



Schweizerische Eidgenossenschaft
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Swiss Confederation

Bundesamt für Statistik BFS
Office fédéral de la statistique OFS
Ufficio federale di statistica UST
Federal Statistical Office FSO

Simplifying the Reuse of Concepts Across Organisations

BFS – IOS – I14Y interoperability platform

Geneva, 21.10.2024

Tasks of the interoperability office

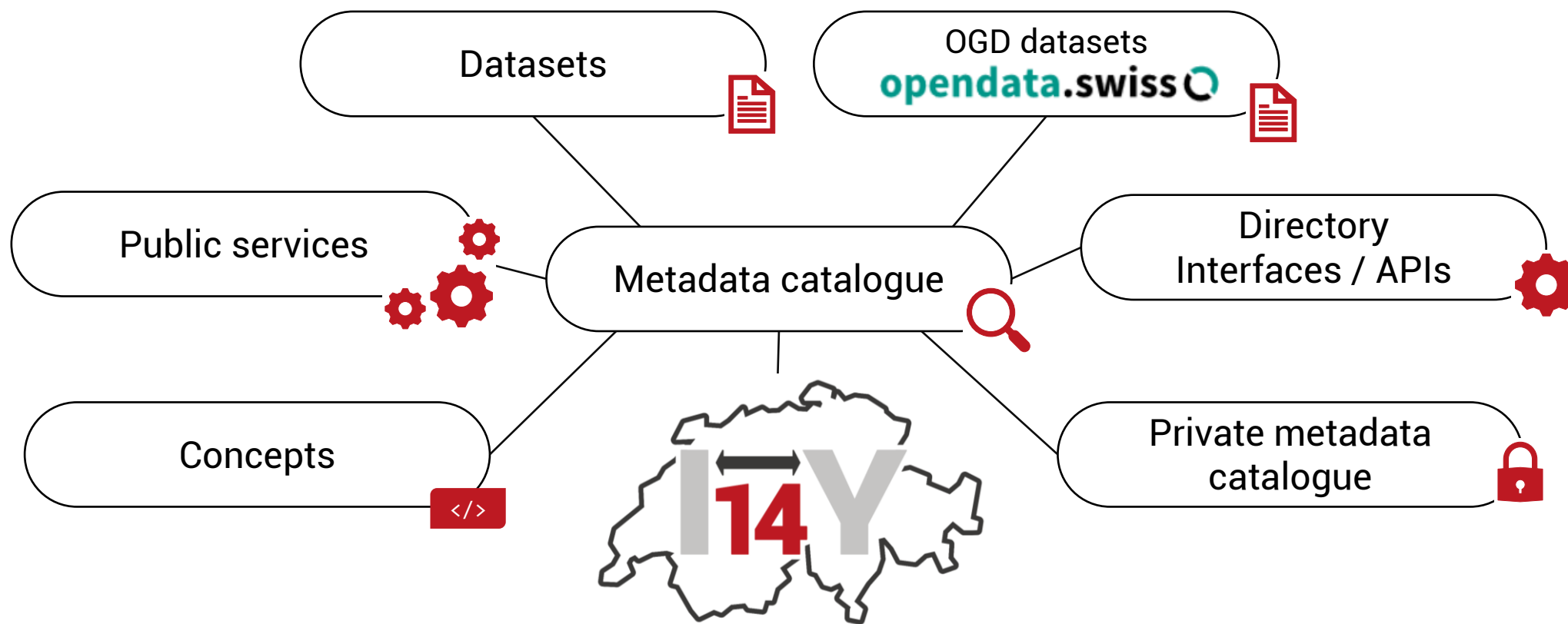
- Advises offices, departments, cantons, municipalities, etc. on the harmonisation of their administrative data
- Supports and coordinates standardisation and data harmonisation throughout the public administration
- Develops and operates the I14Y interoperability platform (<https://www.i14y.admin.ch>)

EMBAG

Art. 14 Interoperability platform

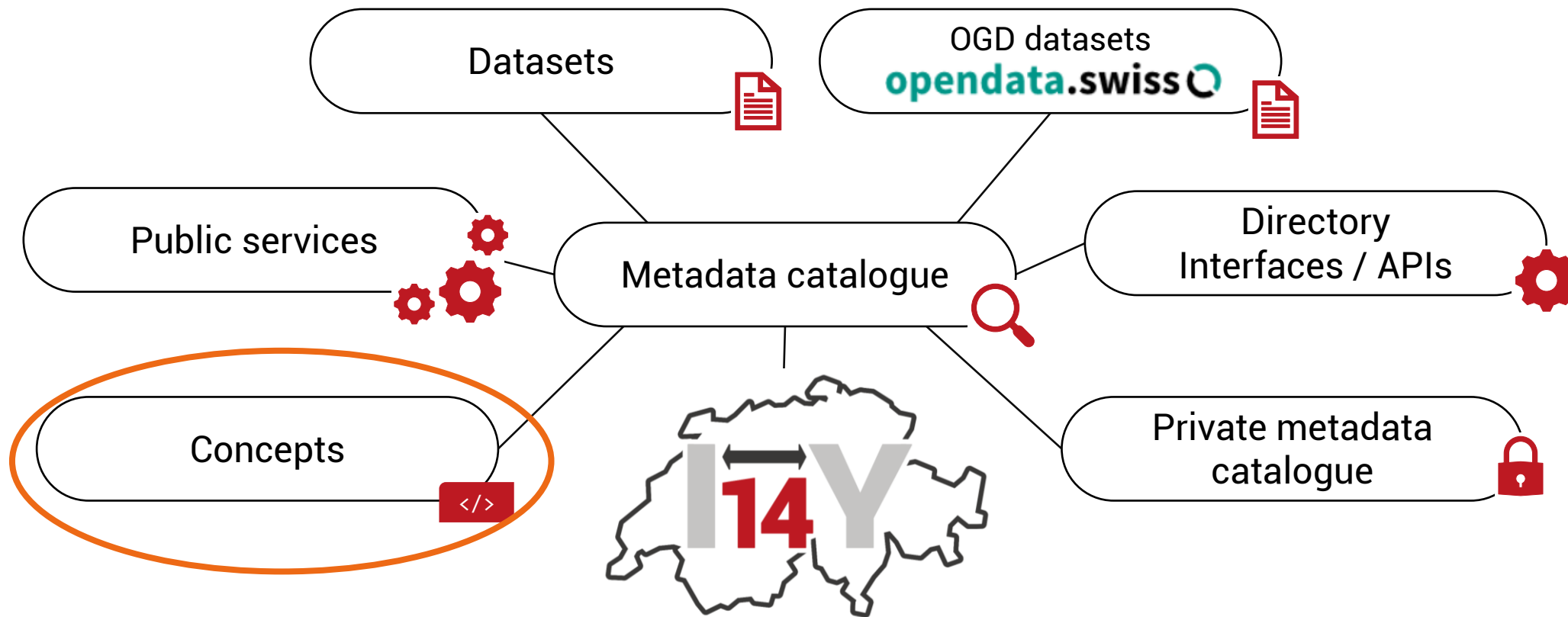
1. The Federal Statistical Office operates a public platform on the Internet on which the following information in particular is easily accessible either directly or via referencing in electronic form:
 - a) the **metadata of structured electronic data sets of the Federal Administration**, including the metadata of Open Government Data in accordance with Article 10;
 - b) a **list of the interfaces (APIs)** referred to in Article 13 and the information necessary for their use, provided that information security is not jeopardised;
 - c) an **overview of the services available electronically offered by public authorities.**

The I14Y functions



I14Y is based on Data Catalog Vocabulary (DCAT)
I14Y offers all services via interface/API (API-first)

The I14Y functions



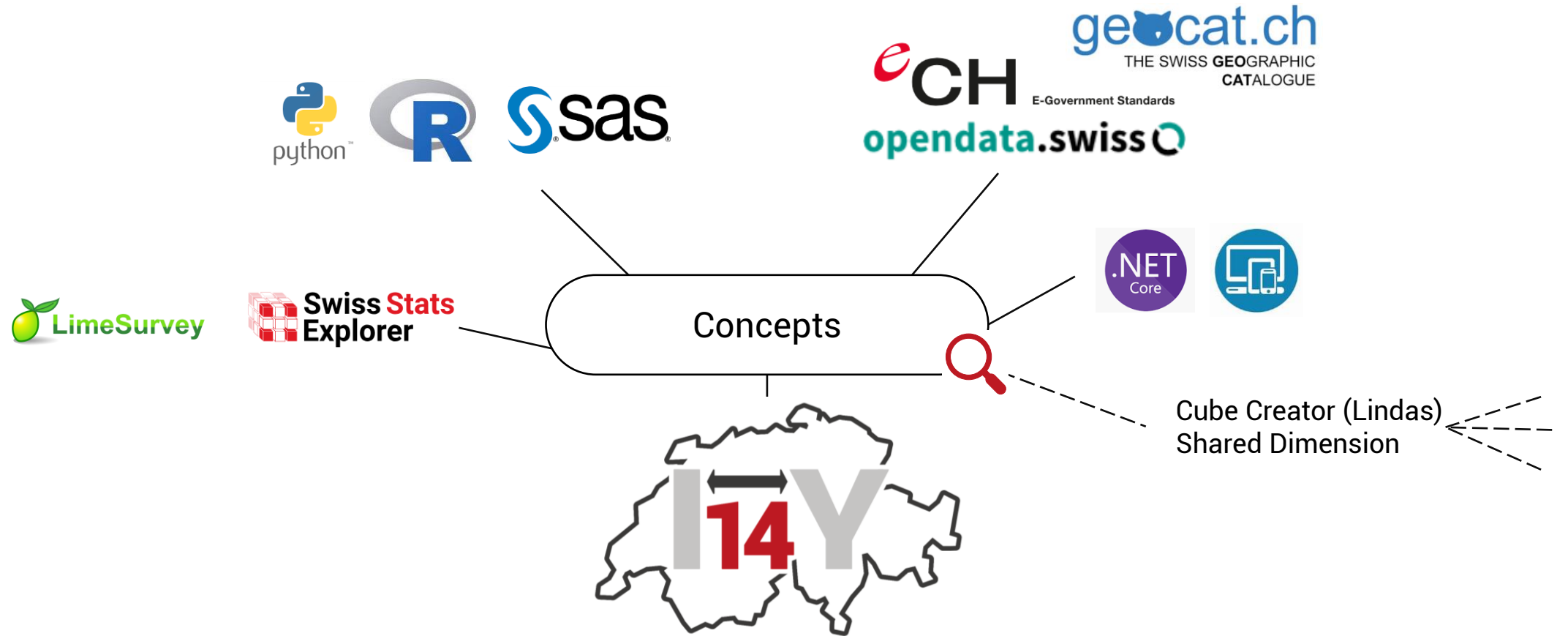
I14Y is based on Data Catalog Vocabulary (DCAT)
I14Y offers all services via interface/API (API-first)



Use Cases

1. Transparency / principle of publicity / inventory
2. Open Government Data
3. Reuse of concepts

Reuse of concepts



I14Y offers services via interface/API (API-first)

<https://api.i14y.admin.ch/api/public/v1/concepts/08dbf1a0-8d10-c75b-a0b4-6a5c2873b2bc/codelist-entries/exports/json>

Reuse of concepts – example – I14Y

Identification number of the enterprise for statistical purposes (ENTID number)

Status: Recorded

Description

In the data model of the Business and Enterprise Register (BER), the ENTID identifies the enterprise for statistical purposes. There is a 1-to-1 relationship between the ENTID and the UID of the main legal unit (head office). The ENTID is a non-speaking identification number and consists of nine digits.

Identifier	entId
Publisher	Federal Statistical Office
Version	1.0.0
Valid from	19.07.2021
Properties type	Numeric
Minimum value	100000000
Maximum value	999999999
Number of decimal places	0

<https://www.i14y.admin.ch/en/concepts/08d94abe-5539-0948-818b-b8286203ca64/description>

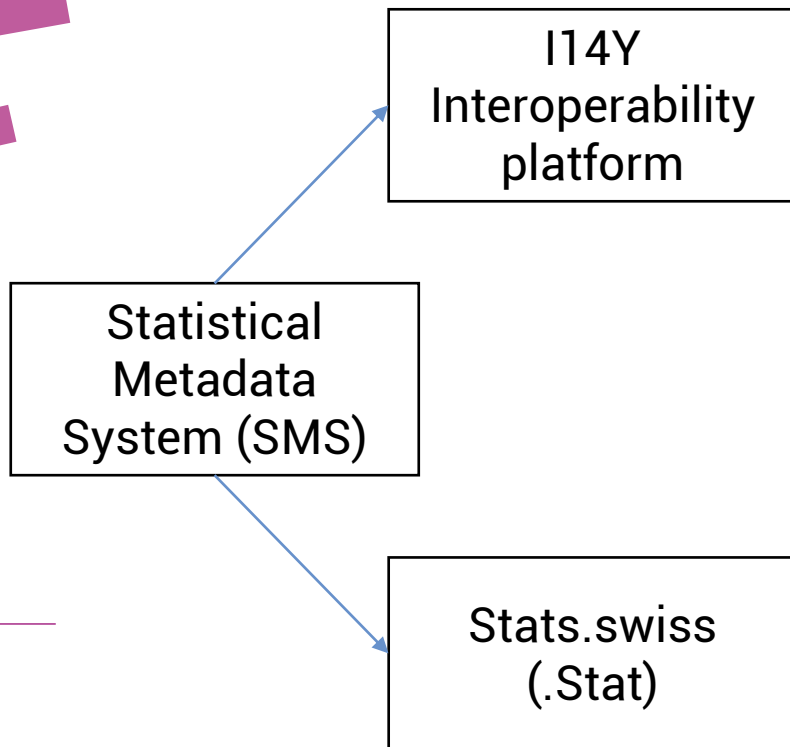
Relations

Number of data elements: 52 Some data elements may not be visible on the public interface.

Published data elements

Dataset	Data element	Publisher
SpiGes KantonsdatenFall Erhebungsvariablen	Numéro de l'entreprise ID ENT	Office fédéral de la statistique
SpiGes KantonsdatenStandort Erhebungsvariablen	Numéro de l'entreprise ID ENT	Office fédéral de la statistique

Reuse of concepts – example – .Stat



The screenshot shows the I14Y Interoperability platform interface. The top navigation bar includes 'Homepage', 'Catalogue / Search', 'Concepts', 'News', and 'Handbook'. The main content area displays the concept 'Cantons, districts and municipalities (01.01.2024)' with a 'Status: Recorded' badge. Below this, there are tabs for 'Description' and 'Content'. A table lists various administrative levels with their counts:

Code	Name	Count
8100	Switzerland	432
ZH	Zurich	Cormoret
BE	Bern	Annotations
B_200	Bezirksfreies Gebiet Bern / Berne	
B_241	Arrondissement administratif Jura bernois	
431	Corgémont	

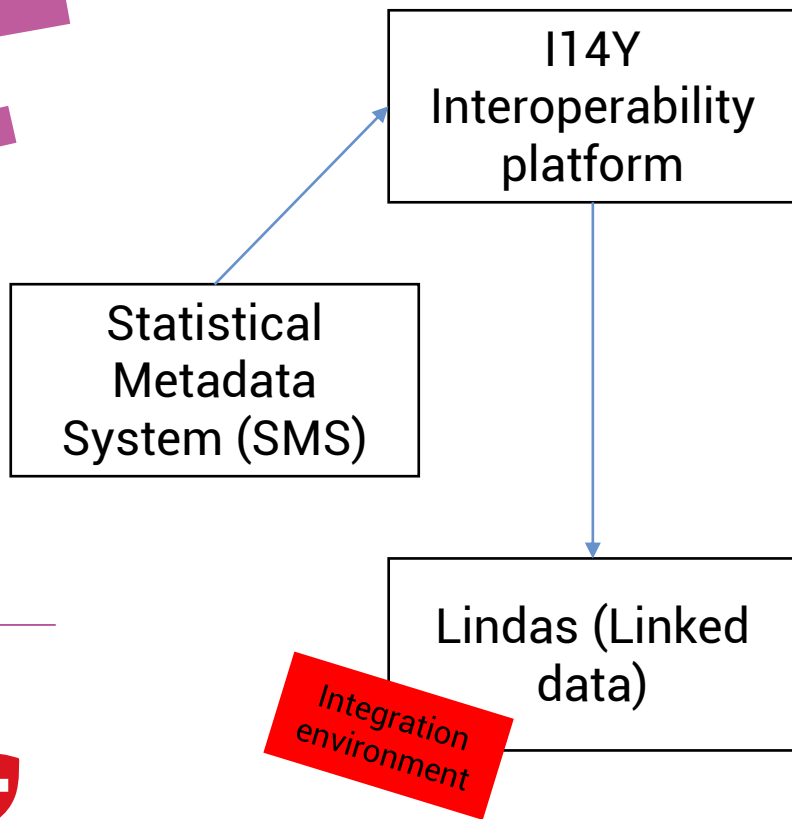
<https://www.i14y.admin.ch/en/concepts/08dc23f0-d04d-2d2f-a9f5-9cea80695acf/description>

The screenshot shows the Swiss Stats Explorer interface. The top navigation bar includes 'Swiss Stats Explorer' and 'EXPERIMENTAL TOOL'. The main content area displays a data table for 'Vacant dwellings by region, canton, district, municipality, number of rooms and type of vacant dwelling'. The table shows data for the years 2016, 2017, 2018, and 2019.

Number of rooms	2016	2017	2018	2019
Type of vacant dwelling: Vacant dwellings (all types)				
Total	56 518	64 274	72 294	75 383
Type of vacant dwelling: Vacant dwelling in a single-family house				
Total	6 523	6 742	7 192	7 597
- 1 Zimmer	54	28	56	55
- 2 Zimmer	163	141	225	228
- 3 Zimmer	584	548	689	694
- 4 Zimmer	1 592	1 706	1 685	1 833
- 5 Zimmer	2 048	2 136	2 174	2 351
- 6 Zimmer oder mehr	2 082	2 183	2 363	2 436

[https://stats.swiss/vis?pg=D&bp=true&snb=1&vw=tb&df\[ds\]=ds%3ADisseminate&df\[id\]=DSL_DIFF_LWZ_1&df\[ag\]=CH1&df\[vs\]=1.0.0&dq=8100...V.A&d=2016%2C2020&to\[TIME_PERIOD\]=false&ly\[c\]=TIME_PERIOD&ly\[rs\]=LEERWOHN_TYP&ly\[rw\]=WOHN_ANZAHL&lc=en](https://stats.swiss/vis?pg=D&bp=true&snb=1&vw=tb&df[ds]=ds%3ADisseminate&df[id]=DSL_DIFF_LWZ_1&df[ag]=CH1&df[vs]=1.0.0&dq=8100...V.A&d=2016%2C2020&to[TIME_PERIOD]=false&ly[c]=TIME_PERIOD&ly[rs]=LEERWOHN_TYP&ly[rw]=WOHN_ANZAHL&lc=en)

Reuse of concepts – example – Linked Data



Query Data

To search in data from a specific dataset, use a SPARQL query. SPARQL (pronounced "sparkle", a recursive acronym for SPARQL Protocol and RDF Query Language) is an RDF Query Language. All data on LINDAS are available in the RDF format. You can re-use such queries and combine them with other data.

Query × +

<https://int.lindas.admin.ch/query>

```
1 PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
2 PREFIX xkos: <http://rdf-vocabulary.ddialliance.org/xkos#>
3 PREFIX ns1: <http://schema.org/>
4 PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
5 PREFIX dc: <http://purl.org/dc/elements/1.1/>
6
7 SELECT ?predicate ?object
8 WHERE {
9   <https://register.ld.admin.ch/i14y/DV_NOGA_2008/011200> ?predicate ?object .
10 }
```

Table Response Map 27 results in 0.043 seconds Simple view Ellipse Filter query results Page size: 50

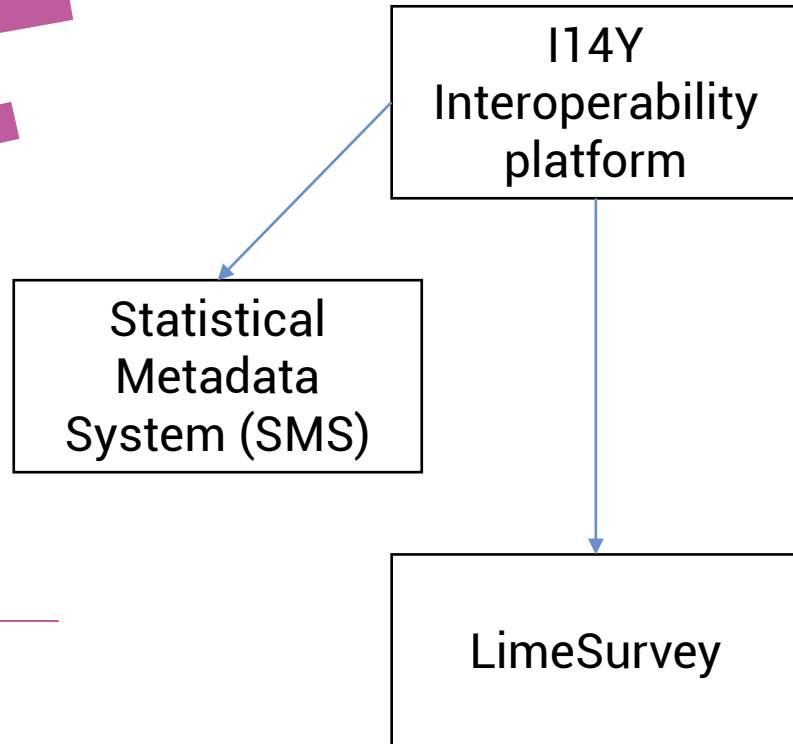
PREDICATE	OBJECT
1rdf:type	skos:Concept
2rdf:type	ns1:DefinedTerm
3ns1:identifier	011200
4skos:prefLabel	"011200 Anbau von Reis"@de
1/ns1:name	"Coltivazione dei riso"---
18skos:broader	<https://register.ld.admin.ch/i14y/DV_NOGA_2008/0112>
19skos:inScheme	<https://register.ld.admin.ch/i14y/dimension/DV_NOGA_2008>
20ns1:inDefinedTermSet	<https://register.ld.admin.ch/i14y/dimension/DV_NOGA_2008>
21ns1:inDefinedTermSet	<https://register.ld.admin.ch/i14y/dimension/DV_NOGA_2008/5>
22ns1:isPartOf	<https://register.ld.admin.ch/i14y/DV_NOGA_2008/0112>
23dc:identifier	011200
24xkos:coreContentNote	"Diese Art umfasst: - Anbau von Reis"@de

<https://int.lindas.admin.ch/sparql/>

Reuse of concepts – example – LimeSurvey

<https://github.com/I14Y-ch/iSurvey>

<https://www.i14y.admin.ch/de/concepts/08dad447-fdc0-073a-b3f5-b70f4b876faf/content>



The screenshot displays the LimeSurvey web interface. The main area shows the 'Struktur' tab for a survey group named 'Meine erste Fragengruppe / G01Q02'. A modal dialog box titled 'Beschriftungseinstellungen verwalten' is open, showing a dropdown menu for 'Fahrzeugart' with the value 'Fahrzeugart' selected. Below the dropdown, there are tabs for 'Deutsch', 'Französisch', and 'Italienisch'. The 'Deutsch' tab is active, displaying a list of vehicle types with their corresponding codes (L0001 to L0013). At the bottom of the dialog, there are three buttons: 'Abbrechen', 'Ersetzen', and 'Hinzufügen'.

Code	Vehicle Type
L0001	Personenwagen
L0002	Schwerer Personenwagen
L0003	Leichter Motorwagen
L0004	Schwerer Motorwagen
L0005	Gesellschaftswagen
L0006	Kleinbus
L0007	Gelenkbus
L0008	Trolleybus
L0009	Gelenktrolleybus
L0010	Lieferwagen
L0011	Lastwagen
L0012	Leichtes Sattelmotorfahrzeug
L0013	Schweres Sattelmotorfahrzeug

Reuse of concepts

Libraries:

- R library: <https://gitlab.com/DSCC/fso-metadata>
- Python library: <https://pypi.org/project/fso-metadata/>
- SAS library (intern)

These are now already outdated, and will be updated to correspond to our new APIs.

Other platforms referencing our concepts:

- Geocat.ch: example [link](#)
- eCH: [eCH-0108](#)



Some figures

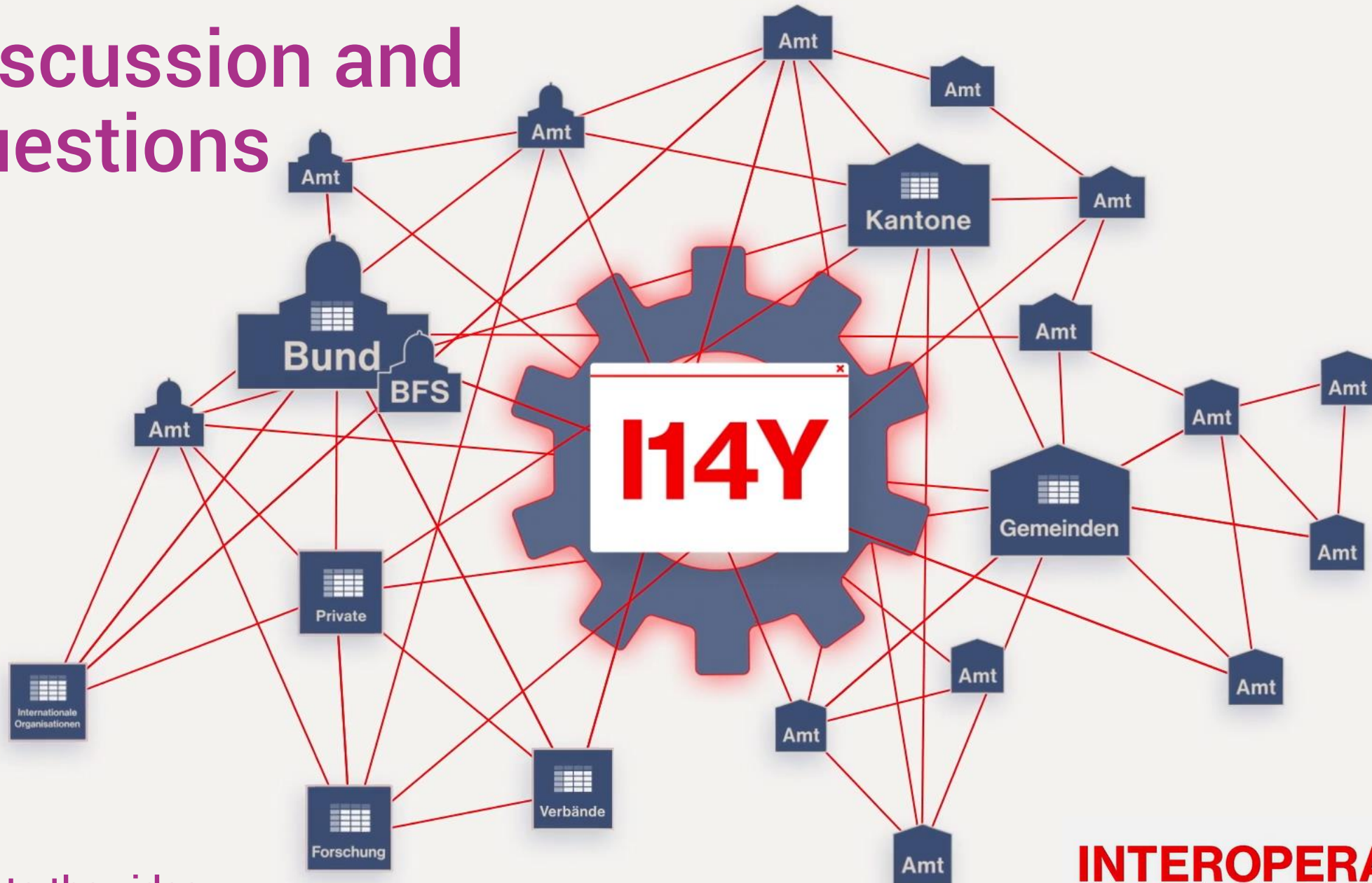
- 439 published concepts (264 in 2024)
- 250 unique users per week (rising)
- 40 organisations with local data stewards and
- 127 Users of I14Y input in production

Dashboard: <https://sharp-gould.185-66-108-249.plesk.page/>

Plans for 2025

- API Gateway improvements
- Historisation of changes and notifications
- Onboarding new cantons and organisations / User experience
- Automate data exchange with other catalogues
- Rework concept reuse in dataset structures
- Open source
- ...

Discussion and questions



[Link to the video](#)

INTEROPERABILITY

1 2 3 4 5 6 7 8 9 10 11 12 13 14