

Inspirational speeches and keynotes

How Data intermediaries build trust, ensure compliance and orchestrate data ecosystems through open principles and standards

Frédéric BELLAICHE, PhD • VP Technology & Research • Dawex
October 26, 2023 - 09:00 - 10:15

ORGANISED BY



IN COLLABORATION WITH



INCLIVA | VLC
Biomedical Research Institute



UNDER THE AUSPICES OF



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

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



9 awards
US, EU, ME



Tech Pioneer at the World Economic Forum

Speaker in **Davos**



Speaker at G7 Summit and other global events



Leads Gaia-X Data Exchange Working Group

Customer references

in more than
15 strategic sectors



Retail



Airports



Infrastructure



Geospatial



Automotive



Mobility



Real Estate



Trading



Culture



Energy



Agriculture



Food



Tourism



Manufacturing

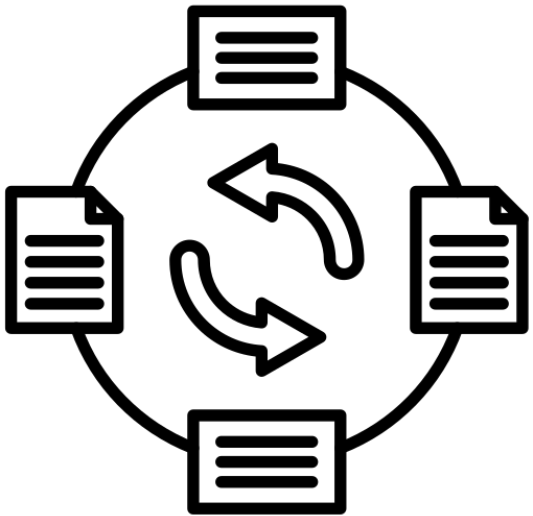


Smart cities



Banking

Data Exchange is a process following precise rules and is materialized by a Trusted Data Transaction

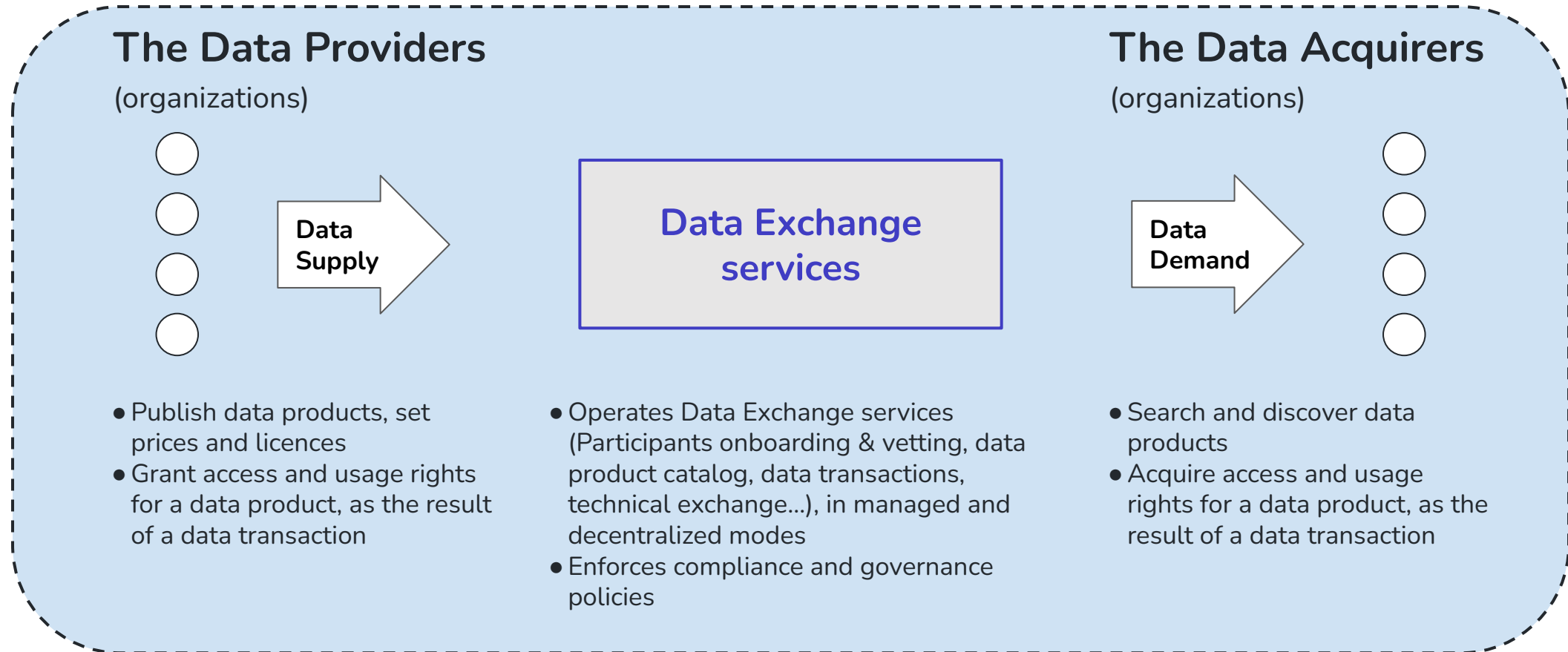


The process by which an organization / department / team, i.e. **the data provider***, grants another organization / department / team, ie. **the data acquirer***, access to a **data product***.

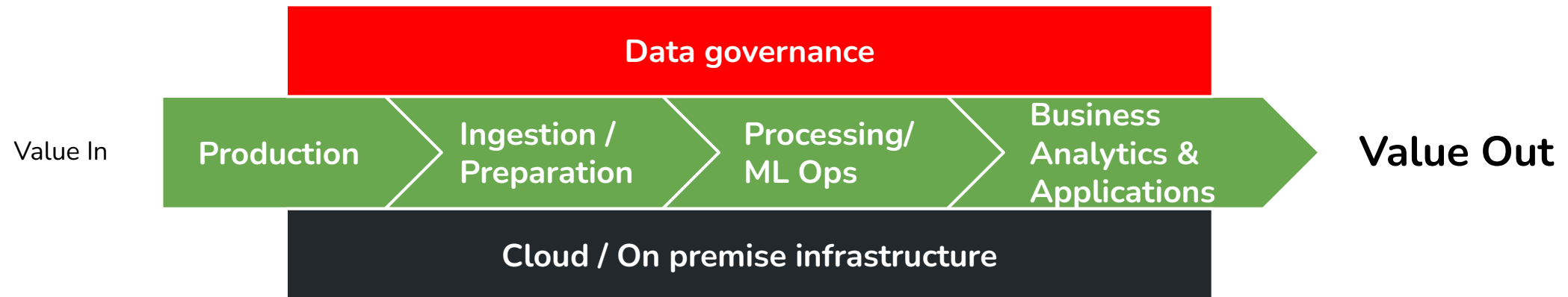
The data exchange is performed according to precise **governance rules**, under **technical, contractual and business terms** proposed by the data provider, agreed by the data acquirer, materialized by a **traceable data transaction***.

There are 3 fundamental roles in modern data exchange: Data Provider Data Acquirer and Data Ecosystem Orchestrator

The Data Ecosystem Orchestrator



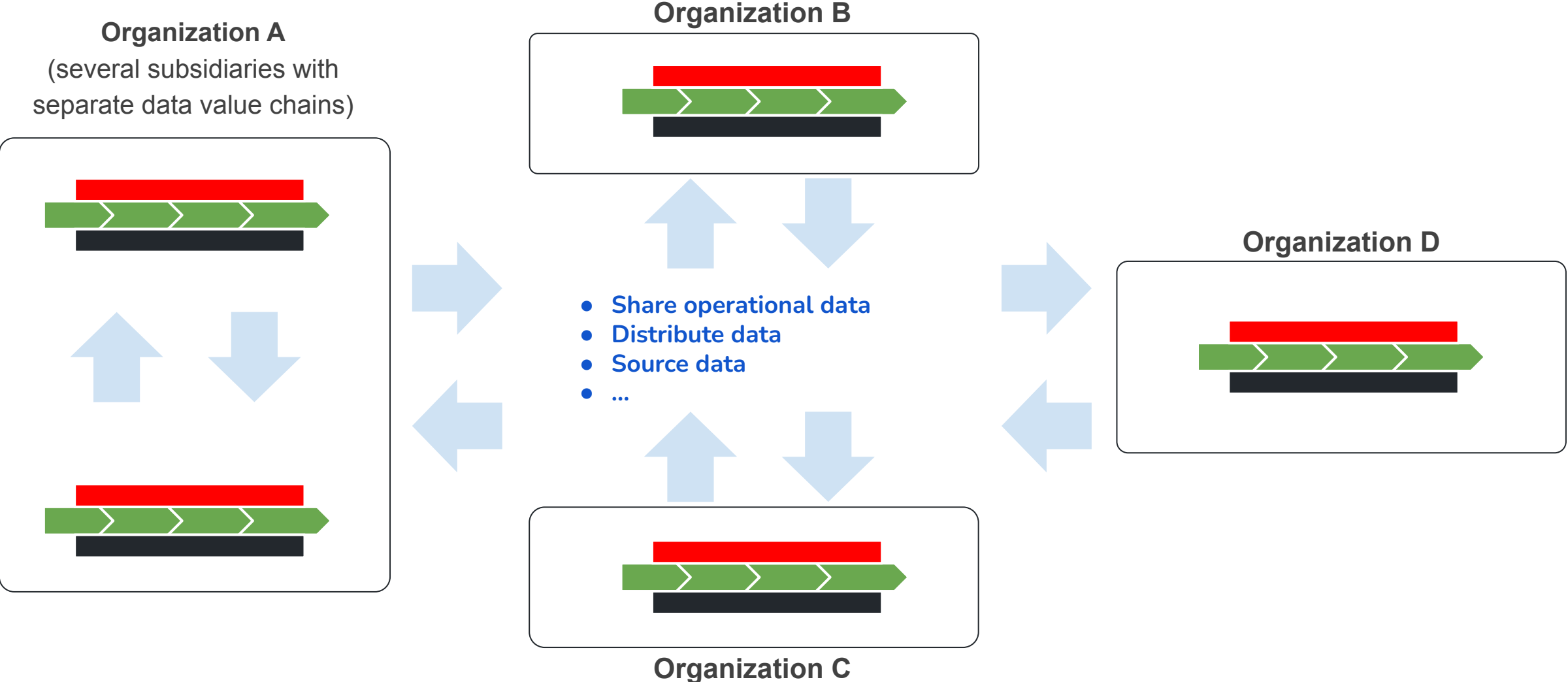
Historically, the data value chain description mainly focuses on internal transformation of datasets...



This classical model encounter limitations, as it overlooks data exchanges between value steps

- The value chain steps are described in a “closed” environment, inside an organization
- Data exchanges are limited to sharing datasets between users of the same platform / environment

... but the multiplication of data exchanges between separate data value chains calls for interoperable, specialized data exchange technologies...

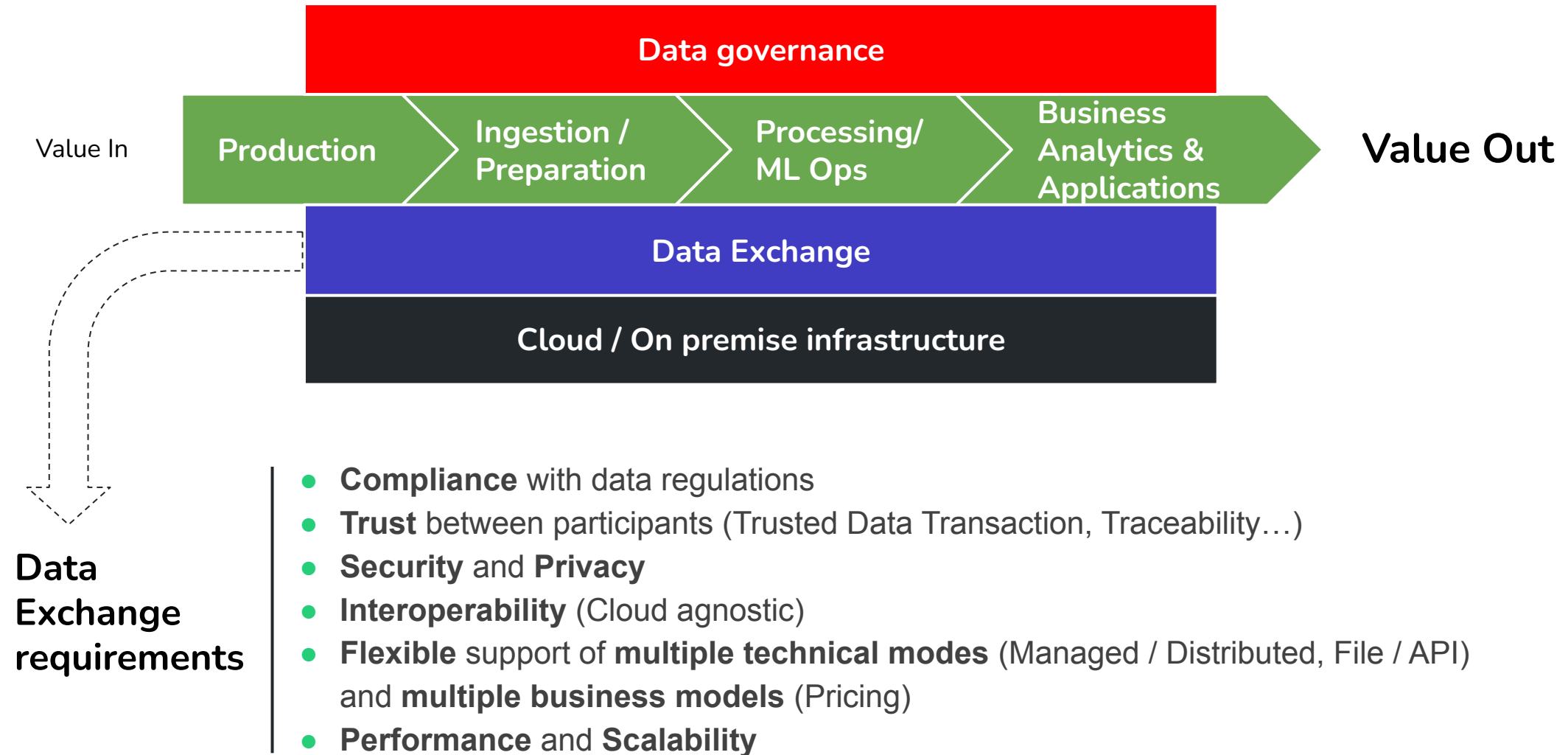


... while traditional data exchanges technologies face industrialization, scalability, security and regulatory challenges...

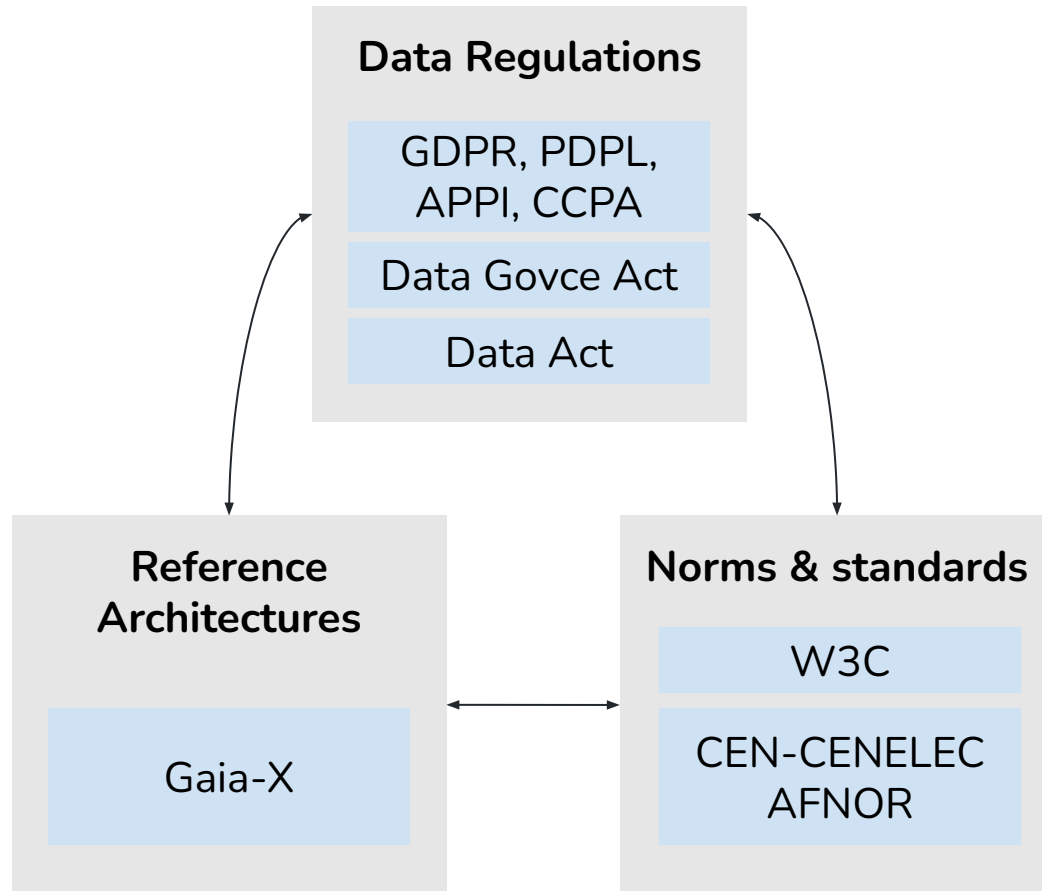


- ! Complex and error prone
- ! Costly
- ! Not scalable
- ! Security, trust and confidentiality issues
- ! Lack of data transaction governance and traceability
- ! Poor business modeling or pricing
- ! Not ready for new data regulations

... leading to the creation of a new specialized function in the data value chain to support internal and external data exchanges



Regulations, reference architectures and standards have emerged quickly in the 2020's, paving the way for generalized data exchanges

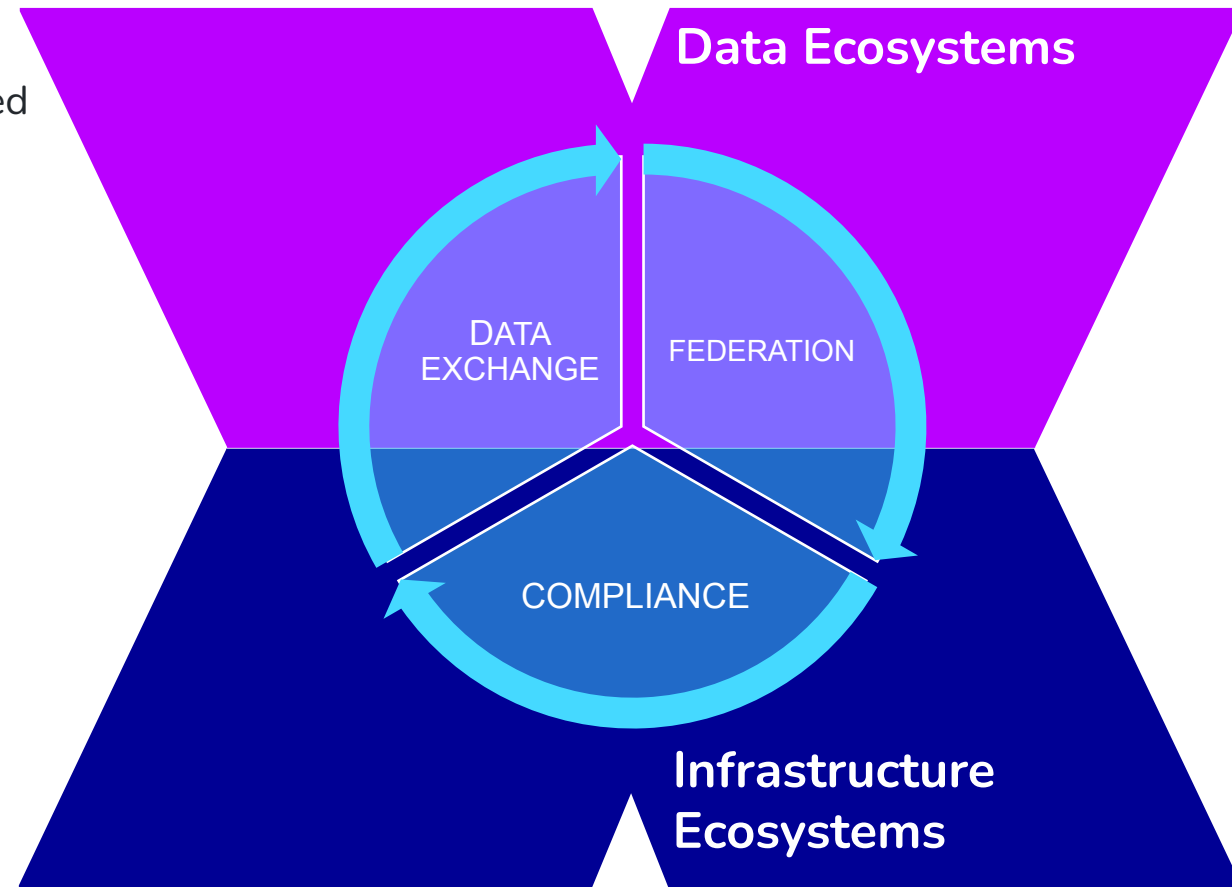


Three powerful levers to:

- Create **trust** in data exchanges
- Facilitate **interoperability**
- Ensure the highest level of **security** and **privacy** as well as **sovereignty** to all stakeholders

The Gaia-X initiative frames the future trustworthy Data Exchange

- Gaia-X is a **European initiative** committed to design of federated **data and infrastructure ecosystems**, with stated aims of being **efficient, competitive, secure and trustworthy**.
- Gaia-X is collective work, based on **open principles** and **open standards** (W3C)
- The initiative publishes technical specifications to allow constructions of European Data Spaces
 - Gaia-X **Architecture Document**
 - Gaia-X **Trust Framework**
 - Gaia-X **Data Exchange Services**
 - Gaia-X **Policy Rules and Compliance**



1800+
Contributors

350+
Members

Data Products and Data Transactions are the core elements of Data Exchange

- A **Data Product** is a collection of data under various formats, that is packaged by the data provider with the associated description metadata, licenses, terms of use and offering, and made ready for data exchange
- **Data Transaction** refers to a unique immutable - i.e. unmodifiable - unit of data access or exchange, logged, treated in a coherent and reliable way independent of other data transactions.
- **Data Intermediation Services Provider** is the organization, as defined by the European Data Governance Act, that provides services which aim to establish commercial relationships for the purposes of data sharing or data exchange between an undetermined number of data providers on the one hand and data acquirers on the other, through technical, legal or other means.
- **A Data Transaction** requires trust between participants and regulatory compliance, contractualization, licensing, technical exchange management and traceability.

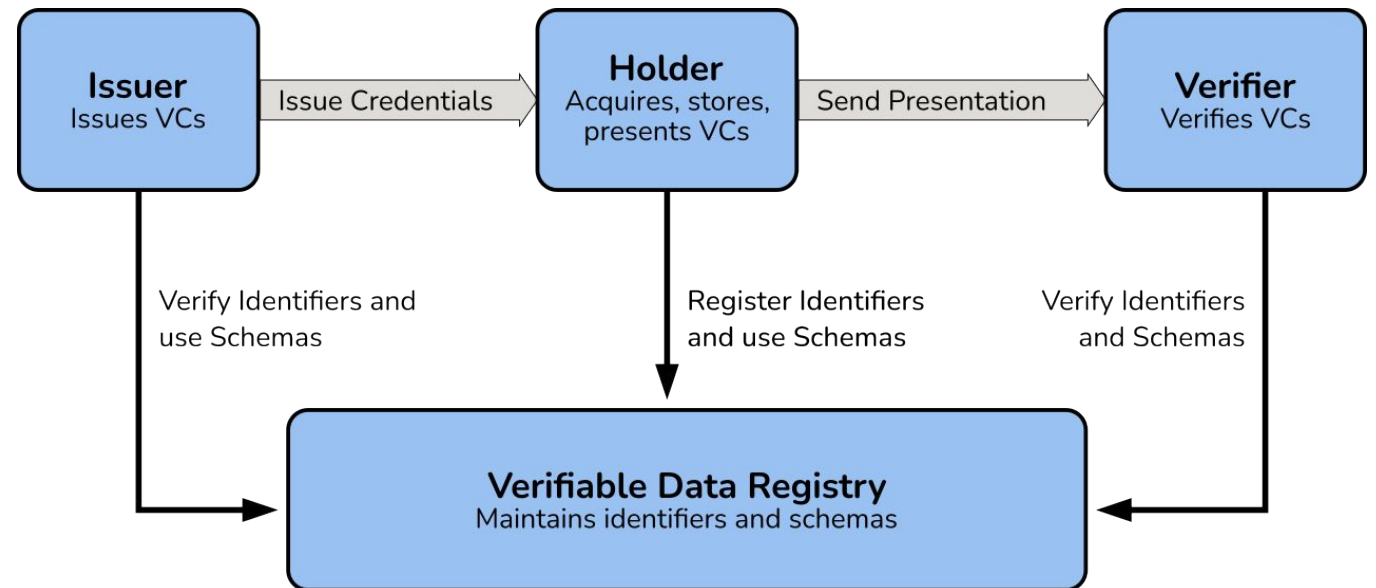
Credentials are essential to build trust and are verifiable through a W3C standard

Credentials are used to build trust and allow accountability

- **Participants** in data ecosystem talk to each other in the language of **Credentials**.
- **Participants** use **Credentials** to describe **themselves**, **service offerings**, **data products** as well as the **resources** that their service offerings are composed of.

W3C Verifiable Credentials

- **Claims**: unverified statements about an entity without any guarantee of truth
- **Verifiable Credentials**: claims whose correctness has been checked and signed by a third party.
- **Verifiable Presentations**: a subset of the Verifiable Credentials selected for sharing with another entity for a certain purpose.



Compliance As Code

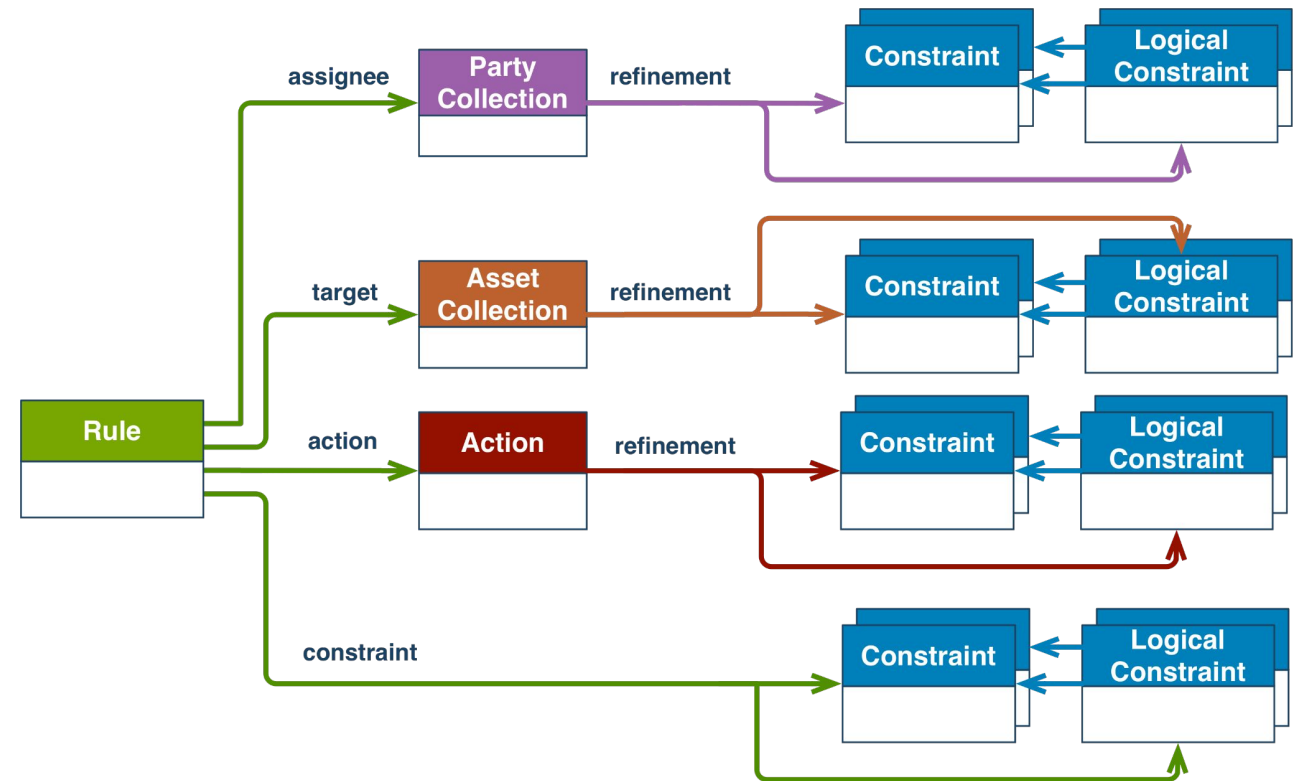
Compliance as code refers to the practice of using software **code to automate compliance processes** and ensure that data exchange meet **relevant policies**.

It involves writing **code that specifies the requirements** for compliance and then **executing** that code to validate compliance automatically.

- Started in January 2000 with **Lawrence Lessig** “Code Is Law” article: **code acts as the law** since it dictates what the users can do or not
- From “**Code is Law**” to “**Law is Code**”: regulations define the set of actions of what can / must be done in the digital space
- In the context of **Data Exchange**, compliance as code can be used to **ensure** that data is exchanged securely and in accordance with **regulations** and **usage policies**.

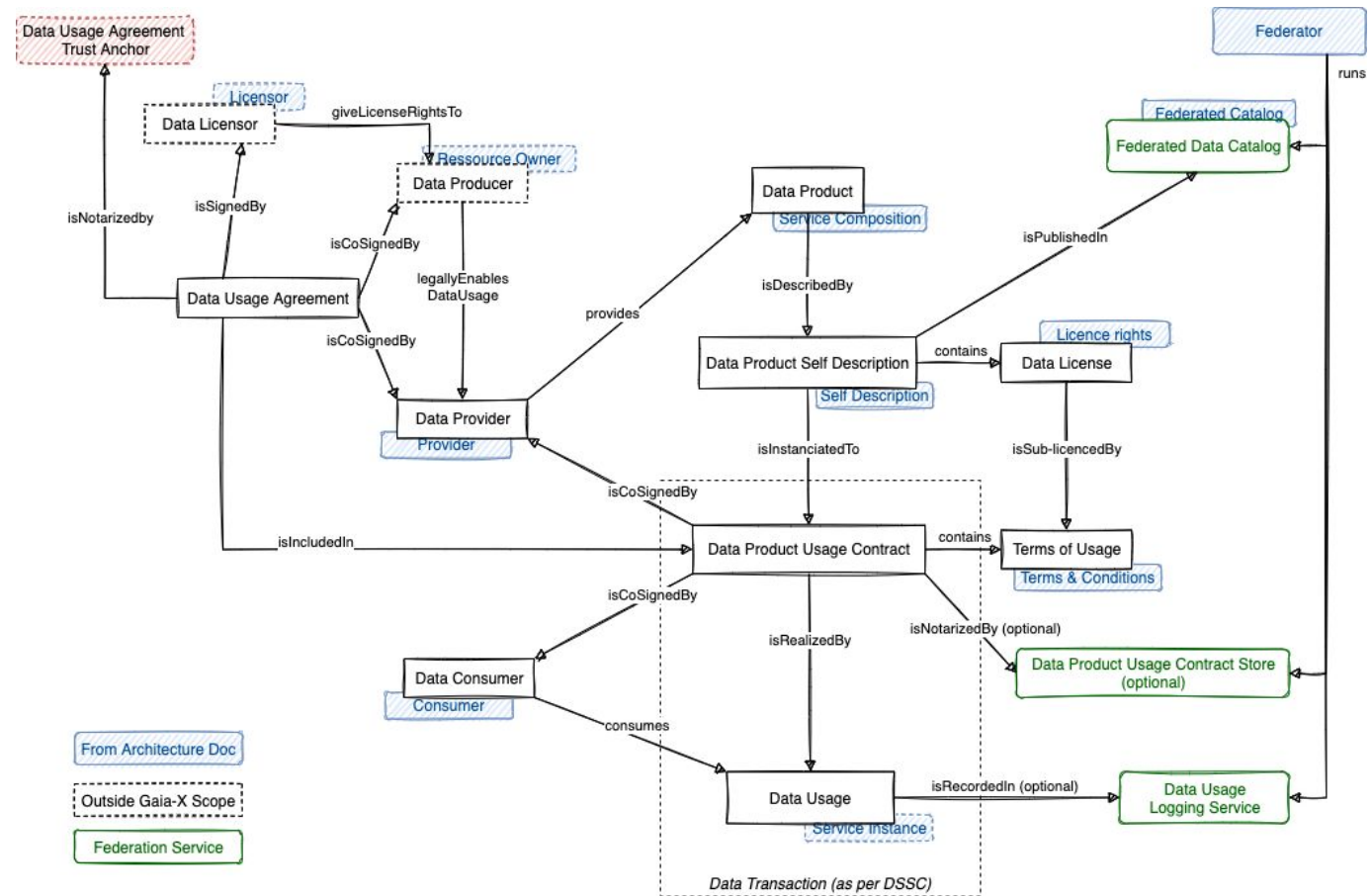
Open Digital Rights Language standardizes policy modeling

- Compliance as code involves using a **language** to express **policy modeling** for compliance checking.
- The **Open Digital Rights Language (ODRL)** is a **W3C standard** providing a flexible and extensible language for describing the rights and permissions associated with data product (who can access it, under what conditions, and for what purposes), including regulatory requirements and business policies.
- It allows the implementation of **usage control features** that complement the access controls usually in place. These usage controls come from licenses



Data Exchange is at the heart of Gaia-X 2023 specifications

- **Architecture Document:** Data Exchange and Data Transactions at the heart of the Gaia-X model.
- **Trust Framework:** Verifiable Credentials and Gaia-X Digital Clearing Houses for Trust and conformity
- **Data Exchange Services:**
 - Data Products, Data Sets and Data Distributions conforming to DCATv3 standard
 - Verifiable Credentials for Data Product Usage Contracts, Data Usage
 - Use of ORDL for control and usage vocabulary
- **Policy Rules Document:**
 - Criteria to define Gaia-X conformity for Data Exchange



Thank you!

Frédéric Bellaïche
PhD and Vice President Technology & Research



ORGANISED BY



IN COLLABORATION WITH



INCLIVA | VLC
Biomedical Research Institute



UNDER THE AUSPICES OF

