Interoperability Building Blocks:

The Flemish Smart Data Space approach

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OASC Summit

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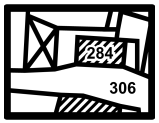
transport infrastructure



Cadaster

Company Registry

Addresses

Council Decisions

Taxes

Demographics

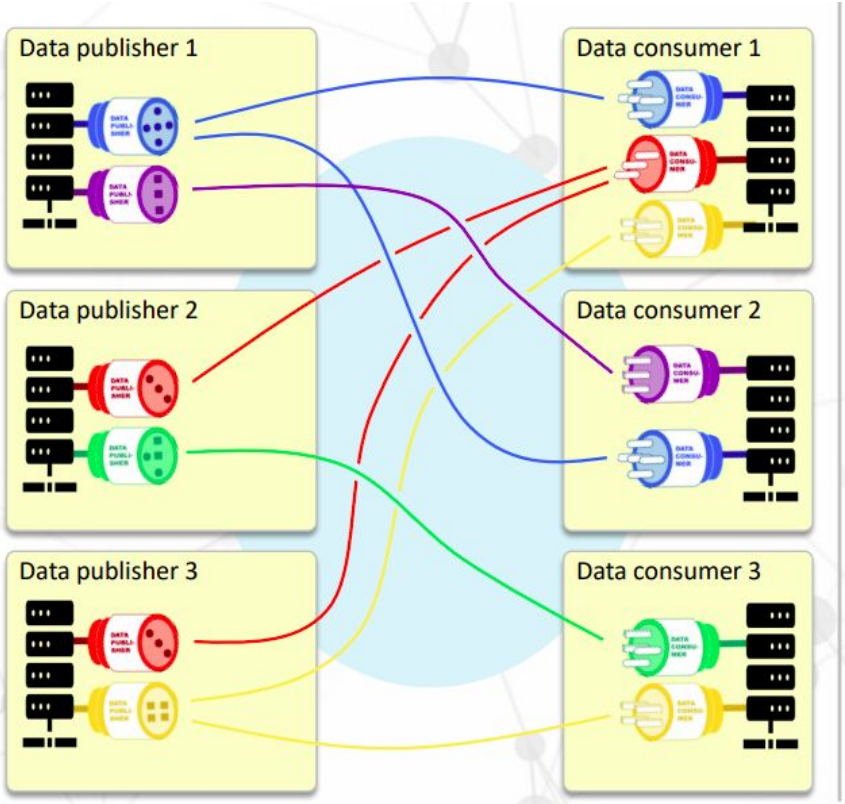
Environment

Health

Public Authorities

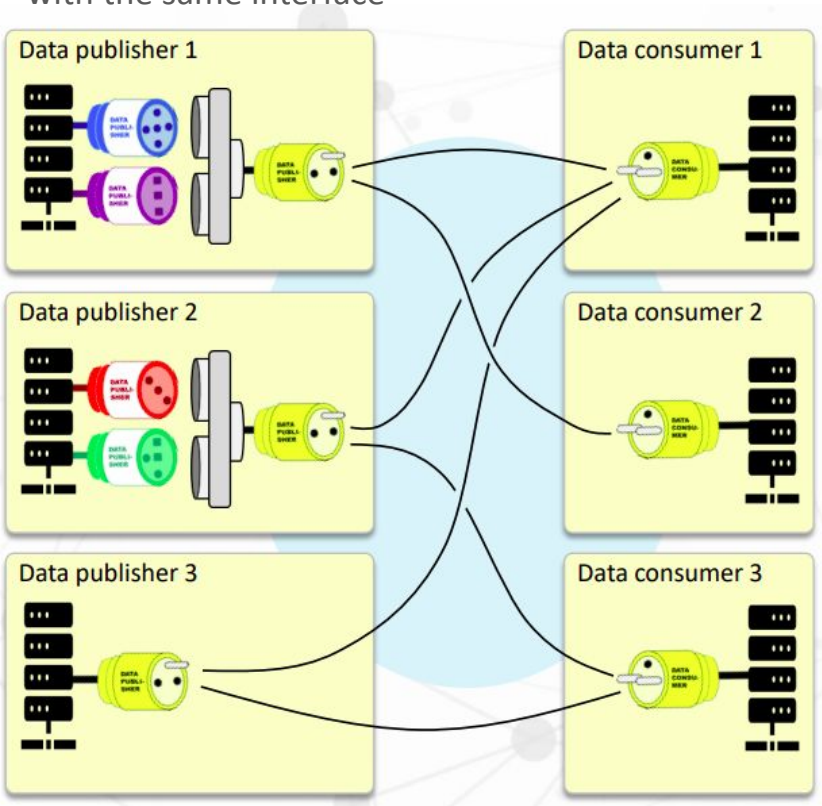
AS-IS

Many different ways (and standards) to exchange data, both on the publisher side and on the consumer side



TO-BE

publishers use the same semantic and technical standards, consumers can retrieve data anywhere with the same interface



FLEMISH SMART DATA SPACE

INTEROPERABLE

The ability of multiple systems to communicate and interact with each other

DECENTRALISED

We facilitate. Accountability remains with data providers and consumers.

NEW BUSINESS MODELS - PUBLIC AND PRIVATE PLAYERS

DATA CONSUMERS

WORKBENCH

Reusable building blocks for publishing and consumption of Linked Data

DATA PROVIDERS

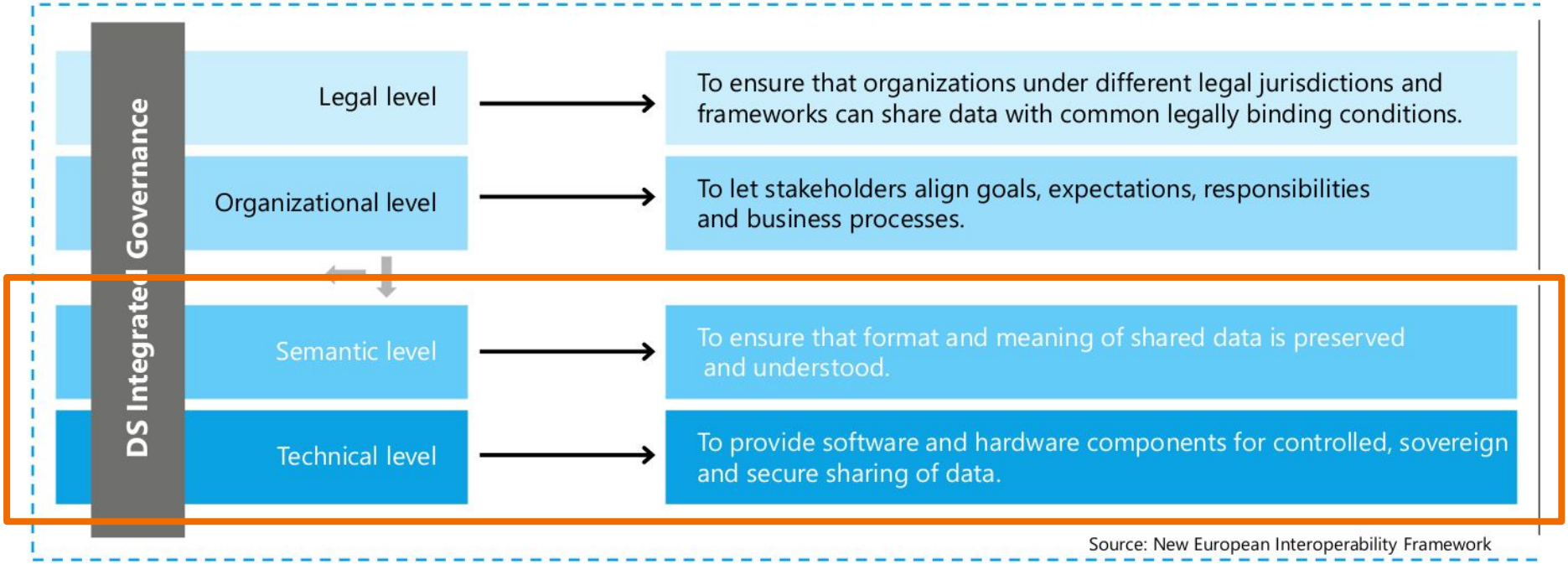
STANDARDS

Semantic (OSLO)
Technical (LDES)

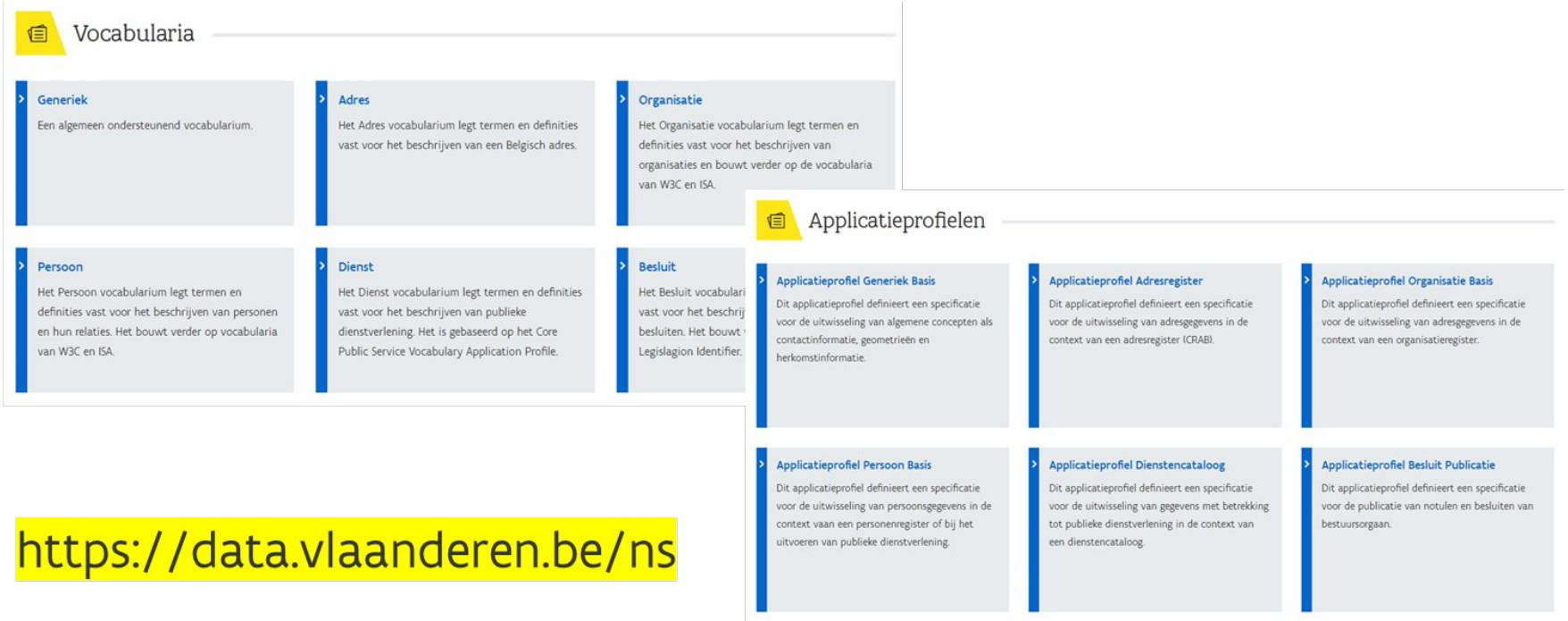
ECOSYSTEMS

GOVERNANCE

The European Interoperability Framework as a starting point



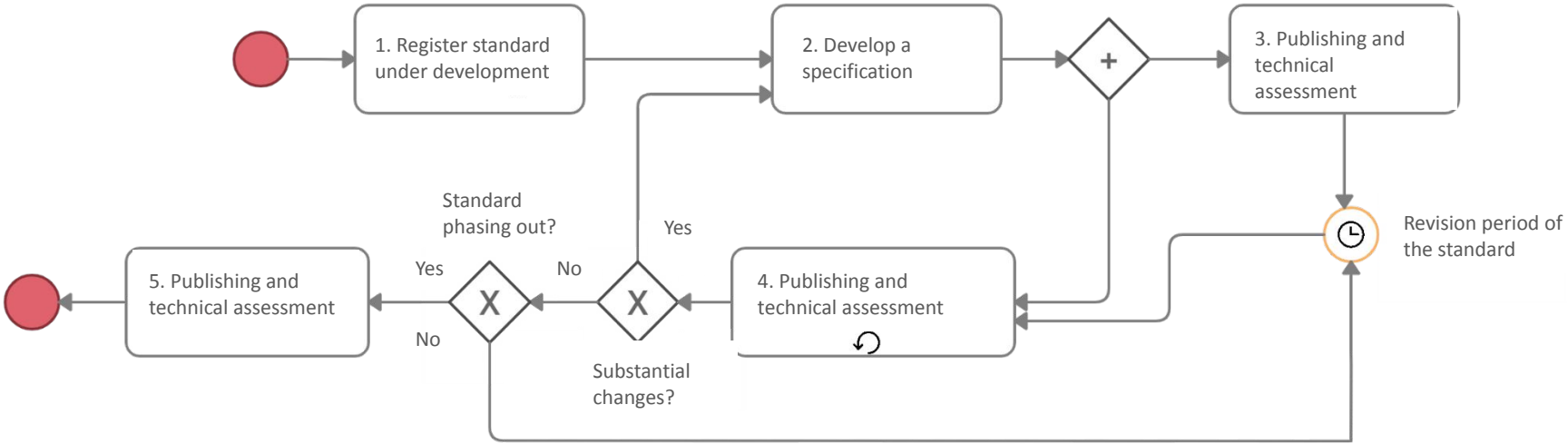
Semantic interoperability:
OSLO (Open Standards for Linked Organisations)



https://data.vlaanderen.be/ns

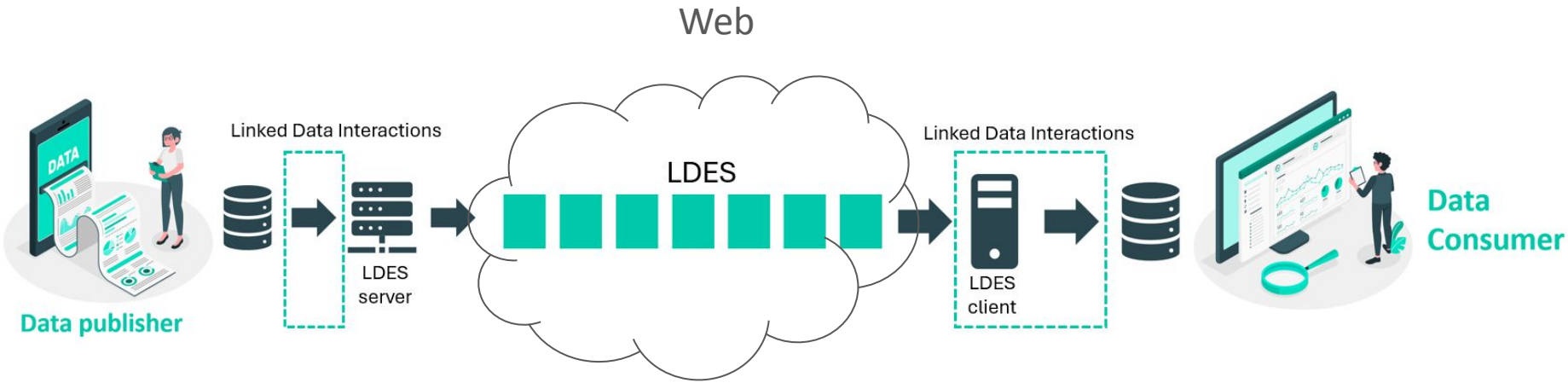
OSLO methodology

- Goal: consensus around data standard supported by various stake
- **OSLO Process and method** for registering, developing, changing, phasing out and changing data standards

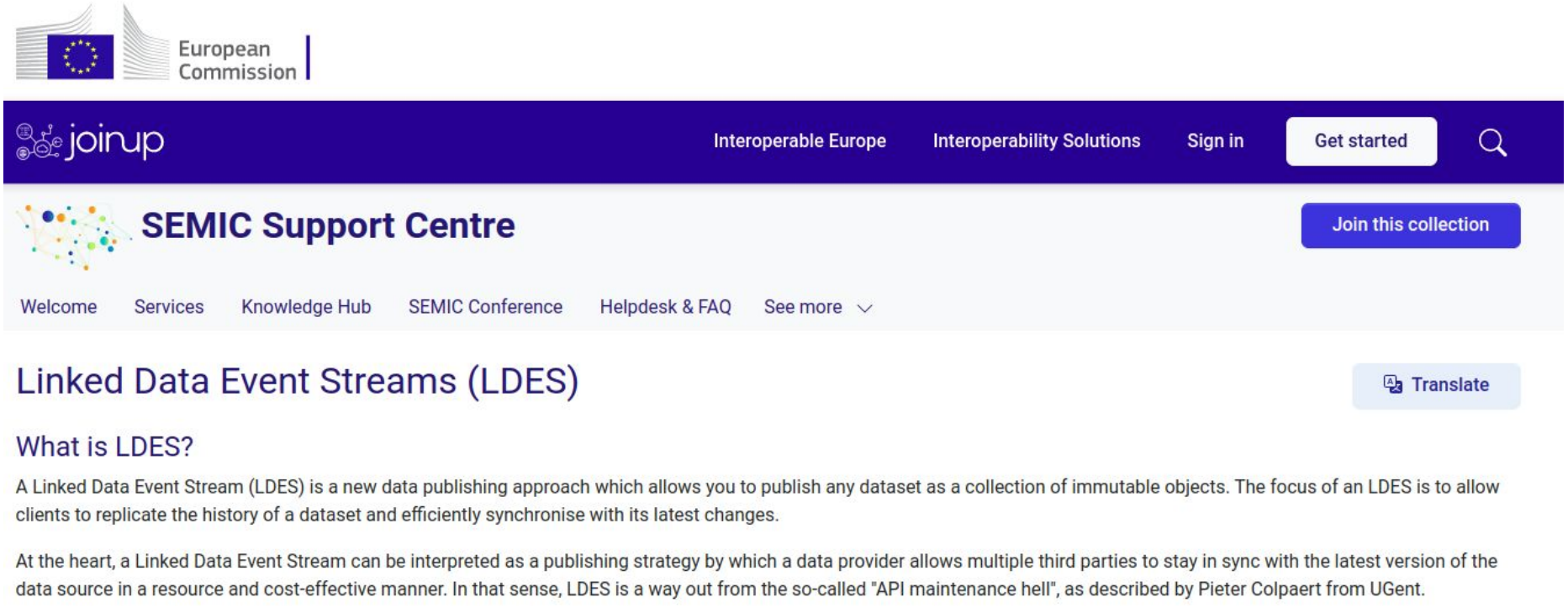


Technical Interoperability:
LDES (Linked Data Event Streams) an API for all APIs

The Flemish Smart Data Space provides technical **building blocks** to create uniform data exchange interfaces based on LDES.

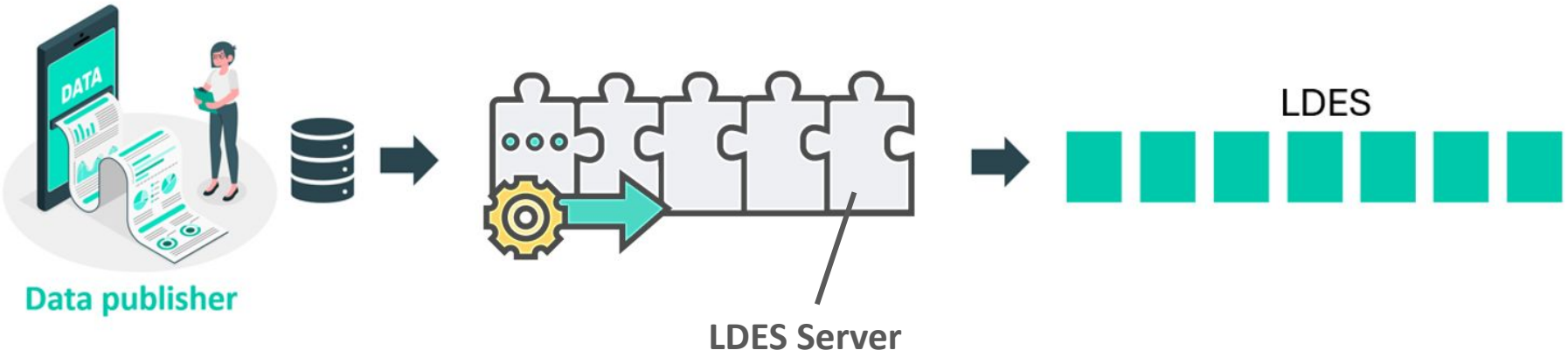


LDES is maintained and developed within the SEMIC initiative



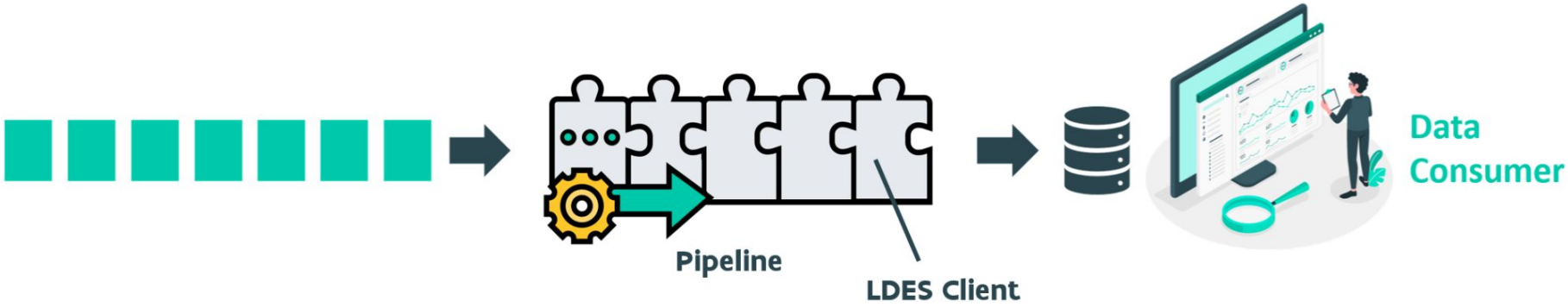
LDES Building blocks: **Publishing**

A data publisher publishes its data in the Flanders Smart Data Space as an LDES via data processing pipelines.



LDES Building blocks: **Consuming**

Data consumers tap into LDES data in the Flemish Smart Data Space and can create consumption pipelines according to their needs.



Use case: traffic measurements data space

Telraam
What : Pedestrians, bikes, cars, bus/freight
How fast: Every hour
Where: 80% Flanders - 20% abroad
Amount: 2.000
Onboarding: end of november

Vlaams Verkeerscentrum
What : Cars, bus/freight
How fast: After completion of interval
Where: Whole Flanders
Amount: 2.500
Onboarding: 2024

AWV – Agentschap Wegen & Verkeer
What : Bikes
How fast: Every 24 hours
Where: Whole Flanders
Amount: 100
Onboarding: december

Stad Genk:
100 smart cameras

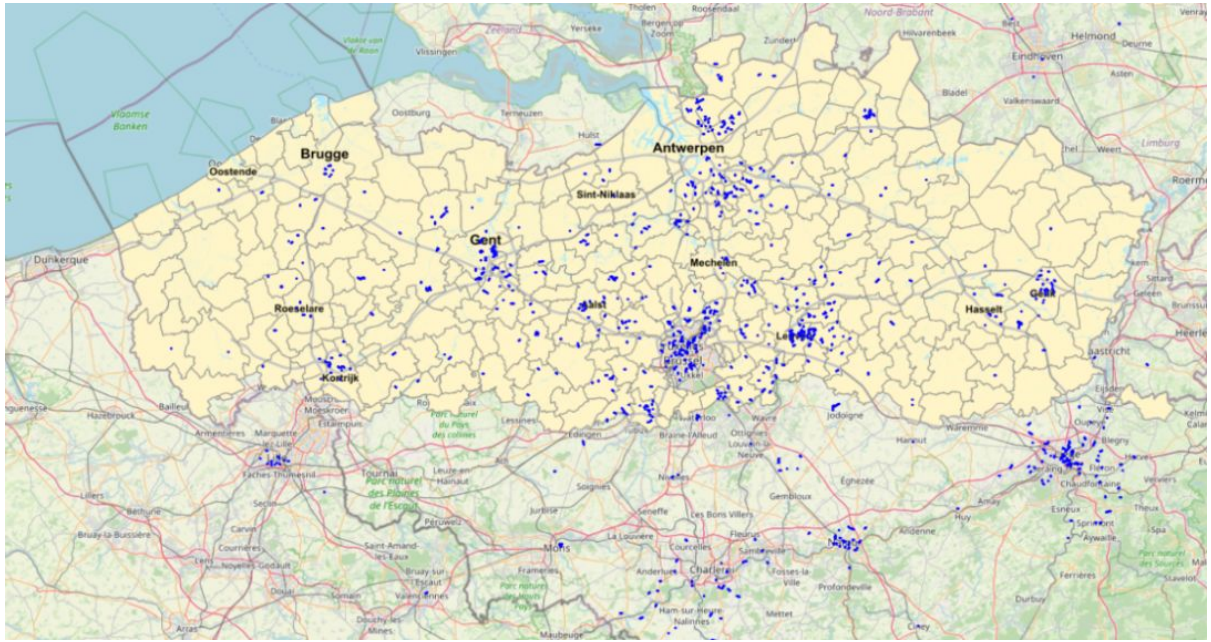
Krycer
What : Cars, bus/freight (smiley signs: speed)
How fast: Realtime data
Where: data owner municipality of Ternat
Amount: 5 to 10
Onboarding: 2024

Geomobility
What: Bikes, cars, bus/freight
How fast: Telecampigns historic data
Where: data owner Brugge
Amount: 48
Onboarding: november

Signco
What: Bikes, Cars, bus/freight
How fast: Telecampigns historic data
Where: data owner Antwerp
Amount: 100
Onboarding: 2024

Geosparc
Leuven traffic measurements

Use case: traffic measurements data space



AI-based user application, answering to the question:

"*Show me all measurements for cars between 15h and 16h for which the count is higher than 70*"

Use case: water data space

Setup Water Data Space

Identification of stakeholders and use cases (e.g., CIW)

IoW – Sensors for water quality

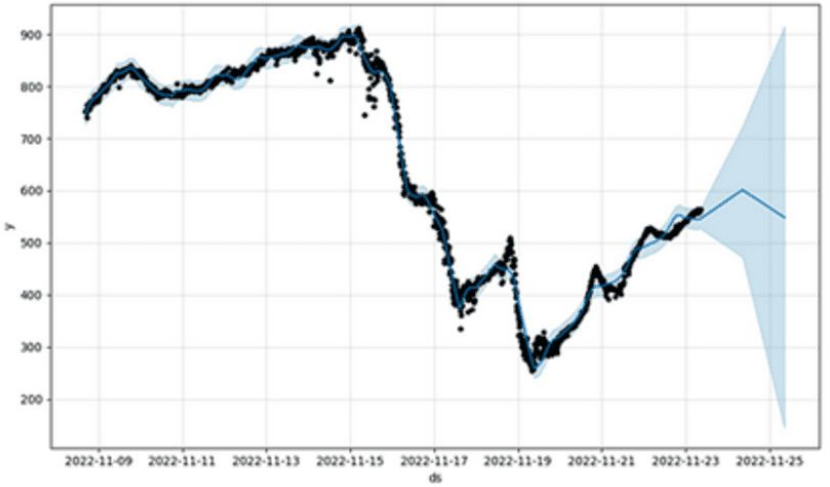
"Virtual" aggregation of the water sensor network

Smarter water metering

Efficient publishing and consumption of water sensor data in the VSDS

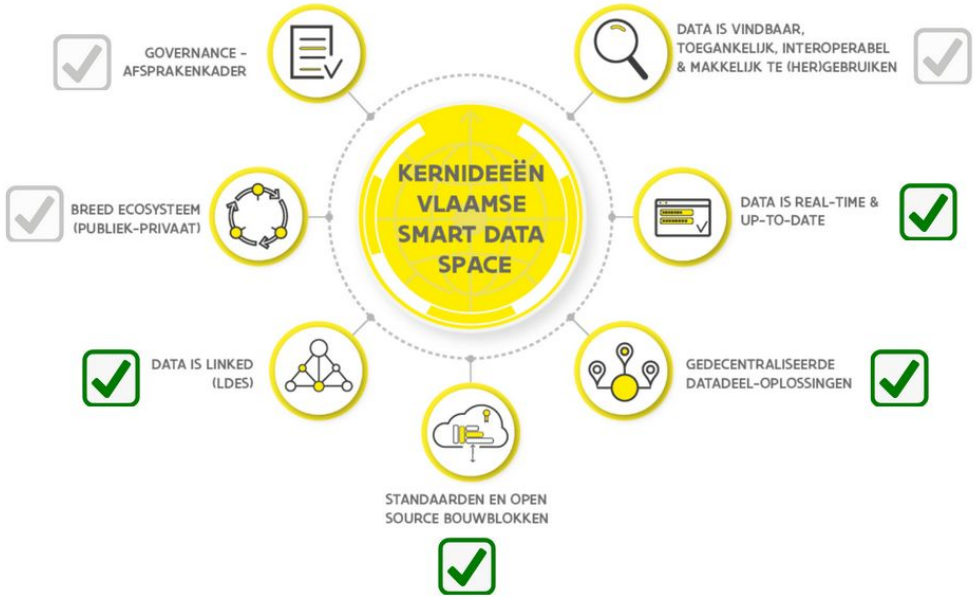
Use case: water data space

Preliminary work using the VSDS building blocks. By using LDES, water quality can be analyzed and aggregated in real-time. This allows emerging trends, deviations from the norm and even alarming situations to be detected



Next steps

Further align with the international initiatives for Data Spaces



Takeaways

- Semantic and technical **interoperability is possible** in collaborative and standard-based ecosystems.

- The value of interoperability becomes tangible in terms of **productivity** and operational costs reductions.

- Legacy **organisational mindsets** remains to be the biggest obstacle for achieving data interoperability.

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