AI-Powered Semantic Hub for Data Spaces

Dawex proposal

BDVA & SEMIC Workshop
"**LLMs to support Semantic Interoperability**"

April 10, 2025

Dawex at a glance: a European scale-up recognized worldwide for its expertise and achievements in data space technologies

Company profile

Founded in 2015

Offices: Paris, Lyon, Montreal, Tokyo

Global reach

- France & Europe
- Japan (2nd largest market)
- North America
- Middle East

Recognized as a pioneer and innovator

11 awards & recognitions
US, EU, ME

Tech Pioneer at the World Economic Forum

Speaker in **Davos**

Speaker at **G7 Summit** and other global events

Data Expert Group member at the **UN**

Leads Gaia-X Data Exchange Working Group

Customer references

AIRBUS · Schneider Electric · Valeo

BOUYGUES · TF1 LE GROUPE · Mobivia

LA POSTE · COLAS WE OPEN THE WAY · cea

GROUPE ADP · AFP · cnes

Auchan · KG KANEMATS
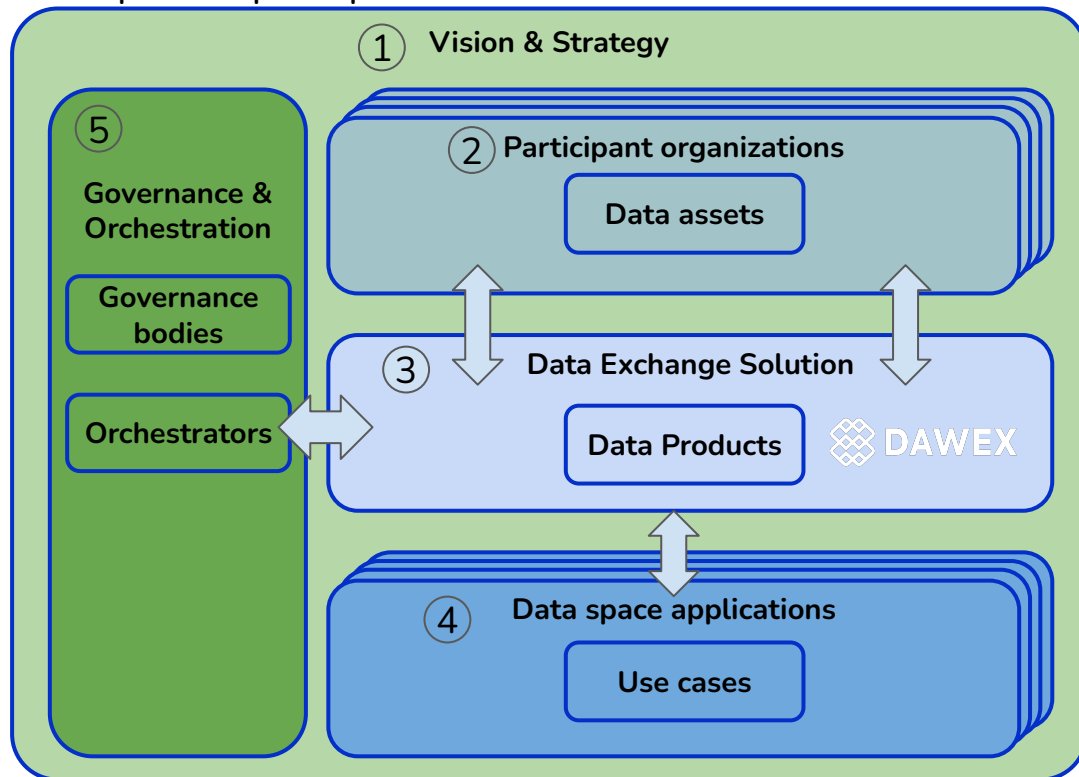
SB Energy

Data spaces are the data infrastructures of the data economy, set to reach €995 billion and 6.5% of EU27 GDP by 2030*

Data space conceptual representation

- **450+ data spaces** expected to be operational in Europe by 2028, and China aiming to launch 100 trusted data spaces by 2028**
- **Data space scope** spans from vision & strategy, to governance, ecosystem, technology and applications
- **Dawex provides orchestrators with the underlying technology** to operate data spaces
- **Target market for Dawex:**
  - **Corporate Data Hubs:** all major global corporations with revenue over 3 or 4 billion euros concerned
  - **Industry Data Spaces:** every leader in its industry sector
  - **Data Marketplaces:** companies of all types, especially those in sectors with typically small margins, such as retail.

AI: a powerful path to semantic interoperability enabling the re-use of data in European Data Spaces

Legal Interoperability ✅
Done in EU: DGA (2023), DA (2025)

- Ensures that organizations operating in different legal frameworks can work together
- Aligns legislation, policies to facilitate cross-border and cross-sector collaboration

Organizational Interoperability ✅
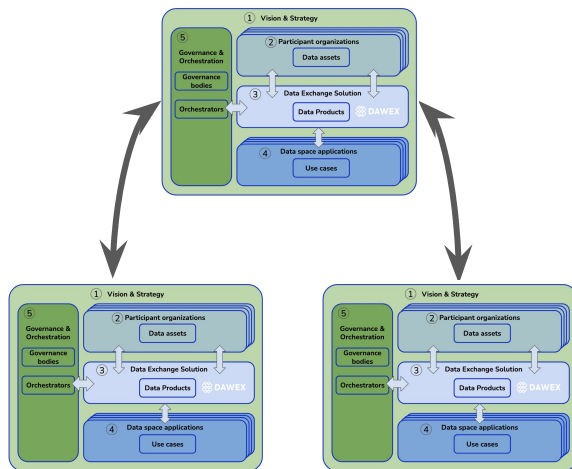Done: Thanks to DSGA and DSSC

- Ensure identities and claims are verified between organizations
- Establishes clear agreements, responsibilities, and coordination mechanisms

Semantic Interoperability to solve ⏳

- **Ensures that exchanged data retains its meaning** across different systems and organizations.
- Uses standardized **vocabularies**, **metadata**, and **ontologies** to achieve a common understanding
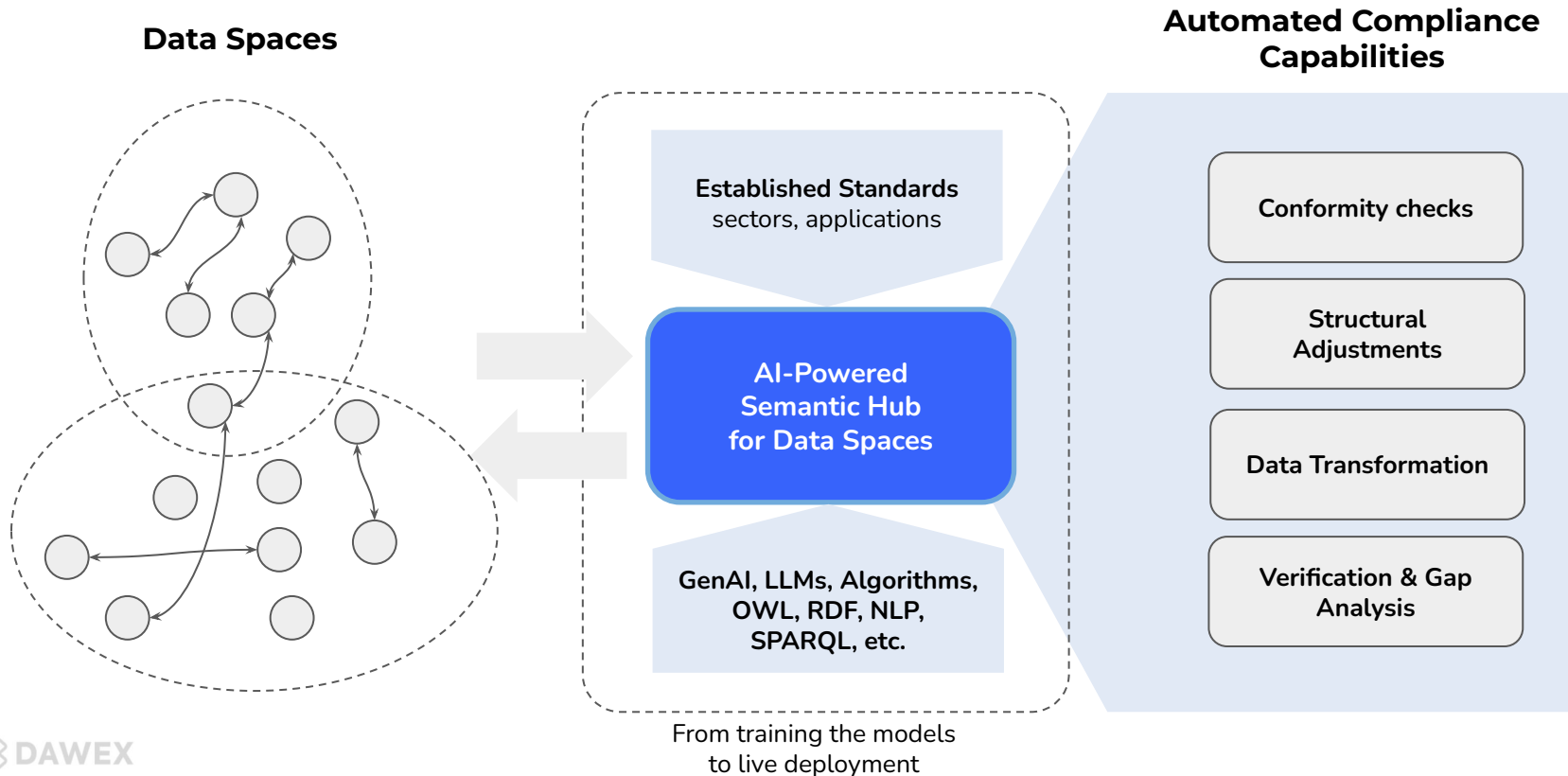
Technical Interoperability ✅
Done : Gaia-X, Trusted Data Transaction, Dataspace Protocol, Eclipse Dataspace WG

- Technical aspects of systems, incl. protocols, APIs, data formats, and security measures
- Ensures IT systems and applications can communicate effectively through agreed-upon standards

Interoperable data spaces

DGA; EU Data Governance Act ; DA: EU Data Act ; DSGA: Data Space Governance Authority ; DSSC: EU Data Spaces Support Centre

Automating the assessment and compliance of data conformity with standards, using AI models and automated control mechanisms

Data Spaces

Automated Compliance Capabilities

Established Standards
sectors, applications

AI-Powered Semantic Hub for Data Spaces

GenAI, LLMs, Algorithms, OWL, RDF, NLP, SPARQL, etc.

From training the models to live deployment

Conformity checks

Structural Adjustments

Data Transformation

Verification & Gap Analysis

DAWEX

5

Benefits: Serving European Commission's high level goals while providing many concrete benefits to Data Spaces orchestrators

01 **Create a common language** within your data space

02 **Remove frictions** for seamless data exchange

03 **Facilitate interoperability** with other data ecosystems

All-in-one AI-powered solution

Eliminates costly manual efforts in aligning data formats, vocabularies, and ontologies

Automates data compliance verification to regulation, lowers the risk of non-compliance penalties

Differentiates data space orchestrators by offering plug-and-play semantic compliance as a service.

AI-Powered Semantic Hub for Data Spaces

Open to working on it?

[Contact Us](#)

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