

A REAL MOMENTUM PROPELLING DATA EXCHANGE

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Abstract:

Gaia-X published three essential documents that marked a significant breakthrough for data exchange. The Trust Framework, Reference Architecture, and Data Exchange Services Specification documents result from an extensive collaborative work and thorough continuous process with one objective in mind: Develop secure, trustworthy data ecosystems that promote a sovereign data economy. The Architecture Document is the centerpiece of Gaia-X as it describes the Gaia-X top-level Architecture mode, as well as the fundamental concepts and terms of the Gaia-X Architecture, including Data Exchange. The Trust Framework is essential as it defines the technical means to describe in a standardized manner participants and services, bringing transparency, control, and creating trust in a data ecosystem. The Data Exchange Services Specification specifies the vocabulary for data exchange and sets the definition of data exchange services, policies, and ontologies for data exchange. These documents illustrate the exceptional technical maturity of data exchange technology, and will provide guiding principles for organizations looking to create data ecosystems.

Keywords:

Data Exchange, Trust Framework, Reference Architecture, Data Exchange Services Specification, Trust, Data Ecosystems, Data Transaction, Compliance.

Main text:

Gaia-X relies on three major pillars which have been defined in essential publications: the Trust Framework, the Reference Architecture and the Data Exchange Services Specification. With these publications, data exchange is propelled to new heights.

Resulting from a highly collaborative and open work, these publications are a huge milestone for data exchange as they support the development of secure, trustworthy data ecosystems to foster a sovereign data economy. These comprehensive texts also demonstrate the maturity of the data exchange technology by structuring and defining what data exchange should be, and confirm the major opportunities generated through the creation of data ecosystems.

The Architecture Document is the centerpiece of Gaia-X as it describes the Gaia-X top-level Architecture model, the aim and means of

the association along with the fundamental concepts and terms of the Gaia-X Architecture, including the ones of data exchange.

The Trust Framework is of utmost importance as it presents the baseline in order to be part of the Gaia-X ecosystem. It defines the technical means to describe in a consistent way the participants and services, to bring transparency, control and create trust among the participants in a data ecosystem in order to give proof of who they are, what they do and how they do it.

The Data Exchange Services Specification

defines the vocabulary for data exchange, sets the definition of data exchange services as well as conceptual & operational models, data exchange policies and ontologies for data exchange to deliver trust, interoperability, discoverability and traceability to the data economy. The document delivers essential definitions such as what is a data product, how to put data products on a market, how to manage consent, or how to ensure traceability of the exchanges. Dawex has been invited by Gaia-X to lead the Data Exchange Services Specification Working Group, with IDSA as co-lead.

Each milestone produced by Gaia-X on the Reference Architecture, the Trust Framework, and the Data Exchange Services Specification demonstrate the strong technical maturity achieved to deliver secure, scalable and traceable data exchanges. This momentum marks a significant breakthrough for data exchange and for all organizations looking at implementing data exchange platforms or relying on either a data marketplace or a data hub. Public and private organizations engaging in building data ecosystems can now rely on guiding principles that will ensure they keep control over who accesses their data, for what purpose, and under which terms, all essential to building trust and retaining data sovereignty.

These significant steps forward for data exchange set guiding principles to what data exchange should be; create a common understanding and vocabulary around data exchange;



define the prerequisites for data spaces and data infrastructures; bring trust, data protection, transparency, security, portability and scalability; align data spaces towards a recognized trust framework; demonstrate the importance of creating data ecosystems; accelerate innovation through data circulation; and foster a strong and resilient data economy.

Dawex, a recognized expert in Data Exchange, actively contributes to the collaborative works of Gaia-X to structure and define the principles around data exchanges. Creating ecosystems around data exchange platforms that meet regulatory requirements and address traceability and security challenges have become a fundamental component of business competitiveness and economic sovereignty. The works conducted by the Gaia-X Association and its Members, representing more than 350+ organizations, demonstrate how open work and collaboration can create an impact and serve as a source of inspiration for those worldwide looking for a trustworthy data economy.

Conclusion

The publication of the Gaia-X Trust Framework, Reference Architecture, and Data Exchange Services Specification is a major breakthrough for data exchange. The high level of technical expertise displayed in this collective effort is evidence of the remarkable progress made in establishing secure, trustworthy, and traceable data exchanges. By creating a shared understanding and common terminology on data exchange, as well as defining the prerequisites for data ecosystems and infrastructures, this initiative will promote the growth of a sovereign data economy. The efforts undertaken by the Gaia-X Association

and its members underscore the value of open collaboration in fostering change and inspiring those around the globe seeking a trustworthy data economy.

Bibliography

Selection of Dawex publications and contributions

- [Exchanging data or not exchanging data - It is a survival issue](#) - July 2022 - MIT CDOIQ
- [Designing Data Spaces, The Ecosystem to Competitive Advantage](#) - Mars 2022 - Editors : Boris Otto, Michael ten Hompel and Stefan Wrobel.
- [Harnessing the power of agriculture data](#) - Mars 2022
- [Deep Dive in Data Exchange](#) - Mars 2022 - Eckerson Research
- [Transformation Map - Data Policy](#) - Septembre 2021 - World Economic Forum
- [Towards a Data Economy: An Enabling Framework](#) - August 2021 - World Economic Forum

Author biography:

Frédéric Bellaïche is a PhD and Vice President of Technology and Research at Dawex. He is responsible for the strategic development and integration of most advanced technologies within the Dawex organization and product architecture. Prior to joining Dawex, Frédéric served for 14 years as Technical Expert for a leading digital services company where he led innovation in the areas of Data Science, Artificial Intelligence, Edge Computing, Blockchain, Security and Quantum Computing. Prior to that, Frédéric also served as CTO and co-founder of a start-up specialized in securing financial flows for 7 years. During his career, Frédéric has conducted research at Brookhaven National Laboratory in the field of high energy physics, at CERN and at the Université Claude Bernard. Holding a PhD. in particle physics and a DEA in nuclear and particle physics, Frédéric is a member of the Blockchain working group at Numeum and contributes to the OWASP project.

