

French Korean Professional Mobility Tool

Prometheus-X, Visions, Headai & Solideo

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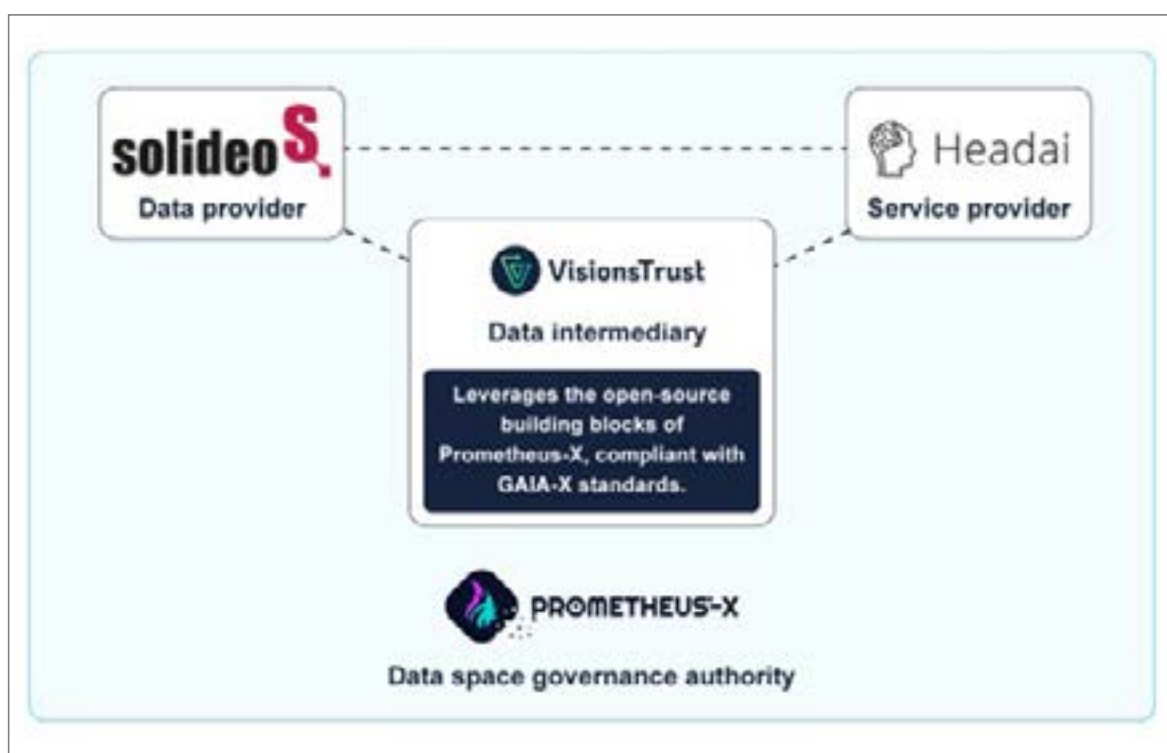
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1. Introduction

a. Brief overview of organisation and Industry

This use-case brings together several organisations with different roles:

- Prometheus-X is the data space governance authority
- VisionsTrust is the data intermediary
- Headai is the service provider
- Solideo Systems is participating as the data provider



b. Main stakeholders and the roles they play in designing the use-case

[Prometheus-X](#) (PTX) is a non-profit organisation created in 2021 to fund and govern open-source building blocks for data spaces. In particular, it aims to empower individuals to have greater control over their data and how it's shared, enabling the creation of more personalized services. PTX collaborates with several data space service providers, such as Visions, to offer these building blocks as a service and power innovative use-cases, where people can control and share their data.

[Visions](#) provides a "Data Space as a Service" solution (VisionsTrust) that allows you to easily set up data space use-cases with catalogue, marketplace, contract, consent, interoperability and data exchange functionalities. This solution is based on and integrates open-source data space building blocks originating

from Prometheus-X, which are all compliant with Gaia-X and IDSA specifications. It is used by 150 organisations across the world and in various sectors.

[Headai](#) is a technology company providing responsible AI to enable data-based insights and predictive simulations in the data ecosystem. Headai technology is built upon “Cognitive Text Analytics” which enables global interoperability, intelligent operations and analytics on unstructured textual data in any language. Headai API offers powerful Natural Language Processing & Machine Learning operations and can easily be integrated into any use-case, solution and application. The AI is entirely Headai IP, based on more than 20 years of experience and used by over eighty global clients.

[Solideo Systems](#) (Solideo) is a System Integrations IT company developing and operating Korea’s government IT platforms in the public sector for over 20 years. They are recognised for their recent development of the Public MyData Distribution System, specifically tailored for Korean citizens. The company operates a certified e-document distribution platform, PINOT (Pathways for International Networking and Opportunity Transformation), enabling users to send pdf format documents from their PDS to affiliate companies, and they are further developing an automatic data parsing technology so that service providers can utilise the skills data provided through PINO within the Skills Data Space.

2. Context & Challenge

a. *Brief description of the problem that the use-case addresses*

The PINOT use-case orchestrated by Solideo Systems, addresses the challenges faced by Korean professionals seeking international employment opportunities and international companies aiming to efficiently hire qualified Korean applicants. These problems primarily revolve around the inefficiencies and complexities inherent in the traditional methods of sharing, verifying, and matching educational credentials and job applications across borders, notably the fact that people lack a simple way to share their skills data for matching with opportunities.

3. Solution description

a. Solution implemented to address the identified challenges



The implementation of the solution incorporates tools and protocols to enable Korean professionals to share their data to be matched with job data (job boards for example) and recommendations services (AI services) while remaining GDPR-compliant and utilising the individual's consent. A full presentation and demonstration of the use-case can be found [here](#).

This was made possible by using the [VisionsTrust](#) Personal Data Intermediary services based on Prometheus-X building blocks (contract, catalogue, consent - compliant with Gaia-X Trust Framework and IDSA Data Space Protocol), and the deployment of the [Prometheus-X Dataspace Connector](#) (PDC) by the parties involved in the data-sharing, to automate and simplify the integration of the data exchange and consent protocols. The Personal Data Intermediary (PDI) enabled through this is a tool for the individual (independent from the organisations storing and using their data) that allows them to easily share their data across data space participants, while ensuring GDPR and Data Governance Act-compliance.

PINOT, a South Korean application where Korean citizens can find their state certified diploma certificates, was connected to the VisionsTrust PDI (by way of the PDC) to enable Koreans to share their diploma data to be matched with job offers. The diploma analysis and matching to the job data was done thanks to the Headai services, also connected through the PDC.

b. Role of technology in the development and deployment of the solution

Technology is essential in enabling this kind of regulated dataspace data transaction. The use of Prometheus-X Data Space Connectors (the only data space connector enabling personal data sharing and GDPR management), and the core consent, contract and catalogue services, all play a major role in managing the flow of contracts and data through the parties involved in the data exchange and the PDI implementation. In order to deploy the solution, parties are recommended to install their own instance of the Dataspace Connector to help with compliance and interaction between the participating infrastructure services.

Headai's AI was used to process textual data including diploma certificates and French job applications, to make the shared data interoperable and comparable, to provide job recommendations for the Korean professionals. AI was used to automate the service of matching open job applications in France with user data based on local (Korean) educational diploma certifications. The recommendation was skills-based, and the data was also translated during the process.

4. Implementation

a. How the solution was integrated into the use-case organisation's existing systems or processes

Testimonial from Solideo Systems:

For this pilot implementation, to interconnect our PINO platform (storing Korean diploma certificates) we set up a separate server distinct from our existing systems. Our approach for integrating the new solution with our current setup involved three key steps:

1. Linking our user database to the PDC
2. Registering our data and services resources with the VisionsTrust Catalogue
3. Ensuring that these registered data resources are accessible through the endpoints specified in the VisionsTrust Catalogue

Testimonial from HeadAI:

Headai makes its data and service resources available through the VisionsTrust Catalogue for clients. During this pilot use-case we:

1. Defined the respective credentials in the PDC for Solideo.
2. Implemented an intermediary API that transforms authentication mechanisms delivered by PDC and the data format received from the consent, into a format that is compatible with our existing APIs.
3. Added the implemented API in the Representation section of the Service Settings.

b. Significant milestones or challenges during the implementation phase

Stakeholder	Description of challenge	Dimensions					Level of difficulty experienced (Low, Medium, High)
		Design of the use-case	Governance of participants	Development of elements & apps	Integration of systems & participants	Using the use -case	
Solideo/ Headai	Integration of the PDC with existing systems				✓		Low
Solideo	User registration through the PDC				✓		Low
Solideo	Identifying and presenting the correct privacy notice for user consent.				✓		Medium
Solideo	Setting up our resource server endpoints and credentials.			✓			Low
Headai	Creation of integration procedure documentation			✓			Low
Headai	Make the documentation publicly accessible on the data space connector GitHub			✓			Low

5. Benefits & Impact

a. Measurable use-case implementers' benefits observed since implementation

Description of benefit	Role this benefit applies to	Dimensions			
		Technological	Operational	Functional & participant-related	Governance & legal
Reduced Overhead: The PDC handles most of the technical and administrative overhead associated with linking to external data resources and services, simplifying our operations	Solideo	✓			
Increased Efficiency: Our teams can now focus more on our core business activities rather than on the complexities of data-sharing and integration	Solideo		✓		
Scalability: The modular approach allows us to easily add or modify services and data resources, facilitating scalable growth and adaptation to new business needs	Solideo			✓	
Improved Data Governance: The PDC ensures that data-sharing complies with the required privacy and security standards, thereby improving our overall data governance	Solideo				✓
Increased commitment to a robust Data Ecosystem: The integration of the PDC strengthens stakeholders' commitment to building a robust data ecosystem, fostering new collaborations and harnessing the potential of data.	Headai				✓
Global scalability ease: Already deployed in France, this use case can be rapidly and easily extended worldwide through the VisionsTrust marketplace	Visions			✓	

b. Benefits for the end-users

Testimonial from Solideo Systems:

The primary end users of our implementation are Korean residents who, before our system was put in place, faced considerable barriers to accessing career opportunities within the European Union (EU). The implementation of our system has brought significant benefits to these users, including:

- **Enhanced Access to Opportunities:** By connecting to the EU dataspace ecosystem, our system provides Korean residents with streamlined access to a broader range of career opportunities across the EU. This means they can explore and apply for jobs more easily than before.
- **Improved Information Flow:** The system facilitates better information exchange, ensuring that Korean residents have access to up-to-date and comprehensive details about job openings, required qualifications, and application processes in the EU.
- **Cultural and Educational Exchanges:** The system promotes greater interaction between Korean residents and EU organisations, leading to enhanced cultural and educational exchanges. This not only helps in building cross-cultural competencies but also in fostering better understanding and collaboration.

Testimonial from HeadAI:

Korean residents are provided with a valuable gateway to a European ecosystem, offering them a rich repository of resources to explore. They could very easily get personalised recommendations tailored to their skills and preferences by using existing data diplomas. We have built, together with all our partners, a secure and automated process that is now scalable for all future users. Our goal was to develop an easy-to-use solution that empowers every job seeker to explore career paths in Europe that align with their unique strengths and locally developed ambitions.

6. Added Value through Gaia-X

a. Alignment with the [Gaia-X vision](#)

Personal data must always be handled with the highest level of security. Obviously, GDPR is the minimum legal requirement to fulfil, but in the context of the French Korean Mobility Tool, the aim was also to add trust to all the data exchanges. Indeed, the Data Provider Solideo System is sending its data to the Prometheus-X data space, to be sure that its data will only be used by trustworthy third parties.

This is actually what Gaia-X, and especially the Gaia-X Trust Framework, is doing. It is enabling trusted decentralised digital ecosystems.

b. Alignment of current architecture and technology stack with the Gaia-X technology model, and any convergence needs

As a first step, the solution focuses on using the same standardised and recognised way of describing the participants, datasets and services involved in the data exchange in the Dataspace Protocol. In other words, the use of the Gaia-X ontology helps increase the interoperability across data spaces and use cases.

In this sense, the Gaia-X Trust Framework (22.10) helped us shape and define the common data models and schemas to represent the major entities concerned in data transactions in the data space. Schemas for Participants, Data Resources, Software Resources & Service Offerings were fundamental to align the [Prometheus-X building block catalogue](#). It also ensured the PDC is compliant with the Gaia-X Trust Framework, in addition to compliance with the IDSA data space protocol.

In the future, Prometheus-X will help services to become compliant with various Gaia-X Label levels through calls to Gaia-X Digital Clearing Houses, adding trust to all the data exchanges involved in its data space. Combined with the increased number of incorporations of decentralised solutions, Prometheus-X is aiming to have a fully aligned architecture to the Gaia-X technical vision.

7. Use-case scaling

a. Requirements and steps for a new member (user, provider, or service providers) to join use-case

A new member would typically need to become a participant of the dataspace. Participants are either data providers, use case orchestrators, service providers or data consumers. In order to become a participant, one should be onboarded through the Prometheus-X services (usually the catalogue), register assets if relevant as a data / service provider, negotiate their offerings with the use case and accept the use case agreement. Once that is completed, there is a technical requirement to setup and configure a dataspace connector to take part in the data exchanges powered by the agreed upon agreement.

b. Other sectors that could benefit by making use of the resources in this usecase

The data-sharing enabled by these components can be applied in other sectors, as the components and PDC are generic. They are currently under consideration for being deployed in several other sectors such as mobility, smart cities, smart building, and many others.

8. Next steps

a. *What are the next steps of your project functionally-speaking?*

Prometheus-X is already in the process of developing 15 other Gaia-X-compliant data space components (billing, monitoring, decentralised AI training and processing, data value chain tracker, etc). These will be integrated into the various use-cases VisionsTrust is spearheading.

25 use-cases are planned to be deployed by the end of 2024. One of these use-cases is to provide French pupils with a Personal Data Store and a personalised AI teaching assistant, enabling them to receive personalised learning recommendations based on their academic data. This innovative use-case is orchestrated by the French Ministry of Education through the Académie de Rennes, in partnership with CozyCloud and Stellia.ai. More to come!

b. *How these functionalities leverage the Gaia-X vision*

At the functional level, Prometheus-X is preparing to incorporate new components that align with Gaia-X's vision of trusted and transparent data sharing, by integrating the Gaia-X Digital Clearing House. This step would ensure that all interactions within the data space are fully compliant with the Gaia-X Trust Framework and the Data Governance Act.

The development of a dedicated connector, which will leverage both identity components and consent management, is intended to offer an alternative governance model, which would help reduce dependency on current models while maintaining strict adherence to Gaia-X standards. This connector is envisioned to foster greater collaboration and secure data sharing among participants, to outline that user-centric consent and trust mechanisms are included in a robust system.

Functionally, this would offer significant benefits to data space participants by simplifying compliance with GDPR and other relevant regulations. It would also empower end users with greater control over their data, reinforcing Prometheus-X's commitment to transparent and decentralised data governance.

c. *Next steps of your project in relation to the current (and near-future) versions of the Gaia-X architecture, and/or Policy Rules Compliance Document, and/or [GXDCH](#) release*

From a technical perspective, the future connector will integrate decentralised identity layers directly with the GXDCH, streamlining the management of identity verification, consent, and data-sharing protocols. This technical infrastructure will allow for seamless and secure data exchanges between various parties in the data space, enhancing the overall trustworthiness and compliance of the ecosystem.

This connector will not only build on the existing GXDCH services provided by Gaia-X but will also feature advanced consent management capabilities. The architecture will include components for identity verification that interact directly with the GXDCH, ensuring all data exchanges meet the highest standards of privacy and security. By integrating Prometheus-X's consent management mechanisms, this

solution will support full control over personal data, ensuring users' rights are respected throughout the data-sharing lifecycle.

Furthermore, this development will reduce reliance on the EDC, introducing a more flexible and modular solution that is fully Gaia-X compliant. Technically, this connector will lay the groundwork for future scalability, allowing participants to easily integrate with the broader Gaia-X ecosystem while maintaining data sovereignty and trust through decentralised technologies.

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