Value and Impact through Synergy, Interaction and coOperation of Networks of AI Excellence Centres

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Report on collaboration among DIHs and NoEs

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Confidentiality	
Does this report contain **confidential** information?	Yes ☐ No x
Is the report **restricted** to a specific group?	Yes ☐ No x *If yes, please precise the list of authorised recipients*:

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Executive Summary

This document is a deliverable of Work Package 4 "Academia-Industry Joint AI Forces" within the EU ICT-48 Coordination and Support Action "VISION". The aim of the report is to present an overview of the current relations and collaboration schemes among and across Digital Innovation Hubs (DIHs) and the Networks of Excellence (NoEs) in Europe. The analysis is based on the mapping exercise carried out through two targeted surveys mainly directed at the RIA consortia of ICT-48-2020 with the aim of gaining an in-depth understanding of the relations and collaboration activities among DIHs, AI Centres of Excellence and the Networks. This initial analysis highlighted the lack of knowledge, strategic interest, and incentives to actively seek collaboration opportunities both from DIHs towards NoEs and vice versa, which revealed the intrinsic difficulties in acting as a direct bridge and facilitator between these two worlds. The report includes some final reflections and a series of recommendations to foster the overspill of those impacts foreseen by the Digital Europe Programme (DEP) and increase collaboration opportunities among NoEs and DIHs. Recommendations for the future include continuing to raise awareness of the potential benefits of collaboration between these two worlds, promoting partnerships and cooperation within each Network, improving relationships with Testing and Experimentation Facilities (TEFs), and, finally, ensuring that the AI-on-Demand platform meets the needs of DIHs and NoEs to increase the possibilities for collaboration in the future.

1. Introduction

1.1. Objectives of the VISION CSA and innovation activities

VISION – Value and Impact through Synergy, Interaction and coOperation of Networks of AI Excellence Centres – is a Coordination and Support Action (CSA) financed by the European Commission through the Horizon 2020 programme under the call for proposal H2020-ICT-48-2020. It has been proposed by a consortium of nine organisations coordinated by the University of Leiden (ULEI).

The aim of the VISION project is to reinforce, interconnect and mobilise Europe's AI community and to orchestrate and accelerate Europe's transition to a world-leading position in the research, development, and deployment of AI technologies. More specifically, the project aims to reach this objective through the following activities:

- Theme Development Workshops: At least two Theme Development Workshops cutting across multiple AI Networks of Excellence (NoEs), bringing together researchers, industry representatives, and other stakeholders to identify industrial trends and needs, and match these to AI capabilities in Europe.

- European AI Trend Radar: The main results of the Theme Development Workshops as well as from similar events of the four NoEs will be summarised and complemented by a market analysis and trend foresights for providing a comprehensive overview of AI capabilities and challenges in Europe.

- Human-Centric AI Education Programme: Development of standardised AI curricula to support current European educational offerings and to support educators in strengthening the digital and human centric skills of their students.

- Community-Shared Best Practices in AI: Sharing of best practices, such as the FSTP Vademecum, standardised AI curricula module for AI non-professionals, a template for Theme Development Workshops to help NoEs to organise such events most effectively, and mechanisms for industrial innovation and transfer of AI technologies.

- Integrated Roadmapping: Joint working groups for tackling challenges that span multiple NoEs, including a group on road-mapping and strategy development continuously updating each other on the strategic steps planned by the NoEs and working towards a common high-level alignment of objectives.

In particular, Work Package (WP) 4 targets academia-industry cooperation by providing market analysis and industrial trend foresight, while maximising the visibility of the NoEs within the European industrial community. More specifically, via WP4, VISION aims to bring together Europe's AI research and industry, identify industrial trends and needs, and optimally reap the socio-economic benefits a European AI powerhouse can bring for industry and society, as well as reinforce exchanges and synergies between research and industrial stakeholders, e.g. (European) Digital Innovation Hubs ((E)DIHs). This includes coordinating the NoEs' connection with (E)DIHs to foster knowledge exchange and potential collaboration opportunities.

1.2. Purpose and structure of the document

This document, "Report on collaboration among DIHs and NoEs (D4.2)", is a deliverable foreseen by Task 4.2 "Digital Europe and collaboration with DIHs" within Work Package 4 "Academia-Industry Joint AI Forces". It provides an overview of existing collaboration levels among the Networks of Excellence and (European) Digital Innovation Hubs. The aim of this deliverable is to present an outline of the current relations and collaboration schemes among and across (E)DIHs and the NoEs in Europe, by first outlining the state of this collaboration prior to the Project (section 2) and then presenting the

results of the analysis conducted to gain a more in-depth understanding of the relations and collaboration activities between them (section 3). Finally, the Report will provide conclusions and recommendations with respect to the potential of this collaboration in the future.

The document is structured as follows:

- Chapter 2 describes the state of collaboration among DIHs and NoEs, prior to the start of the VISION Project and as foreseen by the Digital Europe Programme and other documents defined by the European Commission

- Chapter 3 presents the analysis performed to gain a better understanding of the collaboration activities and relations among DIHs, AI Centres of Excellence and NoEs

- Chapter 4 closes the deliverable with lessons learned, recommendations and conclusions for the future of collaboration among DIHs and NoEs.

2. State of the art of collaboration among DIHs and AI NoEs

2.1. Overview of the Digital Europe Programme and (E)DIHs

In April 2021, the European Commission published its Artificial Intelligence (AI) package[1] which included a proposal for actions and rules to promote a European approach to trustworthy AI excellence and innovation based, among others, on:

- Public-private partnerships in AI, Data and Robotics
- A vibrant network of AI research excellence centres, as promoted by the VISION Project
- At least one DIH per Member State specialised in AI
- Testing and experimentation facilities providing the infrastructures to test AI technologies and solutions before bringing them to the market
- A European AI-on-Demand Platform as the focal point for AI resources

In practice, this European vision and approach to AI has been backed with funding opportunities, starting from 2004 with support to research and innovation in AI-related fields, which have evolved and increased within years. Recently, with the launch of the new Horizon Europe (HE) and Digital Europe Programmes (DEP), the EU planned to invest over €7 billion to boost the development and deployment of secure and trustworthy AI.[2]

More specifically, the DEP has been designed to **bridge the gap between digital technology research and market deployment**, for the benefit of European citizens and businesses, especially SMEs. In fact, one of the goals of the DEP is to complement the research and innovation activities under Horizon Europe and its predecessors to go to market and fill the gap of upscaling innovation.[3] Within the framework of DEP, the European Union aims to achieve two key objectives i.e., a green transition and a digital transformation, by bringing digital technology to businesses, citizens and public administrations.[4] This entails promoting sustainable practices and technologies while guaranteeing a smooth transition to a digitalized economy. Its purpose is also to enhance the EU's resilience and digital sovereignty by fostering the deployment of cutting-edge digital technologies and reduce dependencies on external technology providers.

In this context, the effective use of Artificial Intelligence is among the five crucial areas strategically financed by the Programme. In particular, the DEP complements Horizon Europe with €2.1 billion to invest in the use of AI for businesses and public administrations, facilitate access and storage of large databases and strengthen AI testing and experimentation facilities.

In this setting, the Commission's DEP Work Programme 2021-2023 was also dedicated to financing **European Digital Innovation Hubs** (EDIHs) to **support industry, SMEs and public administrations in their digital transformation**.[5] In particular, the actions included in this Work Programme focused on the creation of a network of "European Digital Innovation Hubs" (EDIHs), with the aim to cover all EU

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1 See: https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence#:~:text=In%20April%202021%2C%20the%20Commission%20presented%20its%20AI,on%20AI%20%28AI%20Act%29%20and%20relevant%20Impact%20assessment.

2 See: https://digital-strategy.ec.europa.eu/en/library/excellence-and-trust-ai-brochure

3 See: https://ec.europa.eu/newsroom/repository/document/2021-46/C_2021_7914_1_EN_annexe_acte_autonome_cp_part1_v3_x3qnsqH6g4B4JabSGBy9UatCRc8_81099.pdf (page 82)

4 See: https://digital-strategy.ec.europa.eu/en/activities/digital-programme

5 See: https://ec.europa.eu/newsroom/repository/document/2021-46/C_2021_7914_1_EN_annexe_acte_autonome_cp_part1_v3_x3qnsqH6g4B4JabSGBy9UatCRc8_81099.pdf

regions.[6] Coming from the concept of Digital Innovation Hubs (see box 1), the goal of EDIHs is to act as brokers to **support different stakeholders in their digital transformation**, by combining the benefits of a regional presence with the opportunities available to a pan-European network. On one hand, this regional presence leaves them well-placed to provide their services to local companies, through their innovation ecosystem. On the other hand, the European coverage of the network facilitates the exchange of best practices across hubs in different countries as well as the provision of specialised services across regions when the needed skills are not locally available. Moreover, the EDIH network is supported by the Digital Transformation Accelerator (DTA), which, together with the Commission, has been providing opportunities for interaction and collaboration between EDIHs, SMEs and the public sector. Following the adoption of the DEP work programme and selection procedures, the EDIH Network is currently comprised of **151 EDIHs** co-funded by the DEP and 76 EDIHs with Seal of Excellence.[7]

Box 1 - Digital Innovation Hubs (DIHs)

EDIHs were built on the concept of Digital Innovation Hubs (DIHs), officially born in 2015 as one of the crucial pillars of the Digitising European Industry (DEI), also to support the uptake of AI in Europe at a regional level. DIHs were envisaged as one-stop-shops to help companies become more competitive regarding their business/production processes, products, or services by using digital technologies and providing access to the needed technical expertise and experimentation for a successful digital transformation.

Coming from different contexts (e.g., university spinoffs, incubators, consortia of companies etc.), they provide their services according to the following four categories, as also depicted in the Figure on the right.

Figure 1 – DIH services

- Test before invest
- Support to find investments
- Training and skills development
- Innovation ecosystem & networking

Hubs can focus on specific technologies, sectors or can offer generic cross-industry innovation services, offering services to their regional/local ecosystem. A Competence Centre is often at the heart of a DIH, enabling multiple connections to regional partners, e.g. universities, industry associations, incubators, accelerators, or regional development agencies.

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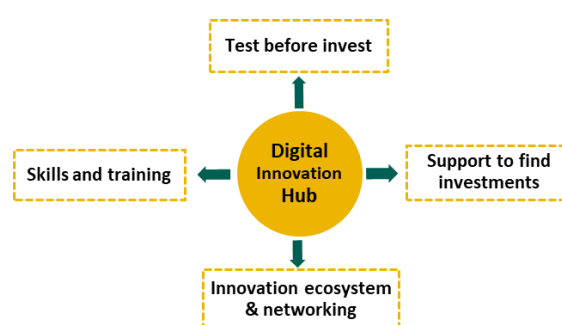
6 See: https://ec.europa.eu/newsroom/repository/document/2021-45/C_2021_7911_1_EN_annexe_acte_autonome_cp_part1_v2_d4ygL3fB7OJrEhLGIXBaC5w0X0_80907.pdf

7 High-quality candidate EDIHs, for which no DEP funding was available, have received a Seal of Excellence. Some of these have been funded by their Member States or regions and, once operational, they can also become part of the network of EDIHs.

2.2. The AI Ecosystem of Excellence: from the Lab to the Market

One of the objectives of the VISION Project is to **bridge the gap between Europe's AI research and industry**, by reinforcing synergies between Academia and industrial stakeholders, such as Digital Innovation Hubs and European Digital Innovation Hubs (funded at a later stage). [8] In fact (European) Digital Innovation Hubs are the last building block of the European ecosystem of excellence in AI from the Lab to the Market, as presented in Figure 2.

As outlined by the Commission, the development and deployment of AI technologies foresees a whole AI life cycle to make the EU the place where excellence thrives from the Lab to the Market. The cycle starts from stakeholder collaboration through the European Partnership in AI, Data and Robotics and public-private partnerships to pool resources and make Research & Innovation funding more efficient. It then continues in the context of previous H2020 and current Horizon Europe projects, through which the Commission created this research community of networked AI excellence Centres — funded under the call ICT-48-2020 call — to establish a common approach and vision for the European AI system. Then, to link the research world to the market, the AI-on-demand platform has been envisaged as the European AI market diver and central toolbox of AI

Figure 2 - The AI Ecosystem of excellence: from the Lab to the Market, presented by the European Commission during the VISION Second ICT-48 Community workshop
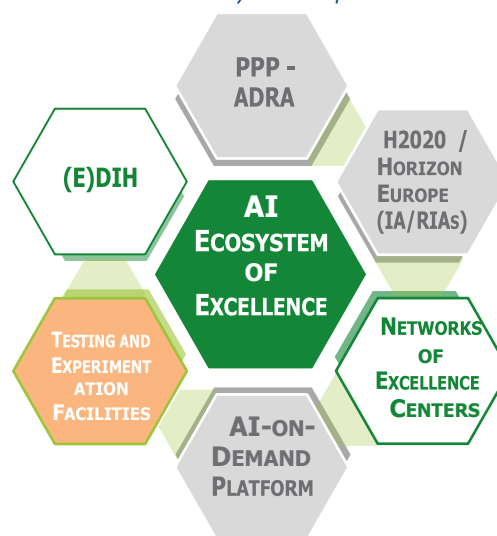
resources needed for the industry and public sector. Ultimately, Testing and Experimentation Facilities (TEFs), i.e. "technology infrastructures with specific expertise and experience in testing mature technology in a given sector, in real or close-to-real conditions, whose aim is to provide developers with an infrastructure for testing AI technology before bringing it to the market" and (E)DIHs will be used to bring innovation from the "lab to the market" and ensure a broad uptake of AI solutions. [9] In this context, throughout this Action, one of the objectives of VISION is to act as transversal enabler, so to smoothen future collaboration opportunities among DIHs and NoEs, especially while the two other building blocks of the Ecosystem, i.e., TEFs and the AI-on-demand platform are starting to become fully operational.

2.3. Relations between DIHs, AI CoEs and NoEs

To act upon potential collaboration opportunities between DIHs and the Networks, it was fundamental to gain an in-depth understanding of the current relations between these two stakeholders. That is why, as a first step, before understanding whether the Networks had planned

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[8] For the purpose of this report and of the activities foreseen within Task 4.2, European Digital Innovation Hub and Digital Innovation Hub are used interchangeably, despite being two different entities. This is because the focus of VISION is to make collaboration opportunities among the Hubs and Networks of Excellence come to life. Indeed, in its initial phase and until the end of 2022, the focus was on DIHs, given that EDIHs were not yet operational. Nevertheless, both DIHs and EDIHs are part of the AI Ecosystem of Excellence from the Lab to the Market.

[9] See "COORDINATED PLAN ON ARTIFICIAL INTELLIGENCE" 2021 REVIEW available here: https://ec.europa.eu/newsroom/dae/redirection/document/75787

activities with DIHs, our aim was to understand the nature of the AI Centres of Excellence making up the Networks and, especially, whether they had existing relationships and collaboration activities with DIHs. In doing so, we started by identifying some key concepts.

According to the official European Commission definition, an "AI Excellence Centre" is a research centre with a strong expertise in AI. The main purpose of such centres is to advance progress in specific fields of science and technology. [10] Starting from this definition and after some consultation with experts in this field, we identified three potential scenarios that would describe the relationship between an AI Centre of Excellence and a Digital Innovation Hub and would allow us to categorise it, as presented below:

Figure 3 - Relationship between an AI CoE and a DIH

1. **The AI Centre of excellence is also a DIH or leads one:** In this case, the AI CoE would legally represent the DIH itself or, if part of a consortium, it would lead the DIH **as its main partner.**

2. **The AI Centre of Excellence is a member of a DIH:** In this case, the AI CoE is part of a **consortium** making up the DIH, but it does not have big decision-making powers with the Hub.

3. **The AI Centre of Excellence is not legally related to any DIH:** In this case, the AI CoE does **not have legal links** to a DIH, but it may collaborate with it.

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10 See Annex to the COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE EUROPEAN COUNCIL, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS coordinated plan on artificial intelligence

# 3. Analysing collaboration activities among DIHs and NoEs

Conscious of the potential relations among DIHs and AI Excellence Centres (as part of the larger Networks of Excellence), the activities of Task 4.2 kicked off via a **mapping exercise**. The exercise was carried out by running an initial survey directed to the AI Centres of Excellence, which was analysed and later complemented with a second survey directly targeting representatives of the Networks of Excellence.

3.1. Survey on collaboration among DIHs and AI Centres of Excellence

As mentioned above, in June 2021 we launched a survey addressed to partners of the ICT-48 RIA consortia, i.e., TAILOR, AI4Media, ELISE, Humane-AI-Net, as planned in the Grant Agreement, as well as to partners of other AI Networks, such as ICT-49, to investigate their relations and collaboration schemes with DIHs. The key objective of this survey - promoted by Intellera as consortium partner - was to explore the relations and collaboration activities among AI Centres of Excellence and DIHs to provide useful recommendations to improve collaboration between AI Centers of Excellence and DIHs, reinforcing the link between Industry, Academia, and Public Administrations.

The survey was divided into different sections i.e., identification of respondents' characteristics, AI Centre of Excellence and DIH Collaborations activities and models, including some final considerations on this collaboration (e.g., obstacles, ideas for the future). The responses collected were considered only if the respondents declared to be AI Centres of Excellence, leading to 69 valid responses out of those 74 obtained. The following figures present an overview of the types of respondents answering the survey, including whether their organisation also represented a DIH, according to the definitions presented in Section 2.2 of the current document.

Figure 4 - Survey respondent characteristics
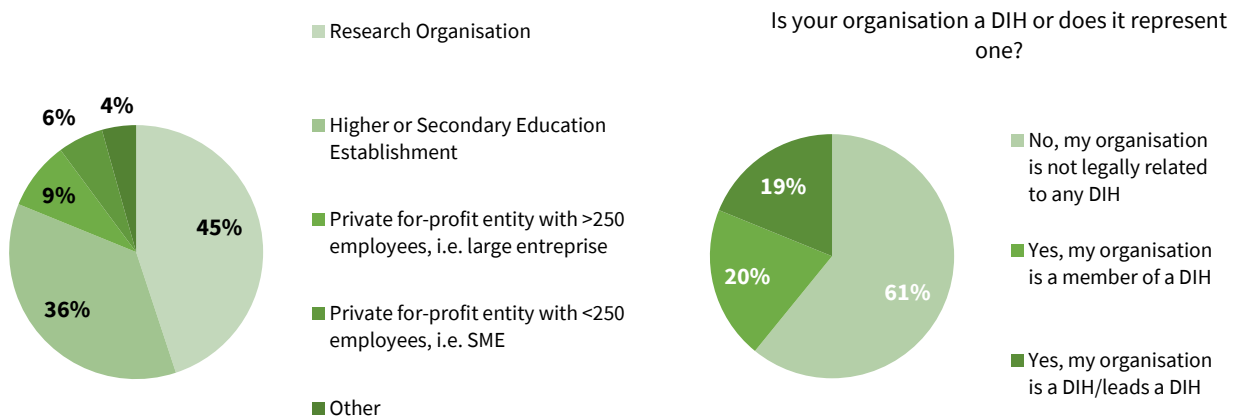
Among the AI Centres of excellence, 39% were DIHs or represented one**,** with 20% of respondents being members of a DIH and 19% leading/representing one, as reported in the chart above.

When further looking at the nature of respondents, most of them belonged to the ICT-48 TAILOR project (one of the four NoEs) as reported in the figure below and several were also involved in the other ICT-48 RIA consortia, i.e., AI4Media, ELISE and Humane-AI-Net. Other projects in which respondents were involved included AI4EU, CLAIRE, ELLIS, AI REGIO, ETAPAS and, overall, almost half of the respondents already participated in other EU-funded projects related to AI (e.g., AI DIH Network).

Figure 5 - Survey respondent characteristics, Involvement in projects

Project	Count
ICT48 | TAILOR	28
Other	15
ICT48 | HumanE-AI-Net	14
ICT48 | AI4MEDIA	12
ICT48 | ELISE	10
None of the above	9
ICT49 | AIPlan4EU	5
ICT49 | DIH4AI	5
ICT49 | I-NERGY	4
ICT49 | AI4Copernicus	4
ICT49 | StairwAI	2
ICT49 | BonsAPPs	1
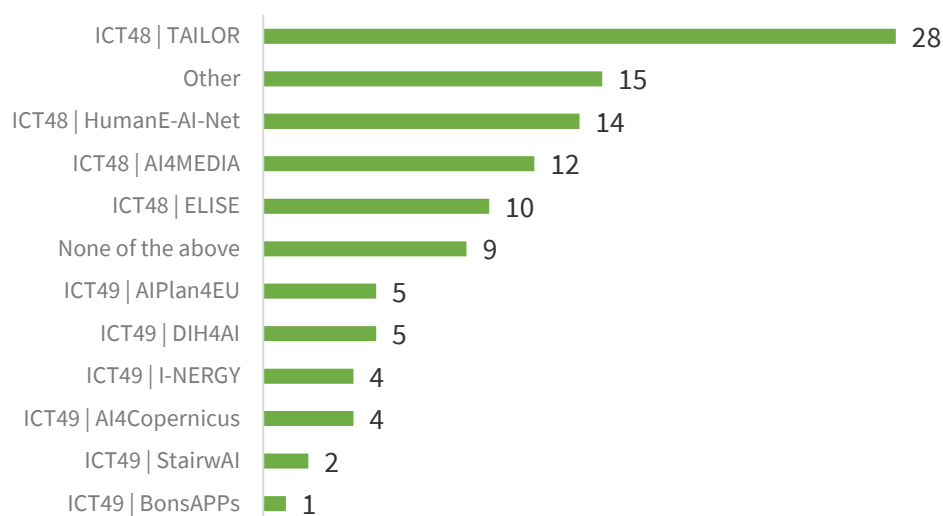
In order to investigate the collaboration activities between AI Centres of Excellence and DIHs or other organisations connected to the DIH (e.g., start-ups, SMEs, large entreprises), a series of questions were asked to understand the frequency with which AI CoEs and DIHs collaborated by (1) **Exchanging research and related outputs**, (2) **Fostering personnel mobility,** and (3) **Sharing facilities.** [11]

3.1.1. Exchanging research and related outputs

When looking at the first collaboration scenario, i.e., **exchanging research and related outputs**, collaboration activities among AI CoEs and DIHs can involve:

- Shared R&D projects
- Joint development of AI-related patents with any organisation part of/connected to a DIH
- Licence or sale of AI-related patents to organisations connected to a DIH
- Co-creation of scientific AI-related papers with organisations part of/ connected to a DIH
- Showcasing AI-related research outputs at events organised by the DIH
- Increasing the TRL of AI-related research outputs with a DIH

Among the above-mentioned activities, the survey revealed that (both temporary and multiannual) **shared R&D projects** are the **most common activity** related to exchanging research and related outputs with a DIH or with its ecosystem. At the same time, increasing the TRL of research outputs emerged as a common collaboration activity, together with the co-creation and showcasing of AI-related research outputs. In fact, more than one third of respondents flagged these as relevant collaboration activities with DIHs and/or their surrounding environment. On the other hand, the joint development or licence/sale of AI-related patents with DIHs seems to be infrequent, possibly due to the high costs of legal agreements to be put in place to co-create innovation.

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[11] These three high-level potential collaboration scenarios have been identified with experts in the field of technology transfer and DIHs.

More specifically, when looking at numbers, the survey highlighted that 46% of respondents implemented **R&D Projects in the AI field directly with a DIH** (18), with an organisation connected to a DIH (10) or with both (4), as shown in the following figure.

Figure 6 - AI R&D projects in collaboration with DIHs

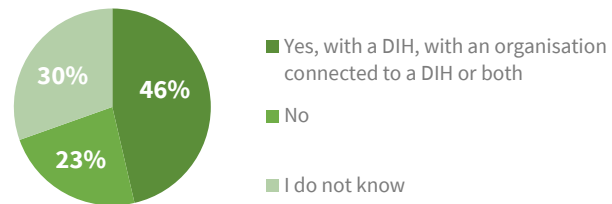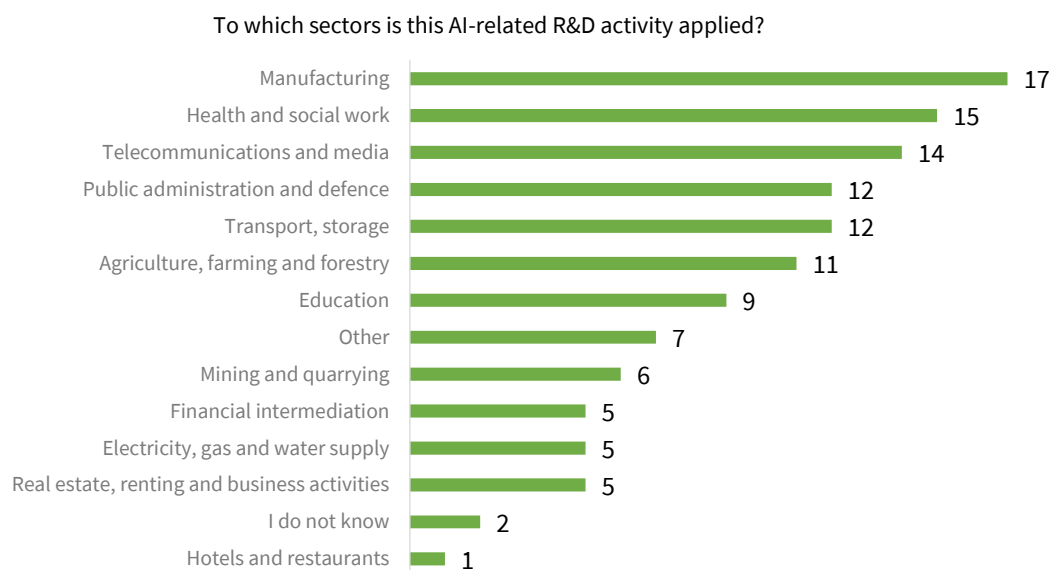Has your organisation ever implemented R&D projects with a DIH in the AI field?

- Yes, with a DIH, with an organisation connected to a DIH or both
- No
- I do not know

46% | 30% | 23%

Figure 7 - Sectors covered in AI-related R&D activity

To which sectors is this AI-related R&D activity applied?

Sector	Value
Manufacturing	17
Health and social work	15
Telecommunications and media	14
Public administration and defence	12
Transport, storage	12
Agriculture, farming and forestry	11
Education	9
Other	7
Mining and quarrying	6
Financial intermediation	5
Electricity, gas and water supply	5
Real estate, renting and business activities	5
I do not know	2
Hotels and restaurants	1

The top 3 sectors of applied AI-related R&D activity among DIHs and AI CoEs were manufacturing, health & social work, telecommunications, and media.

As mentioned above, the **co-creation of scientific AI-related papers & showcase of research outputs** was also a common collaboration activity, with 39% of respondents claiming to have co-authored scientific AI papers with other entities connected to DIHs. Similarly, 38% of respondents showcased AI-related research outputs at events/fora organised by DIHs. Instead, when looking at the development or licensing of patents, only 3% and 4% of respondents jointly developed or licensed/sold AI-related patents to organisations part of/connected to a DIH.

Figure 8 - Collaboration with a DIH to increase TRL of AI-related research outputs

When exploring collaboration activities among DIHs and AI CoEs aimed at **increasing the TRL of AI-related research outputs**, 42% of respondents claimed to have collaborated with a DIH (5), an organisation connected to a DIH (9) or both (5) to increase the TRL of AI-related research outputs, as reported in the following Figure on the right.

Has your organisation ever collaborated with another entity to increase the TRL of AI-related research outputs?

- Yes, with a DIH, with an organisation connectd to a DIH or both
- I do not know
- No
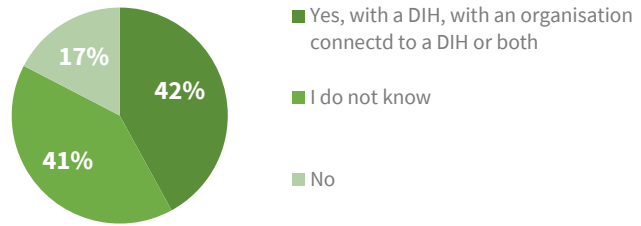
3.1.2. Fostering personnel mobility

The second identified collaboration scenario between AI CoEs and DIHs or organisations connected to the DIH (e.g. start-ups, SMEs, large enterprises) is **fostering personnel mobility**. More specifically when looking at this category of collaboration, activities can involve:
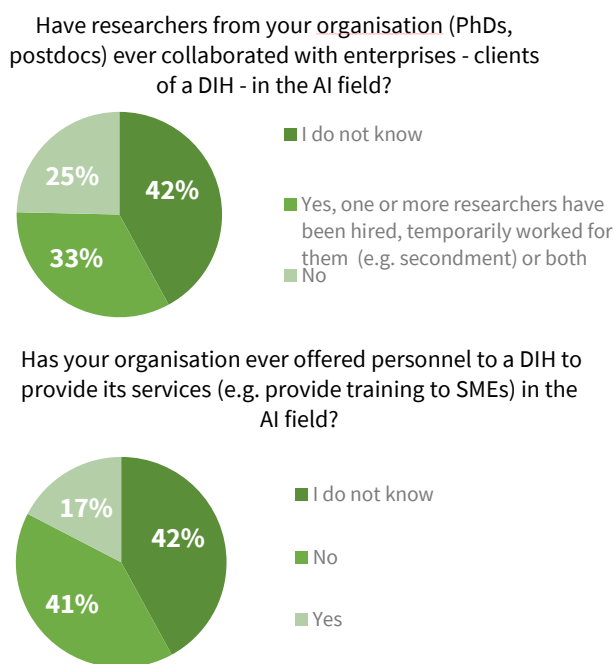
- Researchers collaborating with entreprises - clients of a DIH - on a temporary, multi annual basis or permanently
- Offering personnel to a DIH for providing its services (e.g., for training purposes)

The main finding that emerged from the survey with respect to this type of collaboration is that around **one third of respondents** had one or more **researchers** from their organisation (PhDs, postdocs) **collaborating with enterprises - clients of a DIH - in the AI field**, either permanently, i.e., researchers have been hired by the enterprise or for temporary activities, e.g. secondment. On the other hand, offering personnel to a DIH to allow it to provide its services, e.g., training activities to clients, was less common. This can be related to the fact that legal agreements had to be devised and signed for staff working in the AI CoEs to collaborate with DIHs.

More specifically, when looking at the data, the survey revealed that 33% of respondents had **one or more researchers from their organisation collaborating with enterprises** - clients of a DIH - in the AI field i.e. with most of the respondents claiming that researchers were hired by the enterprise linked to the DIH.

When looking instead at the possibility of collaborating by offering personnel to a DIH for providing its services, only 17% of respondents claimed to have offered personnel to a DIH, through their AI Centre of Excellence, to provide, for example, technology and knowledge transfer, AI Trainings and Digital assessments.

Figure 9 - Personnel collaborating with enterprises and/or the DIH

Have researchers from your organisation (PhDs, postdocs) ever collaborated with enterprises - clients of a DIH - in the AI field?

- I do not know
- Yes, one or more researchers have been hired, temporarily worked for them (e.g. secondment) or both
- No

42% / 33% / 25%

Has your organisation ever offered personnel to a DIH to provide its services (e.g. provide training to SMEs) in the AI field?

- I do not know
- No
- Yes

42% / 41% / 17%

3.1.3. Sharing facilities

The third collaboration mode, i.e. **sharing facilities among AI Centres of Excellence and DIHs** may involve for example:

- Growth and expansion of spin-offs / start-ups born within the AI Centre by using the DIH services
- Sharing facilities (hardware, software, labs) with a DIH or with organisations connected to a DIH

In this regard, the results of the survey proved that **sharing facilities**, like HPC Infrastructures, TEFs, Testbeds for Industry 4.0, AI Learning Environments, Research, and robotics labs **with a DIH was rather**

common, with 37% of respondents making their facilities available to a DIH (8), to an organisation connected to a DIH (6) or both (9).

On the other hand, collaborating with DIHs by using their services to allow start-ups/ spin-offs to grow seems to be infrequent. When looking at the data, the survey showed that only 18% of respondents knew that spin-offs/startups from their organisation used the services offered by a DIH to grow (see figure on theright).

Figure 10 - Start-ups using DIH services

Have any of your spin-offs/start-ups used the services offered by a DIH in order to grow?
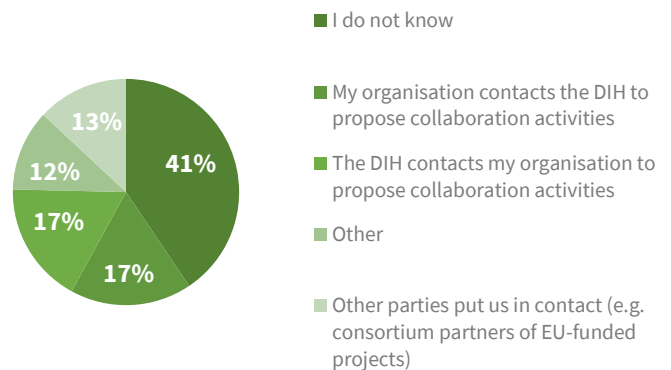
49%
33%
18%

- I do not know
- No
- Yes
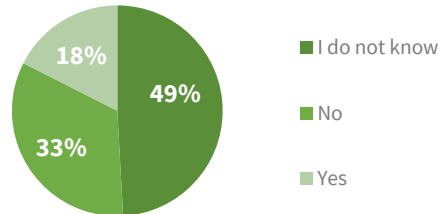
In general, it is important to underscore that one of the main findings was that often respondents were not aware of collaboration schemes with DIHs.

3.1.4. Other aspects of collaborating with a DIH

Besides the type of collaboration among AI CoEs and DIHs, the survey allowed to investigate other interesting aspects of collaboration, such as how it was initiated. In this regard, 30% of respondents started to collaborate with a DIH in the AI field thanks to an EU-funded project while 34% typically started collaboration activities through a **direct contact**, either from the AI CoE or from the DIH.
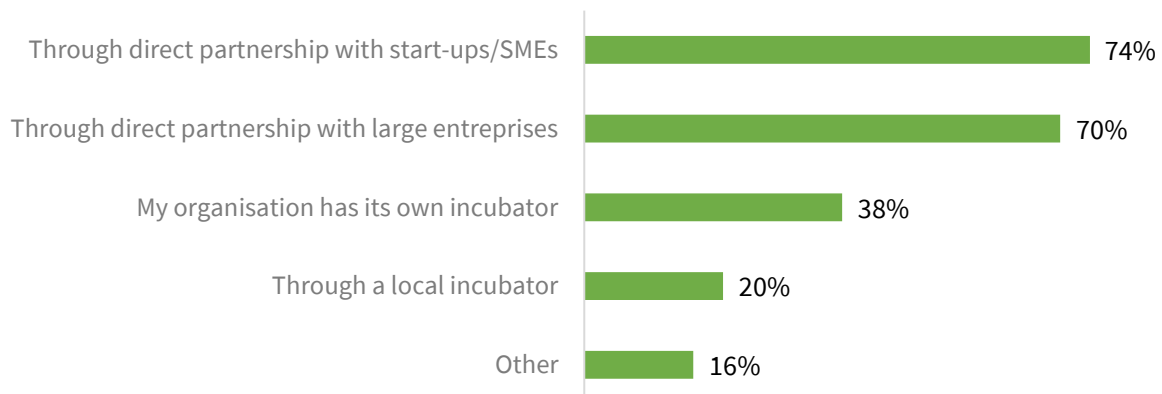
Figure 11 - Initiation of the collaboration

How is collaboration with a DIH typically initiated?

41%
17%
17%
12%
13%

- I do not know
- My organisation contacts the DIH to propose collaboration activities
- The DIH contacts my organisation to propose collaboration activities
- Other
- Other parties put us in contact (e.g. consortium partners of EU-funded projects)

Another aspect which emerged from the survey is that AI Centres of excellence have other ways to reach the market/connect with the businessrealm other than through a DIH. In fact, as shown in the figure below, **the majority** (96%) **of respondents does not reach the market through DIHs** but through direct partnerships with startups/SMEs and large enterprises.

Figure 12 - Ways to reach the market beyond DIHs

Other ways to reach the market:

Through direct partnership with start-ups/SMEs	74%
Through direct partnership with large entreprises	70%
My organisation has its own incubator	38%
Through a local incubator	20%
Other	16%

When looking instead at the **potential of AI Centres of excellence to work with Public Administrations** 75% of respondents declared not to work with PAs, while 32% think that DIHs can have an important role in connecting with local PAs. This could represent an interesting market for DIHs as mediators, especially because very few organisations have direct partnerships with PAs.

Finally, when asked about the **role of DIHs**, most respondents pointed to the fact that DIHs can play a role in transferring technology from research to market and connect with local industry stakeholders, as shown in the following figure.
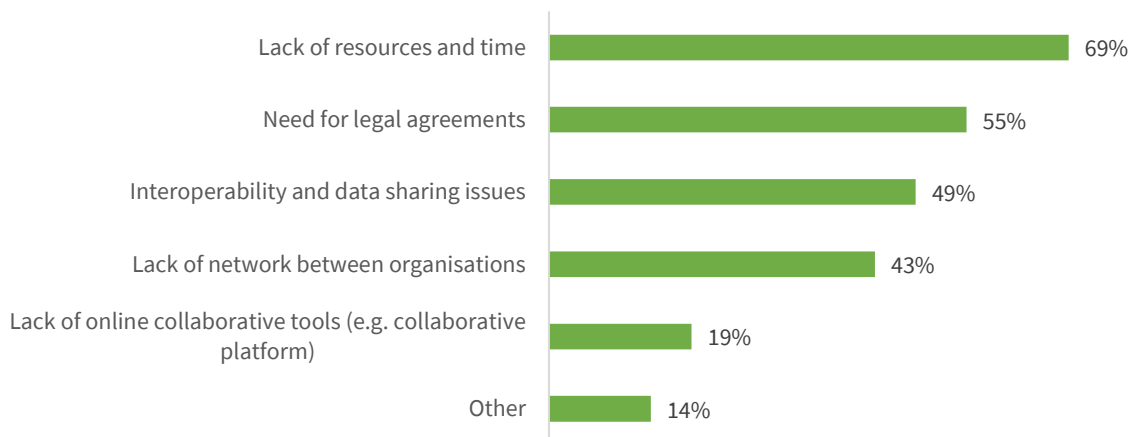
Figure 13 - Opinion on the role of DIHs

According to your experience, do you think that:

- DIHs can play a role to transfer technology from research to market — 66%
- DIHs are important to connect with local industry (e.g. SMEs and start-ups) — 64%
- DIHs are important to connect with local Public Administrations — 32%
- DIHs are important to find financing opportunity for my research — 30%
- None of the above — 16%
- Other — 8%

Finally, the survey investigated **potential obstacles to collaboration between AI Centres of Excellence and DIHs**. In this regard, respondents pointed to a general lack of resources and time, the need for specific legal agreements, e.g., to protect IP rights and set up contracts, as well as interoperability and data sharing issues, as shown in the chart below. Other respondents pointed out that one of the reasons for poor collaboration among AI CoEs and DIHs was the lack of awareness of mutual interests and complexity in setting up collaborations.

Figure 14 - Opinion on the obstacles to collaboration between AI CoEs and DIHs

- Lack of resources and time — 69%
- Need for legal agreements — 55%
- Interoperability and data sharing issues — 49%
- Lack of network between organisations — 43%
- Lack of online collaborative tools (e.g. collaborative platform) — 19%
- Other — 14%

When looking at the **future opportunities** among these stakeholders, according to respondents, AI CoEs and DIHs can enhance innovation and transfer of research outputs by:

- Turning AI models and algorithms into market ready products or services thanks to the fact that DIHs can better address market needs of SMEs and identify the potential of the research results of the AI Centres of Excellence
- Supporting the uptake of the developed tools and send signals of needs in the ecosystem for future research ideas, thus collaborating on research directions
- Allowing for less prescriptive regulation and more sharing of best practices to accelerate the innovation and technology transfer process
- Working together on skills and training
- Sharing platforms and better information about funding and collaboration programs
- Establishing specific collaboration agreements under strategic actions, to tackle challenges in the regional and technological ecosystems
- Creating testbeds for problems to be solved with expertise and resources coming from the CoEs
- Fostering participation to specific EU calls, by fostering a more efficient access to collaboration partners, funding, and infrastructures
- Connecting innovation and research and accelerating the technology transfer to the industry

At the same time, several respondents consider that strong investment in this area is needed at a EU and national level so that DIHs can better address market needs of SMEs and identify the potential of the research results of the AI Centres of Excellence.

3.2. Survey on collaboration among DIHs and NoEs

Following the closure of the first survey, in March 2022, a second survey was launched to explore the specific relations and collaboration activities among the four NoEs and DIHs, as part of the activities foreseen within the ICT-48-2020 funded projects. The aim of this second survey was to obtain a clear view of the planned collaboration activities with DIHs at Network level. As such, it was addressed to the project coordinator - or delegated partner - of the ICT48 RIA consortia, i.e., TAILOR, AI4Media, ELISE, Humane-AI-Net.

Despite multiple efforts to elicit responses from the four NoEs, only 2 answers were obtained from ELISE and TAILOR. These 2 Networks, in fact, planned collaboration activities with DIHs (both external and part of the consortium). For example, ELISE invited 30 DIHs part of the AI DIH Network to participate in the yearly joint academic/industry workshop where they had the opportunity tonetwork with relevant academic and industrial partners. In addition, they also participated in events organised by DIHs with the aim of ensuring knowledge transfer, continuity of the Network and connections with SMEs. While, at the time of the survey, TAILOR was planning common activities between centres of excellence, industries and DIHs with the aim of disseminating and exploiting the project results.

The two NoEs revealed that they typically contacted DIHs part of existing DIH communities/platforms or through the personal network of some project partners (contacting DIHs they already knew). Moreover, according to them, the main obstacle to collaboration with DIHs was **the joint investment needed in terms of resources and time**.

While collaboration between single AI Centres of Excellence and DIHs happens (even if not frequently), at the time of this investigation, there were very few activities planned by each NoE for collaboration with the DIHs within their project plans, despite the input of their call for proposal. In fact, the major

finding emerging from this second survey is the **general lack of strategic interest** from NoEs towards DIHs. More specifically, this lack of strategic interest towards European DIHs may be explained by the fact that these have been launched and funded by the Commission quite recently. In addition, several EDIHs have spent their first year of life getting set up and focusing on their business KPIs. This incongruent timing between the NoEs and the EDIHs may have generated different priorities, interests and needs (on both sides) hindering their potential collaboration. As the final activities within this Task, we intend to carry out follow-up interviews with each NoE representative to understand whether they implemented their planned collaboration activities with the DIHs and/or any additionalactivity, which will thus be included in the final Project report. Moreover, these interviews will help usbetter understand if the Networks have different approaches to collaboration with DIHs and with EDIHs, which were more recently funded and deal with technologies with a higher Technology Readiness Level (TRL).

4. Conclusions and recommendations

One of the objectives of the VISION Project is to bridge the gap between Europe's AI research and industry, by reinforcing synergies between Academia and industrial stakeholders. Among these stakeholders, (European) Digital Innovation Hubs – (E)DIHs – are one of the building blocks of the European ecosystem of excellence in AI. This report aimed at presenting an overview of the current relations and collaboration schemes among and across DIHs and the NoEs in Europe, based on the results that emerged from the two surveys targeting both the AI Centres of Excellence and the NoE representatives.

When looking at collaboration among the single AI Centres of Excellence (within each Network) and the DIHs, one of the most relevant findings emerging from our investigation is that there is a general lack of knowledge and awareness of the existing or potential collaboration opportunities among them. In fact, despite having contacted key reference persons, respondents representing the AI Centres of Excellence were often not aware of the ongoing collaboration activities with DIHs (with a high percentage of «I don't know» answers). Similarly, the second survey directly targeting the Networks' representatives, revealed a lack of strategic interest from NoEs towards DIHs. This pointed to a **general issue of awareness with respect to what a DIH is and what it concretely does**. To act upon this, the subsequent Project activities were focused on raising awareness and fostering knowledge to shed light on the collaboration opportunities and potential benefits of partnerships among DIHs and NoEs. As such, the Project team implemented a series of actions to disseminate mutual knowledge on the DIHs and the Networks, by first presenting the NoEs and the VISION Project in a series of events involving DIHs and, secondly, by producing a dedicated brochure with details on potential collaboration schemes between these two realities, available on the project website.[12]

An interesting finding emerging from this analysis is that there seems to be opportunities for DIHs to become **mediators between AI CoEs and Public Administrations**, which are often more complex to reach. In this context, DIHs focusing on AI could liaise with the Networks and connect to the AI Centres of Excellence, ultimately offering ad-hoc and advanced services to their clients by being up to date with regards to the latest developments in the AI field (e.g., standards, research and market trends). DIHs could also play a relevant role by liaising with the research and institutional realities to help their clients understand and apply the evolving AI policies and regulations. However, it is important to underscore that DIHs and partly also EDIHs (in relation to the national part of their co-financing) have a regional focus, which may limit the scope of these exchanges and interactions at European level. In addition, the success of EDIHs also relies on their national support. In this scenario, administrative burdens and red tape specific to each Member State could definitely influence their ability to act in a flexible and agile way in reaching out and collaborating with these European Networks.

At the same time, it is also important to underscore that the **practical contribution of a collaboration among DIHs and NoEs is limited**, given that the Networks can become facilitators and or enablers of innovation for the Hubs, rather than partners that DIHs are incentivized to seek for collaboration purposes. In fact, the results of the first survey revealed that the AI Centres of Excellence have **other ways of reaching the market** and/or connecting with the business world, i.e., mostly through direct partnerships with SMEs, startups, or large enterprises. One of the main issues concerning these two realities is that they lack the incentives and motivation to collaborate, given their divergent objectives and goals. On one hand the Networks and Centres of Excellence are focused on advancing research activities in the AI field and, on the other hand, the DIHs and, recently, EDIHs are focused on delivering

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12 See here: [Networks of AI Centres of Excellence and Digital Innovation Hubs: Collaboration Models & Benefits | Vision4AI](#)

services for their clients by seeking the needed capabilities within their own consortia, rather than from external collaborators. In fact, Testing and Experimentation Facilities (TEFs) – being recently financed by the Commission - are closer to (E)DIHs in the Innovation cycle and can act as relevant enablers to bridge the gap between these two realms. Similarly, the AI-on-demand platform can become a relevant marketplace to connect these two realities, by fostering potential matchmaking and knowledge exchange. As the analysis revealed, it is currently hard to act as a direct bridge and facilitator between these two worlds given their mutual low interest and incentives to actively seek collaboration opportunities.

The analysis on the collaboration among DIHs and NoEs revealed several important aspects that should be considered for the future:

> ⚘ *Final recommendations for the future*

1. Continue raising awareness at a higher level

It is fundamental to continue spreading knowledge and awareness on the potential benefits of collaboration among (E)DIHs, AI CoEs and NoEs. As such, it is important to distinguish the benefits of collaboration for each of these actors contributing to the European AI Ecosystem of Excellence:

(E)DIHs should play a major role in supporting the technological transfer of research outputs to the industry (especially towards SMEs), acting as mediators between these two realities. For example, (E)DIHs could collaborate with AI Centres of Excellence by:

- Identifying the potential of research results to better address market needs. In this way they would smoothen the transfer from experimental results to reliable tools and applicable solutions
- Providing a useful testbed for problems to be solved with expertise and resources coming from the AI CoEs (e.g., with facilities, labs)
- Provide Academia with links to the business world, i.e., placement opportunities
- Provide opportunities for ecosystem building and networking, by liaising with the Networks to offer clients support in terms of ecosystem scouting for EU funded projects

Aware of the latest research developments and applications in the field of AI, CoEs can:

- Provide information on the technology and its opportunities for application to be disseminated by the DIHs
- Use DIHs to test and transform research outputs into innovative products, reaching targeted markets, e.g., turning AI models and algorithms into market ready products/services

2. Foster collaboration within each Network

Given their pooled expertise in specific areas of AI, each NoE should enhance collaboration and community building within their Network to allow the AI CoEs and (E)DIHs to better connect research to business. For example, within each Network, DIHs and CoEs can work together on skills and training, data and facilities sharing, AI regulation and standards, and exchange of information on funding and collaborative programmes.

> 💡 *Final recommendations for the future*

3. Enhance the relationship with the TEFs

For the Ecosystem of Excellence to thrive, it is important to enhance the relationship between Testing and Experimentation Facilities (TEFs) and the EDIHs to allow a smoother connection with the Networks. As such, TEFs should also have strong connections with the Networks to be able to test and experiment at scale the latest state-of-the art AI solutions in real-world environments, which can then be transferred also to the EDIHs in reaching local markets.

4. Ensure the AI-on-Demand platform serves the needs of DIHs and NoEs

Given its role in the European AI Ecosystem, the AIOD platform should serve as a dedicated reference point for information and include a dedicated space for DIHs and Networks to interact. It should serve as a practical site for exchange and community building. As such, as also advised in the "Strengthening Digital Innovation Hubs with the European AI-on-demand platform: Recommendations White Paper",[13] it could provide access to an ecosystem of researchers, industry, AI experts etc., and a forum for sharing results, tools, and solutions from the broader European AI community.
Considering its role in the AI ecosystem of excellence, the AIoD platform, with its collaborative governance model, could play a significant role as a so-called centraliser/coordinator to avoid the risks of doubling efforts from NoEs, CoEs, (E)DIHs in contributing to awareness/networking etc.

The AI community will engage through several thematic Focus Groups, further contributing to the effectiveness of the platform and improving its performance. Currently, several Focus Groups have been established or are in the process of being established, among which is the Focus Group for DIH experts. This group will represent the DIHs and EDIHs (represented by the DTA) focusing on the needs of this group with respect to the AIoD platform. It might also be useful to include representatives from the TEFs, allowing not only the group to act as a link for communication with the DIH Network and TEF experts but also to incentivize the cross-pollination, co-creation and exploitation of ideas, challenges, and solutions across NoEs, TEFs and DIH domains.

For the remaining Project duration, VISION will act as central hub, where all the DIHs interested in collaboration can access information about the Networks and Centres of Excellence and vice versa, by providing best practices for collaboration and disseminating interesting results, raising awareness and spreading knowledge about opportunities in the AI field. To this end we will continue to promote overspills of those impacts foreseen by the DEP, contributing to enhance de facto the Network of (European) Digital Innovation Hubs.

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13 See Brunner, Melissa, Kührer, Susanne, & Gonzalez-Castañé, Gabriel. (2022). Strengthening Digital Innovation Hubs with the European AI-on-demand platform: Recommendations White Paper. https://doi.org/10.5281/zenodo.6483645

5. Annex

Survey 1: Mapping collaboration activities among AI Centres of Excellence and DIHs

VISION is a Coordination and Support Action financed by the Horizon 2020 programme aimed to reinforce, interconnect, and mobilise Europe's AI community. In this context, the Consortium will be contributing and acting as a transversal enabler to make collaboration opportunities among Digital Innovation Hubs (DIHs) and Networks of AI Centres of Excellence (NoEs) come to life.

The key objective of this survey is to **explore the current relations and collaboration schemes** among "AI Centres of Excellence'' and DIHs. The survey is addressed to:

- ICT48 RIA consortium partners, i.e. TAILOR, AI4Media, ELISE, Humane-AI-Net
- Partners of other AI Networks, such as ICT49, to collect data on AI Centres of Excellence and DIHs beyond the ICT48 Network

Thank you in advance for the time you are dedicating to this survey.

Question format	No.	Question
		Section 1 - Respondent characteristics
OPEN	1	**Please indicate your name and surname**
OPEN	2	**Please indicate your email address**
OPEN	3	**Please indicate the name of the organisation you represent**
OPEN	4	**Please indicate your role within your organisation**
SCQ	5	**What kind of organisation is it?** ● Research Organisation ● Higher or Secondary Education Establishment ● Private for-profit entity with <250 employees, i.e., SME ● Private for-profit entity with >250 employees, i.e., large entreprise ● Other (please specify)
SCQ	6	**Is your organisation active in AI research and innovation, with a dedicated R&D department or research team with expertise in AI?** ● Yes ● No
MCQ	7	**In which specific AI techniques and approaches does your organisation mostly work?** ❏ Machine learning approaches, including supervised, unsupervised and reinforcement learning, using a wide variety of methods including deep learning ❏ Logic- and knowledge-based approaches, including knowledge representation, inductive (logic) programming, knowledge

Question format	No.	Question
		bases, inference and deductive engines, (symbolic) reasoning and expert systems ❏ Statistical approaches, Bayesian estimation, search and optimization methods ❏ Other (please specify)
MCQ	8	**To which project does your organisation belong?** ❏ ICT48 | ELISE ❏ ICT48 | AI4MEDIA ❏ ICT48 | TAILOR ❏ ICT48 | HumanE-AI-Net ❏ ICT49 | DIH4AI ❏ ICT49 | StairwAI ❏ ICT49 | AI4Copernicus ❏ ICT49 | AIPlan4EU ❏ ICT49 | BonsAPPs ❏ ICT49 | I-NERGY ❏ None of the above
SCQ + OPEN TEXT	9	**Did you participate in any other EU-funded projects or communities (e.g. AI4EU)?** ● Yes ● No **If yes, please specify which one(s).** *Free text*
SCQ		**Has your organisation got a Reference Testing and Experimentation Facility (TEF) in house?** ● Yes ● No ● I do not know **If not, has your organisation ever collaborated with a third party TEF?** ● Yes ● No ● I do not know **If yes, please specify how (modalities and purpose)** *Free text* *Reference Testing and Experimentation Facility" is a technology infrastructure that has specific expertise and experience of testing mature technology in each sector, under real or close to real conditions (smart hospital, clean rooms, smart city, experimental farm, corridor for connected and automated driving, etc.).*

Question format	No.	Question
		Section 2 - AI Center of Excellence - DIH Collaboration **General part**
		According to the definition provided by the European Commission's Joint Research Center Report, Digital Innovation Hubs are one-stop-shops that help companies to become more competitive with regard to their business/production processes, products or services using digital technologies, by providing access to technical expertise and experimentation, so that companies can "test before invest". They also provide innovation services, such as financing advice, training and skills development that are needed for a successful digital transformation.[14]
SCQ + OPEN TEXT	10	**Is your organisation a DIH or does it represent one?** ● Yes, my organisation is a DIH/leads a DIH ● Yes, my organisation is a member of a DIH ● No, my organisation is not legally related to any DIH **If, according to the above definitions, you are connected to a DIH, please specify which one:** *Free text*
MCQ	11	**Does your organisation mainly collaborate with:** ❏ The "in house" DIH, i.e. the DIH it represents/is a member of ❏ DIHs located in the same region ❏ DIHs located in the same country ❏ DIHs located in other European countries ❏ Other (please specify)
SCQ	12	**If your organisation is a DIH, or is legally related to one, did it pass the national pre-selection to become an EDIH?** ● Yes ● No ● Not applicable to my organisation
		Section 3 - AI Center of Excellence - DIH Collaboration **Type of collaboration** Within this section, we would like to specifically understand *how* your organisation has collaborated with DIHs or with any organisation connected to the DIH (e.g. Start-ups, SMEs, large enterprises). This will allow us to provide useful recommendations to the European Commission in order to improve collaboration between AI Centers of Excellence and DIHs and ultimately reinforce the link between Academia or research organisations/departments and the market to speed up the technological transfer and commercialization of research outputs. We will now ask you a series of questions related to the type of collaboration schemes that your organisation has implemented with DIHs in the AI field.

Question format	No.	Question
SCQ	13	**Has your organisation ever implemented R&D projects with a DIH in the AI field?** ● Yes, my organisation has implemented R&D projects with a DIH ● No but my organisation has implement R&D projects with an organisation connected to a DIH ● Both the above ● No, never ● I do not know **If yes, they are:** ❏ Temporary ❏ Multiannual ❏ I do not know
SCQ	14	**Have researchers from your organisation (PhDs, postdocs) ever collaborated with enterprises connected to a DIH in the AI field?** ● Yes, one or more researchers have been hired by enterprises connected to a DIH ● Yes, one or more researchers have temporarily worked for enterprises connected to a DIH (e.g. secondment) ● Both the above ● No ● I do not know
MCQ + OPEN TEXT	15	**Is your organization in contact with any enterprises related to a DIH?** ● Yes ● No **If yes, to which sectors do these enterprises mostly belong?** ❏ Agriculture, farming and forestry ❏ Education ❏ Electricity, gas and water supply ❏ Financial intermediation ❏ Fishing ❏ Health and social work ❏ Hotels and restaurants ❏ Manufacturing ❏ Mining and quarrying ❏ Public administration and defence ❏ Real estate, renting and business activities ❏ Telecommunications and media ❏ Transport, storage ❏ Other (specify) ❏ Not applicable to my organisation ❏ I do not know

Question format	No.	Question
SCQ + OPEN TEXT	16	**Has your organisation ever offered personnel to a DIH to provide its services (e.g. provide training to SMEs) in the AI field?** ● Yes ● No ● I do not know **If yes, please specify which type of services** *Optional, free text*
SCQ + OPEN TEXT	17	**Has your organisation ever jointly developed AI-related patents with any organisations connected to a DIH?** ● Yes ● No ● I do not know **If yes, how many?** *Free text*
SCQ + OPEN TEXT	18	**Has your organisation ever licensed or sold AI-related patents to organisations connected to a DIH?** ● Yes, licensed one or more patents to organisations connected to a DIH ● Yes, sold one or more patents to organisations connected to a DIH ● Both the above ● No ● I do not know **If yes, how many?** *Free text*
SCQ	19	**Has your organisation ever co-authored scientific AI-related papers with one or more organisations connected to a DIH?** ● Yes ● No ● I do not know
SCQ + OPEN TEXT	20	**Has your organisation ever showcased AI-related research outputs at events/fora organised by a DIH?** ● Yes ● No ● I do not know
SCQ + OPEN TEXT	21	**Has your organisation ever collaborated with another entity to increase the Technology Readiness Level (TRL) of AI-related research outputs?** ● Yes, with a DIH ● Yes, with an organisation connected to a DIH ● Both the above

Question format	No.	Question
		● No ● I do not know
SCQ + OPEN TEXT	22	**Have any of your spin-off/start-ups used the services offered by a DIH in order to grow?** ● Yes ● No ● Not applicable to my organisation ● I do not know
SCQ + OPEN TEXT	23	**Has your organisation ever made available its facilities (e.g. hardware, software, labs, etc.)?** ● Yes, to a DIH ● Yes, to organisations connected to a DIH ● Both the above ● No ● Not applicable to my organisation ● I do not know **Please specify which type of facilities your organisation has made available** *Optional, free text*
SCQ	24	**Has your organisation ever started collaborating with a DIH in the AI field thanks to a EU-funded project?** ● Yes ● No ● I do not know
SCQ	25	**Who is usually promoting collaboration between your organisation and a DIH?** ● Our organisation contacts the DIH to propose collaboration activities ● The DIH contacts my organisation to propose collaboration activities ● Other parties put us in contact (e.g. consortium partners of EU-funded projects) ● I do not know ● Other (please specify)
Open question	26	**Does your organisation have other ways to collaborate with a DIH, which have not been mentioned above?** *Free text*
SCQ + MCQ (SUBORDINATED)	27	**Does your organisation have other ways to reach the market/connect with the business, other than through a DIH?** ● Yes ● No, my organisation mainly use the DIH

Question format	No.	Question
		If yes, how? ❏ My organisation has its own incubator ❏ Through a local incubator ❏ Through direct partnership with large entreprises ❏ Through direct partnership with start-ups/SMEs ❏ Other (please specify)
SCQ	28	**Does your organisation have other ways to reach Public Administrations, other than through a DIH?** ● Yes, through direct partnership with PAs ● No, my organisation mainly use the DIH ● Other (please specify) ● No, my organisation does not work with PAs
Section 4 - Final considerations on DIHs - AI Centres of Excellence collaboration		
MCQ	29	**According to your experience, do you think that:** ❏ DIHs are important to connect with local SMEs and start-ups ❏ DIHs are important to connect with local PAs ❏ DIHs are important for networking with local ecosystem ❏ DIHs can play a role to transfer technology from research to market ❏ DIHs are important to find financing opportunity for my research ❏ None of the above
MCQ	30	**According to your experience, which are the main obstacles to collaboration among AI Centers of Excellence and DIHs?** ❏ Interoperability and data sharing ❏ Legal agreements ❏ Joint investments in terms of resources and time ❏ Availability of online collaborative tools (e.g. collaborative platform) ❏ Personal relations and trust ❏ Other (please specify)
Open question	31	**How do you think collaboration among AI Centres of excellence and DIHs can enhance innovation and transfer of research outputs?** *Free text*

Survey 2: mapping collaboration activities between Networks of AI Centres of Excellence (NoEs) and DIHs as planned within the ICT-48 Project

VISION is a Coordination and Support Action financed by the **Horizon 2020 programme** aimed to reinforce, interconnect and mobilise **Europe's AI community**. In this context, the Consortium contributes and acts as a transversal enabler to make collaboration opportunities among **Digital Innovation Hubs (DIHs)** and **Networks of AI Centres of Excellence (NoEs)** come to life.

The key objective of this survey - promoted by Intellera Consulting as consortium partner - isto **explore the current relations and collaboration activities** among the NoEs and existing DIHs as part of the activities foreseen within the **ICT-48-2020 funded projects**. This will allow us to identify whether existing activities can be improved and, consequently, design and promote **follow-up activities** to make **this collaboration** more effective.

The survey is addressed to the project coordinator - or delegated partner - of the **ICT48 RIA consortia,** i.e. TAILOR, AI4Media, ELISE, Humane-AI-Net.

It takes around 10 minutes to complete and will be open until the **30th of October 2021**. Thank you in advance for the time you are dedicating to it, your support will be extremely valuable to us!

Your personal data shall be processed in compliance with the EU General Data Protection Regulation no. 679/2016 ("GDPR"), in force since 25 May 2018. For more information regarding the Survey platform, please refer to the following privacy statement: https://ec.europa.eu/eusurvey/auth/ps

Topic	Type of question	Question
Section 1: respondent characteristics		
Name and Surname	Open question	***Please indicate your name and surname**
E-mail	Open question	***Please indicate your email address**
Name of the organisation	Open question	***Please indicate the name of the organisation you represent**
Role	Open question	***Please indicate your role within your organisation**
Identification of single NoE	SCQ (Single Choice Question)	***Which ICT-48 Network of AI Centres of Excellence do you represent?** ● ELISE ● AI4MEDIA ● TAILOR ● HumanE-AI-Net
Current role within consortium	MCQ (Multiple Choice Question)	***What is your role within the consortium?** ❏ Coordinator ❏ Technical/Scientific leader ❏ Other consortium partner ❏ Associate member ❏ Other roles (please specify – open text)

Topic	Type of question	Question
Current role – WP	SCQ	***Are you the leader of any WP?** ● Yes (please specify which one(s)) ● No
Section 2 - Network of AI Centers of Excellence - DIH Collaboration *According to the definition provided by the European Commission's Joint Research Center, Digital Innovation Hubs are one-stop-shops that help companies to become more competitive with regard to their business/production processes, products or services using digital technologies, by providing access to technical expertise and experimentation, so that companies can "test before invest". They also provide innovation services, such as financing advice, training and skills development that are needed for a successful digital transformation.*		
Current Activities	SCQ	***Does the ICT-48 Network of AI Centres of Excellence you represent foresee any activity in collaboration with DIHs?** ● Yes, with DIHs that are part of the consortium ● Yes, with DIHs external to the consortium ● Both the above ● No
Specify current activities	Open question	***If yes, please specify the type of activity, time schedule and output** (as defined in the Grant Agreement). *Free text*
Objectives of collaboration activities	Open question	***What are the objectives of these collaboration activities?** *Free text*
Identification of organizations which lead the tasks addressing collaboration with DIHs	Open question	***Please indicate the Tasks involved and the respective Task Leaders** *Free text*
DIH Channel	MCQ	***In case the foreseen collaboration activities are performed with DIHs that are not part of the consortium, through which channel do you identify/contact them?** (options) ❏ There have been/will be open calls to include DIHs in the network as associate members ❏ We sent an email to some DIHs found in the European DIH catalogue ❏ We sent an email to some DIHs found through desk research on the Internet ❏ Through the personal network of some project partners (we contacted DIH we already knew) ❏ We contacted DIHs part of existing DIH communities/platforms ❏ Other (please specify)

Topic	Type of question	Question
Section 3 – Final considerations	
Project value Added	Open question	***How do you think the VISION Project can facilitate collaboration among AI Centres of Excellence and DIHs, and why should it do it?** *free text*
DIH Collaboration and NoE objectives	Open question	***How do you think collaboration with DIHs can contribute to reach the objectives of the NoE you represent?** *free text*
Obstacles /limits	MCQ	***According to your experience, which are the main obstacles to collaboration with DIHs?** ❏ Interoperability and data sharing ❏ Legal collaboration agreements ❏ Joint investments in terms of resources and time, ❏ Availability of online tools to support collaboration (e.g. collaborative platform) ❏ Personal relations and trust ❏ Other (please specify)
Collaboration opportunities 2	Open question	**How do you think collaboration among AI Centres of Excellence and DIHs can enhance innovation?** *free text*
Opinion on the role of DIHs as mediators between Academia and Business (useful to allow coordinators to think about it and verify if this occurred in 2 years from now)	Open question	**How do you think DIHs can practically contribute to connect the academic/research world with the industry/business world?** *free text*