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

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Deliverable D4.1 Report

Template for Theme Development Workshops

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Does this report contain **confidential** information?	Yes ☐ No X
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Executive summary

This document is a deliverable of Work Package 4 “Academia-Industry Joint AI Forces” within the EU ICT-48 Coordination and Support Action “VISION”. It provides best practices and supports the four Networks of Centers of Excellence (NoE) to run and organise so-called Theme Development Workshops in their areas. The objective of such a workshop is to bring together key players from specific industry sectors with key AI researchers and other stakeholders to jointly identify the key research topics and challenges, outline priorities and develop and provide input to strategic roadmaps for AI in a certain area or for a specific industry sector. These roadmaps can then be further refined, e.g., over the course of the projects, thereby forming the basis for ongoing and future AI research, industry collaboration, and corresponding funding. Accordingly, the aim of this deliverable is to develop a template/blueprint with some guidelines for Theme Development Workshops, supporting the NoE in defining their own events and corresponding activities. The template is work in progress and will be adapted and enriched with lessons learned from the Theme Development Workshops organised throughout the EU ICT-48 projects and beyond.

1 Introduction

1.1 Objectives of the VISION CSA and the innovation activities

VISION – Value and Impact through Synergy, Interaction and coOperation of Networks of AI Excellence Centres – is a Coordination and Support Action (CSA) financed by the European Commission through the Horizon 2020 programme under the call for proposal H2020-ICT-48-2020. It has been proposed by a consortium of nine organisations coordinated by the University of Leiden (ULEI) and has been lasting 36 months from September 2020.

The aim of the VISION project is to reinforce, interconnect and mobilise Europe's AI community and to orchestrate and accelerate Europe's transition to a world-leading position in the research, development, and deployment of AI technologies.

Overall, VISION will reach this objective through the following activities:

- Theme Development Workshops: At least two Theme Development Workshops cutting across multiple NoE, bringing together researchers, industry representatives, and other stakeholders to identify industrial trends and needs, and match these to AI capabilities in Europe.
- European AI Trend Radar: The main results of the Theme Development Workshops as well as from similar events of the four NoE will be summarised, and complemented by a market analysis and trend foresights for providing a comprehensive overview of AI capabilities and challenges in Europe.
- New European Award for Top Young AI Talent: Creation of a Young AI Talents Award to recognise and celebrate the next generation of AI researchers in Europe.
- Human-Centric AI Education Programme: Development of standardised AI curricula to support current European educational offerings and to support educators in strengthening the digital and human centric skills of their students.
- Community-Shared Best Practices in AI: Sharing of best practices, such as the FSTP Vademecum, standardised AI curricula module for AI non-professionals, a template for Theme Development Workshops to help NoE to organise such events most effectively, and mechanisms for industrial innovation and transfer of AI technologies.
- Integrated Roadmapping: Joint working groups for tackling challenges that span multiple NoEs, including a group on road-mapping and strategy development continuously updating each other on the strategic steps planned by the NoE and working towards a common high-level alignment of objectives.

Via Work Package (WP) 4, VISION will bring together Europe's AI research and industry, to identify industrial trends and needs, and to optimally reap the socio-economic benefits a European AI powerhouse can bring for industry and society, as well as reinforce exchanges and synergies between research and industrial stakeholders. This includes coordinating the development of guidelines and best practices to support innovation and transfer of AI technologies across the AI

NoE, supporting them in defining their strategic research agenda and innovation roadmap, and involving further stakeholders, such as educators, associations, and PPP initiatives.

1.2 Purpose and structure of the document

This document, "Template for Theme Development Workshops (D4.1)", is a deliverable of Work Package 4 "Academia-Industry Joint AI Forces", Task 4.1 "Community and industrial panels – European AI Trend Radar". It provides best practices and supports the NoE to run and organise so-called Theme Development Workshops (TDWs) in their areas. Accordingly, the aim of this deliverable is to develop a template/blueprint for Theme Development Workshops, supporting the NoE in defining their strategic research agenda and innovation roadmap, as well as initialising some follow-up activities in their consortia and beyond.

The document is structured as follows:

- Chapter 2 outlines the Theme Development Workshop concept and idea, and describes how this innovative format can be embedded in the broader context of strategic AI research and innovation agendas and roadmaps.
- Chapter 3 describes the developed Theme Development Workshop template/blueprint as a process with five phases and the corresponding activities (process steps). It also provides a checklist derived from the comprehensive process description, which can be used by the NoE to support their own planning process of a TDW.
- Chapter 4 closes this deliverable with some further insights and conclusions as well as an outlook on planned activities in the future.

2 The concept of Theme Development Workshops

The identification of emerging trends and societal and industrial challenges is a difficult process, especially in the area of AI, which is generally seen as one of the most disruptive technologies of our time. Furthermore, deriving a coherent and prioritised scientific and technical picture that takes advantage of existing assets in such a disruptive field is a particular challenge. In general, developing a roadmap is seen as a useful strategic planning tool to forecast development needs and requirements as well as to define the most important steps and activities in order to achieve major advances in the field addressed.[1] Accordingly, the four ICT-48 Networks of Excellence (NoE) have all defined such activities in their work plan, aiming at the development of a strategic research and innovation agenda/roadmap for AI in their specific topic areas.[2]

Existing AI strategies, e.g., on the European level[3] or in national contexts, are basically focusing on political areas of activities and high-level objectives, omitting a concrete definition of AI research and innovation roadmaps. In the German national AI strategy for example, there is even an explicit statement that predictions about the development of AI research and its areas as well as about technologies and their use in applications and sectors are not included on purpose.[4] Accordingly, more focussed roadmaps like the "AI, Data and Robotics SRIDA"[5] are trying to close this gap to some extent. However, also the SRIDA provides a more high-level perspective by identifying five so-called technology enablers, defined as equally important to AI, Data, and Robotics, and an indication of some prospective short-, medium-, and longer-term outcomes in these areas.[6] Since these enablers are defined as cross-cutting, relations to specific industry sectors or application areas are not included in these aspired outcomes.

Given that nowadays the lines between pure academic research and development of innovations are more and more blurring, more integrated approaches bringing basic and applied research as well as innovation together in a focused research agenda seem to be needed and more promising. This seems to be of particular importance in the area of AI, where tech giants like Google/Alphabet and Facebook are headhunting for academics and finance big research departments producing major breakthroughs in Deep Learning and other areas for example. Accordingly, new and innovative formats are required to support the co-creation of research and innovation roadmaps between academia and industry, also including other stakeholders to support interdisciplinary perspectives and to work on the corresponding challenges.

One of these innovative mechanisms the VISION consortium identified and plans to further explore with the EU ICT-48 NoE (and beyond) are so-called Theme Development Workshops (TDWs). The objective of these TDWs is to bring together key players from specific industry sectors with key AI

[1] See Camarinha-Matos, L.M. and Afsarmanesh, H. (2004): A roadmapping methodology for strategic research on VO. In: Collaborative networked organizations – A research agenda for emerging business models, Kluwer Academic Publishers, p. 275.
[2] See for example TAILOR: "Objective 2 Define and maintain a unified strategic research and innovation roadmap for the Foundations of Trustworthy AI": https://www.tailor-network.eu/about/tailor-objectives/
[3] See Coordinated Plan on AI (2018): https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=56017
[4] See Artificial Intelligence Strategy (2018): https://www.ki-strategie-deutschland.de/home.html?file=files/downloads/Nationale_KI-Strategie_engl.pdf, p. 12.
[5] See Strategic Research, Innovation and Deployment Agenda (Third Release, September 2020): https://bdva.eu/sites/default/files/AI-Data-Robotics-Partnership-SRIDA%20V3.1.pdf
[6] See ibid., p.36-37.

researchers to jointly identify the key research topics and challenges, outline priorities, and develop and provide input to strategic roadmaps for AI in a certain area or for a specific industry sector. These roadmaps can then be further refined, e.g., over the course of the projects, thereby forming the basis for ongoing and future AI research and corresponding funding.

In the next subsections, the TDW concept will be placed in the broader context of developing strategic AI research and innovation roadmaps, also referring to insights from scientific literature. Based on this as well as the authors' previous experiences and success stories in organising such workshops, the adaptations of the TDW format to the specific requirements in the context of ICT-48 are further elaborated.

2.1 The Big Picture: Roadmapping activities

Roadmaps are used in academic, industrial, and governmental settings for strategic planning as well as defining or mapping structures and relationships between science, technology, and/or applications. The overall objectives are to better align activities and resource allocations in complex and highly dynamic environments by identifying gaps and opportunities. However, depending on the purpose and context, there is a wide variety of roadmaps, from science/research, via industry, to product and project/issue roadmaps for example.[7] There seems to be a kind of consensus in scientific literature, that roadmaps reflect the knowledge and expertise of a group of visionaries and experts, who should be mixed with different backgrounds in order to ensure a balance of perspectives and contributions.[8,9]

Given this broad range of roadmap purposes and objectives, it makes sense to focus the further analysis more on the specific context of developing a research and innovation agenda/program. In the EU research project BRAID (FP7-ICT-2009-4)[10] for example, the consortium developed an extensive Research Technology and Development roadmap for ICT and Ageing, based on existing roadmaps from previous EU research projects. In order to accomplish this in a systematic way and based on proven scientific methods, a roadmapping method was developed that is depicted in Figure 1.

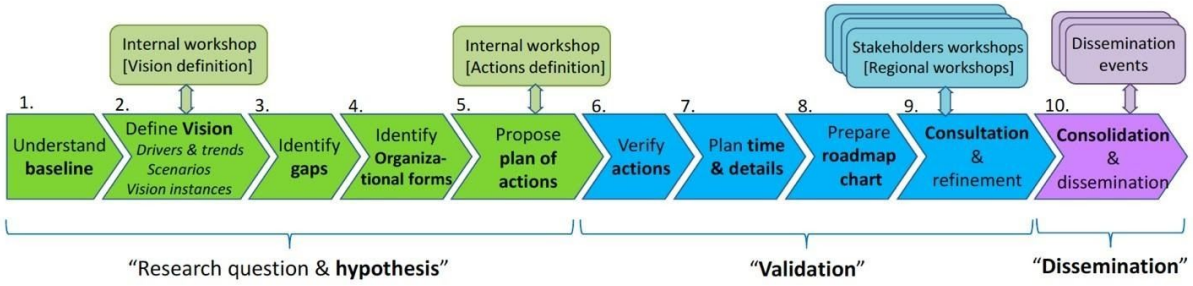


Figure 1: Roadmapping method and steps[11]

[7] See Kostoff, R.N. and Schaller, R.R. (2001): Science and Technology Roadmaps. In: IEEE Transactions on Engineering Management, vol. 48, no. 2, pp. 132, 134.

[8] See Camarinha-Matos, L.M. and Afsarmanesh, H. (2004): A roadmapping methodology for strategic research on VO. In: Collaborative networked organisations – A research agenda for emerging business models. Kluwer Academic Publishers, pp. 275-288.

[9] See Kostoff, R.N. and Schaller, R.R. (2001): Science and Technology Roadmaps. In: IEEE Transactions on Engineering Management, vol. 48, no. 2, p. 135.

[10] Project website does not seem to exist anymore, but a summary can be downloaded at: https://cordis.europa.eu/docs/projects/cnect/5/248485/080/reports/001-01BRAIDPublishableSummary.pdf

[11] Camarinha-Matos et al. (2013): A comprehensive research roadmap for ICT and Ageing. Studies in Informatics and Control, Vol. 22, No. 3, September 2013, p. 235.

In the 10 step process, three main phases are proposed, starting with elaborating the research question(s) based on an understanding of the current state of the art in research and the identification of the roles of all major stakeholders. In the BRAID project, this was done by the consortium to gain an understanding of the baseline. In the next steps, the desired vision for the future is identified and the gaps between this vision and the current state are analysed in order to deduce a first plan of required actions as well as supportive organisational forms and structures. To achieve these results, the BRAID consortium conducted a series of internal workshops and brainstorming sessions until a first set of actions emerged. According to the process, the results from the first phase are then further refined and transitioned to a roadmap chart for validation with various stakeholders in dedicated (regional) workshops. In the BRAID project "Consensus Building Events" in five European countries as well as two special conferences were organised to consult with more than 150 stakeholders for example. Last but not least, the roadmapping method closes with the third phase of preparing the final version of the roadmap with consolidated results.[12]

Taking this roadmapping method and process as a kind of guideline, a TDW is an innovative format that allows to address several activities at once and thereby spans across different steps of the process. This seems prudent because there is already a lot of preparatory work done by the four NoE under EU ICT-48 regarding the "research question and hypothesis" phase (proposals with state of the art, identification of existing gaps and first ideas, and work plan of how to address them, including a competitive review and selection process by the Commission). Furthermore, the four NoE already comprise more than 150 Centres of Excellence and partners in AI all across Europe, so there is a huge pool of expertise and stakeholder perspectives available, which should be connected and exploited in an efficient manner.

Accordingly, from our point of view and based on our previous experience (see next section), a TDW will mainly contribute to the following process steps:

- (2)[13]Define vision: Input to and refinement of strategic and long-term topics for AI research and innovation in Europe, based on the work plans of the four NoE and their first versions of roadmaps respectively.
- (3) Identify gaps: Input to and refinement of barriers and challenges in relation to these strategic long-term topics.
- (5) Plan of actions: First ideas of how to address the identified challenges, including some more focused activities which can be addressed by a smaller group of partners within the NoEs respectively.
- (7) Plan time & details: First rough estimation of a timeline and next steps to address the identified challenges and more focused activities.
- (8) Prepare roadmap chart: Results of the TDW can directly feed into the roadmapping activities of the NoE.

[12] See Camarinha-Matos et al. (2013): A comprehensive research roadmap for ICT and Ageing. Studies in Informatics and Control, Vol. 22, No. 3, September 2013, p. 235, 247-248.
[13] Number is referring to the process step in Figure 1.

- (9) Consultation and refinement: Given the large pool of expertise and stakeholders (from academia and industry) involved in the four NoE, the results of the TDWs can and will provide a high level of confidence in the adequacy[14] of the proposed research and innovation activities and the derived input to the roadmaps.

Last but not least, we would like to come back to the understanding of roadmaps as living documents (see section 2). Although this perspective of continuous evolution due to new results and emerging trends is also stated in the paper outlining the roadmapping process[15], a corresponding process step (11) is missing in the proposed method. In the context of a highly dynamic field like AI in general, and given the objectives of the four NoE, specifically "to reinforce Europe's capacity and progress in critical technologies"[16], this continuous improvement and adaptation of the roadmaps is a key success factor to achieve progress in identifying and addressing the major scientific or technological challenges in AI over time. Therefore, we propose to exploit and further develop TDWs as an innovative format to support this highly dynamic and complex process within the four NoE. Accordingly, we outline our previous experience with this format and develop a first template for organising and executing such an event in the following.

2.2 Previous experience and success factors for a TDW

In spring 2019, CLAIRE[17] and ESA[18] collaborated to organise the first "CLAIRE-ESA Theme Development Workshop on Artificial Intelligence and Earth Observation", which took place at ESRIN[19] in Frascati, Italy with more than 70 participants. For this one-day workshop, AI researchers as well as Earth Observation researchers and engineers came together to work on the challenge of how to utilise AI to get the most out of the large amounts of data produced by earth-observing satellites every day. Accordingly, the experts discussed common goals and strategies as well as the next steps to develop new approaches and solutions at the intersection of AI and Earth and Space science.

This Theme Development Workshop was a huge success, and at the end of the one day event, the participants had collaboratively developed an initial research and innovation agenda, including:

- A strategy for further collaboration (next steps to establish a closer, long-term cooperation between CLAIRE and ESA),
- a list of corresponding challenges and projects to start with, and
- first ideas how to approach these challenges and projects, including some requirements as well as a first timeframe.

In the meantime, some of these challenges and projects have been started, and CLAIRE and ESA have created the World's first AI Special Interest Group (SIG) on Space. The SIG's goal is to accelerate

[14] With regard to confidence in adequacy, see also: Camarinha-Matos et al. (2013): A comprehensive research roadmap for ICT and Ageing. Studies in Informatics and Control, Vol. 22, No. 3, September 2013, p. 251.
[15] See Camarinha-Matos et al. (2013): A comprehensive research roadmap for ICT and Ageing. Studies in Informatics and Control, Vol. 22, No. 3, September 2013, p. 251.
[16] https://cordis.europa.eu/programme/id/H2020_ICT-48-2020
[17] Confederation of Laboratories for Artificial Intelligence Research, website: https://claire-ai.org/
[18] European Space Agency, website: https://www.esa.int/
[19] Website: https://www.esa.int/About_Us/ESRIN

the development of both AI and space-related research, and forms a key part of ESA's wider strategy to accelerate the use of AI in Europe's space and related industries and research communities. It has a very practical focus, organising events and workshops to bring European AI and space experts together, supporting exchanges between these communities and identifying the key themes for collaboration that could be funded by ESA's and other research programmes.[20]

This success story is strongly encouraging the use of this innovative mechanism of a TDW to provide input to the research and innovation roadmap of the four ICT-48 Networks of Excellence. Given the authors' experience in co-organising and participating in the first CLAIRE-ESA Theme Development Workshop, it is recommended to keep in mind the following aspects that we identified as key to the success of such a workshop:

- Start early with the preparation of the TDW. Depending on the number of participants and logistics required we recommend 3+ months in advance.
- Work with a small and agile team to plan and organise the TDW, involve experts from all areas/research disciplines addressed to create a sound schedule for the workshop day, and to follow-up with them about the results and outcomes of the workshop.
- Select the participants for the TDW according to their proven expertise and most importantly their strategic thinking in their research/working field, and make sure that interdisciplinary groups are assembled especially for the breakout sessions[21].
- The mindset of the participants is key to the success of the workshop: People should be visionary and open to discuss creatively in smaller groups about the specific topics and challenges, and contribute their expertise proactively. Participants must have the longer-term goals (e.g., 5-10 years) in mind that are needed for fundamental research, even though more short-term topics should be covered as well as they come up in the discussions. This includes the collaborative documentation of the group findings during the breakout sessions to ensure a valuable outcome of the TDW beyond networking.
- Motivate the discussions in the breakout sessions with some initial inspiring plenary presentations, focusing on specific and exciting challenges as well as possible AI techniques to tackle these challenges.
- Pre-structure the workshop day and prepare the documents for the breakout sessions according to the scope, objectives, and desired outcomes, but leave also room for some creative elements and spontaneous ideas, because interesting topics might emerge during the TDW and the discussions in the breakout sessions.

2.3 Development of a blueprint to support the NoE

Based on the success and the experiences from the first "CLAIRE-ESA TDW on AI and Earth Observation" and the projects, activities, and workshops initiated since then, we further refined this innovative approach. In the context of the AI strategy in Europe, and more specifically under the umbrella of EU ICT-48 and the VISION project as its Coordination and Support Action, we further addressed the following challenges and corresponding requirements:

(1) How to best integrate such a workshop format in the context of a NoE, also given its specific nature as a European Research and Innovation Action (project character)?

[20] See: https://claire-ai.org/sig-space/
[21] Small group of 5-8 people working on a specific sub-topic for a predefined amount of time during the TDW.

(2) Which adaptations are needed to support academia-industry collaboration in particular?
(3) How to deal with the challenges of the Covid-19 pandemic that makes it impossible to physically meet and discuss in larger groups (at least during the first year of the ICT-48 projects)?
(4) How can we facilitate the innovation and research transfer via TDWs beyond the European frame of ICT-48?

In order to do so, we gathered ideas, requirements and contributions from various sources and generalised and integrated them into the concept presented in Section 3.1. In particular the following activities supported our concept development:

- We already started with first ideas for the adaption of the concept in the proposal phase of the ICT-48 call. Based on discussions with industry representatives from the CLAIRE network, we specifically discussed requirements for academia-industry collaboration (→ 2, 4)[22].
- Furthermore, with partners involved in the proposals for VISION and TAILOR, we developed ideas for integrating the TDW concept into the networks (→ 1), specifically to fit into the planned activities around roadmapping.
- When the NoE and VISION started, kick-off meetings and workshops were organised as purely virtual events due to the Covid-19 pandemic. This supported the development of ideas how to best organise also the TDWs as virtual events. (→ 3)
- Based on these results, we developed an initial concept for TDWs in the context of ICT-48, and discussed this in-depth within WP8 "Industry, Innovation and Transfer program" of TAILOR[23]. These discussions included separate 1-hour calls with seven partners from different industry sectors[24]. (→ 2)
- Based on the results of these in-depth discussions, we refined the initial concept for the TDWs. This improved concept was then discussed within WP4 "Academia-Industry Joint AI Forces" of VISION (→ 2). In parallel, the concept was also presented and discussed with the coordinator and two partners from HumanE-AI-Net, representing WP6 "Applied Research with industrial and societal use cases" and WP7 "Innovation Ecosystem and Socio-Economic Impact"[25] of the NoE (→ 1, 2).
- We discussed the idea and objectives of a TDW with representatives of AI4EU, who are coordinating the pilot experiments for the platform[26] and expressed their interest to cooperate in future iterations of TDW (→ 2, 4).
- Our presented concept for the TDWs was supported and much appreciated by all our discussion partners. Thus, we managed to come to an agreement between the respective coordinators and leadership teams of VISION, TAILOR, HumanE-AI-Net, and CLAIRE to plan and execute a series of Joint (co-organised) Theme Development Workshops, starting in spring 2021 (→ 1). Accordingly, we published and distributed a corresponding announcement to the NoE and beyond (AI4EU, CLAIRE, etc. → 4) in mid-December.

[22] Reference in brackets means: Addressing challenges (2) and (4) as described above.
[23] For TAILOR WP-structure, see: https://www.tailor-network.eu/about/organization/
[24] For TAILOR industry partners, see: https://www.tailor-network.eu/network/industry/
[25] For a description of this NoE, see (access only for registered users of AI4EU-platform): https://www.ai4eu.eu/humane-ai-net-0
[26] For AI4EU pilot experiments, see: https://www.ai4eu.eu/pilot-experiments

- Reacting to this broad announcement, the coordinator of AI4Media[27] contacted us and we also discussed the TDW concept also with him. At the end of this call, also AI4Media expressed interest to organise a joint TDW, specifically with a focus on the media sector (→ 1, 2).

We would like to thank all partners involved in this process, and especially those people who supported us by sharing their ideas and valuable input with us.

[27] See project website: https://ai4media.eu/

3 Organisation of a Theme Development Workshop

In the following subsections, a template for planning, organising and executing a TDW will be developed and provided. This includes a checklist and some recommendations for the specific steps and activities required. This template is a first initial version to support the four NoE in organising their specific TDWs, and will be adapted and enriched with the lessons learned from their first workshops accordingly[28].

3.1 TDW template and process

Based on our previous experience (see Section 2.2) and focused discussions with some representatives and partners from the NoE (see Section 2.3), we developed a template for a five-phase process to plan and execute a TDW. This overall process is visualized in Figure 2 and will be further elaborated on in the following subsections, including some recommendations and sharing of best practices.

Figure 2: Process overview - steps to organise a Theme Development Workshop

[28] Depends on their willingness to share the results with the VISION CSA. Based on our experiences with the NoE so far (see previous section), we expect a very good exchange of ideas and results though.

3.1.1 Phase 1: Start planning the Theme Development Workshop

Phase 1 of the overall process consists of three main activities. Based on our previous experience, we recommend to start early with the planning, at least 3 months before the planned workshop date. However, this timeline depends on the scope and size of the TDW as well as some other circumstances (e.g., is there a longer holiday period in-between, are there any special time constraints given the planned location of the TDW, do people have to arrange their travel in advance, or is an online workshop planned).

Activity 1: Define the topic and scope/purpose of the TDW

The first step is to define the topic and scope of the TDW from a high-level perspective. The guiding strategic rationale behind this are the objective/s of the NoE as defined in their project plans, especially in relation to their planned roadmapping activities. If there is already a first roadmap available, we recommend to use it to plan and derive the TDW/s and their topics accordingly. If this is not the case, the development of the roadmap and the TDW planning should be intertwined as much as possible to align those activities, and thereby maximizing the benefit for the network.

In general, there are two different perspectives to define the high-level topic of a TDW and provide input to the strategic AI research and innovation roadmap: (1) From an industry perspective: How will and can AI be used in a particular industry sector or to address a relevant societal topic. And (2) from a research perspective: Given a specific AI area or research field, how will and can this be used in different application areas and/or industry sectors. Accordingly, some examples for high-level topics of a TDW could be:

(1) Trustworthy AI for autonomous driving (focused on an industry sector)
(1) AI approaches and technologies to prevent and expose fakes news (focused on a societal topic)
(2) Application scenarios of AutoML in various industry sectors (focused on a research topic)

Apart from the purpose to provide input to the strategic AI research and innovation roadmap, the requirements analysis also revealed some additional objectives of a TDW. Besides the more longer-term strategic perspective and its corresponding objectives (roadmapping), it seems important to the NoEs to use the TDWs also to identify and define some mid-to-short term activities, which then can be further addressed by some partners within the networks collaboratively. Due to their short-term results they are particularly interesting to industry. But they should be avoided as the main focus of a TDW, as they can easily detract from the long-term focus and may come up anyway in the discussions, at which point they can be explicitly documented as a result. In particular, ideas for use-cases and challenges/benchmarks (TAILOR) and microprojects (HumanE-AI-NET) were mentioned in this context and should therefore be taken into account for defining the topic and scope of a TDW.

Activity 2: Define the target/participant groups for the TDW

The next step after the high-level definition of the topic and purpose is to decide which groups of stakeholders should participate in the TDW and why. This step is not about selecting the individual participants of the workshop (see Phase 3), but more to gain an understanding which backgrounds and expertise are needed to contribute towards achieving the objectives of the TDW. In the context

of the NoE and based on the considerations outlined in Section 2, the following groups are considered as important stakeholders in general:

- **AI researchers from academia** working on specific AI topics and/or application areas.
  - ➔ Contribution: They should bring their specific expertise from academia as well as ground-breaking new ideas about their areas of expertise to the TDW but they need to be open to engage with the industry perspective.
- **AI researchers from industry** working on specific AI topics and/or application areas
  - ➔ Contribution: they should bring their specific research expertise and challenges from an industry perspective to the TDW but they need to bring a strategic, long-term perspective and be open to engage with the research perspective.
- **Strategic thinkers from industry/business units**
  - ➔ Contribution: they should bring requirements from their business units and specific market challenges to the TDW.
- **Strategic thinkers from non-profit/associations and/or politics**
  - ➔ Contribution: They should bring requirements and challenges from a broader/societal perspective in relation to the defined topic/s to the TDW.

Activity 3: Establish an Organising Committee for the TDW

In order to ensure a proper planning and organisation of the TDW, including its content and focus (long-term strategic and mid-to-short term activities), we recommend to establish a so-called **Organising Committee** (OC). Given our previous experience and also the somewhat complex nature of the TDWs as an innovative instrument, it makes sense to bring together a group of people with different backgrounds and expertise. Depending on the scope and objectives of the TDW, we suggest an OC consisting of 5-8 persons[29], collaboratively agreeing to pursue the following tasks:

- Refine the high-level topic of the TDW into specific sub-topics/topic-lines that are interesting to the target groups of the workshop.
- Define the schedule for the workshop day(s), including presentations/speakers and breakout sessions according to sub-topics/topic-lines[30].
- Suggest experts and select participants for the defined sub-topics/topic-lines of the TDW and with all the needed background and perspectives.
- Attend the TDW as experts and/or facilitate a specific topic-line/breakout session
- Contribute to/proof-read and amend the final TDW report.

Accordingly, we advise to select the members of the OC purposefully and take the following prerequisites into consideration:

- Members should be experts in the topic area of the TDW.
- Members should have an extensive network of/know other experts related to the topic/s of the TDW.
- Mix members with academic and industrial background for the OC.

[29] In case of so-called joint TDW, bringing together representatives from more than one NoE, the group might need to include more experts in order to define the topic-lines properly. Please keep in mind to choose a manageable group size and/or organise the OC work in an efficient manner.
[30] An exemplary schedule for a one-day TDW is presented in section 3.2.3.

- OC should include at least one person from/in close contact with on-site/online workshop (technical) organisation team.
- OC members agree to meet on a regular basis/several times before the TDW takes place.

3.1.2 Phase 2: Promote the TDW to the target audience

As soon as the high-level definition of the topic, purpose and target groups is finished, we recommend to start activities to promote the TDW to the target audience. This is very important to select and invite the most appropriate candidates for the workshop (see Phase 3), which is a key success factor for a valuable outcome of the TDW (see Section 2.2). We recommend fixing the date and location of the TDW before promoting it to the target groups, so that the experts can check their availability before their registration. Also a first outline of the schedule for the workshop day(s) (see Section 3.2.3) might be helpful in this context, and therefore should be included in the information material if possible.

Activity 4: Create information/marketing material for the TDW

Based on our previous experience, we advise to create an appealing information package to promote and announce the TDW, and distribute it to the identified target group/s. This package should include:

- Some general information about the TDW, and its purpose and scope,
- The main topic/s of the TDW,
- Some information about the target group/s, and why people should participate,
- Some information why it is beneficial to be a participant, and
- How to participate/register as well as the planned date, time, and location of the TDW.

In December 2020, we released a broader announcement for a series of planned joint Theme Development Workshops, co-organised by TAILOR, HumanE-AI-Net, VISION, and CLAIRE, and distributed it within the four NoE and other EU projects/ initiatives (AI4EU, etc.). This announcement (see Annex 5a) can be used as an example how to promote a TDW and can be adapted by the NoE according to their specific objectives and requirements. As an optional step, we also recommend creating a survey to support the identification of appropriate participants for the TDW.

Activity 5: Open application process to identify suitable participants for the TDW (optional)

This step is indicated as optional because the OC can also decide to create a list of participants based on their own networks, including (associated) partners from the NoEs. However, we recommend to at least complement this list with candidates from an open application process to guarantee a certain level of fairness and broader inclusion of participants. We advise to include all information into the survey that the OC needs to select the most appropriate participants for the TDW, specifically:

- Some personal data
- Affiliation and background of the applicant
- Additional data supporting the selection process and/or organisation of the TDW, e.g.,
    - areas and level of expertise in AI,
    - possible contributions to the TDW, and

- suggestion of further (sub-)topics to be included in the schedule.

Furthermore, the survey should not be too time-consuming and easy to submit, because otherwise applicants might not finish the questionnaire. An example for such a survey, which was released via EUSurvey[31] and communicated together with the announcement for a series of joint TDWs mentioned above, can be found in Annex 5b.

3.1.3 Phase 3: Start organising the Theme Development Workshop

If this has not happened before promoting the TDW to the target audience, Phase 3 should start with a definition of the date and location of the workshop. For on-site/physical meetings, we also recommend defining and reaching out to the local organisers as early as possible in order to clarify organisational issues (needed rooms and equipment, catering, etc.). Especially during the Covid-19 pandemic, a TDW might also be organised as an online or hybrid event. In this case, we recommend to clarify who is in charge of the technical support for the TDW (procurement of software licenses, technical support staff required during the workshop etc.) via the OC as early as possible.

Activity 6: Define the schedule for the TDW

In order to support the selection of participants and speakers, a schedule for the workshop day/s should be defined by the OC. Based on our previous experience, a well-prepared one-day workshop is able to produce an initial research and innovation roadmap, including some first ideas for next steps and estimations on the time frame. However some partners from the NoE also expressed interest to extend the TDW to a second day in order to allow for deeper discussions about specific (sub-)topics. This seems to be reasonable depending on the objectives, purpose, and scope of the workshop.

An exemplary schedule for a one-day, on-site workshop is outlined in the following table, addressing the requirements mentioned by the NoE to discuss roadmapping (long-term strategic perspective) as well as use-cases and challenges (mid-to-short-term activities). Furthermore, the emergence of new topics during the TDW is taken into consideration to support the creative nature of the workshop and addressing the special interests of participants (see success factors, Section 2.2).

Topic/ purpose	Timeline	Description/Activities
Arrival and Intro	8:30	Arrival and welcoming (registration, first socializing, etc.)
	9:00	Official welcome by organisers and information about workshop and procedures (first outlook about the day)
Session 1: Long-term strategic perspective	9:30	Short invited talks (~15 -20 minutes) on (sub-)topics relevant to the workshop (from academia and/or industry) à inspiring & challenging as preparation for breakout sessions

[31] See website for further information: https://ec.europa.eu/eusurvey/

	10:30	Coffee Break and preparation for roundtable work (breakout sessions)
	10:45	Round table group work on specific (sub-)topics
	12:00	In plenary discussion/presentation of key findings from round table work
Lunch & Socialising	13:00	Lunch break and informal discussions
Session 2: Mid-to-short-term activities	14:00	In plenary selection of emerging topics (from morning session) for further development
	14:15	Short invited talks (~ 5-8 minutes max.) on to introduce use cases and challenges
	14:45	Round table group work on specific use cases and challenges, as well as selected topics
	15:45	Coffee break
	16:00	In plenary discussion/presentation of key findings from round table work and next steps
Closing & Socialising	17:00	Closing and informal discussions

Table 1: Exemplary schedule for one-day on-site workshop

Activity 7: Select and invite the participants and speakers

This step is very important because the success of the TDW depends to a large degree on the participants and their contributions. As explained in Section 2, their expertise and visionary mindset is key, as is an interdisciplinary staffing of the smaller groups during the breakout sessions. These considerations should guide the selection of participants by the OC accordingly. We recommend to develop a fair and transparent set of criteria for the selection process, keeping the following aspects in mind:

- Aim for a balanced distribution among the main target groups, and also include a variety of professional backgrounds (researchers, experts from business units, engineers, and developers, etc.),
- Aim for geographical balance, include participants from all over Europe,
- Aim for gender balance,
- Include some early-stage researchers/young talents and invite additional stakeholders to guarantee a broader perspective,
- Try to include as many organisations (academic and private sector) as possible, and
- Include participants from big companies, SMEs and startups.

We advise to create a participant list, including a waiting list in case some of the pre-selected experts are not available for the TDW. The candidates for this list can be generated via different sources, e.g., the network of the OC members, the partners in the NoE, and/or from a broader survey as

described in Activity 5. As soon as a prioritised list is ready, the OC should organise the invitation of the selected participants and get their confirmation to further continue the planning and organisation of the TDW.

In parallel, the OC should discuss and define the presentations and speakers according to the defined TDW schedule. The presentations should be brief and include some real challenges in order to inspire and support the discussions in the following breakout sessions. Speakers can be either participants of the TDW or invited guests. Especially for on-site TDWs with longer travel distances for the experts, we advise to provide some interesting networking and collaboration opportunities to those speakers who are not participating in the workshop, or to focus on speakers who live close to the location of the TDW (e.g., a dinner on the evening before the event to already welcome the participants and get them to socialize).

For on-site TDWs and hybrid events, participants and speakers might ask for support regarding their travel plans and accommodation. Therefore, we recommend preparing an information package together with the local organisers, including some information how to get to the event location and about nearby hotels with special rates, and provide this to the speakers and participants as early as possible.

Activity 8: Prepare the event, including the breakout sessions

Before the start of the workshop day(s), it makes sense to check once more if all needed infrastructure is available and ready, and if the staff is familiar with their supporting and facilitating roles.

We recommend to check in particular:

- Is the location and local organisation team ready (on-site/hybrid TDW):
    - Are the needed rooms ready, including required equipment for presentation and breakout sessions/group work (separate rooms or roundtables in a bigger room)?
    - Is there a stable WIFI connection for all participants?
    - Is catering available and coordinated with the workshop schedule?
    - Are participants informed about how to get to the location?
    - Who can support in case there are questions/issues emerging during the workshop day(s), etc.?
- Are the virtual meeting solutions ready and tested, is the technical support team ready (hybrid-/online TDW)?
- Is the registration process organised (on-site/hybrid TDW):
    - Is there a list of confirmed speakers and participants for the registration team?
    - Are name tags and WIFI access info ready for hand-out?
- Are the plenary and breakout sessions organised:
    - Are speakers informed about the schedule and modalities for their presentations?
    - Are the documents for the collaborative work and note-taking during the breakout sessions prepared?
    - How is the distribution of participants to breakout sessions organised (pre-defined groups or random distribution, etc.)? Are there technical solutions to support this for online TDWs/hybrid events? (see also Activity 10)

- Optional: Are facilitators assigned and briefed for the breakout sessions? Are any recordings planned for the plenary/result presentations, and how is this organised?

3.1.4 Phase 4: Execute the TDW – the day(s) of the workshop

During the workshop day(s), it is important to ensure a smooth flow through the event. This includes welcoming and supporting the participants and speakers, and being available to deal with emerging issues during the day. Some of the organisers might also be involved as speakers and/or participants of the TDW, so we recommend to staff the supporting teams accordingly to avoid distractions due to organisational issues.

Activity 9: Registration and support

As already described in Activity 8, the workshop day starts with welcoming the participants, including a registration process (on-site/hybrid TDW). In case of an online workshop, the organisers might use technical options (password protection, etc.) to make sure that only registered participants get access to the TDW. Depending on the number of participants and the peculiarities of the location (e.g., longer distance from registration to plenary room), we recommend to open registration at least 45 minutes before the official start of the workshop to avoid situations where people are rushing into the first session at the last minute. Furthermore, people can use the time before the official start of the TDW to talk to other participants informally and familiarise themselves with the location and programme. A welcome package for each participant (e.g., name tag, info about location and breakout rooms) may support this process.

We also advise to plan for multiple participants arriving at the same time, so staffing for the registration process should be able to cope with such situations. Otherwise, there may be unpleasant long queues and waiting times, especially if there are further questions during the registration process. Last but not least, if you plan to take photos or record videos/streams during the TDW, participants need to be informed upfront and indicate their consent.

Activity 10: Plenary and breakout sessions

We recommend to start the workshop officially in plenary with a welcoming session, including the most relevant information about the objectives and procedures planned for the workshop (see Table 1). It is important to explain to the participants what is planned in the plenary and breakout sessions, what the expectations are, what tools they can use for support, which kind of results and outcomes are expected, etc. Especially before the start of the first breakout sessions, we advise to offer support in case there are any questions regarding the distribution and/or relocation to breakout rooms/tables, and schedule this transfer during a short break – otherwise breakout sessions might start late because participants are looking for their working groups (on-site/hybrid events). In case of an online workshop, the distribution of participants to the virtual breakout rooms needs to be organised via the technical solution. Furthermore, there might be an opportunity to use a virtual conferencing tool for the TDW, which supports more activities similar to a physical event[32].

[32] One example is https://gather.town/ – a tool with a computer game-like user interface and spaces for presentations/plenary sessions, poster presentations, social rooms, meeting areas, etc., including options for private chats and conversations. We advise to develop a list of criteria to fulfill based on the scope and objectives of the TDW, and then check conditions and alternative solutions before selecting the technical environment and tools to support the workshop.

Regarding the distribution of participants to breakout sessions, we recommend assembling interdisciplinary groups (e.g., 2 AI researchers, 2 experts from business units, 2 engineers/developers in one breakout session). This allows to include different perspectives in the discussion of a specific topic and supports creative ideas with regard to possible solution approaches. Accordingly, a corresponding distribution mechanism or even a list of predefined participants per breakout session is useful, based on the interest, expertise, and background of the participants. If a more random or agile[33] distribution of participants is desired, we recommend to ensure at least that participants from academia and industry mingle as much as possible in each of the breakout sessions. However, this also depends on the discussed topic and desired outcome of such a session. It is helpful to have someone in each group who takes notes, so that participants can focus on the discussion and are not distracted. This could be one of the participants or a designated person from the organisers. Sometimes, joint note taking using a shared document can also work quite well in either way as each participant can add to the notes or adapt them as needed.

It is very important for the outcome of a TDW that participants in the breakout session document their discussion results and insights (see Activity 12). Thus, we recommend using a proven tool to support collaborative note-taking in these sessions, and to provide at least a rough structure and some guidelines for such a document. An example for such a structure can be found in the following table (Table 2).

Headline/section of the document	**Description/ → purpose**
Headline: Topic	State the topic to be discussed in this breakout session ➔ Indicate as headline of the document, so that everybody knows directly what the breakout session is about
Optional: Subtopic	State the subtopic to be discussed in this session ➔ we recommend to formulate a question that is as concrete as possible
Names and affiliations of the participants	Participants can and should indicate their names and affiliations. ➔ Supports the preparation of final report and follow-up activities ➔ Give people credit
Objectives and/or guidelines for the breakout session (see also next section)	Describe the objective of the breakout session, and provide some guidelines if necessary ➔ Participants should know what topics to discuss, including the expected outcome of their collaborative work in this session ➔ Precise and as concrete as possible, we recommend to use bullet list or similar to not overwhelm participants with too much information ➔ If the breakout session is facilitated by someone, this description can be very brief: Facilitator to introduce the objectives and thereby motivate the discussion

[33] Participants can select spontaneously which topic/breakout session to attend.

Optional: Guiding questions	We recommend to use 3-5 guiding questions/subheadings to structure the discussion ➔ These can be specific subtopics to be discussed for example ➔ Recommendation: Depending on the topic, ask for measures for achievement, next steps, and estimated timeline, challenges, and barriers of achievement, etc. ➔ If the breakout session is moderated by someone, discussion can be guided with this predefined structure/questions instead

Table 2: Exemplary structure to support collaborative note-taking in breakout sessions

3.1.5 Phase 5: Summarise and distribute results of the TDW

The five-phase process to organise and execute a TDW closes with a review and summary of the main results and outcomes of the workshop day(s). As outlined in the following activities, these steps support the NoE in their project-specific objectives, and contribute to a further improvement of TDWs as an innovative format.

Activity 11: Review of the TDW results

After the TDW, the results need to be reviewed and edited for further use. Basically, these are recorded in the documents collaboratively produced during the breakout sessions, and can be complemented by further sources, e.g.:

- Facilitators who took part in the breakout sessions and contribute their perspective and assessment,
- Notes taken during the plenary/result presentations by support staff,
- Recordings from the TDW if available (of presentations, etc.[34]),
- Selected experts, including the Organising Committee, who can contribute their experiences from the TDW, as well as their expertise to the results.

Based on this reviewing and editing process, we recommend creating a report summarising the main results of the TDW (see Activity 12), as well as some further documents supporting follow-up activities in the NoE (see Activity 13).

Activity 12: Create a report and distribute it

A report summarising the main results of the TDW might be interesting to all participants and further recipients. Especially to initiate some activities in the NoE based on the outcome of such a workshop, we recommend creating a report immediately after the event and distributing it for feedback to the participants. This helps in incorporating different perspectives and adds input that might otherwise not be included.

[34] We recommend to be very careful with video/recordings, especially during the breakout sessions. People might feel uncomfortable with this, and it might negatively influence the open and creative atmosphere needed for the success of the TDW.

If a summary of the results is needed for recipients outside the participant list of the TDW (e.g. for dissemination purposes), we recommend to check the report carefully for any participant-specific content and/or contents that should not be distributed to a broader audience (for confidentiality reasons, etc.). If such content is part of the report, there should be either a consent of the participants to the publication or the report should be revised accordingly by deleting/anonymising/generalising sensitive results. For transparency reasons, we advise to inform participants before the workshop if a dissemination/publication of workshop results is planned and to indicate what information might be critical to them. With participants from competing companies it might be necessary to remind them to not discuss any topics that might violate rules and laws regarding anti-competitive behaviour.

Activity 13: Take care of follow-up activities (optional)

Depending on the purpose and objectives of the TDW, there might be further activities to follow-up with after the event. In the context of the NoE, the TDWs are planned to contribute to the roadmapping activities as well as to use-cases and challenges to be addressed in the networks for example (see Section 3.1.1/Activity 1). Accordingly, corresponding processes and collaborations are needed to ensure this, e.g., by incorporating the TDWs results and/or involving participants from the TDW into subsequent roadmapping workshops, supporting smaller groups of participants to follow-up with specific use-cases, etc.

We also recommend asking the participants for their general feedback about the TDW after the event. This can be done ideally immediately via an online survey for example but could also be sent to all participants together with the workshop report. Such a feedback process is very valuable to further improve the TDW concept in the context of a NoEs (and ICT-48 in general) with lessons learned, thereby supporting the development of this innovative format.

3.2 TDW checklist

The following checklist summarises the main activities to plan and execute a TDW. Accordingly, it is intended to support and guide the NoE in organising their own workshops.

Checklist: Main activities to plan, organise and execute a TDW	
☑	Define the topic and scope of the TDW ➢ What topic area/challenges should be addressed, and from which perspective (AI topic/area or specific industrial or societal perspective)? ➢ What is the purpose and objective of the workshop?
☑	Define the target group of the TDW ➢ Who (groups of stakeholders) should participate in the TDW and why? ➢ What can and should these groups contribute to the TDW?
☑	Establish an Organising Committee ➢ Who is in charge to plan and organise the TDW? ➢ Who can support regarding content and selection of participants and speakers?
☑	Define Date and location for the TDW ➢ What is an appropriate date and location for the TDW? ➢ Who is the local organizer/contact person, and how will they support the TDW?
☑	Promote the TDW to the target audience ➢ Is the marketing/information material ready? ➢ Who should get the information, and how is the delivery managed? ➢ Optional: Do you need a survey to generate a pool for candidates?
☑	Select participants and invite speakers to the TDW ➢ How should a schedule for the workshop day(s) look like? ➢ Which candidates should be selected to discuss the defined topics? ➢ Which presentations and speakers can contribute and motivate the discussion?
☑	Prepare the TDW, including the breakout sessions ➢ Is the local team ready, are rooms booked (on-site/hybrid event), is the technical support team ready (online/hybrid event)? ➢ Is registration and catering organised (on-site)? ➢ Are all handouts and documents for the TDW and breakout sessions prepared?
☑	Execute the TDW (workshop day(s) ➢ How do you manage registration and support to participants (on-site)? ➢ How do you execute and support plenary presentations and breakout sessions?
☑	Review results and create report about TDW ➢ Who is reviewing the results from the TDW, especially from breakout sessions? ➢ Who is generating the summary/final report, who can support?
☑	Follow-up activities and feedback ➢ Who should be provided with the final report, and who is in charge of this? ➢ Optional: Do you plan to ask participants for their feedback about the TDW, how? ➢ Who is taking care of follow-up activities resulting from the TDW, and how?

4 Conclusion and outlook

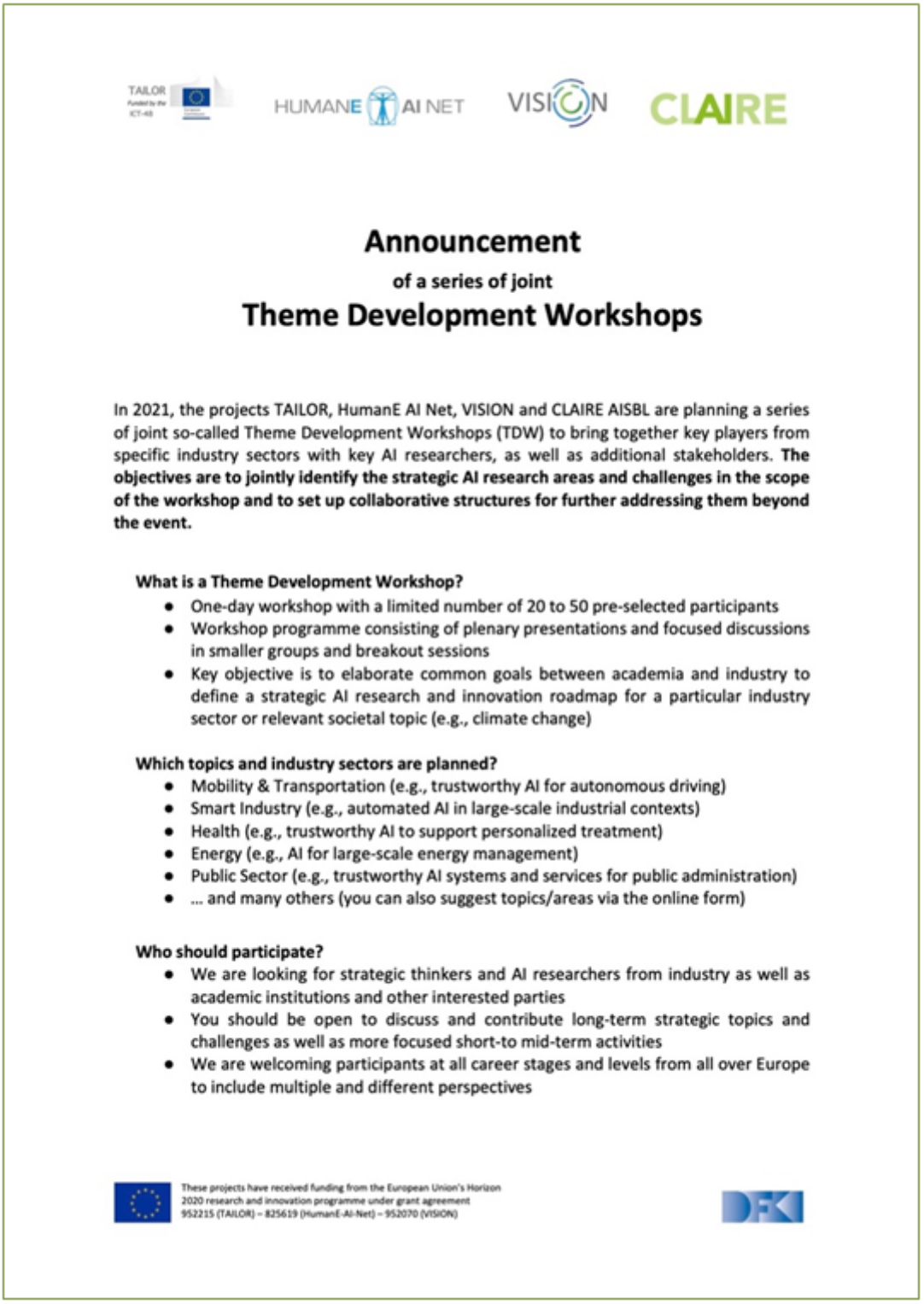
This deliverable introduced so-called Theme Development Workshops as an innovative engagement strategy between academia, industry and other stakeholders, which we recommend to use in and across the four ICT-48 Networks of Excellence to develop and/or improve their AI research and innovation roadmaps. Furthermore, we also see the potential to expand these activities within the European AI framework in general. Accordingly, VISION plans to organise at least two cross-cutting TDWs, additionally to the TDWs (co-) organised by the NoE.

To provide a better understanding about the most important aspects and activities to plan, organise and execute a TDW, this document developed a step-by-step template with some recommendations as well as a checklist. This blueprint for organising a TDW aims to support the four NoE in planning and running their specific events and to provide them with a guideline including some best practices. The blueprint is a work in progress and thus will be adapted and enriched with lessons learned from the TDWs run by the CSA and NoE.

This continuous improvement of the blueprint/template will be strongly supported by the agreement we made between the respective coordinators and leadership teams of VISION, TAILOR, HumanE-AI-Net, and CLAIRE to plan and execute a series of Joint (co-organised) Theme Development Workshops, starting in spring/early summer 2021. Given the great deal of interest we experienced in discussions with these groups of people, we published and distributed a corresponding announcement to the NoE and beyond (AI4EU, CLAIRE, etc.) in mid-December (see Annex 5a). Together with this announcement, we provided an online survey for prospective participants (see Annex 5b), and within only four weeks – including the Christmas break – we received almost a hundred pre-registrations from across Europe (19 countries). This is a huge success and the participation in the survey demonstrates the appreciation and support of such a format by the European AI community, including industry (~1/3 of the pre-registrations indicated an industry background). We will now further analyse the results from this pre-registration process together with the NoE, and include it in the further planning of the first TDW events in the context of EU ICT-48, and beyond.

5 Annex

a. Example: 2-pager for TDW Announcement



Announcement

of a series of joint

Theme Development Workshops

In 2021, the projects TAILOR, HumanE AI Net, VISION and CLAIRE AISBL are planning a series of joint so-called Theme Development Workshops (TDW) to bring together key players from specific industry sectors with key AI researchers, as well as additional stakeholders. **The objectives are to jointly identify the strategic AI research areas and challenges in the scope of the workshop and to set up collaborative structures for further addressing them beyond the event.**

What is a Theme Development Workshop?

- One-day workshop with a limited number of 20 to 50 pre-selected participants
- Workshop programme consisting of plenary presentations and focused discussions in smaller groups and breakout sessions
- Key objective is to elaborate common goals between academia and industry to define a strategic AI research and innovation roadmap for a particular industry sector or relevant societal topic (e.g., climate change)

Which topics and industry sectors are planned?

- Mobility & Transportation (e.g., trustworthy AI for autonomous driving)
- Smart Industry (e.g., automated AI in large-scale industrial contexts)
- Health (e.g., trustworthy AI to support personalized treatment)
- Energy (e.g., AI for large-scale energy management)
- Public Sector (e.g., trustworthy AI systems and services for public administration)
- … and many others (you can also suggest topics/areas via the online form)

Who should participate?

- We are looking for strategic thinkers and AI researchers from industry as well as academic institutions and other interested parties
- You should be open to discuss and contribute long-term strategic topics and challenges as well as more focused short-to mid-term activities
- We are welcoming participants at all career stages and levels from all over Europe to include multiple and different perspectives

These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 952215 (TAILOR) – 825619 (HumanE-AI-Net) – 952070 (VISION)

What is in it for you?

- Identify the grand challenges for AI in Europe together with leading scientists, key industrial players as well as political and societal stakeholders
- Contribute to the strategic research and innovation agenda for AI in Europe
- Meet like-minded people and use the opportunity for networking and participation in follow-up activities (in the projects and beyond, e.g. via internships, hackathons, transfer labs, PhD-programmes)
- Costs for the workshops are covered, there are no participation fees (you have to pay for your travel expenses for on-site Theme Development Workshops though)

I am interested, when and how can I participate?

- First Theme Development Workshops are planned for March/April 2021 as online events (due to COVID-19), TDW later in 2021 might be hybrid or on-site events
- Please pre-register via our online-form until **15th January 2021**, we will inform you about the specific topics, date as well as the selection process for each upcoming TDW as soon as possible:
  https://ec.europa.eu/eusurvey/runner/ThemeDevelopmentWorkshops

About TAILOR (https://liu.se/en/research/tailor)

TAILOR (Foundations of Trustworthy AI integrating Learning, Optimisation and Reasoning) brings together leading AI research centres from learning, optimisation and reasoning as well as major European companies representing important industry sectors into a single network addressing the scientific foundations of Trustworthy AI.

About HumanE AI Net (https://www.ai4eu.eu/humane-ai-net-0)

HumanE AI Net brings together top European research centers, universities and key industrial champions into a network of centers of excellence that goes beyond a narrow definition of AI and combines world leading AI competence with key players in related areas such as HCI, cognitive science, social sciences and complexity science. This is crucial to develop a truly Human Centric brand of European AI.

About VISION (https://www.vision4ai.eu/)

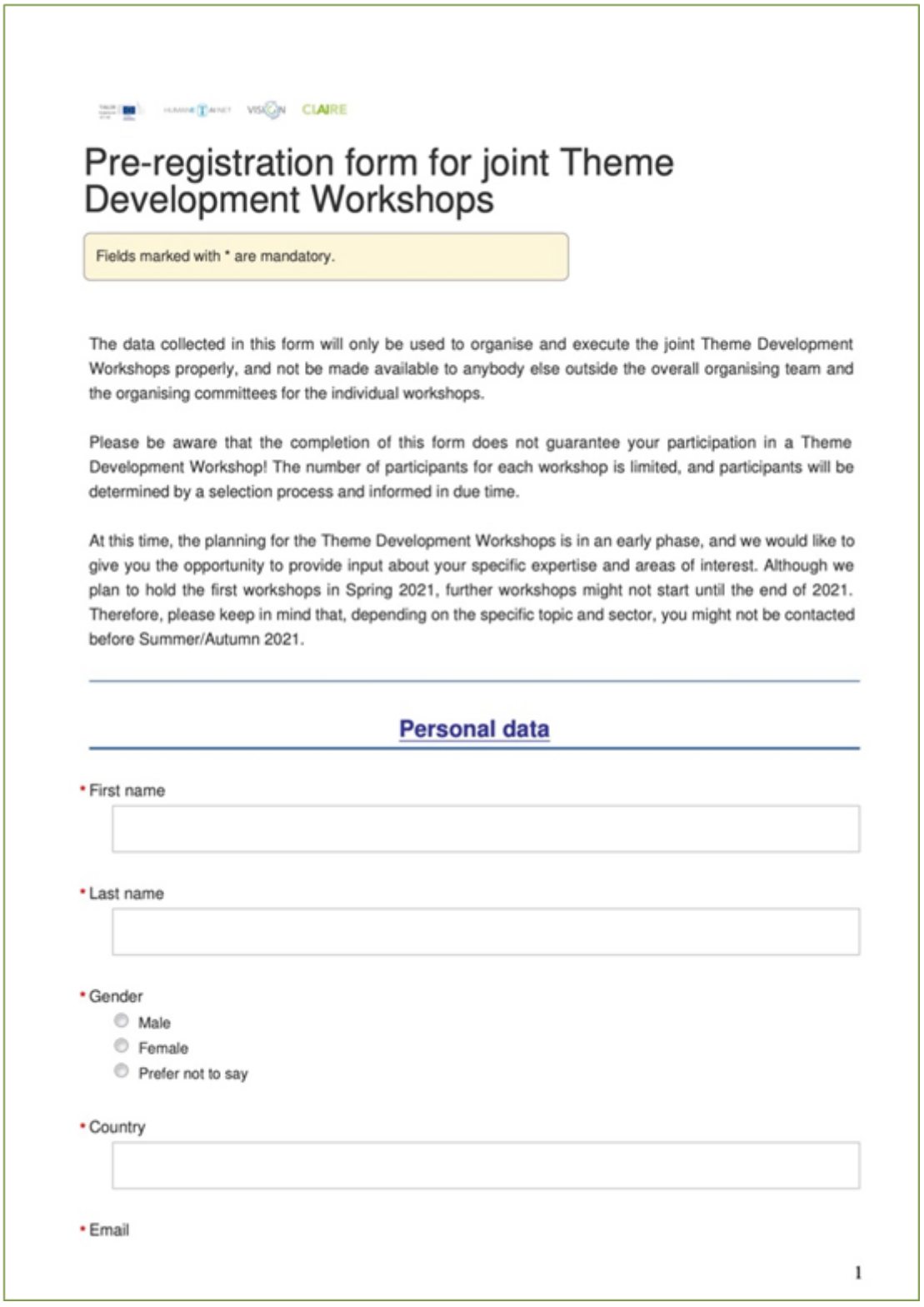
A broad and ambitious vision is needed for human-centred AI research and innovation in Europe to thrive and remain internationally competitive. In this spirit, VISION aims to coordinate the four new AI networks of excellence selected by the European Commission in the framework of the ICT-48-call "Towards a vibrant European network of AI excellence centres".

About CLAIRE (https://claire-ai.org)

CLAIRE (Confederation of Laboratories for Artificial Intelligence Research in Europe) is an organisation created by the European AI community that seeks to strengthen European excellence in AI research and innovation, with a strong focus on human-centred AI.
– *Contact: office-germany@claire-ai.org* –

These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 952215 (TAILOR) – 825619 (HumanE-AI-Net) – 952070 (VISION)

b. Example: Survey TDW pre-registration



Pre-registration form for joint Theme Development Workshops

Fields marked with * are mandatory.

The data collected in this form will only be used to organise and execute the joint Theme Development Workshops properly, and not be made available to anybody else outside the overall organising team and the organising committees for the individual workshops.

Please be aware that the completion of this form does not guarantee your participation in a Theme Development Workshop! The number of participants for each workshop is limited, and participants will be determined by a selection process and informed in due time.

At this time, the planning for the Theme Development Workshops is in an early phase, and we would like to give you the opportunity to provide input about your specific expertise and areas of interest. Although we plan to hold the first workshops in Spring 2021, further workshops might not start until the end of 2021. Therefore, please keep in mind that, depending on the specific topic and sector, you might not be contacted before Summer/Autumn 2021.

Personal data

* First name

* Last name

* Gender
  - Male
  - Female
  - Prefer not to say

* Country

* Email

1

Affiliation and Background

* Affiliation (University, company, organisation or similar)

* Group or department

* Position/title

* Background
  - Academia
  - Industry
  - Other

* Please describe your Background

* Career level
  - Researcher
  - Senior Researcher
  - Professor/Leader in academic institution
  - Other

* Please describe your Career Level

* Career Level
  - Expert/manager
  - Team or department head
  - Executive level (CXO)
  - Other

* Please describe your Career Level

2

Theme Development Workshop - AI topics and industry sectors

* AI topic/area of interest
  - ☐ Explainable AI (formalisms and methods, adaption to context and user background, validate the grade of comprehensibility for different stakeholders, etc.)
  - ☐ Human-machine interaction/teaming (AI methods that understand people, more natural ways to communicate with AI, continuous adaption to each other, etc.)
  - ☐ Autonomous AI agents (integrate data-based with model-based methods, models for collaboration between agents, emergent behaviour, etc.)
  - ☐ Societal AI (aggregated network effects of AI and impacts on society, etc.)
  - ☐ Safe AI systems (verification and validation, simulating the AI system and its interactions, self-monitoring AI systems, etc.)
  - ☐ Fairness by design (how to build such AI algorithms/systems, avoid bias, etc.)
  - ☐ Integrating different AI paradigms (computationally and mathematically)
  - ☐ Automated AI/ML (more mature and flexible approaches for real-world problems, etc.)
  - ☐ Other

* Please describe your AI topic/area of interest

* Industry sector of interest for AI
  - ☐ Smart Industry/AI in production environments
  - ☐ IT Services & Software
  - ☐ Public Services/Public Administration
  - ☐ Automotive, Mobility & Transportation
  - ☐ Energy Sector
  - ☐ Health Sector
  - ☐ Finance/Fintech
  - ☐ Insurance
  - ☐ Other

* Please describe the industry sector of interest for AI

* What would be your contribution to a Theme Development Workshop/why would it be beneficial to have you as a participant (e.g., your specific expertise, your professional network, support to organise a TDW, etc.)? (please write 3-5 sentences)

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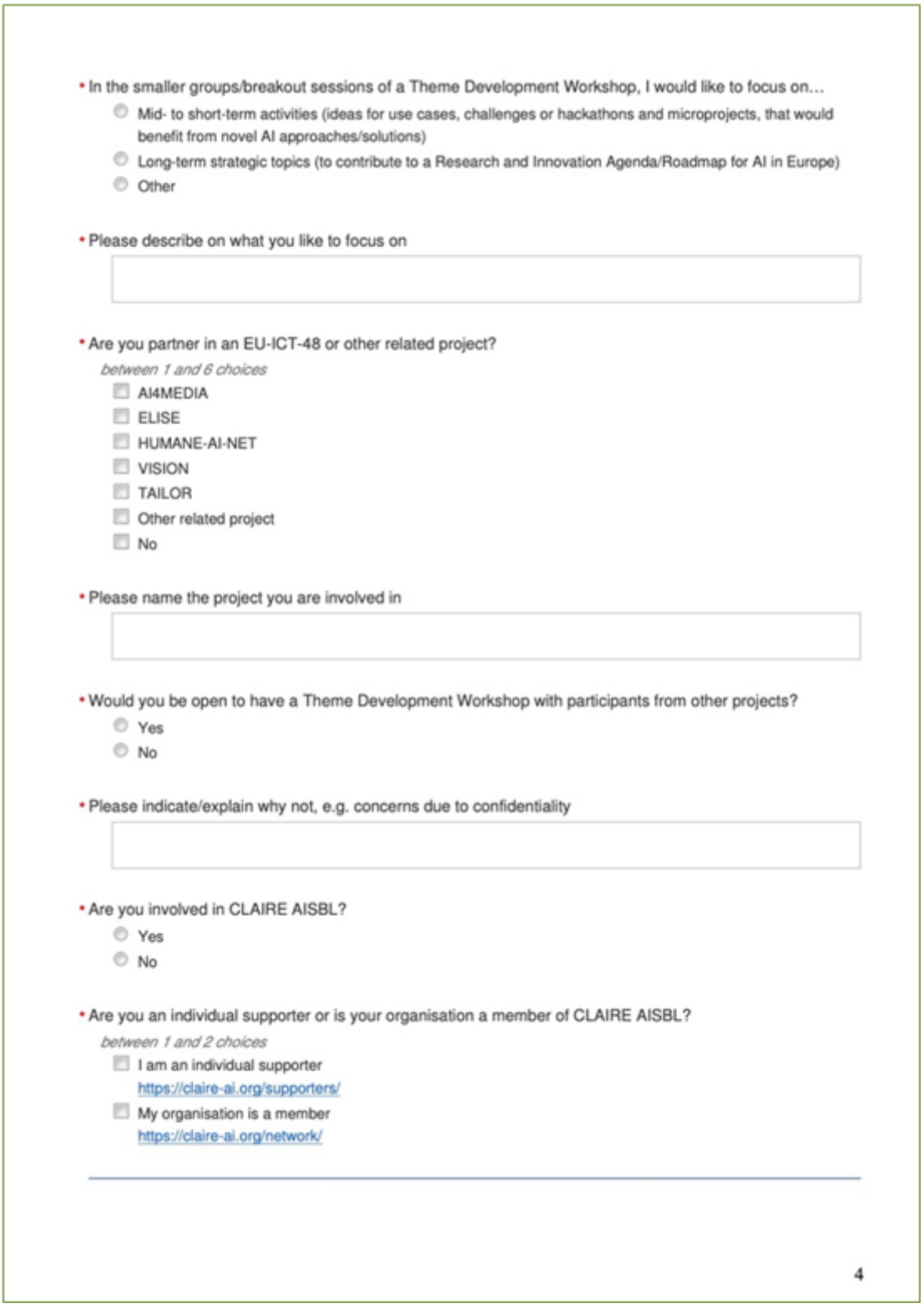

* In the smaller groups/breakout sessions of a Theme Development Workshop, I would like to focus on…
  - ○ Mid- to short-term activities (ideas for use cases, challenges or hackathons and microprojects, that would benefit from novel AI approaches/solutions)
  - ○ Long-term strategic topics (to contribute to a Research and Innovation Agenda/Roadmap for AI in Europe)
  - ○ Other

* Please describe on what you like to focus on

* Are you partner in an EU-ICT-48 or other related project?

between 1 and 6 choices

- ☐ AI4MEDIA
- ☐ ELISE
- ☐ HUMANE-AI-NET
- ☐ VISION
- ☐ TAILOR
- ☐ Other related project
- ☐ No

* Please name the project you are involved in

* Would you be open to have a Theme Development Workshop with participants from other projects?
  - ○ Yes
  - ○ No

* Please indicate/explain why not, e.g. concerns due to confidentiality

* Are you involved in CLAIRE AISBL?
  - ○ Yes
  - ○ No

* Are you an individual supporter or is your organisation a member of CLAIRE AISBL?

between 1 and 2 choices

- ☐ I am an individual supporter
  https://claire-ai.org/supporters/
- ☐ My organisation is a member
  https://claire-ai.org/network/

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☐ I agree that my data is stored and processed in order to organise and execute the Theme Development Workshops. This also includes the processing via EUSurvey (Privacy Statement: https://ec.europa.eu /eusurvey/home/privacystatement; Terms of service: https://ec.europa.eu/eusurvey/home/tos).

☐ I allow the organisation team to contact me regarding the selection process and for further information about the Theme Development Workshops.

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