

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

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Observations from the interaction and mentoring activities and lessons learned

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Executive Summary

Between 2020 and 2024, the VISION coordination and support action supported the development of synergies and exchange between an ever growing community of Networks of Excellence (NoE) projects, starting with those funded by H2020 under topic ICT-48 (AI4Media, ELISE, HumanE-AI-Net, TAILOR), later joined by ELSA and euROBIN, and finally joined by ENFIELD, ELIAS and dAIEDGE. In order to stimulate a sense of community among the NoEs by proomoting interaction and mentoring among the NoEs. To that end, VISION organized four annual collaborative workshops for the NoE community, called *Community Workshops (CW)*. These CWs provided a platform for peer awareness and mentoring, social interaction, strategic reflection, and collaboration action around common strategic and operational topics such as the AI ecosystem mapping, Joint Strategic Research Agenda, AI Doctoral Academy, Communications Club.

Observations

The CWs were highly successful events. While the original plan was for VISION to organize two workshops for 20-25 participants, the positive response allowed for VISION to organize four annual CWs of which three onsite in Brussels, Siena and Thessaloniki. With a total number of 427 participants from the NoEs and beyond, and over 190 people participating at least once, VISION provided a strategic forum for many different stakeholders to work towards an Ecosystem of Excellence.

During these four years, the CWs evolved and improved based on our observations. First of all, they accommodated an ever growing group of NoEs with different thematic foci. Second, the organisation changed from only VISION to a cross-NoE organising committee. Third, strategic topics varied as the NoEs themselves could suggest new topics. Our observations are clustered into the following four themes.

Participation and representation of the NoE community

The CWs saw strong participation and a collaborative atmosphere, with involvement by other initiatives (e.g. ADRA, Rodin) and with each iteration became a more community-driven event. However, given the limited size of the workshop and the massive scale of the AI ecosystem at large, the CW were only able to accommodate part of the community. While its target audience of NoEs is a large group, commitment and involvement across the four workshops varied. Connecting to (i.e. co-organising with) other events was successful in bringing together many stakeholders.

Engagement with the European Commission

Participation by the EC was critical. It provided legitimacy to the event as well as an opportunity to showcase results and discuss strategic direction in partnership between the NoEs and the EC. The CWs saw active involvement by the EC during preparation (e.g. aligning on the programme), as well as participation and speaking at the event. Observations from the workshops show that pre-arranged, (inter)active participation by the EC often results in more productive discussions, which are appreciated by the community.



Workshop topics selection

The CW programmes focused on strategic topics crucial for the NoEs and facilitated strategic reflections, the exchange of good practices, and knowledge sharing among different NoEs, despite challenges in aligning timelines. Some of the cross-NoE activities have their origin in discussions in the CWs, such as the AI strategic research agenda, common visual identity, and ecosystem mapping. But as the agendas were established through a collaborative process, only the topics were programmed that the NoEs deemed most important and urgent. As such, not all sessions were on strategic topics or knowledge sharing on operational topics, indicating a shift in topic prioritization.

Process and format of the CWs

The content-led format of the CWs was very much appreciated as most sessions had interactive components. Time for interaction beyond the sessions (i.e. informal connections) would benefit the community as well. This emphasis on interaction is important, as sessions with limited interaction had the higher risk of not leading to actionable results. To combat this, we had some (limited) successes in creating shared documents where all participants collaborated simultaneously, although this requires good facilitation. However, approaches to agree and converge on actions were used sporadically.

With the increased popularity of the CWs and the additional CWs organized, the organization of the event also became more distributed, with different partners from the NoEs taking charge of organizing sessions. This approach promotes active participation, effort distribution, more diversity of topics, approaches and formats but also implies less control.

Impact

The CWs have significantly impacted European AI by uniting Networks of Excellence and stimulating collaboration. First of all, the CWs introduced a new annual joint strategic event for the AI community that facilitated strategic discussions between researchers, industry and the European Commission. These events directly led to collaborations on concrete common achievements such as a joint Strategic Research Agenda, shared taxonomy, common visual identity, ecosystem mapping, and AIDA. Indirectly, the CWs have led to a more cohesive AI community in Europe. Engagement and shared responsibility among the NoEs offers a foundation for lasting initiatives that will continue to shape European AI goals beyond current projects.

Lessons

Finally, we offer a forward look. As shown, the community workshops can evolve into an annual democratized, co-organised European conference on strategic AI R&I topics, bringing together key stakeholders in government, academia, RTOs, and industry. We offer the following lessons for policy makers and community leaders in order to maintain the community building work of VISION and the NoEs.

Lessons for policy makers

Lesson 1: Keep stimulating community building but also maintain what has been built

Lesson 2: Stay involved



Lessons for community leaders

Lesson 4: Prioritise and allocate resources for a regular flagship AI-made-in-Europe event

Lesson 5: Broaden the scope of the community beyond NoEs

Lesson 6: Select strategic topics

Lesson 7: Strive for interactiveness and informality

Lessons for policy makers

Lesson 1: Keep stimulating community building but also maintain what has been built

To sustain and enhance the AI community, it is essential to secure dedicated resources, funding, and institutional support for continuous community-building efforts, shifting from a project-based approach to a more sustainable, long-lasting solution. While significant progress has been made, ongoing investment and stimulation are crucial to prevent disintegration and ensure that the community self-organizes and thrives beyond the current tipping point.

Lesson 2: Stay involved

Active participation by policymakers gives credibility and activates the networks to engage in a forum for exchanging ideas about AI research and innovation (R&I) policy. This requires dedicating EC representatives to participate, which may also benefit the EC.

Lesson 3: Further legitimise and prioritise community gatherings

To mobilise a diverse ecosystem, CWs are an effective, cost-efficient mechanism for shared experiences and alignment among different actors. By gathering community members in person, CWs facilitate knowledge exchange and the development of actionable outcomes. Aligning these workshops with strategic EU research initiatives is crucial for maximizing societal impact. This requires legitimization and institutionalisation of CWs and active participation from projects.

Lessons for community leaders

Lesson 4: Prioritise and allocate resources for a regular flagship AI-made-in-Europe event

To support and sustain community-driven events, it is essential to allocate both human and financial resources effectively. Assigning mobility funding within networks enables representatives to participate in events, and dedicating resources to organize events with a community workshop character has proven successful for high attendance. Combining such events with other relevant



activities and implementing hybrid participation models, as demonstrated in the 4th community workshop, are effective strategies to engage a wider audience and reduce environmental impacts.

Lesson 5: Broaden the scope of the community beyond NoEs

To ensure the AI community's broad involvement, encourage participation from various projects and stakeholders with relevance and value to AI research and innovation policy, while maintaining a balanced representation. Implementing a vision or policy on attendee representation can help in selecting contributors who add significant value, whether they represent NoEs, DIHs, TEFs, or relevant technologies like High-performance computing, Data, Cloud, or Quantum computing.

Lesson 6: Select strategic topics

Events where relevant strategic topics are regularly discussed are highly suitable to gather views from different stakeholders on strategic topics and jointly define future tasks. While some of these topics can be pre-defined (e.g. strategic research agenda, ecosystem mapping), disseminating a call for sessions and inviting cross-NoE organizers can help finding shared topics that the NoEs care about. While controversial or 'hot' topics can pique interest to join, more general topics like post-project sustainability or the identification of common challenges are also valuable. Joint goals (like a shared SRA) or decision-making (like for the visual identity) helps to strengthen the feeling that the CW represents a community and not just a random group of people who are interested in Al. Given our experience, future initiatives might also prioritize topics such as a joined future vision or increasing requirements towards continuity of activities.

Lesson 7: Strive for interactiveness and informality

In order to help the community strategise, the community workshop should be a workshop and not a conference. This requires an emphasis on interaction, ideation, dialogue, and decision-making. To retain the workshop-like character, sessions must be interactive and capture the results in a way that can be built on. Based on our experience with the CWs, we recommend introducing a requirement for session organizers to minimize presentations and maximize ideating and interactive elements such as breakout groups, structured and guided discussion, Q&A, quizzing, and voting. This also contributes to producing actionable results.

Informal and social elements are also greatly appreciated by the participants and contribute to interaction and community building. In the CWs, social gatherings were just as important as the discussion of strategic topics. For future events this means not just supporting the participants with lunch, drinks and dinner, but stimulating interaction and conversations between people who do not know each other that well. Overall, moments of interactivity and informality can help build a shared experience and a tighter community.



Adra	Al, Data and Robotics Partnership
Adra-e	AI, Data and Robotics ecosystem
ADRF	AI, Data and Robotics Forum
AI	Artificial Intelligence
Al4Europe / Al4EU	A European AI On Demand Platform and Ecosystem
Al4Media	A European Excellence Centre for Media, Society and Democracy
AIDA	International Artificial Intelligence Doctoral Academy
AloD	Al-on-Demand platform
CIIRC	Czech Institute of Informatics, Robotics and Cybernetics
CLAIRE	Confederation of Laboratories for Artificial Intelligence Research in Europe
CoE	Al Centre of Excellence
CSA	Coordination and Support Action
CW	NoE Community Workshop
dAIEDGE	A network of excellence for distributed, trustworthy, efficient and scalable AI at the Edge Granting Authority
DG CNECT	Directorate-General for Communications Networks, Content and Technology
DIH	Digital Innovation Hub
EBDVF	European Big Data Value Forum
EC	European Commission
ELIAS	European Lighthouse of AI for Sustainability
ELISE	European Learning and Intelligent Systems Excellence
ELLIS	European Laboratory for Learning and Intelligent Systems
ELSA	European Lighthouse on Secure and Safe AI
ENFIELD	European Lighthouse to Manifest Trustworthy and Green AI
EurAl	European Association for Artificial Intelligence
euROBIN	European ROBotics and AI Network
GDPR	General Data Protection Regulation
НРС	High-performance computing
HumanE-AI-Net	HumanE AI Network
ICT-38	H2020-ICT-38-2020, Artificial intelligence for manufacturing
ICT-48	H2020-ICT-48-2020, Towards a vibrant European network of AI excellence centres
ICT-49	H2020-ICT-49-2020, Artificial Intelligence on demand platform
JEB	Joint Editorial Board

List of Abbreviations



КРІ	Key performance indicator
NoE	Al Network of Excellence
R&I	Research and innovation
RODIN	Robotics Digital Innovation Network
SME	Small- and medium-sized enterprise
SRA	Strategic Research Agenda
TAILOR	Foundations of Trustworthy AI - Integrating Reasoning, Learning and Optimization
TDW	Theme Development Workshop
TEF	Testing- and experimentation facility
TNO	Toegepast Natuurwetenschappelijk Onderzoek, Netherlands Organisation for applied scientific research
VISION	Value and Impact through Synergy, Interaction and cooperation of Networks of AI Excellence Centres
WP	Work package



Introduction

VISION aims to help develop synergies and exchange between the Networks of Excellence (NoE) projects funded under H2020 topic ICT-48: Al4Media, ELISE, HumanE-Al-Net, and TAILOR. To that end, VISION performed several activities: 1) supporting Financial Support for Third Parties (FSTP) projects of the NoEs; and 2) promoting interaction and mentoring among NoEs. While <u>Deliverable</u> <u>D3.2 - Lessons learned FSTP</u> will focus on the former, this report will focus on the latter.

With task 3.2 (Promoting interaction and mentoring among the NoEs), VISION aimed to stimulate a sense of community among the newly founded NoEs for the project duration. This task was led by TNO, with their prior experience in XS2I4MS and RODIN CSAs. Close collaboration with partner CIIRC ensured the use of the excellent community and dissemination capabilities developed in WP6 to support task 3.2 with professional events that reach the NoEs and the external AI community.

Approach to promote interaction and mentoring among the NoEs

To promote interaction and mentoring of the NoEs, VISION opted to organize collaborative workshops, called *Community Workshops (CW)*, which created peer awareness around topics of common interest and exchanges on how the different NoEs approach such a topic. Thus, the mechanism has been to define common topics and discuss them. CWs aimed at identifying strategic and operational topics that NoEs can collaborate on, learn from each other and keep each other in the loop - ideally forming close cross-NoE working committees (1st CW) and supporting the annual review of strategic topics and joint decision-making (2nd - 4th CW). Thus, the CWs supported other cross-NoE initiatives such as the Project Managers meeting, Communications Club, AIDA, academic-industry collaboration working group, ecosystem mapping, Joint strategic research agenda and the Project Coordinators meeting.

In the CWs, representatives of the NoEs were encouraged to organize and participate in training sessions and discussions of common topics. These workshops were organised to be highly interactive, providing an opportunity to enhance the participants, to exchange experience on the activities of the NoEs, and stimulate collaboration among the different participants. The overall aim was to find concrete opportunities for synergies among the networks in various topics.

The selection of topics was done in a democratic way by letting NoE members vote for topics, or by opening a call for topics among the NoEs. Examples of topics of common interest were academia-industry collaboration, PhD and junior fellow exchange programs. To avoid that networks would just discuss hypothetical and non-committal topics only, a number of topics were put forward that required the networks to work together towards a joint result. Examples are: the AI research mapping, the visual identity, joint SRA, AIDA, etcetera.

This report is not focused on other initiatives to promote interaction and mentoring as they are related to other WPs and tasks.

Target audience

While we originally supported the four ICT-48 NoEs (Al4Media, ELISE, HumanE-Al-Net, TAILOR), new NoEs were also welcomed. First, ELSA and euROBIN joined since the 3rd NoE community workshop onwards, and dAIEDGE, ELIAS and ENFIELD joined since the 4th NoE community workshop.

But the workshops promoted interaction not just among the NoEs. The EC was highly involved in these workshops as well, both as a partner and a participant. Moreover, stakeholders from the wider



European AI community and major AI, data and robotics initiatives took part in the workshops, such as AI4Europe, ICT-49, ICT-38, (E)DIHs, Adra, BDVA, CLAIRE, ELLIS, EurAI, and euRobotics.

This report is structured as follows. First, it gives an overview of the workshop goals, format and results such as number of participants and outcomes of discussions (NoE community workshops). Next, it presents our observations from the NoE community workshops (Observations from the four Community Workshops). Finally, it describes what impact has been made and which lessons learned based on the NoE Community Workshops (Conclusion). Specific details such as workshop programmes are found in the Appendices.



NoE community workshops

This section provides an overview of the organised NoE community workshops and describes their format and how that has been adapted over time.

Overview

In total, four workshops have been organized over the course of the duration of the VISION project. While the expected number of participants at each of the workshops was 20-25, this target was easily achieved. As the table below shows, our KPI "Number of participants of the inter-NoE work-shops organized by VISION" was well exceeded (target: 40-50), with 427 participants in total. While many of these participants joined several workshops, we have reached over 190 unique participants. Registration and attendee lists are maintained by VISION, but are not published in this public report to protect the privacy of the people who have attended.

Event	Goal	Date	Location	number of partici- pants
1st community workshop	Introduce the NoEs and their ambitions, identify opportunities for synergies and foster collaborations within the Networks of AI Excellence Centres and the whole ICT-48 ecosystem.	June 30, 2021	online	82
2nd community workshop	Joined discussion and alignment on scientific and strategic topics for ICT-48 (specifically a European AI SRA); exchange of best practices and experiences; social gathering and networking.	Oct 19, 2022	Brussels, Belgium	40
3rd community workshop	Foster collaborations within the 4+2 Networks of AI Excellence Centres and use this as meeting as an open platform for sharing, gathering and discussing	June 7, 2023	Siena, Italy	40
4th community workshop	To discuss shared strategic themes focusing on the sustainability of the NoE community. Extended with a second day for workshops on AI education beyond borders.	June 26- 27, 2024	Thessaloniki, Greece	265*

Total: 427

* 110 onsite, 45 online via WebEx, 110 online via YouTube

Format

This section describes the cross-NoE workshops that have been organized by VISION. While we intended to organize two workshops, they were so successful that we were able to organize four annual workshops, in response to the community requesting this.

Agendas and workshop topics were selected in consultation with relevant stakeholders, in particular the project coordinators of each NoE. For the 1st CW, a poll was sent out through Mattermost (an



open source team chat service). For the 2nd and 3rd CW VISION shared a draft programme with the NoEs and the EC for review and revision. In the 4th CW, a cross-NoE organisation committee invited NoEs to propose sessions, and created a draft programme which was shared with the NoEs and EC for review and revision.

While many potential topics were envisioned beforehand, VISION intended to let the community choose the topics in order to provide the most useful workshops possible. Meanwhile, as the scope of common activities became more defined over time, some topics were predetermined. In several CWs, the connection with Digital Innovation Hubs (DIH) was explored. In particular, a common branding, a common strategy and road map became a regular topic since the 2nd community workshop, as well as joint ecosystem mapping.

Organisation

VISION introduced the CWs but also facilitated their organisation by chairing the Organising Committee and using and adapting best practices for the organisation.

Month before CW	Activity
12 - 6	Project coordinators (PC), in consultation with EC representative, decide on a location and date, local organiser (LO) and preferred/priority topics.
6	PCs delegate representatives to establish an organising committee (OC). The OC distributes tasks among themselves, incl. the role of chair.
5	OC drafts a theme, opens a call for workshops (e.g. on the VISION website) and invites speakers. PCs and EC representatives are informed and consulted.
3	OC selects workshops, establishes the theme, publishes agenda, opens registration and promotes the event (e.g. on the VISION website).
2	OC checks with PCs the number of expected representatives for their NoE and whether extra push is needed.
1	OC runs through the detailed programme and planning, closes registration and arranges all practical elements for the expected audience (e.g. catering, seating, workshop allocation, signage, badges, attendance lists etc.).

Important aspects to take into account in the organisation are:

- The OC preferably consists of at least project management, communications experts, and content leads and a local organiser lead
- The OC coordinates NoE representation with PCs to ensure a balanced mix of NoEs attending, as well as a minimum representation at the workshop.
- The OC provides rich contextual online information about the programme, speakers, venue, social elements (e.g. dinners), travel and lodging, contact details and frequently asked questions.
- Upon registration, participants are asked for which workshops are preferred.



Results of the NoE community workshops

The four CWs between 2021-2024 have been managed by VISION and all relevant information has been published on the <u>VISION Community Workshops webpage</u>. Each CW has its individual page with visuals, detailed program, speakers, photo galleries, etc. This section describes the workshops and their results in more detail.

First community workshop

The goal of this event was to introduce the NoEs and their ambitions, identify opportunities for synergies and foster collaborations within the Networks of AI Excellence Centres and the whole ICT-48 ecosystem. This was complicated by the coronavirus pandemic, which unfortunately forced us to organize the 1st CW online. Nevertheless, the dedicated organising committee thought of innovative ways to host the workshop for the AI community.

The program consisted of several plenary sessions in which we collectively explored strategic and operational topics for the European AI agenda, as well as 6 parallel sessions in which more in-depth discussion took place on topics that were selected by the NoEs. After that, an informal networking and mingling session was held in GatherTown to exchange ideas and experiences, as well as to share information related to cross-network activities. This included a poster session, where 15 papers were presented, and 15 booths in which projects and networks were presented.



Fig. 1: The virtual fair with poster sessions and booths on the GatherTown platform

This online event was a success as 150 people registered, of which 82 people from across the community participated, which surpassed our original target of 20-25 participants. Positively, we had a good spread among all ICT-48 NoEs, with all networks represented. Additionally, the event was also attended by stakeholders from the wider European AI community and major AI and robotics initiatives, such as AI4EU, ICT-49, ICT-38, ADRA, BDVA, CLAIRE, ELLIS, EurAI, and euRobotics.





Fig. 1: Overview of participating organizations in the 1st Community Workshop



Fig. 2: Overview of participating NoEs in the 1st Community Workshop

Main outcomes

Strategic and operational topics for possible collaboration were collected. **Strategic topics** are focused on long-term goals and include achieving strategic autonomy, engaging with SMEs and the public, and advancing AI education, regulation, and research. Key areas of interest include developing human-centric AI methods, sharing AI resources, and studying the impact of emerging technologies.

To enhance collaboration on strategic topics, the NoEs should consider forming cross-working groups, developing joint AI education programs, and establishing a common infrastructure for large-scale research. Other potential actions include outreach and awareness efforts, identifying common research areas, and developing measures to evaluate the community's success.



Operational topics refer to the regular (daily) operations of the networks. The identified operational topics for network operations include administrative and project management aspects to simplify (interdisciplinary) collaboration such as joint communication and dissemination. Other suggested topics are early career researchers and PhD programmes, and micro projects focused on scientific research support. Possible actions to enhance collaboration at the operational level are: Alignment of yearly activities; communication and scientific publication; Common 'microprojects'; data repository; and PhD / junior fellow programmes.

The main outcomes of each workshop are as follows:

- Cross- and beyond-network communications and outreach and awareness: Many communication activities are in progress in all of the NoEs and beyond (AI4EU). Better coordination and sharing the information is welcome. Target audiences are similar but there is a large amount of activities. A platform for the communication leads and teams can be created to exchange best practices on a regular basis, and a communication task force could be created to meet regularly and govern this process.
- Coordination of Roadmaps: Themes, structure, content, timeline: An overlap and potential synergies with external networks was found in the themes *education* and *research excellence*. Participants were interested in our follow-up. After summer there will be more in depth discussions with each of the NoEs to support them in developing their roadmap and the VISION roadmap. We will establish a working group to regularly discuss commonalities, synergies, and new points of these Roadmaps.
- Industry involvement: TDW / Hackathon / Challenge: A lot of commonalities in the activities and similar ideas were identified, providing excellent opportunities for joint activities in the future and to exchange best practices. With the series of Joint Theme Development Workshops (TDW) and hackathons, there is already a joint activity. Concrete next steps were discussed to establish a regular exchange around the industry, innovation and transfer programmes and activities within the NoEs as well as in VISION.
- *Cross-network scientific challenges:* Valuable collaboration in writing a joint position statement for something like an AI magazine to outline the vision and building a joint data set repository. Common application areas are: AI for dealing with climate change and AI for the acceleration of science. Micro projects concept and workshops would be a potential way to go about this.
- Collaboration between AI Centers of Excellence and DIHs: Potential approaches to collaboration between AI CoE and DIHs were outlined, i.e. exchanging research and related outputs, fostering personnel mobility and sharing facilities and using the services offered by a DIH. Relevant areas are AI TEFs and cross-border industrial testbeds. Obstacles to collaboration were identified: bureaucracy/communication aspects; diverging interests of industry and research organisations; goals for innovation making use of existing infrastructures is also very important.
- *Collaboration on educational activities (AIDA etc.):* In the AI Doctoral Academy (AIDA) there are regular meetings with representatives from all of the NoEs, the governance structure is in place, universities are welcome to sign to become founding members of AIDA. The next step is developing the European approach to AI curricula (both content and structure).



Second community workshop

The goal of the event was to facilitate joint discussion and alignment on scientific and strategic topics for ICT-48 (specifically a European AI SRA), exchange of best practices and experiences and social gathering and networking. This was the first opportunity to organise an in-person workshop.

Almost 40 people from the AI research community and policy ecosystem gathered on October 19th, 2022 in Brussels in a community workshop organized by the VISION project. Representatives from VISION, the ICT-48 Networks of Excellence (NoE) HumanE-AI-Net, ELISE, TAILOR, AI4Media, ELSA, euROBIN, Adra-e and the European Commission spent a day discussing how to collaborate with each other, leverage on each others results, the outlines of a mapping the European AI ecosystem, and a European AI Strategic Research Agenda.



Fig. 3: Holger Hoos (VISION) giving his welcome address at the 2nd community workshop

The morning part of the programme featured 6 roundtables, where participants could discuss and exchange ideas on topics like: cross-network scientific challenges, educational activities, collaboration with Digital Innovation Hubs (DIH) and with industry, and cross-network communication.

Main outcomes

- The community workshop allowed for extensive and actionable discussion on the topics of a joint SRA and ecosystem mapping.
- A relatively large group of NoE representatives joined the social gathering and networking dinner.

The sessions may be summarised as follows:

• *Collaboration on education:* Collect the courses that are already out there and meaningfully organize them, rather than developing new courses. Learn from each other and from other networks which have had similar experiences (e.g. HPC). The goal is to make EU studies attractive, attracting *and* retaining students.



- Collaboration with Digital Innovation Hubs: This happens, but not structurally. A VISION survey from 2022 concludes there is "a general lack of strategic interest from NoEs towards DIHs", while there are clear opportunities for collaboration. TEFs could bridge the gap between NoEs and DIHs, and the NoE's need to connect better to Digital Europe initiatives. Who is the right interlocutor for catalyzing the collaboration between NoEs and DIHs?
- Collaboration with Industry: All NoEs are in some way supporting the connection with industry with their ecosystems and that is already a big portion of the work. Industry finds it difficult to navigate all networks (and some are part of many), so at least a minimal level of creating a landscape and then possible coordination is needed to help industry. There is a need to identify the needs of industry but also good practices on how to involve them.
- Common visual identity: This is a joint commitment towards excellence in AI while preserving the identities of the various NoE and friends. The common brand can also be connected to other networks like the AI-on-demand (AIoD) Platform, but also create a sense of being proud to be part of the network (e.g. also with researchers). The first audience to reach is the AI networks and then the general public. The ICT-48 task force and AIoD to come together in a task force and involve EC.
- *Cross- and beyond network communication:* Think on how to reflect on the myths on Al through scientific arguments, connecting to partners, showcase the scientific results of the NoE and connect with AloD and other networks to align dissemination but also to connect events.
- *Cross-network scientific challenges:* Do not replicate scientific conferences but create shared focused workshops and curated lists to find each other. A lightweight mechanism per theme, but realistic. In scientific topics, besides the familiar challenges, we also think about social systems perspective or transferability. Find a way to bridge across themes through a cross-network content creation team, but we need to organize it efficiently!

The European Commission, represented by Cécile Huet, kicked-off the afternoon sessions outlining a vision of a vibrant network and ecosystem of AI excellence centres working together as a way to develop Europe's position in AI (research) and support industry and society with AI application "from the lab to the market".

In a session on collective mapping, the participants - led by Maurits Butter (TNO) and Iddo Bante (ADRA-e) - discussed 1) who are the most important users of such mapping, 2) how to engage the target audience and 3) efficient organisation of a collective mapping. Discussions revolved around whether there is a need for such mapping, recognizing the importance of creating a common understanding of what is mapped and what is understood by excellence, and the need to connect any topic with actual application. The enormity of the topic and effort was recognized, and it was decided that further alignment and discussions might be needed.

Another key topic of discussion revolved around the idea of a European AI Strategic Research Agenda that complements the individual SRAs of the AI networks of excellence. Moderated by Fredrik Heintz (TAILOR), the session featured presentations from each of the NoEs on the key points of their SRAs. The discussion then turned to how these diverse topics and application areas can be connected and



draw higher level conclusions. A first start to come up with a potential structure connecting the various topics in a categorization (also to initiatives like Adra SRA) was presented by Freek Bomhof (TNO) with a discussion on how this categorization connects to the research communities and how to introduce dependencies. The starting point for the common SRA is a Joint Editorial Board (JEB) with representatives of all NoEs, led by TAILOR and ELISE, supported by VISION. The goal of the common SRA is not necessarily for the NoEs to agree, but to position themselves within certain topics. This leaves room for analysis and drawing higher level conclusions. The form of the common SRA was envisioned to be more high-level than the NoEs SRAs. It may be more mission-oriented, such as the 5 mission areas of the Horizon programme, or also contain academic long-term challenges.

A group of representatives from the networks will further continue the work started. Further, a session in the Big Data Value Forum in November will aim to collect further insights from the AI community on the presented categorization.

The overall conclusion of the workshop was that the AI ecosystem is developing and open discussions among the various communities to enhance collaboration and peer learning. Reflecting on all the sessions, the NoEs came together, connected and identified synergies from collaboration on education to a European AI Strategic Research Agenda.

Third community workshop

The third community workshop took place on 7 June 2023 in Siena, Italy. With the help of local organisers from the University of Siena, it was co-located with the <u>3rd TAILOR conference</u> (5-6 June). This collaboration ensured efficient use of resources as many participants joined both events, and enhanced community building as the CW was organized across NoEs.

The event gathered 40 participants from the Networks of Excellence in AI - AI4MEDIA, TAILOR, ELISE, HumanE-AI-Net as well as ELSA and euROBIN and was organized by the VISION CSA. The event was a successful opportunity for networking, learning about the common activities of the NoEs and discussing possible ways forward. Over the course of the day, representatives of the NoEs discussed strategic topics common to all Networks of Excellence, ways to collaborate and create impact as well as looking ahead towards the future of EU research on AI, the needs and lessons learned for the future funding period programme.





D3.3 - Observations from the interaction and mentoring activities and lessons learned

Fig. 4: Lucilla Sioli (EC) presenting to the participants of the 2nd community workshop

The day was opened with a keynote by Lucilla Sioli, Director DG CNECT.A (AI and Digital Industry) who highlighted the role of AI research and research networks within the EU ecosystem of excellence and the progress already achieved by the NoEs. Ms. Sioli also called for further connections among different players in the ecosystem to enable the community to leverage on the unique capabilities of the EU researchers towards making the EU a powerhouse and lead the way towards explainable and trustworthy AI.

Main outcomes

Following the opening from the Commission, the workshop proceeded with 7 sessions of joined interested for the NoEs, including:

- The International AI Doctoral Academy: the session, highlighted the achievements of AIDA so far and discussed ways to expand the impact and educational content of the Academy as well as alternatives towards sustainability. The session was led by Ioannis Pitas, Filareti Tsalakanidou, Nicu Sebe from AI4MEDIA
- Sustainability of NoE and its activities: the objective of the session was to start the
 discussion on ways to maximize the impact of and sustain the NoEs results. The session
 explored to what extent the AI white paper on EU approach to excellence and trust is still a
 blueprint and what further is needed to create impact. The discussion highlighted the need
 for connection among research and innovation areas and ecosystems but also the need for
 ambition and vision within Europe to connect the different initiatives and efforts together
 towards a common goal.
- *Ecosystem Mapping:* a cross-NoE activity that aims to map the particular AI topics on which researchers are working on in Europe. The discussion led to a decision on how to proceed with next steps towards implementing an approach.



- Joint strategic research agenda: the session showcased the approach of the cross-NoE activity to provide a SRA, discussion on the results and next steps.
- *Connecting research to industry:* in this session the networks shared their highlights from approaches used and discussed how they can collaborate further together;
- Common visual identity and "AI made in Europe" offered the opportunity to present the progress towards a common visual identity and take decisions for further actions among all the NoES.
- Lessons beyond Horizon Europe: this session discussed how HEU projects could connect to the knowledge and research of the NoEs, and drawing lessons for how AI R&I should be addressed in the next work programmes.

Fourth community workshop

The fourth community workshop took place on June 26-27, in Thessaloniki, Greece. It had a novel and unique approach to fostering a sense of community in two ways. First of all, this edition had a community-driven character as it was organized by a committee of volunteering NoE representatives (AI4Media, dAIEDGE, ELIAS, ELSA, Human-AI-Net) which was supported by VISION. This organising committee used the new common visual identity ('AI made in Europe') in its branding. Second, the event had a strong digital hybrid (and at times even decentralised) aspect, so that a broader audience could participate. Remote participants could join the plenary programme and several break-out sessions through WebEx or via the live stream. All these sessions were recorded and published online.

The event was organized as a two-day event, hosted by CERTH (Al4Media). On the first day, the 4th NoE community workshop was held on both strategic and substantive topics by the NoEs for the NoEs, as well as future trends in AI research and development, chaired by prof. dr. Yiannis Kompatsiaris. The second day a symposium *'AI Education Beyond Borders'* was organized around the AI doctoral academy (AIDA), chaired by Prof. dr. Ioannis Pitas.



Fig. 5: Prof. dr. Yiannis Kompatsiaris welcoming the participants of the 4th community workshop in Thessaloniki



The programme was mainly focused on sustainability of successful and valuable efforts beyond the ending of the ICT-48 projects, with a keynote by the EC, highlights of the NoEs and a plenary worldcafé on the sustainability of the NoE community. In the late morning and early afternoon, NoEs co-organised workshops on common topics interdisciplinarity, ensuring trustworthy and fair AI, edge AI, generative AI, the joint SRA and ecosystem mapping. For most sessions, recordings are available via: https://www.vision4ai.eu/community-workshop-2024/#day1 and an aftermovie is available here: Aftermovie: 4th Community Workshop 2024 & AIDA Symposium, Thessaloniki, Greece .





Main outcomes

The 4th NoE community workshop saw a tremendous number of 265 participants, of which 110 people joined in person in Thessaloniki, 45 people joined the remote meeting via WebEx, and 110 people viewed the more accessible live stream on YouTube. Participation was well spread across the NoEs, both in terms of audience members and panelists. Other onsite participants represented the EC, Adra, ELLIS, AI4Europe, among others. For ELISE, one participant was onsite in Thessaloniki, and the rest was 'onsite' in Helsinki while joining the session on NoE collaborative actions and the Worldcafé.

The 4th CW provided an engaging forum for discussion and alignment on sustainability with the community incl. EC, Adra and Al4Europe. This resulted in concrete suggestions which VISION can work into the post-project sustainability plan. With the attached AIDA symposium, we contributed to the fostering of AIDA. Moreover, the 4th CW facilitated interactive sessions on the following topics:

- Highlights of the NoEs and introduction of the new NoEs (dAIEDGE, ELIAS, ENFIELD)
- Evaluating and Auditing, versus Safe and Secure by Design AI Systems (ENFIELD, ELSA)



- Navigating Interdisciplinarity: Leveraging Insights from ICT-48 Projects to Enhance Synergies Across Academic Disciplines (AI4Media)
- #EuroGen: Mapping the Future with Generative AI (euROBIN and HumaneAInet)
- Next-generation infrastructure federation: a Virtual research lab for edge AI (dAIEDGE)
- Assessing and Enhancing Fairness in AI Systems (AI4Media and ELIAS)
- NoE collaborative actions: Joint SRA and Ecosystem Mapping (VISION, TAILOR, ELISE)
- Worldcafé on sustainability of the NoE community/ stand up sessions (VISION)

In-depth explanations of sessions are found in <u>Appendix 4: Programme and report of the Fourth</u> <u>Community Workshop</u>.



Observations from the four Community Workshops

In a period of four years, VISION has led and has been involved in the organisation of four CWs and made several observations. These observations have been gathered in an internal workshop with the five authors of this report on July 24, 2024, through an adapted retrospective (focused on the questions 'what went well?', 'what could be improved?', 'what was the impact?', 'what are the lessons learned'?) and clustering of notes into themes. Our observations from the interaction and mentoring activities are as follows.

Theme 1: Participation and representation of the NoE community

The community demonstrated strong participation and contribution, with members requesting additional CWs due to their appreciation of the emphasis on in-person workshopping on location. The atmosphere was positive and collaborative, free from conflicts or withdrawals, truly embodying a sense of community. Involvement from representatives of other initiatives (e.g. ADRA, Rodin) and the increase of attendance and active participation (incl. co-development of CW) further highlighted this engagement.

Given the breadth of the NoEs and the growing AI ecosystem, the CW were however only able to accommodate part of the community. The Community Workshops were aimed mainly at the different NoEs and to a lesser extent related initiatives, such as AI4Europe, ICT-49, ICT-38, (E)DIHs, Adra, BDVA, CLAIRE, ELLIS, EurAI, and euRobotics. While this is already a large group, it saw varying commitment and involvement across the four workshops, in activities such as who joins the organising committee, setting a date and location and who joins the workshops on behalf of the stakeholder.

Meanwhile, the workshop only hosts a handful people on behalf of these stakeholders while the AI ecosystem is many times larger than the NoEs and related initiatives. Connecting to other events, such as the TAILOR conference or AIDA mellontology was successful in bringing together more stakeholders.

Theme 2: Engagement with the European Commission

Participation by the EC in the CWs provided legitimacy to the event as well as an opportunity to showcase results and discuss strategic direction in partnership between the NoEs and the EC. This format is therefore considered beneficial to exchange ideas and align expectations.

Overall, the EC was involved in both the preparation and the event itself. During preparation, the organisers aligned with the EC on the programme and goals. At the event, the EC had various roles - from active 'working' participation in the workshop to providing keynotes that set the tone for the rest of the day. Observations from the workshops show that pre-arranged, (inter)active participation by the EC often results in more productive discussions, which are appreciated by the community.

Theme 3: Workshop topics selection

The program focused on strategic topics crucial for the NoE, addressing shared issues like the AI strategic research agenda, common visual identity, and mapping the AI ecosystem. The annual gathering facilitated strategic reflections, the exchange of good practices, and knowledge sharing among different NoEs, despite challenges in aligning timelines. Some of the cross-NoE activities have



their origin in discussions in the CWs, which provided opportunities to suggest, engage, steer these activities.

However, workshop topics were dynamic and not all sessions were on strategic topics or knowledge sharing on operational topics. The agendas were established through a collaborative process, and as a result, only the most important and urgent topics were programmed, leaving less room to discuss certain topics such as e.g. FSTP services. The difference between the agendas of all four workshops indicates this shift.

Theme 4: Process and format of the CWs

The CWs were organized in content-led discussion sessions. The format of a 'workshop' was very much appreciated due to increased engagement and the majority of the sessions promoted interactive elements. Yet, with a more distributed organization, it became also more challenging to ensure the interactive element. Meanwhile, by its very nature, a workshop must captivate and engage its participants. While CWs were content-driven and aimed at promoting interaction, feedback indicated that more time for informal connections would benefit the community.

The risk of limited interaction is that the sessions are merely presentations or discussions and do not lead to actionable results. Open discussion formats cannot ensure the input of everybody is taken into account. We had some (limited) successes in creating shared documents where all participants collaborated simultaneously. Provided with good facilitation, this helps with capturing all suggestions, but approaches to agree and converge on actions were used sporadically.

With the increased popularity of the CWs and the additional CWs organized, the organization of the event also became more distributed, with different partners from the NoEs taking charge of organizing sessions. This approach promotes active participation, effort distribution, more diversity of topics, approaches and formats but also implies less control.



Conclusion

In a period of four years, the community of NoEs grew larger and tighter and the Community Workshops (CW) played a major part in this. The CWs were a key supporting activity of VISION and leveraged the consortium's capabilities for innovation ecosystem orchestration and communications. Over the course of these four years, VISION started with organising two "collaborative workshops" with about 20-25 participants from the ICT-48 NoEs and with limited scope (focus on training and lessons learned). Due to both success and a wish/need for broader community building, this grew into the organisation of four annual NoE Community. This resulted in a much broader scope and audience, which was highly valued by the community. This resulted in a much larger participation than expected, with 427 participants in total and over 190 people participating at least once, well exceeding the target of 40-50 for KPI "Number of participants of the inter-NoE work-shops organized by VISION".

During these four years, the CWs evolved based on the community. First of all, new NoEs joined, and the group of involved NoEs grew from four - to six - and then to nine NoEs. Second, the organisation changed from only VISION to a cross-NoE organising committee. Third, strategic topics varied as the NoEs themselves could suggest new topics. While the character changed over time, the CWs also saw stable, favoured factors. First, each workshop strived for a hands-on, interactive character focused on moving forward strategic topics. Second, frequently discussed topics ranged from DIH collaboration, PhD exchange programmes, visual identity, or the ecosystem mapping. Finally, since the 2nd CW, the in-person meetings stimulated social interactions among the participants with breaks, table topics and social dinners.

We also observed points for improvement. Participation and representation of the stakeholders in the community is a crucial point of attention, and in the CWs this has varied often. In particular, more interaction with policy-makers can increase the community cohesion, bring legitimacy, and create a stronger feedback loop between the community and research and innovation policy. Moreover, introducing stronger selection criteria for workshop sessions can help ensure their relevance and interactiveness. Interaction focused on convergence is an important factor to make the workshop sessions successful.

After a pandemic full of travel restrictions, in-person events were much appreciated again. In-person conferences made a big difference in bringing together the NoEs. The CWs were a pleasant and focused get-together for the NoEs and therefore a welcome addition to the larger conferences and fora where the individuals also meet (e.g. EBDVF, ADRF, scientific conferences). Moreover, the community workshops were considered milestones in the progress of the NoEs, deciding together with the NoEs on strategic subjects such as the common visual identity, joint SRA, and the ecosystem mapping. With the fourth community workshop, the format became 'by the community, for the community' and we can conclude that VISION has successfully transferred the CWs to the NoEs.

Impact of the Community Workshops

The Community Workshops (CW) significantly contributed to the development of a sense of community within European AI by bringing together the Networks of Excellence (NoEs). Not only did VISION introduce a new joint strategic event for the AI research community, but after a pandemic full of travel restrictions, in-person events made a big difference in bringing together the NoEs.

The CWs were milestones and provided a forum for an annual dialogue on strategic topics and helped establish important connections between NoEs and the European Commission (EC),



supporting strategic reflections on effective AI research and innovation policy. These connections have led to an increased sense of responsibility among community members, with different partners taking leadership roles in e.g. joint SRA, AIDA. Additionally, these efforts have made AI in Europe feel more alive and tangible for participants, enhancing engagement and understanding.

The CWs also contributed to the development of common achievements. The interactive and strategic workshops contributed to several concrete collaborations among the networks in various topics, such as the joint SRA, shared taxonomy, ecosystem mapping, common visual identity, theme development workshops and AIDA. Many of these outcomes will be sustained beyond the duration of the ICT-48 projects to help shape common European AI goals.

Lessons learned

After four successful CWs and the ending of the VISION project, the question is how to maintain the beneficial effects and overcome the challenges that we came across. As the 4th CW has shown, the community workshops can evolve into an annual democratized, co-organised European conference on strategic AI R&I topics, bringing together key stakeholders in government, academia, RTOs, industry and many others. Based on our observations, we formulated the following lessons for policy makers and community leaders in order to maintain the community building work of VISION and the NoEs.

Policy makers

Lesson 1: Keep stimulating community building but also maintain what has been built

To sustain and enhance community building, it is essential to shift from a project-based approach to a more sustainable, long-lasting solution based on additional resources, responsibility and prioritisation. This involves securing explicit funding, dedicated staff, and institutional support where there is no such funding or support at the national or regional level. Further occurrences of the CWs, with connections to other initiatives are recommended, while keeping representativeness of the ecosystem at large in mind. This also requires planning much in advance to avoid clashes with similar events. For instance, the CWs could be supported and institutionalised through Adra as a focused community workshop, and maybe even attached to the large-scale annual Al-Data-Robotics Forum.

Over the course of the ICT-48 projects, serious efforts have been made to align and create a sense of community. While this has already resulted in benefits, it is unclear whether we are beyond a tipping point where the community self-organises. The risk is that a lack of stimulation will result in the (slow) disintegration of what has been built so far.

Thus, continuous investment in community creation and maintenance is crucial, ensuring that activities do not cease after a few years. This involves securing explicit funding, dedicated staff, and institutional support where there is no such funding or support at the national or regional level. Additionally, attributing responsibility and collaborating within the community is vital for its ongoing success.

Lesson 2: Stay involved

Active participation by policymakers gave credibility to the events and activated the networks to engage. The CWs were considered a forum for exchanging ideas about AI research and innovation policy. Dedicating EC representatives to participate can maintain engagement and predictability with the community, which also benefits the EC. In engaging with the community workshop organization,



requests and preferences from the EC were most appreciated early on in the process in order to ensure ample time to take them into account.

Lesson 3: Further legitimise and prioritise community gatherings

In order to mobilise an ecosystem that is scattered with many different actors, alignment is crucial. The CWs are a valuable and relatively cheap way to create shared experiences across the community and offer opportunities for alignment. It is recommended to capitalize on their ability to gather the community in person, resulting in knowledge exchange and actionable outcomes. Furthermore, aligning these workshops with strategic EU research initiatives is deemed essential as this alignment can significantly influence societal impact. This requires legitimization of the CWs, e.g. by encouraging projects to organize and participate.

Community leaders

Lesson 4: Prioritise and allocate resources for a regular flagship AI-made-in-Europe event

Both human and financial resources are required to support and sustain a community-driven event. Allocate mobility funding within your network to allow some representatives to participate in such an event, and allocate funding to organise one event with a community workshop character. In the experience of the VISION project, combining this with other relevant events (e.g. conferences, summer schools, symposia) has proven to be an extremely useful method to achieve high attendance of the target audience. This also alleviates the environmental burden, because many of the travels would have been made anyway already. Other options to reduce environmental costs are hybrid events - For instance, the 4th community workshop was an experiment to accommodate hybrid participation. To support this, VISION has developed several best practices (see section <u>Organisation</u>).

Lesson 5: Broaden the scope of the community beyond NoEs

Invite the AI community at large, as there are many other relevant projects and stakeholders that can contribute to the sessions, including those who were involved in past NoEs. They may also represent stakeholders (DIHs, TEFs, etc.) or relevant technologies (High-performance computing, Data, Cloud, Quantum computing). However, care must be taken to avoid that the community becomes so wide and amorphous that it attracts participants that do not add value. A vision or policy on the representation of attendees (representing an NoE, or any other relevant organization) could help.

Lesson 6: Select strategic topics

To select strategic topics for events, organizers should balance pre-defined subjects with open calls for sessions to identify shared interests across networks, including both controversial and general themes. Focusing on joint goals and decision-making processes can foster a sense of community, while prioritizing topics like shared future visions and continuity of activities can enhance the strategic value of the event.

Lesson 7: Strive for interactiveness and informality

To promote strategic thinking and community building, organizers should prioritize interactive elements like guided discussions and breakout groups over presentations, ensuring sessions produce actionable results. Additionally, incorporating informal social gatherings and activities can stimulate conversations between participants, creating a shared experience and a stronger sense of community.



Appendices

Appendix 1: Programme and materials of the First Community Workshop

Programme		
9:00-9:15	Welcome and introduction to the event – <i>Joachim de Greeff</i> (TNO)	
9:15-9:45	<i>Plenary session 1</i> : Strategic topics / Building the European AI ecosystem – <i>Holger Hoos</i> (Leiden University)	
9:45-10:15	Plenary session 2: Operational topics – Wendy Aartsen and Holger Hoos (Leiden University)	
10:15-10:30	<i>Coffee breaks</i> : Networking opportunities in small random groups (breakout rooms)	
10:30-11:30	Parallel sessions:	
	1/ Cross- and beyond-network communication and outreach and awareness	
	– <i>Vít Dočkal</i> (CIIRC CTU), <i>Marianne Willaert</i> (Inria), and <i>Eva Doležalová</i> (CIIRC CTU)	
	2/ Roadmapping: themes, structure, content, timeline	
	– Tjerk Timan and Claudio Lazo (TNO) and Marc Schoenauer / Eric Poiseau (Inria)	
	3/ Industry involvement: TDW / Hackathon / Challenge	
	– Philipp Slusallek and Silke Balzert-Walter (DFKI)	
	4/ Cross-network scientific challenges	
	– Holger Hoos (Leiden University) and Paul Lukowicz (DFKI)	
	5/ Collaboration between AI Centers of Excellence and DIHs	
	– Costanza Bersani (PWC) and Paola Barucchelli (FBK)	
	6/ Educational activities (AIDA)	
	– Barry O'Sullivan (University College Cork) and Ioannis Pitas (University of Thessaloniki)	



11:30-11:45	<i>Coffee breaks</i> : Networking opportunities in small random groups (breakout rooms)
11:45-12:00	<i>Plenary Session 3</i> : Brief reports from parallel sessions and announcements – <i>Joachim de Greeff</i> (TNO)
12:00-13:00	 GatherTown – informal networking and mingling: Virtual poster session (ICT-48 related) Virtual ICT-48 Community fair with booths Individual networking and presentations GatherTown allows you to freely walk around in a virtual environment and facilitates informal discussions, chance encounters etc.

Report

Strategic and operational topics

In the workshop, strategic and operational topics were collected through collaborative work in a shared document to which all participants had access and were free to provide input. The aim was to learn where potential synergies are possible. Strategic refers to the topics that are relevant in relation to the long-term or overall aims and interests of the NoEs.

The following **strategic topics** were identified:

- Strategic autonomy
- Engagement and awareness (SMEs, public)
- AI education (PhD, university, professional)
- Data for AI (reusable, reproducible)
- AI regulation
- Common methods for developing and guidelines researching human-centric AI
- Mechanism for sharing AI resources and publications (communications, catalogs, AIoDP)
- Impact of key enabling technologies and emerging technologies (quantum computing, large-scale computing)
- Overlaps between common high-level AI research topics such as hybrid AI, explainability, autonomous agents,...

Possible actions to enhance collaboration at the strategic level:

- Hybrid AI/Combinations of data-driven learning methods and knowledge-based reasoning methods/Integration of symbolic reasoning and machine learning techniques:



- Designing building and evaluating Hybrid Human AI Systems
- Building a central infrastructure for large-scale research, development and testing approaches (e.g CERN for AI)
- Use of synthetic data based on models and simulation
- Non-technical considerations
- Setting up joint AI education programmes and curriculum (e.g. AIDA)
- Outreach and increasing awareness among the general population
- Energy Consumption of AI
- Establish a small set of cross-network committees/working groups focused on specific themes/topics to build collaboration and information exchange
- Consider identifying some "measures of success" for the community and how we might be able to demonstrate the impact of the ICT-48 networking, to show how successful it has been, and demonstrate what could be done with more investment

Operational topic refers to the regular (daily) operations of the networks. The following operation topics were identified

- Joint communication and dissemination (of research)
- Supporting and simplifying academia-industry collaboration
- Improving cross-WP (interdisciplinary) collaborations
- Cross-network collaboration
- Early career researchers / PhD programmes
- Administration, project management and research support
- Microprojects on a scientific level

Possible actions to enhance collaboration at the operational level:

- Alignment of yearly activities
- Enhancing each others internal and external communications
- Publishing papers together, across network boundaries
- PhD programme / Junior fellow exchange programs
- Microprojects
- Joint dataset repository

Workshops

The main outcomes of each workshop are as follows:

Cross- and beyond-network communications and outreach and awareness

- Many communication activities are in progress in all of the NoEs and beyond (AI4EU)
- Better coordination and sharing the information is welcome "an internal" ICT-48 communication is the key for good external communication and dissemination and for finding possible synergies. Additionally, it was suggested to create a newsletter based on the content from the Mattermost VISION4AI channel.
- Target audiences are similar but there is a large amount of activities it is not easy for audiences to find their way around - VISION would like to provide service for ICT-48 in this area



- D3.3 Observations from the interaction and mentoring activities and lessons learned
 - **Platform for the communication leads and teams** can be created to exchange best practices on regular basis - preferably as a dedicated channel in Mattermost as it is a hub for information sharing to enhance the cross-network communication. A communication taskforce could be created to meet regularly and govern this process.

Coordination of Roadmaps: Themes, structure, content, timeline

- Discussed what Roadmaps are and some examples of the good and the bad roadmaps asked participant what they expect from roadmaps (what it should do in the project, which elements should and should not be in there)
- Work on analysis of the goals and actions of the NoEs was presented, mapped onto the European AI strategy to see if and how it matches and which are the gaps on infrastructure and regulation. An overlap and potential synergies with external networks was found in the themes education and research excellence.
- Participants were interested in our follow-up. After summer there will be more in depth discussions with each of the NoEs to support them in developing their roadmap and the VISION roadmap.
- We will establish a working group to regularly discuss commonalities, synergies, and new points of these Roadmaps

Industry involvement: TDW / Hackathon / Challenge

- Representatives from VISION and all four Networks of AI Excellence Centers (NoEs) attended and contributed to the parallel session
- The discussion started with an overview of what is happening regarding industry and innovation activities in each of the NoEs, followed by questions from the audience and a concluding conversation about possible joint activities and next steps
- A **lot of commonalities in the activities and similar ideas** were identified, providing excellent opportunities for joint activities in the future and to exchange best practices
 - With the series of Joint Theme Development Workshops (TDW), there is already a joint activity between TAILOR, VISION and HumanE-AI Net as well as CLAIRE AISBL, opportunities for AI4Media and ELISE to participate were also discussed in this session
 - TAILOR and HumanE-AI Net are planning to organise so-called "Hackathons" as part of their innovation and transfer programmes, synergies for joint events will be further elaborated
 - There are several activities and ideas around joint transfer/collaboration labs between academia and industry, sometimes including PhD programmes within the NoEs; possible synergies and exchange of best practices could be further elaborated
- Some concrete next steps were discussed to establish a regular exchange around the industry, innovation and transfer programmes and activities within the NoEs as well as in VISION, e.g.,:
 - Email addresses and names were exchanged among the participants, including the decision to follow up via email and set up regular meetings (organised by VISION WP4)



- A shared space for exchanging materials will be created
- A dedicated **channel in Mattermost** on industry events and other activities will be put in place

Cross-network scientific challenges

- Metalevel
 - 4 levels at we need to consider that -
 - 1 contractual obligations (provide roadmaps, challenges across the networks)
 - 2 with our community we have a lot of weight with the commission (if we form good joint research agenda allows to drive where the funding is going)
 - 3 very diverse group when we get together we may come up with great ideas and eventually to see people do good science - the network is unified by agreeing on Hybrid AI and two types of Hybrid AI (core AI hybrid, hybrid AI that involves humans)
 - 4?
- **To write a joint position statement** for something like AI magazine to outline the vision it may evolve to a book
- To build a joint data set repository Paul to drive this effort
- Two application areas were discussed:
 - AI for dealing with climate change, sharing practices on doing AI in energy efficient way lot of room for cross network collaboration and sharing best practices
 - Al for the acceleration of science natural sciences and engineering potential by pooling across the networks
- Micro projects concept and workshops would be a potential way to go about this

Collaboration between AI Centers of Excellence and DIHs

- Preliminary definitions of "AI Centre of Excellence" (CoE) and "DIH" were given together with three potential scenarios describing the relation between the two (i.e.the AI CoE legally representing the DIH or leading one as main partner, the AI CoE being part of a consortium of partners making up the DIH; the CoE having no legal links with the DIH but possibly collaborating with it)
- Afterwards, potential approaches to collaboration between AI CoE and DIHs were outlined, i.e. exchanging research and related outputs, fostering personnel mobility and sharing facilities and using the services offered by a DIH
- Following this, the survey on "Collaboration models between AI CoEs and DIHs" was presented. The goal of the survey is to explore the relations and collaboration activities between AI CoEs and DIHs in order to improve collaboration between them, ultimately reinforcing the link between Industry, Academia and Public Administrations.
- FBK then illustrated their digital transformation strategy on AI with EDIH partners and Co-innovation labs (using a proactive approach)


- The open discussion that followed was focused on the ways in which AI CoEs and DIHs collaborate, on the main obstacles to collaboration and on other ways of reaching the market rather than through DIHs:
 - DFKI highlighted the relevance of **AI TEFs and cross-border industrial testbeds** which are used by companies for digitalisation. The availability of datasets and algorithms (e.g. SoBigData project) was also mentioned as an important aspect of collaboration, especially with regards to their cross-border (re)usability and once individual research is over, i.e. sometimes it is not in the researcher's interest to make datasets and algorithms available to other scientists, thus incentives should be created in order to motivate them to do so
 - Obstacles to collaboration were identified: **excessive attention to complex bureaucracy/**communication aspects; the disconnect and differences between industry and research organisations leading to diverging interests, i.e. often they do not speak the same language and have different perspectives and goals for innovation **making use of existing infrastructures** is also very important
- Finally, the example of collaboration activities between DIHs and NoEs within TAILOR was presented by FBK

Collaboration on educational activities (AIDA etc.)

- Session focused on AIDA (AI Doctoral Academy)
- There are regular meetings with representatives from all of the NoEs governance structure is in place
- AIDA MoU universities are welcome to sign to become founding members of AIDA
- To develop the **European approach to AI curricula** (both content and structure). White Paper on that activity will be produced to take into consideration already existing programmes as well
- Activities are going very well



Appendix 2: Programme and report of the Second Community workshop

Introduction

The ICT-48 project *Value and Impact through Synergy, Interaction and coOperation of Networks of AI Excellence Centres* (VISION) is the Coordination and Support Action (CSA) project that coordinates and supports the four Networks of Excellence that have been set up within the ICT48 call on Trustworthy AI:

- HumanE-AI-Net
- ELISE
- TAILOR
- Al4Media

This report outlines a summary of the main topics discussed at the community event that the VISION project has organized to foster cross-network collaboration and identification of common topics. This event is the follow-up of an earlier community event that had to be organized online (because of Covid-related restrictions), but for the second ICT-48 Community Workshop it was desirable to organize a full day event in a physical location, Brussels.

Around 40 people from the AI research, innovation and policy ecosystem participated in the workshop. Representatives of the European Commission, the four NoEs, and other networks who have been invited across the AI, Data and Robotics community – in particular ELSA, AI4Europe, euROBIN and Adra-e.

The morning sessions (10:00-12:00) consisted of roundtables focused on topics. These topics were selected through a vote, as the participants could select three topics during registration. The roundtables were facilitated by VISION and aimed to create discussion across the participants. In the afternoon (13:00-17:30) two strategic topics were opened for discussion among the broader AI, Data and Robotics community: Mapping the AI ecosystem, and a European AI SRA.

Programme

Venue: Neth-ER, Brussels

Date: October 19th, 2022

- 09:30 10:00 Walk-in | Registration
- 10:00 10:10 Welcome by VISION Holger Hoos, VISION Project Coordinator
- 10:10 10:20 Programme and Household Claudio Lazo, VISION Event Chair
- 10:20 12:10 ICT-48 community roundtables on selected topics (in parallel):
- 10:20 11:00
 - Common Visual Identity Holger Hoos (ULEI), Eva Doležalová (CIIRC CTU)
 - Collaboration on educational activities (AIDA etc) Fredrik Heintz (Linköping University)
- 11:00 11:40



- Cross-network Scientific Challenges Tjerk Timan, Freek Bomhof (TNO)
- Cross- and Beyond Network Communications, Outreach and Awareness Eva Doležalová, Anna Tahovská (CIIRC CTU)

11:40 - 12:10

- Collaboration with industry *Philipp Slusallek (DFKI)*
- Collaboration with Digital Innovation Hubs Giovanna Galasso, Beatrice Bozzao (Interella Consulting)

12:10 – 13:00 Lunch Break

Afternoon sessions with a broader AI community: Broader discussions with the AI community on two strategic topics

13:00 – 14:10 A/ Mapping the European AI Ecosystem

13:00 - 13:15 Opening: The EC's view on SRA and ecosystem Cécile Huet, Head of unit DG CNECT A.1, EC 13:15 – 14:20 The Challenges of Information Infrastructure and Capacity Mapping: Lessons from **RODIN** and Adra-e Maurits Butter, RODIN Iddo Bante, Adra-e Discussion on AI Ecosystem Information Infrastructure and Capacity Mapping 14:20 – 14:40 Break 14:40 – 17:00 B/ Towards a European AI SRA 14:40 – 14:50 Towards a European AI SRA Fredrik Heintz, TAILOR 14:50 – 15:00 Categorization for a European AI Map and SRA Freek Bomhof, VISION 15:00 – 15:30 SRA Presentations of ICT-48 Networks NoE Representatives (AI4Media, ELISE, HumanE-AI-Net, TAILOR) 15:30 – 16:00 – Discussion on SRA Methodology 16:00 – 16:20 Break 16:20 – 17:00 Discussion on SRA Categorization 17:00 - 17:20 Wrap-Up 17:20 – 18:00 Project Coordinators Meetup with DG CNECT.A Director Lucilla Sioli

17:20 – 19:00 Networking and Social Gathering 19:00 – 20:30 Dinner

Report

The event was kicked off with a welcoming address by Holger Hoos, the project coordinator of VISION, emphasising the goals of the collaboration between the NoEs and the goals of the event. Holger highlighted that the goal the NoEs have in common is that we are all doing our best for AI



research and innovation excellence, and Holger presented a vision for AI. It is the key to better science through advanced computation. In 15 years many areas are to be connected to AI so we need scientific excellence in AI, and we need to invest in human-centered AI that meets European values. Connecting across groups is the way to make progress in science and is considered the EU way. The following years are a great opportunity for the NoEs to do that.

This was followed by some short words of welcome by Cécile Huet, the Head of the Robotics and AI Excellence and Innovation Unit (DG CNECT A.1), who was glad to see the networks together and stressed that it is important to work together to maximise impact – that her team joined the event because they gladly brainstorm with the NoEs and contribute to the impact and success of the projects.

After that, Claudio Lazo, the VISION chair of the event took the participants through the programme and suggested some process requirements – open, collaborative, connecting and curious. While VISION was responsible for note taking during sessions, people were encouraged to add to the live documents.

Roundtables

The roundtable sessions have addressed topics of common interest to the whole community. The choice of topics has been made after consultation of the networks. Some roundtable discussions were held in parallel.

Collaboration on Educational activities

An introductory presentation by Fredrik Heintz (coordinator of TAILOR) addressed the AIDA doctoral community, now containing 26 universities and courses, summer schools, sponsored events and excellence lecture series. There is a focus on learning outcomes - content, skills, methods, transferable skills, and integration with corresponding topics.

Discussion

There are challenges to get the students. Also mobility and recruitment is an issue. AIDA as a curriculum: it can be very rich but it is limited to the number of courses the university provides. The right approach is to collect existing courses and to meaningfully organize them. Developing courses is time consuming, and you say 'let's use H2020 funding to develop courses. There is a risk to overburden such a system. How do you do it in such a way that you're not eating from the wrong pot?

Other networks have tried similar things (HPC), and we should engage with them and learn from them. There is a positive impact from the AI ecosystem collaborating and then learning lessons from other areas, such as HPC (students winning prices) SEF calls. Another possibility is to set up strategic partnerships with those ecosystems.



AI Curriculum		
		Sustainable Al
Hybrid Al		ELSEC in Al
Layer 1 - Core Al Functionality	Layer 2 - Socially Embedded	Layer 3a - Socially Constrained
Search and Knowledge Machine Agent-Based and Optimization Representation Learning Multiagent systems	Humans and Al/ Human-Al Collaboration	Trustworthy AI*
Constraints and Scheduling and Reinforcement	Interaction	Human agency and oversight
Satisfiability Planning Learning	Collaboration	Technical robustness and safety
	Partnership	Privacy and data governance
Natural Language Computer Vision Processing	Symbiosis	Transparency
	Prosthesis	Diversity, non-discrimination and fairness
	Personal wellbeing	
Layer 3b – Socially and Phys	sically Constrained Infrastructures	Societal and environmental wellbeing
Distributed and Edge AI Robotics, Control and Autonomous Sy	stems	Accountability
AI Applied in Research	AI Applied in Society	Layer 3c – Socially Guided
Al applied as method for research in Medicine, Law, Social Science, etc. Al embedded in techni for managing societal infra	ology for improving health, decision making, ed astructures: business, transactions, transportat	lucation, etc. and ions, resources, etc.
The History a	Ind Futures of Al	Layer 4 – Emerging / Becoming
Epistemology, Methodology an	d Theoretical Frameworks	

Figure: WASP-ED AI Curriculum (draft)

The question is whether we can claim a 'European flavour' to education and how to make universities attractive and create an environment for startups/companies ("Is the EU cool enough?"). Talented people want to have challenges and create impact. If we're out there as Europe as a whole, we can beat the 'Tesla's'.

Wrap up:

- Collect the courses that are already out there and meaningfully organize them, rather than developing new courses.
- Learn from each other and from other networks
- The goal is to make EU studies attractive, attracting and retaining students.

Collaboration with Digital Innovation Hubs

Giovanna Galasso and Beatrice Bozzao (VISION) introduced the topic of collaboration between ICT-48 and Digital Innovation Hubs, and the goals for the session: exploring opportunities to collaborate, and to discuss how to effectively implement and foster the collaboration.

Interella Consulting performed two surveys to understand the state of the art in collaborating with DIHs. ELISE and TAILOR responded. They concluded that while collaboration between single CoEs and DIHs happens (even if not frequently), there are very few activities planned among NoEs and DIHs within the project plans, despite the input of their call for proposal. What emerged from the analysis was "a general lack of strategic interest between NoEs towards DIHs", potentially because they are mainly researchers in the NoEs and non-researchers in the DIHs. However, 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 programs.



Testing and experimentation facilities (TEFs) are more on the supply side, while the DIHs are more on the demand-side. It was suggested that the TEFS could bridge the gap between NoE and EDIH. Most of the NoEs look at HEU, but we need to connect it better to Digital Europe (they should not be so separate).

There are now multiple 'central' platforms, the DTA, the AI-on-demand platform, but who is in charge of collaboration between DIHs and AI NoE? Some of the DIHs won't need AI, in some places they will really need it. We need to find the right interlocutor to make things efficient, as the 'project' cannot talk to the DIHs. The ecosystem mapping effort may help this forward.

Wrap-up:

- Collaboration with DIHs happens, but not structurally. There is a "general lack of strategic interest from NoEs towards DIHs"
- TEFs could bridge the gap between NoEs and DIHs, and the NoE's need to connect better to Digital Europe initiatives.
- Who is the right interlocutor for catalyzing the collaboration between NoEs and DIHs?

Collaboration with industry

The session was chaired by Philipp Slusallek of DFKI. One of VISIONs overall objectives is to foster strong connections between academia and industry. This is done through industry panels, trend radars, theme development workshops, collaboration with DIHs and industrial visibility. TDWs bring together academia and industry, as they are cross-cutting and at the end of day at least a draft document on selected topics. ICT-48 should be one voice talking to the industry, rather than each network separately. Philipp went around the room to give the NoEs a chance to describe their industry efforts.

TAILOR provided an overview of their industry, innovation and transfer activities which consists of industry perspective on trustworthy AI, industrial use cases and an innovation program. Six themes with industrial partners: Smart industry, IT services and software, Public services, Mobility and transportation, Energy, Healthcare. They choose a sector, and invite AI people that work in this sector, but they could do it the other way around: AI topic and invite industry people for that. TAILOR balances strategic vision with activities to be done now (hackathons, workshops, to dos), and as a result, industry is now investing, which is a good outcome.

Al4Media performs several actions to collaborate with (media) industry. They have an Associate Membership framework to include industry representatives and an AIDA research and industry board. They provide research exchanges with industry, and funding to SMEs through open calls. Moreover, Al4Media publishes use cases that explore the use of AI in the industry, white papers based on real-life industrial needs, and engage with stakeholders in media sectors. They have SME partners but also an FSTP and connection with the young talent programme with academia and industrial board.

ELISE is active in industry, their fellows have lot of affiliations with companies (1 out of 2 ELISE fellows are startup founders, e.g. latticeflow.ai, Ellogon, spectacularAI), and they have open call funding for SMEs (16 projects selected from 391 applications in the first call -> success rate 4%). In the ELISE governance, there is an ELISE industry board, providing input and feedback to ELISE activities, and



there are research program leaders with double affiliations (Siemens, Qualcomm, Vodafone, Microsoft, NVIDIA, etc.). Moreover, they have a PhD and Postdoc that includes an Industry track (research at a European industrial lab, min. 6 months). A core goal for the programme is to strengthen the talent pool for European knowledge institutions and industry, and retain young talent in Europe during and beyond their degree. These participants can join multiple events with industry: ELLIS PhD and Postdoc Summit, (this year 19 companies participated) and the Career Symposium.

ELSA is building on ELISE's industry activities. They are just starting but they are trying to connect to the academics, industry and the community.

EuROBIN has an advisory board with industry and hubs; and they define the use cases and part of the FSTP is used for that; they maintain repositories of codes and repositories of companies which used the algorithms. For use cases they are implementing a set of challenges to support benchmarking and certification of AI algorithms relevant to the EU industry.

HumanE-AI-Net contributes to the Theme Development Workshops and engages industry in close synergy with TAILOR.

Discussion

The question was raised whether we should do something **across the networks**? or are the industry activities so separate that it doesn't make sense? And if so, where to collaborate? Do we want a common interface to the European interface? A portal (for lack of a better word). If an industry partner wants to talk to the networks, where and how should they connect?

Each network is now doing similar things with industry involvement and the overlapping part can be shared (maybe professionally) while the network-specific part can stay with the networks. Common challenges are: collecting different open calls, publishing the successful industry collaborations, visible for the community, clearly advertising success stories. Helping industry finding solutions; they might also find it difficult to find out which networks are interested in them and how to connect; first steps to get an overview of what is going on – mapping the ecosystem and then we can try to cluster.

As there are 6 networks it is hard for industry to find out what they are doing and to navigate the networks. It would be better to start from market segments (e.g. the six TAILOR focus areas) and find out what networks do on that particular topic, while showing what networks are offering to industry. A single point of contact is important for industry.

The networks must know or find out the industry needs, and the Commission points to both Adra and the AI-on-demand platform as places to bring them together. Moreover, interaction with industry is very different from interaction between universities. They might not even have a research department, and need the expertise and the surrounding facilities. Here, Adra can help too. As some companies are involved in multiple networks, it would be interesting to find out their perspective. There are a lot of different types of industry involvements, and most interactions are with applied research, close to engineering. Adra should be the driver.

Wrap-up:



- All NoEs are in some way supporting the connection with industry with their ecosystems and that is already a big portion of the work
- Industry finds it difficult to navigate all networks (and some are part of many), so at least minimal level of creating a landscape and then possible coordination needed to help industry (overview is good start here)
- There is a need to identify the needs of industry but also good practices on how to involve them

Common visual identity

As introduction to the topic, Holger Hoos presented the perceived challenges to visual identity and branding – to define a visual branding for AI made in Europe that clearly indicates joint commitment to European AI, preserves identities of NoEs, is easily recognizable and can be adapted beyond ICT-48. It is found similar to the challenge of designing the common Euro currency, which embraces the diversity and commonality.

The proposed approach is to take inspiration from the CE Certification mark, as an add-on to existing branding, so not to replace but complement when appropriate. It is a suggested design and does not need to be the one but a first proposal that we think is very good already; colours to work well on both white and black, these of colours (green and blue), different sizes, black and white background design should be rationalized (by designers) geometry and associated meaning. For instance, it uses circles and bridges, symbolizing building together (typically European). The use is voluntary and could be used as an addition. As a test, we have applied the Mark as a modifier to existing logos, is this the right approach?



Discussion

Another goal for the common visual identity is that we use this to create a sense of pride to be part of it, and that researchers can add this logo to their name or the networks. For the EC it is important that it is recognizable that represents the connection between the EU and AI. But all networks need



to be involved. The logo may be used broader (data, robotics), but it should be linked to AI NoEs and the AI-on-demand platform. Moreover, the AI-on-demand platform (being developed in 8 projects) is also dealing with this question of a common visual identity, so it is good to connect and find out where we differ and where we see synergies - The Platform is the community, not one network.

Beyond ICT-48: many other things contribute to European Excellence in AI, this should be captured beyond the networks. It should be something beyond the ICT-48 but also be used by the EC and the MS, etc. to create a recognizable identity. And ICT-48 is one piece that contributes to the overall idea of excellence in AI in Europe. For instance, we should also think of how ICT-49 could connect, with the caveat that it might be difficult to connect all existing parts and the different approaches to AI (e.g. Adra is connected to robotics).

About the Logo design: The Al-on-Demand platform is also developing a logo for branding. This (circular) logo was also shown and some synergy can be found probably to work together. Both Al and Europe should be clearly identified, and the possibility of aligning with the Commission colors should be explored. A discussion was held on putting the letters 'Al' in it: Something like this is being done in the high-level expert group (I.e. european stars around the letters 'Al'). According to professional designers it may be somewhat crude, you should not need to use the letters 'Al' to indicate it is about Al. Designers input is that we can go a bit more subtle than including the Al sign but this is of course up to debate. Moreover, Al comes with a lot of cultural baggage, people have expectations, associations, preconceptions etc.

Finally, it was suggested to organize a dedicated workshop, do user testing and see what people think. The target audience is the community of funded programmes first (building networks), and the general public second. For this, we should have a contact person from each network, and someone from the EC, and there is a tight deadline because the 40+ new projects should also use this branding.

Wrap-up:

- A common visual identity is a joint commitment towards excellence in AI while preserving the identities of the various NoE and friends
- The common brand can also be connected to other networks like the AloD Platform, but also create a sense of being proud to be part of the network (e.g. also with researchers)
- The first group to reach is the AI networks and then the general public
- The ICT48 task force and AloD to come together in a task force and involve EC

Cross- and beyond network communication

We started off with an introduction of the topic by Eva Dolezalova. The EC focused on synergies and also to align to the public so they are not confused; Currently the community is quite diverse and while we in ICT-48 have 2 more years, in the meantime new networks have emerged as well and it is important to connect. There are expectations for our communication of the results and outcomes. So far we have set up a communication club, shared repository, newsletter, Mattermost community (4137 users since March 2021), events and TDW, and some international outreach. Based on discussions with NoEs, exchange of talent is a first point.



Social media: For the NoE's, Mattermost is there, it's free and some groups are working very well with it, but some people would use Skype no matter what. Twitter is nice but making an impact and getting inputs from various projects might be difficult. A newsletter would benefit from automatic compilation and allowing people to subscribe.

Synchronized communication: We want to foster the communication of the outcomes across the NoE's and beyond, but the challenge is how to bring the communication of 44 projects together. Suggested is a joint task force, sharing good practices, and moving responsibility towards the communication teams of the individual projects.

What to communicate: A suggestion is to publish level-headed commentary on the many articles on AI that are nonsense. Many professors would be willing to contribute, but this needs organization; a lot of people are in thousands of projects and that also has a threshold on what brand to promote we need something more permanent; this could be the AIoD platform or in the case of Elise, through their own community. Blog posts 'debunking AI myths' are one way to go but this blog needs authority, and it might be slow in comparison to Twitter - making the connection with a professor working on the topic. Another aspect to the communication of the NoEs is overview of scientific results, as the NoEs are doing great things and this deserves attention.

Al-on-demand: In the session, two aspects of the Al-on-demand platform were highlighted: 1) Synchronize events with the AloD Platform, a timeline of events is also expected in the AloD which can also be used by the NoEs; 2) AloD is working on automatic sharing of results.

Wrap-up:

- Think on how to reflect with scientific arguments to the myths on AI and connect to partners
- Showcase the scientific results of the NoE
- Connection with AloD and other networks to align dissemination but also to connect events

Cross-network scientific challenges

Tjerk Timan and Freek Bomhof introduced the topic of scientific challenges across the networks, distinguishing between challenges that are *common to all networks*, and challenges that *emerge among the networks*. To get the group started, they used example topics from their own experience in the Theme Development Workshops. They distinguish between: breakthroughs <u>in</u> AI, breakthroughs <u>with</u> AI, key future capabilities and skills, key future assets and building blocks.

Quantifying or operationalizing values: The question 'how can we quantify trustworthiness and explainability?' induced from the participants a number of abstract concepts that are important scientific challenges across the networks: 'robustness', 'accuracy', 'human oversight', 'transferability', 'privacy'. Robustness is a dimension in 'trustworthiness' in the AI high-level expert group definition, and it appears that particularly 'explainability' stands out. Furthermore, it is both a challenge to measure these dimensions, and actually come up with the right dimensions. The level of abstraction determines how to activate what kind of research, for instance, the systems perspective which does not focus on individual AI components but where the main challenge is how to integrate into systems, e.g. healthcare practice, integrate into business processes.



Mechanisms: The participants used the rest of the session to brainstorm on mechanisms to stay up to date on challenges across networks. First, there are already a few mechanisms already in place to bring together people working on common themes: Mattermost, will also be extended to the new networks, Microprojects (TAILOR) or the connectivity funds. Second, events are a second way to organize this. Suggested events were the Theme Development Workshops, Dachstuhl sessions, more events like the ICT-48 Community Workshop, and AI4Media had open workshops on these themes which could be scaled up with all networks. It was advised against to start yet another forum, as the real challenge is priority and attention – getting more focused events. Thus, do not replicate scientific conferences as you want people who attend these conferences to dominate this.

Information sharing: Third, it comes down to a mapping of information (Afternoon session A) and identifying where people work on similar topics, identify commonalities and complementarities (learn from *portfolio management* in industry). To achieve this, a mechanism is necessary to identify what the networks do, so other networks can recognize this (to flag new SOTA/topics across the networks to the interested people). This is closely related to the development of the common SRA and ecosystem mapping and needs:

- 1) A common lexicon so that people know they talk about the same thing (AI categorization).
- 2) Curation of the material. For instance via the Al-on-Demand platform. Approach to curation would be to start a content creation group(s), e.g. with one person from each network. For this to be successful, it is important to make curation easy: make it part of already ongoing efforts, don't start with sifting through everything. There is broad support among the participants for curation where a link to papers comes out to the networks that the authors feel are relevant: one or two sentences.

Wrap-up:

- Do not replicate scientific conferences, but create shared focused workshops and curated lists to find each other. A lightweight mechanism per theme, but realistic.
- In scientific topics, besides the familiar challenges also think about social systems perspective, transferability
- A cross-network content creation team find a way to bridge across themes. But we need to organize it efficiently!

Welcome by the EC

Cécile Huet spoke to the participants on behalf of the Commission. She outlined the NoEs roles in the ecosystem of Excellence, and suggested steps for creating a vibrant network of AI excellence centres together with ICT-48 and new NoEs.

The EC views the Ecosystem of Excellence as a way "From the lab to the market", and NoEs are urged to become an active member of the AI Data Robotics Association (Adra), and to use the AI-on-demand platform for accessing and contributing public AI resources.

The role of the NoEs are to make Europe a research powerhouse for AI; increase Europe's attractiveness for scientists; ensure Europe's leadership in key strategic research topics; strengthen the AI-on-Demand platform with algorithms and tools; and to bring all European teams to the



highest level of excellence. ICT-48 should become a virtual center of excellence, offering access to knowledge and serve as a reference in their chosen specific field, including activities to ensure visibility. The projects are required to demonstrate progress and allocate tasks to cohesion activities with Adra, Adra-e and AI4Europe.

The EC suggests maximizing visibility through ADR project exhibitions, mapping the competencies in the "distributed lighthouse" of ICT-48 and highlighting; creating a common visual identity 'EU AI Excellence Inside', developing a sense of belonging to these lighthouses.

Maximize impact and sustainability through combining forces. Through a joint SRA for European AI; the use, deliver and share results via AI-on-demand platform; Becoming active within Adra and contributing to their SRIDA; sharing good practices and collaborating. Moreover, it is important to think about long-term sustainability: cooperating on making actions and lighthouses survive after the end of the project.

DIGITAL programme call for proposals

After Cécile's welcome, her colleague Arthur Tréguier (DG CNECT.F4) presented the latest call for proposals under the Digital Europe Programme. The topic is Masters and Bachelors programmes in digital technologies, and the call closes on **24 january 2023**. The call aims to increase the offer of EU masters and bachelors programmes, addressing a need for more ICT specialists and digital professionals in Europe.

Digital programmes in key technologies such as AI, blockchain, cloud computing, cybersecurity, data, extended reality, Internet of Things, microelectronics, photonics, quantum and robotics. Read the full call for proposals here: <u>DIGITAL-2022-SKILLS-03 (V 1.0)</u>

Session A: AI Information infrastructure and ecosystem mapping

This plenary session addressed the activity to map the AI information infrastructure and ecosystem.

Maurits Butter (RODIN) and Iddo Bante (Adra-e) presented the workshop titled 'A view on collective mapping: Challenges of infrastructure and ecosystem mapping'. In this session they aimed to initiate joint thinking on why mapping, for whom and what purpose it shall have (starting point), to identify strategies to develop an effective mapping approach for AI community (approach and content and to identify existing mappings initiatives to connect to. During the presentation, the participants divided into smaller groups for their assignments and came together again for plenary discussions of the outcomes.

There are three challenges for mapping initiatives: 1) Mismatch between the information and the user needs; 2) Engaging the target audience; 3) Efficient organisation of a collective mapping. The audience was asked who the main target audience should be, resulting in the following ranking (see the poll). There is a clear focus on academia and RTOs (83%), and on public authorities (67%).



Who should be the main target audience of the mapping according to you? (top 3) 24 out of 42 participants answered this question

83%	Public knowledge and research organizations (Universities, institutes, RTOs)	20 participants
67%	Public authorities (EC, regional/national authorities)	16 participants
50%	Commercial users of infrastructures (SMEs, start-ups, large companies)	12 participants
42%	Intermediary organizations (clusters, hubs, associations, consultancies)	10 participants
33%	Commercial infrastructure suppliers (commercial Al/robotics/etc solution providers)	8 participants
17%	Commercial infrastructure suppliers (commercial Al/robotics/etc solution providers)	4 participants
8%	General public	2 participants

Different stakeholders have different information needs, so it is important to think from the user needs to the data characteristics – what kind of indicator is necessary as input for their decision-making process?

The participants split into four groups (Intermediaries, Commercial users, Knowledge and research institutes, Public authorities) and discussed the pains, functions and necessary data for these types of target audiences. This generated an interesting list of pains and information to provide. One of the main conclusions was that any information provision needs to have a clear function responding to a need.

ntermediary organizations :	Pains :	Function of the information :	Characteristics of the information
e -	+	+	1
Maybe scientific societies and alliances of	More focused approach to topics	Identify expertise	+
esearch organizations belong to this too	Dependency on expert knowledge	Show involvement outside the local area	Easy to access and short, to the point
iGOs	Need for expert advice in specific topics	Be able to publicly show capability and	Mechanisms for giving access to expertise
ublic sector	Ensuring added value to their members	scope of the hub	Shared materials on specific topica ("you
lon profit associations	Not and the to the state of the	Finding added value to hub's partners	may want to read this beforw asking us)
ig companites have their own	or 'reinvent the wheel'	Identifying and coping overlaps, aligning	Contacts for expertise on certain topics within an organisation
ntermediary organization	Finding partners for collaborations on	Facilitate matchmaking	If not obvious from dataset,
ndustry associations	specific AI topics/services Intelligence on areas of growth,	documentation so able to understand its limitations (what the map doesn't cover)	
DIHS	Keeping pace with rapidly shifting research landscape	opportunity, trends	Exisiting collaborations
hink tanks (policy; civil society)		Helping in match-making for hub partners	Level of expertise on specific topics
			Level of expense on specific topics
			Balance being technically informed while accessible to those not working directly on a topic
			Related offerings
			Areas of expertise on specific topics

Commercial users



commercial users :	Pains 1	Function of the information :	Characteristics of the information Tr	
+	+	+	1	
buyers of digital AI solutions (b2b/ BI,	waiting games vs technological dept	front-runner info/ success stories	+	
backend etc)	Uncertainty on next ten years	Seek trends to build a business	presentations, quick overviews, market prospects, risk analyses, investments /	
Startups	not knowing yet what AI will offer and	transformation path	collaboration opportunities, sector- specific moves/organisations	
Research spinoffs	where and how to invest in	types of AI tools and offerings + what they		
SMEs	Users need to know that this information	on legal status and procurement (and	status of readiness, update, market outlook, needs (skills and assets)	
large companies	EXIST.	indonity and iP ())	Linkages between AI assets, network	
digital service developers	Improve efficiencies and cut costs	Place themselves in the Al value chain to fill a gap	aspects	
Integrators	Keeping up with competitors	husiness desision benchmarking market	Yellow pages of expertise and models	
Integrators	Understanding how AI can help their	knowledge	Infrastructure descriptions, access	
	application-oriented needs	Compliance to regulation or standards	conditions	
	pivot to AI: risks of geopolitical priorities, finding resources: large business decisions	To advertise services and propose their value	Information of expected return of investment	
	not knowing where to start on TAI' search	Linderstand how to transform an available	Use case oriented. Examples	
	for tools and talent, understanding / needing new partnerships	technology (e.g. an algorithm) to a tech component that is adapted to their	Use cases of AI in specific industry	
	Convince clients to use Al	specific needs		
	4	Find potential business partners		
		Support to a business model, what services are available, under what conditions		
		Find solution for specific clients		
		What solutions exists. Pro/Cons. For decision making		



public knowledge and research organizations	Pains :	Function of the information :	Characteristics of the information
	+	+	
- T	Limited duration of funded projects	Evidence of excellence/expertise	3
RTOS	Keeping the info in any "mapping tool"	P	Available unique expertise and knowledge
Public universities	updated	Finding bilateral funding	Available unique infrastructure
Líu	Submitted use cases are trivial, and not		Level of expected uswrs
FBK	amenable to research	Market scan	Use cases
	Speaking Different languages	Matchmaking	
Inria	Already existing platforms (Research Gate		
VIT	etc.) can lower the attractiveness to be just in another "mapping" tool		
Research university institute - CIIRC CTU	Provides fields of Al seconds have allow		
Fraunhofer	 Broader fields of Al research can cause a university institute hardly defines its clear profile as it has multiple expertise - this 		
TNO	might be challenging for the mapping (in which category etc.) - this can be also influenced by internal politics in the university (more competing units within one university)		
	Difficul		
	Lacking the knowledge of the real needs of the industry - what they are searching in Al-driven solutions		
	Many scientific topics with low application potential - hard to assess the value for industry		
	Narrow focus on some specific topic, low ability to see/know the context of the broader AI community		
	Finding commercial partners (in other countries) for consortia		

Public knowledge and research institutes

Public authorities

Public authorities :	Pains :	Function of the information :	Characteristics of the information
+	+	+	
Federal	There are so many other channels for a	Judging the quality of the work done /	+
EC	researcher to get information	results obtained	providing overall statistics
International	Aggregate information from individual	quantify and visualiize the eu reswarch	Good structure
international	networks	Provide overview	well searchable
National	We need to know where the capacity is, on EU level, not national	Aggregate information from individual	Visual map
Municipalities	To track output. In terms of IP generated, publications, adopted innovations,	networks	
	To capitalize on national funding		
	Find out where actions are complementary, duplicated, or leaving gaps		
	Identify the impact of actions		
	evaluate the standing of European research in the worldwide landscape		
	Explain how tax-payer money have bee spent		

In order to get the customers attention presentation must be effective; branding is relevant for the audience – sending the right message, so focus is essential; and the distribution channel is essential – It cannot be done alone and requires connections to many other organizations; and finally, it should be very easy for the others to forward it to their own audience as a trusted information provider. Maintenance and updating are very important.



For the last part of the workshop, the presenters focused on reuse of existing initiatives such as AI-on-Demand platform, ADRA-e, CLAIRE, ELLIS, DTA community platform, NL AI coalition, NL EDIH network repository, DIH-HERO, S3 DIH catalogue, EU hubs for data, DIH4AI. The participants brainstormed to find available databases and platforms (<u>Available databases | GroupMap</u>), and provided a long list of potential sources for information:

Available databases on Al	Available platforms on Al	Tr
+	+	
https://alindex.stanford.edu/wp-content/uploads/2022/03/2022-Al-Index-	The Observatory on Society and Artificial Intelligence (OSAI) AI4EU (ai4europe.eu)	
Reput Cinaster	Appl.ai TNO	
nttps://appi-ai-trio.nl/	ITU AI for good	
Joint Research Centre Data Catalogue - Al Watch Index 2021 - European Commission (europa.eu)	Vertex Al	
https://csrankings.org/#/index?al&vision&mlmining&nlp&inforet&europe	Adra-e webplatform	
Joint Research Centre Data Catalogue - Selected AI cases in the public sector - European Commission (europa.eu)	Stateoftheart.ai	
airankings.org	Kaggle	
loint Research Centre Data Catalogue - Datasets - European Commission (europa.eu)	Al on demand platform	
El 11/2/21/22 mans of lake and industry collaborators	Codalab, to organize challenges https://codalab.org/	_
Constanting on the structure constant and s	Microsoft Azure Machine Learning	
Google scholar	github	
Survey on Al in Nordic countries by Silo.ai	Artificial intelligence industry alliance AliA	
Connectionists	Papers with code	_
stanford Al index (yearly)	Amazon Web Services	_
euRobotics		_
arxiv 🕰	https://buogingface.co/	_
https://www.ai-startups-europe.eu	Pakazeat	
The AI Index (US focused with some relevant data)		
eurAl has limited information on members of their member organisations, could possibly help link to national associations, who have more info)	NI4EU	
EDIH database on competences DIH catalogue)		
NL AIC		
ellis.eu, contains lists of outstanding AI researchers, unit and research programs		
(in)famous data training sets (are they relevant here as well?) - large language models		
The TAILOR handbook of Trustworthy AI contains a lot of references		
The ones from AFIA, the French AI Society https://afia.asso.fr/		
ellis		
CLAIRE info on membership (currently partly internal, but can be made available to the ICT- 48 effort), covers more than 400 groups/organisations active in AI research)		

In conclusion:

- 1. Get the target audience and their needs clear
- 2. Make sure that the target audience WILL use it
- 3. Do not do it all yourself, but collectively. But distribute through different channels

Discussion

In order to map 'excellence', it is important to define a set of commonly understood indicators. In academia, there is a debate on who is 'excellent' and who is not. Indicators could encompass 'membership in a NoE', for instance.



One interesting line in the discussion was that - as researchers already have their network and their own overview of the field - for that purpose there is less necessity. However, in that case benchmarking would still be an interesting use of such a map. That would also have a good return-on-investment. The map should also not just provide topics (from a categorization) but also the experience in certain application domains.

It is an enormous amount of work and coordination and it is hard to keep everything up to date, so it requires efficient collection of information and overlapping mappings – where the overlap is minimized.

Session B: Towards a European AI Strategic Research Agenda

This plenary session addressed the steps to be taken to create a European AI Strategic Research Agenda. Fredrik Heintz, project coordinator of TAILOR chaired this session. First, Fredrik presented a suggestion for the joint SRA process, Freek Bomhof, from VISION, presented the preliminary work that TNO has already done on developing a categorization for a shared language, and representatives on behalf of ELISE, AI4Media, HumanE-AI-Net and TAILOR presented their SRAs.

Fredrik started off by highlighting that each NoE already has their own strategic research agenda (SRA) and that the EC has asked us to develop a joint SRA. Moreover, VISION has developed the first version of an AI categorization that can be leveraged for this joint SRA. The proposed plan is to form a Joint Editorial Board (JEB) with one representative per NoE, supported by VISION, engaging both the NoEs and the wider AI community.

Discussion

ELSA and euROBIN are happy to connect with the joint SRA and explore this. Moreover, it is suggested to involve Adra partners and connections. Fredrik is in both exercises to make a connection, but Adra does have a broader scope than research. Furthermore, it is unclear whether the joint SRA will have a curiosity-driven research vs. application-driven research focus.

AI categorization

Next, Freek Bomhof presented the AI categorization work that TNO did in the past year and how it ties into the planned work on joint SRA and ecosystem mapping.

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-		1000 E	国務関節	- 2 -		-
	COM Common		. ean 192 eau		-	
Same and and	04 644	-	100 million (100 m		Income and Andreasty I	

The categorization may be found <u>here</u> or as a PDF version (A0) <u>here</u>. Freek and his team created an first version for the structure using strategic documents (EU policy documents, Roadmaps and SRAs) and the AI WATCH report 'defining AI'. Next, they looked for concrete actions by the networks in



available project plans, NoE websites. Through their own effort and a workshop with VISION people they mapped the concrete actions of NoEs to the categorization structure. The result is a categorization that acts as a shared language, which is useful for: positioning your NoE, exploring strategic directions, finding others within a certain topic, comparing work within a certain topic, easier to describe pathways to impact in future proposals.

In order to test the categorization, they mapped some more recent SRA's (e.g. TAILOR, AI4Media) to the categorization and from that they drew the following lessons:

- 1. Most elements of current SRAs could be mapped without too much effort!
- 2. categorization is sometimes too coarse: For instance, 'Trustworthy and ethical AI' is too broad and should be further specified
- 3. Not all SRA content could be mapped: For instance, institutions or agencies that independently assess AI; Services (algorithm register) informing on usage of AI in the public sector; Controllability of AI.

Finally, Freek emphasised that a categorization does not yet make a roadmap. Compared to an actual map, the categorization gives the names and borders, but in order to plan a route, we need dependencies, priorities, timings etc. However, a good categorization is a major step for a common SRA. Also, it was identified that this approach would be featured on the EBDVF22 conference as well so that feedback from that part of the wider community can be incorporated.

Discussion

A major discussion point was the difference between this and the taxonomies that are used in the research communities. It should however rely on what the scientific community uses, and ensure that keywords from different AI communities are represented, researchers from other networks find their own topics in there and people from outside of the EU relate to the terms in the categorization. The JRC AI watch report uses AAAI and ICAJ keywords, to create a set of topics that is suitable for AI policy monitoring.

AAAI categories are relevant, but you don't find them because people are more elaborate in their text. These categories can be used in the same way as they are used in scientific papers: several are valid at the same time and they indicate the 'technical' AI domains that are involved. While the AAAI is good on technical topics, there is much more beyond the technical part and it is very challenging. Currently the community is heavily biased towards the tech push and development but AI has a broader application, so we need to not forget the social sciences and other fields. We should try to broaden the technical perspective and to include social sciences as well.

There were several comments to this initiative. First, the question whether you want to introduce dependencies (thereby making it an ontology) and increasing the complexity?; Second, that the AI-on-demand platform has done some similar work in the past, and that in Sweden there has been a similar exercise to come up with a categorization - we can combine and unify this. Finally, the question was raised whether this categorization can also be used for the mapping exercise. The answer is 'if possible, yes', as it is beneficial to have one common language.



AI4Media SRA (Vasileios Mezaris, CERTH)

The main objective of Al4Media - A European Excellence Centre for Media, Society and Democracy is to deliver the next generation of Al technologies for the Media Industry. Reimagine Al as a human-centered, trusted and beneficial enabling technology for media and society.

The foundations of the SRA are twofold: 1) A description of AI4Media's actions and 2) roadmap on media AI. The AI4Media SRA contains a lot of strategic information on different topics, an overview of the state of the art, a survey analysis, is available online, and connected to 35 white papers that explore the state of the art.



The first draft is expected on Nov 20, the final version is released on Dec 20. More on the Al4Media roadmap can be found here: <u>https://www.ai4media.eu/roadmap-ai-for-media/</u>



ELISE SRA (Jessica Montgomery, University of Cambridge)

Al as part of the EU objectives can help in achieving a healthier, greener, more digital, efficient society but there are also a number of AI failures; so how to bridge these aspirations and current status quo. The main focus for ELISE is how advances in AI research can help, and that a roadmap for safe and effective AI technologies.

The ELISE SRA has three goals: strengthening technical capabilities, improving performance in deployment and aligning with social interests. It is structured in themes and in programmes:



The aim of ELISE is enhancing research-policy connections: deepen the discussions with policy makers and imagine what the world could be with the help of AI and what it means to translate these results in practice. Progressing research, policy and practice is achieved by looking ahead to see emerging topics and issues that need to be on the policy agenda. Finally, Jessica suggested we use the contribution of AI towards societal objectives as a joined agenda.

The ELISE SRA can be found here: ELISE agenda and programs (elise-ai.eu)

HumanE-AI-Net (Paul Lukowicz, DFKI)

Paul starts with a thought-provoking quote from Picasso, to support their focus on human-centric Al which will help *asking* the right question, *find* answers and do things that you would *otherwise not be able* to do. Their USPs are: focus on AI that enhances human capabilities and empowers citizens; they consider both the individual and the society as a whole; they do dedicated research in ethical and fundamental rights. They bring together a unique community of people from HCI, social



sciences, law etc., and notable achievements are a collaboration network of 60+ projects, and microprojects, which is a core instrument.



The HumanE-AI-Net SRA can be found here: <u>HAI-Net-Deliverable-D6.1.pdf (humane-ai.eu)</u>

TAILOR (Fredrik Heintz, Linköping University)

The vision of TAILOR is to develop the scientific foundations for Trustworthy AI integrating learning, optimisation and reasoning to realise the European vision of human-centered Trustworthy AI.

- 1. **Trustworthy AI:** Explainable AI Systems; Safety and Robustness; Fairness, equity, and justice; Accountability and reproducibility; Respect for privacy; Sustainability; Towards Trustworthy AI
- Learning, optimisation and reasoning: Integration of AI paradigms and representations; Deciding and learning how to act; Learning and reasoning in social contexts; Automated AI; Foundational models
- 3. **Impact and Innovation**: Theme development workshops; AI in the Public sector; AI for Future mobility; AI for Future Healthcare

They identify 14 short-term and long-term scientific challenges, and develop measures and dimensions to assess trustworthiness in AI.

The TAILOR SRA aims to boost research on trustworthy AI by: 1) Aiming to boost research on Trustworthy AI by providing guidelines for strengthening and enlarging the pan-European network of research excellence centres on the foundations of trustworthy AI; 2) defining paths for advancing the scientific foundations for trustworthy AI and translating them into technical requirements to be adopted broadly by industry; 3) identifying directions for fostering collaborations between academic, industrial, governmental, and community stakeholders on the foundations of trustworthy AI. The full version can be found here: <u>D2.1-SRIR-ver-1.0.pdf (tailor-network.eu)</u>

Discussion

On the goal and process of the SRA: Many differences between the SRAs, a starting point is to analyze what they have in common and the differences and from there it is good that two networks (TAILOR, ELISE) offer to lead and that VISION is dedicated to facilitating the process, but available time is a condition. It is not required that the NoEs are agreeing on topics as it is also useful to learn what the different communities think of different topics. More nuanced, the networks do not necessarily disagree on topics but they express different positions ('flavours') towards those topics. Analyze and draw higher level conclusions, leaving room for the NoEs to position themselves.



On what should be in the SRA: A major theme in the discussion was the value of the common SRA to connect the NoE SRA's to missions, showing how the NoEs contribute to policy making as a lot of things that we are looking for are already embedded in policy documents such as policy briefs of the Commission (which go beyond the Horizon missions). One way of doing this is by focusing on 'moonshots' or 'deep dives' - more long-term questions (where do we want to be in 10-15 years? what does it take from the community to make that work?), with the side note that it cannot be exhaustive – but several bigger challenges should be fine.

On the relation to Adra: The Commission emphasized connecting to Adra and their SRIDA. Adra considers focusing more on the 5 mission areas of Horizon, so that the focus on societal benefits is clearer. If they do this, that could provide structure and support for our joint SRA as well. Within Adra the question is, how to bring industry into the missions?

Attracting talent: Missions will also enable us to build up talent. Students want to do good and not just make money. For students, e.g. a 'digital twin of the earth' is very challenging and engaging, so this type of challenge is very relevant.

Academic challenges beyond missions: Purely academic long-term challenges are also useful – there is also value in non-industry-driven challenges. The goals are quite broad but concrete goals also have value to make it very tangible; You might also think of broader goals that are super-ambitions.

Wrap-up and feedback

To close the event, we asked the participants to summarise their experience in one sentence. Here are some of the comments:

- Morning discussions were not long enough, they should have their own full-day workshops
- Brilliant, but be bolder and allow for more informal sessions
- Today felt like a reunion
- People are made of molecules, not pixels
- Getting people in the same room helps with making progress, but now make it happen
- ICT-48 networks are getting more and more of a community
- There's a trade-off between exploring and exploiting, after mainly exploring, it's time to exploit
- Good to see the various stakeholders face to face. More in-depth exchange, also during break, social gathering
- Meeting in person is excellent and makes a huge difference!
- The most important aspect was that we met in person. The interactions were invaluable. The content was also good.
- Strong community with many joint interests.

Feedback on the workshop

A limited number of people (6) gave feedback on the Community Workshop via the form. All of them were happy with the physicality of the event.





We have asked the respondents to rate separate elements of the event (sessions, agenda, organization, speakers) on a scale from 1 (not at all satisfied) to 5 (very satisfied). All the respondents voted 3 or higher, with on average very high scores. The roundtables have a slightly lower score, and the points of improvement suggest that they were too short for meaningful exchange.



The format of the workshop could improve in the following ways:

- Preparation time to make sessions more effective, and more targeted sessions, working together in small groups
- Roundtables having enough opportunity to exchange. Shorter presentations and more time for discussions. Better to have less topics but more time for each topic, so there is more time for the discussions around the topics.
- Discussions having action points, and more detailed actions for the next steps

The facilities (VISION / venue) could be improved as such:

- More diverse, inclusive facilitation
- More coffee in the afternoon
- The facilities were completely inaccessible for handicapped participants

Next steps

The inputs from the different sessions will be processed by the respective responsible partners in VISION working on the topics. Several concrete steps and distribution of tasks have already emerged as part of the discussion on strategic research agenda for instance. There is also good will and several pointers for further connection and collaboration among all the initiatives present (VISION, the Networks of Excellence, as well as other connected projects like Adra-e and Al4Europe).



The categorization developed will also be discussed in a session in Big Data Value Forum (on 22 November 2022 at 11:00 CET) to gather ideas and feedback from the broader community.

Materials

The set of detailed notes is found here: Notes ICT-48 community workshop

The presentations are found here: Shared



Appendix 3: Programme, report and materials of the Third Community Workshop

Programme

8:30 – 9:00 Walk-in

9:00 – 9:15 Welcome by VISION Holger Hoos – VISION

9:15 – 9:30 Welcome by the EC Lucilla Sioli – Director DG CNECT.A

9:30 - 10:15

The International AI Doctoral Academy (AIDA): Achievements and future potential Filareti Tsalakanidou, Ioannis Pitas, Nicu Sebe – AI4Media

This session aims to present the main AIDA achievements so far and discuss ways to expand AIDA in terms of members, educational offerings, and impact. The topic of AIDA's sustainability after 2024 will also be addressed.

10:15 – 10:45 *Coffee Break*

10:45 - 11:30

Sustainability of NoEs and their activities within the AI, Data and Robotics ecosystem Jozef (Joost) Geurts – VISION

The network of AI excellence centers (NoEs) play an important role to support the development and uptake of AI across the EU economy and public administration. In this session we present an overview of the initiatives launched by the EC that contribute to this objective, complementing and leveraging upon the activity of the NoEs and their results. We will discuss mechanisms to maximize and sustain the impact of the NoEs within the ADR ecosystem.

11:30 - 12:00

AI Ecosystem Mapping

Joachim de Greeff, Freek Bomhof – VISION

In this session we will present the status of the of the AI Ecosystem mapping exercise which is to be conducted with the 6 NoEs. Furthermore, we will reflect on the process and outcome, and discuss ideas for a follow-up phase.

12:00 – 13:30 Lunch Break

13:30 - 14:15

Developing the joint strategic research agenda (SRA)

Fredrik Heintz – TAILOR, Jessica Montgomery – ELISE

The joint strategic research agenda is a collaboration across Al4MEDIA, ELISE, ELSA, euROBIN, HUMANE-AI, and TAILOR. It will highlight shared areas of research interest across the current ICT-48



networks. This session will introduce headlines from the joint agenda and give space for discussion about this work.

14:15 - 15:00

Connecting research to industry Philipp Slusallek – VISION

In this session, the Networks of AI Excellence will present and discuss the main achievements to link research and industry. Based on these best practices, an outlook will also be given on the most successful mechanisms for research-industry collaboration opportunities beyond projects, including Digital Innovation Hubs (DIHs) and Public-Private Partnerships (PPPs).

15:00 – 15:30 *Coffee Break*

15:30 - 16:15

Common Visual Identity and "AI made in Europe" brand Holger Hoos, Eva Doležalová – VISION

In this session, we present the design and intended use of the common visual identity as developed by the NoEs, followed by a discussion on maximising visibility and impact

16:15 – 16:30 Break

16:30 – 17:15 Looking beyond the Horizon Géraud Guilloud – VISION

The network of AI excellence centers (NoEs) are a central piece of the EU R&I landscape on AI. This landscape is evolving and the preparation for the R&I landscape in the next MFF have started, notably with the Open consultation beginning of 2023. This session will gather early input from the NoE on the shape of the future innovation landscape on AI as from 2028, in order to insure the continuity of the impact generated by the NoE and face the future research and innovation challenges on Artificial Intelligence.

17:15 – 17:30 Wrap-up

17:30 – 19:30 Free time for networking

19:30 - 21:00 Dinner

Reports

Session 1: The International AI Doctoral Academy: Achievements and future potential -Filareti Tsalakanidou, Nicu Sebe (AI4Media)

Objective: This session aimed to present the main AIDA achievements so far and discuss ways to expand AIDA in terms of members, educational offerings, and impact. The topic of AIDA's sustainability after 2024 was also addressed.



Main outcomes: AIDA aims to nurture the next generation of AI researchers and to be a reference point for AI education. With this in mind, the initiative has achieved significant progress with 75 members, 58 Universities, 19 research institutes, ~500 members in various roles, all supported with courses, educational resources, lectures, PhD curriculum, support of events, etc. ICT-48 projects contribute to AIDA. NoEs were encouraged to provide even more support, e.g. by offering lectures on a broader set of topics (beyond ML), becoming members, asking students to connect, disseminate and promote through their own network, etc. AIDA is also considering its next steps, already thinking on the sustainability and needs and working towards:

- Delivery of curriculum
- Expansion of members (lecturers and students)
- More and better course offer
- Enrich educational repository
- Improve website
- AIDA alumni network
- Promote international collaboration;

The discussion highlighted the support and the excellent results of the AIDA initiative, while AIDA representatives expressed their wish for further increasing the NoEs involvement. Discussion on sustainability beyond the project also took place with ideas ranging from connection to ADRA, connection and contribution (e.g. on content) from current and future NoE projects, and possibly connections with other networks and initiatives like ESSAI. Expansion of activity beyond Europe was also discussed but the need for support from EC on that topic was highlighted.

Session 2: Sustainability of NoEs and their activities within the AI, Data and Robotics ecosystem - Jozef Geurts (VISION)

Objective: The network of AI excellence centers (NoEs) play an important role to support the development and uptake of AI across the EU economy. In this session, the objective was to discuss mechanisms to maximize and sustain the impact of the NoEs, and look forward towards the future innovation landscape on AI. The session was led by Joost Geurts and was the first part of a dual session (second part in the afternoon).

Main Outcomes: The session started with a discussion based on the White Paper on Artificial Intelligence: a European approach to excellence and trust¹ and explored to what extent the paper can still be considered a blue-print, and whether there are missing elements. The discussion pointed out that the white paper highlights areas where the efforts can be focused (synergies, talent,

¹ White Paper on Artificial Intelligence: a European approach to excellence and trust (europa.eu)



light-house research). Yet, the discussion also pointed out that higher ambition and efforts are needed.

The group also discussed how to sustain the impact of the NoEs in the EU ecosystem, echoing the same sentiment for more clear and ambitious goals connected to needs. These elements need to be underpinned with higher investments (following the example of the Chip Act), instruments (like joined undertakings), and longer-term ambition to connect the different initiatives together. Examples from outside Europe, such as Canada were also highlighted as potential inspiration. Some of the further ideas are depicted in the menti-meter results (see below).

cosystem of excellence'?		
le need to find a way to continue the efforts started, how is challenging question	Can the next NoEs take up some instatives?	some funding to sustain the community and enable them to stay in contact
onvince EC to provide sustainable funding (as to prevent arting over with new projects)	Support bottom-up, self-sustaining communities of research and practice	Set clear goals for collaboration with long-term incentives.
ovide longer-term funding, incentives for sustained cluties rather than short bursts of 3-4 years.	Indeed continuation of existing successful initiatives is important	Radically charge the EC approach to building and subtaining the ecosystem of excellence. Follow lessons learned from the Canadian model.
w to maximize and sustain the i osystem of excellence' ?	mpact of the NoEs within the Europ	ean 15 Answers
w to maximize and sustain the is osystem of excellence'? ffer 1Meuros prize for some extraordinary project that acesarily involves several of the technologies we want to omote (see e. g. Darpa challenges)	mpact of the NoEs within the Europ	Can to be an

Session 3: AI Ecosystem Mapping - Joachim de Greeff, Freek Bomhof (VISION)

Objective: The third session of the day discussed the status and way forward of the AI Ecosystem mapping exercise, aiming to map the particular AI topics on which researchers are working on in Europe. The idea was to gather this input starting with the mapping within the 6 NoEs and later-on expanding beyond VISION and the NoEs. The session was led by Joachim de Greeff, Freek Bomhof



Main outcomes: The work towards the ecosystem mapping has benefitted by a collaborative, community driven approach: a representative from each NoE sits in a

Working Committee, with additional input from the EC. So far it was agreed that the collection of the data can be done via a survey but it proved challenging to find a categorization of topics that is sufficiently inclusive (everyone agrees with) and is also practical. In the session, it was therefore discussed how to proceed and whether the AAAI keywords can be a way forward. The discussion highlighted the need for right granularity, recognizing that it is impossible to include all topics, the need to periodically check if the topics are still relevant given the quickly moving research field in AI, as well as to work with topics recognized by the community and those previously agreed upon by the representatives of the networks of excellence (it was noted that the AAAI is a categorization used in the US and we might need a different approach in EU).

Following the discussion and a vote (For=12, Against=0, Abstain=3), the group decided to:

- Continue with the previously agreed upon list of topics with the Working Committee.
- In addition, respondents to the survey should be able to select lower-level topics based on AAAI keywords as well as promote new topics (also towards higher-level categories).
- To enable updates of topics to remain relevant, a body/committee will be suggested to be set up (e.g. from the NoEs or ADRA) to meet once a year to see if changes in the higher level topics are needed based on the promotion of topics by the community.

The decision will be communicated with the Commission with the aim to proceed with the outlined plans and the survey shortly after that.

Session 4: Developing the joint strategic research agenda (SRA) - Fredrik Heintz (TAILOR), Jessica Montgomery (ELISE)

Objective: The Joint Strategic Research Agenda (JSRA) is a collaboration across AI4MEDIA, ELISE, ELSA, euROBIN, HUMANE-AI, and TAILOR (via joint editorial board). It will highlight shared areas of research interest across the current ICT-48 networks. The objective of the session was to introduce headlines from the joint agenda and discuss the results and future plans with the community. The session was led by Fredrik Heintz and Jessica Montgomery.

Main outcomes: The first version of the JSRA has now been prepared (almost done), outlining 8 research challenges and a number of research topics covered within the document. The future plans include: (i) Finalization of the Joint SRA and publish it by the end of the month (June), (ii) Meeting in Brussels with the NoEs and Adra organized by the EC, (iii) Disseminate the Joint SRA broadly and widely to maximize impact.



During the discussion, it was highlighted that the JSRA represents the current view, a snapshot in time. Given the speed of research in AI, it is not always possible to predict what topics might emerge or how big their impact could be. Therefore, it was suggested that the need for flexible instruments to enable researchers to pursue new relevant topics should be acknowledged. Suggestions were also made to include a summary about where we think research will develop into the next few years (this is already there but can be highlighted). It was also discussed that a second version of the JSRA is planned and this might be a way to capture the future needs and input from the community on topics missing can be considered. The distinction between the JSRA and the ADRA research agenda was explained with the broader scope of ADRA.

Last but not least, it was noted that the JSRA might have influence on the future research programmes on EU level and therefore the community needs to be satisfied with results before communication with EC and the public.

Session 5: Connecting research to industry - Philipp Slusallek (VISION)

Objective: In this session, the Networks of AI Excellence presented and discussed the main achievements with regard to establishing a link between research and industry. The session was led by Philipp Slusallek (VISION, TAILOR), with panel speakers including Elizabeth El Haddad (VISION), Beatrice Bozzao (VISION), Danae Tsabouraki (AI4Media), Bernhard Nessler (ELISE), Paul Lukowicz (HumanE-AI-Net), Mario Fritz (ELSA) and Christophe Leroux (euROBIN).

Main outcomes: During the session, NoEs and VISION presented highlights of their industry collaboration activities. The following activities were noted:

- VISION: one of the objectives of the project is to foster the industry and research connection, in addition to connecting the NoEs. To this effect, VISION has been active to: (i) in collaboration with the NoEs and specifically Tailor, two cross-network Theme Development Workshops have been organized with industrial partners; (ii) a cross-network Working Group has been set up with the NoEs to exchange knowledge and best practices, scout novel ideas, focus on AloD, integrate roadmaps; and (iii) the possible connection with (E)DIHs has been explored via a couple of surveys and outlining options for collaboration.
- TAILOR: the network highlighted their approach in research and industry by (i) organizing Theme Development Workshops with industry and research to collect use cases and foster collaboration, (ii) as well as supporting industrial use cases and hackathons. A task force on hackathons has now also been established.
- Al4Media: the network noted that connection between research and industry is supported via activities such as (i) 7 use cases led by industrial partners and inspired by real challenges as a main building block for industry research collaboration in the project, (ii) demonstrators that demonstrate the applicability of the research and ai components in real-world settings, (iii) 7 white papers that present industry needs and challenges led by industrial partners, (iv) collaborating with a network of industrial partners.



- ELISE: the network highlighted some examples of collaboration supported by: (i) ELLIS PhD +industry track which aims to support PhD students by joint supervision by industry and academia supervisors; (ii) the cascade funding instrument used to initiate SMEs/start-up projects supported by scientific advisors, (iii) increasing innovation in AI certification process by for instance a functional trustworthiness requirements.
- HumanE-AI-Net: the network pointed that their overall strategy is to integrate and collaborate with different players in the ecosystem, which is done via instruments such as (i) Micro Projects to foster industry and scientific integration and foster the transition of knowledge, (ii) connect to industrial representatives via the connected associations and conduct workshops with them to identify needs of industry and work with them on a research agenda, as well as (iii) connect to the innovation ecosystem via e.g. events (like conference) with the objective to connect to business actors and Venture Capital to research.
- ELSA: the network highlighted their objective to support trustworthy AI, including all actors. The connection between research and industry is supported via methods such as (i) grand challenges and use cases - the industrial use cases are developed with industrial partners and scientific partners as well as supporting innovation for instance via the (ii) Innovation lab which supports socially-beneficial innovation
- euROBIN: support the connection between research, innovation and industry via (i) aiming to create a community that shares tools and results between industry and academia, where the network has a role to boost participation and well as (ii) leveraging on the connections of the network and industrial partners to attract robotics young professionals (tech and career match-making).

During the follow-up discussion, it was noted that the collaboration with industry is beneficial as, by collaboration you can get more targeted research. Further, several possibilities to collaborate were raised, including

- cross-participation in events, such as inviting industrial partners/connections from the different networks to each other's events in order to bring them together;
- Exchanging best practices among the networks (and challenges) in general but also with regard to concrete topics such as acquiring computing resources
- communicate the impact of the research and the collaboration in the NoES in the longer run, e.g. by joint collection of success stories (from companies).

Session 6: Common Visual Identity and "AI made in Europe" brand (Holger Hoos, Eva Doležalová)

Objective: In this session, the design and intended use of the common visual identity as developed by the NoEs was presented, followed by a discussion on maximizing visibility and impact. The session was led by Holger Hoos, Eva Doležalová.



Main outcomes: The objective of the common visual identity is to Highlight EU excellence in Al research and innovation, commitment to achieving global leadership in development and deployment of human-centric, sustainable, secure, inclusive and trustworthy AI technology. For that purpose, two versions of a common logo modifier have been developed, respectively noting 'AI Made in Europe' and 'AI NoEs', to be used depending on the audience and purpose. The logo options were consulted with the community with a survey with about 70 respondents.

Several suggestions and decisions were made during the meeting:

• Preference for options on the main logo, including claim (see slide 8): In total, Option 1A received 9 votes and option 1B received 1 vote. Three people abstained due to lack of preference and 2 people abstained because they thought that neither option was good.



- proposal to include in the brand book a suggestion that when more than one NoE is included in a presentation, the "AI Made in Europe" is used with the NoEs around it (to avoid messy pictures). In total the votes were: Yes=17, Against=1, Abstain=2.
- Discussion also took place on whether to reverse whether the network or the AI made in Europe logo should be bigger but it was decided to continue with currently suggested approach (stick to current approach =15 votes, open the discussions and explore option=5);
- An idea was also supported to suggest to EC to establish a connection to the logos, with corresponding web pages explaining what AI made in Europe is and respective links that lead to the respective networks of excellence (approved with 18 votes supporting and 0 votes against).



• The question on whether an official trademark will be launched was also raised. It was considered a good idea but this is outside the scope of VISION and the NoEs and should be taken up by EC.

Session 7: Looking beyond the Horizon - Géraud Guilloud (VISION)

Objective: The network of AI excellence centers (NoEs) are a central piece of the EU R&I landscape on AI. This landscape is evolving and the preparation for the R&I landscape in the next MFF have started, notably with the Open consultation begin 2023. This session gathered early input from the NoE on the shape of the future innovation landscape on AI as from 2028, in order to ensure the continuity of the impact generated by the NoE and face the future research and innovation challenges on Artificial Intelligence.

The session is a continuation of the 2nd session by Joost Geurts, about sustainability within the ecosystem. The participants were taken through the complexity of the European AI landscape, highlighting that 2028 is a year of uncertainty – as projects but also programmes will be finished. As the policy process is long, it is important to start thinking on this from now as budgets, topics will start being discussed. Géraud recapped the process for Horizon Europe, and where AI is part of it. He showed a gap analysis of the public consultation on HEU – showing that AI and robotics might end up in future policy discussions.

Main outcomes: the session elicited in an interactive discussion, where Géraud polled the satisfaction of the participants with NoEs as instruments for excellence in AI. After voting (see figure below) there was a discussion on the expectations that were set, and whether funding matched that.



Next, participants were asked what they would like to have removed from the NoE as an instrument. Discussion centered on the following topics:



Overlapping activities and the reduced capacity to do other things

- The dependency on funding which may stop after 4 years, and the dependency on more investment down the line and whether this is the responsibility of the NoE to solve.
- Involvement of sufficient researchers in the basic research agendas
- Overhead of sustaining the EU network besides supporting research

Second, it was gauged whether a joint undertaking (JU) would be a solution. This resulted in a discussion about tradeoff between scale benefits and complexity of the JU, and the difference between European goals and academic freedom, meaning to separate roles in AI prioritization by policy makers and research topics definition by the community.



Third, Géraud asked participants how they see the form of the NoEs in the future. Participants argued that basic research is not self-sustaining, thus requiring public funding, and that it is not the job of research networks to be self-sustaining. This was followed by a discussion on what a successful model for AI investment is, where the Canadian model is mentioned.

Fourth, a poll was held on what should be the priorities of funding in the next framework programme - in order of rank from 1st to 5th: Research (excellence), Infrastructure, Collaboration (network), skills, take-up. A discussion on the order of the results, mainly on take-up of AI took place. It was argued that investing in take-up does not necessarily give the expected desired results if the objective is not clear e.g. or people may still use non-EU or not trustworthy AI systems.

Finally, common challenges for the NoEs were elicited. Among the suggested challenges, there were specifically discussions on:

- Infrastructure that supports and enables collaborative research
- The value of NoEs in connecting researchers to other initiatives



- The speed of development and a call for ambition from policy
- Informing the effort of the NoEs by a broader societal community

hat are the grand challenges for	the Al ecosystem? 15 Answers	
o preserve European technological ndependence and sovereignty in AI (the key driver of progress and prosperity in all sectors, all ciences and all of engineering).	To form critical mass and achieve news-worthy, global impact (which will requires more, and more focussed investment into the ecosystem of excellence).	Increasing dependence on key AI technology and capabilities (notably large generative models) fror a few US-based companies.
Ve urgently need a hardware/software Ifrastructure to support collaborative research on	Trusted AI (providing guaranties), Large AI models, Neuro-Explicit Models, Causality, Grounding,	Trustworthy generative AI
avanced At pipelines.	Playing catch up	European Technology Ecosystems; Al Solutions fo Empowering Europeans in Digital Centenary; Al fo Independent Energy Diversifications & Systems
nodel		VISICAN
reating AI in collaboration with the public, so that ser keeps understanding its riks and advantages.	Unclear legal position of Al	Fear from Al instead of embracing the opportunities
lentifying the critical technologies to push for EU overeignity and agenda. Choices are necessary iven the catching up needed.	Update our AI education programs to be ready for the new skills that need to be developed to catch up with the new reality faced with LLMs	the societal and economic impact of massive use of Al tools /services that affect how individuals and companies work and operate.

The discussions and connections continued after the event as part of the social programme.

Materials

Sessions were accompanied by slide decks and open discussions as well as mentimeter polls All available slide decks and polls are found <u>here</u>.



Appendix 4: Programme and report of the Fourth Community Workshop

Programme

Day 1 - Community workshop

8:30 - 9:00 Walk-in

9:00 – 9:10 **Welcome** Room: *Amphitheatre* Chair: Yiannis Kompatsiaris (AI4Media) – <u>live-streaming</u>

9:10 – 9:45 **Discussion on the future of AI research and innovation** Room: *Amphitheatre* Cécile Huet, EC DG CONNECT (online) <u>live-streaming</u>

9:45 – 11:00 **Highlights of the NoEs and introduction of the new NoEs (dAIEDGE, ELIAS, ENFIELD)** Room: *Amphitheatre* Chair: Nicu Sebe Speakers: 1 representative per NoE *live-streaming*

11:00 – 11:30 *Coffee Break*

11:30-13:00 Parallel Workshops 1-3 Parallel Workshop 1: Evaluating and Auditing, versus Safe and Secure by Design AI Systems Room: Zefyros Organisers: ELSA and ENFIELD

Parallel Workshop 2: Navigating Interdisciplinarity

Room: *Library* Organisers: AI4Media

Parallel Workshop 3: #EuroGen: Mapping the Future with Generative AI

Room: *Amphitheatre* Organisers: euROBIN and HumanE-AI-NET *live-streaming* 13:00 – 14:00 Lunch Break

14:00 – 15:30 Parallel Workshops 4-6:


Parallel Workshop 4: Next-generation infrastructure federation: a Virtual research lab for edge AI

Room: *Library* Organiser: dAIEDGE

Parallel Workshop 5: Assessing and Enhancing Fairness in AI Systems

Room: *Zefyros* Organisers: AI4Media and ELIAS

Parallel Workshop 6: NoE collaborative actions: Joint SRA and Ecosystem Mapping

Room: *Amphitheatre* Organisers: VISION, TAILOR and ELISE <u>live-streaming</u>

15:30 – 16:00 Coffee Break

16:00 – 17:00 **Worldcafé on sustainability of the NoE community** Room: *Amphitheatre*

17:00 – 17:30 **Closing town hall** Room: *Amphitheatre*

20:30 – 22:00 Dinner – Kantouni restaurant

Day 2: AIDA symposium 'AI education beyond borders'

8:30 - 8:50 Walk-in

8:45 – 9:00 **Welcome** Room: *Amphitheatre* Symposium Address by Prof. C. Feidas, Rector of Aristotle University of Thessaloniki Chair: Ioannis Pitas (AI4Media) <u>live-streaming</u>

9:00 – 10:00 <u>AI University Education</u> Room: *Amphitheatre* <u>*live-streaming*</u> Organiser: Efstratios Gavves, University of Amsterdam Panelists: Evangelos Kanoulas, University of Amsterdam; Vincenzo Lomonaco, University of Pisa

In this panel, we will discuss how AI already impact and will continue impacting higher education, not only in AI and computational sciences but also natural sciences and humanities. What are the building blocks of AI, which of them will be critically needed for other sciences, what is the best way to deliver this education? In this panel we will be focusing on all these questions.



10:00 – 11:00 Track 1: Training AI Expertise for Europe: Initiatives and the EU AI PhD Curriculum

10:00 – 11:00 Track 2: First responders education on AI for natural disaster management

11:00 – 11:30 Coffee Break

11:30-12:30 Track 3: Harnessing Generative AI for Inclusive Global Education

12:30-13:00 AIDA and AIoD platform and experience

13:00 – 14:00 Lunch Break

14:00 – 15:00 Track 5: Innovation for Education: How AI can revamp long-life learning

14:00 – 15:00 Track 6: Al in journalism and misinformation: Overview, audiovisual applications and media literacy needs

15:00 – 15:30 Coffee Break

15:30 – 16:30 <u>Track 7: AI tools in education</u> (impact of LLMs and Generative AI in education, exams, essays)

15:30 – 16:30 Track 8: AI PhD and Postdoc education: ELLIS experience

16:30 – 17:30 **ICT-48 Sustainability Session** with the EC representatives, chair: Cécile Huet, EC DG CONNECT (remote)

17:30 – 18:30 AIDA General Assembly

Report

Session summaries

Highlights of the NoEs and introduction of the new NoEs (dAIEDGE, ELIAS, ENFIELD) Chair: Nicu Sebe

Significant attention was given to the achievements of the NoEs. Besides the scientific work that has been conducted by the Network of Excellence centres and resulted in currently almost 2000 scientific

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papers and publications in peer-reviewed journals including data sets and software in open access repositories, the NoEs are also active in multiple areas either jointly or in their respective focus areas. Key achievements include:

- a joint strategic research agenda providing a roadmap to push European AI research and development forward;
- a joint ecosystem mapping for AI-Data-Robotics to give an integrated overview of Europe's capabilities and competencies of the European AI ecosystem in R&I;
- the International AI Doctoral Academy (AIDA) giving access to a world-class AI education and research programme, including 158 registered lecturers, 82 courses and over 50 lectures in the AI Excellence Lecture Series;
- a standardized AI Ph.D. curriculum that is both comprehensive and reflective of the latest advancements in the field.

Other important achievements include academia-industry collaborations, scientific exchange and collaborations such as competition and junior research exchange programmes, as well as having a positive impact on society and sustainability by creating for example the AI Media Observatory.

Workshop 1: Evaluating and Auditing, versus Safe and Secure by Design AI Systems Organizers: ENFIELD and ELSA

Al systems are increasingly used to drive decision making and control, including in security- and safety-critical application domains.

The recent approval of the AI Act in EU introduces a strict regulatory framework for AI-powered systems that foresees clear obligations to assess and reduce risks, to be transparent and to ensure human oversight.

Being able to state with certain confidence that an AI system will behave within its designed limitations and will comply with such regulatory requirements is a sine-qua-non condition for the controlled deployment of AI. This becomes especially important for general-purpose AI models that can be used to power a wide range of applications, some unforeseen at the time of their development.

Following by-design principles for developing safe and secure AI is essential. But over and above being safe and secure by design, AI systems should also be "auditable by design", providing enough insight and transparency about the underlying models and the training procedures employed to enable third parties to continuously evaluate their behaviour in a range of scenarios. In parallel, new tools and techniques should be developed to power the right AI auditing mechanisms, that must go over and above typical performance evaluation and benchmarking.

In this workshop we expect to discuss and debate on the issues above and identify ways for the networks of excellence to practically contribute towards developing meaningful AI auditing tools and procedures.



Workshop 2: Navigating Interdisciplinarity: Leveraging Insights from ICT-48 Projects to Enhance Synergies Across Academic Disciplines Organizers: Al4Media

In this hands-on session, we collect good practices, do's and don'ts, and also identify what next steps could be taken to take interdisciplinarity to the next level. The workshop started with a panel discussion on why interdisciplinarity is essential for doing research on responsible AI. It will bring together legal, regulatory, computer science, and practitioners' perspectives. Then, the participants will be invited to reflect on the following questions: (i) lessons learned: what it takes to lead an interdisciplinary project; (ii) how to evaluate and reward interdisciplinarity; (iii) lessons for program officers and funders on how to enable and facilitate interdisciplinarity. The workshop will conclude with suggestions for researchers, funders, and evaluators of the EU-funded projects.

In this workshop, we will critically reflect on the issues above and identify ways for the networks of excellence to contribute towards meaningful interdisciplinary AI research.

Workshop 3: #EuroGen: Mapping the Future with Generative AI Organizers: euROBIN and HumaneAInet

This session acts as a launch pad to discuss: 1) what have we achieved as networks of excellence regarding generative AI, and 2) what is needed to create more prominent collaborations and how can the EC help with that. We talked about topics like how will genAI transform the research scene, particularly in robotics and activity recognition, the impact of human-AI collaboration on society as a whole, impact of GenAI on industry. We focus on investigating how can the new funding calls target the current GenAI challenges in Europe. By examining these aspects, the session aims to provide insights into the transformative potential of GenAI, stimulate collaboration, and chart a course for future advancements with EC backing.

35+ experts from the networks of excellence, ADRA, AI4Europe and the European commission attended and contributed to identifying core research challenges for advancing GenAI in Europe. The workshop saw 4 experts talk about the core challenge for GenAI in Europe: Paul Lukowicz (DFKI) spoke about grounding GenAI in the real world. Rudolph Triebel (DLR) and Michael Beetz (DLR) complemented the vision and spoke about ways to give robots perception and cognition. John Shaw-Taylor concluded the pitches and spoke about human-centred human-AI collaboration.

Most suggestions focused on research proposals targeting low-resource multimodal GenAI, human-robot interaction and physical grounding of AI in the real world. Participants found that we should focus on GenAI applications in health, digital industry and climate change.

Concrete follow-up actions from the workshop:

• Given the recent funding initiatives by the European Commission, which aim to allocate 3 billion euros towards the development of GenAI until 2027, we have identified the most



pertinent scientific challenges to advance GenAl in Europe: low-resource multimodal GenAl, human-robot interaction and physical grounding of Al in real world.

• Identifying the top application areas from the domains proposed by the European Commission that can benefit from GenAI: health, digital industry and climate change.

Workshop 4: Next-generation infrastructure federation: a Virtual research lab for edge AI

Organizers: dAIEDGE

The workshop presented the core concepts behind the new dAIEDGE Virtual Lab. The audience learned about the expected benefits of the sharing on edge resources under a distributed system/network. This was also the opportunity to receive feedback from the audience towards the definition of requirements and possible use cases for such a distributed network.

Concrete follow-up actions from the workshop:

- Connect with DeployAI, the new project in charge of the commercialisation layer for the AI on Demand platform for the industry
- Clarify that the Vlab is not focused on providing distributed access to cloud services but to edge resources under a collaborative framework
- Reiterate similar workshops to specific audiences

Workshop 5: Assessing and Enhancing Fairness in AI Systems Organizers: AI4Media and ELIAS

Al algorithms exhibit biases that are inherited from those present in their training data and these biases might lead to unfair decisions in real-life situations.

While many existing efforts focus on bias detection and understanding, this workshop addresses proactive ways to counter the phenomenon. Particular attention were given to three topics:

- Interdisciplinary initiatives that seek to make AI fairer, such as initiatives to reduce dataset biases by design.
- Effects of biases in high-impact AI applications (face recognition, recommenders, automatic scoring, media analysis).
- Representational biases in Large Multimodal and Language Models.

Workshop 6: NoE collaborative actions: Joint SRA and Ecosystem Mapping Organizers: VISION, TAILOR, ELISE



Fredrik Heintz and Jessica Montgomery presented the newest version of the joint SRA, which incorporates generative AI as one of its main topics. There was a fruitful discussion on how the SRA should be implemented. Next, the sustainability plan for the ecosystem mapping activity was presented to the audience. Feedback was collected through Q&A, discussion and a questionnaire, which allowed the presenters to adjust their plans accordingly. Overall, people were engaged and happy with the results.

Concrete follow-up actions from the workshop:

- Use the collected views to adjust the ecosystem mapping and develop more concrete user needs
- Organize more community interaction events for the and promote the Adra JTG on Ecosystem Mapping

Worldcafé on sustainability of the NoE community/ stand up sessions Organizer: VISION

The worldcafé aimed to gather input from the NoEs on important activities to sustain beyond the lifetime of the projects. The participants were divided into 6 groups who were all assigned to work out a specific category: Education, infrastructure, innovation and tech transfer, asset transfer, coordination among NoEs, and communication.

Concrete follow-up actions from the workshop:

- The outcomes were analysed and presented at the ICT-48 Sustainability Session with the EC representatives on the next day (June 27)
- VISION takes the outcomes of this session and the ICT-48 sustainability session as input for their report on post-project sustainability of the important activities of the NoE community, in consultation with the NoEs.
- NoEs were requested to fill in the survey VISION shared, which serves to generate a prioritised list of the NoEs' activities that the community wants to sustain beyond ICT-48.

Feedback

To gather feedback, representatives of each attending organisation were asked for a testimonial. The following themes were their key takeaways:

1. Value of the Community Workshop as a networking event

The community workshop was an extremely well-organized, successful, and highly enjoyable networking event. It provided high engagement, motivation, and valuable networking opportunities for participants. The workshop facilitated reconnecting with previous attendees and learning about the work of other Networks of Excellence (NoEs). Through many discussion opportunities, it contributed to building a strong network. Furthermore, the workshop offered insights into current AI developments, establishing it as the prime



European AI networking event. Attendees affirmed that these events provide immense value in strengthening community collaboration.

2. The importance of in-person meetings

While acknowledging the importance of hybrid formats, many emphasize that physical meetings allow for better exchanges and future planning. Despite this being VISION's last event, participants expressed a strong desire for such events to continue. A key benefit highlighted was that the in-person aspect enabled meeting colleagues previously only known online and building friendships.

3. Importance of collaboration and community building

Collaboration is widely recognized as crucial for developing AI in Europe and tackling complex challenges, though it definitely challenging. This workshop served as an opportunity to strengthen the AI community by facilitating new connections. These new connections will contribute to future research and the development of the European AI landscape and they are absolutely essential for facilitating collaboration within the AI community. Underlying this, is the idea that building relationships and fostering trust is key for successful future joint efforts.

4. Role of Networks of Excellence (NoEs)

Networks of Excellence (NoEs) play a crucial role in advancing AI research and development in Europe. The workshop highlighted their valuable collaborative work and research output. Notably, the event revealed the interconnectedness of these networks and how they collectively shape the research landscape. The 4th CW highlighted the fruition of NoEs' work over the past years and the active engagement of the new NoEs.

5. Looking at the future of AI

Many discussions at the workshop focused on generative AI's impact and ensuring its fair, inclusive, and trustworthy development. The European AI community needs to identify areas where Europe can excel in AI to address competition. A key aspect is the future of AI education, curricula reform, and training of future experts. The workshop provided insights into AI's future implications for education, research, and society. Moreover, it covered strengthening and developing the European AI community further to meet emerging challenges.

6. Education and AI

At the workshop, generative AI's impact on educators, researchers, and students was a major topic. There was an emphasis on the role of AI education in advancing the field, covering fairness, trustworthiness, and PhDs. Overall, the event and the AIDA symposium on day 2 provided a platform to exchange ideas on AI education programs which are shared among the NoEs.

7. Sustainability and funding

It is important to identify valuable NoE research for continued funding. Participants recognized that preventing the loss of important results from ending projects is a key concern. Finding alternative funding models is crucial for sustaining impactful activities.

8. Personal experience

The organizing team's efforts were deeply appreciated, including the hosting by CERTH.



Attendees expressed personal satisfaction in being part of this community. Importantly, it was a memorable experience to connect in-person after years of only online interactions.