Gaia-X
Standard Presentation

April 1st, 2021

Agenda

01

Introduction

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?

Our vision

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

European cooperation

Ensure the efficiency of European data infra-structure, based on European values and supported by the European Commission.

Transparency

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

Our objectives

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

Maximum security

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

Rights protection

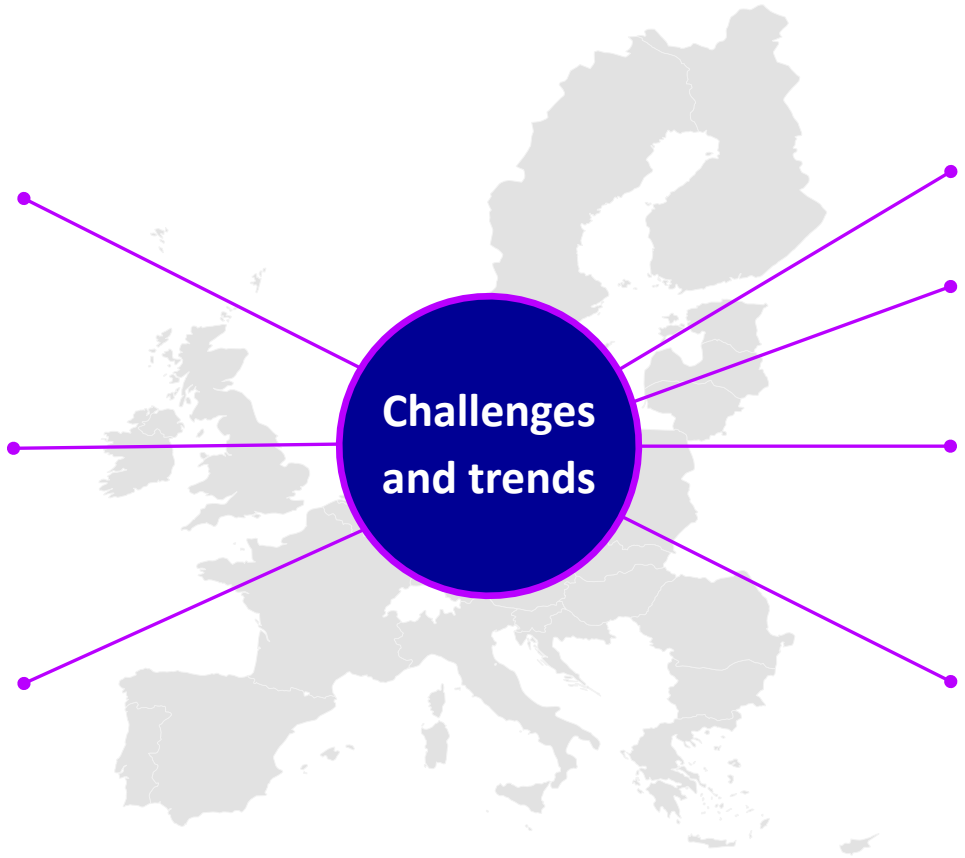
Guarantee citizens' privacy as a human right and respect the sovereignty of other nations.

Motivated by challenges to the European digital economy

Decentralised processing locations

Lack of transparency and sovereignty over stored and processed data and infrastructure

Sector-specific data spaces and lack of ontology



Multiple technology stacks

Insufficient clarity about the applicable jurisdiction

Absence of widely accessible application programming interfaces (APIs)

Multiple stakeholders and difficult accessibility of existing data and infrastructure services

A strong alliance of companies and organisations has joined

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

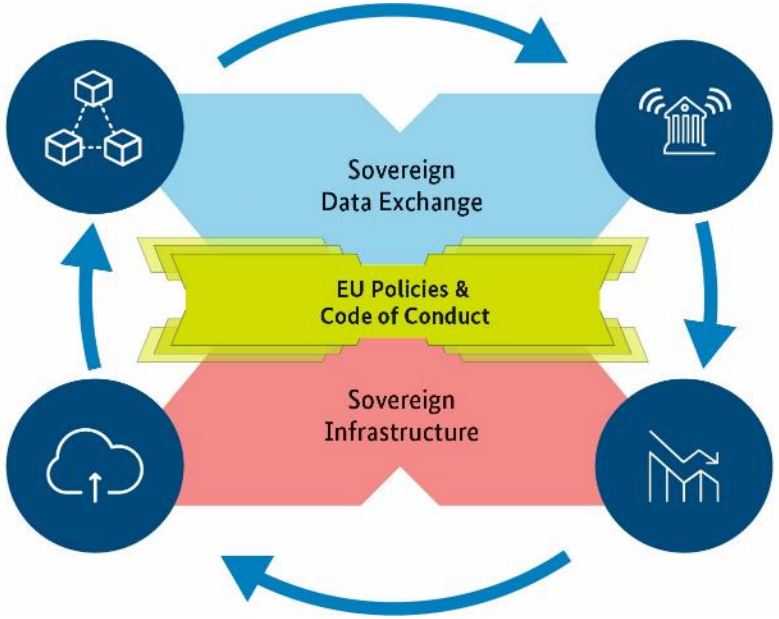
Gaia-X aims at building a trusted, sovereign digital infrastructure for Europe

Creation of digital infrastructures and an ecosystem for innovation

Trusted environment between partners and interoperable links between smart service applications and infrastructure services.

Increasing transparency and attractiveness of digital services

Reduce barriers to compliant service usage; enable the development of new services and products.



Data sovereignty

Strengthen the digital sovereignty of business, science, government and society.

Reduction of dependencies

Reduce private and business consumers' dependency of single providers; control over location and regulatory environment of stored data; reduce sector-specific dependencies.

Gaia-X will add value to the European digital economy

Data-based business models

Enabling self-determined data-based business models from an entrepreneurial perspective.

Raise the value of data

Supporting innovative collaborations across industries to aggregate and raise the value of data.

Fairness and transparency

Promoting fair and transparent business models by providing the rules for such collaborative approaches, including the legally compliant use of data.

Data commercialisation

Providing common data monetisation schemes, sharing models and respective enforcement rules. As such, the commercialisation of data becomes less complex and costly.

Interoperability

Enabling collaboration across industries to create federated, interoperable services on the infrastructure layer.

Data protection

Supporting the detection and preservation of data protection classes and confidentiality rules even in the case of “mixed” data allocations. Hence, the value leakage of enterprise data sets is prevented.

Infrastructure

Easing access to trustworthy next generation IT infrastructure, which will provide a productivity boost for software engineering teams.

The Gaia-X ecosystem of services and data

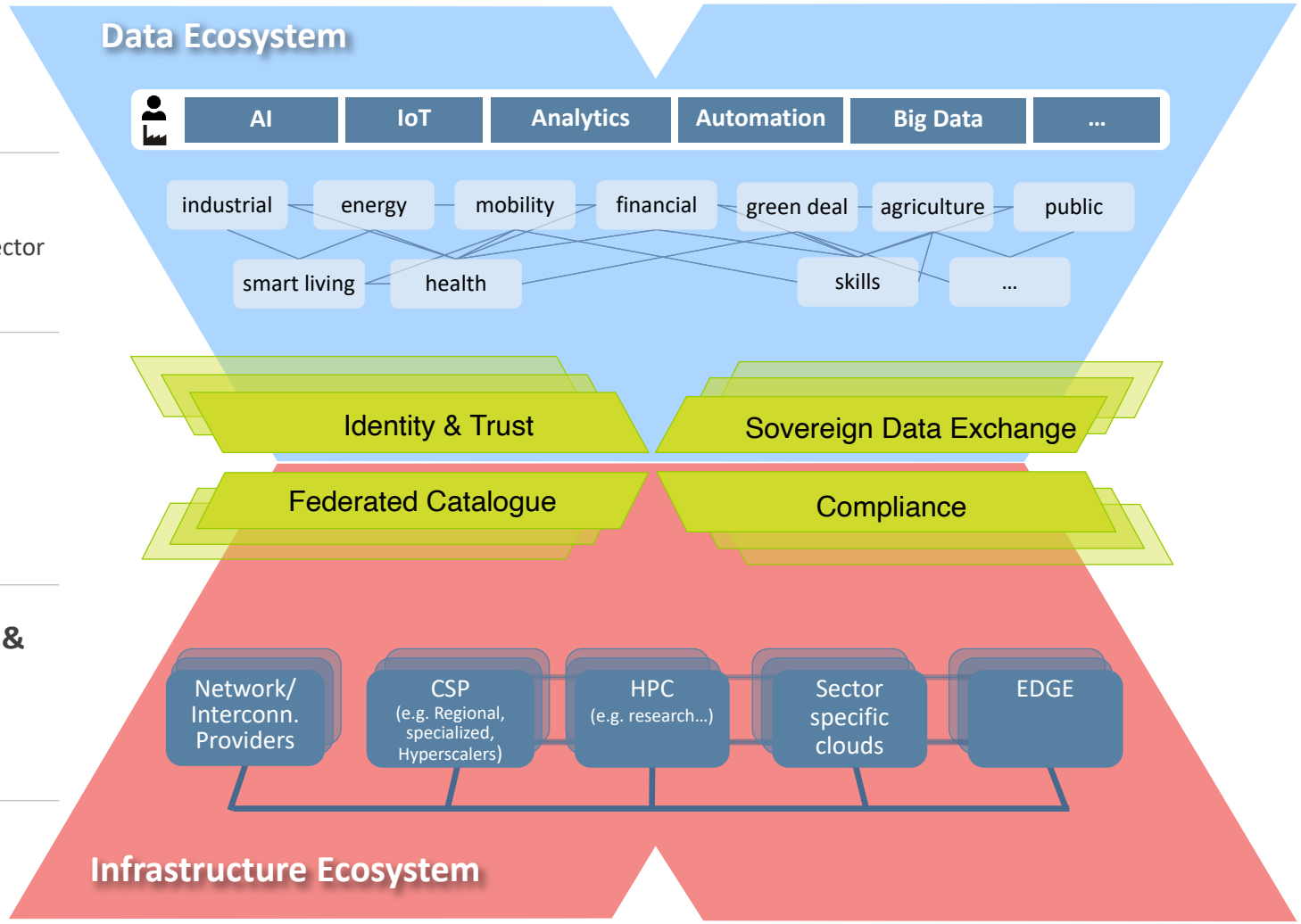
Advanced Smart Services
(Cross-) Sector Innovations /
Market places / Applications

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

GAIA-X Federation services
Federated & distributed for interoperability Trust & Sovereignty services

Portability, Interoperability & Interconnectivity
Technical: Architecture of Standards
Commercial: Policies

Compliance
Legal: Regulation & Policies



02

The user perspective

Activate and represent the user side

Identify suitable use cases – from both a qualitative and a quantitative perspective

Analyse and evaluate the **requirements** of **use cases** from **different domains**

Initiate **further measures** for the **development** of Gaia-X

Define and validate **cross-domain requirements**

Define and validate **domain-specific requirements**

All domains share common requirements

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

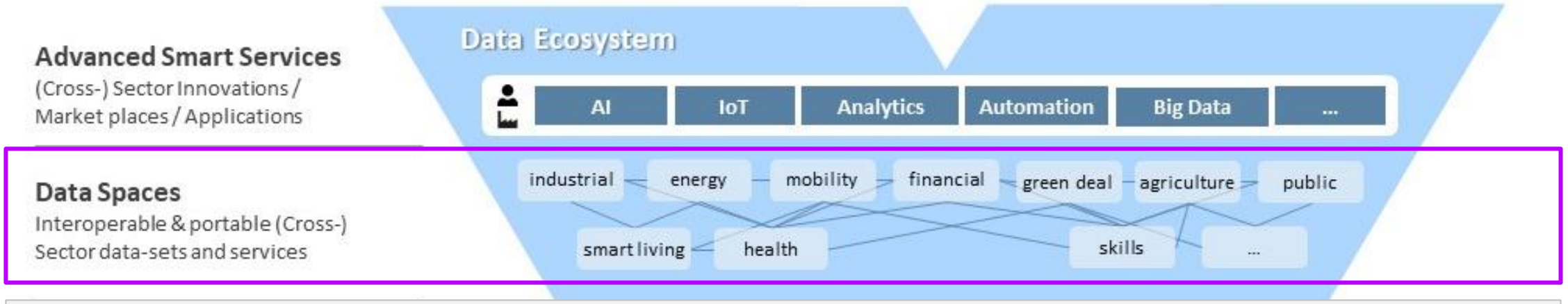
Selectable Geography and Legislation for data storage and service offering (locally/centrally)

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.

The analysis of use cases has provided valuable insights

The path from use cases to Gaia-X

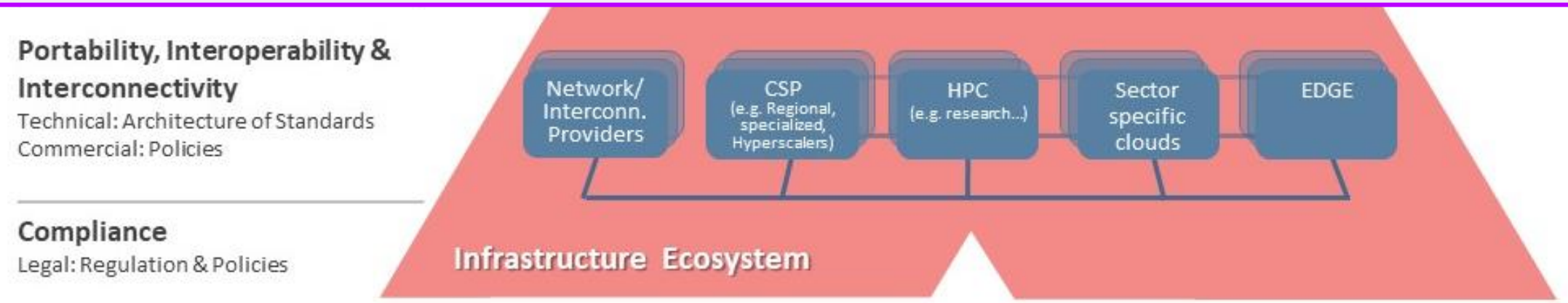
1. Use cases from different domains **face the same challenges**.
2. Based on the consolidation of use cases, we can **identify common cross-domain requirements,** which are **shared by all domains**.
3. **Additional requirements** may be described depending on the domain and use case.
4. Through the synthesis of the use cases we will develop Data Space Demonstrators, which **represent the requirements of users and domains**.
5. We will continue to develop Gaia-X into a **shared solution** and **an enabler within and across domains**.

03

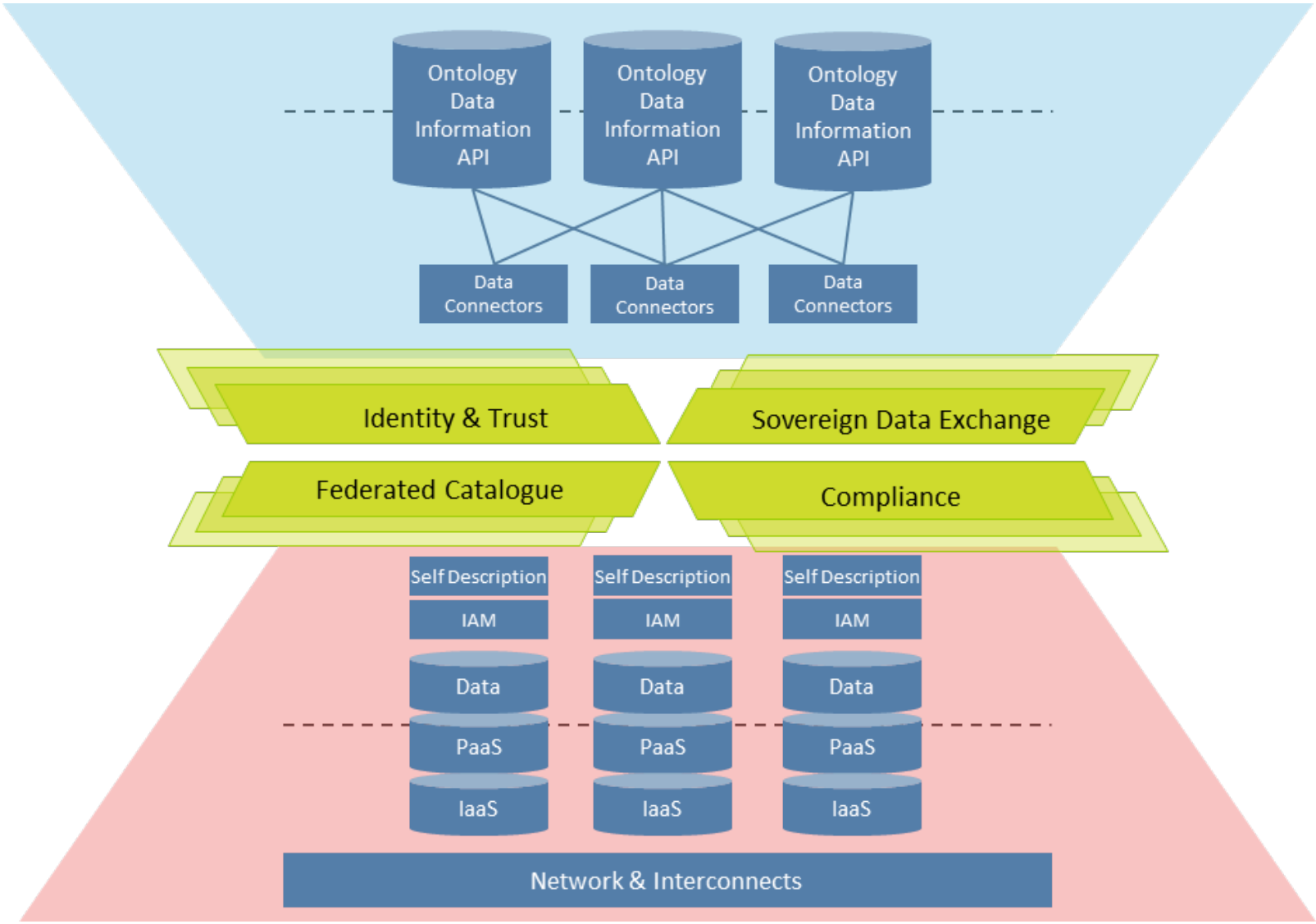
The provider perspective

Alignment of various providers in an infrastructure ecosystem

- 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.



Architecture of Standards



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Data Spaces
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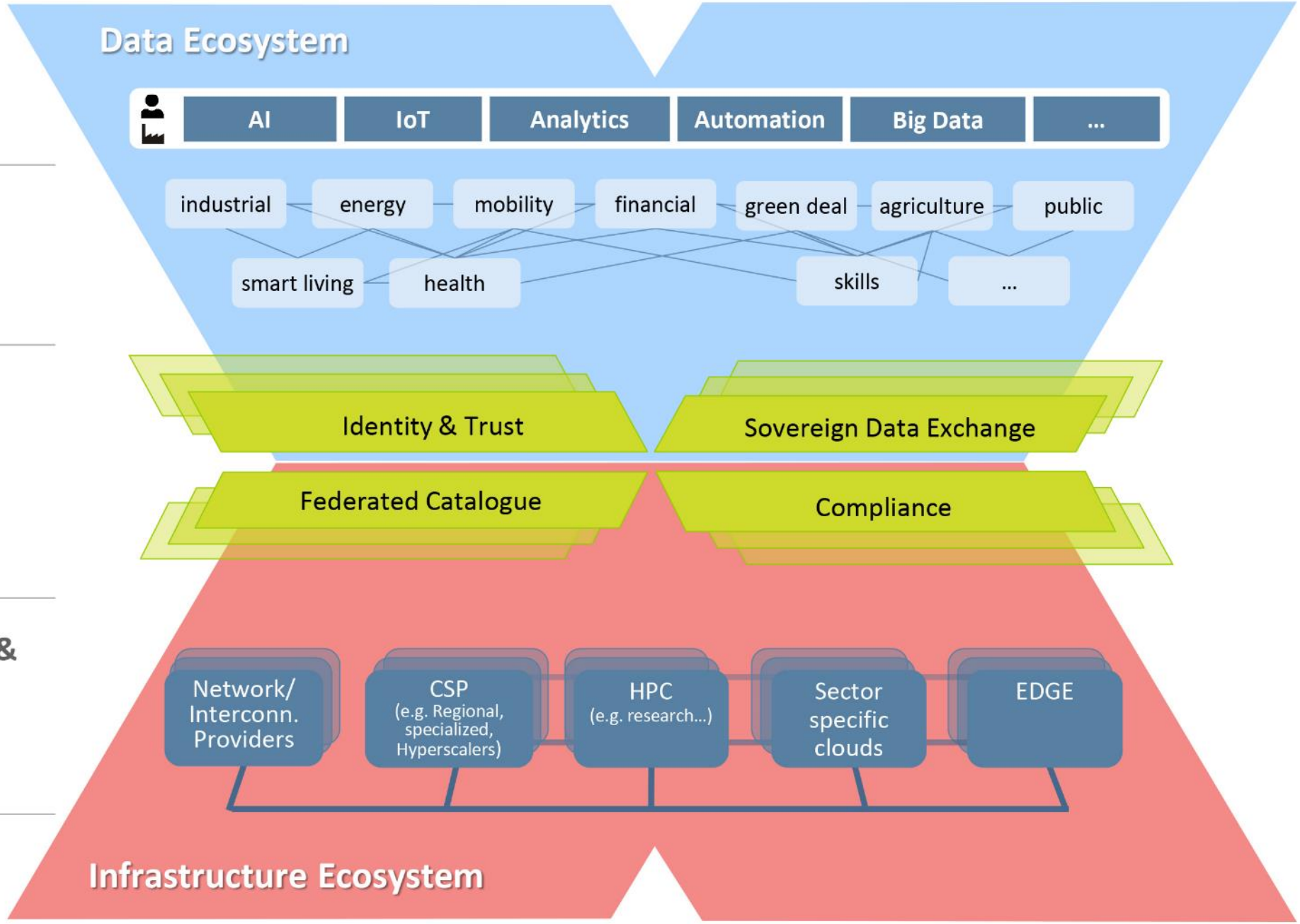

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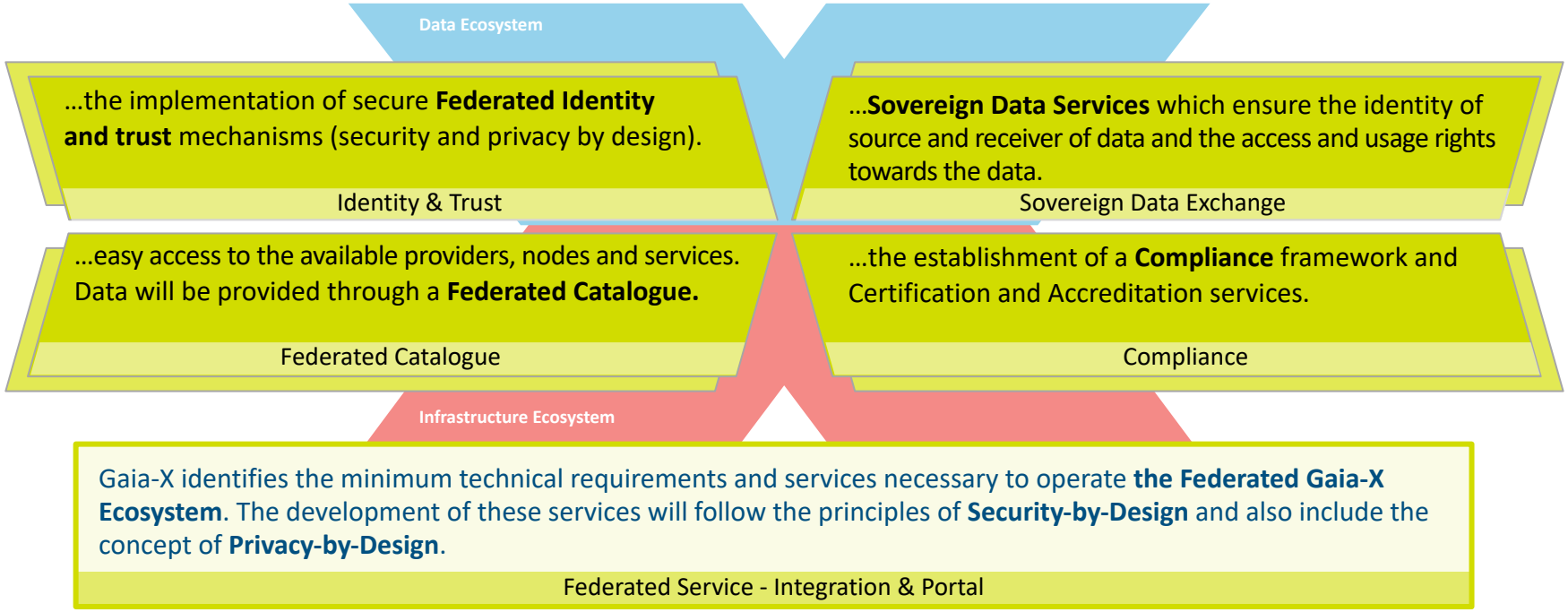
What are the Federation Services?

Federation Services as core of the technical infrastructure

The technical implementation of these Federation Services focuses on…



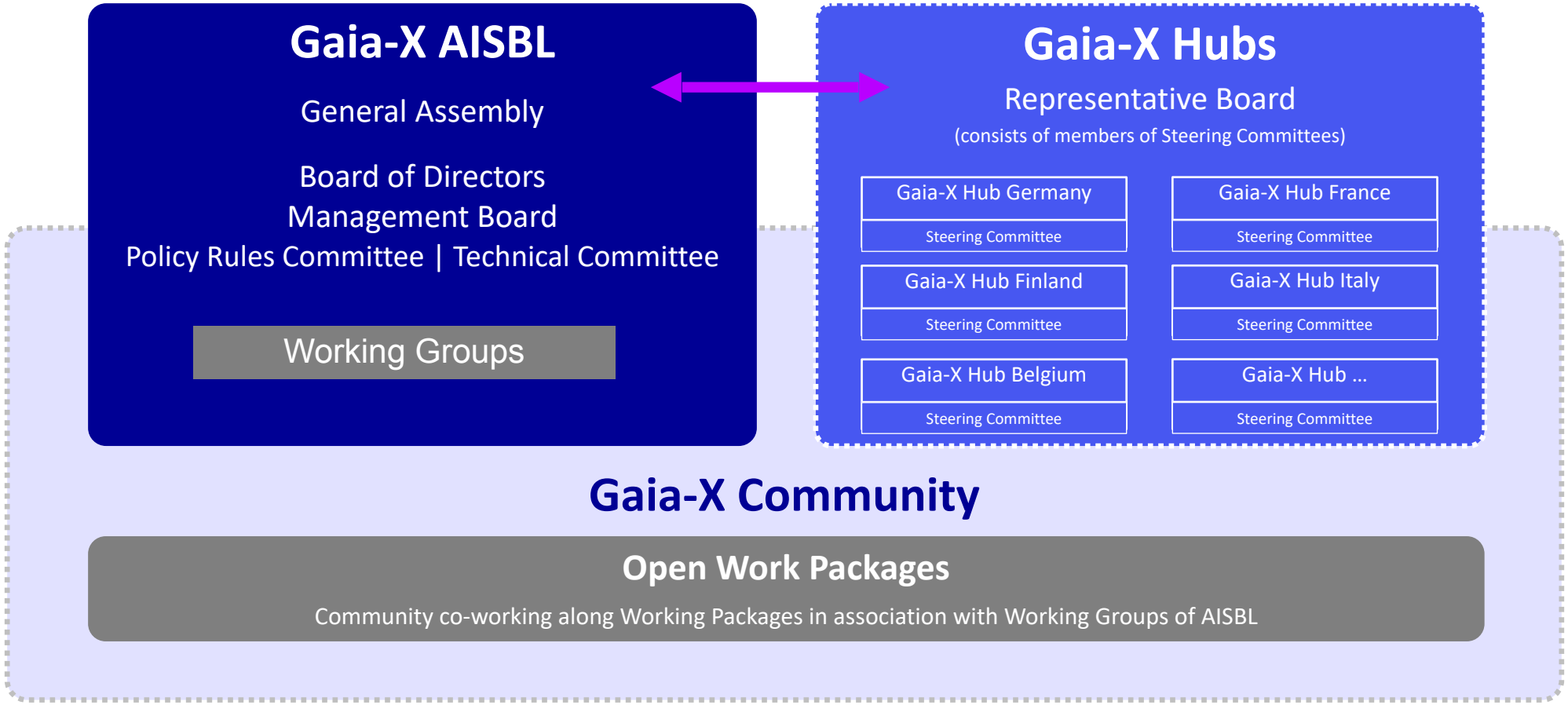
05

How is Gaia-X structured?

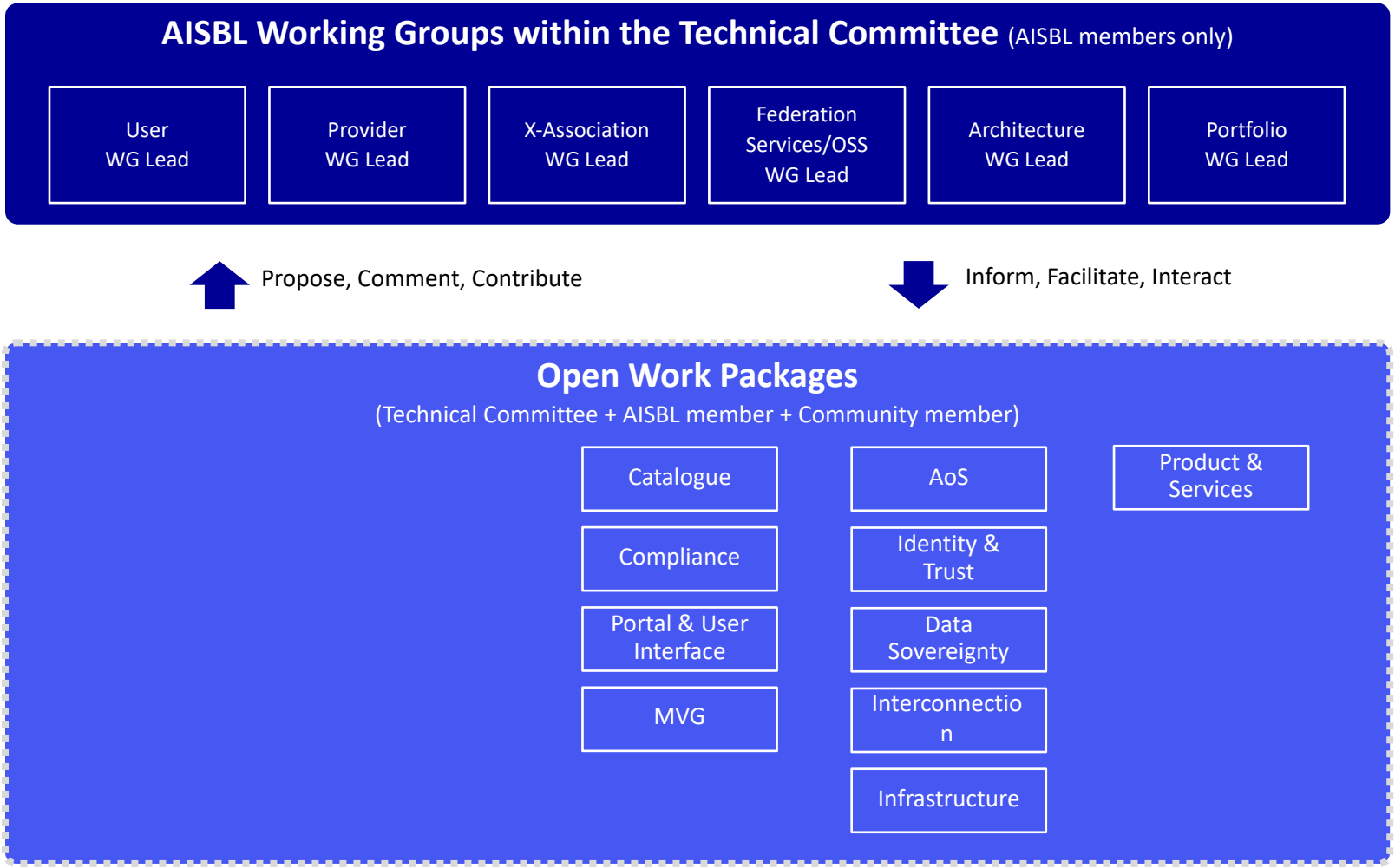
05.1

General structure

Organisational structure and groups



How do TC, Working Groups and Work Packages interact?



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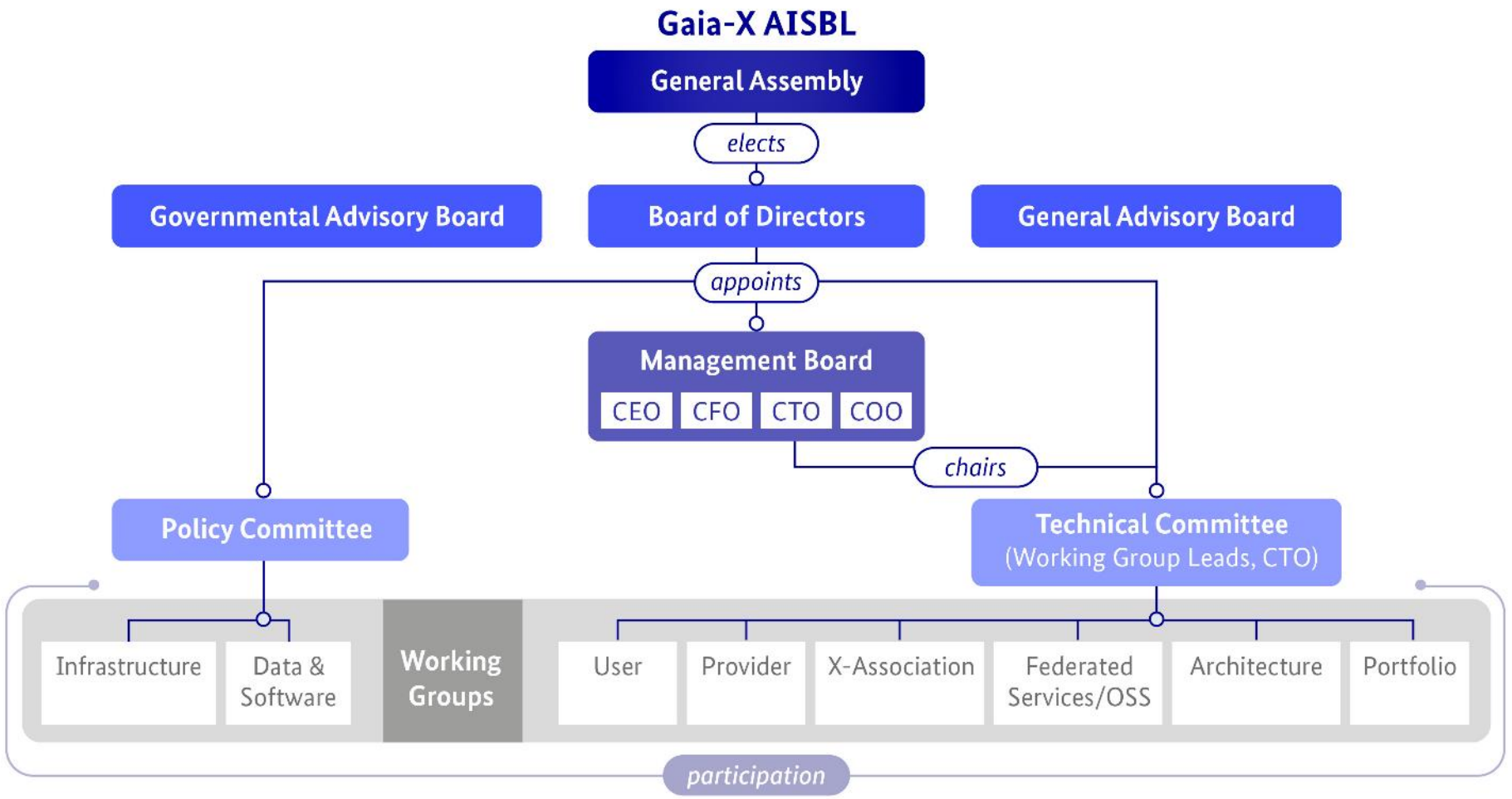
05.2

Gaia-X, European Association for Data and Cloud, AISBL

Core deliverables of the Gaia-X AISBL

The structure of the Gaia-X AISBL



Data Spaces as enablers of cross-domain business models

Industry 4.0/SME

Gerd Hoppe
g.hoppe@beckhoff.com
Germany

Health

Sergio Levi
serio.levi@Philips.com
The Netherlands

Energy

Martine Gouriet
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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

Space

Servane Augier servane.augier@outscale.com
France

Mobility

Jean-Francois Cases
jean-francois.cases@amadeus.com
France

Finance & Insurance

Patrick Lauren-Frings
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France

Travel

Claudio Cimelli
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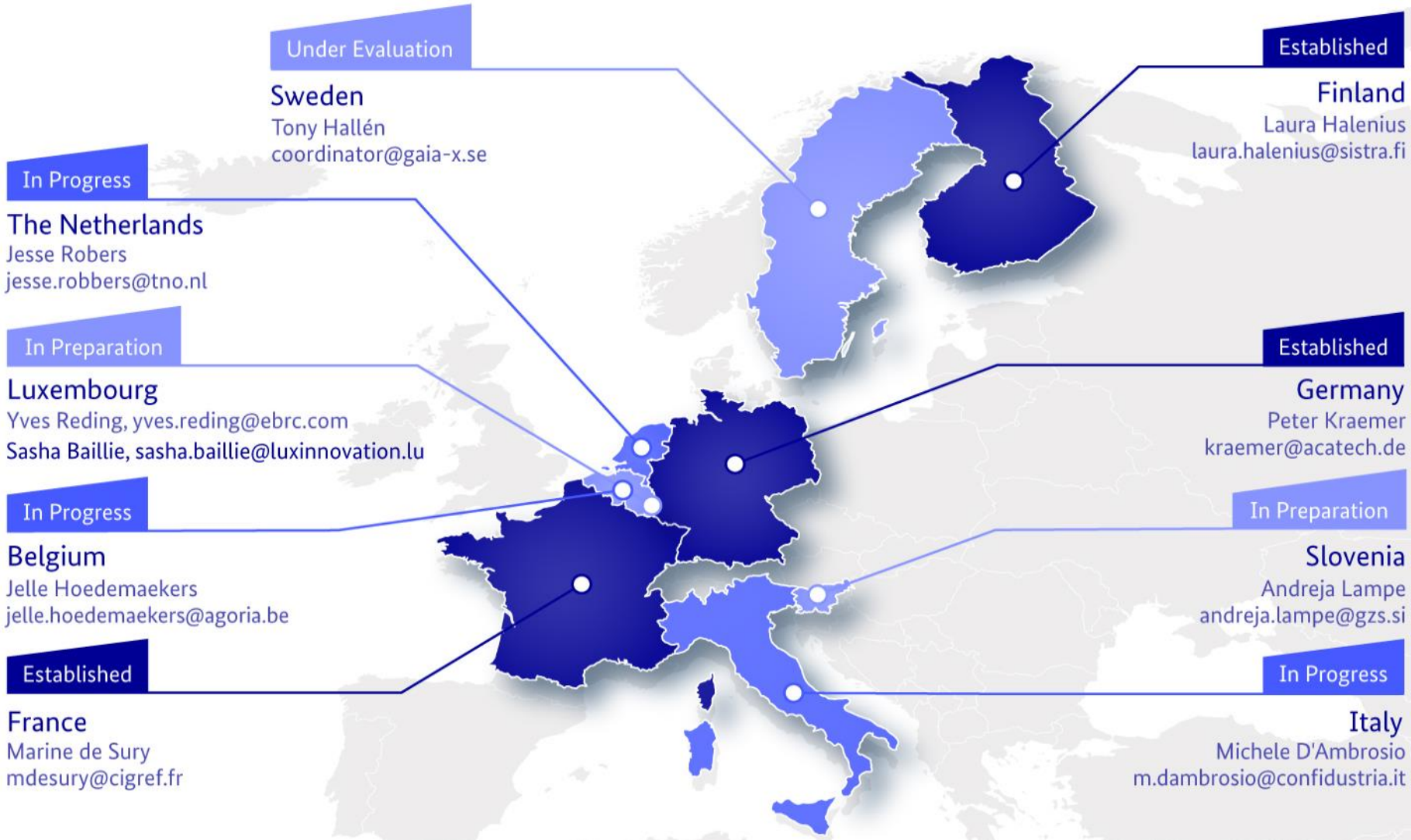
France

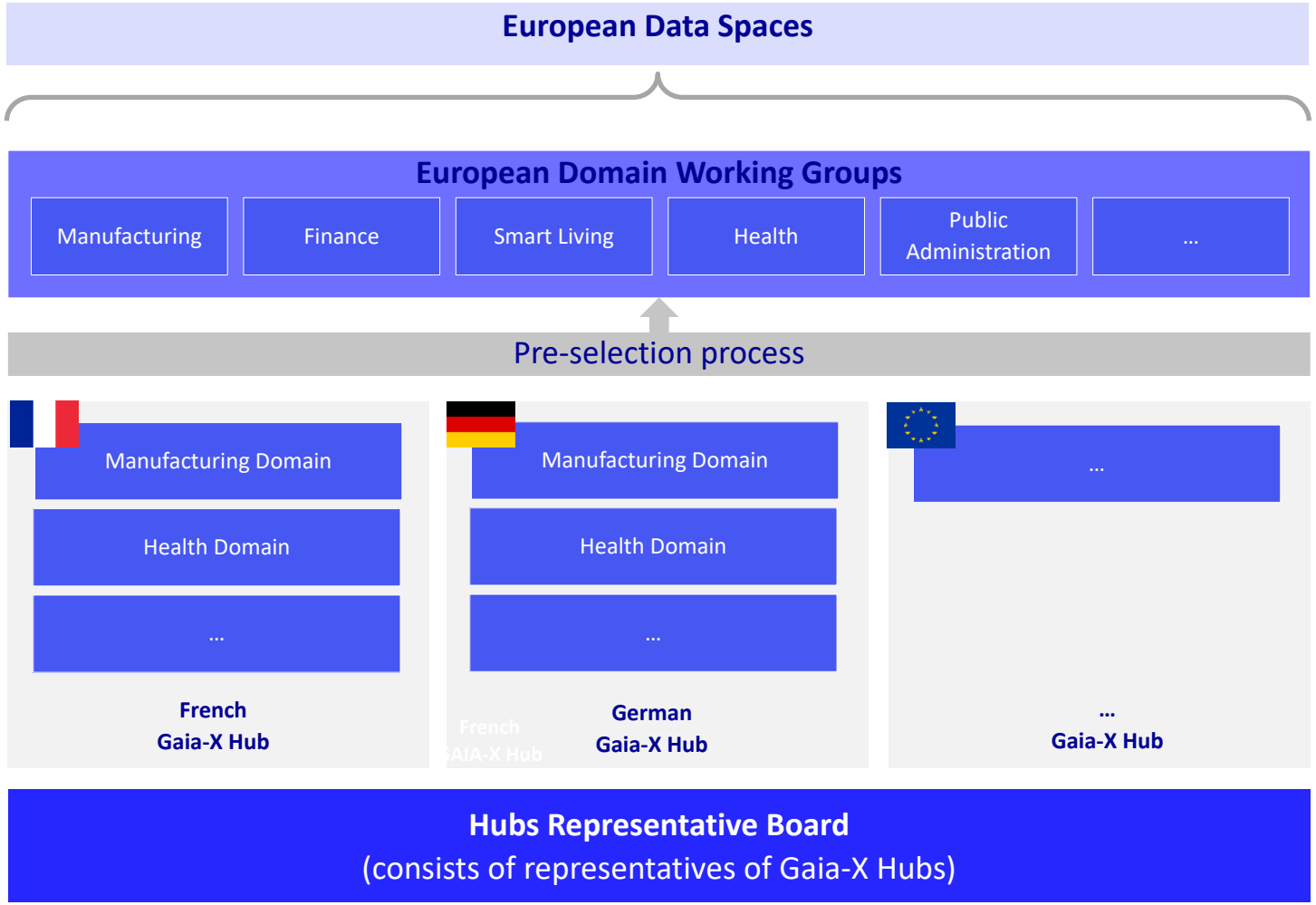
05.3

Gaia-X Hubs

Establishment of Gaia-X Hubs



Gaia-X Hubs help to channel information to the right places



European Domain Working Groups
- consolidate and align use cases
- articulate requirements on technical level as **Requests for Change** towards AISBL
- fed by the Regional-level domain working groups
- close cooperation with other data space initiatives to facilitate development of European Data Spaces

Regional-level domain working groups (part of Regional Hub)
- collect, analyze and evaluate use cases
- **work on regional issues**
- **consolidate requirements** for discussion on European level

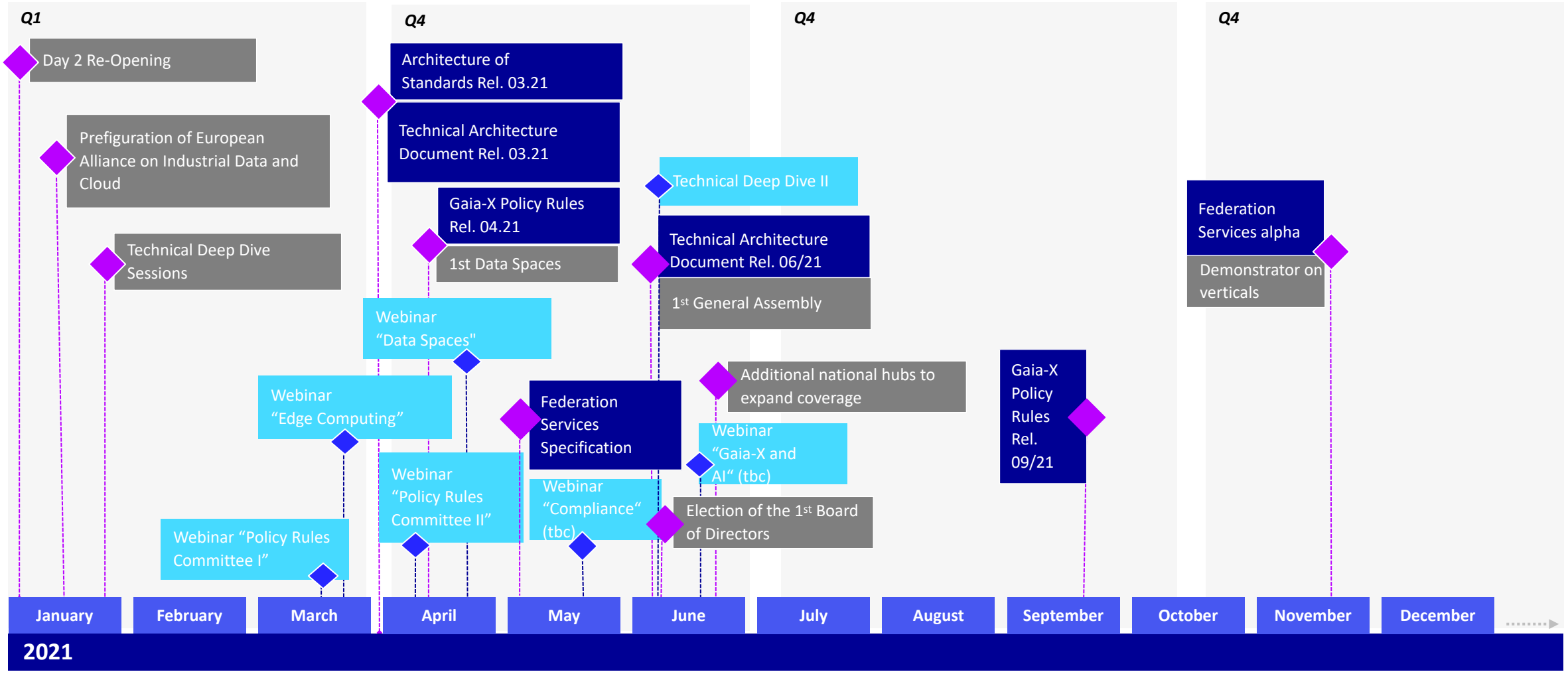
Regional Hubs
- consolidate relevant national initiatives
- coordinate regional-level domain working groups
- disseminate information
- act as central point of contact

Hubs Representative Board
- consolidate strategic advice for AISBL and overarching issues
- coordinate interaction among Hubs

06

Roadmap

Important milestones are upcoming



07

Further information

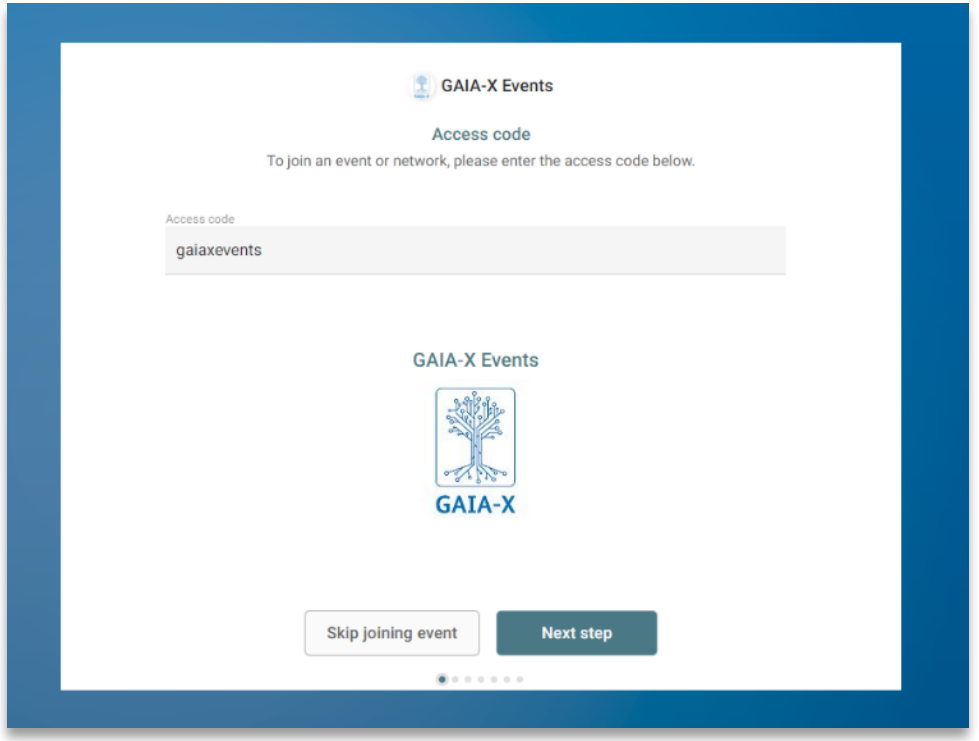
Watch various Gaia-X videos on demand

As a member of the Gaia-X network on talque you have full access to all recordings of previous online events such as the Gaia-X Summit (Nov 2020) or Gaia-X Web Seminars. Just log in to your talque account: https://www.talque.com

If you aren‘t on talque yet, you can register to the Gaia-X network at https://tinyurl.com/GAIAX-network-on-talque using the access code **gaiaxevents**.

All Gaia-X events are accessible via talque

- talque is the **central Gaia-X event platform**.
  All events and web seminars will take place there.
- To join you need to become a **member of the Gaia-X events network**.
- Once being registered you have full access to all upcoming and past events: http://talque.com/join/gaiaxevents



Find further information on
www.data-infrastructure.eu

gaia-x

Information

- Descriptions of the mission, project structure and workstreams
- Overview and download of publications

Blog

- Publication of blog posts on news, developments, discussions and comments on events and articles

Social Media

- LinkedIn and Twitter Channel @gaiax_aisbl with news and discussions

Use cases

- Overview of the current use cases
- Individual one pager with further descriptions and information on each use case

Glossary

- The glossary is intended to list and explain important terms used in the Gaia-X context

FAQ

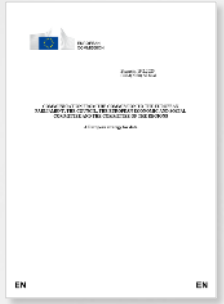
- The FAQ list offers a collection of frequently asked questions and answers about the project and Gaia-X

New website coming soon: **www.gaia-x.eu**

Our current publications provide in-depth knowledge

Project Gaia-X

Franco-German Position Paper



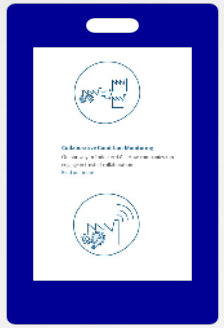
Gaia-X: The European project kicks off the next phase

Gaia-X: Policy Rules and Architecture of Standards

Objectives & Principles

Gaia-X: A Pitch Towards Europe

Use Cases: Gaia-X from the user perspective



User Ecosystems & Requirements

Gaia-X: Driver of digital innovation in Europe

Gaia-X: Technical Architecture

All publications are available on:

Technical Implementation

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Be part of Gaia-X and create a future that is both open and fair!