



<https://www.ai4europe.eu/>

The European AI on Demand Platform

AI4EU is a one-stop-shop for anyone looking for AI knowledge, technology, tools, services and experts.

AI on-demand platform for regional interoperable DIHs Network

Sergio Gusmeroli, Politecnico di Milano
DIH4AI Coordinator <https://www.dih4ai.eu/>



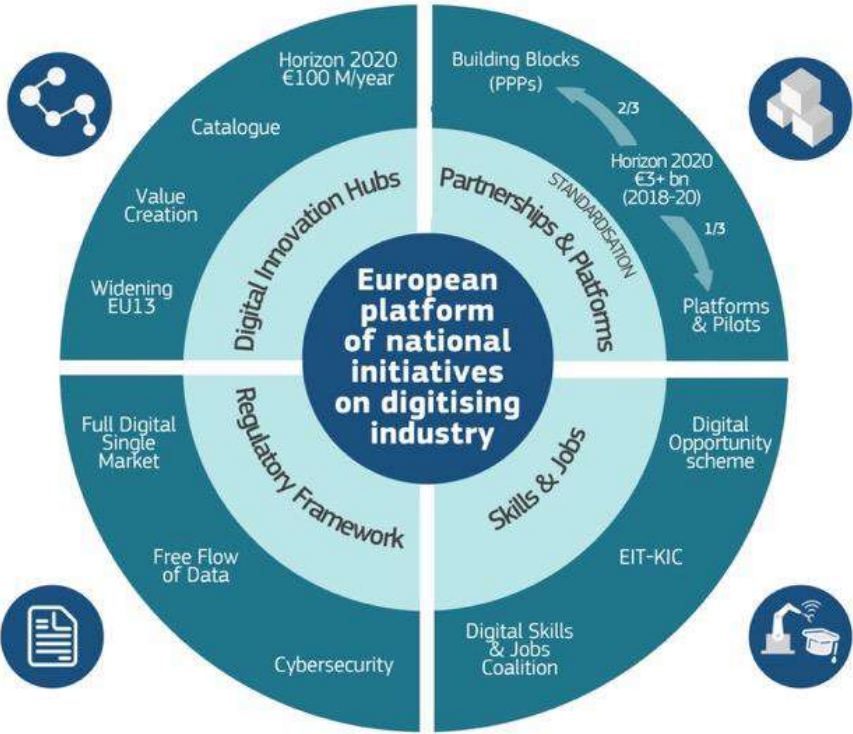
**AI4MEDIA workshop
November 11th 2021**



H2020 In AI4EU is a one-stop-shop for anyone looking for AI knowledge, technology, tools, services and experts. from the European Union's Horizon 2020 research and innovation programme under grant agreement N. 101017057

What is a DIH and how it implements the DEI

The **Digitising European Industry** initiative aims to reinforce EU's competitiveness in digital technologies and to ensure that every business in Europe - **whichever the sector, wherever located, whatever the size** - can fully benefit from digital innovation. To reach this goal the European Commission put in place five key action lines where important progress has already been made. In this factsheet you can find a summary of the initiative, why it is needed and how Europe is progressing on its implementation.

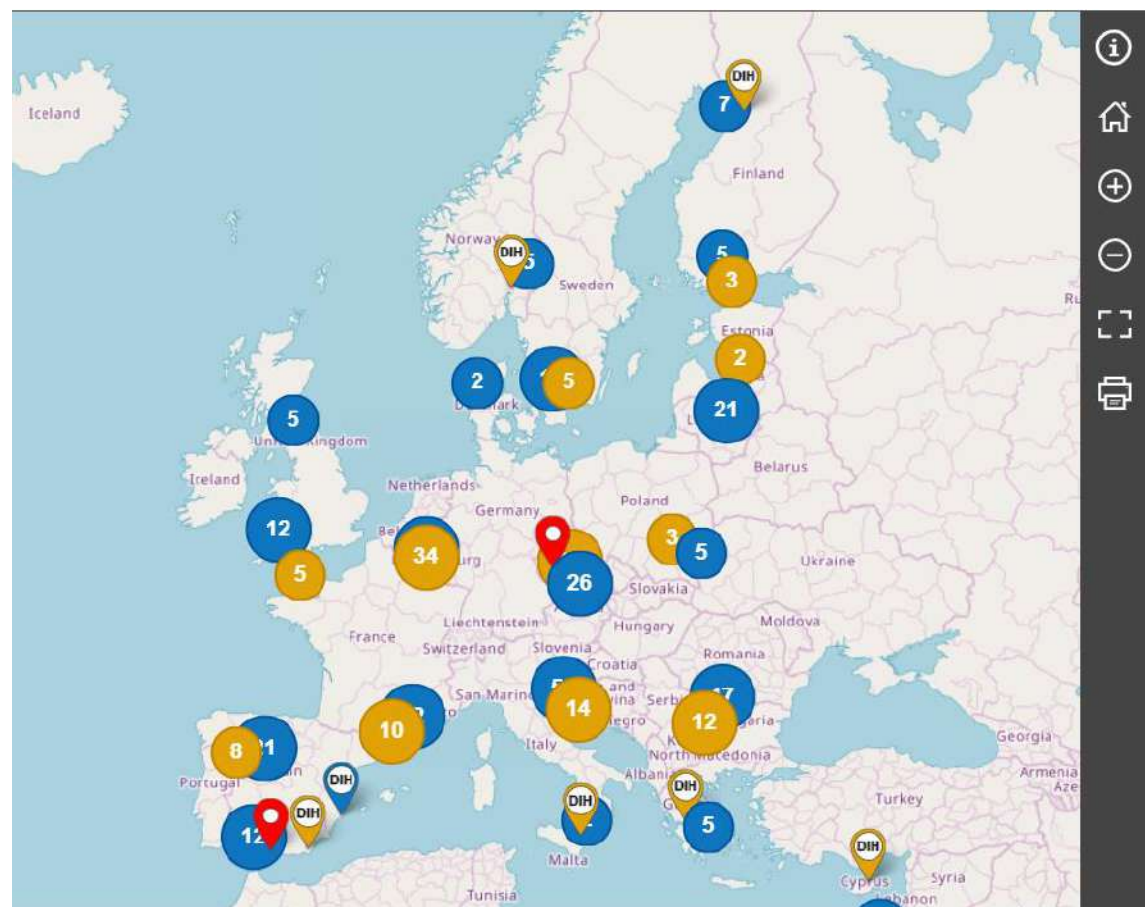


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The JRC Catalogue and the AI (E)DIH (434, 126)

1. Be part of a **regional**, national or European policy initiative to digitise the industry;
2. Be a **non-profit** organisation;
3. Have a **physical presence** in the region and present an **updated website** clearly explaining the DIHs' services
4. Have at least **3 examples** of how the DIH has helped a company with their digital transformation



The Consortium

12 partners from 6 EU countries.
covering 3 key dimensions:

- Regional specialization
- Methodological
- AI tech providers

- **CEA** (representing the DIGIHALL Hub)
- **IMT Transfert**

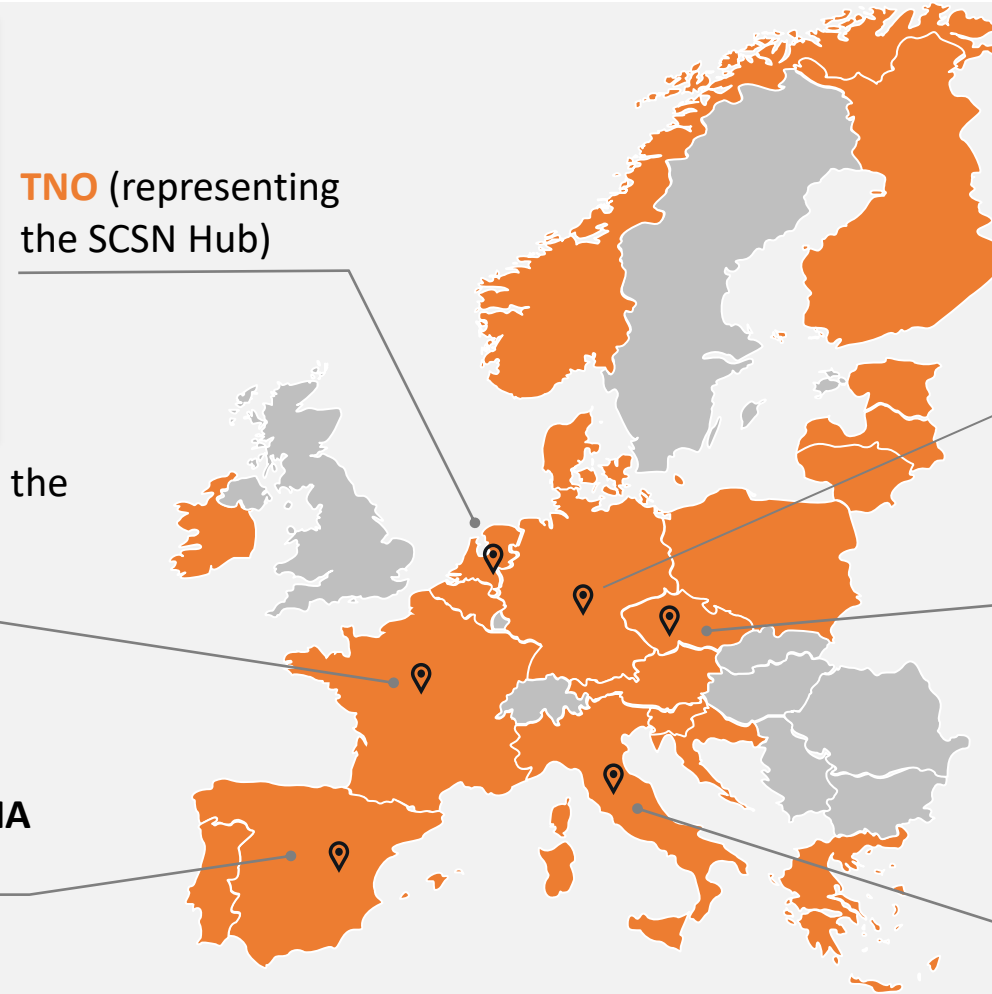
- **INNOVALIA**
- **ATOS**

TNO (representing the SCSN Hub)

- **Fortiss** (representing the Munich Innovation Hub)
- **Fraunhofer IFF** (representing the DIH Saxony-Anhalt Hub)

- **CIIRC CTU** (representing the Czech Innovation Hub)

- **POLIMI** – Project Coordinator
- **PwC (Intellera Consulting)**
- **EKA**
- **ETA**



The DIH4AI Innovation Action

DURATION: 36 months (January 2021 – *ongoing*)

COORDINATOR: Politecnico di Milano

FUNDING: € 4,999,863 (2M Open Calls)

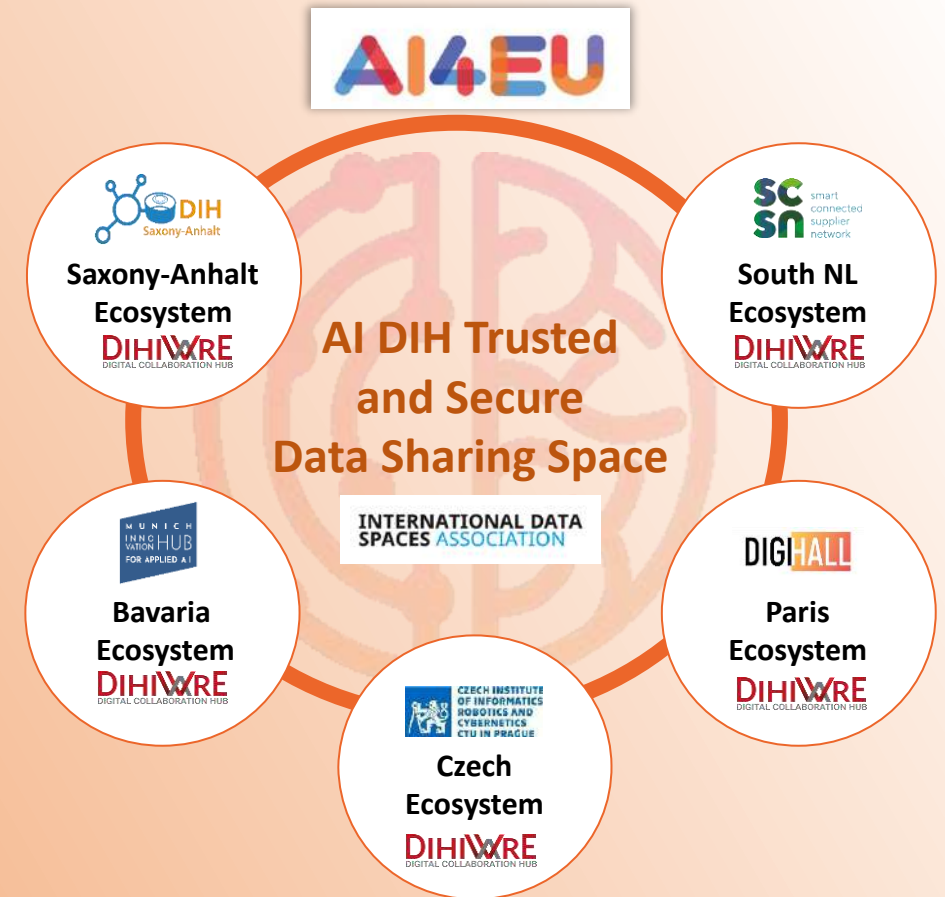
CONSORTIUM: 12 Partners from 6 countries

OPEN CALLS: 10+10 new DIH-driven SME-oriented

DIHs: 5 AI DIHs selected from AI DIH Network

EXPERIMENTS: 20+ AI Best Services implementations

<https://www.dih4ai.eu/>



Building upon the results of the AI DIH Network project



Creation of a EU Network of DIHs focusing on AI

30 DIHs were selected – out of **150 applications** – for being involved in the AI DIH Network project



The profile of an AI DIH

Definition of the key characteristics of an AI DIH, in terms of **service offering, competences & operating model**



Multi-lateral framework cooperation agreement

Signature of a co-drafted multi-lateral framework cooperation agreement among **25 AI-focused DIHs**



Structured approach for cross-border collaboration

Development, through co creation activities of **3 scenarios for cross-border collaboration** and the **blueprint**

Results of the project



1. The Blueprint for cross-border collaboration among DIHs



2. The Final Study Report

https://ai-dih-network.eu/media_and_training.html

Implementation of an **Maturity Assessment Collaboration Pilot**



1. Technological Open Platform for AI DIHs (Network)

GETTING CLOSER TO EUROPEAN DIGITAL INNOVATION HUBS SERVICES OFFER



Innovation ecosystem networking

- Users Catalogue
- Organisations Catalogue
- Success stories Catalogue
- Events

ECOSYSTEM BUILDING

Skills and training

- Training Material
- Documentary Library
- Papers and Publications
- References (Bookmarks)

MATURITY ASSESSMENT & SKILLS

Support to find investment

- Funding and opportunities catalogue

BUSINESS DEVELOPMENT

Test before invest

- Experimental Facilities Catalogue
- IT/Technology Assets Catalogue
- Industrial Trials
- Data Space

TECHNOLOGY PROVISION

Collaboration Space

- Blog
- Discussions
- Events list

Innovation Space

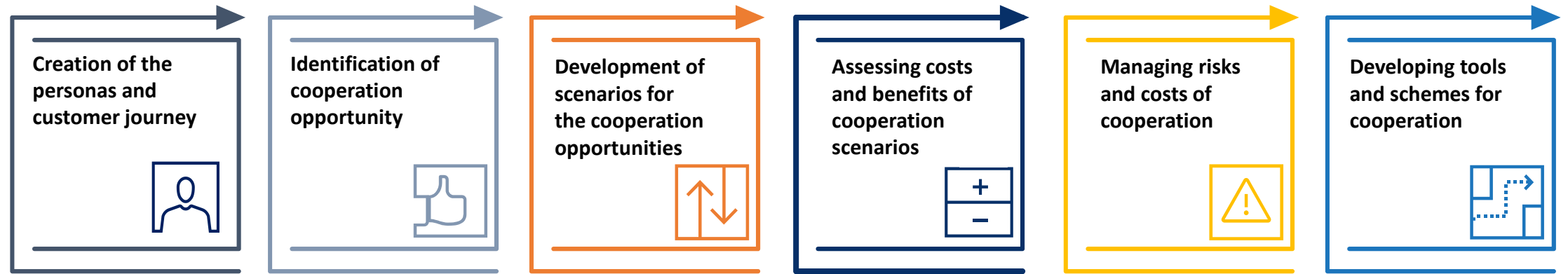
- IMS
- Weight up Decision
- Multi Poll



The Platform supports the intra-region SME ecosystem and cross-DIHs cooperation schemes. It materialises the 4 archetypal (E)DIH functions (i.e. Innovation Ecosystem and Networking, Support to Find Investments, Skills and Training, Test before Invest) in more generic and comprehensive service classes adapted to AI, respectively **Ecosystem Building, Business Development, Maturity Assessment & Skills and Technology Provision**, coupled with collaboration and innovation services to allow people and organisations to co-operate and co-innovate.

2. Methodological framework for DIH collaboration

This methodology was developed in the **AI DIH Network** initiative and promoted by the European Commission.



USER PERSPECTIVE

DIHs service offerings are analysed from a user perspective to identify situations in which cross-border collaboration could deliver tangible benefits to the DIHs and other stakeholders

CUSTOMER JOURNEY MAPPING

This methodology aims to represent the specific activities of the DIHs during the service delivery and the opportunities to improve through cooperation. This approach leads to the identification of different 'cooperation use-cases'.

COOPERATION SCENARIOS

Identified 'cooperation use-cases' and the described methodology will represent the basis for DIH4AI experimentations and will facilitate the wider use and uptake of AI-on-demand-platform.

3. Regional-European Interoperability Framework



3 MAIN INTEROPERABILITY BRIDGES BETWEEN **DIH4WRE** AND **AI4EU**

DIGITAL COLLABORATION HUB

1

The Portal Interoperability

To integrate **Users** of both the Regional and the European platforms.

2

The Data Interoperability

To integrate **Content/Data Repositories** of both the Regional and the European platforms.

3

The Cloud Interoperability

To integrate **Services and AI Infrastructures** of both the Regional and the European platforms.

Additional tools and services

In line with the upcoming European regulation on AI, different services and tools to support SMEs will be also developed and defined in this field, including:

01

Ethics by design support

DIHs could help SMEs in the implementation of ethical AI guidelines/requirements through technical support and process guidance

02

Conformity assessment and compliance

DIHs could develop and deliver conformity and assessment mechanisms to verify the actual implementation of ethical requirements

03

AI skills development programme

The programme will support citizens, enterprises and public authorities in filling the competencies gaps required by AI

Wide dissemination: DIH related initiatives/EDIHs and the AI4EU ecosystem and International collaborations

01 **TECHNOLOGICAL OPEN PLATFORM
FOR AI DIHs (NETWORK)**

02 **METHODOLOGICAL FRAMEWORK
FOR DIH COLLABORATION**

03 **REGIONAL-EUROPEAN
INTEROPERABILITY FRAMEWORK**

DIHIWARE – Vision



Knowledge-driven services next to a Catalogue Management System
harmonized with the **collaborative** and **innovation** side of the platform, where providers and consumers of digital technologies are not just matching assets and needs, but they are collaborating to boost innovations.

DIHIWARE
DIGITAL COLLABORATION HUB

Knowledge
Platform



Marketplace

Innovation
Capabilities



Collaboration
Services

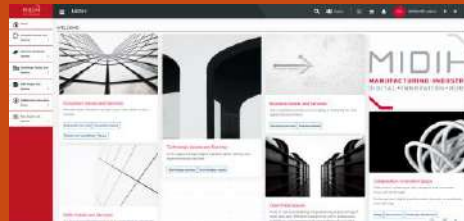


DIHIWARE Main Subsystems



Knowledge Management System

Knowledge management, social activity next to collaboration and innovation capabilities



 Liferay

Catalogue Management System

Resources organization and cataloguing

Dynamic Information Modelling & Rendering



Catalogue Design
and
Management



Taxonomies
and
metadata use



Information dynamic
modelling and
visualization

The Identity Manager

Centralizing user authentication, defining their roles and granting their access while using the other applications





3 Levels of Use

Powered by
DIHIWARE

Level 1

Use DIHIWARE as a tool to manage a single DIH regional ecosystem, connecting local experts and exploiting the technology excellences of their service portfolio.

Target: SMEs

DIHIWARE
DIGITAL COLLABORATION HUB

Level 2

Use powered-by-DIHIWARE portal to establish cross-DIH collaboration, usually supported at project level

Target: SMEs

Powered by
DIHIWARE
DIGITAL COLLABORATION HUB

Level 3

Join DIH4INDUSTRY, a powered-by-DIHIWARE ecosystem, to establish cross-DIH collaboration, from DIHs to DIHs active in the manufacturing industry sector

Target: DIHs

 **DIH4INDUSTRY**
The EU Network of DIHs in the Manufacturing domain

D-BEST Services Model

D

Data Services

Data acquisition and sensing
Data processing & analysis
Decision-making
Physical-human action & interaction
Data sharing

B

Business Services

Incubation acceleration support
Access to finance
Business training and education
Project development

E

Ecosystem Services

Community building
DIH Innovation Development
Ecosystem Governance

S

Skill Services

Process & Organizational Maturity
Human Capabilities Maturity
Skills Improvement

T

Technology Services

Ideas Mngmt and Materialisation
Contract research
Provision of Infrastructure
Technical support on scale up
Verification and Validation

For the taxonomy of the services we have used a classification based on the D-BEST services model where each one of the classes considered (Business, Ecosystem, Skill and Technology) can be declined in several types of services representing the main categories of services provided by the DIH to the end-users.

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METHODIH – a METHOdology for DIHs

METHODIH is a set of methods and frameworks defined to create common standards among DIHs, to support them in service exchange and provisioning

SERVICE PORFOLIO

L

Legal

- LEGAL AND IPR ASSISTANCE
- ETHICAL AI ORGANISATIONAL SUPPORT
- ETHICAL AI LIFE CYCLE ASSISTANCE & ASSESSMENT

B

Business

- INCUBATION ACCELERATION SUPPORT
- ACCESS TO FINANCE
- OFFERING HOUSING
- BUSINESS TRAINING AND EDUCATION
- PROJECT DEVELOPMENT

E

Ecosystem

- COMMUNITY BUILDING
- DIH INNOVATION DEVELOPMENT
- ECOSYSTEM GOVERNANCE

S

Skills

- PROCESS & ORGANIZATIONAL MATURITY
- HUMAN CAPABILITY MATURITY
- SKILLS IMPROVEMENT

T

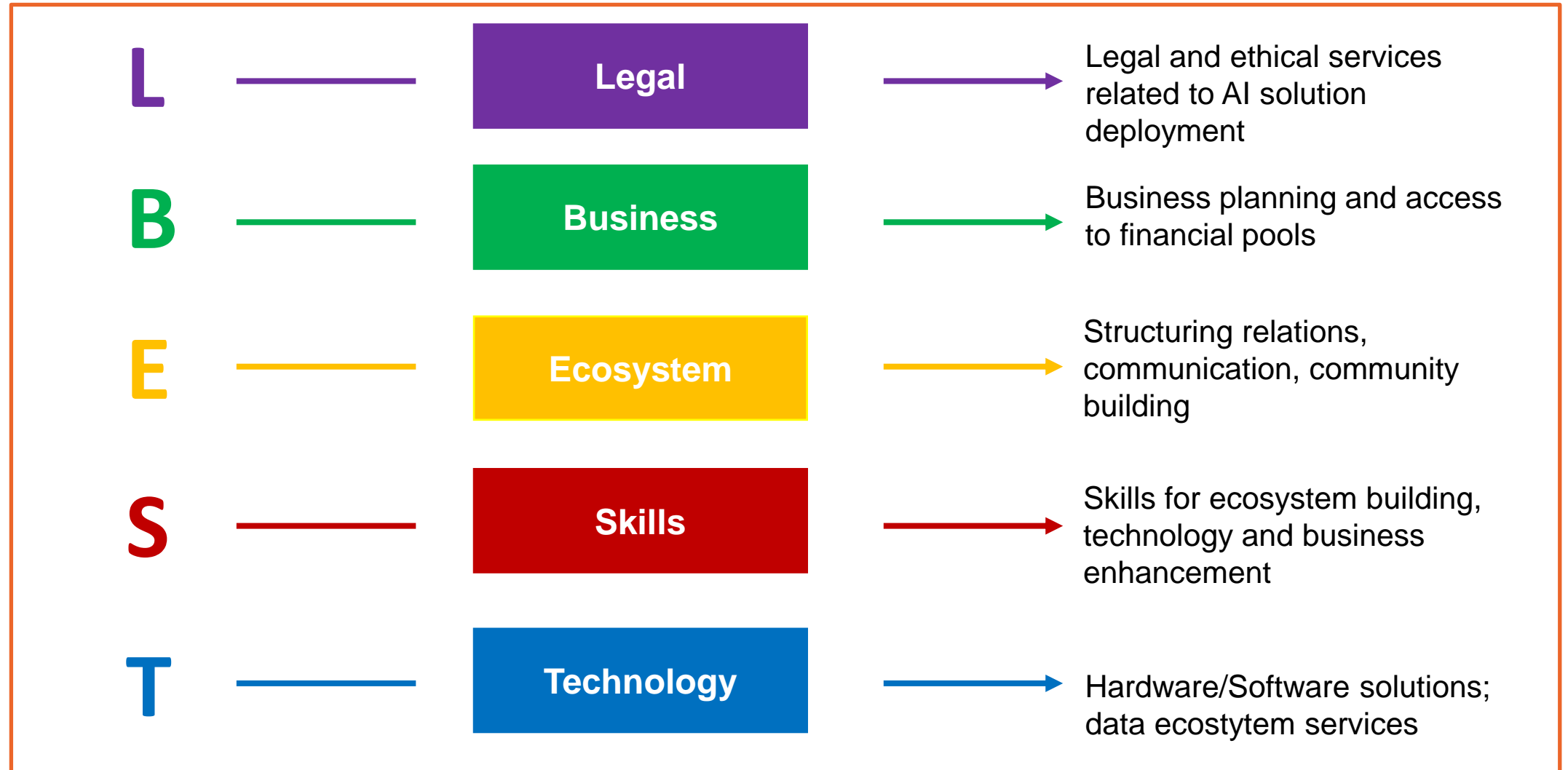
Technology

- IDEAS MANAGEMENT AND MATERIALIZATION
- CONTRACT RESEARCH
- PROVISION OF INFRASTRUCTURE
- TECHNICAL SUPPORT ON SCALE UP
- VERIFICATION AND VALIDATION
- DATA MANAGEMENT

CUSTOMER JOURNEY



L BEST SERVICE PORTFOLIO (level 1)



L BEST SERVICE PORTFOLIO (level 2)

L

Legal

- LEGAL AND IPR ASSISTANCE
- ETHICAL AI ORGANISATIONAL SUPPORT
- ETHICAL AI LIFE CYCLE ASSISTANCE & ASSESSMENT

B

Business

- INCUBATION ACCELERATION SUPPORT
- ACCESS TO FINANCE
- OFFERING HOUSING
- BUSINESS TRAINING AND EDUCATION
- PROJECT DEVELOPMENT

E

Ecosystem

- COMMUNITY BUILDING
- DIH INNOVATION DEVELOPMENT
- ECOSYSTEM GOVERNANCE

S

Skills

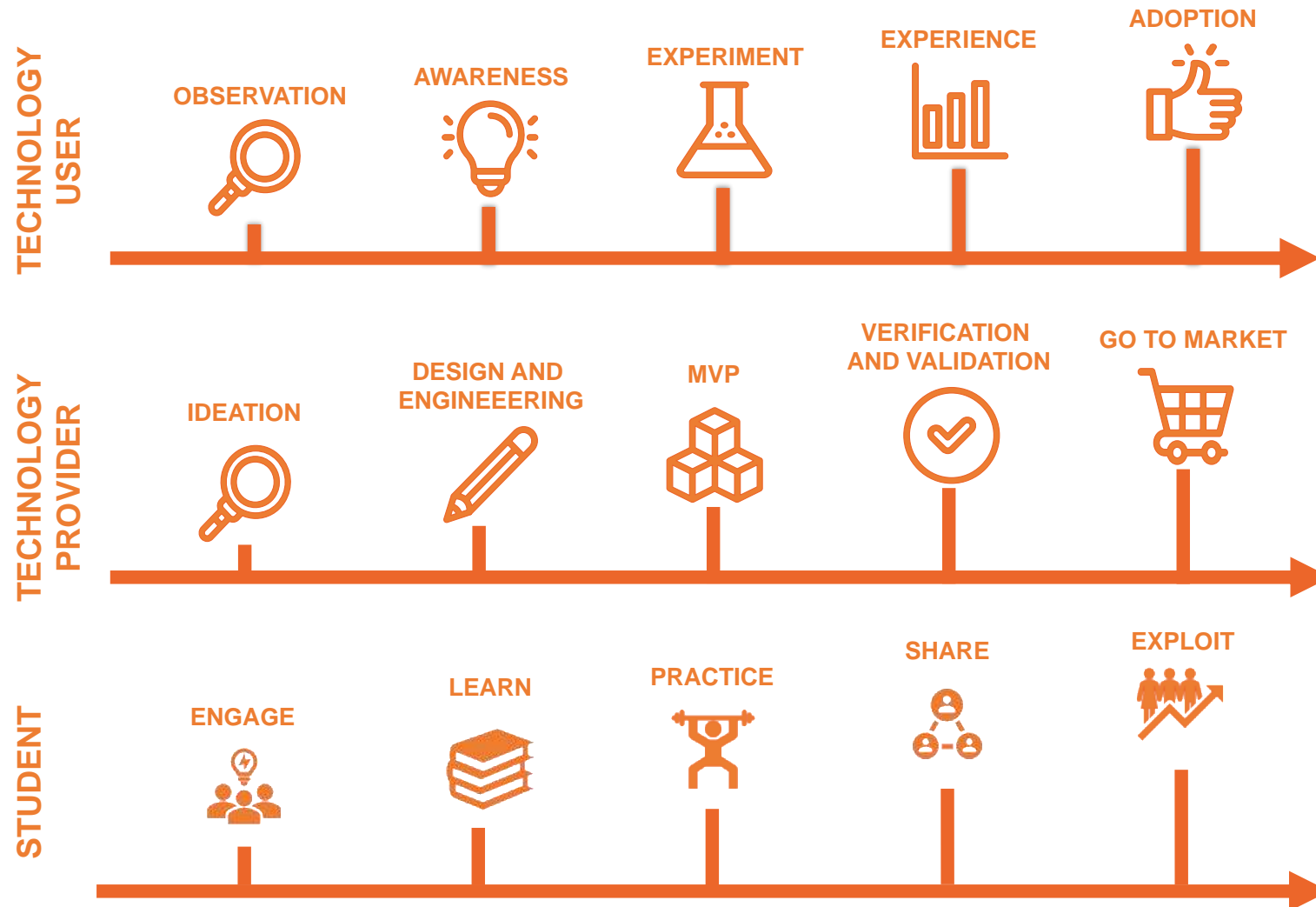
- PROCESS & ORGANIZATIONAL MATURITY
- HUMAN CAPABILITY MATURITY
- SKILLS IMPROVEMENT

T

Technology

- IDEAS MANAGEMENT AND MATERIALIZATION
- CONTRACT RESEARCH
- PROVISION OF INFRASTRUCTURE
- TECHNICAL SUPPORT ON SCALE UP
- VERIFICATION AND VALIDATION
- DATA MANAGEMENT

CUSTOMER JOURNEYS (1/2)



CUSTOMER JOURNEYS MATRIX



OBSERVATION



AWARENESS



EXPERIMENT



EXPERIENCE



ADOPTION

B
BUSINESS

Infodays

- Open Innovation Community
- Matchmaking events/delegation
- Funding opportunities monitoring
- Find alternative funding

- Consortia generation support
- Innovation Platform

Innovation Platform

E
ECOSYSTEM

- Community Engagement
- Innovation Labs/Conference
- Best Practice promotion
- Awareness Creation

- Strategic Community
- Workshops/Event/study visits
- Roadmapping
- Ecosystem mapping

- Open Innovation Challenges
- Innovation Labs

S
SKILLS

Advanced Manufacturing Scan

Transformation methodology

T
TECHNOLOGY

Stimulating Innovative Ideas

Collaborative Project Support

Orientation for infrastructure identification

Experimenting and testing collaboration



1. Intra-DIH regional Experimentations

The 5 DIHs part of the Consortium will analyse the current **as-is AI services** and select and experiment with expected to-be AI services **according to the needs** of its specific ecosystem.



2. Cross-DIH and Regional-Europe Experimentations

Specific scenarios will be identified, according to a shared methodology and based on the outcomes of the AI DIH Network project:

1. Joint Provision
2. Joint Development
3. Joint Matchmaking

OPEN CALLS

An additional set of DIH-driven experiments will be supported with open calls to implement SME-driven experiments and further expand their impact. The 2 open calls aim to support around **10 + 10 SMEs**.



Cross-DIHs collaboration scenarios



1) Joint provision of complex services



- **Partnership to provide services jointly**, pulling together existing resources, to enable DIHs to respond to a client's request leveraging on the capabilities and infrastructure available in the network

e.g. a multi-disciplinary Summer School, a cross-regional investors' matchmaking event

2) Joint development of collaborative services



- Design, develop and provision of **innovative new services** to widen the DIH offering to the ecosystem. This is based on cooperation with other DIHs in Europe that face similar challenges and needs.

e.g. a new AI Digital Maturity Assessment method; a new Skills Competencies framework for AI.

3) Joint matchmaking of complementary competencies



- **Matchmaking** to enable DIHs to provide **new opportunities to the ecosystem**, creating connections with players operating in other regions

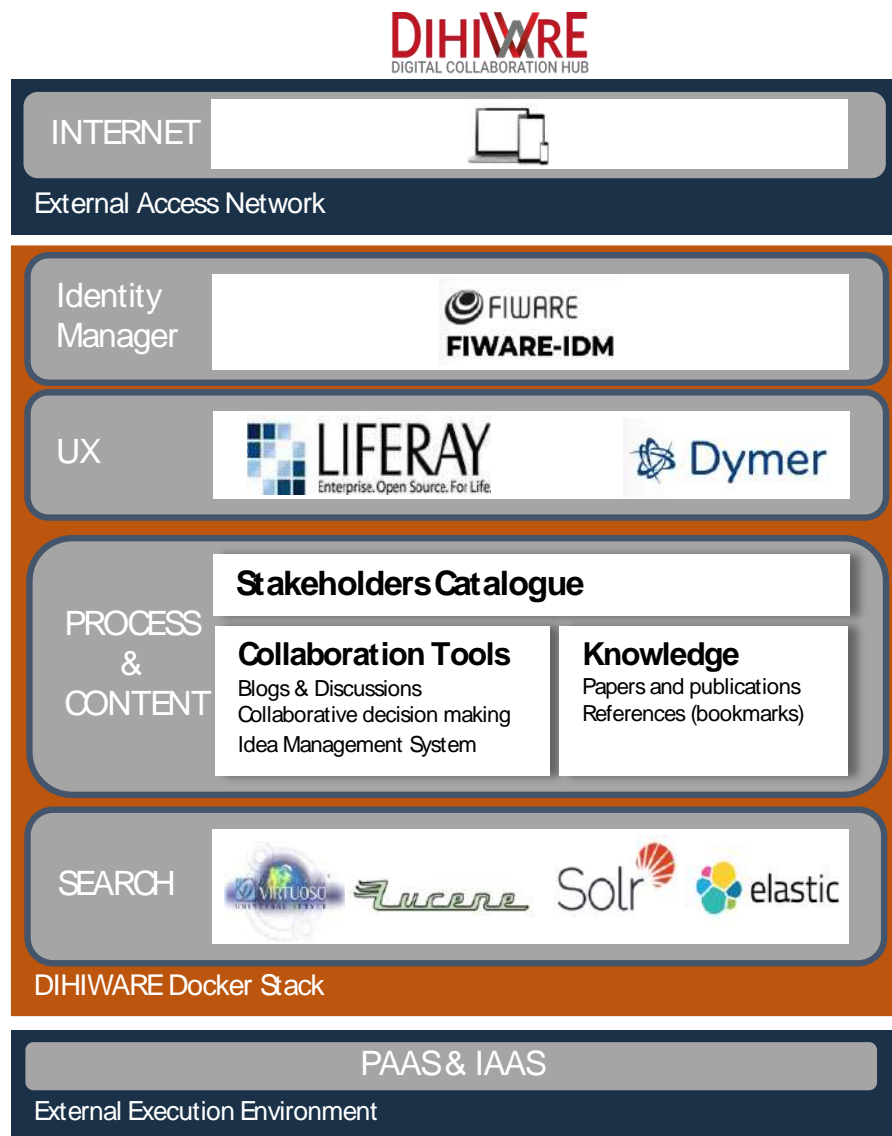
e.g. AI startup looking for new customers outside its region; a user SMEs looking for AI solutions in predictive maintenance; a hospital looking for other hospitals to share experiences in digitalization

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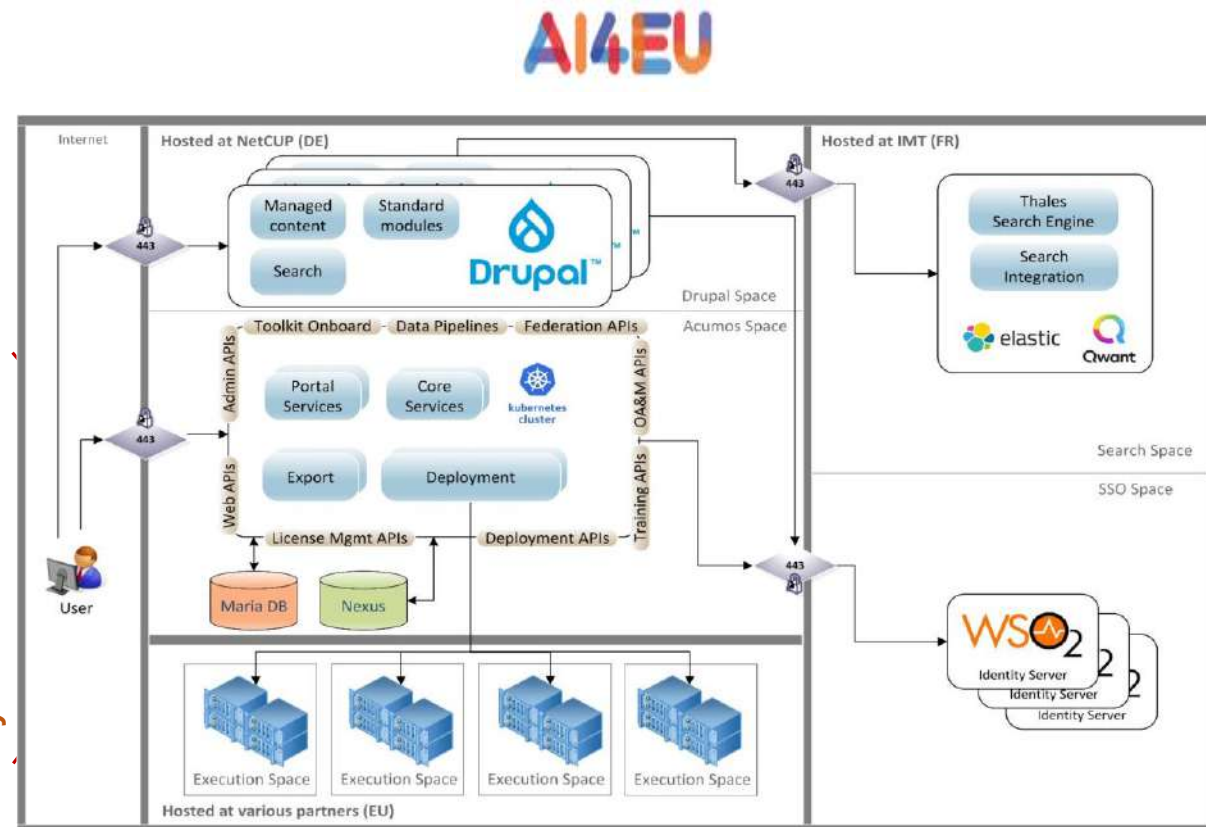
DIH-AI4EU Interoperability Framework



Portal Interoperability

Data* Interoperability

Cloud Interoperability



Portal interoperability

Enabling mechanisms to interoperate between the European and Regional portals and content

Access

Aim: allowing seamless access, authentication and authorization by users of both the Regional (DIHIWARE) and the European (AI4EU) platforms.
Pending on the status of SSO solutions.

Search

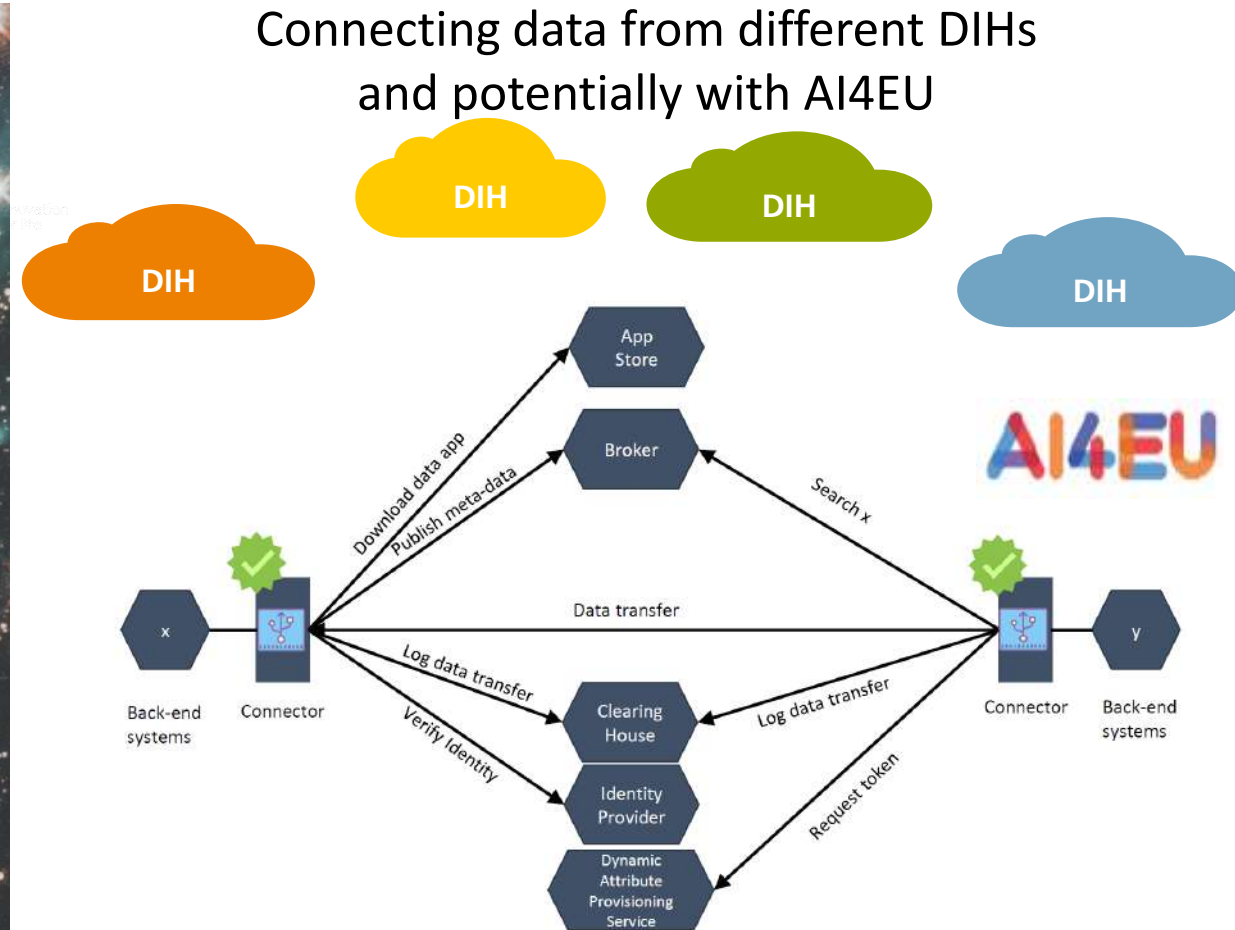
Aim: Search for content from the different portals

Ongoing discussions on Search APIs

Interoperability bridge between regional (DIHIWARE instances) and European (AI4EU) portals

Data-level Interoperability Framework

To design and develop the **Data level of the Interoperability Framework**, allowing the creation of a common **Regional-European Data Sharing Space** in the domain of AI



Following **IDSA** principles
respecting data sovereignty

Cloud-level Interoperability Framework

Defining the **functional and technical interoperability on the cloud/infrastructure level**

Objective

Design and develop the Cloud level of the Interoperability Framework, allowing sharing of IaaS and PaaS resources and Regional-European distributed Sandboxes

Interoperability and experiments

Taking into consideration the end-user journey and requirements, **we will define interoperability of the DIHIWARE and AI4EU platforms for experimentation**

Guidelines

Issue **cloud interoperability recommendations and guidelines** for DIH4AI

Enabling sandboxes for experimentation

Funding Support to Third Parties – Call for Proposals

Total FSTP : 2 Million €

2 Open Calls – 1 Million € for each OC1 and OC2

Up to €100k lump sum funding for each Experiment (Innovation Action rules)

1st OC Opening: 30/09/2021

1st OC Closing: 30/12/2021

WEBINAR: NOV 17th 10:00 CET



2nd OC Opening: Q3 2022

Aims (20 additional experiments)

- AI Innovative applications experimentation in any domain of AI and Cognitive Science
- Support by local regional DIHs through the provision of (L) BEST Services (Pipeline)
- Active participation of technology users (SMEs or Public Organisations)
- Feasibility analysis of integration with AI4EU Platform and Catalogue

Objectives

- Develop and Experiment highly innovative applications in any AI domain
- Test and Validate DIH (L) BEST Service Pipeline in the “AI Providers” [and “AI Users”] Customer Journeys
- Evaluate the feasibility of integration in the AI4EU Portal, Catalogue and Repositories



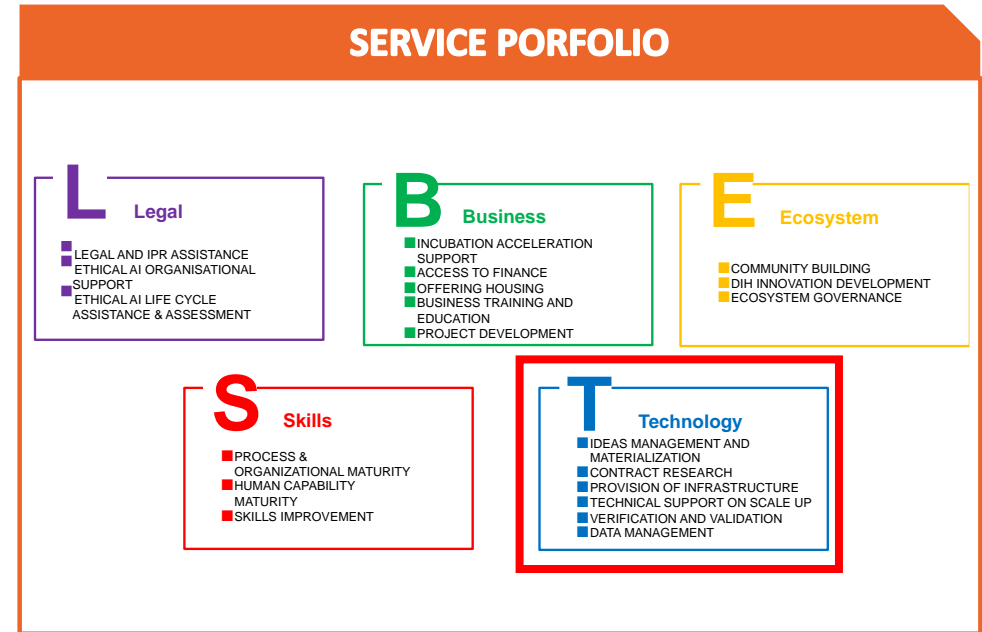
Funding Support to Third Parties – Call for Proposals

TWO KINDS OF EXPERIMENTS

Type A: Intra-Regional Skills-Technology Experiment

Mini-consortia formed by **2-3 partners**:

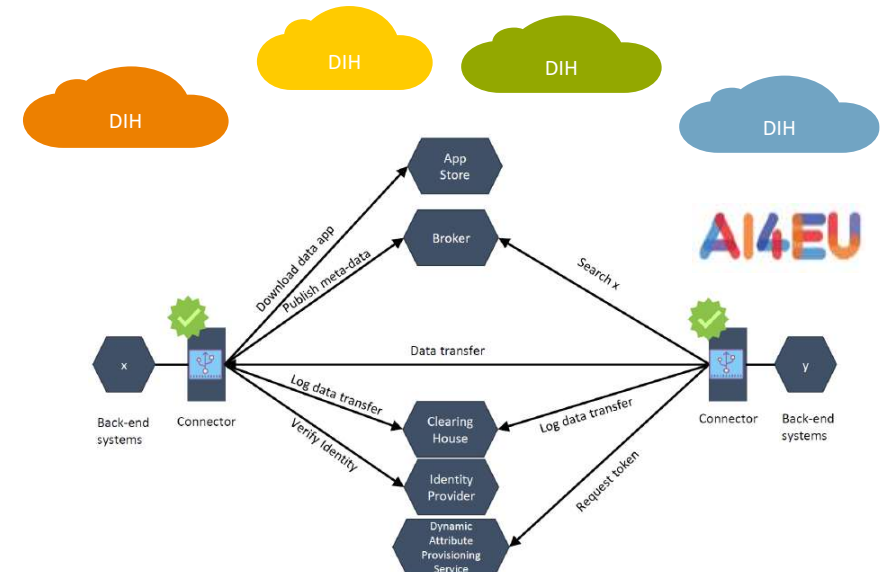
- an AI technology provider SME (who leads the Experiment)
- its regional DIH (operational in AI from the JRC Catalogue)
- optionally, a user SME or a Policy Maker can complete the mini-consortium



Type B: cross-Regional Skills-Technology Experiment

Mini-consortia formed by **3 partners**:

- an AI technology provider SME (who leads the Experiment),
- its regional DIH (operational in AI from the JRC Catalogue)
- and a second DIH (operational in the JRC Catalogue) as testing and experimental facility



THANKS

Follow the project
updates



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sergio.gusmeroli@poilimi.it

