

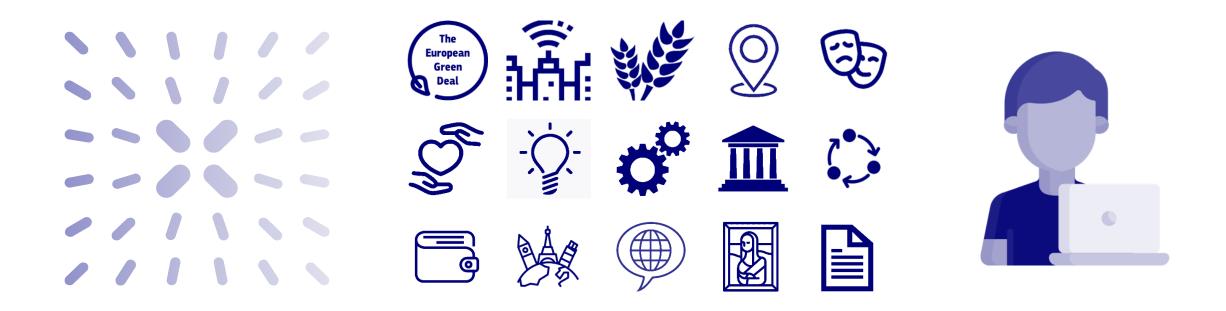




Technology Business Vs Digital Economy...

Who is more impacted by this disruption?





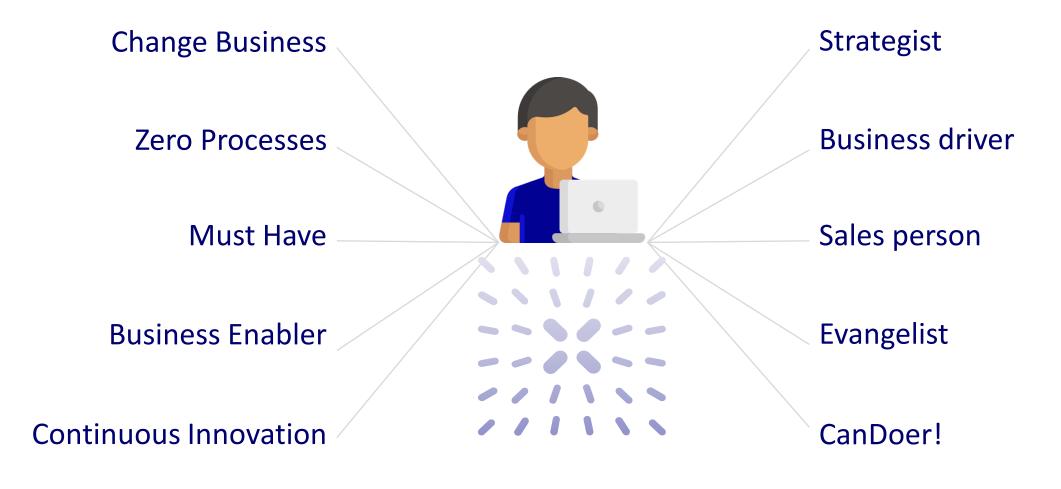
All are impacted! The new Digital Economy is pervasive and driven by Data Spaces, the digitalization of the value chains, in economical, social, political, and natural ecosystems.

Why we need a new role for IT?



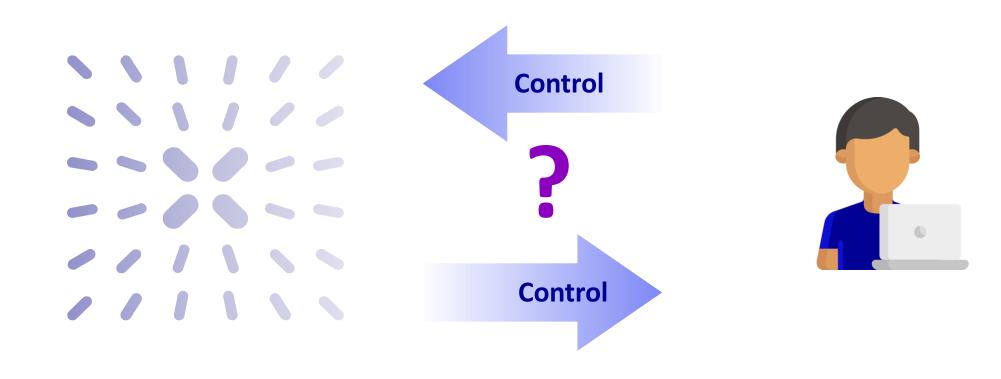
THE NEW ROLE OF TECHNOLOGY

THE NEW ROLE OF IT EXECUTIVE



Are we in Control of, or Controlled by Technology?...







The EU Data Strategy

European Digital Ambition





Feb. 2020

European Strategy for Data

aims to build a single market for data



May 2020

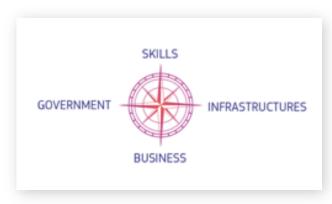
Recovery and Resilience Facility

20% Digital EU Flagship "Scale-up"



Oct. 2020

Member States
Declaration for
European cloud



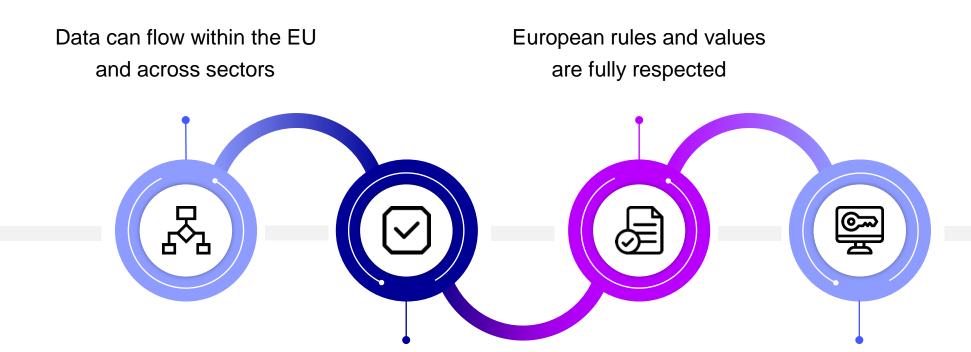
March 2021

Digital Decade Strategy

sets targets on edge and cloud for 2030

European Strategy For Data

A Common European Data Space, A Single Market For Data



Availability of high-quality data to create and innovate

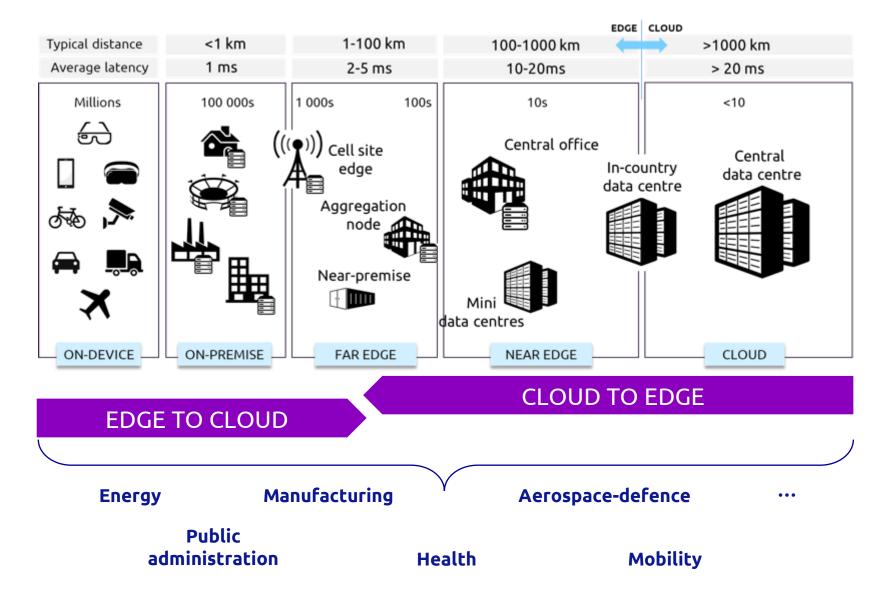
Rules for access and use of data are fair, practical and clear

Digital Decade - computing continuum by 2030





- √ >10.000 edge nodes by 2030
- ✓ 75% of cloud and of uptake by EU enterprises in 2030

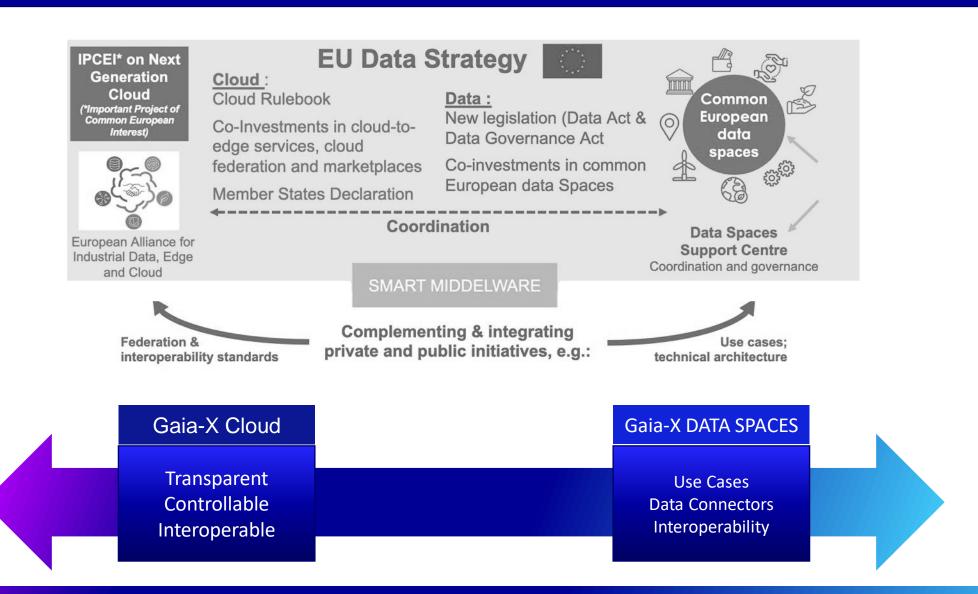




How does Gaia-X fit into it

Gaia-X vs. European Data Strategy



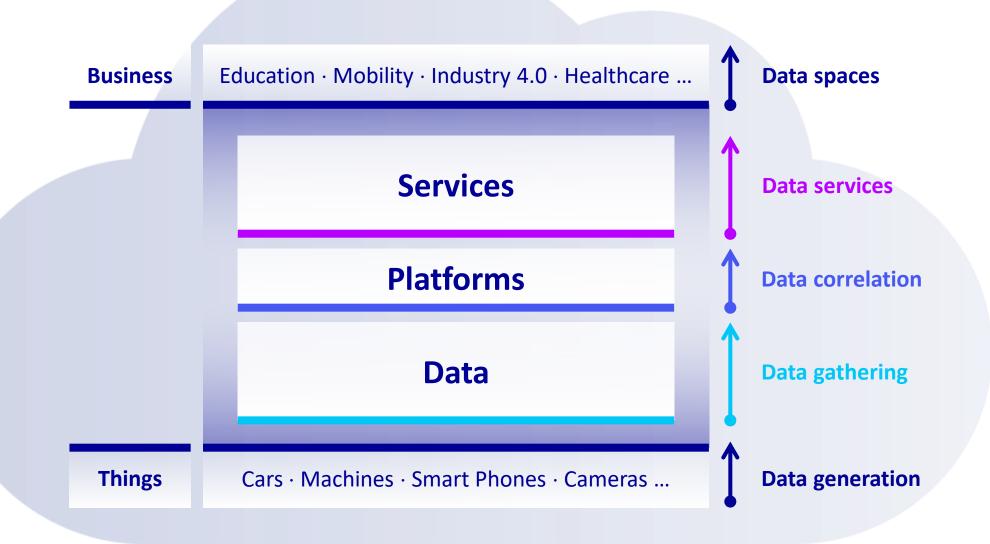




Why Gaia-X?

Cloud enables data economy





What are we talking about?



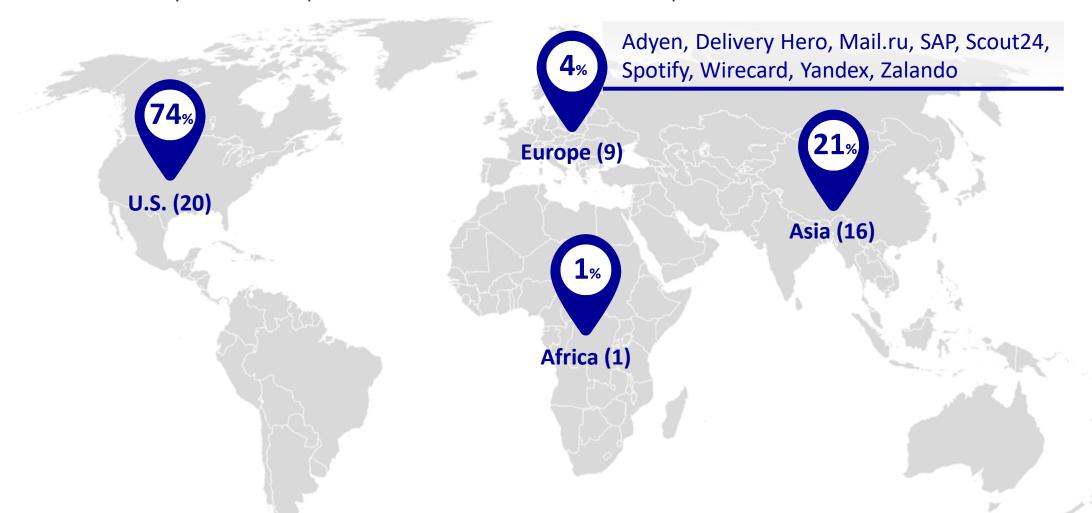
Data Business		Situation
Data platforms	100B\$ TAM (33% AWS) in 2019	
Data services	829B€ EU data economy by 2025	
Data access	40B Smart devices by 2025 (+13%YoY)	

Where Do We Stand?



The European Contribution to the Platform Economy

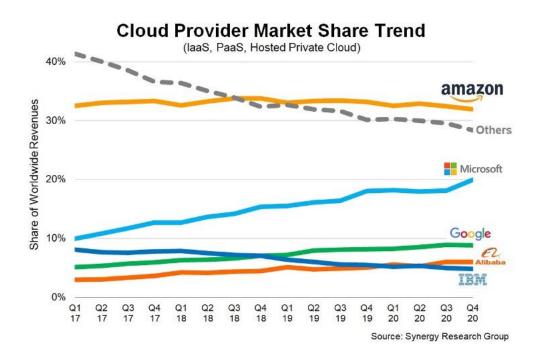
Platform Economy – Market Capitalisation Value Distribution of Companies



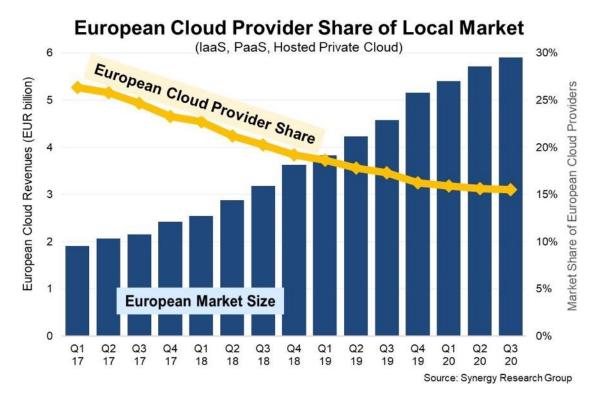
Cloud market trends



Globally



• In Europe



Cloud market trends in Europe



Supply

- EU cloud market grows threefold (over EUR 23bn for 2020)
- EU CSPs' share still declines (from 26% in '17 to <16% in '20)
- 3 US CSPs hold 66% of the total market share
- The biggest EU provider has 2% of the EU market

Demand

- 36% of EU enterprises use "basic" cloud services
- Large legacy and on premises footprint (>70% of data/apps)
- Strong dependency from 'proprietary' models (lock-in)
- Demand for switchable services with more user control

Gaia-X, an urgent move for a European Future!



EU Digital Market 2025

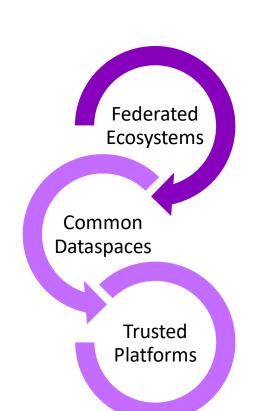
- EU CSP Providers Market Share = <10%
- EU TAM on Data Platforms = 8-10% EU GDP
- EU Economy Footprint Largely SME = >80%

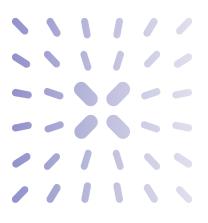
EU Economy 2025

- Public Services dependency on Digital Platforms = >70%
- Product/Service Value Dependent on Data = 50-70%
- Disjoint Data across Value Chains = >70%

EU Sovereignty in 2025:

- No Political Sovereignty w/o Digital Sovereignty
- No Economy Drive w/o Digital Sovereignty
- No Sovereignty with 'Private' or 'Autocratic' Platforms







What is Gaia-X?

Our story in short

About Gaia-X – The elevator pitch



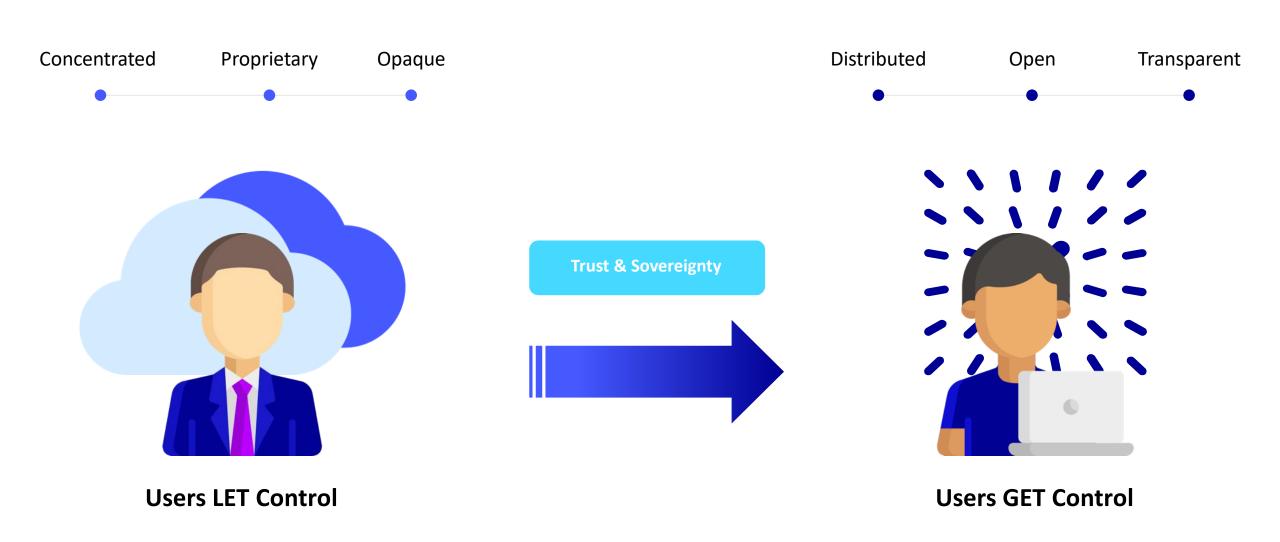
Established as a not-for-profit Association in 2021, Gaia-X brings together a broad range of organisations (large companies and SMEs, developers and users of technology, industrial players, and members of academia) around one common goal: to boost the European data economy by enabling the creation of common data spaces, in full alignment with the objectives of the EU's data strategy. To this end, Gaia-X focuses on building a common standard for an open, transparent, and secure digital ecosystem that will serve as the basis for a new model of data infrastructure guaranteeing safe and trustworthy data exchange.

Open to anyone, but aligned with the European values of human-centricity, transparency, openness and sovereignty, Gaia-X's ambition is to deliver unprecedented opportunities for innovative data-driven business models in the European Single Market, reducing the dependency from non-controllable technologies while reflecting Europe's need for data and cloud sovereignty.

Want to learn more about Gaia-X? <u>Click here</u>. Interested in becoming a member of Gaia-X? <u>Click here!</u>

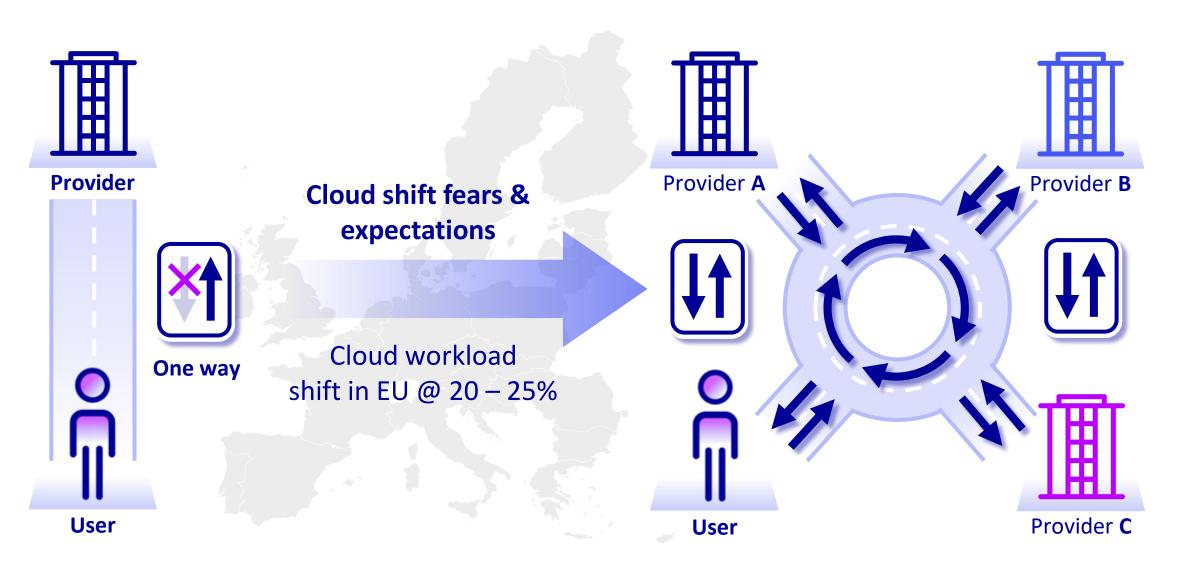
Our Reason - From traditional Cloud to Gaia-X





From one-way to free & sovereign





The existing Split X Model

Disjoint Data & Infrastructures Ecosystems





Data

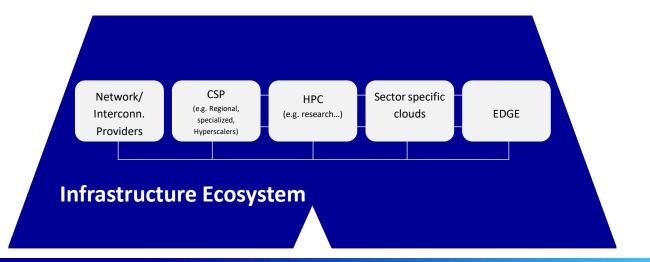
Untapped, fragmented, disjoint, no secure exchange mechanism



infrastructures

Segregated, non-reversible, non-interoperable, closed architectures, private standards





Our X Model

Connecting Data - Infrastructures Ecosystems





Advanced Services

New (Cross-) Sector Innovations / Applications build from service composition.



Data Spaces / Federations

Interoperable & portable (Cross-) Sector data-sets and services.



Data Exchange

Anchored contract rules for access and data usage.



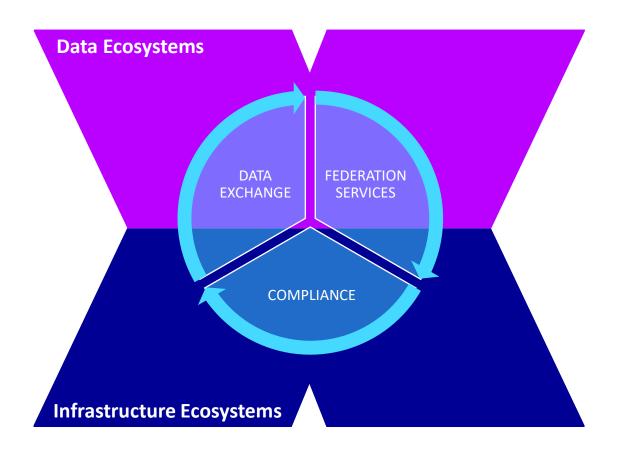
Gaia-X Compliance

Decentralized services to enable objective and measurable trust.



Label framework

Gaia-X and ecosystem specific Labels to ease market adoption through autonomy and self-determination.



What We Are – What Is Gaia-X. What It Does



What Gaia-X Is Or Is Not



Gaia-X Is

- > A single point of definition of Gaia-X architecture & rules
- > Making available an open implementation to all
- > A qualification authority for Gaia-X compliance



Gaia-X Is Not

- > A formal standardization body
- > A SW or HW product or cloud platform
- > A runtime implementation of any Gaia-X service



Gaia-X vs.
Association

- > Gaia-X project is driven by the Association
- > Gaia-X architecture is developed by the Association members
- > Gaia-X services will not be operated by the Association

What We Do – Gaia-X Three Deliverable Types



The Gaia-X Deliverables



Specify

- > Architecture Document
- > Trust Framework
- > Policies and Rules, Label Framework Documents



Develop

- > OSS framework for community work
- > Reference implementation of Federation Services
- > Reference implementation of self regulation Services



Qualify

- > Service qualification Process
- > Service qualification Labelling
- > Service qualification

Specs

Code

Labels



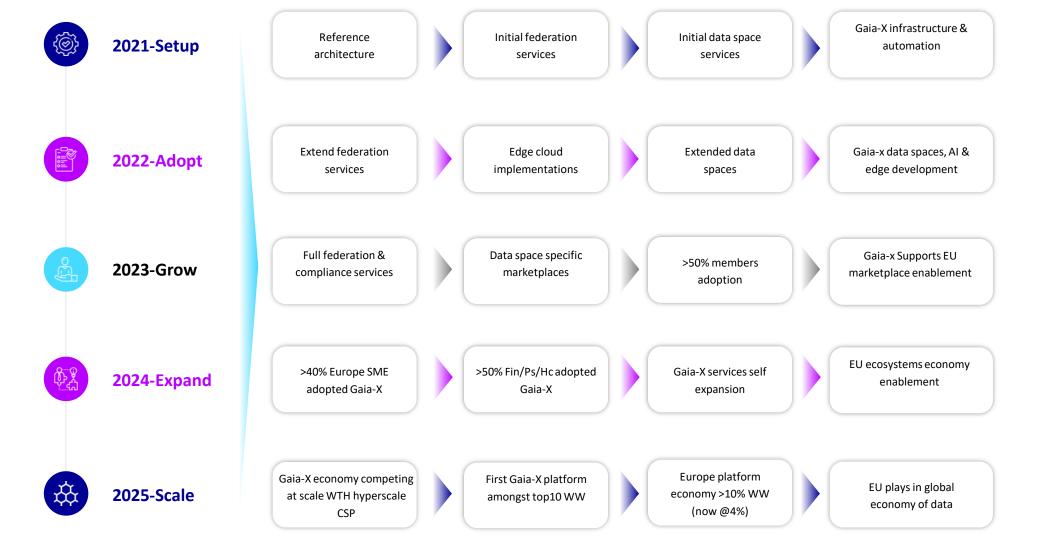
Gaia-X Roadmap

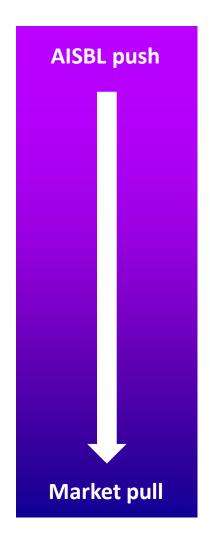
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The 5 Years Outlook



Main focus:





Gaia-X Roadmap

	2021	H1/2022	H2/2022	H1/2023	H2/2023
Gaia-X	Architecture Doc 21.06	Architecture Doc 22.04	Architecture Doc 22.09		
Specification	GXFS Spec v1		TechSpec IAM, DEX, FED		
Documents	Policy Rules 21.06		Policy Rules 22.09		
/ 6 1 - 1 1 1		Trust Framework 22.04	Trust Framework 22.09		
(Association)		Label Spec 22.04	Label Spec 22.09		
		PoC	OSS v1	OSS v2	
		Trust Framework		Trust	Gaia-X Toolbox
		Compliance Registry		TSA NOT	
			Identity & Trust	Identity & Credentials	
Gaia-X OSS (Community)			AA TSA NOT P+OCM	AA PCM OCM	New releases and
			Compliance	Conformity	components to be planned in
			CAM OAW	CAM OAW	Colo V Dologo Dloggio
			Catalogues	Catalogues	Gaia-X Release Planning and
			CCF	CCF	Gaia-X OSS community
			Integration & Portal	Integration	processes
			POR ORC	POR ORC	incl.
			Data Exchange Services	Data Exchange Services	contributions from PoC, Hackathons,
			DCS DELS	DCS DELS	Evaluations & Concepts
Gaia-X Releas	es coix V// o //		X // 4 0 //	Connector Plug-ins	
	"consistent deliverables" Gaia-X " v 0.x " Gaia-X " v 0.y " Gaia-X " v 1.0 "				

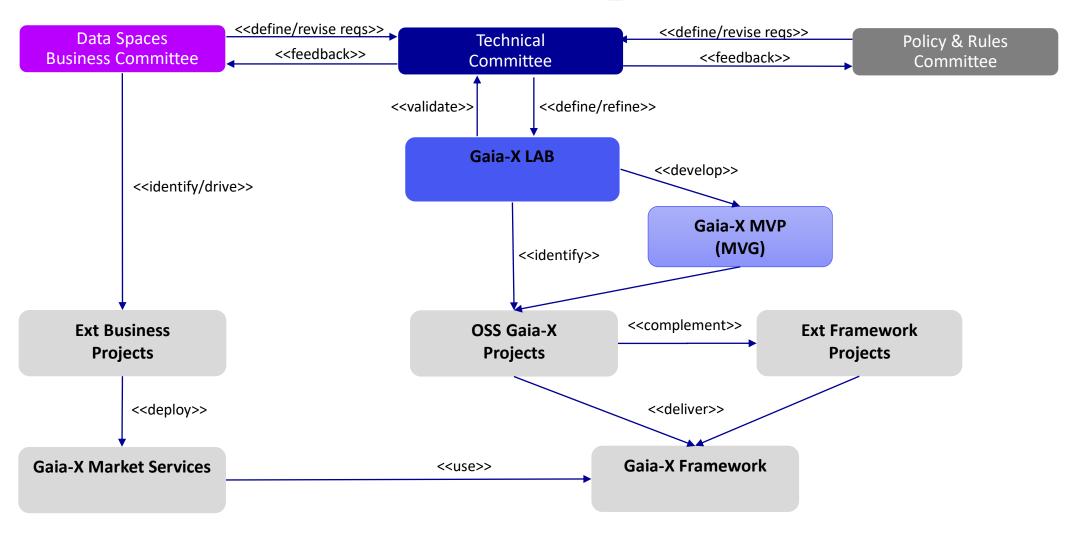


Gaia-X Ops Model & Projects

Gaia-X New Operational Model 2022







Gaia-X Federated Services (GXFS)



GERMANY AND FRANCE SUPPORT



Coordination led by ECO

13M€ Budget

Lots:

- Authentication/ Authorization (Tsystem, Fraunhofer, Verimi)
- Personal Credential Manager, Organization Credential Manager, Trust Services Api (Vereign, Daasi)
- Core Catalogue Functions, Data Contract Service, Data Exchange Logging Service (Bigchaindb, Smartcontrol, Deltadao)
- Continuous Automated Monitoring (Fraunhofer)
- Orchestration (Xlab)
- Portal (Tsystem, Ultratendency)
- Notarization (Sec, Spherity, Msg)



12M€ Budget

Lots:

- Identity Access Management (3dsoutscale)
- Self-description (Ovhcloud)
- Security And Norms (Docaposte)
- Testbeds (Imt, Teralab)
- Data Sharing Components (Atos)
- Data Exchanges (Dawex)
- Management (Imt, Teralab)











































Gaia-X Data Space Lighthouse Projects started in 2021





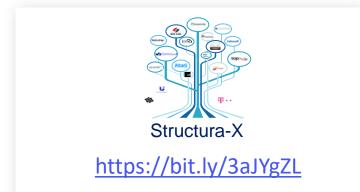
https://catena-x.net/en/

Automotive Supply Chain



https://agdatahub.eu/en/

Agriculture



Manufacturing, Industry 4.0



https://smart-connected.nl/en

Electronics Supply Chain



https://euprogigant.com/en/

Manufacturing, Industry 4.0

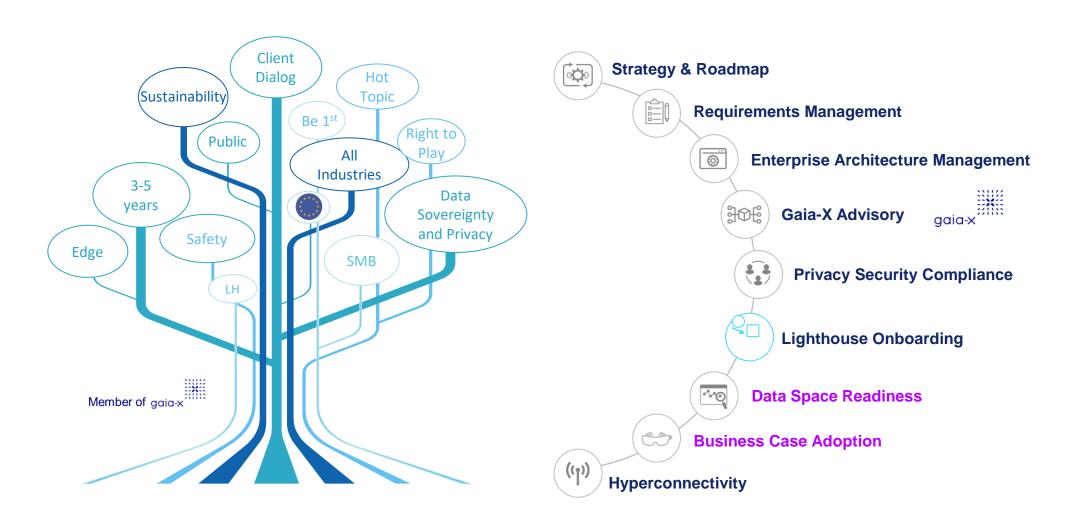


https://mobility-dataspace.eu/

Mobility

Opportunities and transformation areas







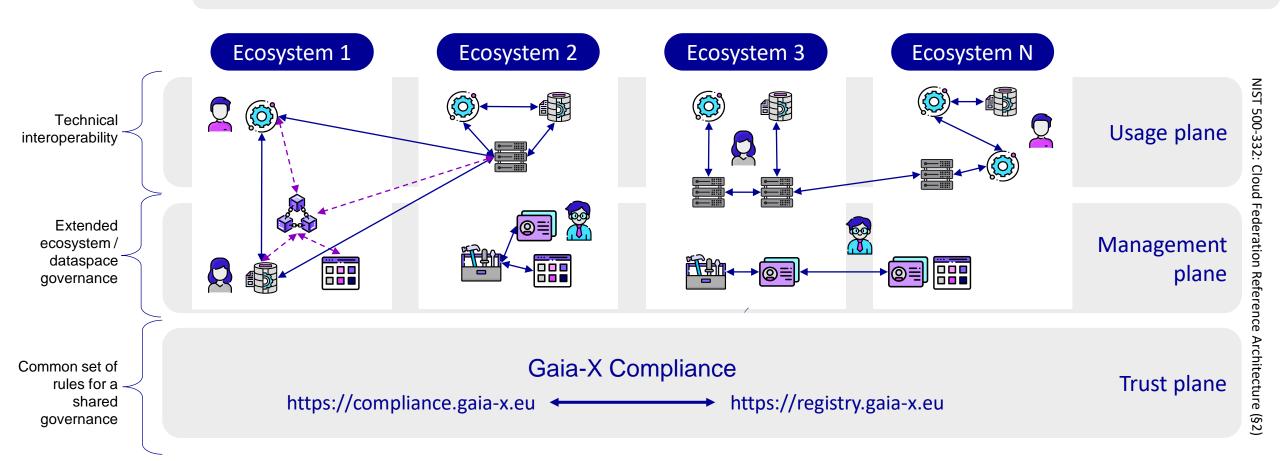
Gaia-X Compliance

Thursday, 01 September 2022

One Gaia-X Ecosystem, federating interoperable autonomous data-infrastructure ecosystems



Gaia-X Ecosystem: the virtual set of Participants, Service Offerings, Resources fulfilling the requirements of the Gaia-X Trust Framework









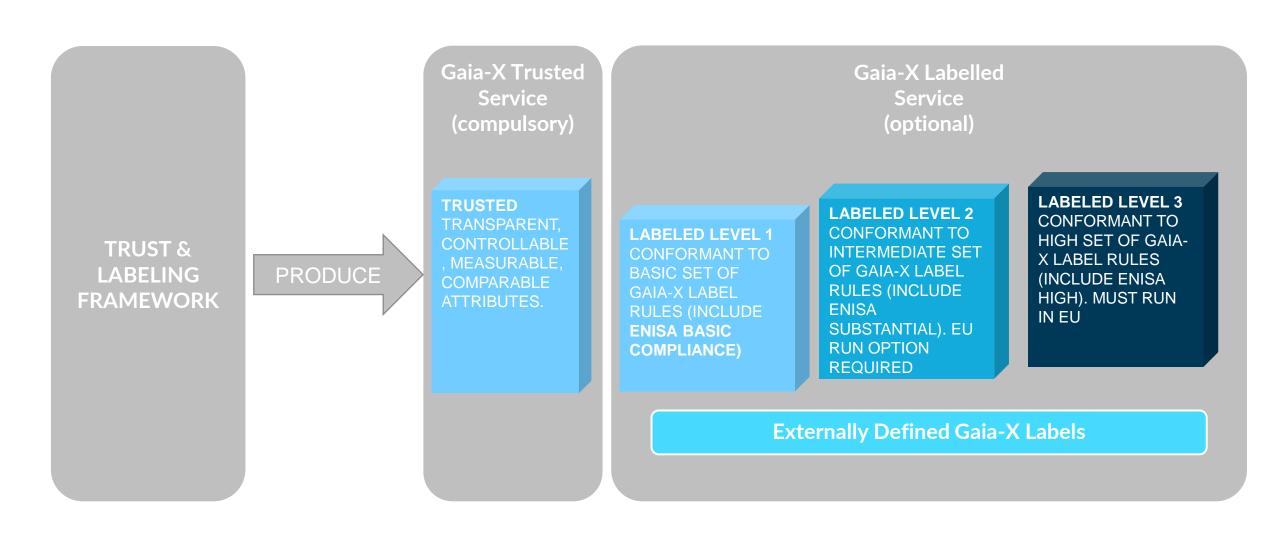






Gaia-X Rules: Trust & Labelling Framework





Gaia-X External Label Owners Example



Example:

Label Owner: Ministry A Owner defines the credentials to be fulfilled by a Public Sector Cloud to be considered trusted

Example:

Label Owner: Banking Inst.

Owner defines the minimum credentials to be met by any European Bank digital service

Example:

Label Owner: Ministry B

Owner defined the credentials for a digital platform to be used by a Golden Power Energy Plant

GOVERNMENT TRUSTED CLOUD

CLOUD MARKETPLACE(s)

> LABEL REGISTER

> > LABEL

ISSUER

Gaia-X Architecture

by Label)

(every label is registered in a common registry and commonly accessible)

Gaia-X Service Providers (e.g.,

a CSP will create marketplaces

where services can be searched

Gaia-X Association (or certification authorities identified and certified by the Association to issue new labels)

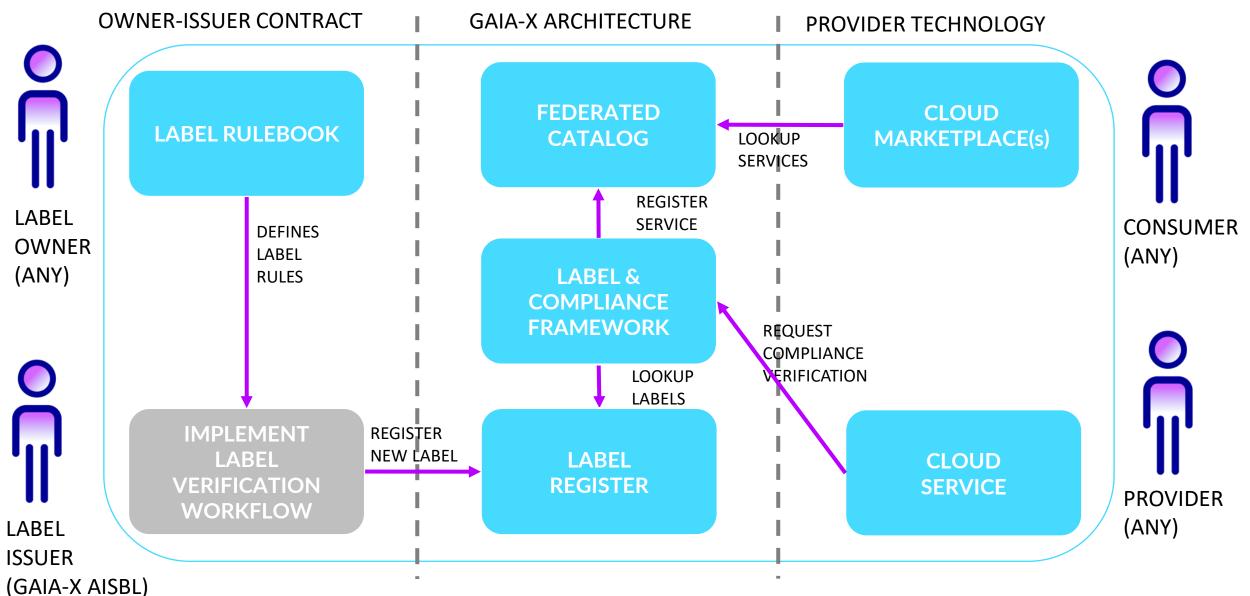
CRITICAL ENERGY PLANTS

SECURE EUROPEAN

BANKING CLOUD

Gaia-X Label Functional Model (exemplification)







Gaia-X Compliance – Tech Insight

_

Gaia-X Trust Framework



To ensure **Trust** the Gaia-X Trust Framework is:

- Automated by Gaia-X specific components part of decentralized technology framework
- Versioned, i.e. bound to a specific version in time of the Compliance rules set
- Applied to the self-description file of all entities implied in the Gaia-X conceptual model (*)
- Aimed to verify the existence and veracity of the attributes and not judging their value

The content
Verify if the mandatory attributes are filled in and if the values are verified.

Set of claims attribute: value attribute: value

attribute: value

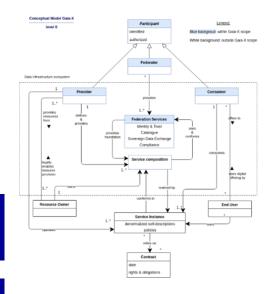
Machine readable or plain English

Trust Framework example:

- All cars must have a color
- All Datasets must have a location
- All Services must identify their provider with its legal country of jurisdiction.

Label examples:

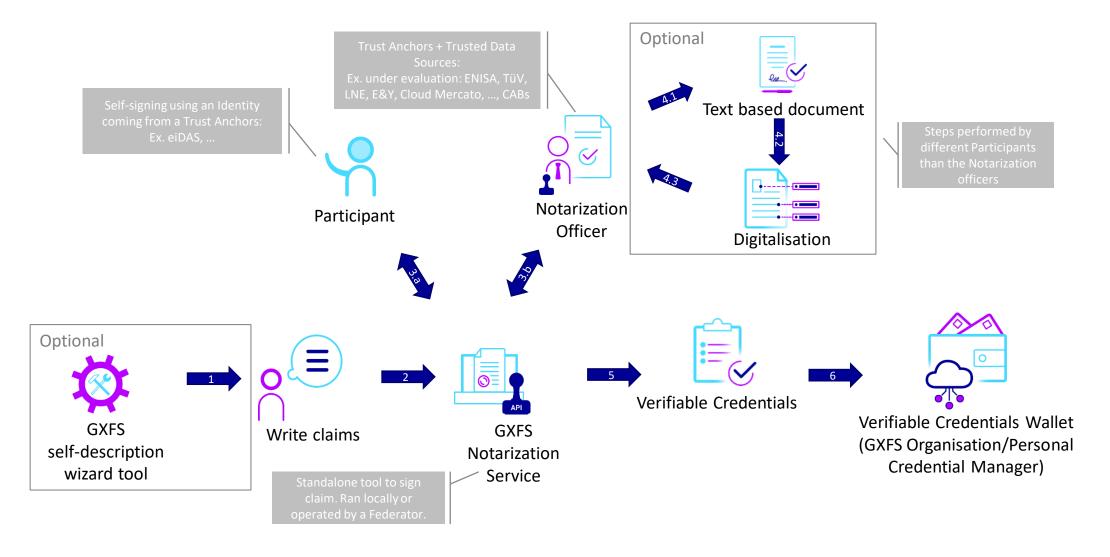
- cars level 1 are red, cars level 2 are blue, ...
- My dataset must be located in EU
- My services must be non-subject/immune to non-EU laws





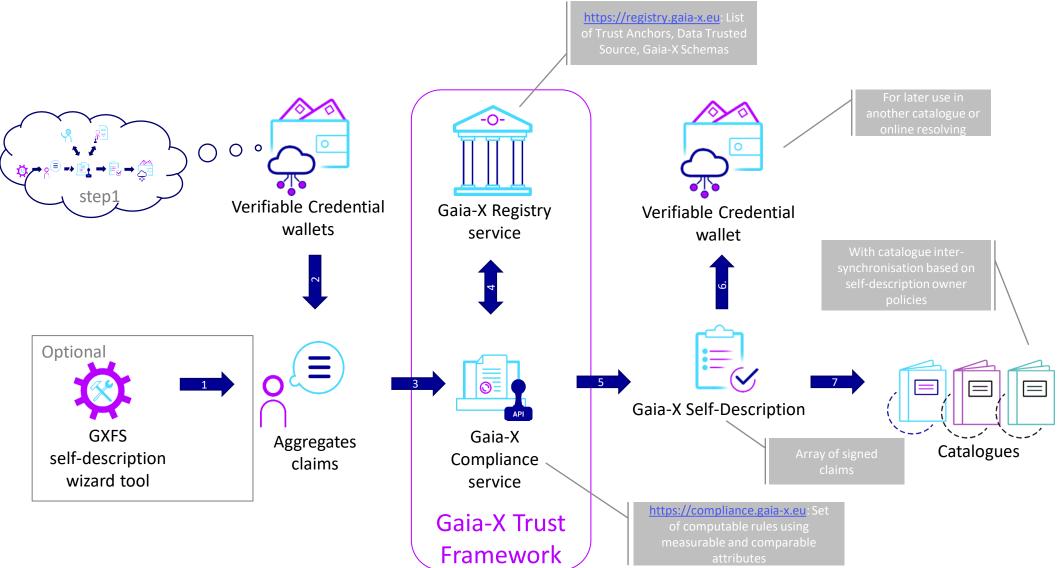
Step 1/3: Collect signed claims





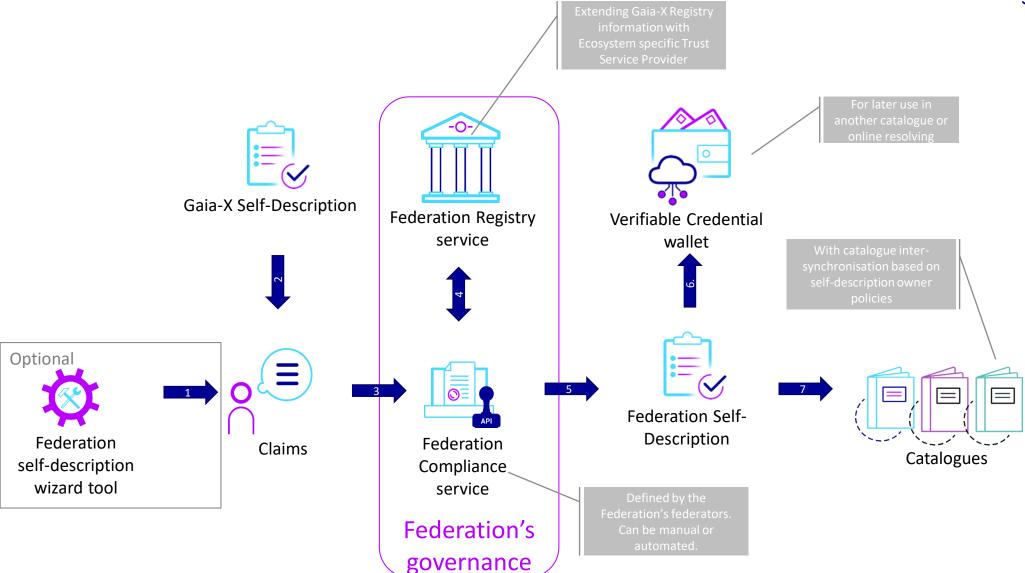
Step 2/3: Create Gaia-X Self-Descriptions





Step 3/3: Federation governance extension







Gaia-X Membership and Hubs

The Gaia-X network expands!





The Most representative alliance of organisations in Europe







350 companies and organisations



3 out of 4 organisations are private companies, **about half** of which are SMEs*



Organisations from different industries, such as Mobility, Energy, Manufacturing, Finance etc.



Large Companies



SMEs



Start-Ups



Universities



R&D



Associations

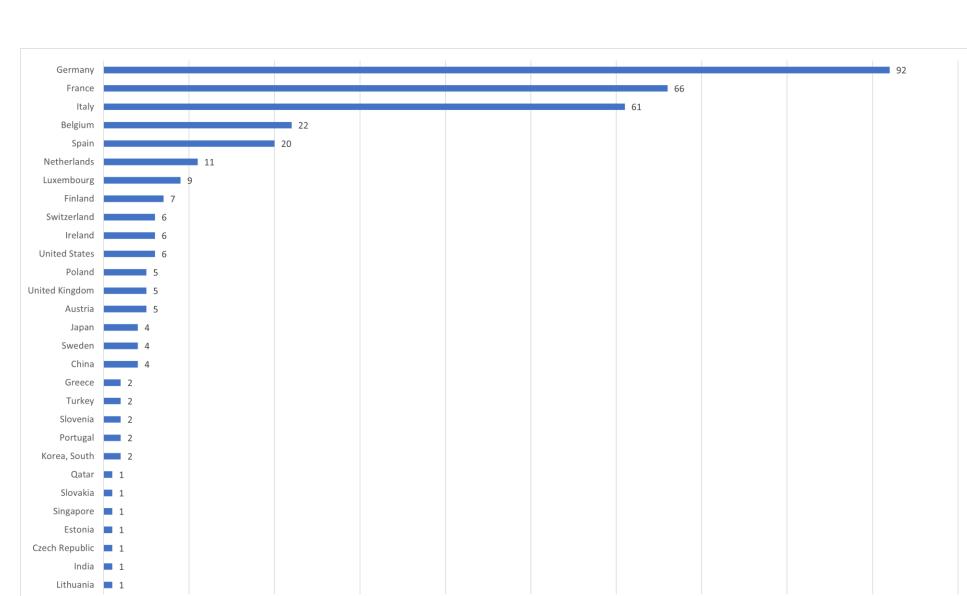


Public Sector



Mentioned explicitly in the **European Data Strategy** and proactively addressing key issues. Exchange between Gaia-X and the **European Commission** to identify synergies between Gaia-X and initiatives and programs such as the **European Cloud Federation**, **CEF 2** and **Digital Europe**.

Gaia-X Member Distribution





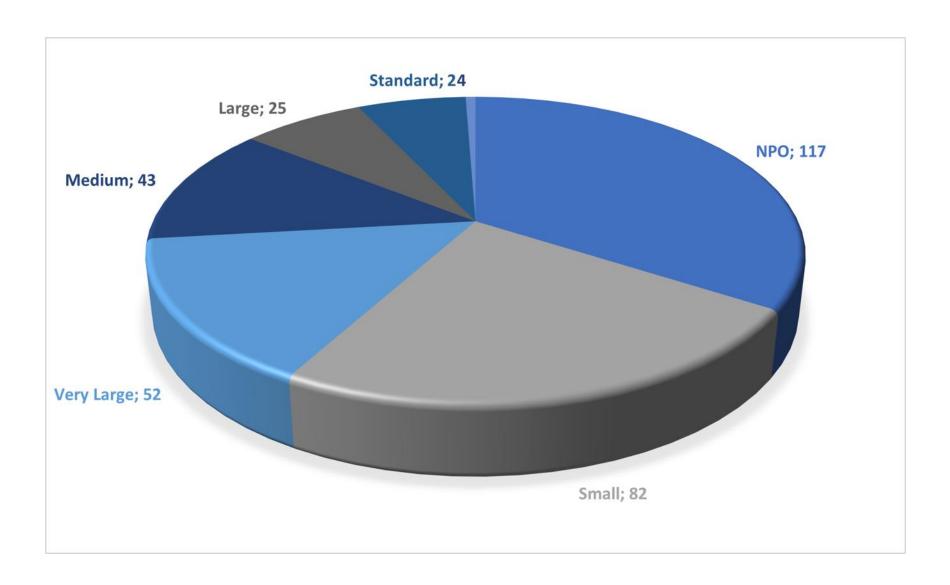
To date 350 members

OGA22 348 members

EGA21 270 members

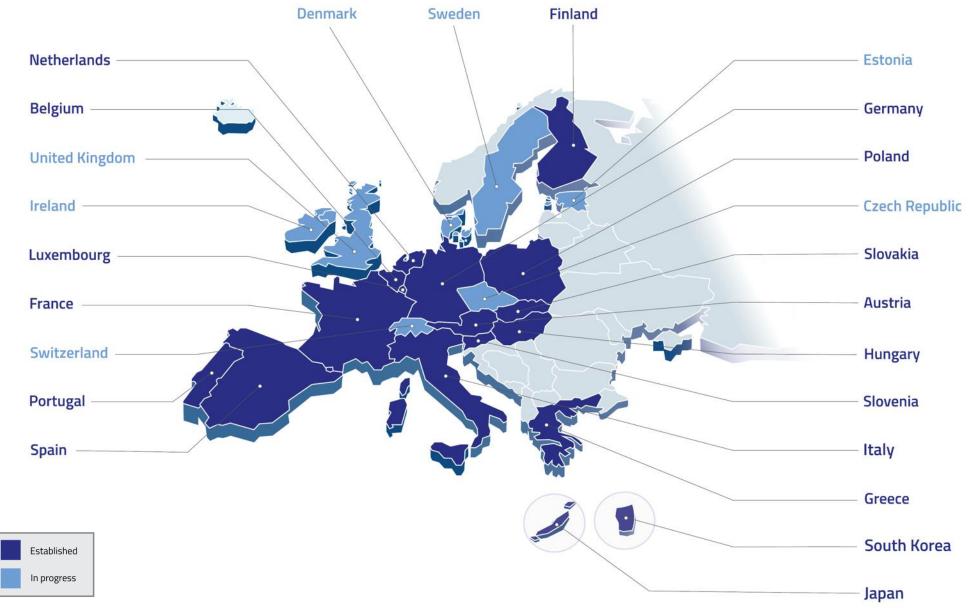
Gaia-X Member Sizes





Gaia-X International Hubs (15 EU + 1 non-EU + 1 non-EU collaboration)





Gaia-X Governmental Advisory Board



- **GERMANY** DANIELA BRÖNSTRUP, Director General Digital and Innovation Policy, German Federal Ministry for Economic Affairs and Climate Action
- FRANCE MATTHIEU WEIL, Head of Digital Economy Department, Ministry of Economy, France
- ITALY STEFANO FIRPO, Head of Cabinet of the Minister for Technological Innovation and Digital Transition
- SPAIN ALBERTO PALOMO, Chief Data Officer, Government of Spain
- NETHERLANDS JOS DE GROOT, Director Digital Economy
- PORTUGAL ANDRÉ DE ARAGÃO AZEVEDO, Secretary of State for the Digital Transition, Republic of Portugal
- **BELGIUM** JACK HAMANDE, Director General Digital Transformation at FPS Policy and Support
- LUXEMBOURG MARIO GROTZ, Director General for Industry, Technology and Research at Ministry of Economy
- FINLAND ILONA LUNDSTRÖM, Director General at Ministry of Employment and the Economy
- POLAND ROBERTO KROPLEWSKI, Governmental Advisory Board Member (Chancellery of the Polish Ministry)
- **AUSTRIA** MICHAEL WIESMÜLLER, Head of department for Key Enabling Technologies for Industrial Innovations at Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology
- **GREECE** –MARIA MAVRIDAKI, Legal Officer, European Commission
- **SLOVENIA** NENA DOKUZOV, Head of Project Group for New Economy and Blockchain Technologies at Ministry of Economic Development and Technology, UNECE expert and Head of Delegation for Slovenia
- **SLOVAKIA** JURAJ PANKUV, Advisor, Ministry of Investment, Regional Development and Informatization of the Slovak Republic ...more to come...

Gaia-X Data Spaces (12)



gaia-x	, keath	Manuf	acturing Indicate and in	rya,o Reject	tire te	Gedir	cornaits Space	cities timan	e rout	rr creet	Michael Econor	Suit ?	Education
Austria							Х		Х	Х			
Belgium			Х	Х		Х					Х		
Finland			Х	Х						Х	Х		
France	Х	Х	Х	Х	Х			Х				Х	
Germany		X	Х					Х					
Greece		X			Х								
Hungary	Х	X	Χ	Х	Χ								
Italy	Х	X				X							
Luxembourg	Х					Х		X					
Netherlands	Х	X	Χ	Х	Χ						X		
Poland	Х	X		Х	Χ			X					
Portugal	Х				Χ		Χ		Χ	X			
Slovakia	Х	X	X			Х							
Slovenia	Х	X		Х			X			Х			
Spain	Х			Х					X				
UK	Х				Χ		Χ	Х					
Japan		X											
South Korea		Х											
Count	11	11	7	8	7	4	4	5	3	4	3	1	



Community Engagement

Status overview of the Gaia-X endeavor

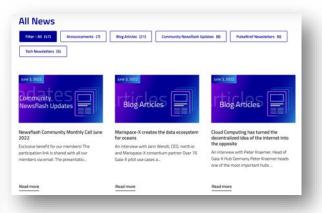
Media Kit

https://gaia-x.eu/news/press-room



News section

https://gaia-x.eu/news



https://gaia-x.eu/press-room/press-review-clips/

Editorial Calendar

https://gaia-x.eu/news





Weekly Press Reviews

https://gaia-x.eu/press-review

Weekly Press Review

04 April 2022 – 11 April 2022	×
Gaia-X Weekly Press Review: 04 April 2022 – 11 April 2022	
14 March 2022 – 04 April 2022	+
07 March 2022 – 14 March 2022	+
28 February – 07 March 2022	+
21 February – 28 February 2022	+
14 February – 21 February 2022	+
7 February – 14 February 2022	+
31 January - 07 February 2022	+
24 January - 31 January 2022	+

Nikkei Asian Review - 03 Fe - 21:47 UTC

Japan to pitch data-sharing framework to bolster Asia supply chains

EU's Gaia-X data infrastructure seen as role model

EU's Gaia-X data infrastructure seen as role mode

Spoke - 31 Ja - 11:00 UTC

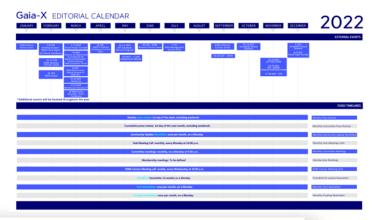
BigchainDB, co-founder of Ocean Protocol, wins 3 tenders for Gaia-X Federation Services

These are the first EU-wide tenders for the release candidate of the Gaia-X Federation Services Through this

- Association of the Internet Industry, added that, "The Gaia-X's open source software modules, available mid-year, will enable innovation

Press Releases

https://gaia-x.eu/press-room/press-releases/



Gaia-X releases a new Architecture document and Trust Framework to strengthen Gaia-X's ecosystem and better safeguard data The documents aim to enforce a higher and unprecedented level of

trust in digital platform 7 June 2022 - Brussels, Belgium: Gaia-X, championing data sovereignty, has announced the release of two.



Events

https://gaia-x.eu/events/

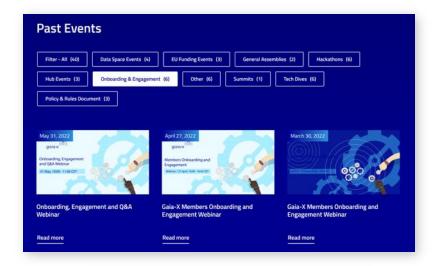


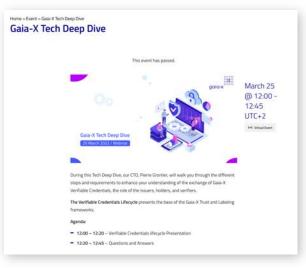












Intranet & communication material

https://members.gaia-x.eu/



The access to this website is limited to Gaia-X association members. If you are not a member of the association, please vir Gaia-X association members can access this website by login and using their Gaia-X credential here https://members.gaic

Fig: Gaia-X Login button

https://gaia-x.eu/pressroom/communicationmaterial/

Communication Material

About Gaia-X (Boiler Plate)	
Gaia-X Factsheet	
Gaia-X Infographic	
Gaia-X Standard Presentation	
Gala-X Communication Briefing	
Gaia-X Media Kit	
Gaia-X Logo	
Gaia-X Federation Services (GXFS) - Executive Summary	
Gaia-X Hubs	
Gaia-X Membership	
Gaia-X Design Guidelines	
Gaia-X Hubs Online Styleguide	

Why join us as a member?



829 BN



Gaia-X at a glimpse



Gaia-X Committees – Taking the project forward together

Which Gaia-X Committees exist?

for Data and Cloud AISBI. Members of the Association may participate in the Committees. They are



Gaia-X Federation Services (GXFS)

Gaia-X Ecosystem Kickstarter - Executive Summary

What is this White Paper about? This White Paper explains the Gaia-X Federation Services' concept from a broader Gaia-X project angle. It introduces the reader to the Gaia-X project; elaborates why ederation Services are key to deliver Gaia-X's ambitions and provides an overview of different Federation Services for a non-technical audience.

What is Gaia-X and why does it matter? Gaia-X is a European project aiming to promote innovation through data sharing. By addressing the lack of trust in the current data landscape, Gaia-X will tap into the potential of linking up different industries and new data pools. Gaia-X develops a framework whereby actors will agree on certain rules and values that create trust among all actors based on the values of data sovereignty, privacy, security, technology neutrality and interoperability. In a community-driven process - companies, individuals and other actors can join Gaia-X.

What is GXFS? Gaia-X Federation Services are the implementation toolbox and minimum technical requirements and services to kickstart Gaia-X. The Federation Services empower the Federations to become operational and work together in an efficient and secure manner

How will the Gaia-X Federation Services work in practice? Each Federation will be able to use the reference open-source code of the Gaia-X Federation Services toolbox to build apps and services that respective Federation. The GXFS source code is a reference implementation point



packages Identity & Trust, Federated Catalogue, Data Sovereignty Services, Compliance and Portal. For instance, such services include authentication and authorisation, personal credential management self-descriptions and notarisation services to name only a few. Further details may be consulted through the latest release of the White Paper available here.

Who is working on GXFS? GXFS-DE is the project name of an initiative funded by the German Ministry of Economics and Energy, and as per a German Parliament decision. It intends to kickstart the development of Gaia-X Federation Services through a joint community process. The resulting specifications and open-source code of this funded project are owned by the Gaia-X Association.

The eco Association of the Internet Industry, with its Head Office in Cologne, Germany, acts as a procurer to coordinate the specification work and to award the implementation contractors, based or

Gaia-X at a glimpse

Gaia-X Hubs - Join a thriving network across Europe

What are Gaia-X Hubs?

What is the role of Gaia-X Hubsi





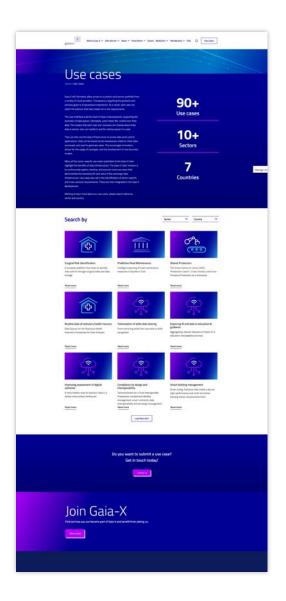


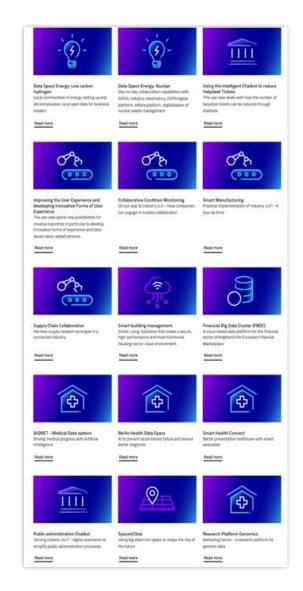


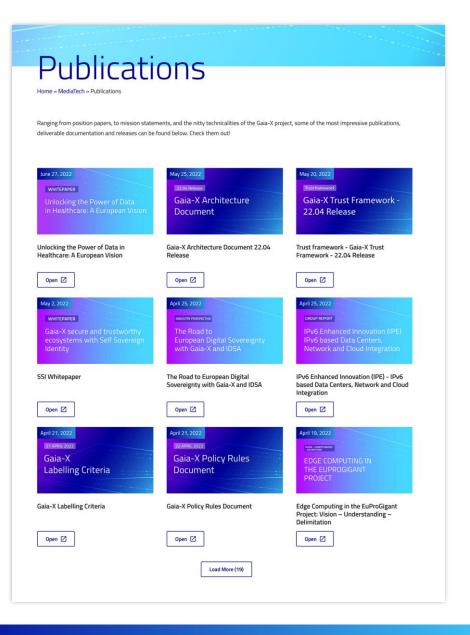




Gaia-X Data Space Use cases & Publications







Gaia-X Useful documents – Check them out!

For quick understanding:

- Gaia-X Factsheet: https://gaia-x.eu/wp-content/uploads/2022/06/Gaia-X-Factsheet_V4_14062022.pdf
- Gaia-X Infographic: https://gaia-x.eu/wp-content/uploads/2022/07/Gaia-X Infographic 05072022.pdf
- Hubs Infographic: https://gaia-x.eu/wp-content/uploads/2022/06/20210929_Gaia-X_Hubs_TwoPager_A4_V04.pdf
- Media Kit: https://gaia-x.eu/wp-content/uploads/2022/07/GX-Media Kit V8 06072022.pdf

Important milestones & relevant publications:

- Vision & Strategy publication: https://gaia-x.eu/wp-content/uploads/2021/12/Vision-Strategy.pdf
- Architecture publication: https://gaia-x.eu/wp-content/uploads/2022/06/Gaia-x-Architecture-Document-22.04-Release.pdf
- Trust Framework publication: https://gaia-x.eu/wp-content/uploads/2022/05/Gaia-X-Trust-Framework-22.04.pdf
- Labelling criteria publication: https://gaia-x.eu/wp-content/uploads/2022/05/Gaia-X-labelling-criteria-v22.04_Final.pdf
- Policy Rules publication: https://gaia-x.eu/wp-content/uploads/2022/05/Gaia-X_Policy-Rules_Document_v22.04_Final.pdf

Gaia-X Press releases

For a user-friendly comprehension:

- Vision & Strategy: https://gaia-x.eu/news/latest-news/gaia-x-association-releases-its-vision-and-strategy-document/
- Latest architecture & Trust Framework: https://gaia-x.eu/news/latest-news/gaia-x-releases-a-new-architecture-document-and-trust-framework-to-strengthen-gaia-xs-ecosystem-and-better-safeguard-data/
- Policy & Rules/Labelling: https://gaia-x.eu/news/latest-news/gaia-x-releases-its-latest-policy-rules-and-labelling-criteria-demonstrating-better-governance-and-compliance-with-gaia-xs-principles/
- Labelling Framework latest release: https://gaia-x.eu/news/latest-news/gaia-x-association-announces-labelling-framework-release/
- GXFS and SCS begins: https://gaia-x.eu/news/latest-news/gaia-x-implementation-phase-starts-for-gxfs-and-scs/
- Lighthouses: https://gaia-x.eu/news/latest-news/gaia-x-making-a-stride-in-navigating-digital-transformation-with-its-lighthouse-projects-targeting-multiple-industries/
- Gaia-X Lab: https://gaia-x.eu/news/latest-news/gaia-x-association-moves-into-the-adoption-phase-accelerating-the-gaia-x-sw-framework-development-through-oss-project-and-a-sw-lab/

Why should you join?









Contribute

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how data will be stored, shared, and used in future.

Develop

new data-driven business models and data spaces.

Strengthen

ties to the expert communities in your industry.

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https://www.youtube.com/channel/UCB5WMc2Ff rxKzfd7XIODoMw



Thank you!

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Gaia-X Association