Prometheus-X
Online Public Launch
Welcome

23 January 2024
3:30 pm - 5:30 pm

Marcello Grita
General Manager

Welcome!

PROMETHEUS

Agenda

15:30 Welcome !

15:30-16:00 Prometheus-X Introduction

16:00-16:30 First use cases

16:30-17:00 Building blocks for data spaces

17:00-17:10 How to get involved

17:10-17:25 Q&A

17:25-17:30 Summary & information about upcoming website, newsletter, SoMe etc.

Matthias DE BIEVRE
Co-founder & President, Prometheus-X

Prometheus-X: next gen empowerment!

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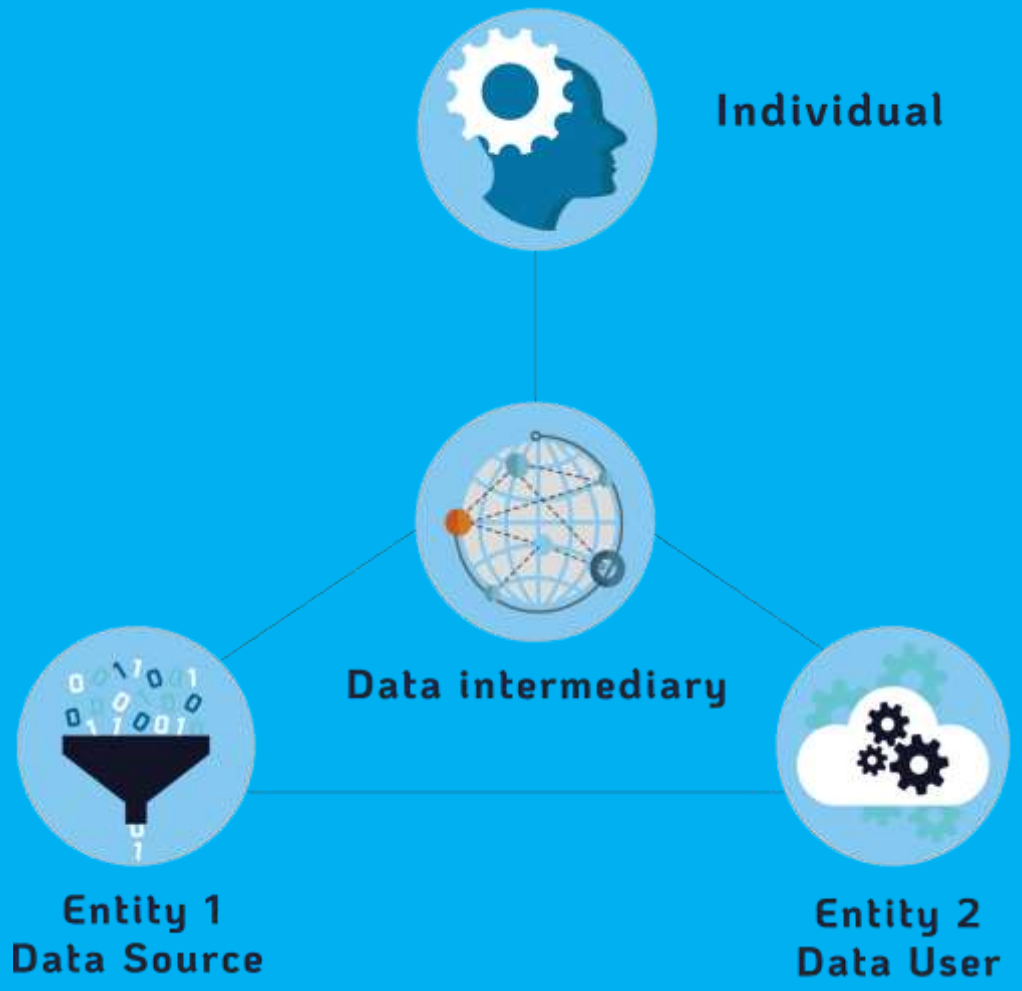
Trustworthy Data Sharing

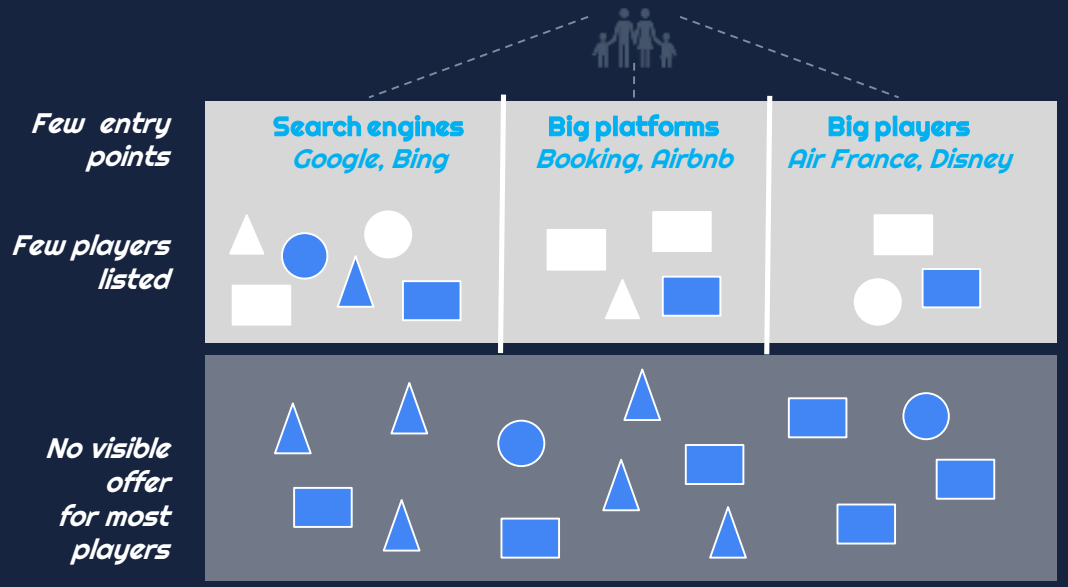
- ✓ Human-centric
- ✓ Decentralised
- ✓ Digital commons
- ✓ Shared governance
- ✓ Open network



DATA SPACES
A PARADIGM SHIFT

CENTRALIZED TODAY

Data is controlled by very few gatekeepers deciding by themselves on data-sharing rules



- Few entry points
- Centralized listing with no visibility for most players
- Data-privacy issues
- Monopolistic value capture
- Fragmented user-experience
- Limited profiles-based contextualization

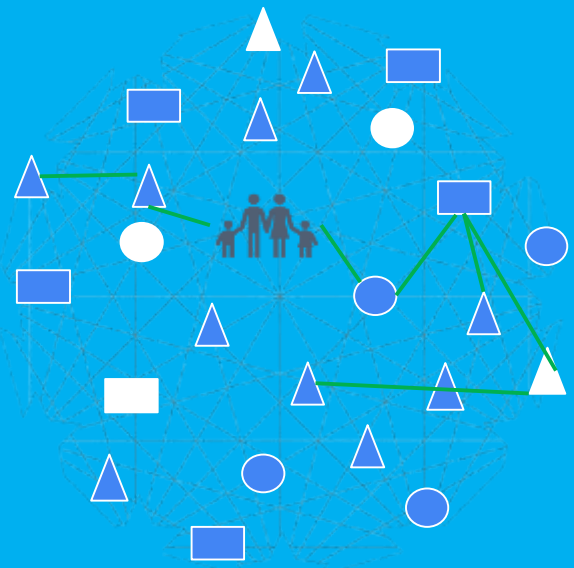
DECENTRALIZED TOMORROW

Data is shared P2P among digital services, with individuals' consent and fair value redistribution

DATA SPACE

Incumbents, SMEs, Public organizations, etc

« An ecosystem of organizations willing to share personal and non personal data, in a decentralized manner, through mutualized governance & infrastructure. »



- End-to-end seamless user-experience
- Extended experience-based contextualization
- Full data-privacy control

- multiple (re-)entry points
- Distributed listing effort with enhanced visibility for all
- Fair value redistribution

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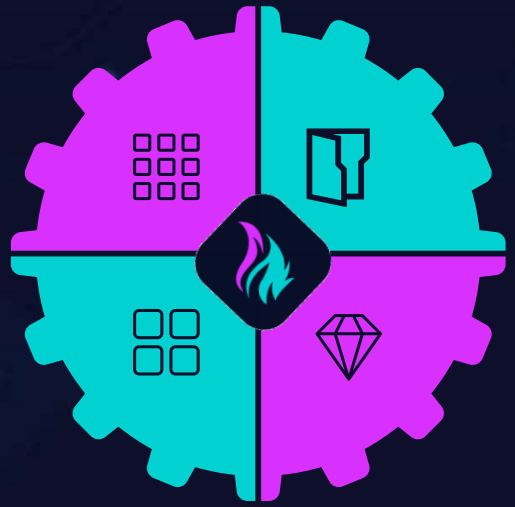
What do we need?

Data sharing services to facilitate data sharing with trust



Committed organisations and people to connect their data and services and create next gen digital services

Open source components to ensure interoperability and trust

Governance and business models to make it last

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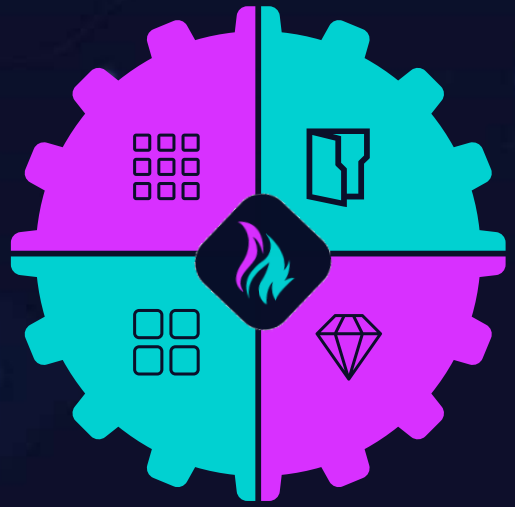
Infrastructure providers
(19 partners)

GAIA-X compliant Building Blocks
(20 BBs)



Use cases and participants in 3 sectors (skills, tourism, smart cities)
30 use cases registered
200 organisations

Under one structure and governance to deploy, commercialise and maintain
\+ 23 m€ to launch

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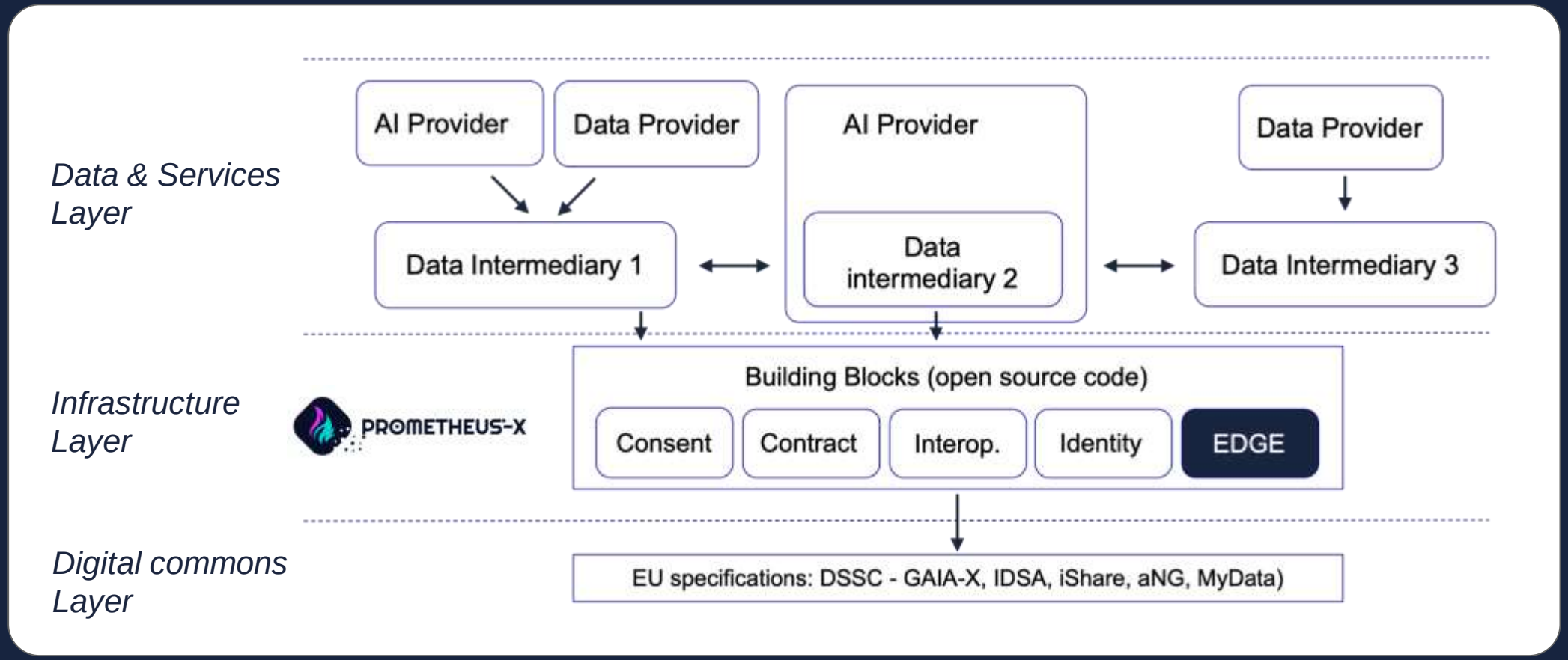
General Architecture



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Skills data space use cases

Intermediary for data sharing

Data Intermediary

- **Employer :**
- More relevant offers and sources skills information to best match candidates

- **Regional governments and affiliated organizations:**
- More appropriate appropriation of grants and receives more accurate information on employment and skills statistics

- **Platforms and social networks:**
- Access to accurate information and creation of additional services and features

- **Training:**
- Provides relevant training offerings and better counseling for students

- **Higher education:**
- Provides more specific course offerings and better student counseling and orientation

- **K-12:**
- Adaptive learning
- Better orientation

Prometheus-X is building the open and human-centric infrastructure to enable innovative use cases in data spaces.
Find a use case here:

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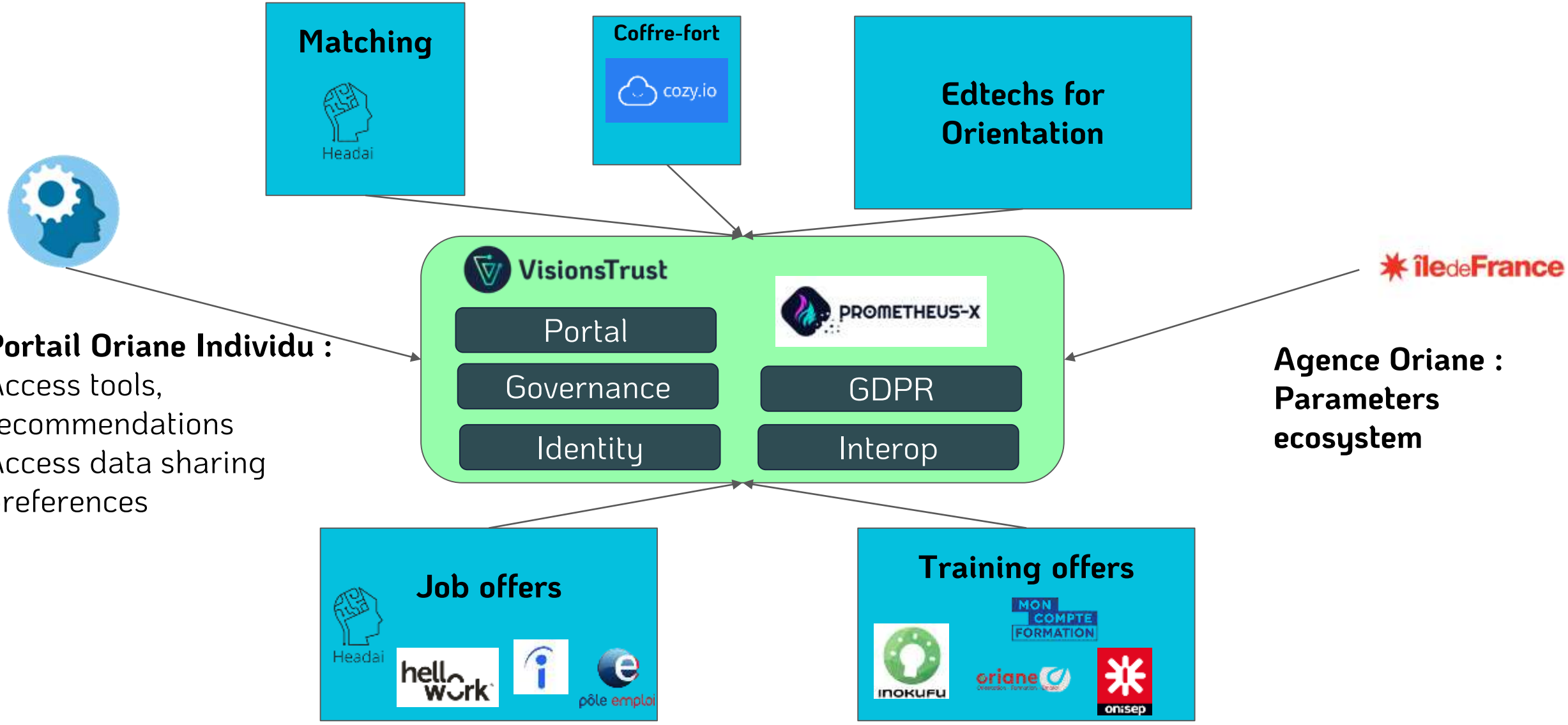
Regional Orientation Data Space



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Values & Strategy

Digital Commons

Common Governance

Use case first

Use case Partners

define test and implement use cases,
define the building blocks needed

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Infrastructure Partners

develop and operate the building blocks

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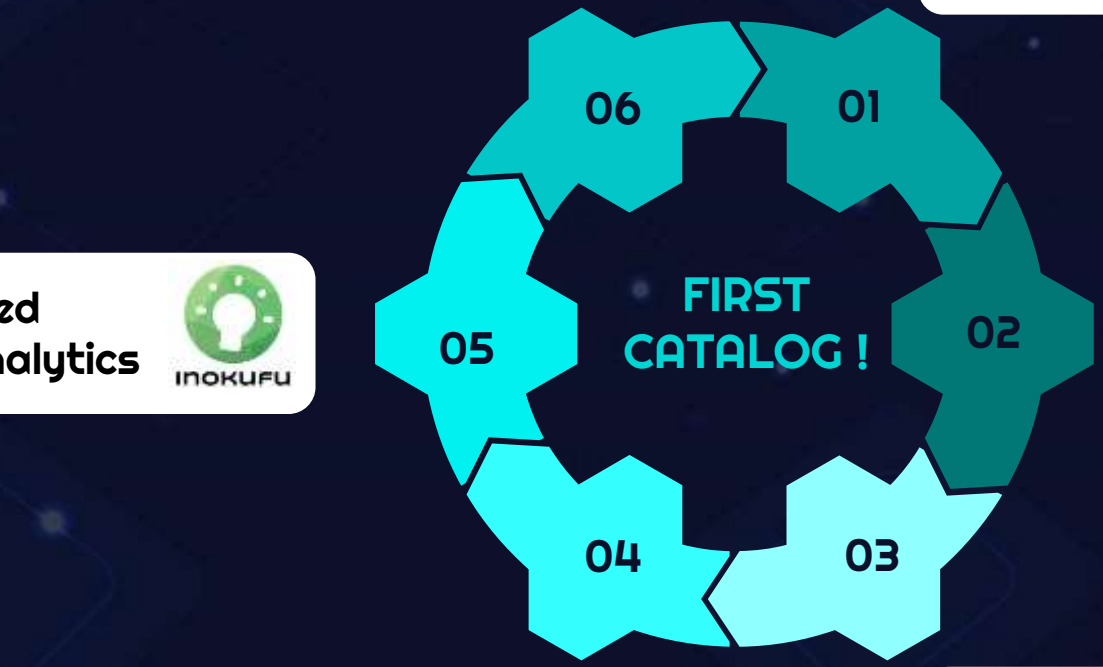
Usage Scenarii

Usage scenarii



Mutalise data for AI

Personalised Skills Matching

Personalised learning analytics

Decentralised Skills Analytics

Travel Assistant

VR learning analytics

Helko LEHMANN
Director Research & Digital School Innovations,
imc AG

imc
part of Scheer

Skills analytics & Forecast

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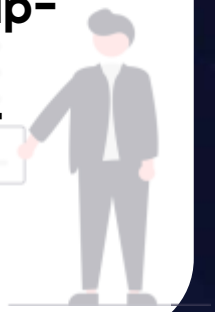
Skills Analytics & Forecast

Organisations must up-/reskill employees to sustain, develop their business strategy, to manage change



Predicting skill demand and recognizing up-/reskilling opps supports change, reduces costs, risks

- Skill (demand) data is distributed, business-sensitive, personal
- Dataspaces provide trust in policy-conform data exchange

Corporate and public organisations (i.e. resp. for learning and dev, change managers), Service/data providers that enable skill analytics and forecast functionalities for them

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Skills Analytics & Forecast

Responsible for strategic HR development in a mid to large-size organization, aligning business strategy with HR strategy

- skill/competency model data
- data about skill market and skill market changes
- evidence about career/development paths
- skill metrics data
- data about skill development, training opportunities
- employee profile models and data

- map skill market data to existing workforce (as-is-status)
- benchmark workforce skills with sector, identify skill gaps
- skill matching and skill development paths and programs
- match employee profile with up-/reskill opportunities and career/development paths in organization

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Skills Analytics & Forecast

- **Data Providers**
  - Organizations of pilot partners (through dataspace connected LMS/HR systems)
  - Providers of aggregated job market data
- **Service Providers**
  - Enabler: dataspace-compliant (connected) LMS/HR systems
  - Benchmarking and skill gap analysis for organizational units
  - skill-based matching of training/development programs

One use case of this data space usage scenario

Max (Strategic HR) want adapt hiring and training strategy to business requirements within "PilotPartner Ltd"

imc's Pilot Partner(s)

Organization Data about Job profiles and job positions of "PilotPartner Ltd"

MINDMATCHER®

NEOBRAIN

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Job market data, skill modelling data, data about 1000s available training opps.

palm

Headai

TrouveTaVoie

AI-services for skill forecasting and skill gap analysis

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Matthias DE BIEVRE
Founder & CEO Visions

VISIONS

Personalised skills matching

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Personalised skills matching services for people

Context:
Each person is in charge of their future and destiny and is empowered with their career path.
Organisations need to upskill people.

Value:
* Help people design and manage their lifelong learning and career journey.
* Bridge the gap between individual competencies and market demands

Data space added value:
People need to control their data and relevant services and data sets are scattered across many organisations.

Target: students deciding on higher education or career sectors, Job seekers looking for opportunities, Employees looking to upskill or reskill.
Segment: Higher Ed., Lifelong learning, Professional Career

Skills and matching services for people

Matilda is a UX designer and is aware of the necessity to keep pace with AI-powered design tools in today's fast-moving tech world. She navigates her career progression and training options, empowered by data-driven insights and seamless data interconnections.

Data categories
Individual profiles, job descriptions,

Services categories
Skills assessments, career recommendations, skills gap analysis, job matching, training recommendations

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Partners of this data space usage scenario

Partners	Data Providers	Service Providers
Grande Ecole du Numérique (FR) IMT (FR) EDUNAO (FR) CNAM (FR) DIGITAL EUROPE (BE)	Grande Ecole du Numérique (FR) University of Koblenz (DE) Budapest University (HU) EDUNAO (FR)	Headai (FI) Mindmatcher (FR) Palm.ai (FR) Schuelerkarriere (DE) Inokufu (FR) EDTAKE (FR)

One use case of this data space usage scenario

Matilda wants to upskill.

Data about Matilda's learning experiences

Data about Matilda's skills and professional experience

Data about current learning opportunities

AI to match Matilda with learning and job opportunities

Matthieu SONNATI
CEO Inokufu

Distributed learning analytics to personalize education

Distributed learning analytics to personalize education

Learning is happening in many digital and physical places

Value: Enabling learners to easily gather and share their own learning data to get more personalized learning experiences

The **Right to data portability** can only exists safely and efficiently within a data space (*ie* trust framework, interoperable and compliance by design approach)

Target: Learners and training organizations
Segment: K12, Higher Ed. and Lifelong learning

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Lifelong availability of learning data

Alexandria, an Erasmus student in ancient History, also learned web design on a MOOC platform and coding with an app, wants to get Lifelong availability of her data in her own cloud drive, being able to share it when needed in the future (job search, career change, new training)

- Learning Records (xAPI, SCORM/cmi5, caliper)
- Learning Objects (activity, course, training)

- Recommendation engines (training, learning activity, job)
- Personal Learning Records store
- Learning object evaluation

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Partners of this data space use case

Partners	Data Providers	Service Providers
LORIA (FR) CNAM (FR) IMT (FR) Games for citizen (FR)	ANTARES (DE) EDUNAO (FR) University of Koblenz (DE) Inokufu (FR)	Cozy Cloud (FR) Maskott (FR) Prof en poche (FR) EvidenceB (FR) Cabrilog (FR) Inokufu (FR)

One use case of this data space usage scenario

Alexandria wants lifelong availability of her learning data.

France Travail

Data about Alexandria past learning experience

Data about Alexandria current learning experience

cozy.io

Alexandria Personal Cloud drive to store her learning data

Loria

Research on learning records and job mobility

Thierry Koscielniak
Chief Digital Officer - Le CNAM

le cnam

VIDEO4XR

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Video4XR - Le Cnam / Mimbus / Ubicast

Using videos
as VR Analytics
for Skill Mastery

The project provides a groundbreaking platform where educators can utilize the data harvested from VR headset recordings to analyze and enhance the learning curve of students practicing technical gestures. This immersive technology offers a new dimension of interaction, enabling a more precise and in-depth assessment of each student's performance.

A dedicated Data Space for this project is essential for several reasons:

1. Detailed Tracking
2. Personalized Feedback
3. Performance Metrics
4. Safe Learning Environment
5. Progression Analysis

Target Audience: Learners and Teachers

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Proof of concept

Persona 1:
Alex - The Educator

Persona 2:
Judy - The Student

Persona 3:
Taylor - The Data Analyst

Types of Data Produced:
1.Performance Data: This includes detailed recordings of the students' movements and gestures while performing tasks in the VR environment.
2.Progress Metrics: Data on how quickly and accurately students complete tasks, as well as their progression over time.
3.Interaction Data: Logs of how students interact with the VR environment, including errors, retries, and help requests.
4.Feedback Responses: Students' responses to personalized feedback and their subsequent performance changes.
5.Qualitative Data: Notes or voice recordings from students reflecting on their VR experience and learning outcomes.

IT Services Used:
1.Cloud Storage: To store the large volumes of data generated by VR headsets securely.
2.Data Analytics Platform: Services that allow for the processing and analysis of structured and unstructured data.
3.Machine Learning APIs: For pattern recognition and predictive analytics to identify trends and forecast learning outcomes.
4.Database Management Systems (DBMS): To manage, retrieve, and run queries on the data efficiently.
5.Virtualization Services: For creating and managing different VR environments for various technical gestures and scenarios.
6.User Interface (UI) Design Tools: To create dashboards for educators and analysts to interact with the data.
7.Cybersecurity Solutions: To protect sensitive data, especially biometric data, from unauthorized access.
8.Integration Services: To ensure the VR system works seamlessly with existing Learning Management Systems (LMS) or other educational technology tools.

- Data Providers
  - Le Cnam (FR) - Mimbus (FR) - Ubicast (FR)

- Service Providers
  - Mimbus (FR) - Ubicast (FR)

One use case of this data space usage scenario

After the immersive practical Session, Alex and Judy can replay Judy's XR experience in video.
Alex the teacher annotates and comments on Judy's XR experience. Judy can ask him questions and Alex can give her pointers on how to go further.

le cnam

Data about Judy's learning experiences

imbus

Data about Judy's skills and XR experience

UBICAST

Video Data about Judy's XR experience

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Vojtech SEMAN
CEO & Co-Founder, Rejustify

REJUSTIFY

Mutualise data for AI

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Usage Scenario: Mutualize data for AI

Context

Jobs evolve, individuals can be trained and reskilled, and training takes time. Data is essential and abundant but scattered across different locations, formats and shapes, often not organized and not structured, making it challenging to find, prepare and use.

Value

Automated data preparation from diverse sources will enable AI Providers' services to be: less biased, re-trained more often, ultimately resulting in more accurate, robust and contextualized advice to individuals.

Need

Scaling a highly contextualized advice to individuals requires efficient data channelling from sources to providers, and would benefit from standardized interoperable formats, and trust to lower barriers to data preparation.

REJUSTIFY

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Usage Scenario: Mutualize data for AI

Meet Sarah

Sarah is a data scientist working at an agency predicting managerial success of employees from their psychological traits. Sarah has developed an AI algorithm that only requires data from a questionnaire on the agency website to predict an individual's success. Following the recent job market evolution, Sarah is looking to elevate the service and upgrade to an AI algorithm 2.0, taking into account a higher number of success factors for more accurate predictions but she is facing several constraints that she wishes to overcome.

Sarah's constraints

- Many diverse sources to choose the right one
- Unifying diverse datasets is complex and time-consuming
- No real-time access to sources for service automation

Sarah's wishes

- Streamlining data discovery from high number of candidate sources
- Combining data from diverse sources effortlessly
- Cutting data preparation time
- Real-time access to data

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Usage Scenario: Mutualize data for AI Partners

Data providers

- schools
- training orgs
- employers
- recruiters
- Individuals

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imc part of Scheer

Loria Laboratoire lorrain de recherche en informatique et ses applications

Institut Mines-Télécom

AI providers

- skill evaluators
- training recommendators
- job matchers

MINDMATCHER®

Headai

INOKUFU

VENTR Solutions

CABRILOG Making math & science success simple

REJUSTIFY

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Usage Scenario: Mutualize data for AI
Use case example

Sarah has to find, access, clean, and compile data from several sources, which is time-consuming and complex. Thanks to this usage scenario, she gets to her desired dataset, faster and effortlessly.

Sarah's desired dataset readily available

training data

GEN GRANDE ÉCOLE DU NUMÉRIQUE

skills data

MINDMATCHER®

training data

imc part of Scheer

REJUSTIFY

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Olivier Dion
COO & Co-founder Themis-X
Lead MyTravelConnect for EONA-X

themis

MyTravelConnect

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Usage scenario MyTravelConnect

Statement / context
For a trip, the traveler uses many apps and services that do not communicate with each other.

Value: Enabling all digital travel services to behave like smart travel assistants, knowing each aspects of the trip and the traveler

Data space added value /need:
The **Right to data portability** can only exists safely and efficiently within a data space

Target: Travel assistants & travel digital services in general
Segment: Mobility (long & short distance, hospitality, leisure activities)

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Use case example

Persona presentation

Youngmi, is visiting Paris for the 2024 Olympic games. Besides the event, she wants to explore the city (museums, shopping, concerts,...). She does not speak French, and because of a small accident 2 weeks before leaving Seoul, her mobility is reduced.

Data categories involved

- identity data (ex: name, contact and payment information, family composition)
- specific needs (ex: accessibility needs from reduced mobility, allergies)
- preferences (ex: language, tastes, desires)
- schedule information
- purchase history (ex: locations and dates, bookings already made from hospitality, mobility, and activities digital services)

Services categories involved

- Smart travel assistants in any language

Partners of this data space usage scenario

Data Providers	Service Providers
COJO [FR] EONA-X partners: Air France [FR] Aéroports de Paris [FR] SNCF [FR] Accor Hotels [FR] Compagnie des Alpes [FR] Alentour [FR]	Solideos: Smart Travel assistant [KOREA] Cozy Cloud: travel wallet [FR] Raccourci: Roadbook [FR] TravelAssist: VIP 24/7 travel assistant chatbot [FR]

One use case of this data space usage scenario

Youngmi's korean smart travel assistant

Data about Youngmi's flight

Data about Youngmi's train

Data about Youngmi's accomodation

Data about Youngmi's activities

Prometheus-X
Building blocks

- Laszlo Gonczy
  Associate Professor, BME
  Lead of technical development

Technical components to make it happen!

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Prometheus-X development approach

Building blocks

- Modular, open source approach
- Basis of a configurable dataspace
- Used to connect to a dataspace
- No dependency on a concrete infrastructure

Personal data

- Focus on user consent
- Trustworthiness evaluation of data and algorithms
- Decentralized /distributed learning and visualization

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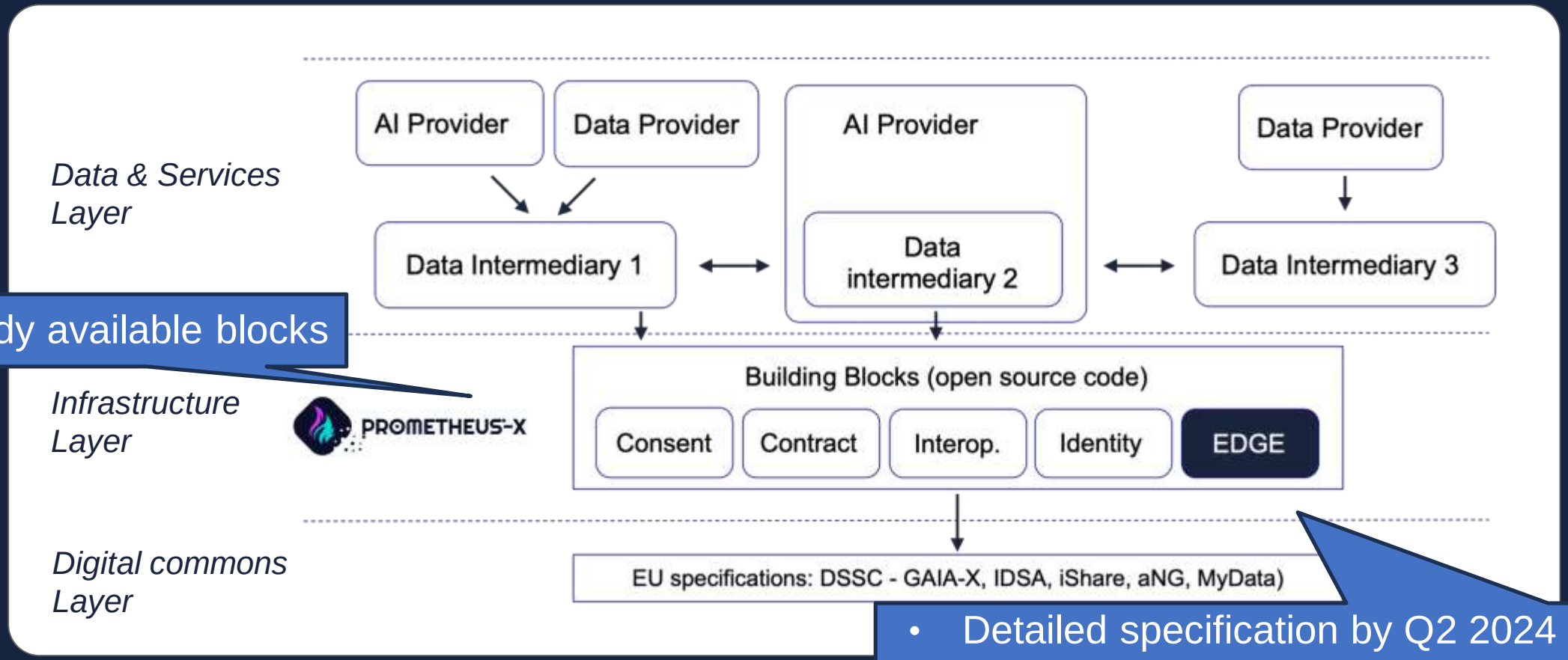
Prometheus-X

General Architecture



Already available blocks

- Detailed specification by Q2 2024
- First version available by end of 2024

Modular approach based on building blocks

Leverage on data:
Skills, education and tourism

Data processing and assurance

Core infrastructure

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Infrastructural blocks

Billing & monitoring

Identity

Pseudonomyzation

The entry point for users (data and AI services)

Catalog

Anonymizaton

Contract

Contract/consent agent

Consent

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Data processing and assurance

Data Value Chain Tracker

How much could a data provider contribute to the ecosystem?

Data Veracity Assurance

How much I can trust in data?

Decentralized AI training

Trustworthy and privacy-preserving AI

Edge Computing for Data Processing

Distributed, efficient near-data processing

Data Alignment, Aggregation and Vectorisation (DAAV)

Data conversion to a uniform representation

Trustworthy AI assessment

How much I can trust in an AI model, what to improve?

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Blocks to leverage on skills data

Distributed Data Visualization

Data visualization with privacy assurance

VR Learning Traces Analytics

VR simulation analysis for skills improvement

Lifelong availability of learning data (see next)

Decentralized Personal Learning Record Store

Learning traces of teachers and course designers

Learning Object Metadata Crowd Tagging

Edge AI Translators

Skills-gap detection based offerings

Semantic data processing

Learning traces from websites and browsing activities

Web Analytics Learning Records Universal Connector

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Personal learning record store (PLRS)

Why : Currently, learner's learning traces are distributed across multiple apps/LMS. He does not have lifelong visibility of his learning.

What : Develop a cloud-based PLRS that allows individuals to store, manage and share their own learning records in a central location.

Partners : LORIA, Cozy cloud, Inokufu

Prometheus-X Communication

How to communicate about Data Spaces?

... and why Prometheus-X needs DIO - Data Intelligence Offensive?

WHO are we?

DIO is a cooperation platform, which connects stakeholders in AT and EU along the data value chain...

WHAT do we do?

We promote the EU's data economy and the optimized use of data technologies. In line with European values such as data sovereignty, trust, and security.

WHY do we do it?

We all produce data and we all should benefit from this.
As such, we support the development of data technologies for current and future generations.

https://www.dataintelligence.at/
office@dataintelligence.at

Marcos Moschovidis

Katarzyna Leduc

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Our role and objectives in Prometheus-X

ROLE

- Reaching relevant stakeholders and collaborating with them along the main objectives of the initiative
- Establishing a community around the European Data Spaces of training & skills
- Promoting the achievements of Prometheus-X & partners

OBJECTIVES

- Communicating & disseminating information about the initiative
- Creating an Editorial Team and collaborating on content
- Organizing online and offline informative events promoting Prometheus-X & partners

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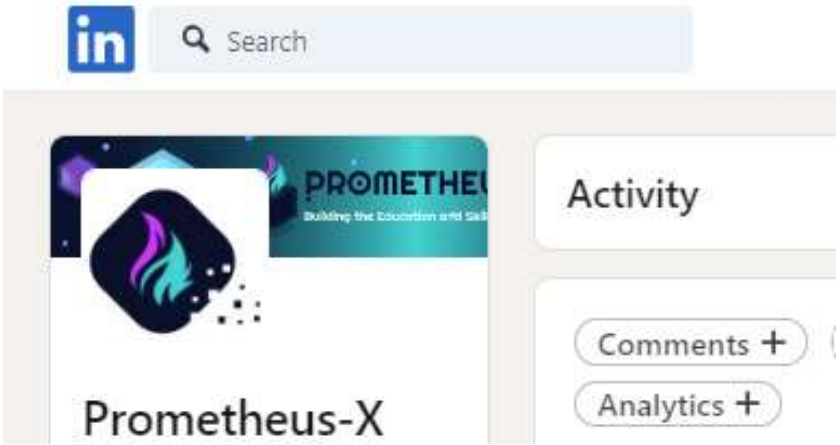
YOU determine our success!

European Data Spaces are made by people and for people.

We need YOU to build a strong community, which will benefit from Data Spaces and run upskilling & reskilling in an easily understandable, actionable manner.

Follow us on LinkedIn and stay tuned! Many updates about the website, newsletter, and events will follow!



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Stay tuned!

We will organise regular meetings to:

- show and discuss progress on use cases
- show and discuss progress on building blocks

One meeting each 2 months!

Fill in our form to keep engaged!

Prometheus-X Public Launch

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Prometheus-X
THANK YOU