STATEC

Enhancing Data Dissemination through improved SDMX Modeling at STATEC

Frédéric STIBLING

SDMX Global conference
Rome
30.09.2025

Agenda

1. **Background and motivation**
2. **Organisation and collaboration**
3. **SDMX data modelling**
4. **Lessons learned and next steps**

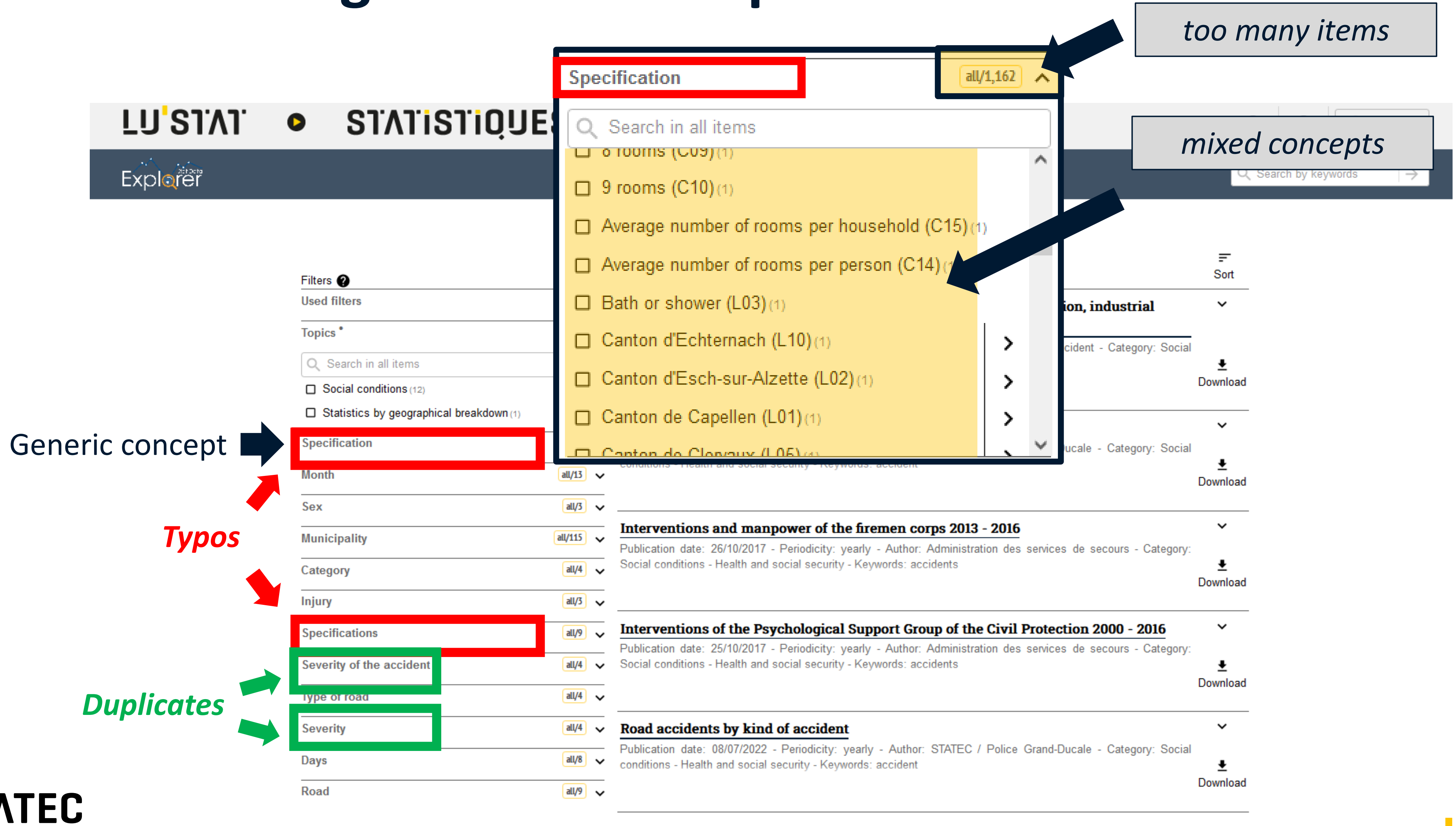
1

Background and motivation

Background and motivation

- *Statec migrated to .STAT suite for data dissemination in March 2022*
- *Migration was needed because the previous tool became depreciated*
- *Urgency to migrate more than 650 tables in a short time*
- *Focus more on migration deadline than on modelling*
- *Bad modelling = bad user experience*

Bad modelling = bad user experience



too many items

mixed concepts

Generic concept

Typos

Duplicates

Specification all/1,162

Search in all items

- ☐ 8 rooms (C09) (1)
- ☐ 9 rooms (C10) (1)
- ☐ Average number of rooms per household (C15) (1)
- ☐ Average number of rooms per person (C14) (1)
- ☐ Bath or shower (L03) (1)
- ☐ Canton d'Echternach (L10) (1)
- ☐ Canton d'Esch-sur-Alzette (L02) (1)
- ☐ Canton de Capellen (L01) (1)
- ☐ Canton de Clervaux (L05) (1)

Filters

Used filters

Topics •

Search in all items

- ☐ Social conditions (12)
- ☐ Statistics by geographical breakdown (1)

Filter	Items
Specification	
Month	all/13
Sex	all/3
Municipality	all/115
Category	all/4
Injury	all/3
Specifications	all/9
Severity of the accident	all/4
Type of road	all/4
Severity	all/4
Days	all/8
Road	all/9

...ion, industrial

...cident - Category: Social

...ucale - Category: Social conditions - Health and social security - Keywords: accident

Interventions and manpower of the firemen corps 2013 - 2016

Publication date: 26/10/2017 - Periodicity: yearly - Author: Administration des services de secours - Category: Social conditions - Health and social security - Keywords: accidents

Interventions of the Psychological Support Group of the Civil Protection 2000 - 2016

Publication date: 25/10/2017 - Periodicity: yearly - Author: Administration des services de secours - Category: Social conditions - Health and social security - Keywords: accidents

Road accidents by kind of accident

Publication date: 08/07/2022 - Periodicity: yearly - Author: STATEC / Police Grand-Ducale - Category: Social conditions - Health and social security - Keywords: accident

2

Organisation and collaboration

Organisation and collaboration

How to introduce SDMX good modelling practices in a small organisation ?

- *STATEC is a small structure (250 staff size)*
- *Business is already busy with daily tasks*
- *SDMX modelling has a certain entry cost*
- *Misunderstanding of the data modelling practice*
- *Is it really needed at STATEC ?*

Organisation and collaboration

Approach ***1/2***

- *Setting up a horizontal team composed of :*
  - *an external SDMX expert*
  - *a dissemination manager,*
  - *under the supervision of a methodology expert*
  - *a chief information Officer*

- *Project management including regular reporting to higher management*

Organisation and collaboration

Approach ***2/2***

- *New approach with the business (production units)*
- *IT support : .STAT maintenance*
- *Technical assistance provided by OECD:*
  regular workshops / ticketing tool

Organisation and collaboration

I. Initialisation

GitLab

.STAT ACADEMY

eurostat

OECD

II. Modeling

GitLab

SDMX Matrix Generator

OECD

III. Validation

GitLab

.Stat Suite

IV. Publication

.Stat Suite

3

SDMX data modelling

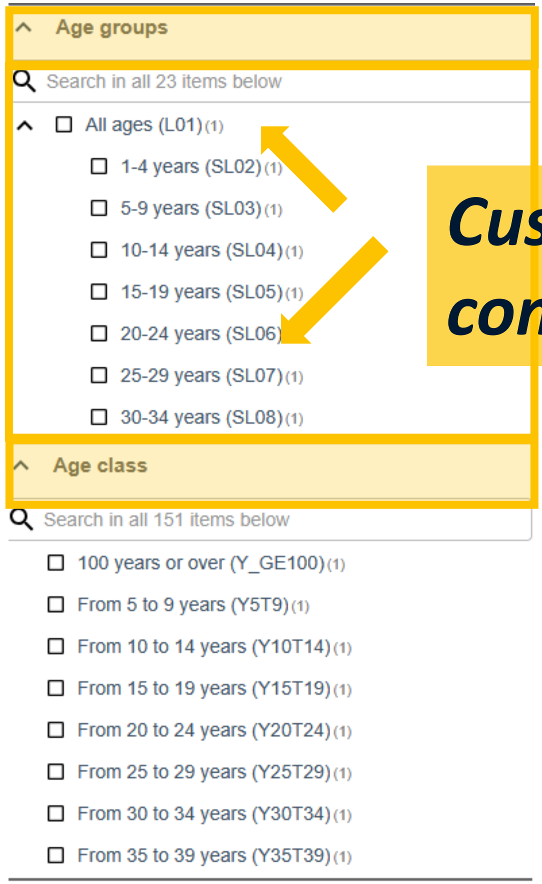
SDMX data modeling

Example : Census data 2021

- *Input from business, shaped from EU Census requirement*
- *111 dataflows / 10 DSDs / content constraints*
- *+/- 40 concepts (incl. commons) / +/- 30 CLs (re-used and new)*

SDMX data modeling

before



^ **Age groups**

Search in all 23 items below

^ ☐ All ages (L01) (1)
  - ☐ 1-4 years (SL02) (1)
  - ☐ 5-9 years (SL03) (1)
  - ☐ 10-14 years (SL04) (1)
  - ☐ 15-19 years (SL05) (1)
  - ☐ 20-24 years (SL06)
  - ☐ 25-29 years (SL07) (1)
  - ☐ 30-34 years (SL08) (1)

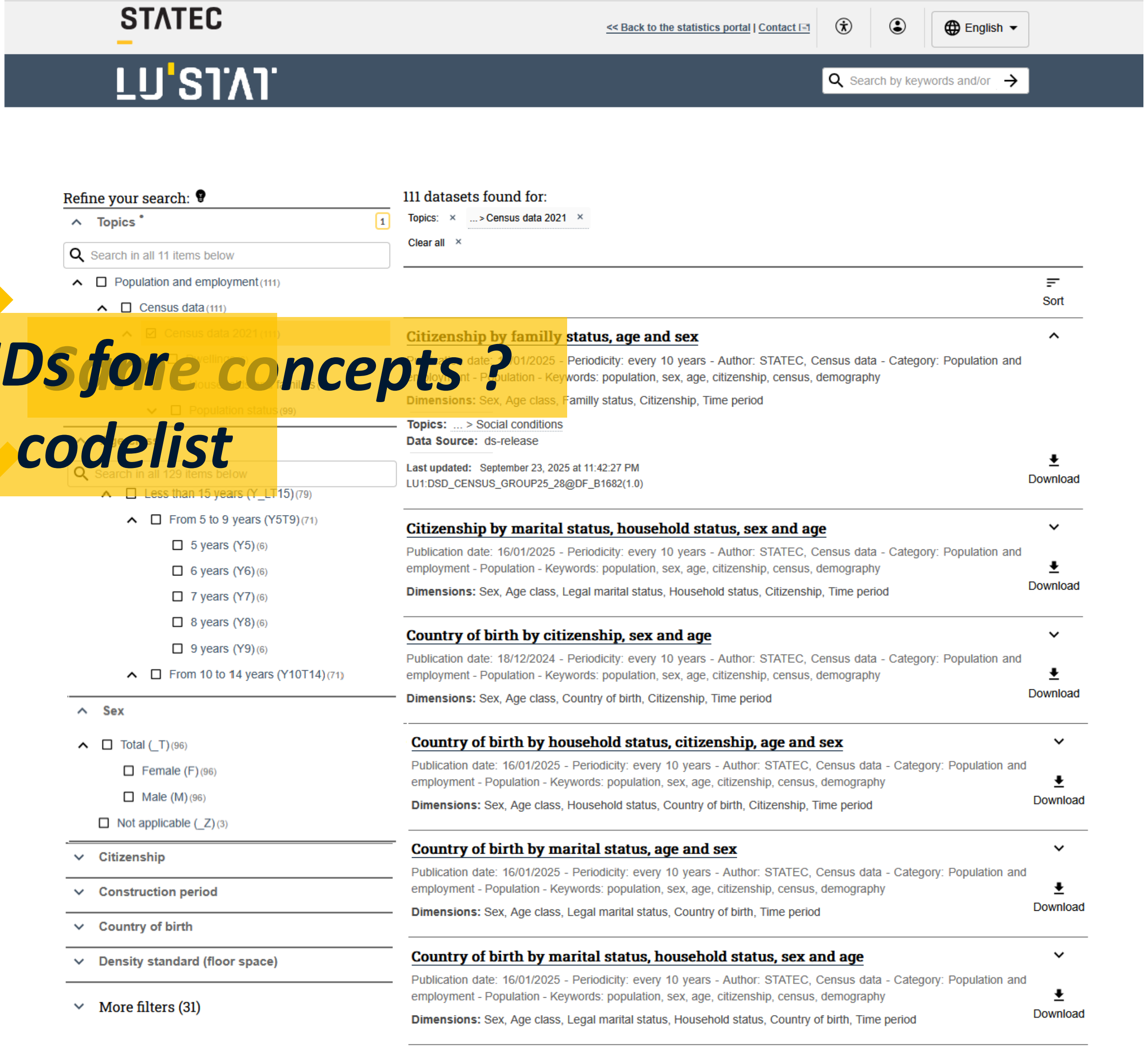
^ **Age class**

Search in all 151 items below

- ☐ 100 years or over (Y_GE100) (1)
- ☐ From 5 to 9 years (Y5T9) (1)
- ☐ From 10 to 14 years (Y10T14) (1)
- ☐ From 15 to 19 years (Y15T19) (1)
- ☐ From 20 to 24 years (Y20T24) (1)
- ☐ From 25 to 29 years (Y25T29) (1)
- ☐ From 30 to 34 years (Y30T34) (1)
- ☐ From 35 to 39 years (Y35T39) (1)

Custom IDs for concepts ?

common codelist



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Search by keywords and/or

Refine your search:

^ **Topics** 1

Search in all 11 items below

^ ☐ Population and employment (111)
  - ^ ☐ Census data (111)
    - ^ ☑ Census data 2021 (111)
      - ☐ Population status (99)

Search in all 129 items below

^ ☐ Less than 15 years (Y_LT15) (79)
  - ^ ☐ From 5 to 9 years (Y5T9) (71)
    - ☐ 5 years (Y5) (6)
    - ☐ 6 years (Y6) (6)
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^ ☐ Total (_T) (96)
  - ☐ Female (F) (96)
  - ☐ Male (M) (96)

☐ Not applicable (_Z) (3)

Citizenship

Construction period

Country of birth

Density standard (floor space)

More filters (31)

111 datasets found for:

Topics: × ... > Census data 2021 ×

Clear all ×

Sort

Citizenship by familly status, age and sex

Publication date: 16/01/2025 - Periodicity: every 10 years - Author: STATEC, Census data - Category: Population and employment - Population - Keywords: population, sex, age, citizenship, census, demography

Dimensions: Sex, Age class, Familly status, Citizenship, Time period

Topics: ... > Social conditions
Data Source: ds-release

Last updated: September 23, 2025 at 11:42:27 PM
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Citizenship by marital status, household status, sex and age

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Country of birth by citizenship, sex and age

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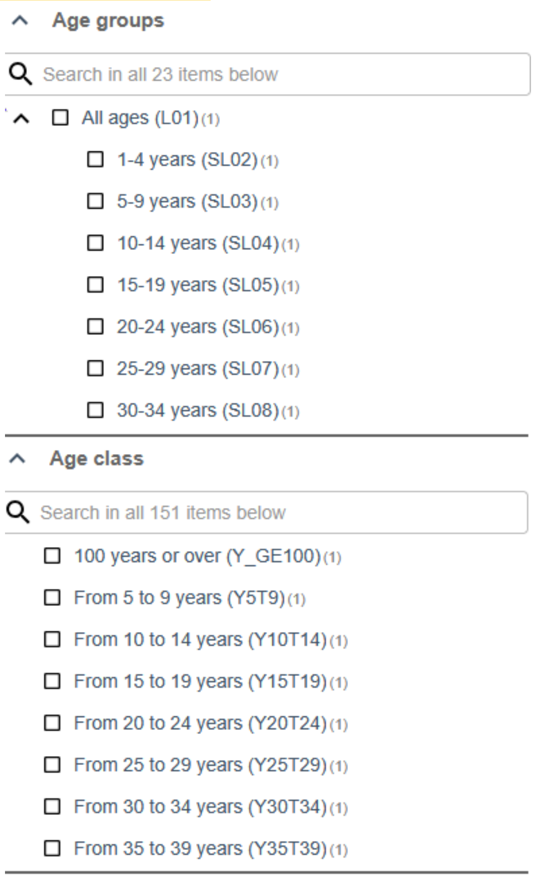
SDMX data modeling

After



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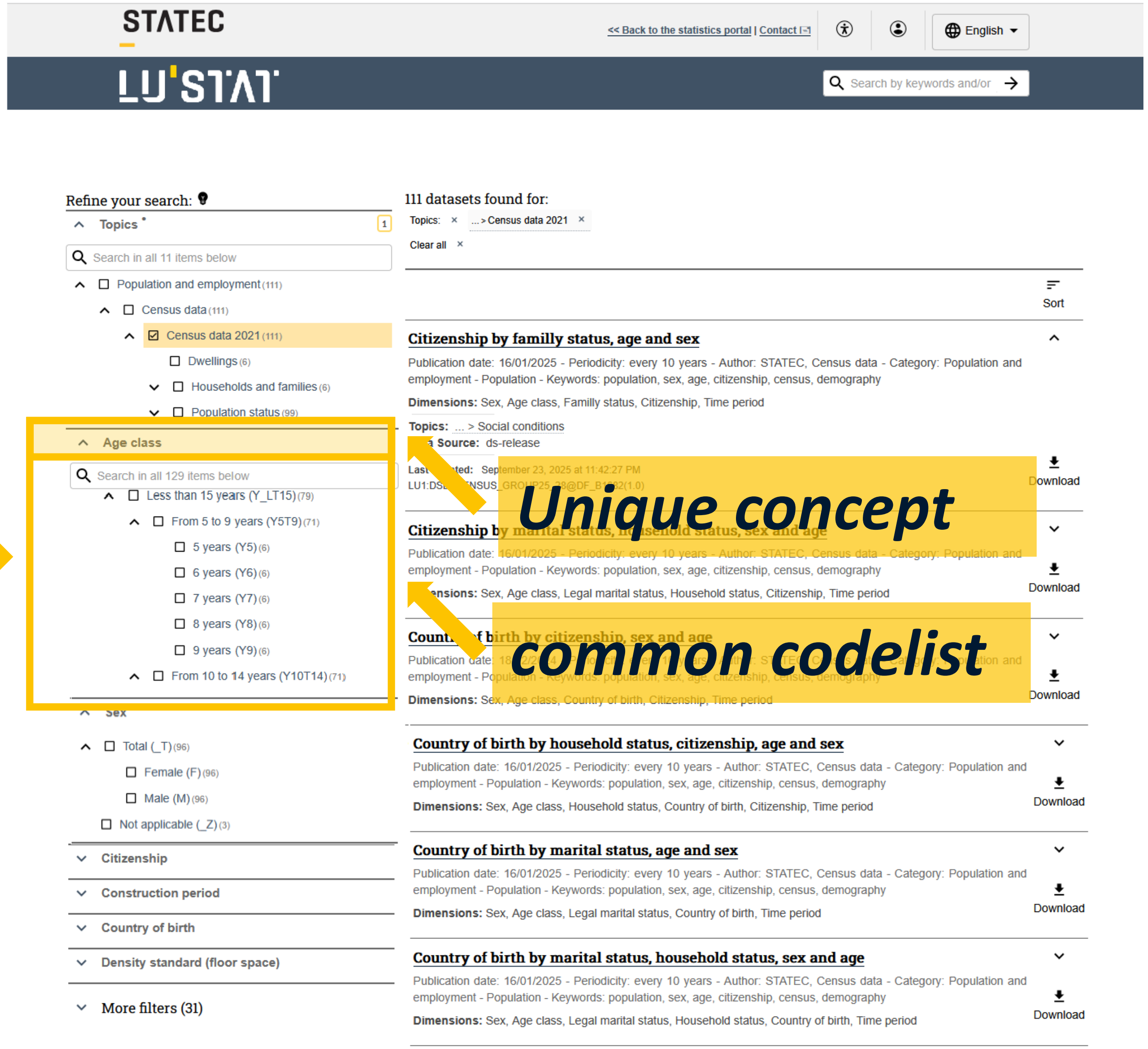

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Refine your search:

Topics 1

Search in all 11 items below

- ☐ Population and employment (111)
  - ☐ Census data (111)
    - ☑ Census data 2021 (111)
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      - ☐ Households and families (6)
      - ☐ Population status (99)

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Citizenship

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Clear all ×

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Topics: … > Social conditions

Source: ds-release

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Count f birth by citizenship, sex and age

Publication date: 18 - Population and employment - Population - Keywords: population, sex, age, citizenship, census, demography

Dimensions: Sex, Age class, Country of birth, Citizenship, Time period

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Country of birth by household status, citizenship, age and sex

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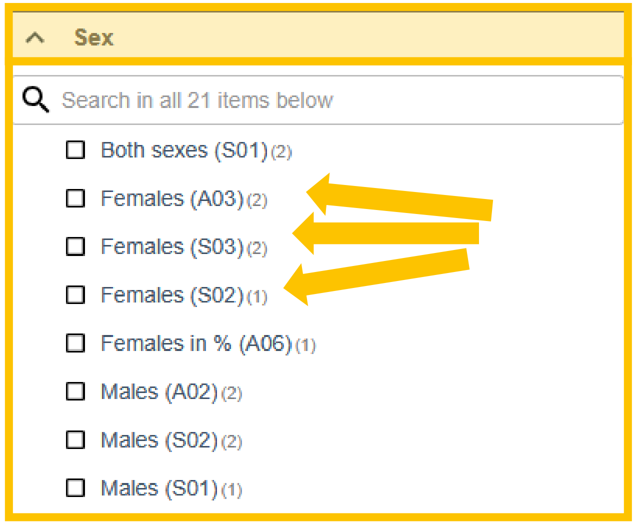
Unique concept

common codelist

SDMX data modeling

Same for SEX

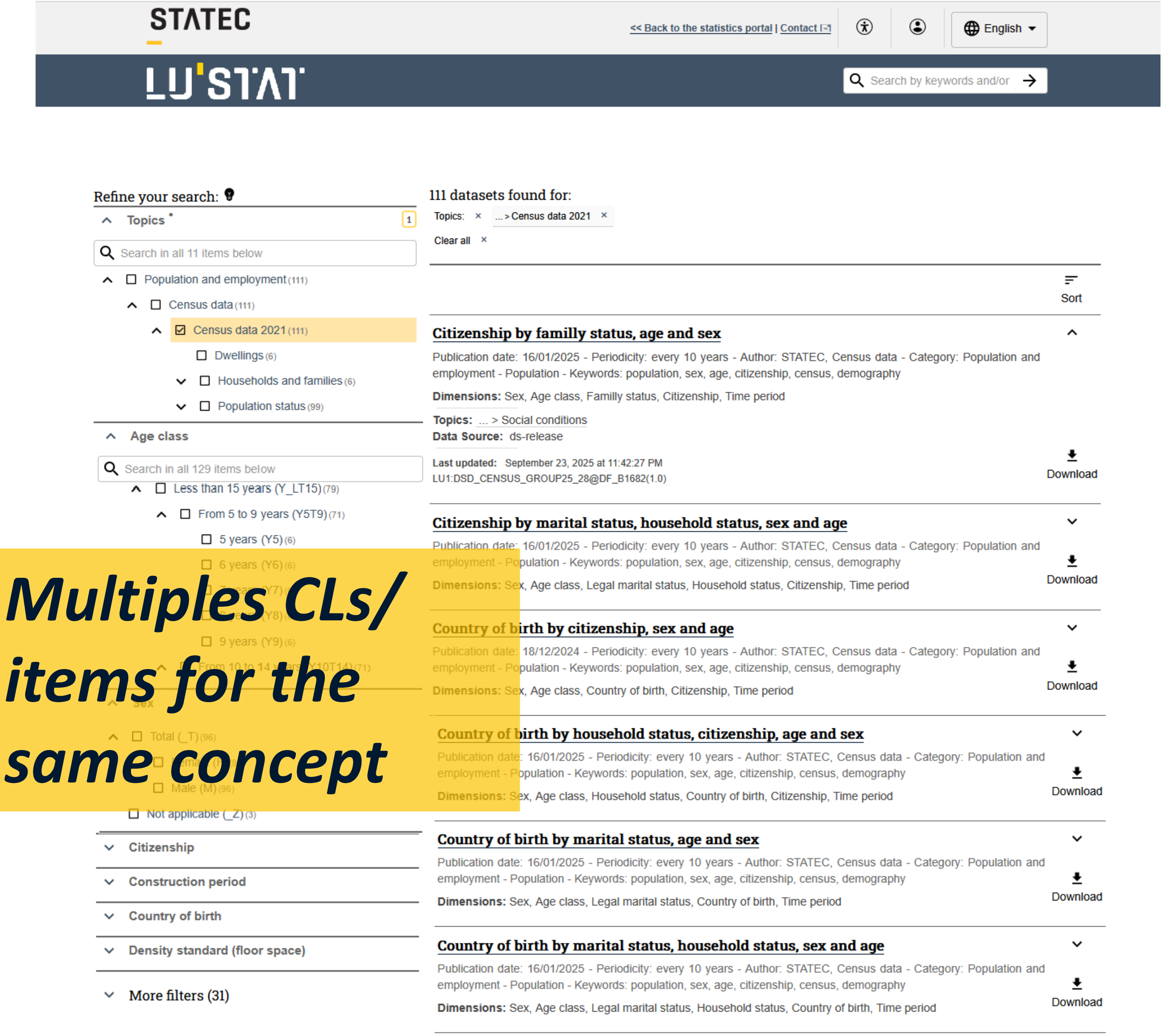
before



Sex

Search in all 21 items below

☐ Both sexes (S01) (2)
☐ Females (A03) (2)
☐ Females (S03) (2)
☐ Females (S02) (1)
☐ Females in % (A06) (1)
☐ Males (A02) (2)
☐ Males (S02) (2)
☐ Males (S01) (1)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Multiples CLs/ items for the same concept

SDMX data modeling

Same for SEX

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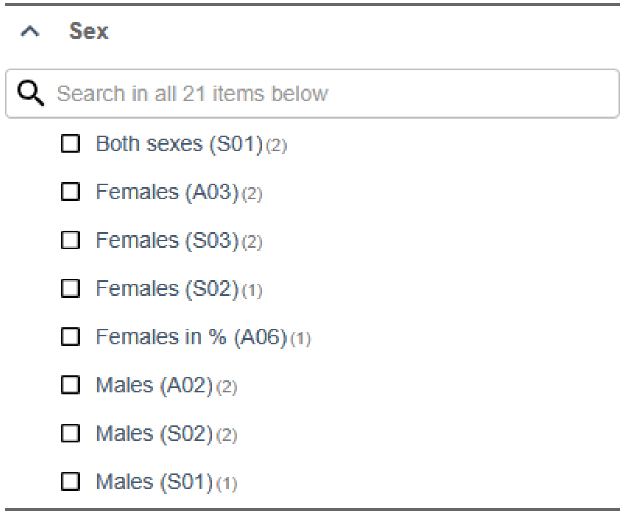

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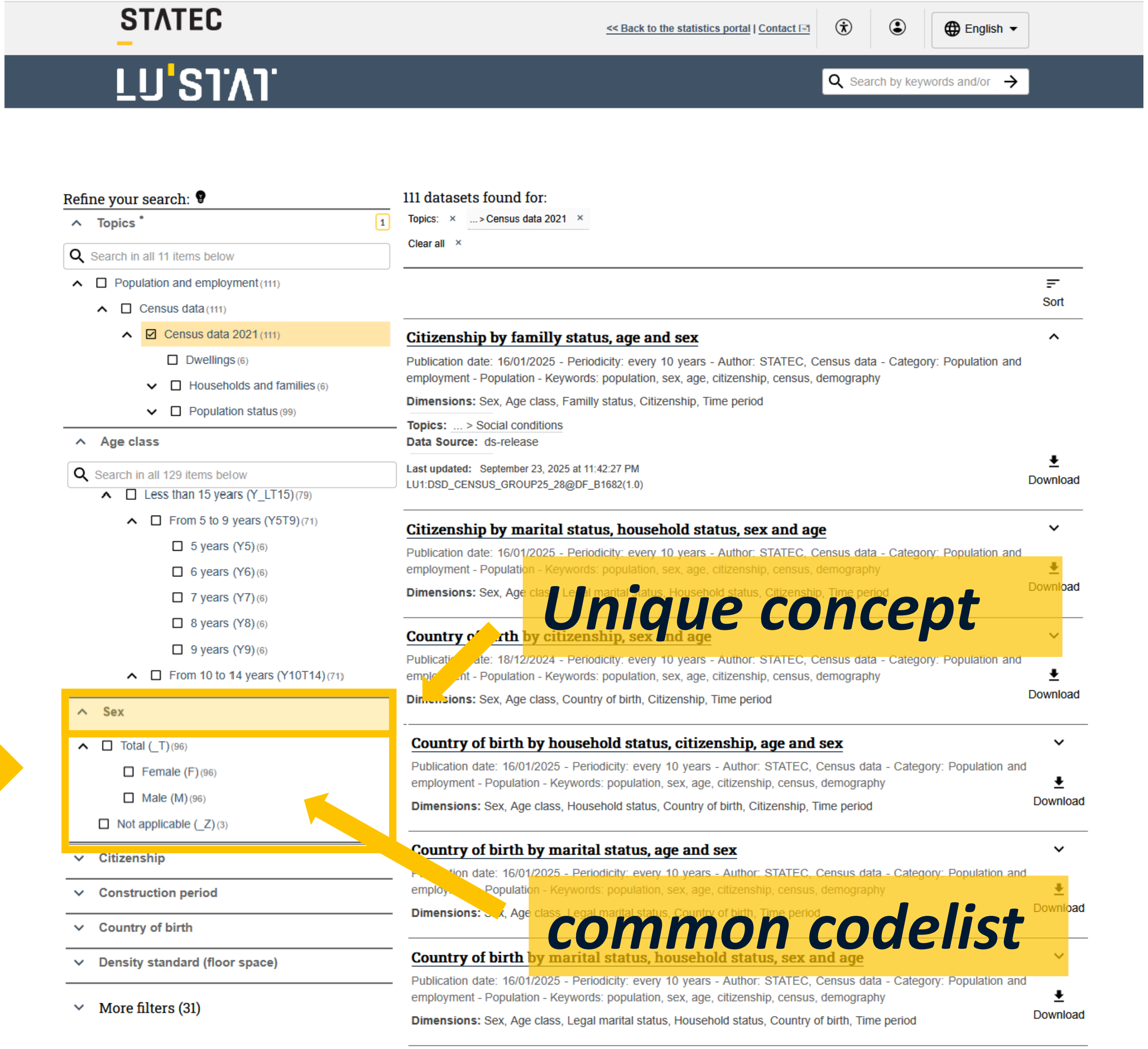
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Country of birth by citizenship, sex and age

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Country of birth by household status, citizenship, age and sex

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Unique concept

common codelist

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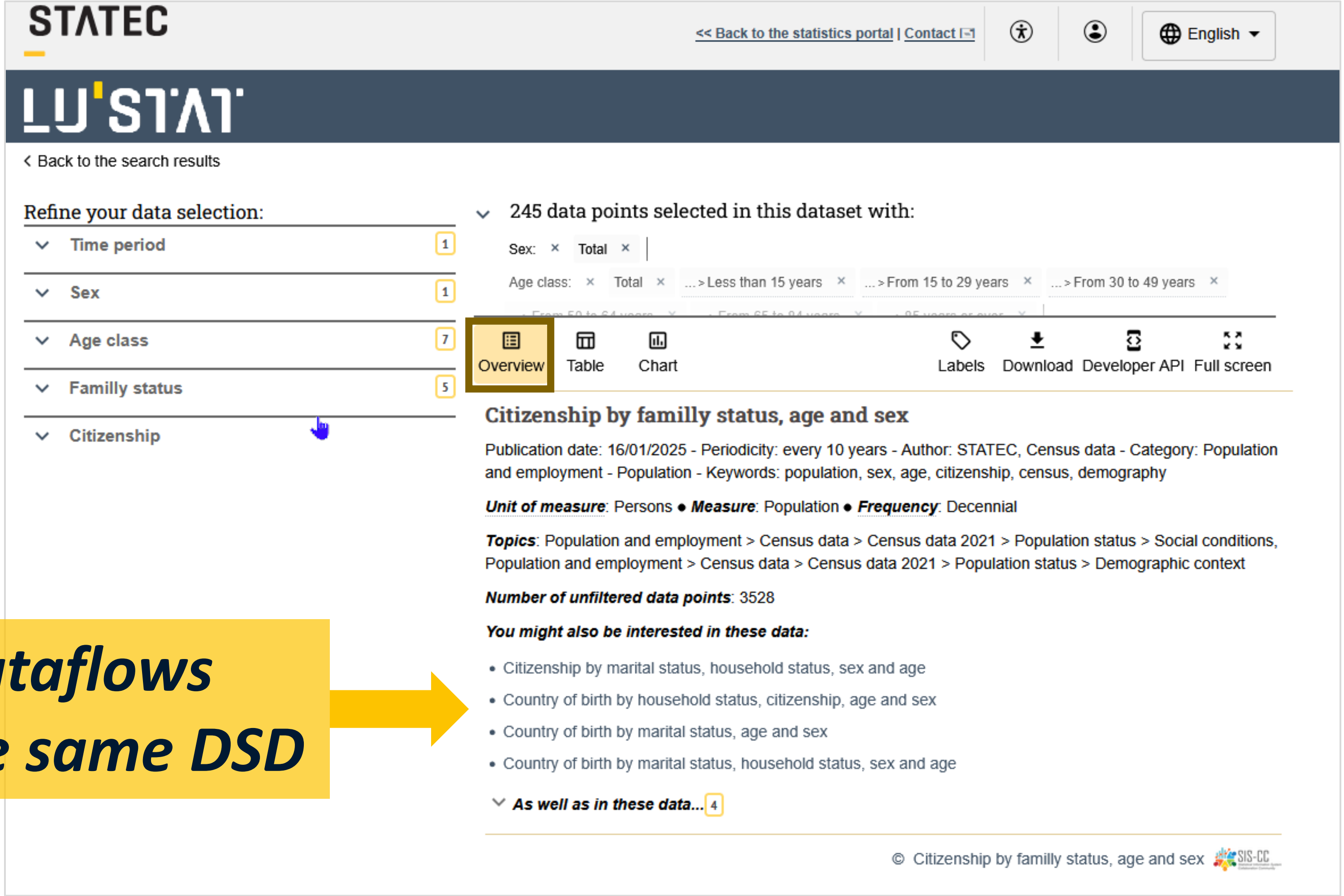

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Refine your data selection:

- Time period 1
- Sex 1
- Age class 7
- Familly status 5
- Citizenship

245 data points selected in this dataset with:

Sex: × Total ×

Age class: × Total × ... > Less than 15 years × ... > From 15 to 29 years × ... > From 30 to 49 years ×

Overview
Table
Chart
Labels
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Developer API
Full screen

Citizenship by familly status, age and sex

Publication date: 16/01/2025 - Periodicity: every 10 years - Author: STATEC, Census data - Category: Population and employment - Population - Keywords: population, sex, age, citizenship, census, demography

Unit of measure: Persons ● ***Measure***: Population ● ***Frequency***: Decennial

Topics: Population and employment > Census data > Census data 2021 > Population status > Social conditions, Population and employment > Census data > Census data 2021 > Population status > Demographic context

Number of unfiltered data points: 3528

You might also be interested in these data:

- Citizenship by marital status, household status, sex and age
- Country of birth by household status, citizenship, age and sex
- Country of birth by marital status, age and sex
- Country of birth by marital status, household status, sex and age

As well as in these data... 4

© Citizenship by familly status, age and sex

List of dataflows using the same DSD

4

Lessons learned and next steps

Lessons learned

- *Lack of experience with modelling*
- *Need for technical assistance and sharing of knowledge*
- *Challenge to manage cross-domain artefacts (Code Lists, concepts)*
- *Need for internal guidelines for designing and maintaining artefacts*
- *Business better understands added value of modelling*
- *Importance of IT / OECD support to solve technical issues*
- *Long-term effort to improve modelling of all data flows*
- *Need to adapt to future developments of the .STAT suite*
- *Centralised vs decentralised organisation of the modelling*

Next steps

- *Finalise current modelling project (around 50% completion rate)*
- *Bring SDMX modelling practices to the other national authorities that disseminate statistical data in our database*
- *Integrate SDMX into STATEC's new data strategy under development*
- *Explore and implement more advanced AI-driven search capabilities based on SDMX*

STATEC

Institut national de la statistique
et des études économiques

Thank you!

Frédéric STIBLING

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