DIH-WORLD

WIDENING DIGITAL INNOVATION HUBS

DIH 4 AI

Service offering in AI: taxonomies and best practices from the DIH4AI project

29 November 2022

This webinar is recorded and will be available on the DIH-World website

DIH-WORLD

Agenda

Time	Session
15:00 - 15:10	**Welcome greetings and introduction** Beatrice Bozzao, Associate, Intellera Consulting
15:10 - 15:25	**DIH4AI and the L BEST model** Sara Mancini, Senior Manager, Intellera Consulting, Italy
15:25 - 15:35	**Stimulating cross-DIH collaboration through Service Portfolio Analysis: the METHODIH framework** Isidora Trucco Campos, Polytechnic University of Milan, Italy
15:35 – 15:45	**The DIH4INDUSTRY Portal for cross-DIH Collaboration** Francesco Stefanelli, Researcher, Engineering Ingegneria Informatica, Italy
15:45 - 15:55	**A Success Story for cross-DIH Collaboration: the PIANAI experiment** Philip Frankl, Coordinator Technology Transfer Projects, Fortiss, Germany
15:55 - 16:00	**Q&A Session and closing remarks** Beatrice Bozzao, DIH World & Sara Mancini, DIH4AI

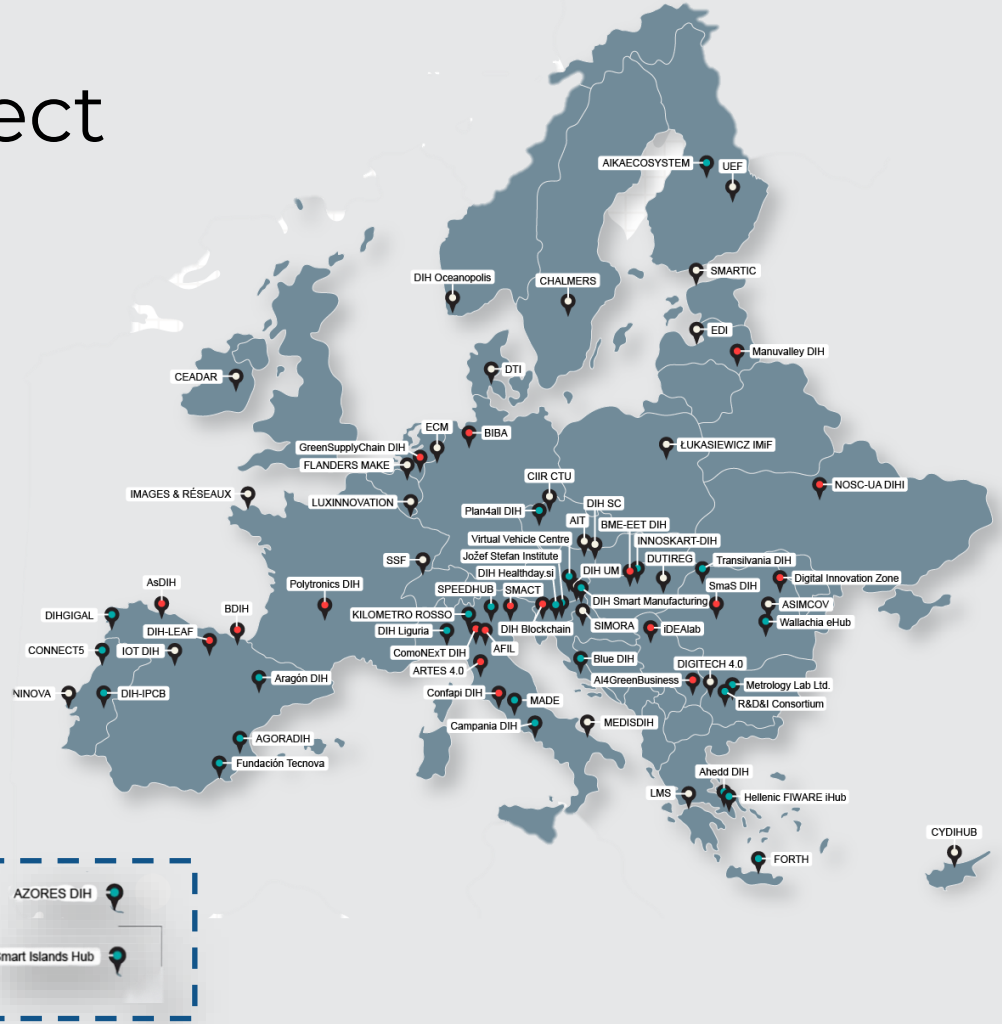
Co-funded by the Horizon 2020
Framework Programme of the European Union
Under grant agreement No. 952176

The DIH-World project

DIH-World is an Innovation Action funded by the EU through the Horizon 2020 programme, lasting three years (2020-2023).

The aim of this project is to **accelerate the development and consolidation of DIHs** and to improve the **digitalisation of European SMEs and public sector bodies.**

DIH-World includes **a network of Digital Innovation Hubs,** which is now made up of **74 Hubs** after the launch of **two open calls for experiments**, respectively in 2021 and 2022.



DIH-World key activities

DIH-World Experiments

DIH-World has launched two Open Calls for experiments:

April 2021: 1st Open Call
April 2022: 2nd Open Call

DIH-World Academy

The Academy provides a wide range of **training, webinars and coaching** support services to DIHs to improve their service delivery capabilities

Technology needs assessment

DIHs learn and conduct **SME technology needs assessments.**

DIH-World Connecting

DIH-World provides opportunity to **build a network of DIHs**, so that they can collaborate and learn from each other

Objectives of the webinar

Getting you to know **useful tools, taxonomies and best practices for improving collaboration among DIHs**

Demystifying the concepts through the concrete experience of a successful **cross-DIHs collaborative experiment**

Understand how to **cooperate in a structured way** with one or more DIHs located in different regions / countries

How can collaboration happen?

Collaboration with other DIHs offers the possibility to **upgrade** their respective technological capacities, service offerings and in-house skills. It can happen in different ways.

Thanks to **structured collaboration**, Hubs can respond more effectively to specific client needs and provide better services. For example, through the:

1. Development of a new service	2. Partnership to provide service jointly	3. Matchmaking
• DIHs can enlarge their offering by leveraging on the **skills and capabilities available** within the **network**	• DIHs can **deliver services in cooperation with other partners** with complementing competences.	• DIH supports clients in **identifying potential partners** in another ecosystem (e.g. technological, business or financial partners)

DIH4AI and the L BEST model

Sara Mancini, Senior Manager, Intellera Consulting, Italy

H2020 Innovation Action - This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N. 101017057

DIH4AI Introduction

The DIH4AI "**AI on-demand platform for regional interoperable Digital Innovation Hubs Network**" has clear **objectives** that rely on **three fundamental pillars**

OBJECTIVES

Build a network of AI-on-demand innovation and collaboration platforms, **interoperable with the AIoD platform**

Supporting the **joint development and provision of services** through a sustainable network of regional AI DIHs and targeting local SMEs and GovTech agencies.

KEY PILLARS

- Technological Open Platform for AI DIHs
- Regional and European Interoperability Framework
- Methodological Framework for DIHs collaboration

DIH4AI network of (E)DIHs specialized in AI

18 DIHs in DIH4AI Innovation Action (90+ applications)

The 5 DIHs in the initial project are extended with further 13 DIHs coming from the first Open Call. In the second Open Call 10+ new DIHs

30 DIHs in the AI DIH Network Study (150 applications)

A European Commission study to train the trainers towards AI-driven Digital Transformation and cross-DIH collaboration (legal MoU)

50+ DIHs in ICT49 World Café' at EU Week of Regions

ICT49 projects are organizing awareness events for promoting regional Digital Transformation and advertising Open Calls funding opportunities

Any **Digital Innovation Hub** can make **part of our network**. Do not hesitate to **reach out to us** if you wish to find our more!

Open Call 1: Funded Sub-Projects winners

Sectors under scope

- Agrifood: 2 winners
- Earth observation: 1 winner
- Finance and Insurance: 1 winner
- Manufacturing: 4 winners
- Public Sector: 2 winners

Distribution by country

- Italy: 2 winners
- Spain: 2 winners
- Austria: 1 winner
- Hungary: 1 winner
- Greece: 1 winner
- Portugal: 1 winner
- Romania: 1 winner
- Serbia: 1 winner

Open Call 2: Details about the call

The DIH4AI project will select up **to 10 SME-centered experiments** focused on **developing new AI solutions**, to extend the AI4EU platform

The Open call opened on the 17th of October and will **close on the 16th of December 2022 at 17:00 CET**

The total funding of the open call is 1,000,000 EUR. **10 SMEs** will be selected and will receive up to 100,000 euros per winner. **DIHs will provide support to SMEs to test and experiment**

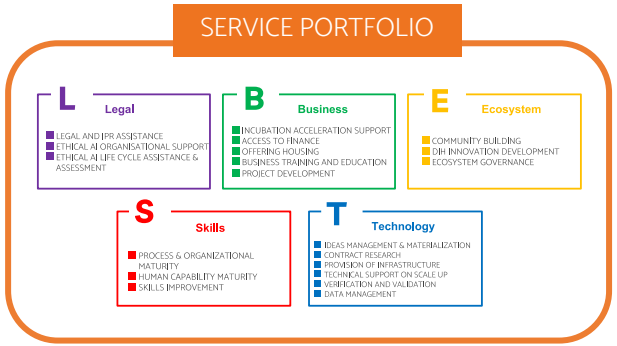
More information here

Sectors under scope

- Agrifood
- Earth observation
- Finance and Insurance
- Manufacturing
- Public Sector
- NEW Energy

METHODIH – a METHOdology for DIHs

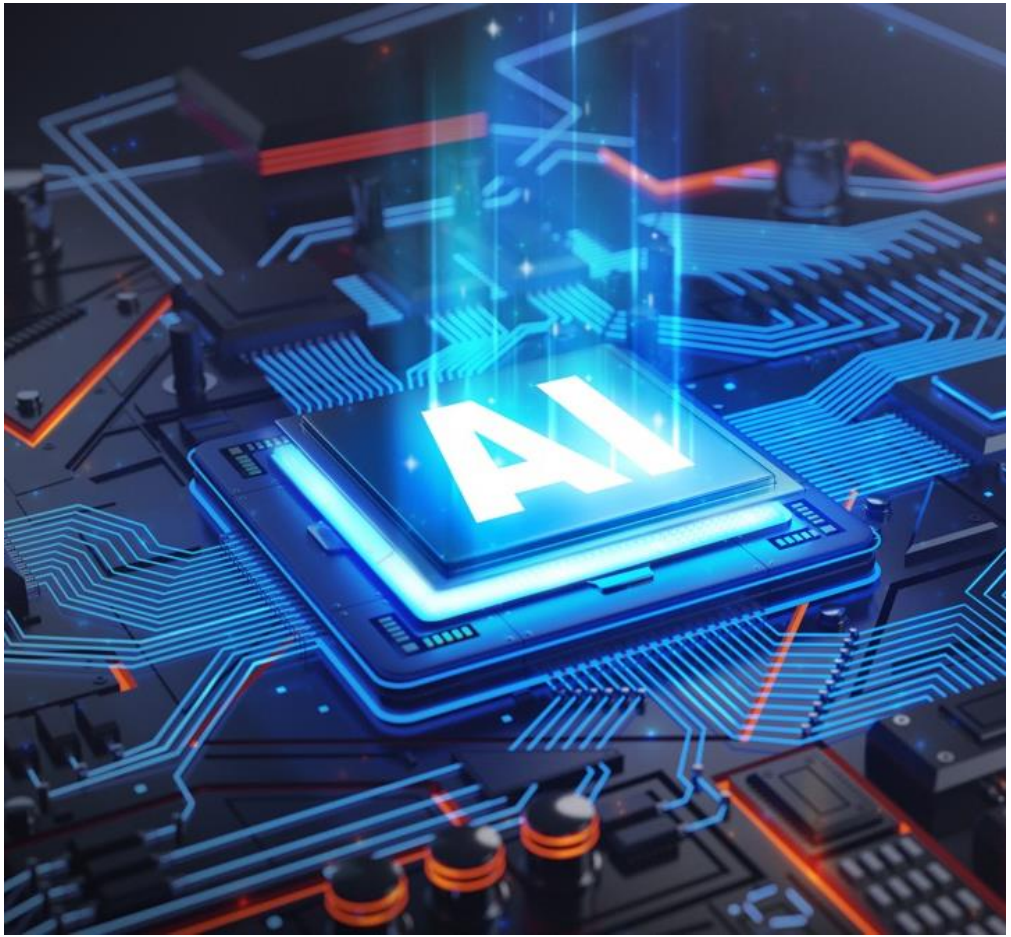
METHODIH is a set of methods and frameworks defined to create common standards among DIHs, to support them in service exchange and provisioning



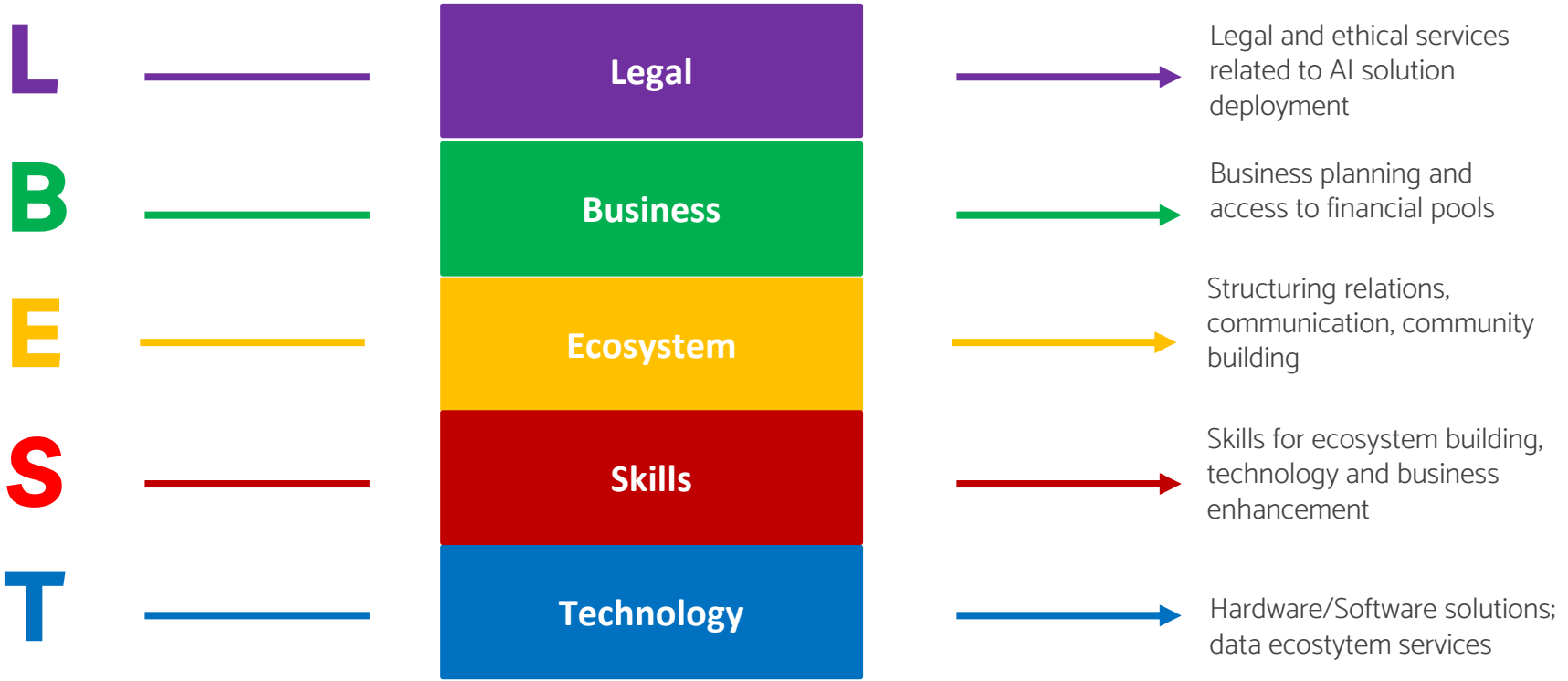
L-BEST Service Portfolio

DIH4AI inherited, from AI REGIO project, the concept of Service Portfolio **3-levels taxonomy** for classifying the **AI DIH's services**. The taxonomy was also enriched based on the AI DIH Network services for ethics and legal AI aspects.

The objective is to provide to DIHs a **standard framework** to describe their services according to a common taxonomy, also in the perspective of **collaboration opportunities.**



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

L-BEST service portfolio – Level 3 (ecosystem)

CLASS	TYPE	SERVICE
ECOSYSTEM BUILDING	Community building	SME and People Engagement
		Brokerage, Awards, Challenges
		Technology scouting
		Communication
	DIH Innovation	Trend watching
		Visioning and strategy development
	Ecosystem Governance	Services Impact assessment
		Ecosystem strategy management

Example: the "E" of Ecosystem

E Ecosystem

- COMMUNITY BUILDING
- DIH INNOVATION DEVELOPMENT
- ECOSYSTEM GOVERNANCE

Spanning over the 5 classes, more than 60 services are classified!

LEVEL 1: class of service (LBEST)

LEVEL 2: type of service

LEVEL 3: the service

Focus on the Legal and Ethical dimension

DIH4AI newly developed the L(egal-ethical) category of services of the L-BEST taxonomy and is currently **validating it with external stakeholders** as part of the activity of the **Trustworthy AI Working Group** of the **ICT49 projects**.

L Legal

LEGAL AND IPR ASSISTANCE

- Legal advice and support
- IPR assistance & management
- Model agreements & assistance
- Regulatory Sandboxes

ETHICAL AI ORGANISATIONAL SUPPORT

- Support definition of internal AI Code of Conduct
- Ethics-related organizational measures
- Training on Ethical & Legal AI services
- Ethics Expert on-demand

ETHICAL AI LIFE CYCLE ASSISTANCE & ASSESSMENT

- Ethical AI Committee as a Service
- Ethical risk assessment
- Support the development of ethically-aware AI solutions
- Conformity assessment / certification of AI solutions
- AI solution independent audit

ICT 49

The TAI WG is **led by DIH4AI** and brings together all the six ICT49 projects with **two key objectives**:

1

"L" services taxonomy improvement

Revision and extension of the L services' catalogue, from the L-BEST classification, to create a common framework of Trustworthy AI services; definition of a draft **strategy to integrate** it with **OSAI** and the **AIoD Platform**

2

Shared approach for Trustworthy AI Assessment

Define a draft **common methodology** for the **trustworthy assessment** of proposals from the OC and for the AIoD's platform assets; provide feedback to the EU Trustworthy AI requirements (HLEG)

DIH4AI Collaboration Experiments

L B E S T	Task 6.2 1. Joint Provision of complex services	Task 6.3 2. Joint Development of collaborative services	Task 6.4 3. Joint Matchmaking of complementary competences
Business		**AI Business Plan Assessment** Lead: CTU/CIIRC Partners: Fraunhofer IFF, TNO X-PRAG-3	
Ecosystem	**Pan-EU AI Adopters Ecosystem** L Lead: DIGIHALL Partner: Fraunhofer IFF X-PAR-1 **AI Awareness Raising Skills for DIH** Lead: Fraunhofer IFF Partner: TNO, Fortiss X-SAX-1	**Catalog of experiments at cross-DIH level** Lead: CIIRC/CTU Partners: TNO, DIGIHALL X-PRAG-2	**AI EU Consortia** Lead: DIGIHALL Partner: Fraunhofer IFF X-PAR-2
Skills	**AI DIH Winter School** Lead: CTU/CIIRC Partners: fortiss, Fraunhofer IFF X-PRAG-1	**Quick Check –Maturity Assessments** Lead: fortiss Partner: DIGIHALL, CIIRC/CTU, Fraunhofer X-MUC-1	
Technology	**AI Testing and Experimental Facility in Manufacturing** Lead: TNO Partner: CIIRC/CTU X-NL-2	**Platform-as-a service for accountable evidential transactions** L Lead: fortiss Partner: TNO X-MUC-2	

Activities ongoing L Legal-ethical component

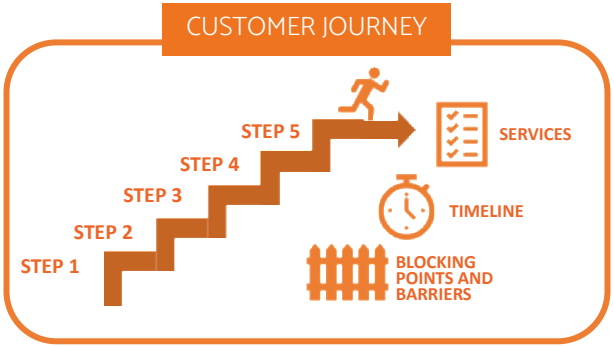
Stimulating cross-DIH collaboration through Service Portfolio Analysis: the METHODIH framework

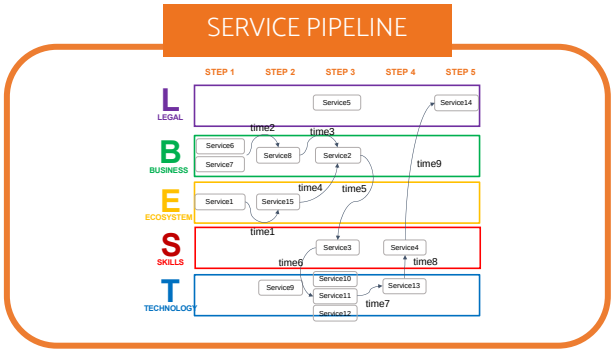
Isidora Trucco Campos, Polytechnic University of Milan, Italy

H2020 Innovation Action - This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N. 101017057

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





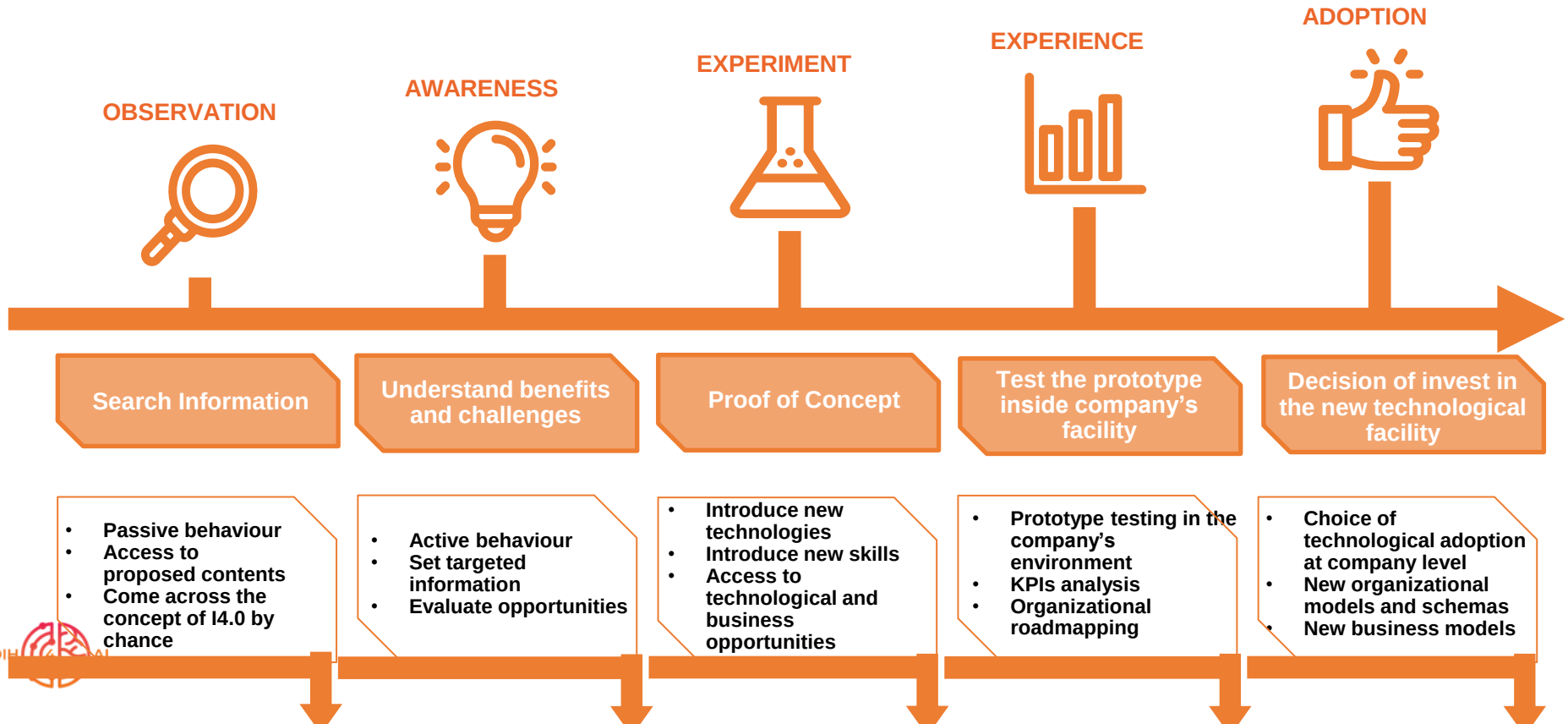
Customer Journey – what is it?

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

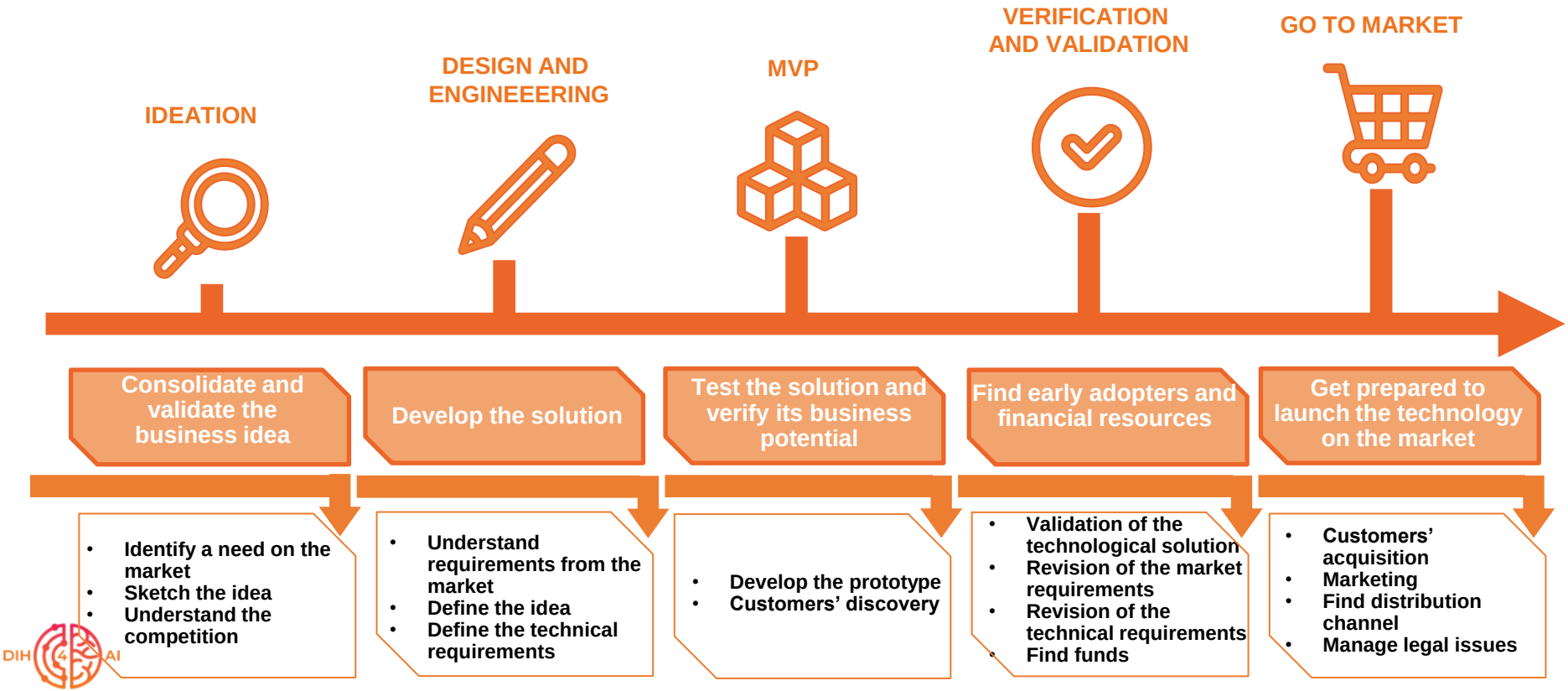
5 steps path to describe the journey of a DIH customer:

- Each step is characterised by related **obstacles** and **barriers**
- DIHs are expected to know the **needs** of their customer base
- The DIH's offering can be shaped to **facilitate the transition** from a step to the next one

Customer Journey - Tech user



Customer Journey - Tech provider

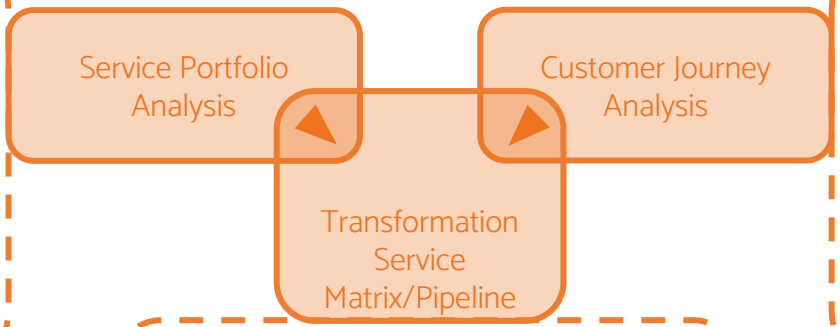


Transformation Service Pipeline

Combining the Service offering with the Customer demand, it is possible to build the Customer Journey Matrices (that will naturally evolved in Service Pipelines).

Four types of services are included:

- Current provision
- Intra-DIH DIH4AI Experiments
- Cross-DIH DIH4AI Experiments
- DIH4AI services



So far,

- Tech user
- Tech providers

Journey are taken into account.
If required, also

- Student
- Policy Maker
- Start-up
- Open-call winner

Journeys are available.

One matrix for each customer Journey is expected.
Service Pipelines are specific for customer profile and they are used also to describe success stories

Tech provider service pipeline - Example

IDEATION

DESIGN AND ENGINEEERING

MVP

VERIFICATION AND VALIDATION

GO TO MARKET

L

B

E

S

T

L&E Task Force

AI ethical assessment

Access to finance

Project development (R&D - Innovation projects)

Ecosystem learning

Ecosystem building

AI EU Consortia

AI adopters' ecosystem

Testing AI maturity assessments tools with SMEs

Cartography of available AI training offer

Education on AI

APIs to upload resource on AIoD

Platforms for collaborative R&D

AI pipelines with DIH4AI platform

Out-of-the-box solutions for development of CPS

DIGIHALL Platform for Trustable-by-design AI-based system

Play with Data (Data Space)

Success story - example

Current offering | IntraDIH services | Cross services | DIH4AI Service

OBSERVATION | AWARENESS | EXPERIMENT | EXPERIENCE | ADOPTION

L

Where are we today: initial point

What we want to achieve

B

Open Call Assistance

Smart Energy Living Lab

E

Information events

S

Quick Check - Maturity Assessment

Qualification Workshops

Webinars

Customized Solutions

T

Mobility Lab | IIoT Lab | Energy Lab | Neuromorphics Lab | Robotics Lab

Prototyping

Research Networks

Contract Research

DIH4AI

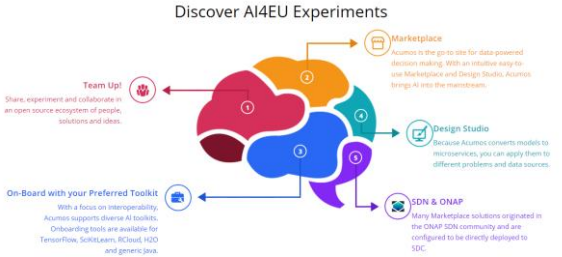
DIH4AI Outcomes Integration with the AIoD Platform

The AIoD Portal and the AI DIH pages

A concrete operational proposal was discussed in July 2021 TGB. Key point: integrating DIHIWARE into AIoD platform (esp. AI Assets, Cases)

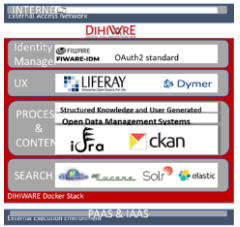
The AIoD Experimental Facility and DIH AI Pipelines

As part of their service pipelines, DIHs accompany their customers (AI users and/or providers) in the Design Studio and Assets Marketplace



The AIoD Platform and DIH-Europe Interoperability

Regional DIH platforms (DIHIWARE L1) as IDS Network nodes with AIoD Catalog / Marketplace / Experiments Platform (portal data cloud, semi-automatic).



The DIH4INDUSTRY Portal for cross-DIH Collaboration

Francesco Stefanelli, Researcher, Engineering Ingegneria Informatica, Italy

H2020 Innovation Action - This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N. 101017057

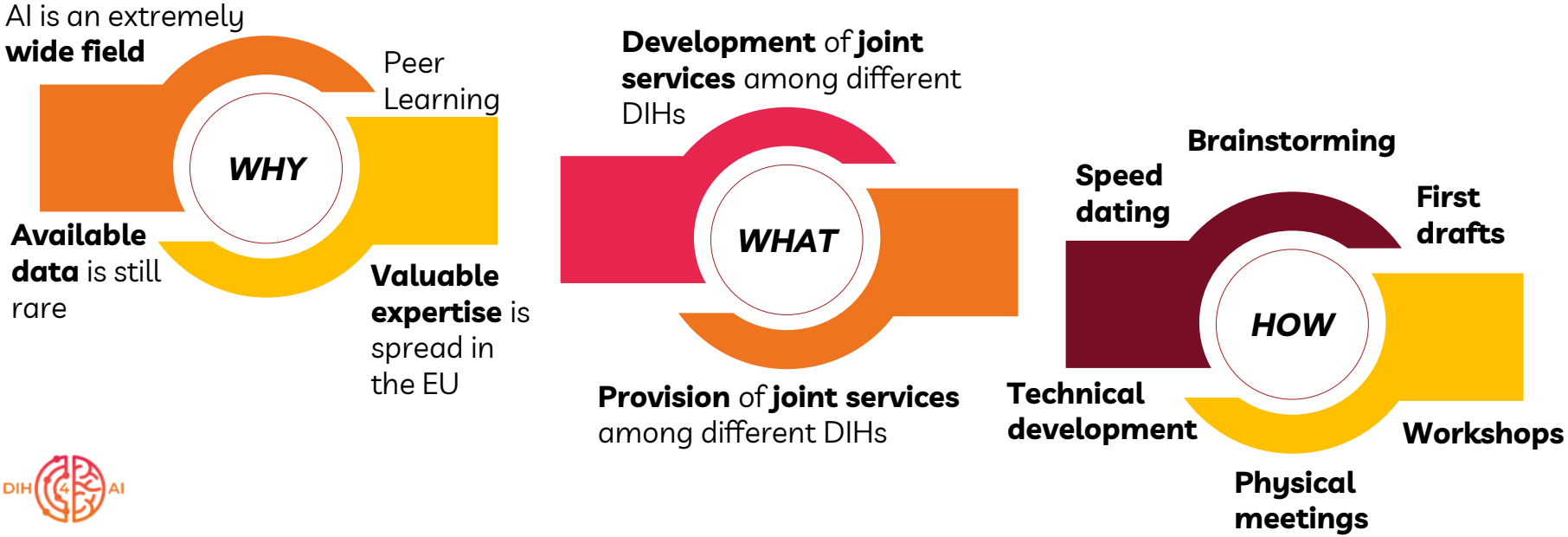
A Success Story for cross-DIH Collaboration: the PIANAI experiment

Philip Frankl, Coordinator Technology Transfer Projects,
Fortiss, Germany

H2020 Innovation Action - This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N. 101017057

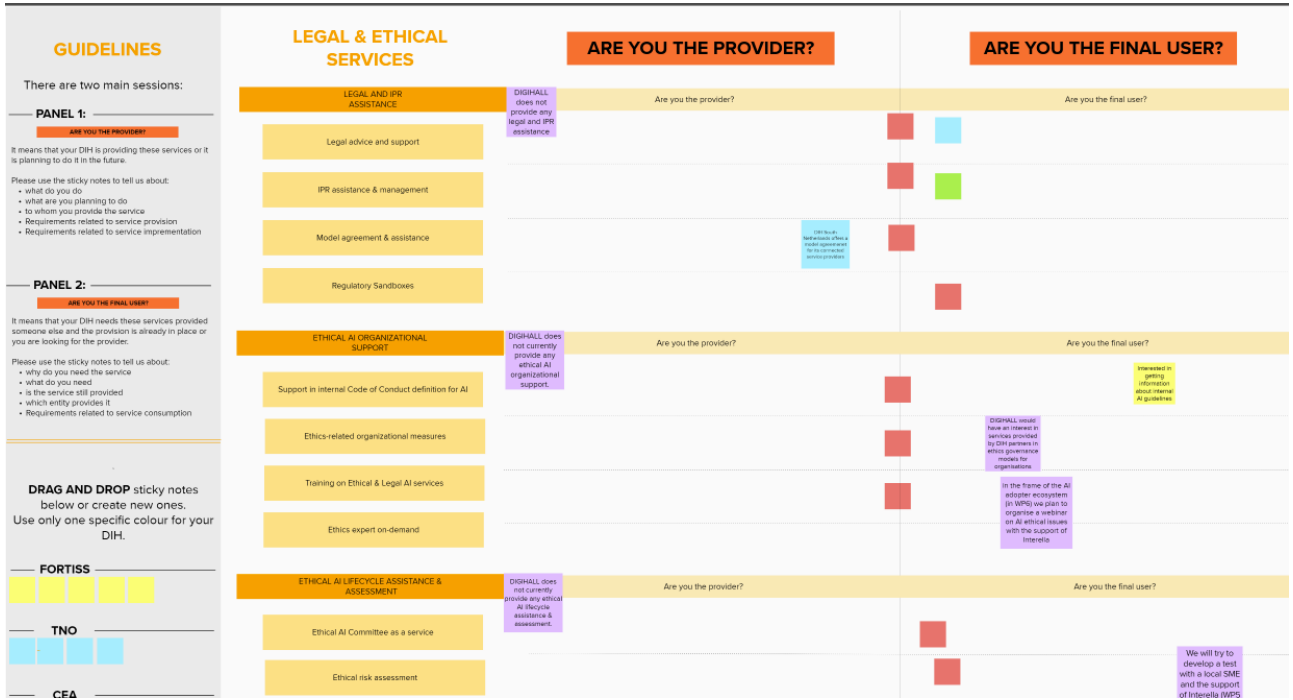
Why, What and How: cross DIH collaboration

Achieving a smooth and successful **collaboration between Digital Innovation Hubs** can have a significant impact on the delivery of a specific service

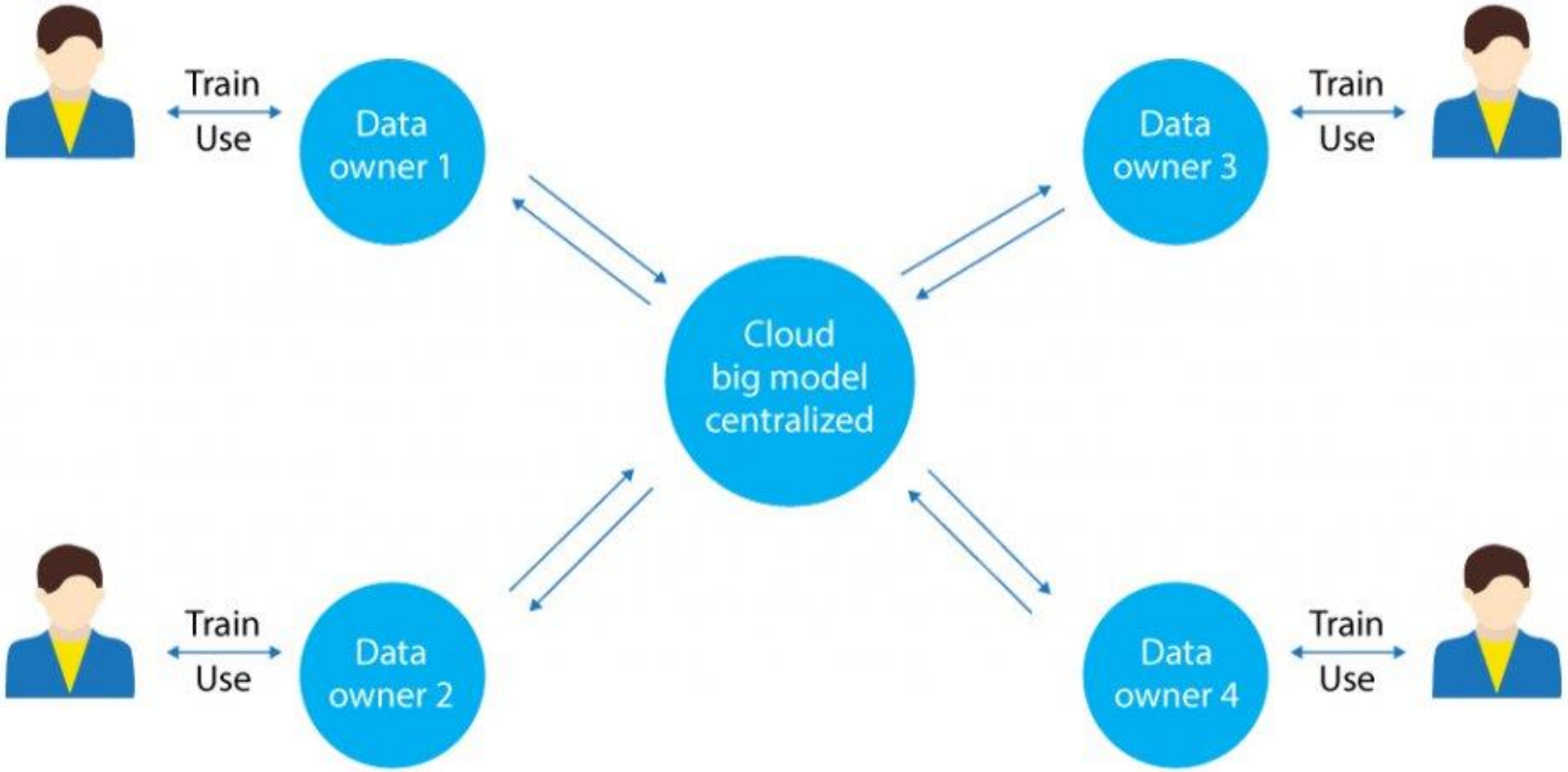


Cross DIH collaboration: speed dating

Specific tools have been used **to stimulate the collaboration among DIHs**, in order to brainstorm and identify **common ground**.

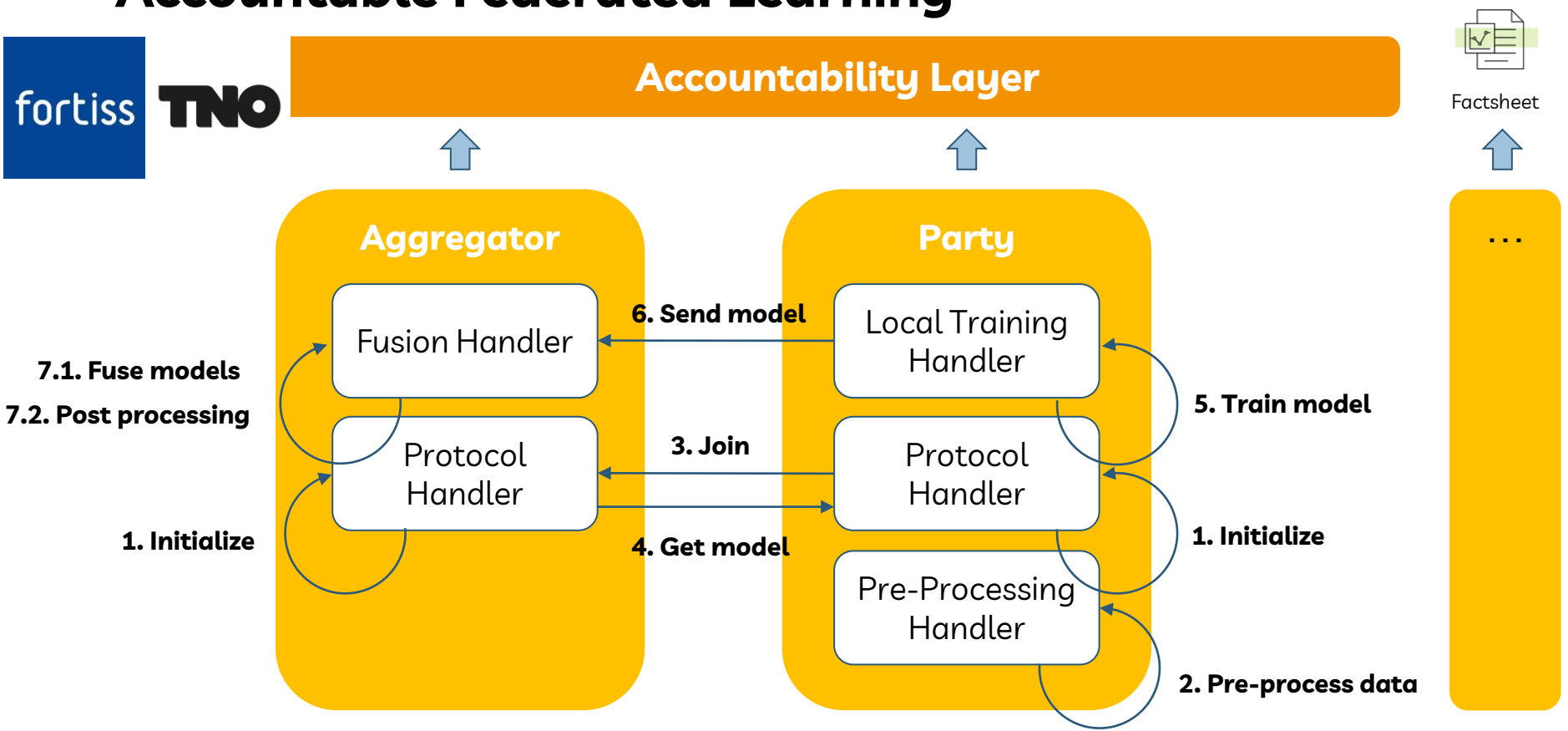


Federated Learning



©TheBlue.ai

Accountable Federated Learning



Difficulties and Lessons Learned

Thanks to this cross-DIH collaborative experiment between Fortiss and TNO Digital Innovation Hubs we were able to gather useful insights for future collaborations

Challenges

- Difficulties in understanding each other on complex experiments due to the impossibility of meeting physically
- Identification of common technologies and interest
- Commitment of involved partners and lack of personal exchange

Lesson learnt

- It is essential to meet physically to be able to carry out complex experiments
- Need for having a common repository of services and AI assets to improve collaboration
- Need to translate in local languages documents and other materials for SMEs in the different European regions

Q&A

DIH-WORLD

Next steps

DIH4AI:

- DIH4AI-HUBiquitous webinar: collaboration between European and African DIHs – 9° of February 2023
- L-services and ALTAI survey: provide us your feedback
- Participation to the DIH4AI 2° open call

More information here

DIH-World:

- Coming soon: organisation of the Working Group online event with local policy makers!
  - Please fill in the survey by the first of week of December!
- Next year: third round of Community Days!

THANK YOU