



Practical Handbook for the Co-Creation Process

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Acronym/abbreviations	
AI	Artificial Intelligence
AI HLEG	AI High-Level Expert Group
ALTAI	Assessment List for Trustworthy AI
AP4AI	Accountability Principles for AI
GPAI	General Purpose AI System
WP	Work Package
XAI	Explainable AI

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EXECUTIVE SUMMARY

This deliverable corresponds to Task 2.3 *Develop a methodological handbook for the co-creation process*, where the aim is to develop a step-by-step methodological handbook outlining the co-creation process for the development of operational AI ethics guidelines for various industry use cases.

In AIOLIA, co-creation is defined as a participatory and inclusive process where stakeholders from various backgrounds or industries work together to find or improve solutions, share ideas, and drive innovation. Principles of respect, transparency, equality, and fairness guide the active engagement and participation of stakeholders to develop tailored, feasible and relevant AI ethics guidelines in the AIOLIA industrial use cases.

This handbook includes practical information for academic and industry partners on how to establish, facilitate and evaluate co-creation activities in the development of AI ethics guidelines across AIOLIA's industrial use cases. The handbook provides templates and instructions on how many iterations of the co-creation process should occur, how to structure and optimise each iteration for the effective operationalisation of guidelines, and what should the order and content of each contribution be. It defines expected results to ensure that the operationalised guidelines receive optimal uptake across AI research areas. The handbook is intended to be flexible and adapted to the different use case contexts and chosen AI research areas.

The approach proposed in the handbook has been informed by interviews with the academic and industry partners in the AIOLIA project as well as desk-based research conducted by CENTRIC to acquire industry perspectives. These insights supported our understanding of the key needs, desired impact areas, success criteria and most effective methods when conducting co-creation activities in AIOLIA.

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1. Introduction

1.1. PURPOSE AND STRUCTURE OF THE HANDBOOK

This handbook provides practical guidance, tools and instructions on the effective implementation of the co-creation process in the development of artificial ethics operational guidelines for intelligence (AI) in AIOLIA. The material covered in this handbook provides a **step-by-step procedure with templates, methods, and considerations for the AIOLIA academic and industrial partners on how to co-create operational AI ethics guidelines through an operationalisation pathway**. As we emphasise a co-creation approach, many of the recommendations and templates are geared toward interactive dialogues, participatory engagement and collaborative learning. Partners are encouraged to evaluate their needs and adapt the content to suit the requirements in their use case. The operationalisation pathway details the instructions, timeline and expected actions that academic and industrial partners should undertake to achieve the milestones related to the phase in the development cycle. The overarching objective of this handbook is to equip the academic and industry partners with a comprehensive and easy-to-follow methodology for developing operational AI ethics guidelines.

The handbook is organised along three sections:

a) Introduction

- a. **Purpose and Structure of the Handbook** (this section)
- b. **An Introduction to Co-Creation:** introduces the concept of co-creation in AIOLIA with a concise definition, what it entails, guiding principles and the benefits of adopting a co-creation approach in the development of AI ethics guidelines
- c. **Methodology for Operationalising AI Ethics Guidelines across Use Cases:** offers a brief overview of the methodology for operationalising AI ethics guidelines across the AIOLIA use cases and research areas

b) Procedure for Operationalising AI Ethics Principles:

provides a step-by-step process for the development of operational AI ethics guidelines, along a two-cycle co-creation methodology. This section is organised along an operationalisation pathway which breaks down the process of developing operational AI ethics into steps. Each step includes **timelines, expected results, partner contributions and templates** for academic and industry partners.

c) Appendix: Supporting information

- a. **Conducting the Co-Creation Process effectively:** outlines how to prepare, facilitate and evaluate co-creation activities
- b. **Common Challenges in Co-Creation and Mitigation measures:** examines common challenges that may occur during the co-creation process such as power imbalances, bias, groupthink and participant disengagement
- c. **Research Ethics:** explores five research ethics principles and guiding information that should be taken into account when performing co-creation activities in AIOLIA to ensure high quality, credible research that also protects the rights, safety, dignity and wellbeing of research participants

1.2. AN INTRODUCTION TO CO-CREATION

In the AIOLIA project, we understand co-creation to be:

A collaborative and participatory process where stakeholders from various backgrounds and industries work together to identify ethical issues, share ideas and drive innovation.

Co-creation is often associated with numerous terms such as co-design, co-production, co-develop and user-centred design. However, at its core, co-creation is about working with individuals from diverse backgrounds to find solutions and explore ideas.^[1]

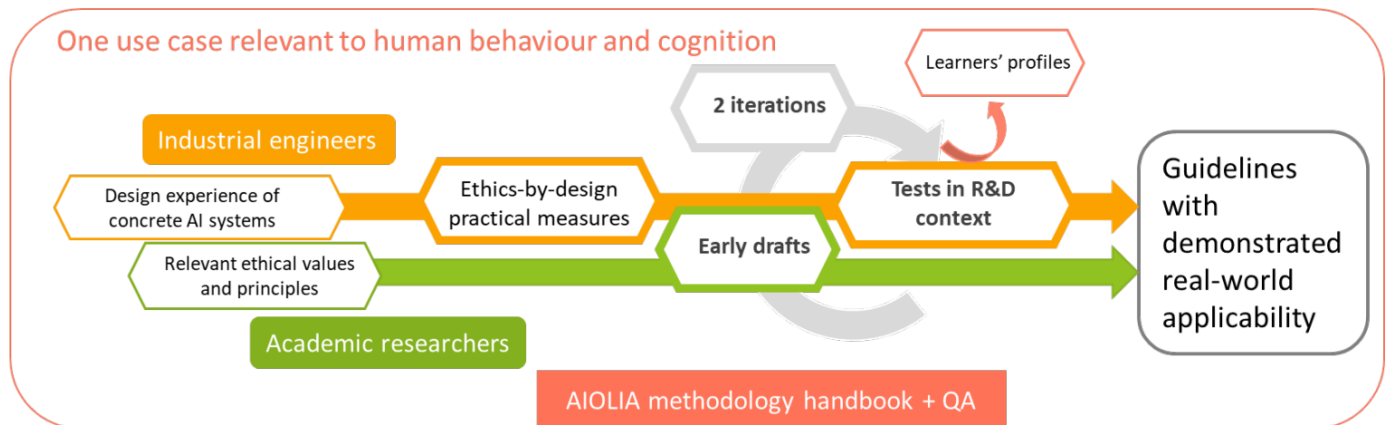
Current AI regulation requires further operationalisation to have a real-world impact on the design and use of AI systems in various use cases. The high-level ethical principles and values present in current legislation do not provide sufficient information on how these principles can be translated into actionable and feasible practical measures which ensure ethical compliance in real world conditions and existing workflows. It also fails to account for the unique and complex risks that may be present across different use cases. This is where co-creation provides a useful approach. The **use of co-creation processes in the development of use case AI ethics guidelines should lead to the development of tailored, feasible and sustainable guidelines which account for use case specific contextual factors**^[2]. The design, development and deployment of new digital technologies such as AI requires long-term multidisciplinary collaborations to ensure these technologies are socially acceptable and adhere to ethical considerations and legal requirements.^[3]

Co-creation is an iterative process where individuals should cycle through the process several times through various methods to achieve the best results. The main values of co-creation revolve around respect, transparency, equality and fairness to guide and ensure a fair, productive and inclusive environment. Successful co-creation in AIOLIA requires active dialogue and collaboration between stakeholders from various relevant disciplines to develop operational AI ethics guidelines across the selected industrial use cases and AI research areas. Depending on the context, participating individuals can belong to any domain from industry, government, academic or civil society who are affected by or interested in AI technologies.

In the context of AIOLIA, the two core groups involved in the co-creation process in T3.1 are industry partners and academics. Accordingly, the Handbook will provide guidance exclusively for these two groups. Additionally, AIOLIA non-EU partners in T3.2 will involve governmental and societal stakeholders.

The approach for the co-creation of AI ethics guidelines in T3.1, is to co-create operational guidelines on selected industrial use cases. To achieve this, we prioritise **participatory iterative engagement with industry and academic partners** to understand how to define the chosen ethical principles in the use case context, practical challenges and identify the organisational and technical measures needed to address the relevant ethical challenges. The approach presented in this handbook follows the overall co-creation philosophy within the AIOLIA project (cp. Figure 1).

Figure 1: Approach for Co-creating Operational Guidelines between Academic and Industrial Partners



1.3. HOW TO USE THIS HANDBOOK

This handbook provides academic and industry partners with guidance, tools, methods, recommendations and templates for the operationalisation of AI ethics guidelines for industrial and international use cases.

The **step-by-step procedure for developing operational AI ethics guidelines can be found in Section 2** of the handbook. The procedure is based on a two-cycle operationalisation pathway. It comprises of four phases and 7 steps. Each step is accompanied by 5 sub-sections to provide clarity for the academic and industrial partners.

Information provided for each step



Purpose



Instructions



Expected
Results



Process



Templates

1. **Purpose:** Signifies the intended aim/ goal of the step
2. **Instructions:** Information for academic and industry partners on how to complete the step
3. **Expected Results:** Showcases the results that will occur following successful completion of the instructions
4. **Process:** A series of actions that need to be completed to finish the step
5. **Templates:** A pre-designed format used to guide you through the successful completion of the step

Checklists for easy access

Each cycle features a checklist for partners to assess whether they completed all the necessary steps involved within the cycle. These can be found on **page 14 for Cycle 1** and **page 15 for Cycle 2**.

2. Procedure for Operationalising AI Ethics Guidelines

2.1. OPERATIONALISATION PATHWAY

In AIOLIA, operationalising AI ethics refers to the process of translating high level ethical principles into practical actions, tools, processes and governance structures that can guide and be applied throughout the lifecycle of AI systems to ensure ethical design, development, deployment and use.

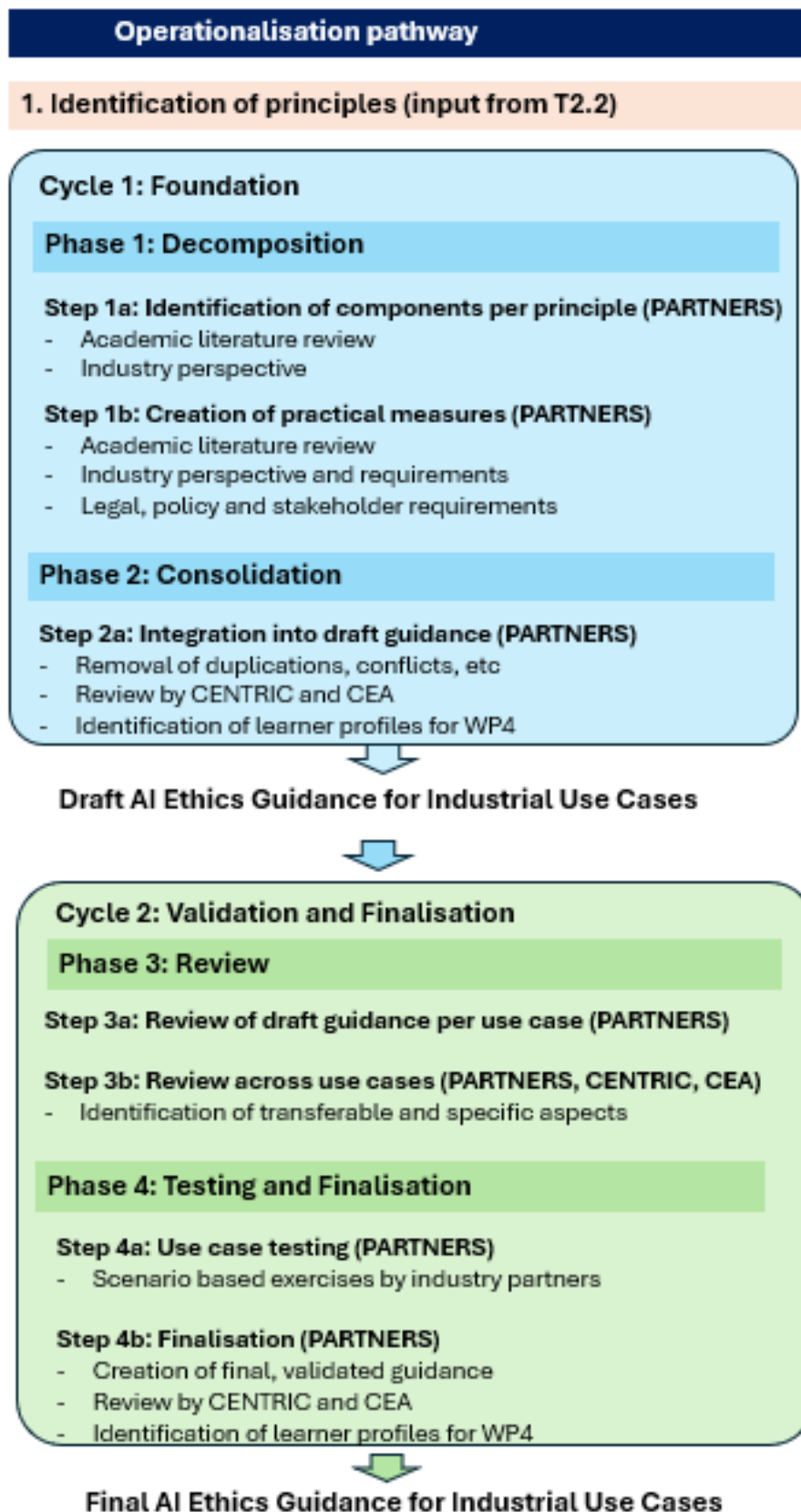
The operationalisation of AI ethics principles will follow an operationalisation pathway comprising of a **co-creation methodology with two cycles and four phases**, after the identification of principles from T2.2. Each cycle has two phases, providing a systematic, step-by-step process for developing operational AI ethics guidelines (see Figure 2). This approach has been adapted and expanded on from the AP4AI project which developed an operational **Framework for AI Accountability for Policing, Security and Justice**.^[4]

Structure of the pathway

The first cycle focuses on **foundation**. This cycle comprises of two phases: **decomposition** and **consolidation**. This cycle identifies the components of the chosen principles through a document analysis of existing literature, standards and frameworks completed by the academic partners and the identification of current standards and guidelines used by industry partners. This will form the basis from which partners choose practical measures to develop the guidelines. The objective of this cycle is to build a shared understanding of how each chosen ethical principle is currently defined, assessed and applied in literature and industry and identify appropriate technical and organisational measures that adhere to unique contextual factors of the use case. The completion of cycle 1 will result in the draft AI ethics guidance for industrial use cases in October 2025.

The second cycle focuses on **validation and finalisation**. This cycle comprises of two phases: **review** and **testing and finalisation**. The objective of this cycle is to finalise the guidelines through feedback loops with the academic and industry partners. Feedback will be incorporated to clarify opacities and ensure the guidelines are both feasible and adaptable in the real-world conditions of the specific use case and AI research area. Cycle 2 will result in the finalised, validated AI ethics guidance for industrial use cases by February 2026.

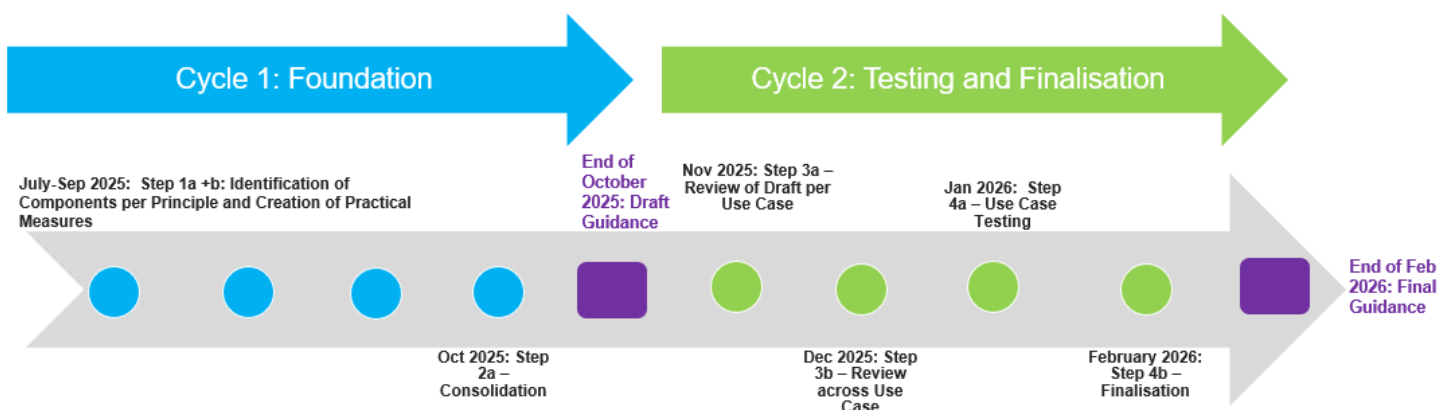
Figure 2: Operationalisation Pathway for the Development of AI Ethics Guidelines



2.2. TIMELINE

The timeline for the development of operational AI ethics guidelines will span eight months with each month focusing on a specific step from the operationalisation pathway. The timeline can be found in Figure 3. Partners should aim to achieve the milestones associated within each stage in the given month.

Figure 3: Operationalisation Pathway Timeline



Detailed view of the operationalisation pathway linked to the timeline

A visualisation of the operationalisation pathway from the phases, steps, objectives, expected results, and related templates can be found in Table 1 for Cycle 1 and Table 9 for Cycle 2. These tables serve as a reference for academic and industry partners to view the entirety of the pathway.

2.3. STEP-BY-STEP GUIDANCE

The step-by-step guidance provides a detailed breakdown of the operationalisation pathway. For each step requirements, templates¹, and methods are provided.

Each step in the pathway outlines its purpose, provides instructions for academic and industry partners, and details expected results, guiding the participants to effective completion.

CHECKLIST: Quick Guide for Academic + Industry partners

Cycle 1: Laying the foundation

Step 0: Identification of Principles (conducted in T2.2): The operationalisation will be based on the high-level ethical principles identified in T2.2 (reported in D2.2)

Phase 1 Decomposition (July to Sept 2025)

Step 1a

- Academic partners analyse existing documents, standards, and policies to define how ethical principles are structured
- Industry partners identify industry practices and requirements for the chosen ethical principles
- Both perspectives are integrated using provided templates
- Complete **Table 2** Template to Facilitate Decomposition of Ethics Principles, **Table 3** Guiding Questions for Identifying Components in Ethical Principles for Industry Partners and **Table 4** Template for Integration of Perspectives on Components per Ethics Principle in a Use Case in AIOLIA Co-Creation handbook

Step 1b

- Academic partners identify technical and organisational measures to ensure ethical compliance
- Industry partners assess feasibility, actionability, and usability from industry perspective
- Consider resources, budget, personnel time, and existing workflows
- Complete **Table 6** Information collected for Components per Principle and **Table 7** Guiding Questions to support gathering of Technical and Organisation Practical Measures for Each Ethical Principle and its Components in AIOLIA Co-Creation handbook

¹ Please note that the templates in this handbook are for illustrative purposes. CENTRIC will provide templates outlined in this handbook as Excel spreadsheets to facilitate data collection and analysis. All the provided templates are designed to be completed collaboratively between academic and industry partners in live discussions. CENTRIC will oversee the process and provide support with the discussions if needed.

Phase 2: Consolidation (Oct 2025)

Step 2a

- Academic partner creates draft guidelines with support from both industry partner and CENTRIC.
- Review of guidelines by CENTRIC and CEA
- Industry partners to answer **Table 8** Guiding Questions to Support Training Material

Cycle 2: Finalising AI Guidelines

Phase 3: Review (Nov to Dec 2025)

Step 3a

- Academic partners validate accessibility for technical and non-technical stakeholders
- Industry partners evaluate whether guidelines reflect industry perspectives
- SAB review of draft guidance
- Complete **Table 10** Template to Review Ethical Principles in Use Case and Validation of AI Ethics Guidelines in AIOLIA Co-Creation handbook

Step 3b

- Academic partners identify convergences and divergences in operationalisations of same ethics principles
- Establish which components are transferable versus use case specific
- Complete **Table 11** Template for determining ethical variance across AI Types and **Table 12** Template to examine convergences and divergences of ethical principles for AI Research Areas

Phase 4: Testing and Finalisation (Jan to Feb 2026)

Step 4a

- Academic partners develop use case scenarios for industry partners
- Industry partners complete scenario exercises to test usability and applicability
- Industry partners complete **Table 13** Checklist for Use Case Testing of AI Ethics Guidelines

Step 4b

- Academic partners integrate feedback to create finalised AI ethics guidance
- CENTRIC and CEA will review and validate guidance
- Industry partners to answer **Table 14** Guiding Questions to Support the Development of Learner Profiles for Training Materials.

CYCLE 1 DETAILED GUIDANCE

Laying the Foundation

The first cycle comprises of two phases:

- **Decomposition** and
- **Consolidation**, with accompanying steps for each phase.

The aim is to build an understanding of how each selected ethical principle is defined, assessed, and benchmarked, followed by development of practical measures to assess fulfilment of and compliance to the ethical principle.

Table 1 provides an overview of steps, timelines, actions, expected results and location of relevant templates.

The further section provides detailed information on the activities and templates.

Table 1: Overview of Cycle 1 of the Operationalisation Pathway

Cycle:	Phase:	Step:	Purpose:	Timeline:	To do:	Expected Results:	Relevant Templates + page numbers:
Identification of Ethical Principles (2.2)							
Cycle 1: Foundation	Decomposition	Step 1a: Identification of Components per Principle	The identification of components per principle ensures that all relevant aspects of a principle are captured and can subsequently be translated into practical measures.	July 2025 to September 2025	Academic Partners <ul style="list-style-type: none"> Conduct research on existing literature on how selected ethical principles are defined and assessed. Determine what elements and factors that encompass the ethical principles are relevant to the use case. Fill in Table 2 to notify CENTRIC which materials were assessed. With CENTRIC and industry partner support, fill in Table 4 to integrate academic and industry perspective of components per ethics principle. Industry Partners <ul style="list-style-type: none"> Determine how ethical principles are defined and assessed within your organisation using the guiding questions in Table 3. Fill in Table 2 to notify CENTRIC which materials or documents were assessed. 	Academic partners complete a document analysis on how each ethical principle is defined, assessed and how the ethical principle is currently regulated, assessed and benchmarked. Industry partners are consulted in identifying what each ethical principle is defined and assessed in their organisation. For each principle, at least three components are identified and agreed upon by academic and technical partners.	<i>Table 2 - Template to Facilitate Decomposition of Ethics Principles (page 22)</i> <i>Table 3- Guiding Questions for Identifying Components in Ethical Principles for Industry Partners (page 23)</i> <i>Table 4- Template for Integration of Perspectives on Components per Ethics Principle in a Use Case (page 23)</i>
		Step 1b: Creation of Practical Measures	The creation of practical measures for each ethical principle and its components.		Academic Partners <ul style="list-style-type: none"> Identify possible technical and organisational measures to ensure ethical compliance to selected principles and how to mitigate potential risks of non-compliance. Discuss the feasibility of the identified measures with industrial partners. Adjust accordingly. Fill in Table 6 and 7 with support from industry partner. 	Each principle is supported by at least two technical and/or organisational measures, with a preference for both when relevant. Industry and academic partners are in consensus that the proposed measures are feasible	<i>Table 6- Information collected for Components per Principle (page 28)</i> <i>Table 7- Guiding Questions to support gathering of Technical and Organisation Practical Measures for Each Ethical Principle and its Components (page 29)</i>

				<p>Industry Partners</p> <ul style="list-style-type: none"> Suggest existing or planned technical and organisational measures and discuss their strengths, weaknesses, and limitations Determine whether identified practical measures are feasible, actionable and useable from industry perspective considering resources. 	<p>and tangible in current real-world conditions of case context.</p> <p>Describe limitations and obstacles of each measure. Determine which elements or components of the principle remain unaddressed or potentially insufficiently addressed</p> <p>Technical and organisational measures are adapted to specific use case and location considerations.</p>	
Consolidation	Step 2a: Integration into Draft Guidance	Draft of AI Ethics Guidance for Industry Use Cases	October 2025	<p>Academic Partners</p> <ul style="list-style-type: none"> Academic partners take lead on consolidating data from Step 1a and 1b to develop draft guidance Engage in discussions with CENTRIC and CEA to validate draft version of guidelines. <p>Industry Partners</p> <ul style="list-style-type: none"> Fill in Table 8 to support the development of learner profiles for training materials in T4.1. 	<p>Based on the information collected in Phase 1, academic partners will create a draft of the AI Ethics Guidance for industrial use cases with support from CENTRIC and industry partners through online discussions. CEA and CENTRIC will validate the draft guidance.</p> <p>Identification of learner profiles to support T4.1.</p> <p>Having a draft of the AI ethics guidelines marks the end of Cycle 1.</p>	<i>Table 8: Guiding Questions to Support Development of Learner Profiles for the Training Materials (page 31)</i>

Phase 1: Decomposition

In the context of developing operational AI ethics guidelines, **decomposition refers to the translation of the chosen high-level ethical principles into actionable and context specific components**. This phase establishes the elements that together constitute an ethical principle.

Step 1a: Identification of Components per Principle



Purpose:

The identification of components per principle ensures that all relevant aspects of a principle are captured and can subsequently be translated into practical measures.



Instructions

- 1. Academic Partner:** Analysis of existing documents, standards, approaches and policies (e.g. UNESCO Ethics of Artificial Intelligence, Council of Europe Framework Convention on AI). Academics partners will conduct desk-based research on current literature to determine how selected ethical principles are defined and which aspects fully describe the principle. Fill in Table 2 to notify CENTRIC which materials were assessed. With CENTRIC and industry partner support, fill in Table 6 to integrate academic and industry perspective of components per ethical principle.
- 2. Industry Partner:** Identify industry practices and requirements. Simultaneously to academic partners, the industry partners will identify industry perspectives for the chosen ethical principles. These can be based on technical standards, operational procedures, professional conduct considerations, etc. Table 3 lists guiding questions for industry partners to support the process.



Expected results:

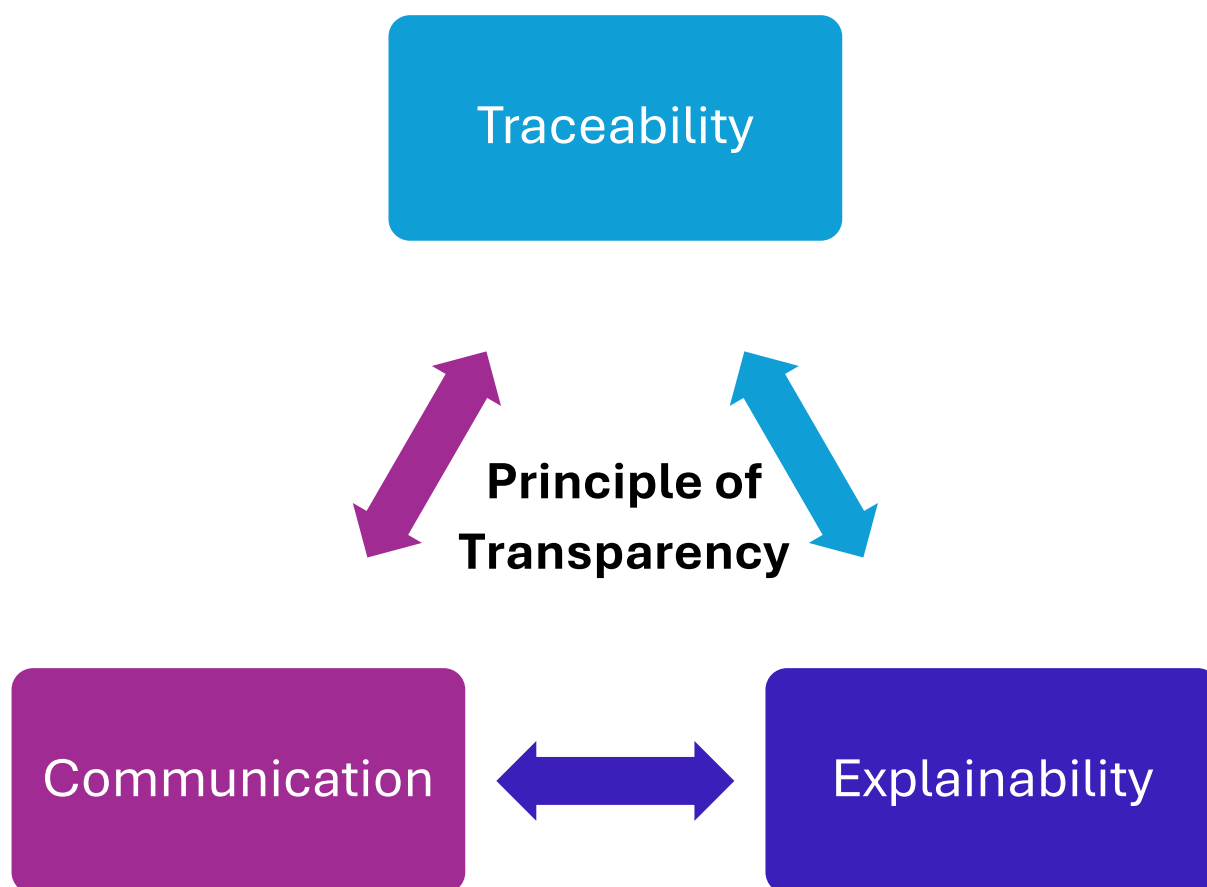
1. Academic partners complete a document analysis on how each ethical principle is defined, assessed and how the ethical principle is currently regulated, assessed and benchmarked.
2. Industry partners are consulted in identifying how each ethical principle is defined and assessed in their organisation.
3. For each principle, at least three components and agreed by academic and technical partners.



Process:

An example of decomposition is shown in Figure 4, using the principle of transparency from the Ethics Guidelines for Trustworthy AI developed by the AI High Level Expert Group (AI HLEG) in 2019. Transparency is one of the seven requirements to achieve Trustworthy AI. The components that contribute to transparency are traceability, explainability and communication of AI systems.

Figure 4: Example for Decomposition of Principle ‘Transparency’ into its Components according to ALTAI



To provide further context, in the Ethics Guidelines of Trustworthy AI, these three components act as the building blocks which form the definition and understanding of transparency. In the Ethics Guidelines, transparency is a core part of ensuring Trustworthy AI. Transparency in AI models and capabilities ensures that the systems are not ‘black boxes’ and individuals involved throughout the AI lifecycle process understand how it works, how decisions are being made and what the limitations of the system are. Therefore, in the development of the AI ethics guidelines, we need to design practical measures which promote transparency by fostering community, traceability and explainability. If we know what components form the ethical principle, this will provide the basis for the development of practical measures in Step 1b. You will understand what components form the selected ethical principles in your use case by examining desk-based research and speaking with industry partners on current standards, guidelines and frameworks.

To facilitate collection and comparison of both perspectives, partners will be provided in the template outlined in Table 2. **After completing their respective reviews, academic and industry partners will be asked to collaborate to assess how their perspectives align or differ.** The aim of this exercise is to assess whether components need to be adapted according to the understanding of the ethical principle according to the two groups. For example, does the definition of transparency in AI models vary according to an academic in healthcare versus an industry partner in healthcare or do they focus on separate aspects? To ensure these discussions

are documented and decisions for retaining or deleting components are transparent, partners will be asked to record such decisions into a template similar to Table 4.

To run a successful co-creation discussion, there are a number of steps partners must take before, during and after the process. Before the meeting, partners should define the objectives of the meeting, set success criteria, select suitable participants to join and prepare the necessary materials. Co-creation dialogues should be tailored to reflect and respect cultural nuances within the participants. During the process, there needs to be a moderator who ensures balanced participation and guides the participants through the exercise to achieve actionable outcomes. Notetakers must be present to document decisions. After the meeting, partners must circulate the meeting notes, outcomes and next steps to all those that attended. Success is measured by the level of participation from participants, by how well the expected objectives were achieved and whether the outcomes are actionable, feasible and useful for the development of the AI ethics guidelines. Further information on how to have successful co-creation discussions can be found in Section 5.1 in the Appendix.

The knowledge obtained in this step will provide the basis to develop practical measures to ensure compliance for the chosen ethical principle.


Templates² for Step 1a (please note these will be provided in Excel for easier data collection)
Table 2: Template to Facilitate Decomposition of Ethics Principles (1 per academic and industry partner)

Document Analysis Template	
Use Case Title:	
Partner:	
Ethical Principles	
1.	
2.	
3.	
Components for _____ (repeat for each of the 3 principles)	
Component	Definition
Method Documentation Sources and Databases Used	
1.	
2.	
3.	
Selection Criteria for Documents	
Inclusion Criteria	Exclusion Criteria
Screening Process How were documents screened and selected?	
Types of Documents Analysed	
Method of Analysis What method was used to analyse selected documents?	
Gaps and Limitations Did you encounter gaps or limitations in your review process?	

² All the provided templates are designed to be completed collaboratively between academic and industry partners in live discussions. CENTRIC will inform partners when these discussions need to occur and what are the expected outcomes. CENTRIC will oversee the process and provide support if needed.

Table 3: Guiding Questions for Identifying Components in Ethical Principles for Industry Partners

Guiding Questions for identifying components for industry partners	
Existing Policies, Guidelines and Standards	
1.	Do you currently have any policies, guidelines or frameworks in your organisation to assess or measure compliance with _____ [insert ethical principle]? If yes, could you describe them?
2.	Who is responsible for ensuring that _____ [insert ethical principle] is considered and upheld within the AI model?
3.	What mechanisms support reflection, review and responsiveness to ensure compliance to [insert ethical principle] in your organisation?
Defining Ethical Principles within your organisation	
4.	How does your organisation define or interpret _____ [insert ethical principle]?
5.	What guiding values inform how _____ [insert ethical principle] is defined within your organisation?
6.	How does your organisation revise how you interpret _____ [insert ethical principle] in response to emerging changes to technologies, societal expectations and organisational changes?
Type of AI	
7.	Do you think the type of AI (e.g. General-Purpose AI systems, Emotional AI) affects how [insert ethical principle] is defined or prioritised in your organisation?
8.	Do the current AI guidelines, standards or frameworks you use (or are aware of) in your organisation differentiate ethical principles based on type of AI?

Table 4: Template for Integration of Perspectives on Components per Ethics Principle in a Use Case

Use Case Title:				
Partners:				
Principle (listed and definition)	A: Include as is for use case	B: Include but needs adaptation for use case	C: Do not include	Explanation If B: explain adaptation If C: explain why
Component* 1: *Components act as the building blocks that form an ethical principle. It is the values and qualities that shape and construct the principle.				
Component 2:				
Component 3:				
Component ...:				
Component to add:				

Step 1b: Creation of Practical Measures



Purpose:

The creation of practical measures for each ethical principle and its components.



Instructions:

- 1. Academic Partner:** Identify technical and organisational measures to ensure ethical compliance to selected principles. Determine whether there are any associated barriers to fulfilment of ethical principles, associated risks and challenges that will emerge with non-compliance, the severity of the risks and gaps in current practices to address these challenges, including groups affected and the individuals or groups that will be responsible to fulfil the practical measures. Information on these aspects and the practical measures will be captured in Table 6 and 7.
- 2. Industry Partner:** Determine whether identified practical measures are feasible, actionable and useable from industry perspective considering resources (budget, personnel time etc.) and existing workflows.



Expected Results:

1. Each principle is supported by at least two technical and/or organisational measures, with a preference for both when relevant.
2. Industry and academic partners are in consensus that the proposed measures are feasible and tangible in current real-world conditions of case context.
3. Technical and organisational measures are adapted to specific use case and location considerations.
4. Guidelines are adapted to follow the existing regulatory and legal frameworks governing ethical AI in the use case.
5. Identification and inclusion of practical measures from relevant stakeholders.



Process:

The creation of practical measures for each component will involve academic and industry partners identifying technical and organisational measures to ensure compliance to selected ethical principles and their components identified in step 1a.

This step requires academic and industry partners to work together to define the practical measures for each ethical principle and its components, including the associated ethical risks for non-compliance. Partners will need to determine how the ethical principle is viewed in the specific use case context, identify domain specific risks and map relevant regulations, policies and standards.

Practical measures refer to measurable features, dimensions or attributes related to the chosen ethical principle relevant in the design or deployment of an AI model or capability. Practical measures act as an observable method to detect, assess or monitor fulfilment of the ethics principle in the industrial use case.

To ensure the development of operational ethical AI guidelines across the AIOLIA use cases, both **technical** and **organisational** measures must be considered and adopted. These methods work in tandem to ensure the ethical use of AI systems across the use case contexts.

Technical measures focus on the design and technical aspects of AI systems and refer to specific tools, methodologies, technologies, and processes that are implemented to AI systems to ensure it operates in an ethical manner. Questions related to technical methods should be asked to stakeholders involved in the technical aspects of AI system such as engineers or AI software developers. Examples of technical measures include:



Documentation
and Security
Audits



Privacy by
Design
Approaches



Data
Anonymisation
Techniques



Adversarial
Testing

Organisational measures focus on how an organisation incorporates and manages ethical AI practices by referring to the structures, policies, and governance framework in place. Questions related to organisational methods should be asked to stakeholders involved in the management and use of AI systems such as product managers. Examples of organisational measures include:



AI Ethics Board



Promoting
Community
Stakeholder
Engagement



Compliance
with Existing
Regulations



Development of
AI risk
frameworks

In practical terms in step 2, industry and academic partners will engage to determine:

- a) the practical measures to assess whether a component of an ethical principle is fulfilled
- b) any associated barriers to their fulfilment, associated risks and challenges that will emerge with non-compliance to principle
- c) the impact, frequency and severity of the risks and gaps in current practices to address these challenges, including groups affected
- d) the individuals or groups that will be responsible to fulfil the practical measures
- e) any cultural nuances that need to be considered in the development of practical measures

This will ensure the technical and organisational measures cater to the unique considerations, capabilities, resources and needs of the use case. The academic partner will collect this information in the template provided in Table 6 with support from the industry partner.

Table 5 shows a general example of operationalisation through practical measures for the Ethics guidelines for Trustworthy AI (ALTAI) developed by the AI High-Level Expert Group in 2019^[5] for the principle of transparency. ALTAI outlines specific technical and organisational measures needed to ensure transparency in AI systems. Transparency is one of the seven requirements to achieve Trustworthy AI. The components that contribute to transparency are traceability, explainability and communication of AI systems. Therefore, the technical and organisational measures to achieve transparency are designed to foster traceability, explainability and communication.

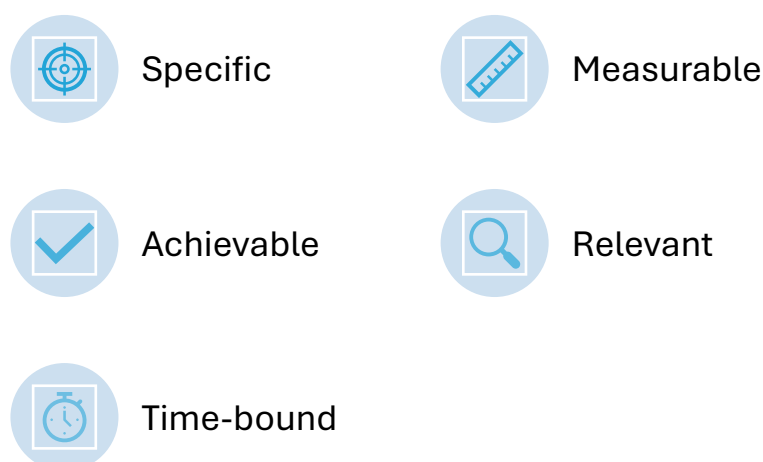
Table 5: Example of Technical and Organisational Measures to comply with Principle of Transparency according to ALTAI

Principle of Transparency			
Components:	Traceability	Explainability	Communication
Technical Measures		Organisational Measures	
Implementation of logging mechanism and documentation to facilitate audits. Data labelling, model training, design decisions and AI model updates should be documented to the best standard possible.		Establish governance and oversight mechanisms that manage the design, development and deployment of the AI system.	
Technical processes of an AI system and the associated human decisions should be explainable and understood by individuals.		Incorporate diverse stakeholder engagement in the design, development and deployment of the AI system.	
Provide comprehensive and accessible information to users about AI capabilities and limitations.		Provide regular comprehensive training for all individuals associated with the AI system.	

The practical measures developed in AIOLIA will be more precise and targeted as the practical measures will be developed with regard to the **principle of proportionality** meaning they should be simple to measure and consider the resources (time, personnel, budget) necessary for the fulfilment of the guidelines. For example, if a potential recommendation is to increase trainings on a certain ethical principle, the use case partners will need to consider who will be responsible for its development and deployment in industry, how frequent should it occur and whether they have the resources currently to achieve this. If industry partners are not able to incorporate the recommendations to current working conditions, it will be not included in the guidelines.

Academic and industry partners should also map existing guidelines, standards, benchmarks and regulations to assess adherence to ethical standards of the chosen ethical principle and their components in the creation of practical measures. We recommend defining the parameters of the guidelines by following the **SMART criteria** to ensure they are actionable and feasible.

Figure 5: SMART Criteria



Academic and Industry partners must also include **relevant stakeholder-specific considerations** into the development of the guidelines. To help determine what stakeholders need to be involved, consider what types of knowledge, capabilities or roles are relevant to your case and which stakeholders can provide this information. Individuals involved in the procurement, use and deployment, data protection or legal aspects of AI use and end users of the AI system are suitable to contact. Individuals such as engineers, lawyers, data protection officers, data scientists, software developers, IT infrastructure specialists, quality assurance engineers, managers, compliance officers and training leads would provide valuable insights into the feasibility and applicability of practical measures. End users are individuals who will be directly using the AI system. End users will differ based on the use case. For example, in healthcare, focus would be placed on gathering the opinions of doctors, consultants, nurses whereas in law enforcement, it would be law enforcement officers, investigators, crime analysts etc.

In Table 7, partners can find guiding questions to facilitate formulation of technical and organisational practical measures. Partners will need to adapt the questions based on the chosen ethical principles and their components. Questions should be designed to obtain information on current gaps, weaknesses and opportunities which the AI guidelines can address. Partners can refer to the Assessment List for Trustworthy Artificial Intelligence for self-assessment list to support in the formulation of relevant questions. ^[6]

Upon successful completion of this step, partners should have a clear understanding of how the use case specific considerations influence the development of the practical measures of the guidelines to ensure it is tailored and actionable and be able identify stakeholders to gather information and insights from that are relevant to the development of the case specific operational AI ethics guidelines.


Templates for Step 1b (please note these will be provided in Excel for easier data collection)

Table 6: Information collected for Components per Principle

Use Case Title:		
AI type: (e.g. GPAl, Emotional AI)		
	Documentation analysis	Industry insights
Ethical Principle:		
Definition:		
Existing guidelines standards, policies or regulations governing this ethical principle:		
Existing measures to assess and promote ethical compliance:		
Associated risks or challenges that will emerge with non-compliance:		
Individuals or groups affected by risk(s):		
Impact and severity of risk(s):		
Frequency and occurrence of risks/ challenges:		
Existing measures to address the risks /challenges:		
Gaps in existing measures to address emerging risks/challenges:	Gap 1:	Gap 1:
	Gap 2:	Gap 2:

Table 7: Guiding Questions to support gathering of Technical and Organisation Practical Measures for Each Ethical Principle and its Components

General Guiding Questions
<p>Use Case Specific considerations:</p> <ol style="list-style-type: none"> 1. How are the principle and its components implemented in practice in the specific use case? 2. Who is responsible for its enforcement and assessment in the use case? 3. What metrics, benchmarks or indicators are used to assess adherence to the ethical principle in the specific use case? 4. How is the performance of the ethical principle monitored over time in the use case? 5. Are there clear roles and responsibilities for the AI model deployment and use in the case context to ensure compliance with the ethical principle? 6. What existing policies, regulations and standards governing the ethical principle in the case context and how can they influence the development of the AI ethics guidelines? <p>AI Type:</p> <ol style="list-style-type: none"> 7. Does the type of AI influence which technical or practical measures are most appropriate for ensuring ethical compliance and mitigating risks related to non-compliance to the chosen ethical principles? 8. Does the industrial AI ethics guidelines need to be adapted to better account for differences in types of AI?
Guiding Questions: Technical Measures
<ol style="list-style-type: none"> 1. Are there any practices you currently use to ensure ethical AI through technical measures (e.g. XAI approaches, privacy-by-design)? What methods do you use to anonymise and secure sensitive data in the AI models? How do you ensure there is traceability and explainability in the decision-making process? Is user data collected and stored ethically and legally? 2. What technical obstacles are currently present for designing solutions to solve _____ [insert ethical challenge]? 3. How is it currently benchmarked and evaluated? 4. What needs to be done to improve _____ [insert ethical challenge] from the ethical or regulatory point of view? 5. What is feasible from the technical point of view to address this ethical challenge? 6. What are the best pathways to delivering the expected outcomes? 7. What resources, skills and capacity are required to address the risk associated with _____ [insert ethical principle]? 8. What are the real-world technical constraints that might affect ethical AI practices in this context?
Guiding Questions: Organisational Measures
<ol style="list-style-type: none"> 1. Are there any practices you currently use to ensure ethical AI through organisational measures (e.g. documentation, AI ethics board, community stakeholder engagement)? 2. What obstacles are currently present for designing solutions to solve _____ [insert ethical challenge]? How is it currently benchmarked and evaluated? 3. What are the most pressing ethical risks unique to your industry? 4. What challenges have you faced (or anticipate facing) when applying AI ethics principles operationally? 5. How do we build a strategy for the entire sector to move towards better _____ [insert ethical principle]? 6. What are the best pathways to delivering the expected outcomes? 7. What resources, skills and capacity are required? What is feasible considering the existing ethics guidelines and regulations in this space? 8. What are the real-world organisational and financial constraints that might affect ethical AI practices in this context? 9. What adjustments/ considerations are needed to make the guidelines for the better _____ [insert ethical principle] feasible within your context? 10. How can we ensure the guidelines can be actively implemented into the current ways of working within your context?

Phase 2: Consolidation

Step 2a: Integration into Draft AI Ethics Guidance



Purpose:

Based on the information collected in Step 1a and 1b, the academic partners will create a draft of AI ethics guidance for industrial use cases with support from the industry partner. CENTRIC and CEA will validate and review the guidance.



Instructions:

- 1. Academic Partner:** Academic partner will take the lead to consolidate information from Step 1a and 1b to develop draft guidance. Contact CENTRIC for support if required. Send the draft guidance to CENTRIC and CEA for validation and review.
- 2. Industry Partner:** Fill in Table 8 to identify learner profiles for development of training materials to support WP4 activities.



Expected Results:

- 1.** Draft of AI Ethics Guidance for Industry Use Cases in October 2025.



Process:

CENTRIC will organise online meetings with academic and industry partners to draft and review AI ethics guidelines for industrial use cases in October 2025. Send draft guidance to CENTRIC and CEA for review and incorporate feedback (if any). Once a draft version of the guidance has been completed, industry partners need to answer the questions provided in Table 8 to support the development of learner profiles in T4.1.


Templates for Step 2a (please note these will be provided in Excel for easier data collection)

Table 8: Guiding Questions to Support the Development of Learner Profiles for Training Material

	Demographic Questions	Answers
1.	Who will be responsible for operationalising the guidelines in the specific industry example?	
2.	What are the typical characteristics of this group in terms of age, gender, educational background	
	Questions to Analyse Training Needs	Answers
1.	Are there any specific learning gaps this group have to be able to operationalise the guidance?	
2.	What is their preferred learning delivery methods? (e.g. online (video?), blended learning, stepwise instructions)	
3.	What are the typical constraints to learning for this group? (e.g. time available)	
4.	What do you think the training target groups need to know about operationalising the training (i.e. potential learning objectives for these groups)? The target groups are: Ethics appraisal scheme experts; AI governance and policy experts; the next generation of AI researchers (from Masters to Post docs); other researchers and research ethics educators.	

CYCLE 2 DETAILED GUIDANCE

Finalising AI Guidelines

Cycle 2 comprises the two phases:

- **Review** and
- **Testing and finalisation**, with accompanying steps for each phase.

The objective of this cycle is to review, refine and finalise the guidelines through feedback loops with the academic and industry partners.

Feedback will be incorporated to clarify opacities and ensure the guideline is both feasible and adaptable in the real-world conditions of the specific use case. This phase will also explore the transferability of the use case guidelines to the AI research areas.

Table 9 provides an overview of steps, timelines, actions, expected results and location of relevant templates.

The further section provides detailed information on the activities and templates.

Table 9: Overview of Cycle 2 of Operationalisation Pathway

Cycle:	Phase:	Step:	Purpose:	Timeline:	To do:	Expected Results:	Relevant Templates and page numbers:
Cycle 2: Finalisation	Review	Step 3a: Review of Draft per Use Case	Ensure the AI ethics guidelines are robust, relevant and aligned with the document analysis by academic partners and industry perspectives	November 2025	Academic Partners <ul style="list-style-type: none"> Fill in Table 10 as it serves as a data collection activity where every principle and each associated technical measure is collected and analysed by CENTRIC. Determine whether developed guidelines reflect document analysis requirements from Step 1a in Cycle 1 by filling out Table 10. Determine whether new or missing literature requirements need to be included to guidelines. Industry Partners <ul style="list-style-type: none"> Determine whether developed guidelines reflect document industry opinions from Step 1a in Cycle 1 and is accessible to relevant industry stakeholders by filling out Table 10. Determine whether new or missing industry opinions, standards, guidelines or practices need to be included to guidelines. 	One agreed AI ethics guidance for each industrial use case where it <ol style="list-style-type: none"> Is verified that guidelines account for and address their use case needs and concerns. Is confirmed that the guideline is simple to follow and easy to understand. Is confirmed that guideline is understandable without external consultation 	<i>Table 10 - Template to Review Ethical Principles in Use Case and Validation of AI Ethics Guidelines (page 36)</i>
		Step 3b: Review across se Cases	The review across industrial use cases aims to assess convergences and divergences in the operationalisations of the same ethics principles. This allows to establish which parts (components and/or practical measures) are shared (transferable) and which parts are use case specific.	December 2025	Academic Partners <ul style="list-style-type: none"> Examine convergences and divergences in the operationalisations of the same ethics principles by filling in Table 11. Complete Table 11 for each type of AI in your use case to determine whether changes to AI type will affect how principles are defined, assessed and benchmarked with support from industry partners. CEPS and CENTRIC	Shared interpretation, frameworks and practices have been identified across use cases for the AI research area. Use case specific differences in interpretation and implementation of principles are clearly outlined. Differences in stakeholder and regulatory interpretation of	<i>Table 11- Template for determining ethical variance across AI Types (page 40)</i> <i>Table 12- Template for Transferability of Use Case Guidelines for AI Research Areas (page 40)</i>

Testing and Finalisation					<ul style="list-style-type: none"> CENTRIC and CEPS to liaise to complete Table 12 to review similarities and differences between ethical principles for AI Research Areas. 	ethical principles across use cases are identified.	
	Step 4a: Use Case Testing	Use case testing ensures that the AI ethics guidance is fit-for-purpose and user friendly in the real-world context of each use case context.	January 2026	<p>Academic Partners</p> <ul style="list-style-type: none"> Develop use case scenarios for industry partners that assess whether they are able to apply the guidance in their industry and existing workflows. <p>Industry Partners</p> <ul style="list-style-type: none"> Complete use case scenario exercise developed by academic partners. Answer questions in Table 13 to determine the usability, feasibility and applicability of guidelines to existing workflows and real-world conditions. 	Though the use case testing, industry partners can: <ol style="list-style-type: none"> Validate the feasibility, useability and applicability of the guidance into their current work cycle. Apply usefully in their own use case context without external consultation 	<i>Table 13 - Checklist for Use Case Testing of AI Ethics Guidelines by Industry Partners (page 43)</i>	
	Step 4b: Finalisation	Integrating and consolidating all information from Cycle 2, CENTRIC will create the finalised AI Ethics Guidance for industrial use cases.	February 2026	<p>Academic Partners</p> <ul style="list-style-type: none"> Engage in online discussions with CENTRIC to finalise AI ethics guidelines for the industrial use case. Send finalised guidelines for review to CENTRIC as task lead and CEA as project coordinator. <p>Industry Partners</p> <ul style="list-style-type: none"> Fill in Table 14 to support the development of learner profiles for training materials in T4.1. 	Final AI Ethics Guidance for Industry Use Cases. Finalisation of learner profiles for T4.1	<i>Table 14: Guiding Questions to Support the Development of Learner Profiles for the Training Materials (page 45)</i>	

Phase 3: Review

Step 3a: Review of Draft Guidance per use case



Purpose:

Ensure the AI ethics guidelines are robust, relevant and aligned with the document analysis and industry perspectives. The Stakeholder Advisory Board will review the guidelines at this step.



Instructions:

- 1. Academic Partner:** Validate the accessibility of the guidelines for technical and non-technical stakeholder groups, including whether the terminology is correct and understandable. Evaluate whether the draft AI guidance fully reflects literature requirements. Missing or new data regarding best practices, recommendations, policies based on desk research in added into guidelines. Fill in Table 10 with support from industry partner.
- 2. Industry Partner:** Evaluate whether guidelines reflect industry perspectives collected in Cycle 1. New or missing information on standards, best practices and guidelines from industry partner is included in guidelines.



Expected Results:

One agreed AI ethics guidance for each industrial use case where it

1. Is verified that guidelines account for and address their use case needs and concerns.
2. Is confirmed that the guideline is simple to follow and easy to understand.
3. Is confirmed that guideline is understandable without external consultation



Process:

Review refers to the integrative process of assessing the draft guidance to ensure its terminological clarity, coherence, as well as practical alignment and relevance. It aims to validate identified components and practical measures and solve any remaining unclarities and disagreements. This phase requires academic and industry partners to work collaboratively to ensure the guideline aligns with existing literature, best practices, current standards, regulatory and policy frameworks while also meeting the expectations of industry partners. The review will use guiding questions in Table 10 to document any potential remaining issues. Following the draft review by use case partners, CENTRIC will organise an online meeting with both the academic and industry partner to review and solve identified issues.


Templates for Step 3a (please note these will be provided in Excel for easier data collection)

Table 10: Template to Review Ethical Principles in Use Case and Validation of AI Ethics Guidelines

1. Use Case Overview			
Use Case Title:			
Purpose of AI system:			
Type of AI: (repeat template depending on number of AI types in use case to determine whether ethical principles & recommendations differ based on AI type)			
Stakeholders involved:			
2. Ethical Principles (list the three chosen ethical principles that are relevant to use case)			
Principle (listed)	Definition (context-related)	Rationale for inclusion	
3. Criteria for Ethical Principles (list the requirements from the document analysis and industry perspectives for each ethical principle)			
Principle (listed)	Literature analysis requirements (academic partners)	Industry perspectives	
1.			
2.			
3.			
4. Indicators for Ethical Principles (list the technical and organisational measures which support each principle. Note any repeated conflicted or unnecessary measures here)			
Principle (listed)	Technical measures	Organisational measures	
1.			
2.			
3.			
5. Terminology Check (Note whether there are any terms unclear or used more than once with differing meanings)			
Term	Definition	Is it clear?	Are definitions consistent with relevant standards, guidelines and regulations?
6. Conflicts/Overlaps between Ethical Principle Criteria and Indicators (Note potential conflicts or overlaps in development of the AI ethics guidelines and the strategy to address and resolve it)			
Conflicts/Overlaps	Description	Resolution Strategy	

Academic Perspective		Yes	No	If not, then why and how it can be addressed?
1.	Do the guidelines reflect the interpretation of the principle found in the literature for that case context?	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Are all key stakeholders identified within literature analysis included in the development of the guideline?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Do the guidelines recognise how different stakeholder groups are affected by the risks associated with non-compliance with ethical principle?	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Do the guidelines address the ethical risks identified within the literature? Does the guideline account for the likelihood or severity of potential risks?	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Are existing policies, regulations, frameworks and standards from the literature incorporated or referenced in the guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Is there alignment between the guidelines and existing best practices identified in the literature?	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Have any gaps or grey zones that you noted between current practices in the literature analysis been acknowledged?	<input type="checkbox"/>	<input type="checkbox"/>	
8.	Do the guidelines specify mechanisms for assessing ethical compliance?	<input type="checkbox"/>	<input type="checkbox"/>	
9.	Are technical and organisation measures derived from the literature analysis?	<input type="checkbox"/>	<input type="checkbox"/>	
Industry Perspectives		Yes	No	If not, then why and how it can be addressed?
1.	Was the industry partner involved in the development of the ethical guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Are the concerns raised by the industry partner during cycle 1 explicitly addressed in the guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Are all relevant stakeholder types identified in the guidelines (e.g. primary users, impacted third parties)	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Are the ethical recommendations in the guidelines practically applicable and feasible to the industry partner using the AI system?	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Do the guidelines reference the real-world use case constraints and challenges raised by industry partners?	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Can each recommendation in the guidelines be traced to industry partner requirements from Cycle 1?	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Are the guidelines accessible (language format) to non-technical users of the AI system?	<input type="checkbox"/>	<input type="checkbox"/>	

	Accessibility Guidance Questions	Yes	No	If not, then why and how it can be addressed?
1.	Are the purpose, aim and use case of the guidelines clearly stated at the beginning?	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Do the guidelines clearly define who the target audience is?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Are the AI ethics guidelines written in simple and plain language to ensure it is understandable by non-technical stakeholders?	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Do stakeholders feel confident that they fully understand the ethical requirements after reviewing the guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Do stakeholders have access to support or help if they have questions about the guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Can an individual with little to no prior knowledge of AI ethics understand the main principles and recommendations from the guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Is it clear how the guidelines would apply in real-world situations and case contexts? Are the guidelines practical and feasible to everyday situations in which the AI system is used?	<input type="checkbox"/>	<input type="checkbox"/>	
8.	Are the guidelines free from ambiguity and vague statements? Do the guidelines avoid using technical jargon or explain it clearly when necessary?	<input type="checkbox"/>	<input type="checkbox"/>	
Update Requirements from Academic Perspective		Yes	No	If not, then why and how it can be addressed?
1.	Have any relevant new publications, policies or regulations been published since the development of the guidelines? If so, have these been factored into guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Have you identified any new gaps or weaknesses in the compliance of the ethical principles in literature? If so, have these been addressed in the guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	
Update Requirements from Industry Perspectives		Yes	No	If not, then why and how it can be addressed?
1.	Have any new industry standards or guidelines been published since we developed the guidelines? If so, have these new requirements been accounted for in the use case guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Are there any new stakeholder groups that we need to include in the AI ethics guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Are there any new practices, methods or tools that have been introduced to ensure ethical compliance to the selected ethical principles?	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Is there any information that is missing from the guidelines that would support in your ethical compliance?	<input type="checkbox"/>	<input type="checkbox"/>	

Step 3b: Review across Use Cases



Purpose:

The review across industrial use cases aims to assess convergences and divergences in the operationalisations of the same ethical principles. This allows to establish which parts (components and/or practical measures) are shared (transferable) and which part are use case specific. This will support the work in T3.3 which will develop non-technical guidelines on AI research areas.



Instructions:

1. **Academic partner:** Complete Table 11 to identify convergences and divergences in the operationalisations of the same ethics principles. Liaise with CENTRIC after completing the table. Send completed template to CEPS for review.
2. **Industry partner:** Support academic partner to complete Table 11.



Expected results:

1. Shared interpretation, frameworks and practices have been identified across use cases for the AI research area.
2. Use case specific differences in interpretation and implementation of principles are clearly outlined.
3. Differences in stakeholder and regulatory interpretation of ethical principles across use cases are identified.



Process:

Table 11 provides a format for academic and industry partners to evaluate whether the ethical principles vary depending on the type of AI research area (e.g. GPAI, emotional AI, decision support systems). The table needs to be repeated by the number of AI types that are in your use case. This comparative review will support further the development of the context-enriched AI ethics guidelines for the AI research areas in T3.3.

Table 12 provides a format and guiding questions for CENTRIC and CEPS to liaise and identify convergences and divergences between ethical principles for AI Research Areas.


Templates for Step 3b (please note these will be provided in Excel for easier data collection)

Table 11: Template for determining ethical variance across AI Types

Use Case Overview	
Use Case Name:	
Domain/Context:	
Type of AI System(s):	
Guiding questions based on type of AI:	
1.	Does the type of AI affect how ethical principles are defined or assessed?
2.	Does the type of AI change how you measure or benchmark a particular ethical principle?
3.	Did you have to adjust the technical and organisational measures based on the type of AI? E.g. Do you think emotional AI requires distinct safeguards compared to other types of AI? Does multi-modal AI pose unique risks which general ethics guidelines are not addressing sufficiently?

Table 12: Template to examine convergences and divergences of ethical principles for AI Research Areas

AI Research Areas		
AI Research Area:		
Use Cases Examined:		
Ethical Principles assessed in each use case	Is the ethical principle present for the other chosen use cases?	Notes
Principle-Specific Analysis:		
Interpretation and Scope	How is the principle defined or understood in the use case?	
	What aspects of the ethical principle are emphasised or prioritised?	
Assessment and Compliance	What methods or criteria are used to measure adherence?	
	Are there specific regulations, standards or relevant best practices?	
Risk and Challenges	What risks do non-compliance pose in this context?	

	Are there particular groups or communities that are more vulnerable?
Mitigation Strategies	What measures or best practices were identified to ensure ethical compliance and mitigate risks associated with non-compliance?
Summary of Convergences across Use Cases:	
1.	What ethical principles consistently appear in this research area when analysing the relevant use cases?
2.	What common definitions, methods and mitigation strategies from the use case guidelines can be adapted to the AI research area?
3.	Are there any recurring risks or consequences highlighted?
4.	Are there ethical requirements that are applicable regardless of the use case?
Summary of Divergences across Use Cases:	
1.	Are there any variations in the way principles or terms are understood and defined across use cases?
2.	Are there any conflicting priorities between ethical principles in the use cases?
3.	How do the different use cases address trade-offs between principles (e.g. privacy vs explainability)
4.	Are there any use case specific risks or challenges that shape the use case guidelines in a unique manner?
5.	Where do use case specific adaptations become necessary for the development of AI research area guidelines?
Gaps and Opportunities	
1.	Which ethical principles or values are missing or underdeveloped across the use cases?
2.	Are there specific areas where the guidelines are vague or ambiguous?
3.	What practices can be transferred between use case guidelines to improve ethical awareness and governance?

Phase 4: Testing and Finalisation

The final steps are to test the applicability and useability of the developed AI ethics guidelines in real-world conditions.

Step 4a: Use Case Testing



Purpose:

Use case testing ensures that the AI ethics guidance is fit-for-purpose and user friendly in the real-world context of each use case context.



Instructions:

- 1. Academic Partner:** Develop use case scenarios for industry partners that assess whether they are able to apply the guidance in their industry and existing workflows.
- 2. Industry Partner:** Complete use case scenario exercise developed by academic partners. Answer questions in Table 13 to determine the usability, feasibility and applicability of guidelines to existing workflows and real-world conditions.



Expected Results:

A tested AI ethics guidance industry partners can:

1. Validate the feasibility, useability and applicability of the guidance into their current work cycle.
2. Apply usefully in their own use case context without external consultation



Process:

CENTRIC will moderate an online meeting for this exercise. Industry partners will apply the AI ethics guidance to their own use case to assess the direct feasibility and applicability of the guidelines. This step will provide insights into feasibility of guidelines, opacities or unintended consequences and blind spots. Academic partners are encouraged to create use case specific scenarios of ethical challenges and request industry partners to apply the AI ethics guidelines to ensure ethical compliance. During the testing session, the industry partner will be guided to answer the questions in Table 13 to validate the useability, accessibility and feasibility of the AI ethics guidelines.


Templates for Step 4a (please note these will be provided in Excel for easier data collection)

Table 13: Checklist for Use Case Testing of AI Ethics Guidelines by Industry Partners

	Questions	Yes	No	If not, then why and how can it be addressed?
1.	Are the guidelines applicable to you in your use case?	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Are the recommendations feasible and actionable in your use case?	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Does the guideline address the ethical risk associated with the ethical principles in your domain?	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Does the guideline align with the regulatory and compliance requirements in your domain?	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Is the guideline written in a way that all individuals interacting with the AI system can understand the measures without specialist support	<input type="checkbox"/>	<input type="checkbox"/>	
6.	Can you identify how to apply the guideline in your current workflows?	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Can you realistically implement the recommendations within the guideline with existing resources?	<input type="checkbox"/>	<input type="checkbox"/>	
8.	Do you have access to the resources (data, tools or methods) needed to monitor the impact of the implemented guideline?	<input type="checkbox"/>	<input type="checkbox"/>	
9.	Do the guidelines account for the unique risks or sensitivities of the AI model used in your use case?	<input type="checkbox"/>	<input type="checkbox"/>	
10.	Are the guidelines likely to remain relevant as AI use in the domain evolves?	<input type="checkbox"/>	<input type="checkbox"/>	

Step 4b: Finalisation



Purpose:

Integrating and consolidating all information from Cycle 2, the academic partner will create the finalised AI Ethics Guidance for industrial use cases with support from the industrial partner.



Instructions:

1. **Academic Partner:** Academic partner to draft finalised AI Ethics Guidance. Send guidance for review to CENTRIC and CEA.
2. **Industry Partner:** Fill in Table 14 to identify learner profiles for development of training materials to support WP4 activities.



Expected Results:

1. Final AI Ethics Guidance for Industry Use Cases



Process:

After reviewing the templates submitted in Step 3a and b, academic partners will consolidate the information to create the final version of the AI ethics guidelines with support from the industry partner. The final version of the AI ethics guidelines will be ready in February 2026. Send guidelines to CEA and CENTRIC for review.

Once the operational AI ethics guidance have been finalised, industry partners must complete Table 14 to identify any updates to the learner profiles for T4.1.



Templates for Step 4b:

Table 14: Guiding Questions to Support the Development of Learner Profiles for the Training Materials

	Demographic Questions	Answer
1.	Are there new or additional stakeholders responsible for operationalising the guidelines in the specific industry example from what was previously identified in your use case?	
2.	If so, what are the typical characteristics of this group in terms of age, gender, educational background	
	Questions to Analyse Training Needs	Answer
1.	Are there any specific learning gaps this group have to be able to operationalise the guidance?	
2.	What is their preferred learning delivery methods? (e.g. online (video?), blended learning, stepwise instructions)	
3.	What are the typical constraints to learning for this group? (e.g. time available)	
4.	What do you think the training target groups need to know about operationalising the training (i.e. potential learning objectives for these groups)? The target groups are: Ethics appraisal scheme experts; AI governance and policy experts; the next generation of AI researchers (from Masters to Post docs); other researchers and research ethics educators.	

3. Closing Comments

This handbook provides a step-by-step outline on the process to create the AI ethics guidance for the industrial use cases in AIOLIA.

Through the operationalisation pathway detailed in this handbook, we will develop use case specific guidelines which translate high-level ethics values and principles into concrete guidelines for various use case specific contexts. The finalised guidelines will reflect the nuances of the case context while also being practical and applicable within their specific use case contexts. This will result in the guidelines being effectively implemented in real world operational settings.

This handbook is instrumental for activities, where the aim is to co-create operational guidelines on industrial use cases. The use case guidelines will also support activities which aim to develop non-technical context-enriched AI ethics guidelines for broader AI research areas by identifying and lifting overarching ethical concerns by cross analysing the use case guidelines. The outcomes from these two tasks will also inform the AIOLIA policy and advocacy activities.

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5. Appendix - Supporting Information

5.1. APPENDIX A: THE CO-CREATION PROCESS: PREPARE, FACILITATE AND EVALUATE

To simplify the co-creation process, we have identified three stages for the academic and industry partners:

1. **PREPARATION:** This stage lists all the measures that need to be taken when planning a co-creation activity.
2. **FACILITATION:** This stage refers to the measures taken to facilitate a successful co-creation process.
3. **EVALUATION:** This stage provides information on how to evaluate insights from co-creation processes to ensure they are valid, effective and relevant.

The three stages build on each other and the steps outlined in each stage applies to each successive stage as well. Each step in this process is described in detail below.

5.1.1 Preparation for Co-Creation

Early planning efforts need to be taken during the co-creation process to ensure that the objectives are clear, relevant stakeholders and their roles are identified and availability of resources and time. The outcome of this stage should be an understanding of key stakeholders needed, research gaps, the best methods to facilitate co-creation stakeholders and your desired objectives. In the following table, you will find a set of questions intended to guide you through this stage:

<p><i>What do you want to achieve?</i></p> <p><i>What do you already know about the issue?</i></p> <p><i>What more do you need to learn?</i></p> <p><i>Who do you need to learn from?</i></p> <p><i>What methods are feasible depending on the resources available to me?</i></p>

Below is a step-by-step guide to assist you through the process of preparing for your co-creation activity:

1. Understanding the Context

To begin, the AIOLIA academic and industry partners need to conduct early-stage research to understand and define the objectives in your use case or selected AI research area. For partners who have limited knowledge or experience of ethical AI principles or the development of operational ethical AI guidelines, please refer to the **Accountability Principles for Artificial Intelligence (AP4AI)** and **The Assessment List for Trustworthy Artificial Intelligence (ALTAI)** to support you.

The AP4AI project offers a **Framework for AI Accountability for Policing, Security and Justice**. Accountability serves as the main basis for the AP4AI framework which consists of 12 accountability principles and application guidelines for their implementation in operational environments. All principles derive from ethics and are related to privacy and data protection. The AP4AI principles are intended to guide and support security practitioners through monitoring and review activities across the entire lifecycle of AI ranging from research design to review. The guidelines provide a process for evaluating accountability and for assessing compliance with the EU AI Act. The **Assessment List for Trustworthy Artificial Intelligence** is a self-assessment tool developed by the High-Level Expert Group on Artificial Intelligence to help organisations assess the trustworthiness of AI systems.

To ensure the development of operational ethical AI guidelines across the AIOLIA use cases, both **technical** and **organisational** methods must be considered and adopted. These methods work in tandem to ensure the ethical design, development and use of AI systems across the use case contexts.

2. Define the Aim, Purpose and Objective

Following your initial research, outline objective aims and gaps in the research you wish to focus on. The purpose should be tangible and clear. The overall arching aim of the co-creation activities in AIOLIA is to co-create operational AI ethics guidelines for the selected principles based on your use case.

However, it is not possible to develop these guidelines through one activity. As such, the objective of the co-creation activities should be broken down into achievable goals. A multi-stage co-creation process is encouraged for partners in AIOLIA to co-create operational guidelines on the various industrial use cases. Each co-creation activity should achieve a measurable goal. As a rule of thumb, plan iterations with checkpoints to assess whether more is necessary.

3. Define Success Criteria

Key performance indicators (KPIs) and success criteria should be aligned with the original objectives of the co-creation process and should address the key outcomes stakeholders wish to achieve. You should set up your KPIs by following the SMART protocol. Ensure your goals are Specific, Measurable, Achievable, Relevant, and Time-Bound. Defining these parameters ensures that your objectives are attainable. Ensure the success criteria and key performance indicators you set are feasible and tangible according to the objectives you wish to achieve and resources available to you.

The number of iterations needed depend on the objectives you wish to achieve. Continuous iterations usually bring about greater results

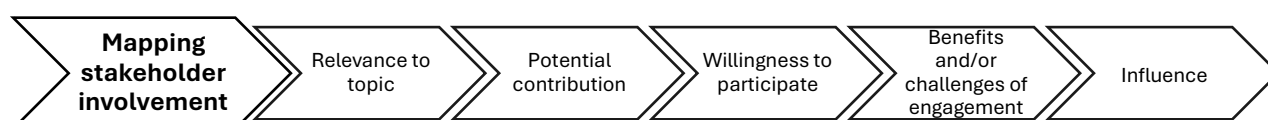
4. Identify Relevant Stakeholders

This step involves determining key stakeholders that need to be involved in your co-creation activity. To help determine what stakeholders need to be involved in the development of ethics guidelines consider what types of knowledge, capabilities or roles are relevant to your work and

which stakeholders can provide this information. It is also important to adapt and customise communication strategies based on identified stakeholders’ profession and needs. The identification of practical measures should also consider relevant stakeholder-specific considerations. To help determine what stakeholders need to be involved, consider what types of knowledge, capabilities or roles are relevant to your case and which stakeholders can provide this information. You can use Figure 6 to identify relevant stakeholders based on varying factors.

Diversity reflects both the type of stakeholder and identity. Diverse perspectives will enhance broader applicability and relevance to a wider stakeholder audience

Figure 6: Mapping Relevant Stakeholders



In AIOLIA, there are several key groups who should be included in the co-creation discussions in the development of the operational AI ethics guidelines. These include:

- 1) **Technical stakeholders** such as data scientists, machine learning engineers, software developers, engineers, monitoring and evaluation analysts, IT experts, AI model maintenance teams or quality assurance engineers.
- 2) **Use case domain experts** who can provide contextual understanding. This will differ based on the industrial use case. Examples include subject matter experts, academics, frontline workers, and end users.
- 3) **Stakeholders involved in governance and compliance** such as lawyers, data protection officers, ethics review boards and risk and compliance officers.
- 4) **Affected communities or impacted stakeholders** such as advocacy groups, relevant NGOs, policy makers and community representatives.

5. Determine the Co-Creation Timeline

When developing a timeline for your co-creation activities, ensure that you account for the time needed to prepare, facilitate and evaluate the process. It is also important to consider how feasible it is to do multiple iterations of co-creation to develop tailored and actionable AI ethics guidelines.

Continuous feedback loops are highly encouraged for the development of suitable AI guidelines in all the AIOLIA use cases. In the context of AIOLIA, we have two iterations of the co-creation cycle for the development of ethical guidelines. At least two consecutive drafts will be developed, discussed and validated via online meetings and one in-person expert meeting. The first iteration of the guidelines for the use cases should be completed by October 2025 with the guidelines being finalised in February 2026.

6. Choose a Method(s)

The next step is to identify the most suitable engagement method with your selected stakeholders (see table below for list of methods). In deciding which method(s) you want to utilise, several factors need to be taken into account. ^[7] Firstly, methods of engagement with stakeholders can

differ based on the objectives you wish to achieve. Secondly, methods need to be tailored to the stakeholders’ needs and requirements. For example, prior to an online workshop with elderly individuals you may want to have a session where you provide technology support. Lastly, different methods require varying time commitments and resources to organise and conduct. For example, a scenario workshop will require more time to organise than online interviews.

Co-creation dialogues need to be tailored to ensure they reflect and respect local and cultural nuances or norms. This involves adapting facilitation or data collection methods to acknowledge, respect and accommodate diverse cultural backgrounds, communication styles and values that are present within the group. For example, IDEO.org, a non-profit organisation, launched the Billion Girls CoLab in Kenya. The initiative focuses on empowering adolescent girls by directly involving them in co-creation sessions in designing products and services for reproductive health and wellness [8]. The organisation adapted their engagement strategies to reflect local cultural, educational and social contexts. Emphasis was placed on removing existing gender barriers and empowering the girls by providing them a safe and comfortable space to share ideas.

There are many methods and tools that can be used to facilitate a co-creation process. When selecting a method, you need to consider the following questions:

1. What methods are suitable for the stakeholders you will contact and their preferences or needs?
2. Do you have sufficient budget to use this method?
3. Do you have sufficient resources (individuals, materials and time) to carry out this method?

Table 15: Methods

	Description	Considerations	Further Resources
Interview	An interview is a qualitative research method where questions are asked to individuals to gather information about a specific topic.	Interviews can take place in person, online or over the telephone. There are three types of interviews. They can be unstructured (free flowing conversation and no use of pre-arranged questions), semi-structured (mix of pre-arranged questions and unplanned questions) or structured (specific targeted questions). Questions can be open or close-ended depending on the objectives you wish to achieve. The length of an interview varies depending on the complexity of the topic, and number of questions asked.	College of Policing. (2019). How to guide: conducting research interviews. Office for Health Improvement and Disparities. (2020). Interview Study: qualitative studies.
Workshop	A workshop is an interactive meeting where a group of individuals take part in activities and	In AIOLIA, we encourage partners to consider the purpose, time, activities and stakeholders when choosing workshop activities. Workshops can be a great method to gather feedback from stakeholders on the draft AI ethics guidelines.	Candelo, C., & Unger, B. (2003). Organizing and running workshops. <i>WWF Colombia. In Went</i>

	discussions on a particular topic.	Ensure the activities you choose are varied to encourage active participation. These can include brainstorming sessions, scenarios or group work. If you are planning a workshop, be mindful of the accessibility needs of your participants.	<i>(antes DSE, alemania) IFOK.</i> Seeds for Change. (n.d.). Facilitating Workshops.
Focus Groups	A focus group brings together a group of individuals for structured discussions in a moderated setting with a facilitator.	Focus groups are typically structured around a set of carefully predetermined questions with the discussion being free flowing. It is an interactive process where participants openly engage with one another. Questions are typically qualitative and open-ended to ensure information is open to interpretation. The facilitator guides the discussion based on the determined objectives.	College of Policing. (2018). How to Guide: Conducting Focus Groups. Krueger, R. A., & Casey, M. A. (2002). <i>Designing and conducting focus group interviews</i> (Vol. 18).
Scenario Workshop	A scenario workshop is a participatory method that is used to anticipate and address challenges using scenarios.	A scenario workshop begins by defining the purpose of the workshop to participants. Afterwards, participants are given scenarios by the workshop facilitator to read and address potential barriers, challenges or risks. The participants comment on the scenarios based on their views, knowledge and experiences, providing solutions to overcome highlighted barriers. The following questions can help in the formulation of plausible and relevant scenarios in AIOLIA: 1. What is the time frame and the geographic scope of the use case? 2. Who are the stakeholders that will be impacted by the use case? 3. What are the main ethical concerns you wish to highlight?	Murphy, N. & Linkenhoker, B. (2020). Guide to Creating and Using Scenario Vignettes in Workshop Design. World Economic Forum. Copeman, C. (2006). Picture this: a guide to scenario planning for voluntary organizations. NVCO.

7. Prepare Required Content

A variety of content needs to be prepped before you conduct your co-creation activity. This includes creating a list of questions you will ask participating stakeholders, information sheets and consent forms in your co-creation activity

It is also important to prepare the necessary tools that you may need during the co-creation dialogue. Agendas are a useful method to provide structure, focus and clarity in your co-creation activity if it involves multiple participants. The agenda should include information on objectives,

session plans, time allocations, topic and purpose of co-creation. This should only be drafted if you are conducting a method which involves many individuals. You may need to design exercises or activities (e.g. brainstorming sessions, scenarios etc.) and draft visual aids through PowerPoint, diagrams or photos to guide the co-creation process if they are relevant.

You may need resources depending on how you collect stakeholder insights. By this we mean, if the activity is taking place online, you may use applications such as Slido or Miro and if the activity is taking place in the offline environment, you may need supplies such as paper, whiteboards, pens and markers.

Before the co-creation activity, prepare an information sheet outlining the purpose and aim of the workshop and a consent form requesting your identified stakeholder's participation. It may be beneficial to create and provide pre-read materials if required such as a one-page information sheet which offers an introduction and overview of ethical AI to stakeholders.

8. Identify Roles

Before you engage with stakeholders in your chosen method, you need to plan well in advance the roles that are required to facilitate smooth co-creation activities. Once you have identified roles, assign them to capable individuals. Some common roles include the facilitator who is responsible for creating and maintaining a productive discussion, a notetaker and if your co-creation process is online, technical contributors can assist in the smooth running of the event in case of technical glitches.

5.1.2 Facilitation of Co-Creation

Facilitating co-creation activities involves a guided structure where stakeholders actively participate in achieving the desired objectives. It is important to create a space which encourages active dialogue and participation. Effective facilitation ensures that all voices are heard, and power dynamics are balanced. The outcome of this stage should be a successful co-creation activity which fosters open and constructive dialogue. In the following table, you will find a set of questions intended to guide you through this stage:

Have you created a safe and comfortable environment for stakeholder(s) to share their opinions and insights?

How will you ensure the stakeholder(s) stay aligned with the determined objectives?

Are stakeholder insights being translated into tangible actions or recommendations?

What tools and ways have you adopted to collect stakeholder(s) insights?

How will you manage power dynamics during the discussion?

Below is a step-by-step guide to assist you through the process of facilitating your co-creation activity

1. Begin with an Introduction

Begin by welcoming participant(s) and explaining objectives, aims and timetable of the activity. Inform participants of the aims of the AIOLIA project and how their insights will guide the development of AI ethics guidelines. Let participants introduce themselves and inform participants what is expected from them as part of this collaboration.

2. Ice Breakers (Intended for group settings)

An ice breaker can help to introduce participants to the group. The exercise is used to make the participants feel comfortable being outside their normal work environment, but also to familiarise them with each other. Common ice breakers include two truths, one lie and would you rather

3. Encourage the Use of Tools

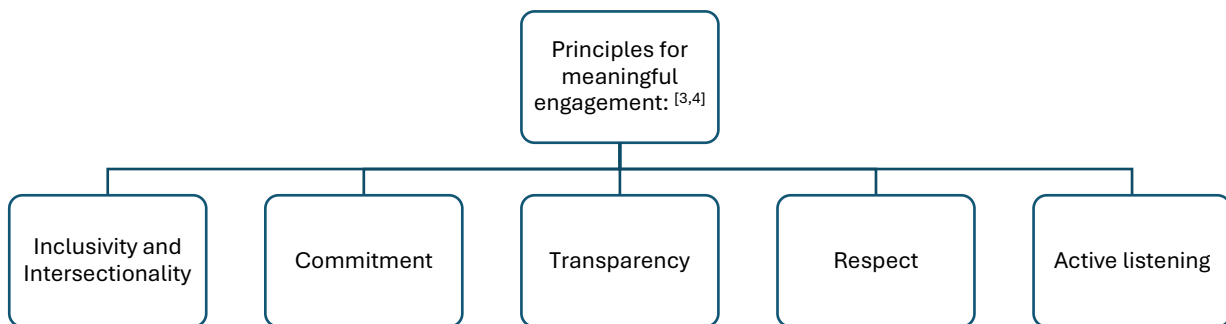
The use of timers and agendas can help manage your co-creation activities and keep it on track. To capture insights, facilitators should encourage the use of notes, photos, and/or videos. You could also use tools such as Miro and Slido to capture participate insights. However, factor in the time needed by participants to get familiar with digital tools if you are using them in co-creation activities.

4. Manage Group Dynamics (Intended for Group Settings)

Establishing common ground rules such as respectful communication, active listening and respecting time limits can be helpful to manage group dynamics. To ensure all participants are engaged and comfortable with one another, especially in situations where power imbalance may exist, a group agreement and ground rules should be communicated before the start of the session.

Before you start your activity, iterate that each stakeholder brings unique perspectives, knowledge, and experience and effective co-creation requires trust, respect, good management and reciprocity between all those involved. Facilitators also need to be prepared to be flexible in how stakeholder dialogue is conducted as co-creation involves participants from various backgrounds and experiences.

Figure 7: Principles of meaningful engagement



Below you can find a list of principles that support meaningful engagement.

1. Conduct activity

After the introduction, the facilitator should explain the activity which you will do to collect stakeholder insights to develop the operational AI ethics guidelines. Examples of activities can include questions, focus groups, assessing scenarios or completing user journey maps. Ensure that you have a system to collect stakeholder insights as the activity is occurring.

2. Manage Co-Creation

All facilitators need to be sufficiently prepared to mediate and guide participants during co-creation. Facilitators need to be able to manage time effectively, maintain focus, observe how stakeholders feel, respond and relate to each other, ensure alignment to desired objectives, actively listen and stay neutral.

When managing co-creation, it is important to assess how stakeholders are engaging with one another. Facilitators should be aware of techniques to foster equality and manage power dynamics by emphasising mutual respect, empowerment and inclusive leadership. Having multiple modes of collecting feedback such as an anonymous survey or the option to provide insights before or after the co-creation activity can be helpful for participants to voice their opinions in a way that is comfortable to them.

Verbal acknowledgement of stakeholder contributions can make participants feel valued and heard.

3. Summarise Key Points

At the end of the co-creation activity, summarise the main objectives and content covered. Invite participants to share final thoughts. You should mention how and when you will share the findings with them as well as next steps. To conclude, thank participants for their time and support.

4. Conduct activity

After the introduction, the facilitator should explain the activity which you will do to collect stakeholder insights to develop the operational AI ethics guidelines. Examples of activities can include questions, focus groups, assessing scenarios or completing user journey maps. Ensure that you have a system to collect stakeholder insights as the activity is occurring.

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5.1.3 Evaluation of Co-Creation

Analysing the results of co-creation involves assessing how well the outcomes and results from co-creation align with the initial objectives and stakeholder expectations. This includes assessing the effectiveness of collaboration, participant engagement, quality of the results and stakeholder satisfaction. Additionally, it is important to reflect on any challenges faced during the process and identify areas for improvement in the next cycle. Ultimately, a comprehensive analysis of the co-creation process helps to evaluate the success of the process and identify opportunities for refinement.

In the following table, you will find a set of questions intended to guide you through this stage.

Did the outcomes/findings align with the original objectives you set out to achieve?

Did the co-creation activity result in the development of actionable and feasible recommendations?

What went well? Were stakeholders engaged?

What challenges arose during the process and how were these managed?

What could be improved for the next iteration?

Below is a step-by-step guide to assist you through the process of evaluating your co-creation activity:

1. Organise and Consolidate Data

The first step is to organise all the data you have received from the co-creation activity. If several notetakers were present, assign an individual to collate all the findings in one document.

2. Assess and Analyse Findings

Academic and industry partners need to work collaboratively to analyse the findings from your co-creation activity. There are numerous methods to analyse findings. Common methods to analyse qualitative data include conducting content analysis or thematic analysis by identifying patterns, recurring themes or key insights from the participants. Adopt a method which you are familiar using. From your analysis, you should be able to identify core problems and opportunities for improvement which can guide the development of operational AI ethics guidelines in your chosen use case and guide the development of the next co-creation activity. It can also be useful to validate stakeholder insights through additional research or by consulting the stakeholders for clarity on their insights.

3. Assess Whether Further Iterations are Needed

To assess whether further cycles of co-creation are needed, you need to determine whether your findings met the desired objective you set out to achieve. The number of iterations needed for co-creation is highly dependent on the purpose, complexity and success criteria you have defined. If the co-creation process partially achieved your defined KPI's, it is recommended to conduct the process again. Further iterations of co-creation will also depend on available resources (budget, time and participant availability).

If you have not achieved your aim, follow the checklist provided at the preparation stage to conduct another co-creation cycle. Keep in mind that regular collaboration and feedback is needed in any co-creation process.

4. Communicate Findings and Recommendations (Academic and Industry Partners)

Create a summary report of the key findings and share to participating stakeholders. It is crucial to adopt diverse communication methods to ensure visibility of results to a wide range of audiences. You can achieve this by tailoring communication based on stakeholder needs. Common techniques include incorporating visual aids, graphics and the use of plain and clear language. Once you have disseminated your findings to stakeholders, gather their thoughts and revise the findings as needed.

5. Evaluate your Co-Creation Process (Academic and Industry Partners)

Assessing the quality of your co-creation process and measuring its impact will help you think about how it can be improved. Assess the quality of your results to the KPI's you set to achieve. You also need to consider whether participants were engaged, active and present in the discussion and whether any challenges arose when conducting the activity. If challenges did occur, you need to think of how you can mitigate them for the next co-creation cycle. It is important to make sure that each consecutive meeting with the stakeholder(s) builds on the last by beginning each meeting with an update on how the individual or group's input has been used so far in the development process of the AI ethics guidelines.

Conclusion

The stages outlined above provide a structured process for the co-creation activities pertaining to the development of AI ethics guidelines tailored to the AIOLIA use cases and AI research areas.

Further Resources

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5.2. APPENDIX B: COMMON CHALLENGES IN CO-CREATION AND MITIGATION MEASURES

When preparing, facilitating or evaluating a co-creation process, you may run into challenges. The table below lists some common challenges that may materialise prepping, facilitating or evaluating your co-creation activities and measures on how to mitigate the negative impacts.

Table 16: Common Challenges and Mitigation Measures

Challenges	Mitigation Measures
<p>Challenges with logistics and management can occur when facilitating co-creation. For example, the bigger a group the more difficult it can be to moderate, or you may notice difficulties achieving consistent participation from stakeholders.</p>	<p>To combat challenges with logistics and management, conduct a risk assessment to identify possible risks and mitigation strategies.</p> <p>For example, if you are conducting an online workshop with multiple stakeholders, be mindful that not all participants may feel comfortable voicing their opinion. As such you should encourage the use of breakout rooms or have multiple facilitators to ensure all participants have the opportunity to voice their ideas and thoughts.</p>
<p>Be aware of and account for power dynamics between different stakeholders. Individuals may feel discouraged or hesitate to share their opinions in front of individuals of different socio-economic status, ages, educational level, professions and genders. This can lead to the oppression of diverse viewpoints within the discussion.</p>	<p>It is important to recognise and acknowledge that not one participant has all the necessary expertise to deal with all aspects of the problem. Facilitators should ensure participants feel safe and comfortable to voice their opinions by setting ground rules and handling potential issues in a sensitive and constructive manner.^[9]</p> <p>Having other modes of collecting feedback such as an anonymous survey or the option to provide insights before or after the co-creation activity can be helpful for participants to voice their opinions in a manner, they feel comfortable.</p>
<p>Be mindful of cultural differences and respect these differences within the co-creation process. Cultural misunderstandings can lead to misinterpretation or conflicts.</p>	<p>It is important that facilitators acknowledge and respect cultural diversity and foster an inclusive space during the co-creation session. Facilitators should also emphasise that stakeholders should avoid making assumptions and the importance of being open-minded to everyone's ideas.</p>
<p>Groupthink occurs when individuals conform to the consensus view of a group rather than engage with the topic critically. This can occur if members of the group withheld their viewpoints or minimise the importance of their opinions in fear of being rejected by the group.</p>	<p>Avoid groupthink by reminding participants that it is encouraged to have differing opinions, and the goal is to consider as many options as possible. It also helps if facilitators do not share their own preferences or encourage participants to choose a particular opinion.</p>
<p>Participant disengagement refers to when participants are less interested or involved during a co-creation process. This can manifest through lack of attention or reduced</p>	<p>Begin your co-creation activity by acknowledging that all participant contributions have value. Developing personal and trusting relationships can be crucial to ensure long-term engagement of stakeholders.^[3] To increase</p>

<p>participation. The use of administrative or technical jargon can also interfere with effective communication.</p>	<p>participation, it may be helpful to have regular communication with stakeholders and create a positive and open atmosphere.</p>
<p>Biases, whether conscious or unconscious, can influence how stakeholders engage and interact with one another during co-creation processes. Everyone holds individual biases which can negatively impact their judgement and objectivity.</p>	<p>All those participating in a co-creation process should be aware of their own biases and understand how these could impact their judgements.</p>
<p>It can be challenging to incorporate and include all ideas, thoughts perspectives into actionable recommendations.</p>	<p>Establishing clear goals can help individuals align their recommendations to the objective and aims of the co-creation process. Facilitators can also encourage consensus building through votes.</p>
<p>You may experience resistance from potential stakeholders to participate in co-creation processes due to uncertainty around how their opinions can contribute to meaningful change.</p> <p>Some stakeholders' participation may be limited due to barriers related to time limitations, technology access, language barriers or geographical restrictions.</p> <p>Stakeholders with high levels of authority can have a high influence but can be difficult to reach.</p>	<p>To mitigate possible resistance from stakeholders, you can adopt various techniques:</p> <p>Firstly, it is important to empower your potential stakeholders by conveying their opinions and insights are valid, relevant and important.</p> <p>Secondly, effective engagement with gatekeepers can increase your chances of accessing relevant stakeholders. For example, to involve families in co-creation activities, you may want to engage with teachers or principals.</p> <p>You also need to tailor your communication and co-creation activity to the needs of participants. If there are language barriers, you should include a translator. If there are geographical restrictions, a method of online engagement can be helpful.</p> <p>Lastly, to reach individuals with high levels of authority, using a variety of communication methods through various channels can be helpful.</p>
<p>It can be challenging to find suitable stakeholders to participate in co-creation processes due to an inability to access or locate individuals with the necessary capabilities or skillset.</p>	<p>Use a stakeholder matrix to identify relevant stakeholders with the necessary skills and capabilities. Leverage existing network to connect with stakeholders who may be more difficult to access.</p>
<p>Recruiting stakeholders from bureaucratic or hierarchical organisations can be time consuming due to the different authorities and approval processes needed to participate in co-creation activities.</p>	<p>Allocate sufficient time to connect with relevant stakeholders and account for these waiting times when developing your co-creation activities.</p>
<p>It can be difficult to involve stakeholders from different stages of the development process and end users to work as a cohesive</p>	<p>It is important to emphasise that co-creation actively involves all individuals involved at all stages of the AI lifecycle process working together to develop recommendations that are widely applicable. Working in</p>

team as they could be used to working with a specific part of the AI system lifecycle.	silos will result in recommendations that do not account for unique needs across different stages of the AI systems lifecycle.
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Further Resources

1. January, A. (2024, August 1). *Navigating Biases in Co-Creation: A Facilitator's Guide to Equitable Design Thinking*. Mediciroad. <https://mediciroad.org/navigating-biases-in-co-creation-a-facilitators-guide-to-equitable-design-thinking/>
2. The Partnering Initiative. (2018). Anticipating, managing and mitigating power imbalances. <https://archive.thepartneringinitiative.org/wp-content/uploads/2018/12/Managing-power-imbalances.pdf>

5.3. APPENDIX C: RESEARCH ETHICS

Research ethics refers to principles governing the design, implementation, management, conduct and evaluation of research. Ethical principles are paramount in research as they serve to protect the rights, safety, dignity and wellbeing of research participants and serve as a foundation for high quality credible research. While several global institutions and organisations have developed their own ethical principles, the underlying basis that form the principles remain the same. Ultimately, incorporating and abiding by research ethics principles and guidelines is vital for maintaining the integrity of research.

In AIOLIA, we have identified five core ethics principles that will guide all the co-creation activities throughout the project lifecycle.

Principle 1: Beneficence
AIOLIA partners should aim to maximise the benefit of the research while minimising the potential risk of harm to all those participating in the research process.

Principle 2: Non-Maleficence
This principle relates to ‘do no harm’. All potential risks and harms in the research process should be mitigated by robust precautions.

Principle 3: Autonomy
Respecting the autonomy and dignity of participants are core principles associated with research ethics. All researchers have a duty to ensure informed consent and protect the privacy of everyone participating in research.

Principle 4: Justice and Inclusiveness
Research participants must be recruited fairly and not exploited. A core principle of justice is equal treatment and respect for individuals. It also means that active efforts must be made to include individuals who may be underrepresented in research projects.

Principle 5: Integrity
Research should be performed in a manner that promotes accountability, rigor, honesty, respect and transparency. ^[10] These factors should be implemented in all stages of the research process and involves factors such as declaring conflicts of interest and crediting other relevant work appropriately.

We have also identified the following guidelines and practices to support the academic and industrial partners as they undertake co-creation activities.

1. One of the foundations of research ethics is obtaining **informed consent**. Participation should be voluntary and appropriately informed. The following information should be provided to the participants: the research procedure, the purposes, risks and anticipated benefits, alternative procedures, how their data will be used and a statement offering the participant the opportunity to ask questions and to withdraw at any time from the research without giving a reason and without facing any consequences.

2. When conducting research, it is important to develop a **data management plan** outlining how you will collect, use, store, share and delete participant data. Data generated by the AIOLIA project must be securely collected, stored, used, deleted in accordance with relevant legislation.
3. Researchers should plan ahead and set up a process for **incidental findings**. Incidental findings are insights that arise from the research process that were not considered as part of the original research objectives. In case of the event, researchers should develop a research management plan which has procedures on confidentiality and communication with participants. To proactively address incidental findings, researchers should account for it in the information sheet and consent forms.
4. While ethics research principles serve as an important point of reference, you also need to consider **applicable laws, regulations and guidelines** to ensure legal compliance when completing your research activity.
5. You must **obtain ethical approval** from the appropriate oversight body before undertaking any research involving individuals. This involves submitting a detailed plan of your research questions, methodology, data collection, data sharing and data analysis process.
6. Where **conflicts of interest** cannot be avoided, they should be made explicit. A conflict of interest is defined as a situation in which an individual's objectivity could be influenced or diminished due to their involvement in another role. ^[11] These conflicts can arise from personal, professional or financial interests.
7. Everyone has individual **biases** which can affect their judgement and impact objectivity in their personal and professional life. As such, it is important to reflect on potential biases you may have and be aware of how these could impact your research.
8. It is crucial to give appropriate considerations to individuals from vulnerable and/or minority communities. It is important to **adopt inclusive approaches** to foster participation from minority and/or vulnerable communities. This can include providing translation services and consider methods to make the research process more accessible to them. Contacting vulnerable communities (e.g. children and elderly) and enabling their participation in co-creation requires careful and sensitive considerations. If this is not feasible, the involvement of advocacy groups and non-governmental organisations can act as a great representative of different communities' ideas and opinions. For example, the involvement of elderly individuals requires considerations on accessibility. You need to consider physical, cognitive, usability, mobility and/or dexterity limitations. Mitigating these challenges by using large print or font sizes, ensuring that co-creation processes occur at accessible locations. You should also consider the possibility of utilising low-tech methods such as in-person interviews if participants face technological challenges.
9. **Research misconducts must be avoided** when conducting co-creation activities as they undermine the integrity and legitimacy of the work. Misconducts refer to actions or practices that violate the research ethical principles. Examples of misconduct can include fabricating, falsifying, changing or omitting results or data and plagiarising others research.

Further Resources

1. All European Academics. (2023). The European Code of Conduct for Research Integrity – Revised Edition 2023. Berlin.
2. Oates, J., Carpenter, D., Fisher, M., Goodson, S., Hannah, B., Kwiatowski, R., ... & Wainwright, T. (2021, April). BPS code of human research ethics. British Psychological Society.
3. Mager, F & Galandini, S. (2020). Research Ethics: A practical guide. Oxfam GB. Oxfam International. <https://policy-practice.oxfam.org/resources/research-ethics-a-practical-guide-621092/>
4. Wiles, R. (2012). What are qualitative research ethics? Bloomsbury Academic.
5. European Commission. (2021). Ethics in Social Science and Humanities. https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ethics-in-social-science-and-humanities_he_en.pdf
6. Sainsbury, N. (n.d.). A short guide to research conduct. UK Research Integrity Office <https://ukrio.org/news/research-misconduct-a-short-guide/>
7. Smith, J., & Noble, H. (2025). Understanding sources of bias in research. *Evidence Based Nursing*. <https://doi.org/10.1136/ebnurs-2024-104231>