



# Artificial intelligence, Data and Robotics ecosystem

<https://adra-e.eu/>

**Call: A human-centred and ethical development of digital and industrial technologies 2021**

**Topic: Horizon-CL4-2021-Human-01**

**Type of action: Coordination and Support actions**

**Grant agreement N°: 101070336**

**WP N°2: Awareness and Coordination between European ADR initiatives**

**Deliverable N°2.3: Cross-project workshop series. Report 1**

**Lead partner: DFKI**

**Version N°: v.1.0**

**Date: 31/12/2023**

**Dissemination level<sup>1</sup>: PU**

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<sup>1</sup> **PU**: Public; **CO**: Confidential, only for members of the consortium (including the Commission Services)



Document information	
Deliverable N° and title:	D2.3 Cross-project workshop series Report 1
Version N°:	1.0
Lead beneficiary:	DFKI
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Reviewers:	Katerina Linden (LIU)
Submission date:	04.01.2024
Due date:	31.12.2023
Type <sup>2</sup> :	R
Dissemination level <sup>3</sup> :	PU

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<sup>2</sup> R: Report, **DEC**: Websites, patent filling, videos; **DEM**: Demonstrator, pilot, prototype; **OTHER**: Software Tools

<sup>3</sup> **PU**: Public; **CO**: Confidential, only for members of the consortium (including the Commission Services)

<b>Document history</b>			
<b>Date</b>	<b>Version</b>	<b>Author(s)</b>	<b>Comments</b>
24/11/2023	0.1	Janina Hoppstädter (DFKI), Kyra Kiefer (DFKI)	First version
28/11/2023	0.2	Janina Hoppstädter (DFKI), Kyra Kiefer (DFKI)	Set up of Section 1 and 2
04/12/2023	0.3	Janina Hoppstädter (DFKI), Kyra Kiefer (DFKI)	Set up of Section 3 and 4, Document summary
11/12/2023	0.4	Andrey Girenko (DFKI), Janina Hoppstädter (DFKI), Kyra Kiefer (DFKI)	Finalisation of all Sections
12/12/2023	0.5	Andrey Girenko (DFKI), Janina Hoppstädter (DFKI), Kyra Kiefer (DFKI)	Final version; adjustments to the format and the finalisation of the text
19/12/2023	0.6	Katerina Linden (LiU)	Review
20/12/2023	1.0	Andrey Girenko (DFKI), Janina Hoppstädter (DFKI), Kyra Kiefer (DFKI)	Final version with included review comments

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Adra-e has received funding from the European Union's Horizon Europe under grant agreement 101070336.

## Document summary

The Adra-e Deliverable D2.2 "Cross-project workshop series. Report 1" the preliminary phase of the cross-project workshop series, centered around Work Package 2 "Awareness and Coordination between European ADR initiatives". This report delineates the package's pivotal role as a nexus between ADR communities and the broader research domain. Its primary thrust is to galvanize collaborative endeavors, propelling advancements by fostering awareness, identifying synergies, nurturing cross-disciplinary research, and nurturing innovation.

At its core, the document articulates the multifaceted objectives of the work package, delineating strategies for disseminating information, synergizing initiatives, supporting interdisciplinary collaboration, and incubating novel ventures. It expounds on the nuanced methodologies deployed to realize these aims, spotlighting the pivotal roles of the Joint Research Task Force and the meticulously structured cross-project workshops.

A substantive segment of the report expounds upon the function of the Joint Task Force (JTF) and the operational framework of Cross-project workshops in actualizing these objectives. The JTF, comprising influential entities, focuses on harmonizing perspectives, pinpointing research areas, fostering knowledge transfer, and embracing interdisciplinary approaches. Simultaneously, the Cross-project workshops, orchestrated through five distinct phases, endeavor to amalgamate diverse expertise, strategically curate participants, and culminate in comprehensive reports steering forthcoming initiatives.

Throughout this document, the focal point remains steadfast on the pivotal role of collaboration, knowledge exchange, and strategic planning in propelling ADR practices forward. These workshops serve as indispensable platforms fostering networking, synergy identification, and the formulation of influential recommendations that sculpt the research landscape within the ADR community.

## Table of Contents

1. Introduction .....	7
2. Objectives and expected outcomes of Adra-e’s cross-project workshops.....	9
2.1 Background.....	9
2.2 Objectives .....	9
2.3 Expected outcomes.....	10
3 Joint Task Force as a major organizer behind.....	12
3.1 JTF composition principles .....	12
3.2 Initial activities of JTF .....	13
4 Design and methodology of Adra-e Cross-project workshops .....	15
4.1 Organisation of a Cross-project Workshop .....	15
<i>CPW template and process .....</i>	<i>15</i>
Phase 1: Start planning the Cross-project Workshop .....	15
Activity 1: Define the topic and scope/purpose of the CPW.....	15
Activity 2: Define the target/participant groups for the CPW.....	16
Activity 3: Establish an Organising Committee for the CPW.....	16
Phase 2: Promote the CPW to the target audience .....	17
Activity 4: Create information/marketing material for the CPW.....	17
Activity 5: Create a survey to identify suitable participants for the CPW (optional). ....	17
Phase 3: Start organising the Cross-project Workshop .....	17
Activity 6: Define the schedule for the CPW.....	18
Activity 7: Select and invite the participants and speakers. ....	18
Activity 8: Prepare the event including the breakout sessions.....	19
Phase 4: Execute the CPW – the day(s) of the workshop.....	20
Activity 9: Registration and support.....	20
Activity 10: Plenary and breakout sessions .....	20
Phase 5: Summarise and distribute results of the CPW.....	22
Activity 11: Review of the CPW results. ....	22
Activity 12: Create a report and distribute it.....	22
Activity 13: Take care of follow-up activities (optional). ....	22
4.2 Lessons learned from organising a Theme Development Workshop .....	22
5 Conclusion.....	24

## List of abbreviations

ADR	AI, Data and Robotics
CPW	Cross-project Workshop
EDIH	European Digital Innovation Hub
e.g.	for example
etc.	et cetera
JTF	Joint Research Task Force
OC	Organising Committee
SME	Small and Medium Enterprise
T.	Task
TDW	Theme Development Workshop
WP	Work Package

# 1. Introduction

In general, work package 2 serves as a linchpin, connecting ADR communities with the broader research ecosystem, and catalysing collaborative efforts that propel the field forward. Through a strategic combination of awareness, synergy identification, support for cross-disciplinary research, and innovation cultivation, the package seeks to contribute significantly to the vibrant and evolving landscape of ADR research and innovation.

In detail the objectives of the work package are:

- **Raising Awareness within ADR Communities:**
  - **Information Dissemination:** The primary objective of this work package is to actively disseminate information within the ADR communities. This involves raising awareness about ongoing research, innovation, and infrastructure development activities within adjacent areas that align with European or national initiatives.
  - **Communication Channels:** To achieve this, the work package employs various communication channels, such as regular updates, newsletters, and targeted communication campaigns. By keeping ADR communities informed, the goal is to create a well-informed and connected network that stays abreast of relevant developments.
- **Identifying and Capitalizing on Synergies:**
  - **Collaborative Opportunities:** Another key goal is to identify and leverage synergies between the initiatives at the European and national levels. By fostering collaboration between these activities, the work package aims to create a more cohesive and impactful landscape for ADR research and innovation.
  - **Strategic Alignment:** The identification of synergies involves a strategic alignment of goals and resources, with the aim of maximizing the collective impact of European and national initiatives. This collaborative approach seeks to avoid duplication of efforts and enhance the overall effectiveness of the ADR community's endeavours.
- **Supporting Cross-Disciplinary Research Topics:**
  - **Facilitating Interdisciplinary Collaboration:** The work package plays a crucial role in supporting the identification of promising cross-disciplinary research topics. This involves bringing together diverse expertise from different fields within ADR to encourage interdisciplinary collaboration.
  - **Interaction with WP1 (Task 1.1):** Close interaction and collaboration with WP1 (Task 1.1) are emphasized to ensure that the identified cross-disciplinary research topics align with the overarching goals of the broader project. This collaborative effort aims to seamlessly integrate insights from various disciplines, fostering a holistic and comprehensive approach to research.
- **Facilitating the Emergence of New Initiatives:**
  - **Cultivating Innovation:** A core objective is to cultivate an environment that encourages the emergence of new cross-disciplinary initiatives. By providing the necessary support structures and fostering a collaborative culture, the work package aims to catalyse the development of innovative projects within the ADR communities.
  - **Dynamic Interaction:** The work package recognizes the dynamic nature of the research landscape and actively engages with ADR communities to stay attuned to emerging trends and opportunities. This proactive approach ensures that the project remains agile and responsive to the evolving needs of the ADR field.

The goal of T2.2 is to drive innovation and collaboration in the realm of technology and research involves the initiation of strategic initiatives that bring together diverse stakeholders, foster knowledge exchange, and build synergies. The following key activities outline our commitment to cultivating a collaborative ecosystem:

- **Joint Research Task Force:** Setting up and enabling a Joint Research Task Force bringing together interested coordinators (appointed “ambassadors”) based on the mapping activities in T.2.1 and setting up and enabling a Joint Task Force to support discussions about a suitable “ADR Research Infrastructure”, with the objective to find commonalities and synergies as well as to provide recommendations for such an infrastructure. A very important activity in this context is to build up strong connections to the HPC and supercomputing community (EuroHPC, etc.).
- **Cross-project workshop series:** Identification of topics and participating projects through the Joint Research Task Force and in cooperation with WP1 (Task 1.1). Each workshop will be aimed at exchange of knowledge, identification of synergies as well as possibilities for coordination and new research challenges. Jointly co-organise 2 hybrid events/conferences about “AI, Data and Robotics for cross-regional innovation” with relevant EDIHs to support connections between these EDIHs and Adra, facilitate corridor-building activities of the EDIHs, and share best practices. This will be done in coordination with the activities in WP4.

The following sections explain both the Joint Task Force as the main organizer and the methodology of the Theme Development Workshops as a tool for implementing the objectives described.



## 2. Objectives and expected outcomes of Adra-e's cross-project workshops

### 2.1 Background

As one of the major objectives of the Adra-e project is to establish the mechanism for building connections between structured initiatives from the ADR domains (see Objective 2 of the project), there is a need to raise cross-domain awareness of the major RTD and structural projects, discuss the trends and foresights specific to common and socioeconomically important application areas and provide consolidated feedback to the project activities aimed at the identification of joint research priorities. In this context, the cross-project workshop series designed by Adra-e plays a central role as a forum enabling focused and application-centred discussions of representatives of key initiatives from the corresponding ADR domains.

The complementarity to the research priorities identification activities in WP1 will be ensured by a clear application focus (e.g. Health, Manufacturing, Energy, etc.), which would provide an important sectoral dimension. This, in turn, will help to formulate the future technological challenges, which are typically sector specific.

### 2.2 Objectives

The Joint Research Task Force will conduct a series of workshops in collaboration with WP1 (Task 1.1) and other candidates form the organising committee with the following objectives:

- **Topic and Project Identification:**
  - **Leveraging Collaborative Intelligence:** The Joint Research Task Force and WP1 (Task 1.1) serve as dynamic platforms for harnessing collaborative intelligence. Through these channels, we actively seek to identify pertinent topics that are at the forefront of research and align with the collective objectives of participating projects.
  - **Engaging Stakeholders:** We encourage active involvement from stakeholders within the Joint Research Task Force and WP1 (Task 1.1) to ensure a diverse and comprehensive perspective during the identification process. This ensures that the chosen topics resonate with the broader research community.
- **Knowledge Exchange:**
  - **Catalysing Learning:** The workshops are meticulously crafted to provide an open and interactive space for knowledge exchange. Participants are encouraged to share not only successes but also challenges faced during their projects, fostering a culture of learning from both achievements and setbacks.
  - **Facilitating Open Dialogue:** Through structured discussions, panels, and interactive sessions, the workshops aim to break down silos and promote a free flow of ideas. This open dialogue allows participants to gain valuable insights from each other's experiences, ultimately enriching the collective knowledge base.
- **Synergy Identification:**
  - **Fostering Collaboration:** The workshops serve as catalysts for collaborative efforts, providing a platform to explore synergies among projects. By identifying common goals and complementary strengths, we aim to encourage collaborative initiatives that amplify the impact of individual projects.
  - **Networking Opportunities:** Structured networking sessions and collaborative exercises are integrated into the workshops to facilitate organic interactions. These sessions are designed to nurture relationships, paving the way for potential partnerships and joint endeavours.

- **Coordination Possibilities:**

- **Enhancing Efficiency:** Recognizing the potential for increased efficiency through coordination, the workshops delve into possibilities for streamlining efforts across projects. This may involve resource optimization, shared methodologies, or coordinated timelines to maximize the overall effectiveness of the research endeavours.
- **Establishing Best Practices:** Workshops provide a forum for the exchange of project management strategies and best practices. Through shared insights, projects can adopt proven methodologies and enhance their coordination mechanisms.

- **New Research Challenges:**

- **Proactive Exploration:** The workshops are forward-looking, actively engaging participants in discussions about emerging research challenges. By addressing these challenges collectively, we aim to inspire innovative solutions that push the boundaries of knowledge and drive advancements in the field.
- **Encouraging Interdisciplinary Perspectives:** Workshops encourage participants to view emerging challenges through interdisciplinary lenses, fostering a holistic approach to problem-solving. This interdisciplinary perspective often leads to ground-breaking insights and novel solutions that may not be apparent within the confines of individual projects.

## 2.3 *Expected outcomes*

The collaborative efforts of the cross-project workshops are anticipated to yield valuable outcomes aimed at enhancing ADR and facilitating research infrastructure development. The key outcomes include:

- **Whitepaper/Report on Best Practices, Lessons Learned, Knowledge Exchange:**

- The task force will produce a comprehensive whitepaper or report outlining best practices observed during the mapping activities<sup>4</sup> and subsequent discussions.
- Insights into lessons learned from various ADR initiatives will be documented, providing a valuable resource for practitioners, researchers, and policymakers.
- A platform for knowledge exchange will be established, fostering a collaborative environment where stakeholders can share experiences and insights, thereby enriching the ADR community.

- **ADR Research Infrastructure Recommendations:**

- A central outcome of the task force's efforts will be a set of recommendations for the development of an effective ADR Research Infrastructure.
- These recommendations will encompass insights gathered from the coordinated efforts of appointed ambassadors, mapping activities, and focused discussions within the Joint Task Force.
- The recommendations will address critical aspects such as technological requirements, data management, standardization of methodologies, and collaborative frameworks.

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<sup>4</sup> Within Task Task 2.1 of Adra-e, mapping activities involve charting the ADR landscape and infrastructure, fostering connections between initiatives, yielding a comprehensive understanding of innovation, geographic reach, societal reception, and pivotal elements. These efforts produce detailed cartographies of the evolving ADR ecosystem showcased in the ADR Awareness Centre's digital repository and an exhibition highlighting key advancements.

These outcomes collectively aim to contribute significantly to the advancement of ADR practices and the establishment of a robust research infrastructure. The whitepaper/report and infrastructure recommendations will serve as valuable references for researchers, practitioners, and stakeholders involved in ADR, promoting continuous improvement and innovation in the field.

### 3 Joint Task Force as a major organizer behind

#### 3.1 JTF composition principles

The Joint Task Force Composition Principles stand as a meticulously crafted blueprint, delineating the intricate framework essential for fostering an alliance among key entities in the realm of research and innovation. Rooted in the foundational efforts of mapping activities within T.2.1, this strategic orchestration converges on the assembly of designated ambassadors—individuals appointed to represent a diverse spectrum of entities.

At its core, this initiative seeks to convene a diverse ensemble, including but not limited to AI4EU, ICT-49 CSA, VISION (ICT-48), RODIN, ROBOTICS4EU, DIHNET, BOWI CSAs, outcomes from CL4-2021-DIGITAL- EMERGING-01-12 calls, and clusters like the ICT-38 cluster. The amalgamation of these influential entities underscores a deliberate move toward consolidating collective efforts, propelling research endeavours to new heights.

Based on these principles, the Joint Task Force was established on the 22nd of September 2023 with the following persons and affiliations and started its work with the first meeting:

Andrey Girenko	DFKI
Janina Hoppstädter	DFKI
Kyra Bare	DFKI
Mattia Trino	BDVA
Andreas Metzger	BDVA
Reinhard Lafrenz	euRobotics
David Bisset	RODIN
Holger Hoos	RWTH Aachen
Barry O'Sullivan	EurAI
Anneli Roose	Robotics4EU
John Soldatos	AI for Manufacturing (ICT-38) Cluster
David Servat	CEA
Valentina Ivanova	CEA
Freek Bomhof	TNO
Iddo Bante	EIT Digital
Anne Bergen	EIT Digital
Morgan Gillis	EIT Digital

Further members were added in the following months and will participate in further meetings:

Andre Hebben	INSIDE, HPC
Roberto Cascella	ESCO, HP
Alexandros Kaloxylos	6GSNS, HPC
Clara Pezuela	FIWARE, HP
Davide Dalle Carbonare	Big Data Value

The genesis of this collaborative endeavour traces back to the foundational mapping activities<sup>5</sup>, but its essence lies in the Joint Research Task Force. Paired with WP1 (Task 1.1), this coalition is poised to embark on a series of workshops, each meticulously designed to accomplish multifaceted objectives. These objectives serve as guiding lights, steering the collective efforts towards a cohesive and comprehensive approach:

- **Topic and Project Identification:** The collaborative intelligence of the Joint Research Task Force and WP1 (Task 1.1) serves as a conduit for identifying cutting-edge research topics. Engaging stakeholders ensures a broad spectrum of perspectives, aligning the chosen subjects with the overarching research goals.
- **Knowledge Exchange:** Crafted as interactive hubs, the workshops facilitate open sharing of successes and challenges. This cultivates a culture of learning from diverse experiences and perspectives.
- **Synergy Identification:** By fostering collaboration and encouraging networking, the workshops aim to identify common ground among projects. This facilitates synergistic initiatives and potential partnerships, amplifying collective impact.
- **Coordination Possibilities:** Efficiency enhancement and best practice establishment form the crux here. Delving into coordinated efforts and shared methodologies optimizes resources and management strategies.
- **New Research Challenges:** The forward-thinking approach of the workshops encourages proactive exploration of emerging challenges. Embracing interdisciplinary perspectives in these discussions inspires innovative solutions and pushes the boundaries of knowledge.

The overarching objective of this Joint Task Force is to harness the collective wisdom and expertise of its constituents, promoting a collaborative ecosystem that not only addresses existing challenges but also anticipates and tackles future endeavours head-on.

### **3.2 Initial activities of JTF**

The fundamental activities of the Task Force serve as a foundation on which future collaborative efforts will flourish. These critical steps lay the groundwork for a cohesive and focused alliance between influential institutions at the forefront of research and innovation.

**At the time of writing this deliverable, these steps have been fully completed.**

These activities are:

The foundational activities of the Task Force serve as the bedrock upon which the future collaborative endeavours will flourish. These pivotal steps set the stage for a cohesive and purposeful alliance among influential entities at the forefront of research and innovation. These activities are:

- **Contacting Potential Partners:** The proactive engagement with a diverse array of entities marks the initiation of a dialogue aimed at fostering collaboration. Reaching out to esteemed partners such as AI4EU, ICT-49 CSA, VISION (ICT-48), RODIN, ROBOTICS4EU, DIHNET, BOWI CSAs, outcomes from CL4-2021-DIGITAL-EMERGING-01-12 calls, and clusters like the

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<sup>5</sup>Within Adra-e, mapping activities involve charting the ADR landscape and infrastructure, fostering connections between initiatives, yielding a comprehensive understanding of innovation, geographic reach, societal reception, and pivotal elements. These efforts produce detailed cartographies of the evolving ADR ecosystem showcased in the ADR Awareness Centre's digital repository and an exhibition highlighting key advancements.

ICT-38 cluster represents a deliberate effort to forge connections and explore synergies. These contacts lay the groundwork for potential collaborative initiatives within the Task Force.

- **Creating a Comprehensive Mailing List:** Establishing a robust communication infrastructure takes center stage. The creation of a comprehensive mailing list, incorporating all identified partners, ensures seamless information dissemination. This proactive step serves as the linchpin for fostering efficient and consistent communication channels vital for cohesive collaboration.
- **Extending Invitations for the Inaugural Joint Task Force Meeting:** Formal invitations are extended to the esteemed entities, outlining the agenda and objectives of the inaugural meeting. This act not only signifies the initiation of collective endeavours but also fosters an atmosphere of anticipation and commitment among the involved parties.
- **Inaugural Meeting - Building Understanding and Defining Objectives:** The maiden gathering is a pivotal moment for fostering rapport and understanding among Task Force constituents. Introductions pave the way for comprehensive discussions aimed at aligning individual aspirations with the overarching goals of the Task Force. This meeting acts as a catalyst for establishing a cohesive vision that underpins collaborative efforts.
- **Subsequent Meeting - Methodology and Workshop Planning:** Building upon the foundational discussions, the subsequent meeting delves into the strategic planning of Theme Development Workshops. Methodologies, structures, and approaches are meticulously crafted. The meeting culminates in the definitive setting of dates and the identification of the initial workshop topic, laying the groundwork for future collaborative engagements.

These activities serve as a scaffold on which the Task Force is building a solid framework for collaborative research and innovation. Each step is a strategic move to harness collective intelligence, foster synergies and push the frontiers of knowledge through collaborative initiatives.

## 4 Design and methodology of Adra-e Cross-project workshops

Having in mind the goals of the Joint Task Force the methodology of the Cross-project Workshops (CPW) will be adopted and adapted to specific requirements.

A CPW is a highly innovative format that allows addressing several activities at once and thereby spans across different steps of the innovation process.

- (1) 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 Adra-e and their first versions of roadmaps respectively.
- (2) Identify gaps: Input to and refinement of barriers and challenges in relation to these strategic long-term topics.
- (3) 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 Adra-e respectively.
- (4) Plan time & details: First rough estimation of timeline and next steps to address the identified challenges and more focused activities.
- (5) Prepare roadmap chart: Results of the CPW can directly feed into the road mapping activities of Adra-e.
- (6) Consultation and refinement: Given the large pool of expertise and stakeholders (from academia and industry) involved in Adra-e, the results of the CPWs can and will provide a high level of confidence in the adequacy of the proposed research and innovation activities and the derived input to the roadmaps.

### 4.1 Organisation of a Cross-project Workshop

In the following subsections, the template for planning, organising and executing a CPW will be shown and explained in detail. This includes a checklist and some recommendations for the specific steps and activities required.

#### CPW template and process

Based on previous experience and focused discussions with some representatives and partners from the Joint Task Force (see 3.1), a template for a five-phase process to plan and execute a CPW was developed. This overall process is visualised underneath and will be further elaborated on in the following subsections, including some recommendations and sharing of best practices.

#### *Phase 1: Start planning the Cross-project Workshop*

Phase 1 of the overall process consists of three main activities. Based on our previous experience, we recommend starting early with the planning, at least 4 months before the planned workshop date. However, this timeline depends on the scope and size of the CPW 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 CPW, 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 CPW.**

The first step is to define the topic and scope of the CPW from a high-level perspective. The guiding strategic rationale behind this aim is to exchange knowledge, identify synergies and opportunities for coordination and new research tasks.

In general, there are two different perspectives to define the high-level topic of a CPW and contribute to the goal of the workshop:

1. From an industry perspective: How will and can AI be used in a particular industry sector or to address a relevant societal topic.
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.

### Activity 2: Define the target/participant groups for the CPW.

The next step after the high-level definition of the topic and purpose is to decide which groups of stakeholders should participate in the CPW 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 CPW. In the context of Adra-e and based on the considerations outlined above, the following groups are considered as important stakeholders in general:

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

### Activity 3: Establish an Organising Committee for the CPW.

To ensure a proper planning and organisation of the CPW, including its content and focus, we recommend establishing 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 CPW, we suggest an OC consisting of 8-10 persons including the Joint Task Force as leader, collaboratively agreeing to pursue the following tasks:

- Refine the high-level topic of the CPW 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.
- Suggest experts and select participants for the defined sub-topics/topic-lines of the CPW and with all the needed background and perspectives.
- Attend the CPW as experts and/or facilitate a specific topic-line/breakout session.
- Contribute to/proof-read and amend the final CPW 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 CPW.
- Members should have an extensive network of/know other experts related to the topic/s of the CPW.



- Mix members with academic and industrial background for the OC.
- 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 CPW takes place.

### *Phase 2: Promote the CPW to the target audience*

As soon as the high-level definition of the topic, purpose and target groups is finished, we recommend starting activities to promote the CPW 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 CPW. We recommend fixing the date and location of the CPW 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 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 CPW.**

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

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

#### **Activity 5: Create a survey to identify suitable participants for the CPW (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. However, we recommend at least complementing 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 CPW, specifically:

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

### *Phase 3: Start organising the Cross-project Workshop*

If this has not happened before promoting the CPW 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 to clarify organisational issues (needed rooms and equipment, catering, etc.). A CPW might also be organised as an online or hybrid event. In this case, we recommend clarifying who oversees the technical

support for the CPW (procurement of software licences, technical support staff required during the workshop etc.) via the OC as early as possible.

### Activity 6: Define the schedule for the CPW.

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 also expressed interest to extend the CPW to a second day 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. Furthermore, the emergence of new topics during the CPW is taken into consideration to support the creative nature of the workshop and address the special interests of participants.

Topic/Purpose	Timeline	Description/activities
Arrival and Intro	8:00	Arrival and welcoming (registration, first socialising, 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) → inspiring & challenging as preparation for breakout sessions.
	10:30	Coffee break and preparation for roundtable work (breakout sessions)
	10:45	Round table group work on specific (sub-) topics
	12:00	Plenary discussion/presentation of key findings from round table work
Lunch and Socialising	13:00	Lunch break and informal discussions
Session 2: Mid-to-short-term activities	14:00	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
Closing and Socialising	16:00	Plenary discussion/presentation of key findings from round table work and next steps
	17:00	Closing and informal discussions

### Activity 7: Select and invite the participants and speakers.

This step is very important because the success of the CPW 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 discussing in the breakout sessions. These considerations should guide the selection of participants by the OC accordingly. We recommend developing 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 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.
- Include participants from big companies, SMEs, and start-ups.

We advise creating a participant list, including a waiting list in case some of the pre-selected experts are not available for the CPW. The candidates for this list can be generated via different sources, e.g., the network of the OC members. 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 CPW.

In parallel, the OC should discuss and define the presentations and speakers according to the defined CPW schedule. The presentations should be brief and include some real challenges to inspire and support the discussions in the following breakout sessions. Speakers can be either participants of the CPW or invited guests. Especially for on-site CPWs 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 CPW (e.g., a dinner on the evening before the event to already welcome the participants and get them to socialise).

For on-site CPWs 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 on how to get to the 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 the infrastructure needed is available and ready, and if the staff is familiar with their supporting and facilitating roles. We recommend checking in particular:

- Is the location and local organisation team ready (on-site/hybrid CPW):
  - Are the rooms needed ready, including the 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 CPW)?
- Is the registration process organised (on-site/hybrid CPW):

- 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 CPWs/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?

#### *Phase 4: Execute the CPW – the day(s) of the workshop.*

During the workshop day(s), it is important to ensure a smooth pass 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 staffing 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 CPW). In the 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 CPW. 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 CPW 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 planning 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. Finally, if you plan to take photos or record videos/streams during the CPW, participants need to be informed upfront and indicate their consent.

### **Activity 10: Plenary and breakout sessions**

We recommend starting the workshop officially in plenary with a welcoming session, including the most relevant information about the objectives and procedures planned for the workshop. 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 the case of an online workshop, the distribution of participants to the virtual breakout rooms needs to be organised via a technical solution. Furthermore, there might be an opportunity to use a virtual conferencing tool for the CPW, which supports more activities like physical events.

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 us to include different perspectives in the discussion of a specific topic and supports creative ideas regarding 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 distribution of participants is desired, we recommend ensuring 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 CPW (see Activity 12) that participants in the breakout session document their discussion results and insights. Thus, we recommend using a proven tool to support collaborative notetaking in these sessions, and to provide at least a rough structure and some guidelines for such a document. An example of such a structure can be found in the following table.

Headline/section of the document	Description/ à Purpose
Headline: Topic  Optional: Subtopic	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  State the subtopic to be discussed in this session → we recommend formulating 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 using bullet list or like not overwhelm participants with too much information → If the breakout session is moderated by someone, this description can be very brief: Moderator to introduce the objectives and thereby motivate the discussion
Optional: Guiding questions	We recommend using 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

*Phase 5: Summarise and distribute results of the CPW.*

The five-phase process to organise and execute a CPW closes with a review and summary of the main results and outcomes of the workshop day/s.

**Activity 11: Review of the CPW results.**

After the CPW, 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 CPW if available (of presentations, etc.<sup>34</sup>).
- Selected experts, including the Organising Committee, who can contribute their experiences from the CPW, 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 CPW (see Activity 12).

**Activity 12: Create a report and distribute it.**

A report summarising the main results of the CPW might be interesting to all participants and further recipients. Especially to initiate some activities in Adra-e and beyond 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 would not be included.

If a summary of the results is needed for recipients outside the participant list of the CPW (e.g. for dissemination purposes), we recommend checking 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 not to 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 CPW, there might be further activities to follow-up with after the event. Accordingly, corresponding processes and collaborations are needed to ensure this, e.g., by incorporating the CPWs results and/or involve participants from the CPW into subsequent road mapping 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 CPW 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 CPW concept with lessons learned, thereby supporting the development of this innovative format.

**4.2 Lessons learned from organising a Theme Development Workshop**

Based on the previous experience of organising and planning the Theme Development Workshops in TAILOR, we were able to identify some valuable specific and general lessons learned. In the following, these will be explained in more detail and, in addition, included in the ongoing planning of

future workshops and will serve for further adaptation of the template for the organisation of Theme Development Workshops.

- **Early Planning and Coordination:** Initiating the planning process well in advance, preferably around six months before the workshop, proved essential for overcoming challenges related to holiday periods and other scheduling conflicts. Moreover, involving the Organizing Committee right from the outset, along with aligning their availability, ensured a smoother planning process.
- **Monthly Meetings and Communication Strategies:** Holding monthly meetings with the Organizing Committee proved to be an effective balance between coordination and minimising time consumption. This approach acknowledged that a majority of Committee members were unable to attend regular meetings. However, to ensure ongoing communication, email exchanges were utilised between meetings, enhancing efficiency.
- **Mitigating Keynote Speaker Challenges:** Recognizing the potential for keynote speaker cancellations or technical issues, it was prudent to have backup arrangements in place. This proactive approach safeguarded against last-minute disruptions and upheld the quality of the workshop's content.
- **Dynamic Agenda:** Flexibility in the agenda is important to accommodate unforeseen discussion needs or participant interests. Dynamically adjusting the agenda can increase the workshop's relevance.
- **Participant Commitment and Engagement:** Despite efforts to secure confirmed participation from attendees for the entire workshop day, some individuals either failed to attend without prior notice or participated only partially. Implementing mechanisms to enforce full-day commitment could improve the overall workshop experience.
- **Diversity and Gender Balance:** Ensuring a diverse range of participants, both in terms of industry and academia backgrounds as well as gender balance, was identified as a critical factor for the workshop's success. Striving for balanced representation allowed for richer discussions and perspectives during the event.
- **Sustainability and Follow-up Activities:** The workshop's success was not limited to its immediate outcomes. The collaboration's sustainability depended on follow-up activities, such as joint research initiatives, challenges, and hackathons, which require dedicated efforts to materialise the ideas generated during the workshop.
- **Involvement of Key Opinion Leaders:** Engaging renowned experts and key opinion leaders in the AI industry can enhance the workshop's interest and credibility.
- **Public Communication:** Targeted promotion of the workshop within the professional community and relevant industry circles can increase participant numbers and elevate the event's visibility. This requires
- **Collecting Feedback:** Participants' opinions about the workshop are valuable. Gathering feedback both during the workshop and in the post-event phase can help improve future events. However, this proved to be difficult, as only very few participants filled out the survey that was created for this purpose, despite multiple requests during the workshop.
- **Report generation:** As a result of the follow-up to the workshop, the Organising Committee as well as the experts and moderators of the breakout sessions must be involved in the preparation of the report. In the past, however, it has been shown that these are not always available due to scheduling restrictions, so it is important to send multiple reminders and therefore to plan enough time in advance for the preparation of the report.

## 5 Conclusion

The work package 2 of the project aims to act as a crucial connector within the ADR landscape, fostering collaboration and innovation. It outlines objectives such as information dissemination, interdisciplinary cooperation, and the emergence of new initiatives. Specifically, T2.2 focuses on driving innovation and collaboration in technology and research, aiming to create a collaborative ecosystem through activities like setting up a Joint Research Task Force and cross-project workshops. These initiatives aim to bring diverse stakeholders together, exchange knowledge, and build synergies critical for advancing ADR.

Central to this endeavor are the cross-project workshops, pivotal platforms promoting focused discussions among key ADR representatives. These workshops will identify and facilitate research priorities, exchanging knowledge, and addressing emerging challenges, culminating in valuable reports and recommendations for ADR research infrastructure.

Moreover, the Joint Task Force, comprising influential entities, seeks to harness collective wisdom, enabling comprehensive approaches to research and innovation. It initiates activities like contacting partners and planning meetings to establish cohesive collaboration and strategic planning.

In parallel, the Theme Development Workshops (TDWs) within the Joint Task Force address strategic topics, challenges, and roadmaps through meticulous planning, execution, and consultation with diverse stakeholders from academia and industry. These workshops aim to enhance ADR practices, foster collaboration, and advance research infrastructure.

Overall, these coordinated efforts aim to enhance ADR practices, foster collaboration, and advance research infrastructures, significantly contributing to innovation in the field. The TDWs, specifically tailored to address strategic aspects and innovation processes, play a pivotal role in achieving these goals by engaging stakeholders and crafting actionable roadmaps.