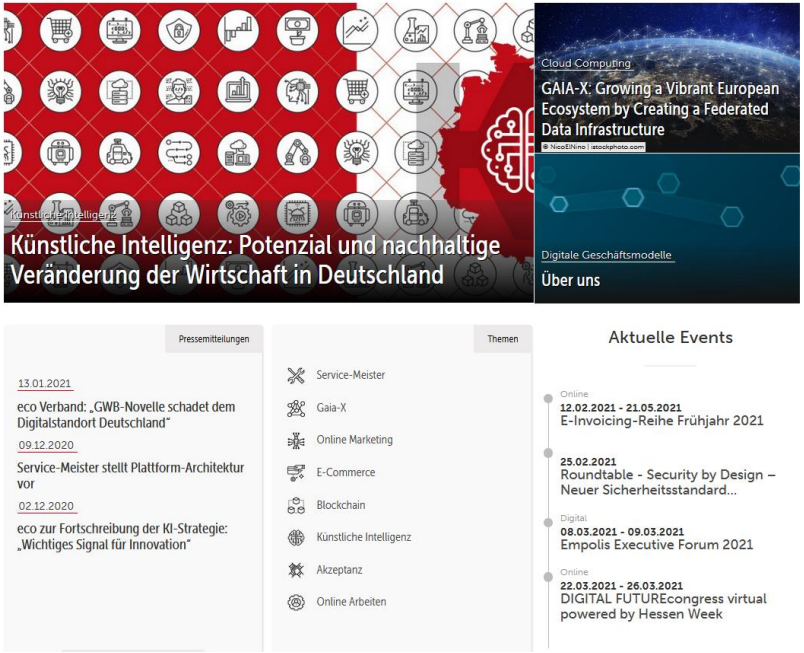
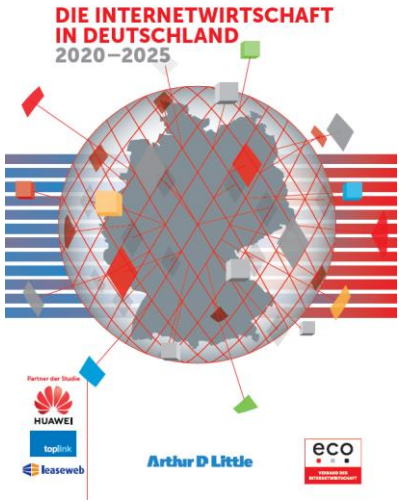

ecoDM
präsentiert
eco – Verband der Internetwirtschaft e.V.
Wir gestalten das Internet

eco – Digitale Geschäftsmodelle



https://www.eco.de/themen/digitale-geschaeftsmodelle/
https://www.eco.de/themen/digitale-geschaeftsmodelle/ueber-uns/
https://www.eurocloud.de/gaia-x



Die Internetwirtschaft startet in eine digitale Dekade der Superlative: Die Studie "Die Internetwirtschaft in Deutschland 2020-2025" erwartet Umsatzzuwächse um 75 Prozent für die Internetwirtschaft in Deutschland

Bei konsequenter Anwendung von KI Verfahren Potentiale in 2025:
13 % Wachstum des Bruttoinlandsprodukts
330 Mrd. Euro Kostenersparnis
150 Mrd. Euro Umsatzpotential

https://www.eco.de/studie-die-internetwirtschaft-in-deutschland-2020-bis-2025/
https://www.eco.de/kuenstliche-intelligenz-potenzial-und-nachhaltige-veraenderung-der-wirtschaft-in-deutschland/


datensouveränität
sicherheit
digitale souveränität
wissenschaft
innovation
grean deals
digitale transformation
hyperscaler
werte
industrie
ethik
europa
nextgenerationeu
home office
home schooling
covid
resilienz
data space
compliance
datenverfügbarkeit

GAIA-X

The **GAIA-X PROJECT** was initiated to enable a **SECURE, OPEN** and **SOVEREIGN** use of data.

In this way, **SELF-DETERMINED DECISIONS** can be made on **HOW** and **WHERE DATA** is **STORED**, **PROCESSED** and **USED** within the **DATA INFRASTRUCTURE**.

What is GAIA-X?

GAIA-X

Our vision

Access and share data through a federated data infrastructure to ensure innovation for our future thanks to the next generation of Information Technology.

Our objectives

Foster the creation, formation, roll out and growth of digital ecosystems that can be used commercially in and across data spaces.

European cooperation

Ensure the efficiency of European data infrastructure, based on European values and supported by the European Commission.

Maximum security

Maximise data sovereignty for business, customers and governments through services that ensure interoperability and privacy by design.

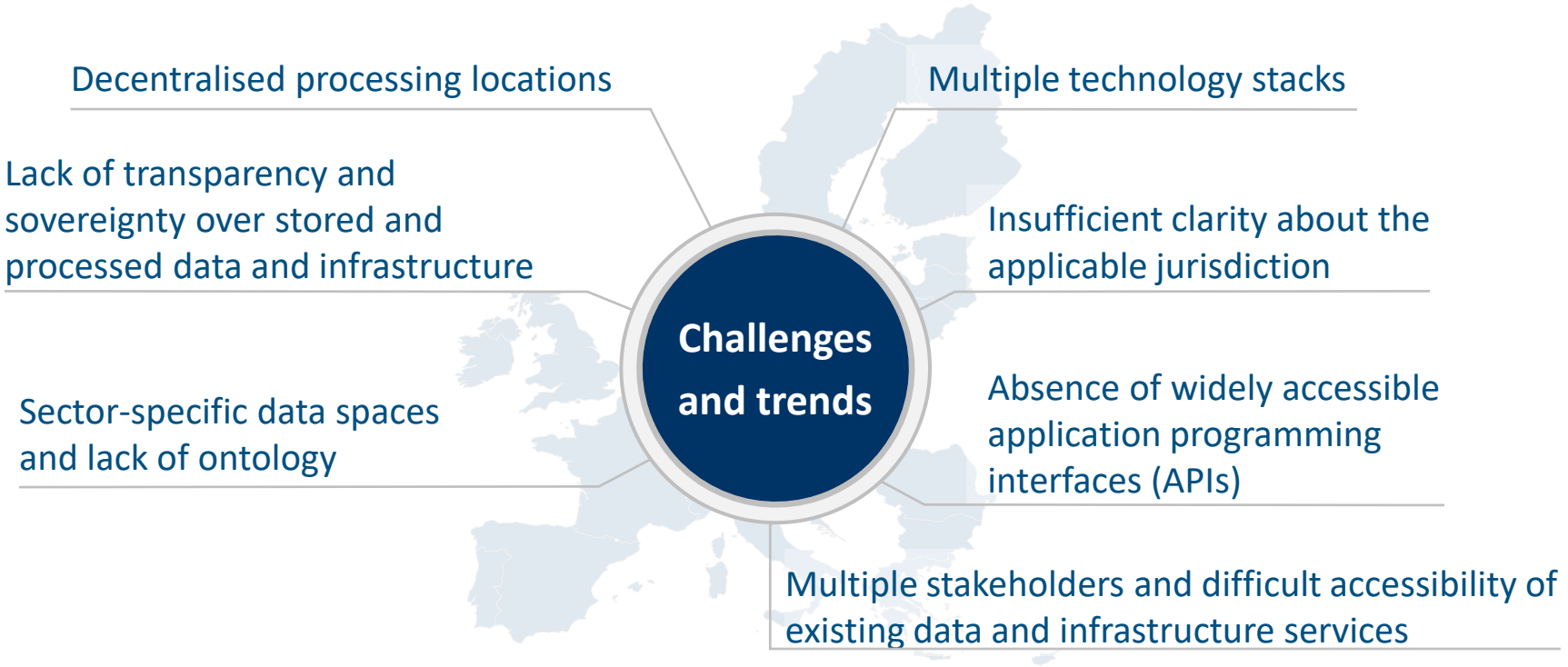
Transparency

Secure open interfaces and standards to allow the aggregation of data while driving innovation and efficiencies within a transparent environment.

Rights protection

Guarantee citizens' privacy as a human right and respect the sovereignty of other nations.

Motivated by challenges to the European digital economy



A strong alliance of companies and organisations has joined

GAIA-X

500+ participants from
ca. 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

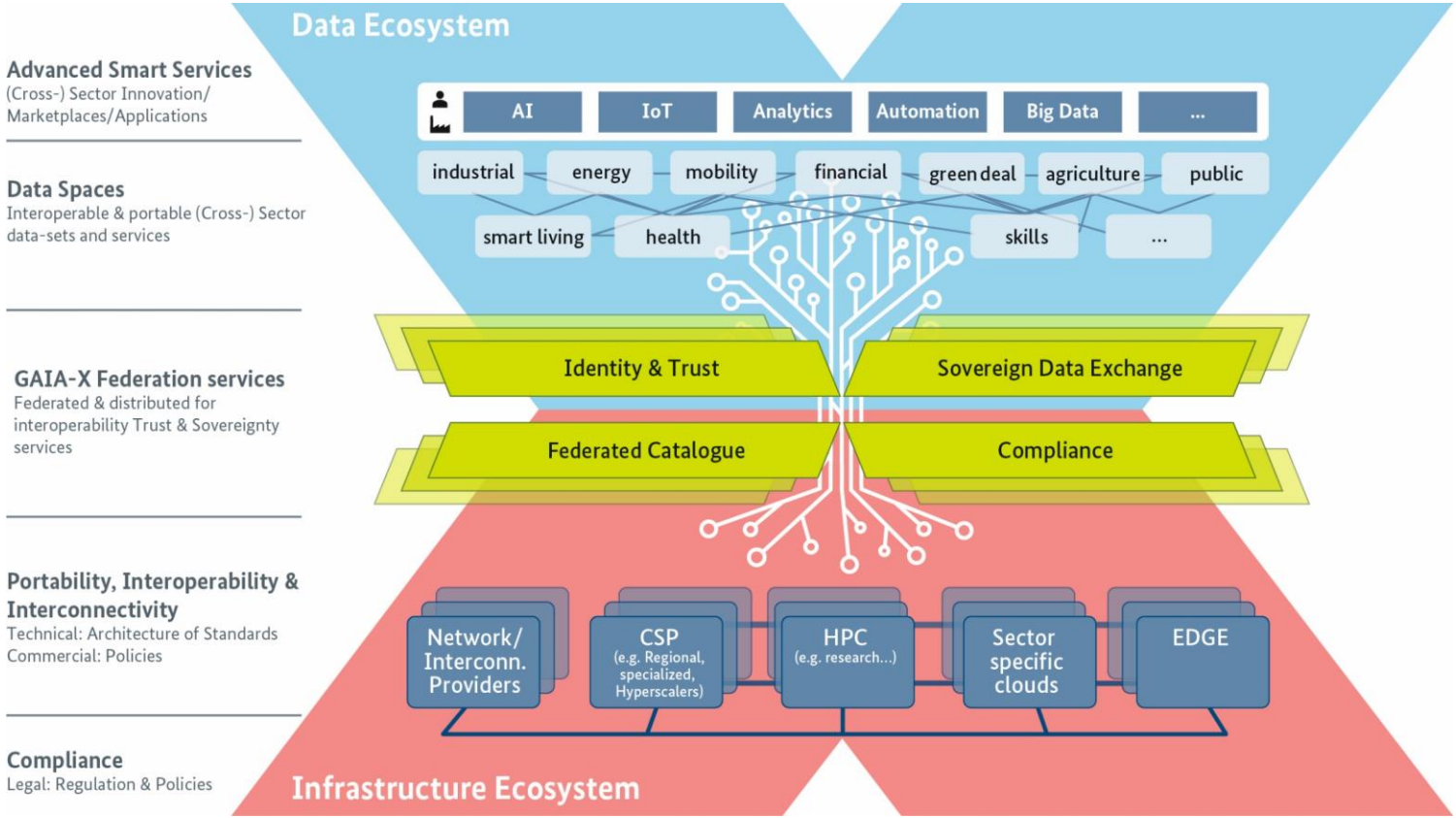
Mentioned explicitly in the **European Data Strategy** and proactively addressing key issues

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**.

*SME <500 employees

The GAIA-X ecosystem of services and data

GAIA-X



All domains share common requirements

GAIA-X

Energy | Finance | Agriculture | Health | Industry 4.0/SME | Mobility | Public Sector | Smart Living

Common cross-domain requirements

GAIA-X as enabler

Federated Identity Management

Algorithms for data monetisation

Trusted Relationship Management

Data Custodianship as a business principle

Open to adapt of all market participants - and systems

Authorisation and data usage control by the data owner

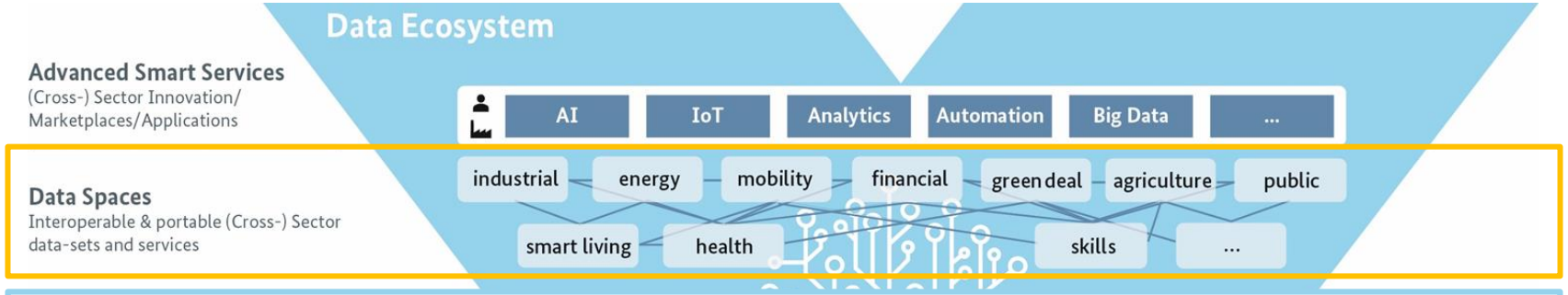
Uniform definition of protection classes for data and services for all participants

Selectable Geography and Legislation for data storage and service offering (locally/centrally)

Hybrid Cloud Scenario through distributed implementation (vertically and horizontally) across many vendors

Additional domain-specific requirements

User requirements as core of the development of GAIA-X

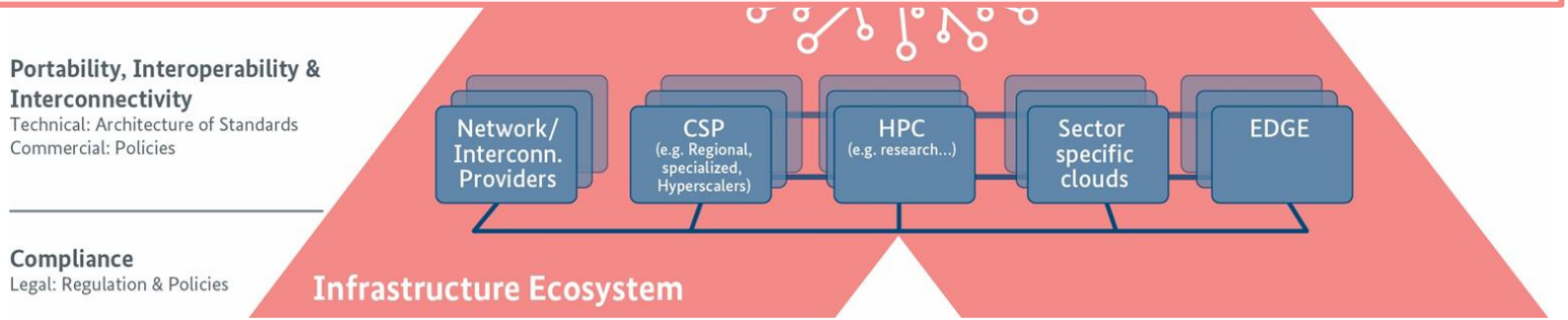


- In order to facilitate value creation based on digital services and mechanisms, we need **an architecture in the form of an underlying framework common to all domains**.
- GAIA-X allows the emergence of **Advanced Smart Services** such as **AI, Analytics or Big Data** and fosters **innovation in the GAIA-X Ecosystem**.
- GAIA-X offers ontologies for interoperability and API within and across sector specific **data spaces** according to the EU data strategy.
- It promotes the opportunity to collaborate in **data-driven horizontal and vertical value chains**.
- As a result, it encourages the emergence of **sustainable business and innovation ecosystems** for the next generation of digital infrastructure.

Alignment of various providers in an infrastructure ecosystem

GAIA-X

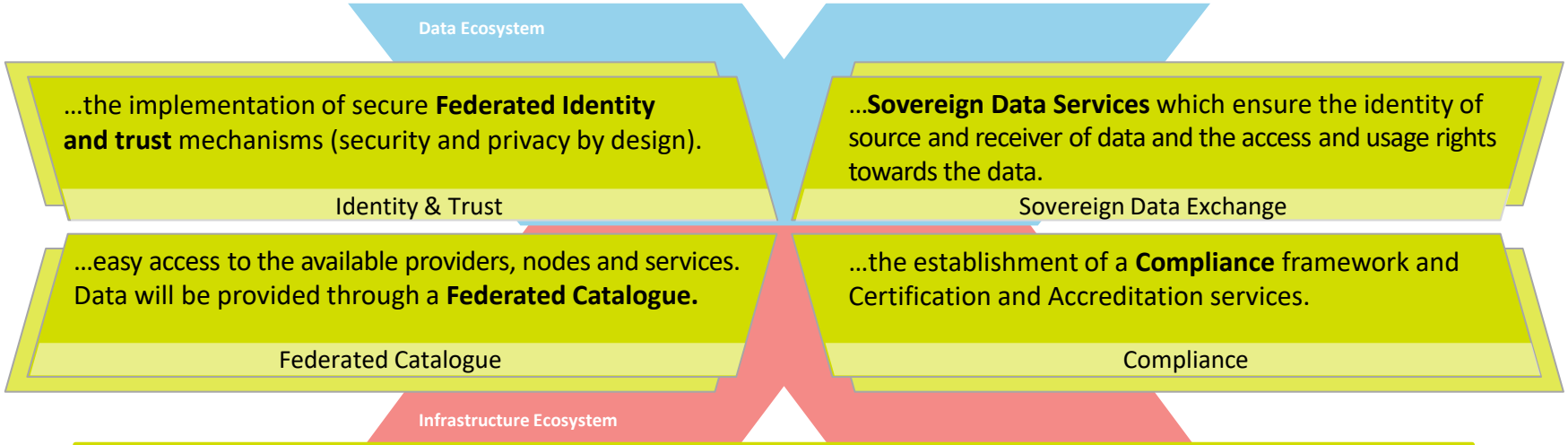
- GAIA-X creates an infrastructure ecosystem by establishing **portability** and **interoperability** between **network and interconnection providers**, **Cloud Solution Providers** (CSP), **High Performance Computing** (HPC), **sector-specific clouds** and **edge systems**.
- Mechanisms are developed to **find, combine and connect services** from participating providers in order to enable a **user-friendly infrastructure ecosystem**.
- GAIA-X **supports distributed use cases**, spanning from on-premise set-ups, cloud hosted infrastructure through to facility to edge cases.
- GAIA-X has to address the **complete technical stack**, including infrastructure and existing network/ interconnection requirements (Architecture of Standards) of distributed use cases.



Federation Services as core of the technical infrastructure

GAIA-X

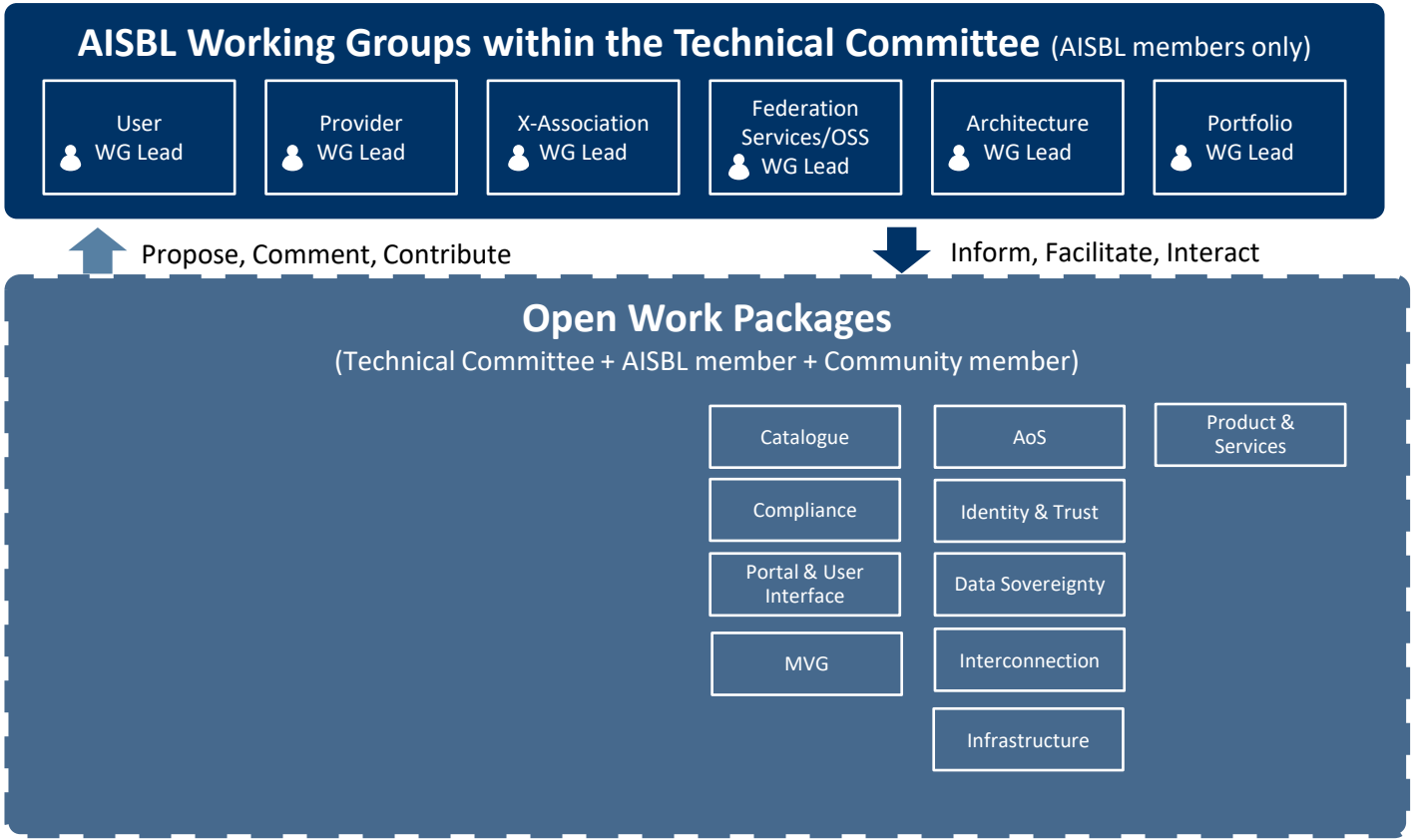
The technical implementation of these Federation Services focuses on…



GAIA-X identifies the minimum technical requirements and services necessary to operate **the Federated GAIA-X Ecosystem**. The development of these services will follow the principles of **Security-by-Design** and also include the concept of **Privacy-by-Design**.

Federated Service - Integration & Portal

How do TC, Working Groups and Work Packages interact?



Data Spaces as enablers of cross-domain business models

GAIA-X

Industry 4.0/SME

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Health

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The Netherlands

Energy

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France

4 characteristics

- Data sovereignty and transparency
- Interoperability on a semantic level
- More than one single source of truth
- Can be nested and overlapping

Mobility

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Finance & Insurance

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Space

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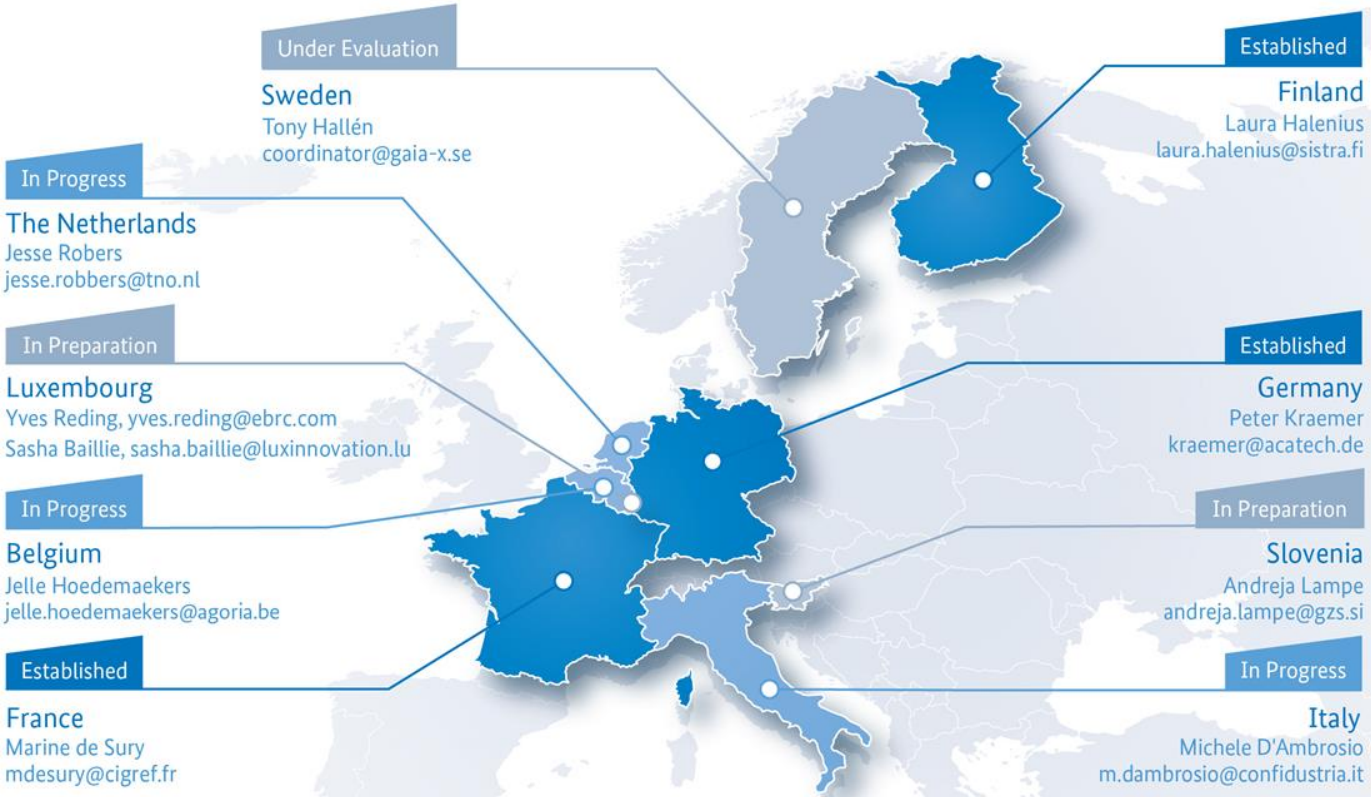
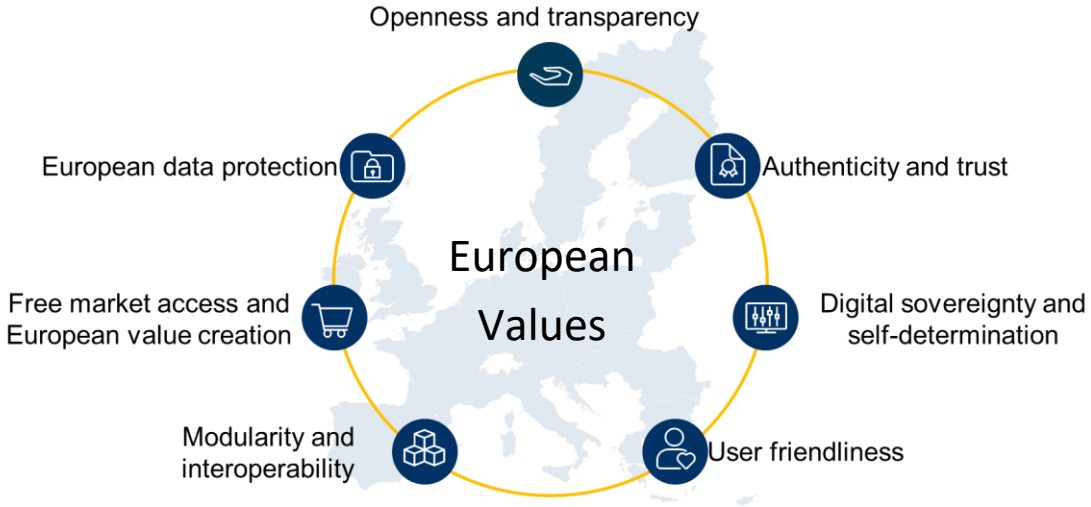
Establishment of GAIA-X Hubs

GAIA-X



Potential IPCEI on Next Generation Cloud Infrastructure and Services Rooted in European Values

- Joint Member States' declaration on EU Cloud federation in October 2020
- Launch of European Alliance on Industrial Data and Cloud in December 2020
- Official launch of GAIA-X European cloud infrastructure initiative in June 2020



Potential IPCEI on Next Generation Cloud Infrastructure and Services Objectives and Scope

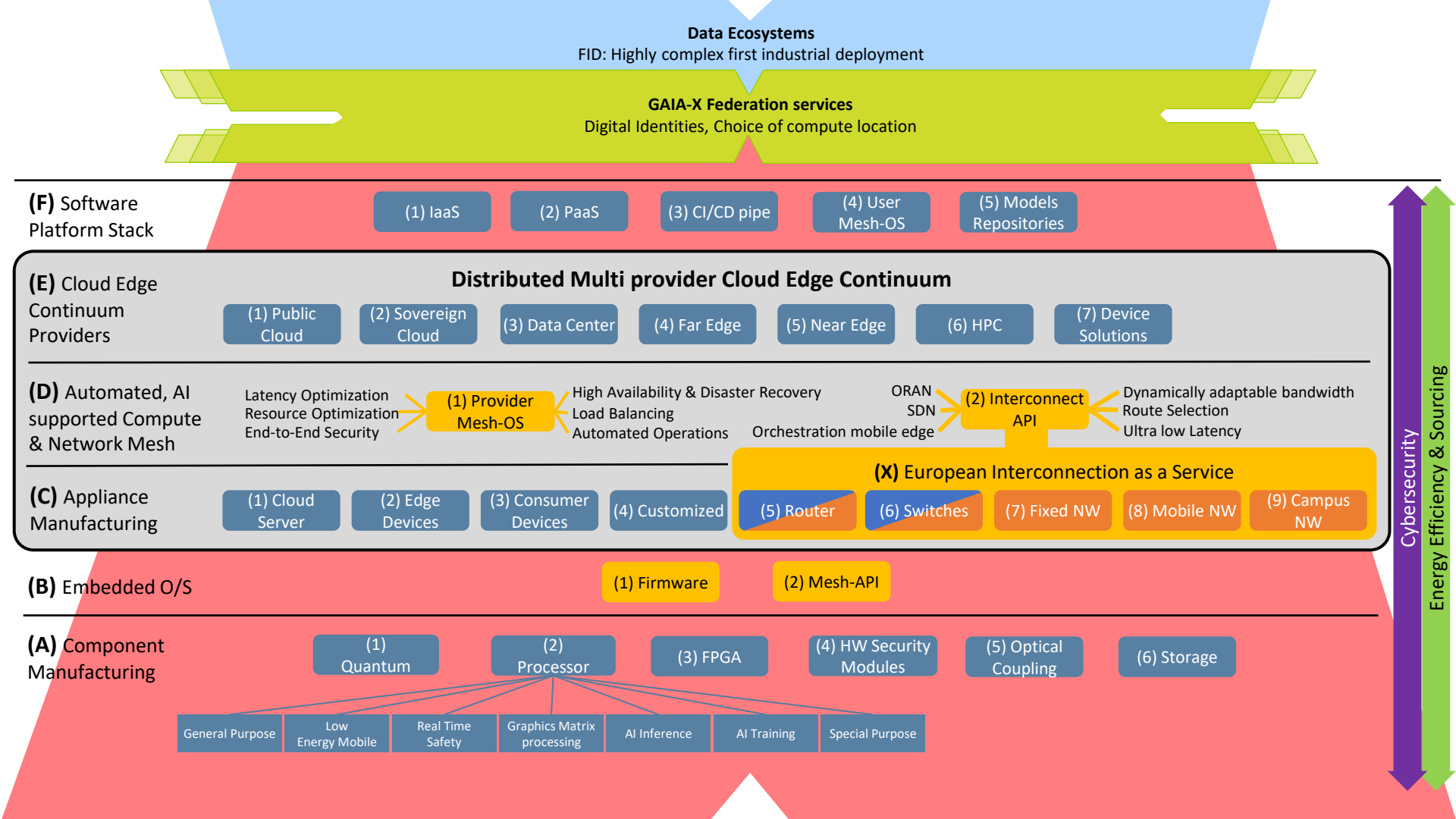
Fostering the resilience and competitiveness of European industries by creating a multi Provider Cloud and Edge Continuum

Main objectives:

- Strengthen EU digital industry at both infrastructure and service level
- Support the development of highly scalable, federated, interoperable, trustworthy and energy-efficient cloud and infrastructure services across Europe
- Invoke Spill over effects in different sectors
- Boost Cyber-Security of cloud infrastructure

Scope:

- IPCEI addresses research, development and innovation (R&D&I) needs
- Supports a first industrial deployment (FID)


Data Ecosystems
FID: Highly complex first industrial deployment
GAIA-X Federation services
Digital Identities, Choice of compute location
(F) Software Platform Stack
(1) IaaS
(2) PaaS
(3) CI/CD pipe
(4) User Mesh-OS
(5) Models Repositories
(E) Cloud Edge Continuum Providers
Distributed Multi provider Cloud Edge Continuum
(1) Public Cloud
(2) Sovereign Cloud
(3) Data Center
(4) Far Edge
(5) Near Edge
(6) HPC
(7) Device Solutions
(D) Automated, AI supported Compute & Network Mesh
Latency Optimization
Resource Optimization
End-to-End Security
(1) Provider Mesh-OS
High Availability & Disaster Recovery
Load Balancing
Automated Operations
ORAN
SDN
Orchestration mobile edge
(2) Interconnect API
Dynamically adaptable bandwidth
Route Selection
Ultra low Latency
(C) Appliance Manufacturing
(1) Cloud Server
(2) Edge Devices
(3) Consumer Devices
(4) Customized
(X) European Interconnection as a Service
(5) Router
(6) Switches
(7) Fixed NW
(8) Mobile NW
(9) Campus NW
(B) Embedded O/S
(1) Firmware
(2) Mesh-API
(A) Component Manufacturing
(1) Quantum
(2) Processor
(3) FPGA
(4) HW Security Modules
(5) Optical Coupling
(6) Storage
General Purpose
Low Energy Mobile
Real Time Safety
Graphics Matrix processing
AI Inference
AI Training
Special Purpose
Cybersecurity
Energy Efficiency & Sourcing

Beispiel OpenAI – GPT-3

OpenAI (GPT-3): Eine Künstliche Intelligenz, die englischsprachige Texte selbstständig vervollständigen kann und deren Texte teilweise von Menschen geschriebenen Texten nicht unterschieden werden können.

The supercomputer developed for OpenAI is a single system with more than **285,000 CPU cores**, **10,000 GPUs and 400 gigabits per second of network connectivity for each GPU server**. Compared with other machines listed on the TOP500 supercomputers in the world, it ranks in the top five, Microsoft says. Hosted in Azure, the supercomputer also benefits from all the capabilities of a robust modern cloud infrastructure, including rapid deployment, sustainable datacenters and access to Azure services.

https://blogs.microsoft.com/ai/openai-azure-supercomputer/

Danke für Ihre Aufmerksamkeit!

Andreas Weiss

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- www.eco.de
- www.dotmagazine.online

GAIA-X: https://www.data-infrastructure.eu
IPCEI Recording: https://attendee.gotowebinar.com/recording/9208799522831766786