



gaia-x
Lighthouses

Gaia-X Lighthouses

Criteria Catalogue and Nomination Process

Draft Version 1

Data Spaces Business Committee

Contents

- Contents..... 1
- 1 What are Gaia-X Lighthouse Projects?..... 2
 - 1.1 Purpose2
 - 1.2 Benefits and Responsibilities3
- 2 Selection and priority criteria..... 4
 - 2.1 Alignment with the vision and the goals of Gaia-X.....4
 - 2.2 Openness: creating open, non-proprietary ecosystems for data exchange.....4
 - 2.3 Adoption of the Gaia-X policies, rules, architecture and trust framework5
 - 2.4 Impact on EU economy and/or society.....5
 - 2.5 Pan-European scale.....6
 - 2.6 Large potential user-base6
 - 2.7 Target scale and scale potential.....7
 - 2.8 Clear use cases, value or business cases and deliverables7
 - 2.9 Critical mass of committed stakeholders.....7
 - 2.10 Funded and resourced (in flight)8
 - 2.11 Time-to-market and time to initial target-scale8
 - 2.12 Complementary to, and linked to, other data spaces8
- 3 Application and nomination process 9
- 4 Overview of current Lighthouse Projects..... 9

1 What are Gaia-X Lighthouse Projects?

Gaia-X Lighthouses are industrial or public projects, which are selected and recognised by the Gaia-X Association for their relevance and significant contribution concerning the development and establishment of open, non-proprietary ecosystems for data exchange within and across sectors in full alignment with the vision and the goals of Gaia-X.

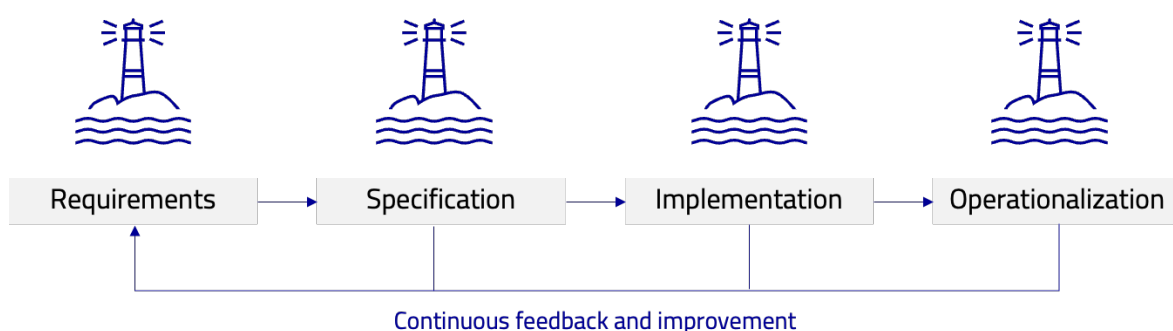
They provide clear value propositions or business cases with a significant potential impact on the EU economy and society and are committed to provide the necessary resources, time, and knowledge to concretely realise the vision and mission of Gaia-X.

1.1 Purpose

Gaia-X aims to produce a business value and usable results for the wider community. It is important for Gaia-X to elicit and understand user requirements and to have active participants to refine, implement and subsequently test and industrialise in various phases.

The **Data Space Business Committee (DSBC)** presents a joint approach towards projects creating new products, business models and services based on Gaia-X’s vision and goals to ensure that the development and operationalisation of the Gaia-X framework components and the necessary technologies address concrete business needs that are practically feasible and useable and are in line with the customer expectations and the overall market demand.

Lighthouse projects act as early adopters of the Gaia-X framework and technology components (including technical specifications, labels, open-source software implementation, etc.), support the sandboxing, testing and operationalisation of deliverables and follow a continuous feedback loop between the committees and working groups of the Gaia-X association and themselves.



Demand-driven and practically applicable Gaia-X deliverables with high business relevance

Figure 1: Vital role of Lighthouse projects in the development process of competitive Gaia-X framework components

To ensure the quality and significance of requirements in terms of value proposition and market orientation, as well as the capability and resources to test and operationalise developed components, the Lighthouse projects need to meet and provide sufficient proof surrounding a set of defined criteria. Such criteria will be established and evaluated by the Gaia-X Association and

herby outlined in this document, in order to be nominated and eventually be used to officially recognise a Gaia-X Lighthouse Project.

1.2 Benefits and Responsibilities

Concrete **benefits and responsibilities** are linked to the status of a Gaia-X Lighthouse project.

By:

- 1) active participation and contribution within Gaia-X Working Groups
- 2) formulating requirements and supporting their consolidation
- 3) supporting in the development of framework components
- 4) offering to validate and industrialise the development results

the **Lighthouses can:**

- 1) expect Gaia-X to develop framework components which meet business and project needs and are aligned with respective timelines
- 2) leverage Gaia-X development expertise, supporting to develop the components by themselves
- 3) rely on Gaia-X framework components that are practically applicable and future proof
- 4) promote their official Gaia-X Lighthouse status

Furthermore, Gaia-X Lighthouses are closely integrated into the Gaia-X requirements process, necessitating their participation to elicit, evaluate and prioritise the requirements (functional and non-functional, business, technical, legal, etc.) and therefore take a vital part in shaping the Gaia-X development roadmap.

2 Selection and priority criteria

According to a Gaia-X Board of Directors decision in January 2022, the Gaia-X Association has assigned 12 criteria based on which Gaia-X Lighthouse projects are nominated, selected, and continuously re-evaluated.

The consideration of these criteria is mandatory for the application process, as well as the maintenance of the Lighthouse status, to assure the market relevance of requirements and sufficient capacity of Lighthouse projects to specify, implement and operationalise developed components.

The following paragraphs outline each criterion and the mandatory questions to be answered with entering the application process.

2.1 Alignment with the vision and the goals of Gaia-X

- a. The vision and goal of Gaia-X is to create a secure and federated data infrastructure for Europe that meets the highest standards of digital sovereignty and promotes innovation in a transparent digital ecosystem, where data and services are made available, brought together and shared in a trustworthy manner. The architecture of Gaia-X is based on the key principles of federation, distributed consensus, decentralisation, and regulation by automation¹. Lighthouses are aligned with and contribute to that vision.
- b. In the context of the specification, development and implementation of Gaia-X application examples or use cases, the overarching guiding principles of Gaia-X must be considered: European data protection, openness and transparency, authenticity and trust, sovereignty and self-determination, secure data connections in data pooling, free market access and European value creation, modularity, interoperability and user-friendliness. Lighthouses adopt and promote these principles.

Mandatory questions:

1.1	How is Data Sovereignty considered in your dataspace?
1.2	How do you increase the level of transparency, i.e., for services in your dataspace?
1.3	How do you address compliance with European data protection legislation?

2.2 Openness: creating open, non-proprietary ecosystems for data exchange

- a. Lighthouse projects enable interoperability and portability of data and data-driven applications within individual sectors and across sector boundaries. To this end, the various participants in data ecosystems (including data producers, data intermediaries and data consumers) are brought together and interconnected via non-proprietary standards and protocols (not exclusive, lock-in technologies).

¹ Regulation by automation is meant to reduce the complexity and costs associated with e.g. the verification of the credentials of a service, by automating them as much as possible in technology.

- b. The solutions developed by Lighthouses are technically characterised by a high degree of interoperability, data portability and interconnectivity. They achieve a high level of acceptance through scalability, performance, reusability, transparency, and security.

Mandatory questions:

2.1	How are proprietary solutions encapsulated to avoid lock-in effects?
2.2	Which open-source standards (if any) are applied?
2.3	How do you ensure to reduce dependencies in your dataspace?

2.3 Adoption of the Gaia-X policies, rules, architecture and trust framework

- a. Lighthouses adopt the policies and rules expressed in the Gaia-X latest version of Policy & Rules Document (PRD) with regard to 1. Contractual Framework, 2. GDPR, 3. Cyber Security, 4. Portability and 5. European control. These policies are also referenced within the latest version of the Gaia-X Label Framework Document.
- b. Lighthouses must be in close alignment with Gaia-X architectural guidelines defined in the the latest version of the Gaia-X Architecture Document (AD) to ensure compliance with the Gaia-X technical requirements and the latest version of the Gaia-X Trust Framework.

Mandatory questions:

3.1	How do you ensure compliance with the Gaia-X policies, rules and architectural guidelines (documents listed above)?
3.3	How do you comply with the self-description requirements for your services?

2.4 Impact on EU economy and/or society

- a. The added value of Gaia-X and the underlying principles must be clearly recognisable to the targeted users of a Lighthouses products or services. This includes, among other things, higher performance, efficiency (e.g., economic efficiency for public budgets/citizens/businesses, resource, and environmental conservation), additional growth potential or added value for (EU) society and/or economy (e.g., cost-effective/neutral additional services in the domains, higher quality of life for citizens or other requirements of users and stakeholders).
- c. Lighthouse projects can clearly illustrate the need for the technological advancements that support the Gaia-X vision (e.g., multi-cloud strategies, hybrid cloud scenarios, data pooling, data sharing or service provision) and concurrent possible economic and social potentials of cross-company and/or cross-industry solutions based on Gaia-X framework components and data-driven applications.

Mandatory questions:

4.1	How do you characterise and estimate the potential economical and/or social impact of your use case?
4.2	Which challenges of the EU economy are addressed?

2.5 Pan-European scale

- a. Lighthouse projects have a clear Pan-European footprint (i.e., deploy and scale in more than one country) and aim to link partners across Europe and beyond. They promote the digital transformation of the European economy to increase the international competitiveness of Europe concerning the offering and usage of digital technologies.
- b. The European Data Strategy [1] is an important reference point for Lighthouse projects. The goal is to strengthen data sovereignty and develop uniform European rules and standards for the use of cloud technologies and to achieve a true single market for secure data, which can be accessed by economic and public actors across Europe and beyond.

Mandatory questions:

5.1	Your initiative has participants from how many different European countries?
5.2	How can your use case or solution possibly be adopted in other markets?
5.3	How does your initiative contribute to the development and application of European rules and standards?

2.6 Large potential user-base

- a. Lighthouse projects set a special focus on integration of potential users regardless of size (i.e., small and medium enterprises in addition to larger players), organisation structure or existing (technical) infrastructures by developing “out of the box” offerings.
- b. The success of a Lighthouse project significantly depends on adoption by all players along the value chain. This includes OEMs as well as SMEs of all sizes.

Mandatory questions:

6.1	What is the structure and size of your potential user base?
6.2	How do you foster adoption and growth of the user base?
6.3	How does your solution support SMEs in particular?

2.7 Target scale and scale potential

- a. Lighthouse projects have a clearly identified market and application potential (i.e., the target scale after initial ramp-up and the longer-term scale potential).
- b. Market and user adoption is a key focus area and structures are in place to fully leverage the growth prospects of the initiative/ecosystem.

Mandatory questions:

7.1	How generic is the solution you tackle (Sector, Region, Use cases).
7.2	What's the scaling potential of your solution?

2.8 Clear use cases, value or business cases and deliverables

- a. Lighthouse projects can clearly present the economic and social potentials, market positioning and market feasibility of their use cases and their contribution to strengthening the innovative power of companies or participants.
- b. The solutions developed by Lighthouse projects should be highly practical. This must be demonstrated by means of suitable prototypes, demonstrators, or pilot applications under real conditions.

Mandatory questions:

8.1	Which use cases/business cases are addressed by your initiative? What's the business model?
8.2	Which key deliverables exist/are in development / are planned in the future?

2.9 Critical mass of committed stakeholders

- a. Lighthouse projects have a critical mass of committed, independent partners (companies, associations, municipalities or other organisations, participating SMEs and/or start-ups) from Europe collaborating on the joint development of Gaia-X use cases.
- b. The role of the individual partners in the collaborative project, their potential, competence and innovative strength of research, implementation and application capabilities is clearly defined.

Mandatory questions:

9.1	Who are the contributing stakeholders in your initiative?
9.2	In what form and capacity do partners contribute to your project?
9.3	In which Gaia-X Working Groups are you actively involved?

2.10 Funded and resourced (in flight)

- a. Lighthouse projects are fully funded (i.e., personnel costs, costs for infrastructure and equipment, costs for research, intellectual property, additional overheads, and other operating cost, etc.) and resourced (time commitment, workforce skill, education).
- b. The reliability and financial viability (creditworthiness) of the collaborating partners in the Lighthouse project is verifiable.

Mandatory questions:

10.1	How is your project funded?
10.2	What are critical resources and how are they managed?

2.11 Time-to-market and time to initial target-scale

- a. A project plan containing the basic work packages, important milestones, and market introduction of developed solutions and/or services is in place.
- b. Initial target-scale for developed use cases (i.e., initial target group size, market and job potential, potential multiplier effects, etc.) is defined.

Mandatory questions:

11.1	What is the overall timeline to initial go-live of services (and what are key milestones)?
11.2	What is the size of your initially targeted user group/market?

2.12 Complementary to, and linked to, other data spaces

- a. Lighthouse projects consider and, if necessary, network with similar projects and/or initiatives at the European and international level if it serves the efficiency and better utilisation of the project results. They plausibly demonstrate that extensive research is being carried out to identify such projects.
- b. Lighthouse projects also deem as potent multiplier and transformer for adjacent industries and have a potential effect along and beyond the respective industry value chain.

Mandatory questions:







11.1	What adjacent or similar initiatives exist? How do you differentiate, is an integration planned?
11.2	How is your use case or solution positioned in the value chain?
11.3	What is the potential to transfer into other industries/domains?

3 Application and nomination process

- Applications can be submitted continuously to the DSBC based on outlined criteria and mandatory questions catalogue
- Quarterly review of applications through panel comprised of representatives from DSBC (chair), PRC, TC, industry experts. Optional: DSBC BoD Vice Chairs and Gaia-X Management Board. Confirmation through BoD
- Lighthouse project status awarded for 1 year, following re-evaluation.

4 Overview of current Lighthouse Projects

Table 1: Overview of Lighthouses

Name	Description	Website	Logo
Catena-X	Alliance for secure and standardised data exchange in the automotive industry	https://catena-x.net/en/	
Structura-X	Alliance for the provisioning of Gaia-X services	https://www.gaia-x.eu/news/structura-x-lighthouse-project-european-cloud-infrastructure-launched-concrete-implementation	
Agdatahub	Alliance for standardised data exchange in the agro industry	https://agdatahub.eu/en/	
Mobility Data Space (MDS)	Alliance for standardised data exchange in the mobility sector	https://mobility-dataspace.eu/	
Smart Connected Supplier Network (SCSN)	Alliance for standardised data exchange in the electronics machining industry	https://smart-connected.nl/en	
EuProGigant	Alliance for standardised data exchange in the wood machining industry	https://euprogigant.com/en/	

Question catalogue for (re-)evaluation

Table 2: Question catalogue for re-evaluation

Criteria	#	Mandatory questions
Alignment with the vision and the goals of Gaia-X	1.1	How is Data sovereignty considered in your dataspace?
	1.2	How do you ensure to reduce dependencies in your dataspace?
	1.3	How do you increase the level of transparency, i.e., for services in your dataspace?
Openness	2.1	How are proprietary solutions encapsulated in order to avoid lock-in effects?
Adopt Gaia-X policies, rules, architecture and trust framework	3.1	How do you ensure compliance with the Gaia-X compliance requirements (documents listed above)?
	3.2	How do you plan to enable Self-Descriptions for your services?
Impact on EU economy and/or society	4.1	How do you characterise and estimate the potential economical/social impact of your use case?
Pan-European scale	5.1	Your initiative has participants from how many different European countries?
	5.2	How can your use case or solution possibly be adopted in other markets?
	5.3	How does your initiative contribute to the development and application of European rules and standards?
Large potential user-base	6.1	What is the structure and size of your potential user base?
	6.2	How do you foster adoption and growth of the user base?
Target scale and scale potential	7.1	How generic is the solution you tackle (Sector, Region), what's the scaling potential?
Clear use cases, value/business case and deliverables	8.1	Which existing use cases/business cases are addressed by your initiative?
	8.2	Which key deliverables exist/are in development/are planned in the future?
Critical mass of committed stakeholders	9.1	Who are the contributing stakeholders in your initiative?
	9.2	In what form and capacity do partners contribute to your project?
	9.3	In which Gaia-X Working Groups are you actively involved?

Funded and resourced (in flight)	10.1	How is your project funded?
	10.2	What are critical resources and how are they managed?
Time -to-market and time to initial target-scale	11.1	What is the overall timeline to initial go-live of services (and what are key milestones)?
	11.2	What is the size of your initially targeted user group/market?
Complementary to, and linked to, other data spaces	12.1	What adjacent or similar initiatives exist?
	12.2	How is your use case or solution positioned in the value chain?
	12.3	What is the potential to transfer into other industries/domains?

References:

[1] European Commission: A European Data Strategy, <https://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:52020DC0066&from=DE>

[2] Eclipse Dataspace Connector (EDC) ([link](#))

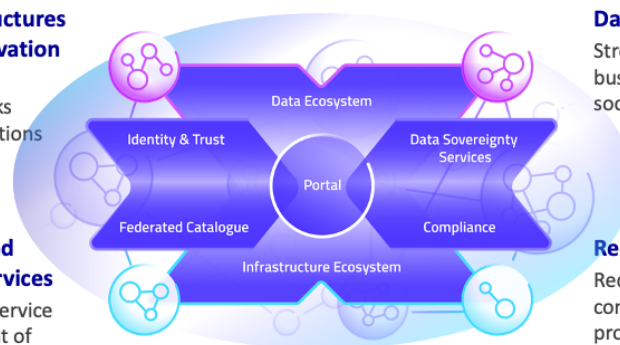
Gaia-X aims at building a trusted, sovereign digital infrastructure for Europe

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.

Figure 2: Gaia-X Vision, Goals and Values