gaia-x

Gaia-X

European Association for
Data and Cloud AISBL

TOGETHER TOWARDS A FEDERATED & SECURE DATA INFRASTRUCTURE

Gaia-X 2024

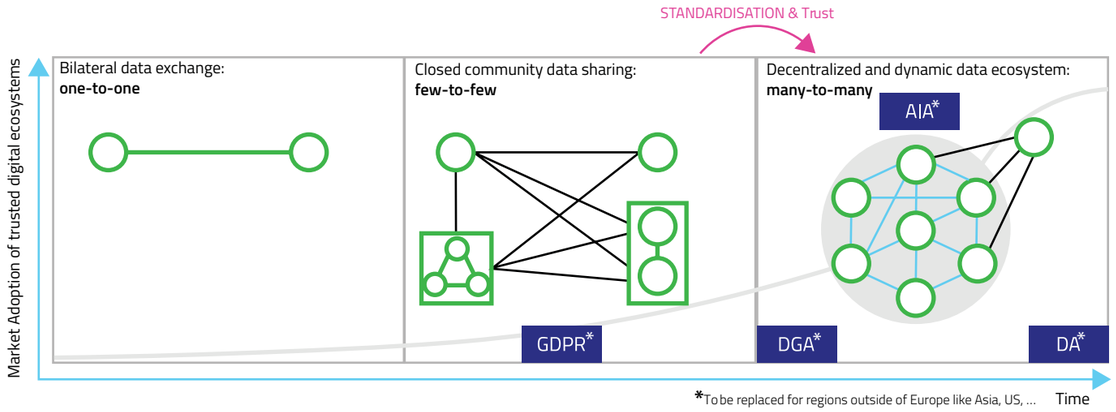
The demand for Data Spaces

The data exchange between companies and organisations started in the 1960s when Ed Guilbert developed a form of electronic communication between shipment supply chains in the US Army. Although it took until the early 90s for EDI to find widespread supply chain integration, EDI was a critical facilitator of early globalisation. This was and still is a **One-to-One** communication.

Digital platforms enabled during the last 20 years the data exchange from **Few-to-Few**. Still, it takes a lot of effort to connect different sources and users of data to these platforms, making it difficult to scale. On the other hand, GDPR paved the way for the trustful management of personal data on digital platforms.

Now, we are shaping the next level of data management by creating Data Spaces enabling the data exchange of **Many-to-Many**. This is possible as standardisation and a Trust Framework enable us to automatically identify and authorise sources and users of data and to connect them to Data Spaces without any additional manual effort. For Europe the Data Governance Act and the Data Act of the European Commission are providing the frame for a sovereign management of data. For regions outside of Europe similar policies and rules will be developed based on their specific legislation. The interoperability of Data Spaces is allowing the creator of a set of data to determine and technically enforce the rights of someone getting access to this data on a global scale. This also includes mechanisms for data monetisation, which allows the creator of data to benefit from their value.

Data does not flow on rainbows. Interoperable Data Spaces operated on a federated Cloud infrastructure are the future of global data management and are also providing the basis for more advanced Artificial Intelligence solutions within the frame of the AI Act.



Gaia-X MISSION

Creating the de facto standard to enable federated and trusted data and infrastructure ecosystems, by developing a set of specifications, rules, policies, and a verification framework

Gaia-X VISION

Enable trusted decentralised digital ecosystems.

gaia-x

Gaia-X in numbers

320+ members from 25 countries join the association, including enterprises, research institutions, associations, administrations and politics.

320+

170+ use cases from more than 15 industry sectors worldwide display the economic demand for Gaia-X

170+

15+

Gaia-X in numbers

3

19

3 Committees enhance Gaia-X: for the areas of technology, policy rules and data spaces. They unite a total of 19 working groups and sub-working groups.

24

19 European and 5 Global Hubs are established in:
Austria, Denmark, Belgium, Finland, France, Germany, Greece, Hungary, Italy, Japan, Korea, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Switzerland, USA (Texas, California, Washington DC)

16

An indicative list of the current ecosystems includes the following:
Aerospace, Agriculture, Tourism, Education, Energy, Finance, Location, Health, Manufacturing, Media, Mobility, Public Sector, Smart Cities, Smart Living, Construction and Logistics.

90%

90% of Europeans want uniform data protection rights across the EU.[1]

72%

72% of European internet users fear being asked too much personal information online.[2]

480 M

In addition to businesses, up to 480 m citizens will benefit from a European Digital Single Market based on technologies and standards of Gaia-X.

The demand for Gaia-X

829 BN

The value of data is expected to grow to 829 bn Euros by 2025.[4]

80%

By 2025 80% of data processing will be done by intelligent network systems and only 20% by central computer systems.[3]

1 European Commission (06.05.2020): https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52015DC0192 [last retrieved on 28.10.2020]
2 ibid
3 European Commission (19.02.2020): https://ec.europa.eu/commission/presscorner/detail/-de/fs_20_283 [last retrieved on 27.10.2020]
4 European Commission: https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-data-strategy_de [last retrieved on 28.10.2020]

The Gaia-X Strategic Plan in a nutshell

1 END-USER ADOPTION STRATEGY

- Increase the number of reference stories to enable the community in reference selling
- Policymakers supporting and advocating for the Gaia-X initiative in Europe
- Work with Cloud Service Providers, including Hyperscalers, while maintaining sovereignty through Gaia-X rules
- Establish Hubs in European countries which are not active yet

2 MARKET READINESS OF THE TECHNOLOGY

- Intensify collaboration with DSBA and FOSS communities
- Strengthen partnership with funded projects on EU and member state level, including lighthouse projects to enhance the functionality
- Provide regular deep dive sessions using Gaia-X de-facto standards to demonstrate how Data Spaces based on a federated Cloud infrastructure can be realised
- Validate 'Powered by Gaia-X'

3 GLOBALISATION STRATEGY

- Partner with international members for global regions and align with regulations outside of Europe
- Utilize Gaia-X Hubs as multiplier for Gaia-X in their home regions
- Include other regions to participate in the definition of labels for their territory
- Join global events to increase awareness about Gaia-X
- Foster analyst relations to increase global awareness

4 GROWTH OF THE Gaia-X ECOSYSTEM

- Demonstrate benefits for existing members
- Provide added values for organisations to join Gaia-X
  - Large corporates for global reach
  - Start-ups and SME for innovative solutions
  - Developers and Universities for technology excellence
- Maximize the efficiency of the Committees and agile sprints
- Grow the number of members

Driven by a growth and service oriented team providing thought leadership to the market

The Gaia-X Trust Framework

The Gaia-X Trust Framework is a comprehensive system designed with three primary goals in mind: empowering users to make informed decisions across various jurisdictions and domains, accommodating specific needs of different regions and industries, and laying the groundwork for automated compliance processes.

Trust is a fundamental aspect of the Framework, defined as the favourable response of a decision-making party assessing the risk regarding another party's ability to fulfil a promise. Trust decisions are nuanced and influenced by various factors, and the Gaia-X Framework provides a methodology and technical specifications for risk assessment.

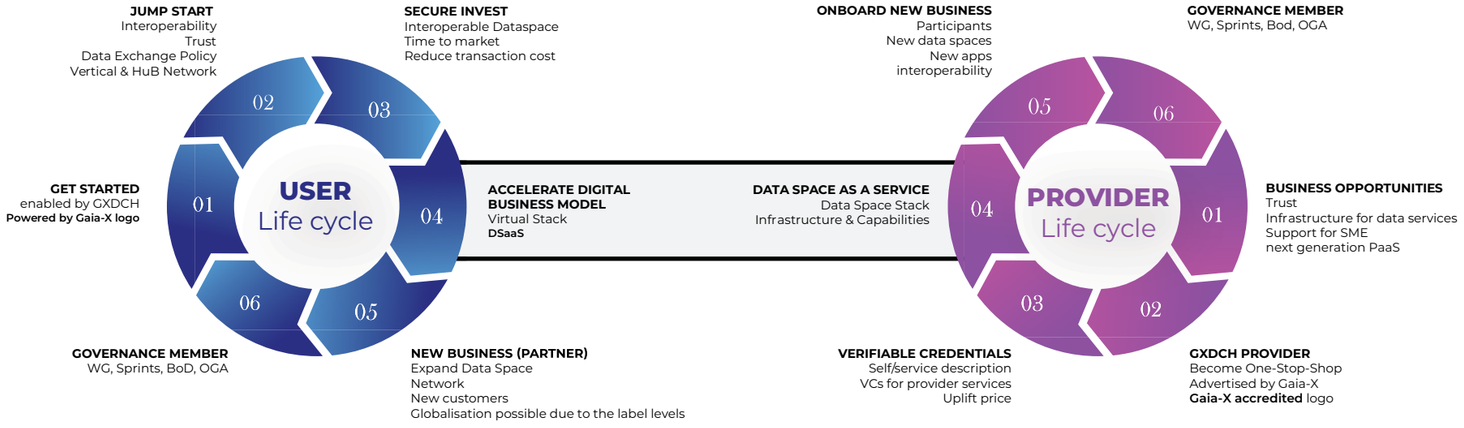
Interoperability is another key aspect, with a focus on organisational and semantic layers. The Framework provides ontology and logic rules to translate the European values of transparency, openness, self-determination, privacy, and interoperability into machine actionable information. While initially targeting ICT services and data products, the technical protocols and data formats can be adapted for other use cases, such as the EU Digital Product Passport for various industries.

Guidelines are provided for both policy-rules makers and users. Policy-rules makers define assessment schemes and criteria, ensuring compliance with European values and legislation. Users can apply for assessments and procure services/ products based on various levels of compliance, ranging from basic conformity to higher levels of cybersecurity and data processing restrictions.

Members Benefits

Benefits for USERS

- Build and implement common rules in order to be able to exchange data in a trusted way.
- Accelerate sovereign data driven EcoSystems.
- Enable global data driven value chains through federated trust and interoperability.
- Reduced cost for cross-organisational data management.



Benefits for PROVIDERS

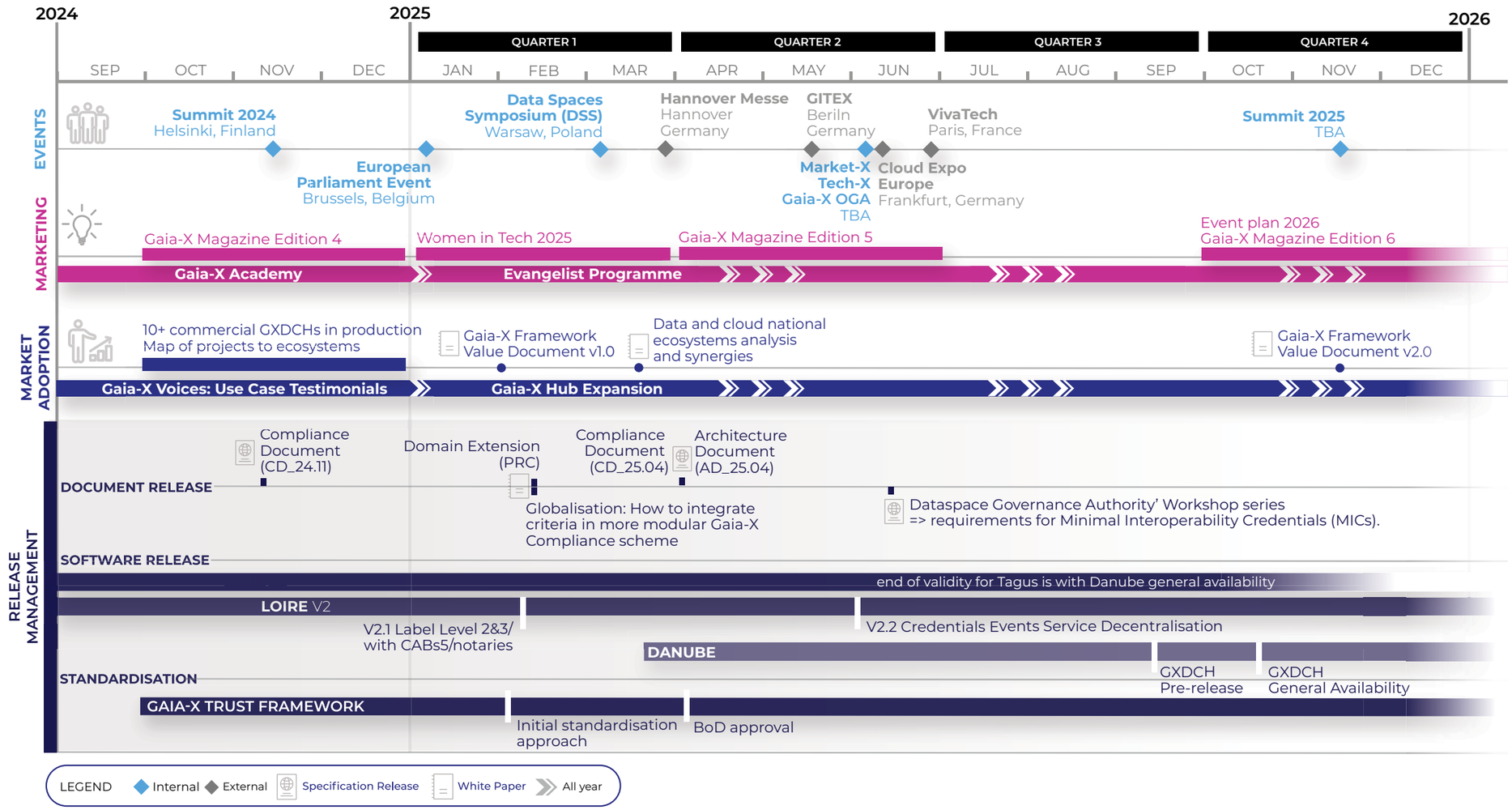
- Expand, reach, visibility and market share by delivering services which are certified as compliant with Gaia-X.
- Become a one-stop shop as a GXDCH Provider for your existing and new customers utilising the Gaia-X EcoSystem.
- Deliver DataSpace as a Service (DSaaS) to enable fast, cost-efficient, transparent and reliable data-driven Business Applications.

The Gaia-X Academy

The Gaia-X Academy has been established to provide accessible education on the Gaia-X initiative, welcoming both members and non-members. Our courses cater to diverse expertise levels, offering foundational knowledge as well as in-depth technical insights.

The curriculum spans from basic understanding of Gaia-X to advanced levels, covering aspects such as the data economy, Framework structure, and technical components. Participants will gain the ability to lead related initiatives and develop the necessary technical competence to support Gaia-X adoption. Additionally, the academy offers a detailed analysis of Gaia-X architecture, enabling participants to design compliant solutions and support business outcomes effectively.

Gaia-X Roadmap 2025



Gaia-X Label

A Gaia-X Label is a mark of confidence which reflects the completion of different criteria related to transparency, data protection, security, interoperability, portability, sustainability, and European Control.

GXDCH

Gaia-X Standard Compliance

A service or product offering is certified **Gaia-X Standard Compliance** upon the successful assessment of all the mandatory criteria related to transparency, security, interoperability, portability and sustainability. Not bound to a specific jurisdiction or industry domain.

Value: The provider & consumer can make informed & educated decisions based on information gathered to demonstrate European values.

Gaia-X Label Level 1

A service or product offering is certified **Gaia-X Label Level 1** if the offering is **Gaia-X Standard Compliance** and fulfils additional European rules related to personal data protection.

Value: In addition to the Gaia-X Standard Compliance, the provider & consumer can rely on their mutual declaration of adherence to the European data protection rules.

Gaia-X Label Level 2

A service or product offering is certified **Gaia-X Label Level 2** if the offering is **Gaia-X Label Level 1** and fulfils additional criteria related to cybersecurity and the service offering needs to have an option for the customer's data to be processed and shared exclusively in the Europe Economic Area.

Value: In addition to the Gaia-X Label Level 1, cybersecurity criteria have been verified by impartial third parties & data can be processed exclusively in the EEA.

Gaia-X Label Level 3

A service or product offering is certified **Gaia-X Label Level 3** if the offering is **Gaia-X Label Level 2**, the consumer's data are processed and shared exclusively in the European Economic Area and the headquarters and the main establishments of the service provider are located in the European Economic Area.

Value: On top of the Gaia-X Label Level 2, the data is processed exclusively in the EEA & cannot be accessed by parties from outside the EEA.

	STANDARD COMPLIANCE	LEVEL 1	LEVEL 2	LEVEL 3
Declaration of Service or Product	✓	✓	✓	✓
Signed with verified method (e.g. eIDAS)	✓	✓	✓	✓
Automated validation by GXDCH	✓	✓	✓	✓
Automated verification by GXDCH*	✓	✓	+	+
Data Exchange Policies	✓	✓	✓	✓
Certified Label Logo		✓	✓	✓
Data protection by EU legislation		✓	✓	✓
Manual verification by CAB			✓	✓
Provider Headquarter within EU				✓

*not all criteria can be automated, "+" means automated verification of the evidence issuer (Standard & CAB)

The Gaia-X Digital Clearing House (GXDCH)

The What = Provides Gaia-X Clearance

1. The GXDCH is a node of verification of the Gaia-X rules;
2. It is the go-to place to obtain Gaia-X compliance and become part of the Gaia-X ecosystem;
3. The GXDCH are non-exclusive, interchangeable multiple nodes operated by market operators, acting as a Gaia-X Federator;
4. They operate and run services of the Gaia-X Framework (compulsory and optional), necessary to achieve compliance and support the onboarding of any Gaia-X adopter;
5. They integrate to external TA (Trust Anchors), including CAB (Conformance Assessment Bodies) for external asseverations, Identity Verification (like eIDAS), and other TDS (Trusted Data Sources) as defined by Gaia-X.

The Why = One-Stop-Place for Gaia-X

1. Each GXDCH must provide public services to implement the compulsory elements necessary to achieve Gaia-X compliance (under the sole governance of Gaia-X);
2. Each GXDCH can offer (or resell) services to support the extended adoption of Gaia-X (out of the governance of Gaia-X);
3. Any Gaia-X adopter (user, provider, federator) can use any GXDCH to obtain compliance, join a federation, become a federator (or additional services);
4. GXDCH act as a one-stop place for Gaia-X services facilitating the concentration and match of Demand and Offer.

The how = Operationalise the Gaia-X Framework

1. The Gaia-X Framework has mandatory SW components (those controlling the 'Compliance') as well as optional SW components (referred as the GX Toolset);
2. The code of compulsory components must run into services providing for the compulsory verifications to become GX compliant;
3. These services must be run in a physical compute node accessible to anyone;
4. Each node must be operated by a service provider according to rules defined with and approved by Gaia-X;
5. Gaia-X is not an operator of any node, but it has control on the operators for the operations of compulsory services;
6. Any operator compliant to the requirements defined by Gaia-X and featuring the necessary characteristics as defined by Gaia-X can become a node;
7. Each node is connected in a network to ensure free access and selection by Gaia-X adopters and consistency of the compliance data managed by these nodes.

Gaia-X Lighthouses

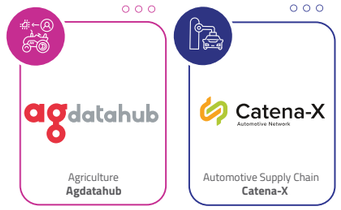
Lighthouse Projects

These projects aim to create a data exchange platform built on transparency, trust, and openness. They target multiple industries, such as Agriculture, Mobility and Manufacturing, to name a few. These projects will help us bring and create a coherent data infrastructure ecosystem. These initial business cases are the front-runners implementing the Gaia-X framework that will equally enable a comprehensive pipeline of future lighthouse projects.

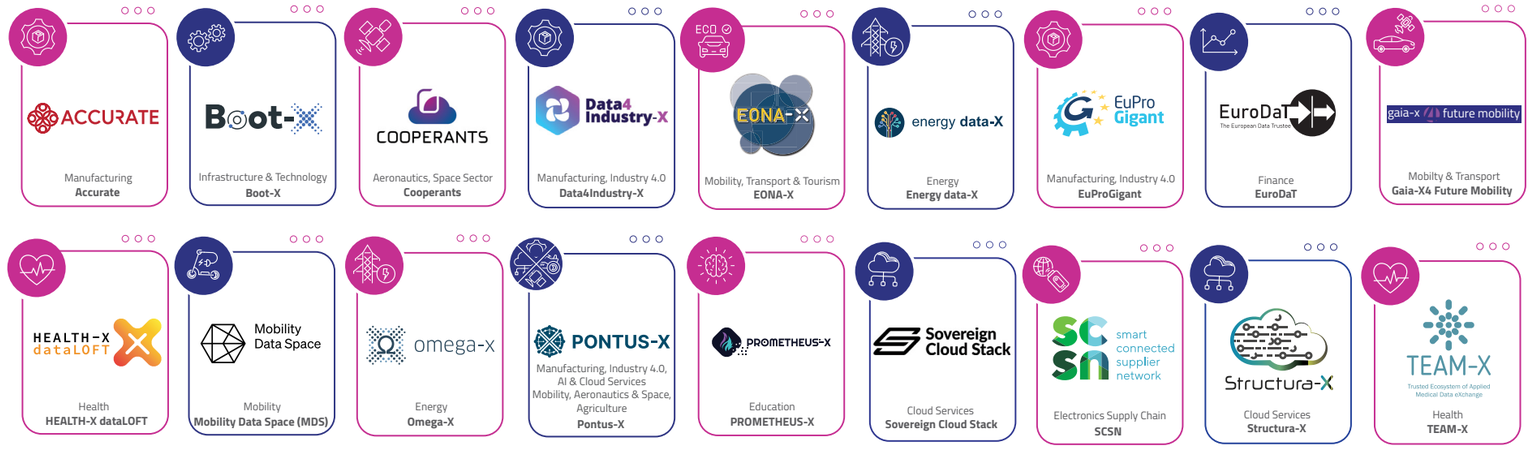
Lighthouse Data Spaces

Lighthouse Data Spaces have evolved from a project to an operational Data Space generating value for its members. Lighthouse Data Spaces commit to adopting Gaia-X policies and rules, ensuring alignment with technical requirements and the Gaia-X Trust Framework. Furthermore, they must exhibit a Pan-European footprint, promoting the creation or expansion of data spaces across borders.

Lighthouse Data Spaces



Lighthouse Projects



EUROPE 19

IN PROGRESS 6

INTERNATIONAL 5

Gaia-X Hubs

Gaia-X Hubs are the central contact points for interested parties in each country. They may be viewed as think tanks and grass root supporters for the Gaia-X project.

The Association and the national Gaia-X Hubs cooperate. Any organisations and companies that work on and with use cases, create expertise and resources, or are interested to become a stakeholder and create data spaces, are welcome to join the Gaia-X Hub.

Gaia-X hubs have several objectives. Amongst these are:

- Act as a local ambassador for Gaia-X
- Identify territory specific needs and high priority data spaces
- Collaborate with other hubs to develop globally interoperable Data Spaces
- Make Gaia-X real identifying projects and creating Gaia-X services in the market
- Help local governments implementing the Recovery and Resilient Facility (RRF) in the most effective way adopting Gaia-X solutions
- Attract the participation of new members in the association
- Provide feedbacks on specific needs and requirement to be implemented in the Gaia-X Framework

Gaia-X

European Association for Data and Cloud AISBL

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