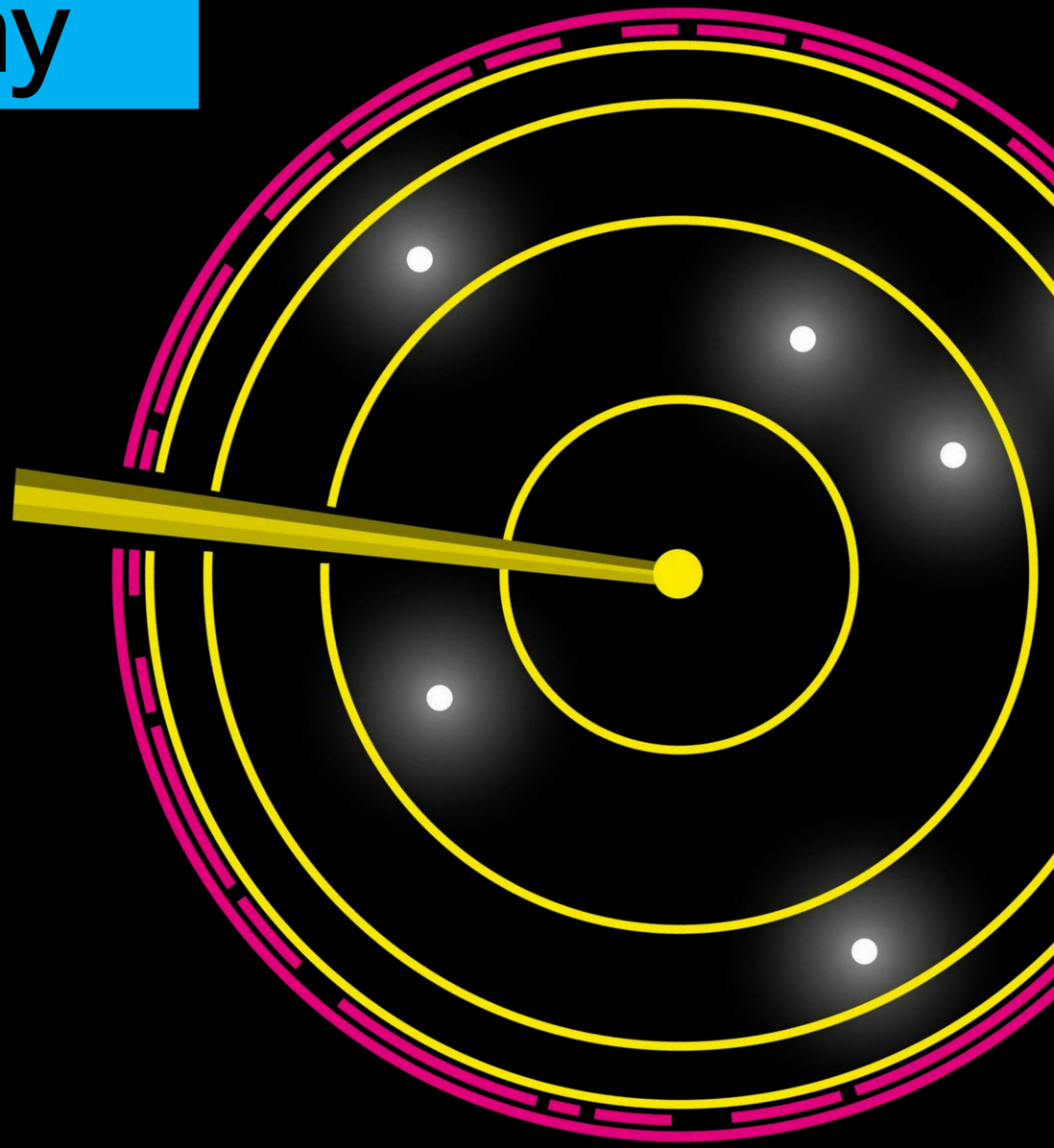
Data Spaces Discovery Day

October 19, 2023 | Vienna



Data space lighthouses & success stories

OMEGA-X

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Orchestrating an interoperable sovereign federated Multi-vector Energy data space built on open standards and ready for GAia-X

What is the business value & purpose?

What has already been realized?

What are the next steps?

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You asked for it: Business value & purpose

What is the business value & purpose?

Energy transition driven by the increase in distributed energy resources and the penetration of electric vehicles will have a significant impact on Smart Grids, making it difficult to ensure system stability and quality. In this context, it is crucial to **develop innovative digital services** that leverage existing data to overcome the abovementioned challenges. However, nowadays **energy data** is normally kept in silos within companies. In fact, this is one of the main blockers for AI since the ability of the algorithms to learn and generalize is limited by the company´s data, which generally covers a limited range of possible operating conditions. In addition, the **energy system is a complex system** where multiple actors interact with each other. Therefore, in order to come up with a **global optimal solution for smart grid management data** from different stakeholders (prosumers, DSO, aggregator) is required, for instance, to provide flexibility services from prosumers to DSOs through aggregators. Consequently, is necessary to foster **data exchange amongst different actors of the energy system** in order to develop innovative solutions that can accelerate the energy transition. Furthermore, energy data could be **combined** with other sectors such as mobility, health to foster innovative value-added services and business models.

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In a nutshell

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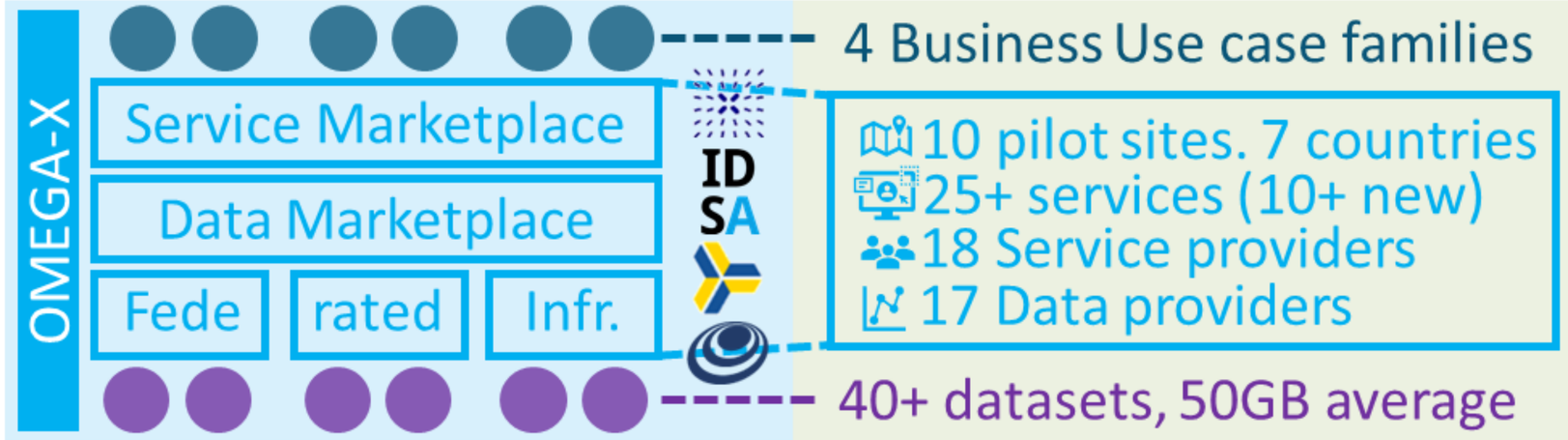
FUNDING
8M€

START
05/2022

END
04/2025

LEADPARTNER
Atos

PARTNERS
30



Quantifyiable improvements in all 4 UC families (decarbonization, efficiency, Renewable penetration, engagment)

Full Interoperability, new governance models, new services, new business models, industry and cross-industry alliances.

Safe data trading, break data siloes, lower costs of data usage, increase data availability

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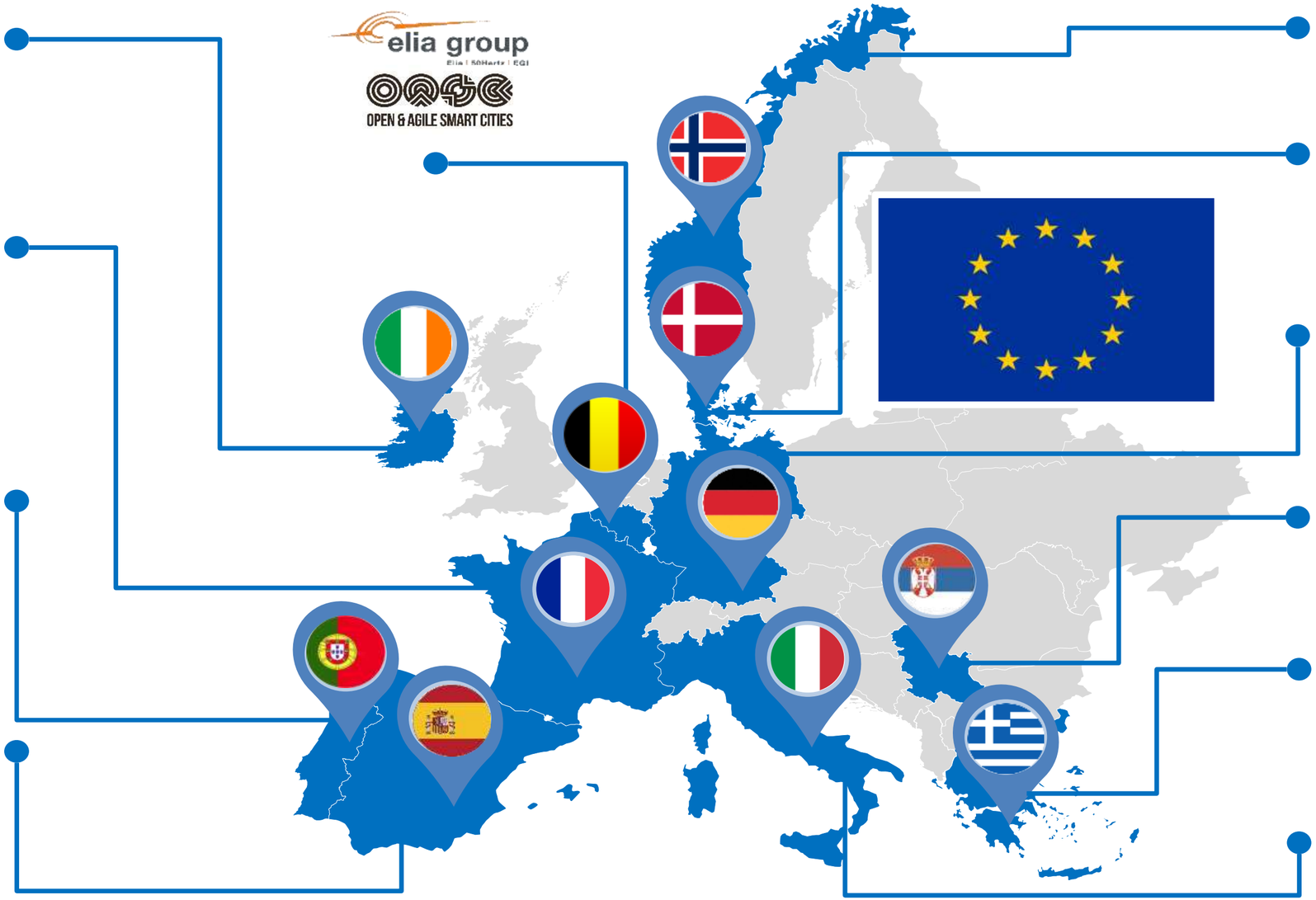
Partnership

- 29 Partners - 11 EU Countries



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Objectives

#	Name	KPI #1	KPI #2	KPI #3
1	Standard Architecture	4 EU Initiatives	Liaise >3 projects	
2	Data & Services Marketplace	3-5 Data Providers / UCF 4-5 Service Providers / UCF	25 services with 10 new	
3	Data Governance Models	Based on DSSC	Tested in at least 1 UCF	E2E data security and governance in all UCs
4	Demonstration	7 stakeholders in different locations / UCF	Guarantee of data availability/quality	Demonstrated value of data sharing
5	Data Space Interperability	Vertical interoperability (semantic)	Horizontal interoperability (other DS/Projects)	Open Source, standard protocols and APIs
6	Multi-vector Approach	5 different Energy Vectors	Electricity and Mobility	
7	Iteration and Cooperation	Three cycles	Continuous feedback loop	Collaboration with sister projects
8	User Centricity	Alignment with BRIDGE	Pilot level handbook	

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Relevance

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Use cases

RENEWABLES

3 pilot sites, 2 countries (Spain, France)
7 partners involved (3 data owners, 4 service providers
Intra-pilot: O&M and smart grid data-driven services
Inter-pilot: Benchmarking and synthetic data generation

LOCAL ENERGY COMMUNITIES

4 pilot sites, 3 countries (Spain, Italy, Serbia)
9 partners involved (5 data owners, 5 service providers
Intra-pilot: multi-vector optimization/planning, engagement
Inter-pilot: Benchmarking

ELECTROMOBILITY

2 pilot sites, 2 countries (Germany, Belgium)
8 partners involved (4 data owners,
5 service providers
Intra-pilot: Roaming of booking and self-consumption
Inter-pilot: TSO-DSO collaboration

FLEXIBILITY

1 pilot site, 1 country (Portugal)
7 partners involved (5 data owners, 4 service providers
Intra-pilot: Advanced data-driven flexibility

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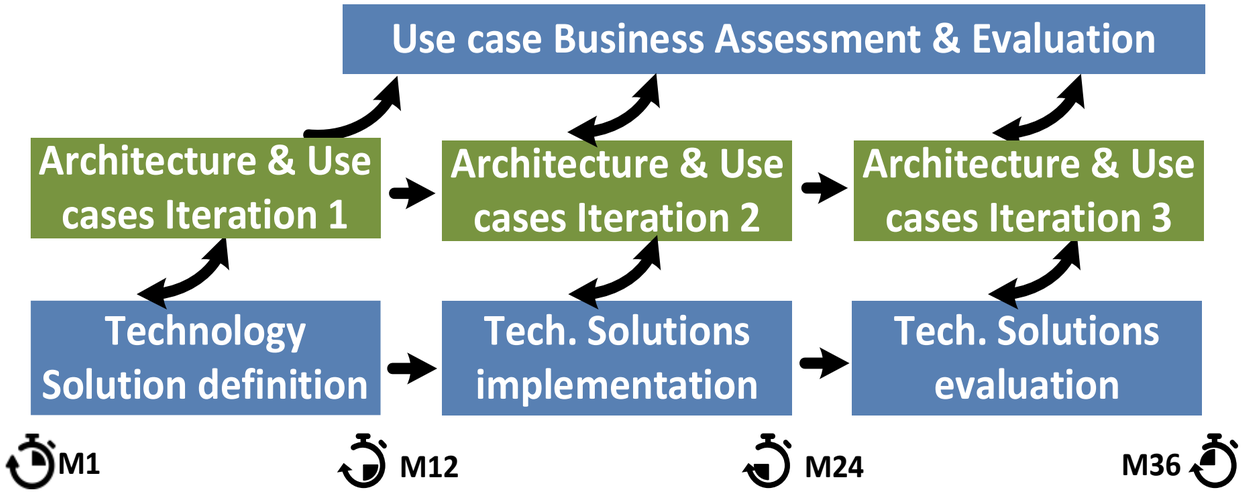
Time Plan

OMEGA-X project Kick-off

End of Design Cycle: Architecture and Use Cases

End of development cycle: first release, pilot start

End of evaluation cycle: final results



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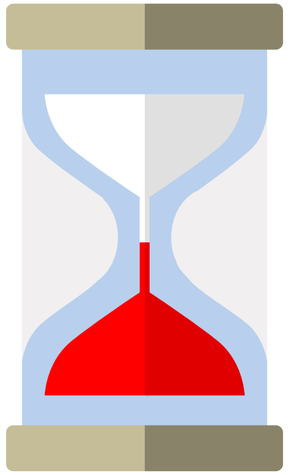
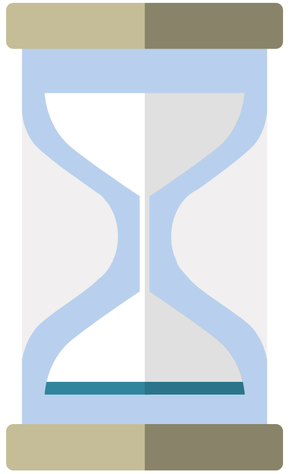
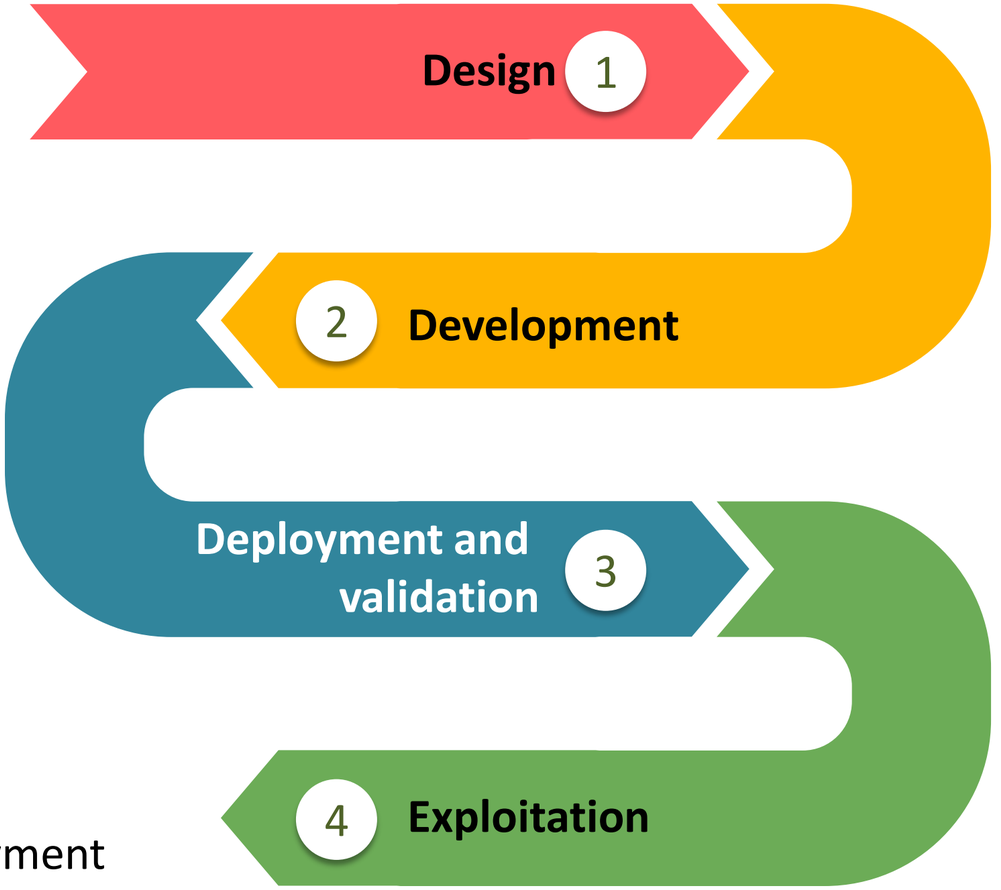
Technical Objectives

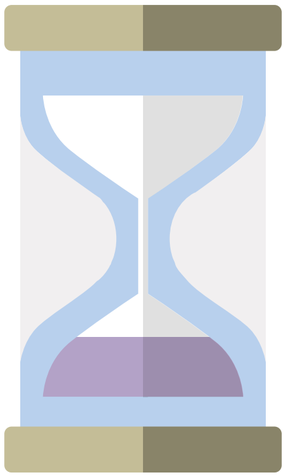


- Use Cases
- Architecture
- Specifications

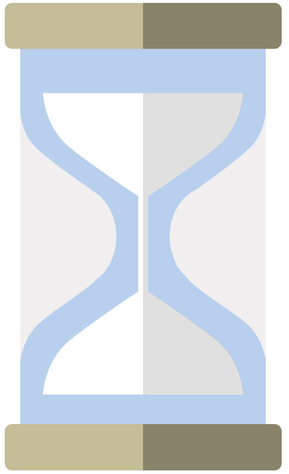


- Pilot site deployment
- Validation





- Component development
- Integration



- Performance
- Impact asessment

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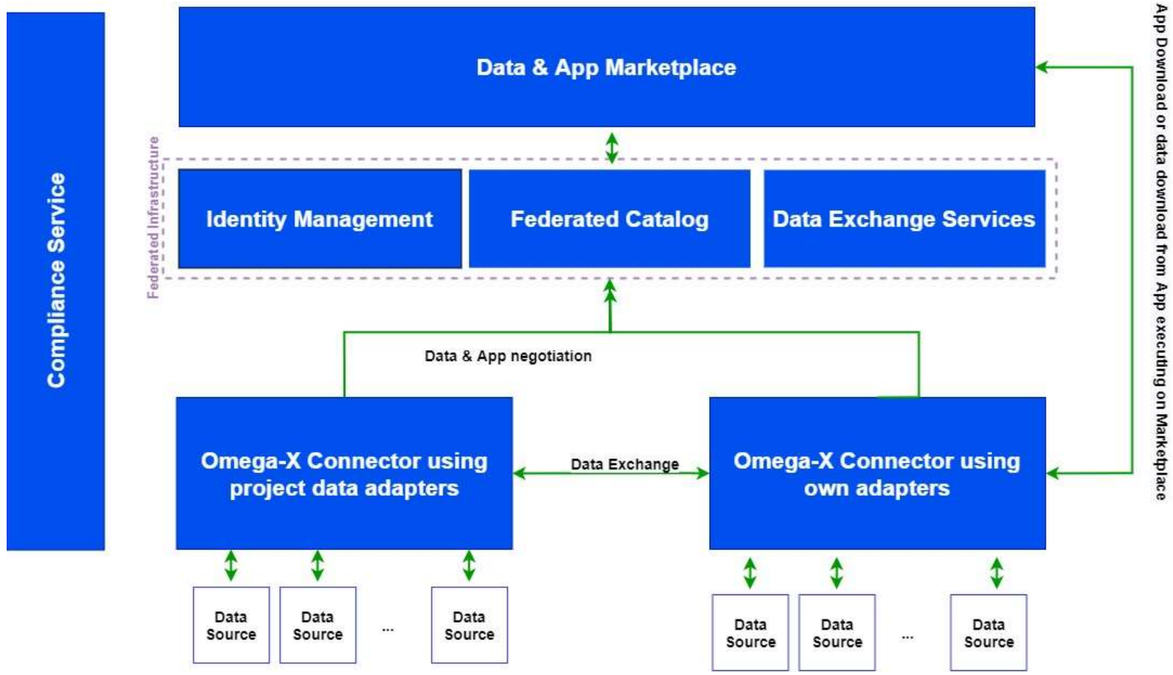
Technical/Semantic Interoperability

- **Vertical Interoperability**:
  - Open definition of protocols and standards
  - Alignment with IDSA/Gaia-X federation services (GXFS) and roles
- **Horizontal Interoperability**
  - Open-Source Standardized protocols and APIs
  - Information Models based on standards such as IEC CIM, IEC 61850 and IEC COSEM
- **Use case Interoperability**
  - Multiple stakeholders (both for data provision and service provision)
  - Multiple locations (at least 2 per use case family)
  - Interaction with sister projects



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In a nutshell (again)

What has already been realized?

- V1 of **Reference Architecture defined based on GAIA-X/IDSA and DSSC blueprint**
- 9 Business Use Cases defined
- 32 Services defined
- V1 **Common Semantic Data Models** Defined

What are the next steps?

- April 2024: V1 **Data Space** including Connector (EDC-Sovity), GAIA-X Trust Anchor with ssid, Federated Catalogue, Compliance Service and Marketplace
- 2024-2025: Implementation and validation of **Data Space Building Blocks and Services** in 10 pilot sites grouped in 4 use case families
- 2024-2025: Demonstration of **interoperability** with other **Energy Data Space** sister projects

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Thank you!

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