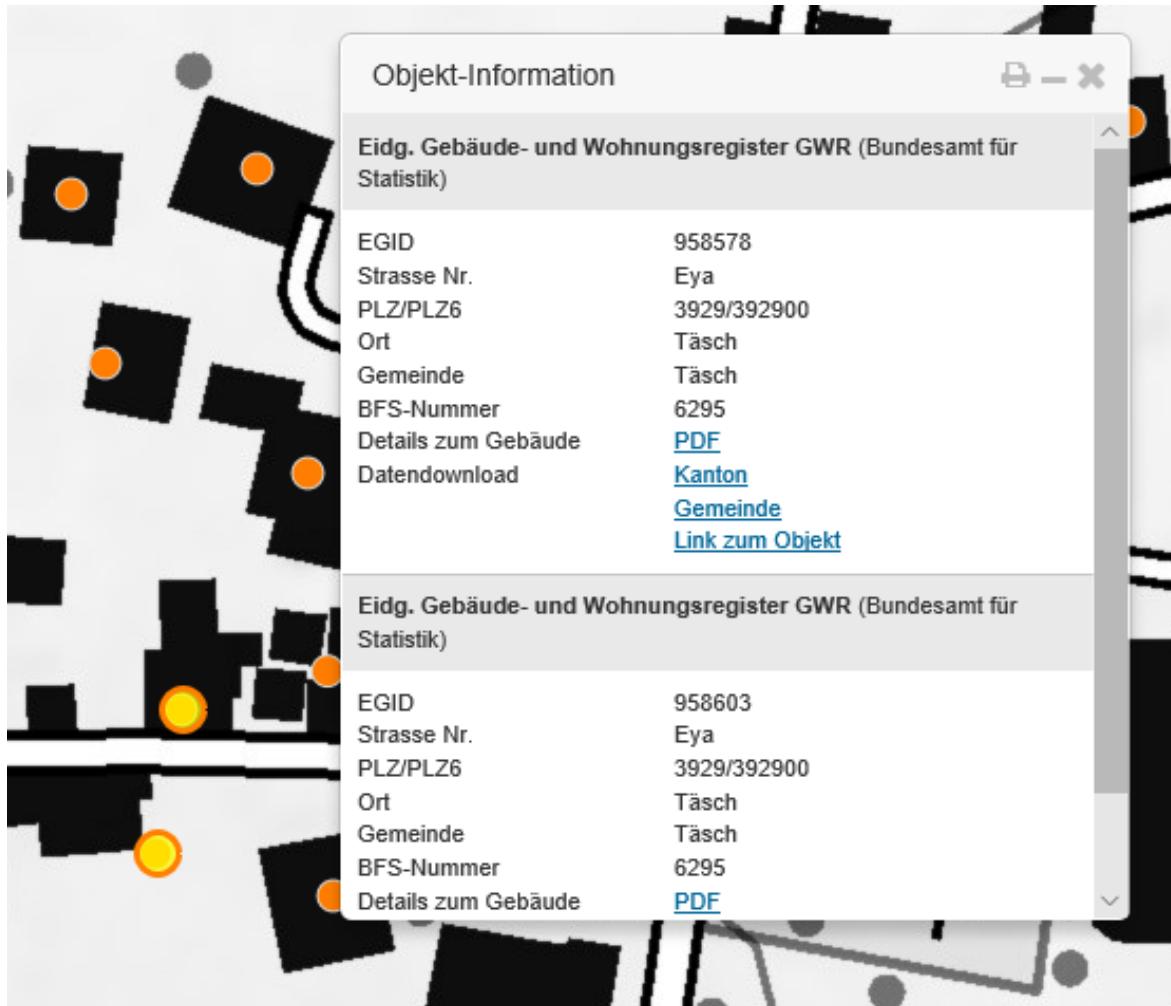
# Next step addresses but

The postman knows all the addresses but the fire department, and ambulance hopefully too. Every house has the same address





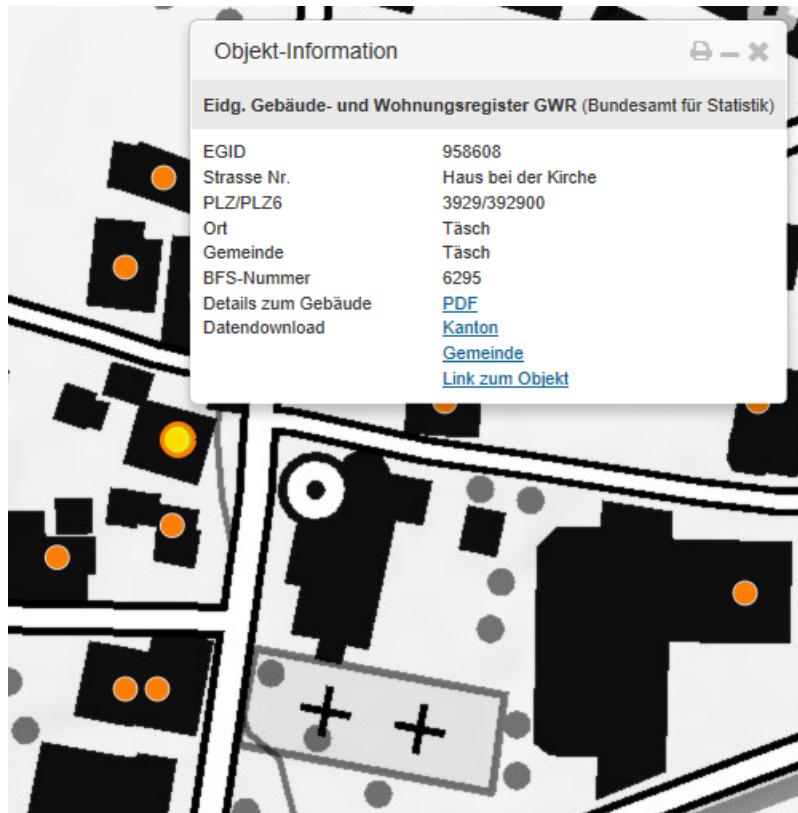
# Next step addresses Two houses one address





# Next step addresses house with name

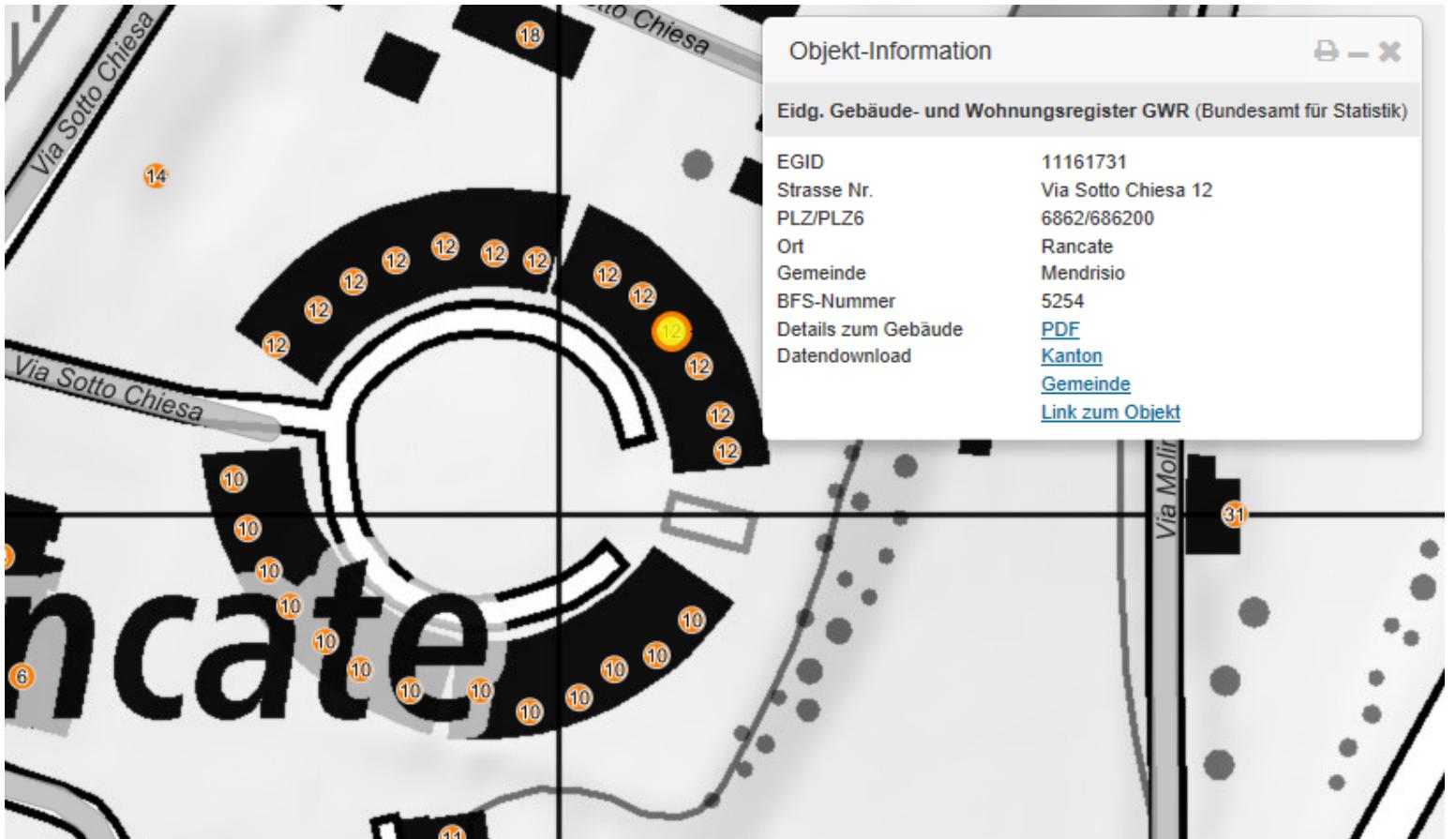
“Haus bei der Kirche” -> House at the church  
Hope there is only one church





# Next step addresses

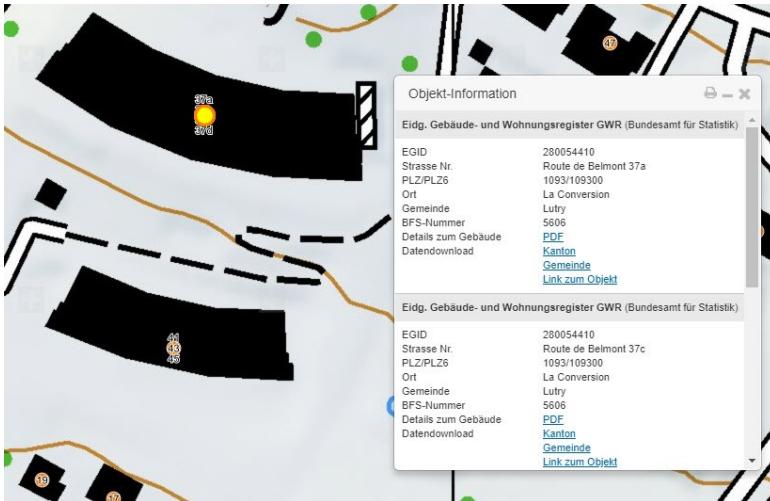
Where is number 10? Near to number 12?



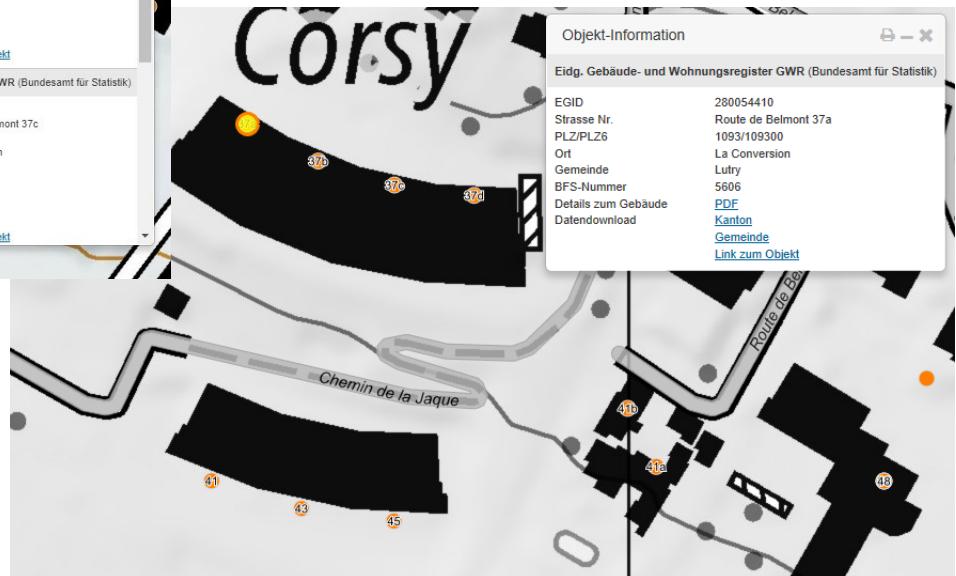


# Next step addresses

## Visualization helps



You will now find the entrance



Ok we will change the coordinates 😊



# Federal Spatial Data Infrastructure (FSDI)

Available web services inspired by ESRI GeoServices REST specification

- Search  
<http://api3.geo.admin.ch/services/sdiservices.html#search>
- Identify (reverse geocoding, intersection)  
<http://api3.geo.admin.ch/services/sdiservices.html#identify-features>
- Find (check exact spelling)  
<http://api3.geo.admin.ch/services/sdiservices.html#find>

Available OGC-Webservices

- WMS
- WMTS

It is for free ☺



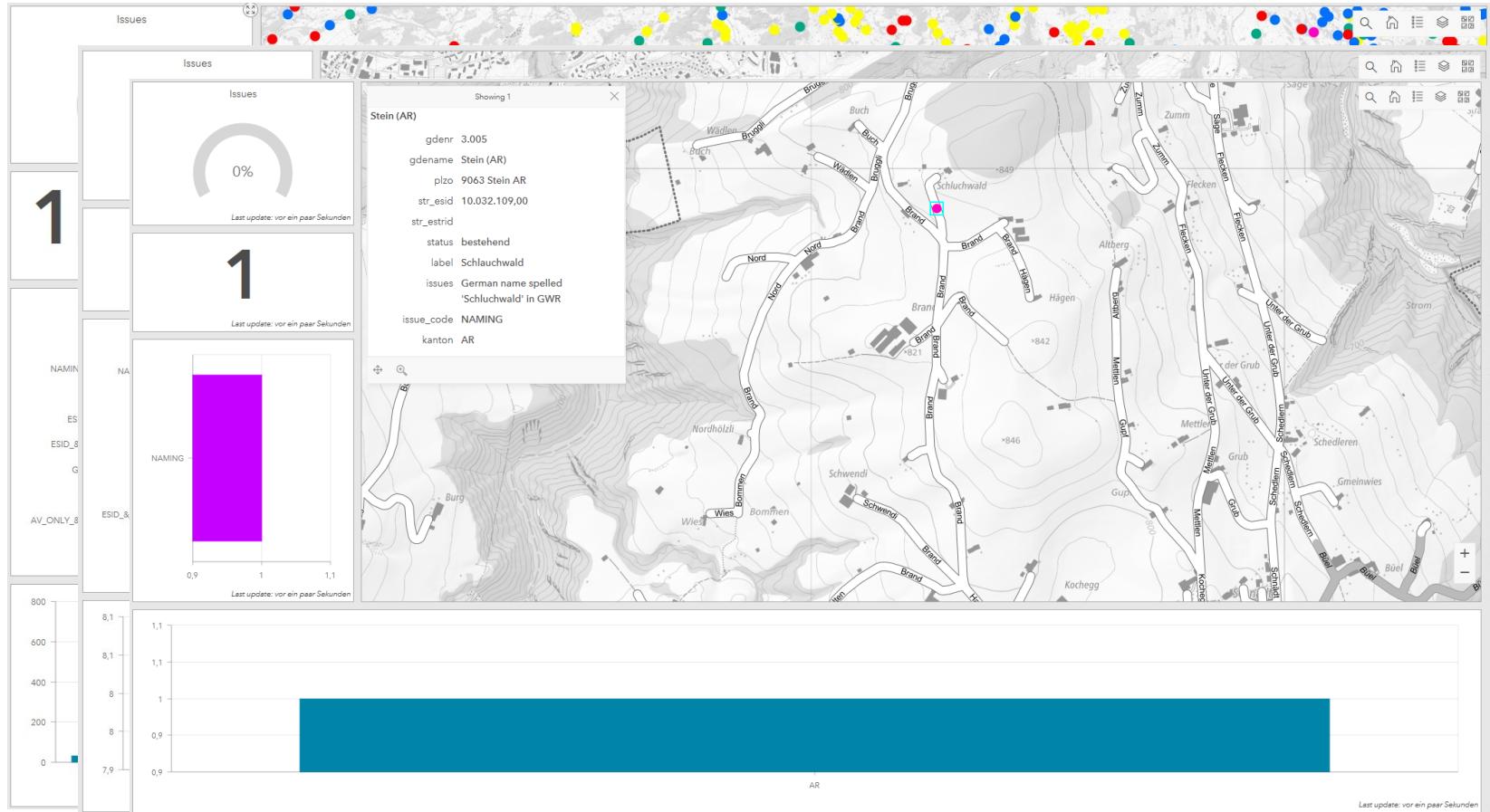
# Federal Spatial Data Infrastructure (FSDI)

## Planned web services

- Download (ATOM?)
- LinkedData (if there is a need)



# Internal Dashboard





# There is an open question?

Thalstrasse or Talstrasse?  
Glatttalstrasse or Glatttalstrasse?



# Thalstrasse or Talstrasse?

<https://api3.geo.admin.ch/rest/services/api/MapServer/find?layer=ch.swisstopo.amtliches-strassenverzeichnis&searchText=Thalstrasse&searchField=label&returnGeometry=false&contains=false>

<https://api3.geo.admin.ch/rest/services/api/MapServer/find?layer=ch.swisstopo.amtliches-strassenverzeichnis&searchText=Talstrasse&searchField=label&returnGeometry=false&contains=false>

