TECHETHOS

FUTURE ○ TECHNOLOGY ○ ETHICS

Advisory and impact board members' activities, cooperation and clustering activities

Deliverable 6.3

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D6.3 Advisory and impact board members' activities, cooperation and clustering activities			
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The TechEthos Project

Short project summary

TechEthos is an EU-funded project that deals with the ethics of the new and emerging technologies anticipated to have high socio-economic impact. The project involves ten scientific partners and six science engagement organisations and runs from January 2021 to the end of 2023.

TechEthos aims to facilitate "ethics by design", namely, to bring ethical and societal values into the design and development of new and emerging technologies from the very beginning of the process. The project will produce operational ethics guidelines for three to four technologies for users such as researchers, research ethics committees and policy makers. To reconcile the needs of research and innovation and the concerns of society, the project will explore the awareness, acceptance and aspirations of academia, industry and the general public alike and reflect them in the guidelines.

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Abbreviations

Term	Explanation
ADIM	Advisory and Impact
ALLEA	All European Academies
CE	Climate engineering
DoA	Description of Action
DXR	Digital extended reality
EC	European Commission
ENERI	European Network for Research Ethics and Integrity
EU	European Union
EUREC	European Network of Research Ethics Committees
GDPR	General Data Protection Regulation
H2020	Horizon 2020
NDA	Non-disclosure agreement
NLP	Natural language processing
NT	Neurotechnology
OECD	Organisation for Economic Co-operation and Development
RE	Research ethics
REC	Research ethics committee
RI	Research integrity
RRI	Responsible Research and Innovation
SRM	Solar radiation management
WP	Work Package

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Executive Summary

A well-functioning advisory board and an active cluster of related projects are of high importance for a project as they expand its knowledge base and create synergies with other projects' work.

This report describes the ADIM (advisory and impact) board and cluster activities which are tasks 6.3 (cluster) and 6.4 (ADIM board) of work package 6 of the TechEthos project: horizontal coordination on cooperation and synergies with other relevant projects and stakeholders. Both tasks represent the connection of TechEthos to outside players, individuals and projects that enrich the TechEthos project's work.

Accordingly, the report comprises two parts: Part A describes the activities of the individual ADIM board members and Part B summarises the activities of TechEthos (partners) within the cluster of related projects.

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PART A Advisory and Impact Board Activities

1 Introduction and Background

This part describes the TechEthos ADIM (advisory and impact) board and its activities. According to the DoA the task would: "invite members to give feedback, (conduct) personal interviews with relevant ADIM board members, share regular reports with them, and carry out joint (virtual) meetings with them." In this report the fulfilment of these tasks will be described as well as the manifold other activities of the ADIM board.

The first section describes how the board was built up and coordinated. The second section gives information on the composition of the board and how it changed from the beginning of the project to the end. This is followed by some information on how a working relationship with the board members was established and how communication with the ADIM board worked before concentrating on the main part of this section: the activities of the board. Before going into the details of the ADIM board members' activities some information is given on the importance of stakeholder engagement in general and its function for the TechEthos project.

1.1 Importance of stakeholder engagement in general

As stated in the EC Stakeholder consultation guidelines 2014 stakeholder consultation is a "key tool for transparent and informed policy-making".[1] It plays an important part in "increasing the legitimacy and hence the quality and credibility of Commission proposals."[2] It is also a key tool to increase the credibility and trustworthiness of the results and recommendations of EU projects.

The above guidelines also provide a definition of stakeholders which is used here.

"The minimum standards define four stakeholder types, those:

(1) affected by the policy;

(2) who will have to implement it;

(3) who have a stated interest in the policy; and those

[1] European Commission, Stakeholder consultation guidelines 2014, Public consultation document, 2014, p. 1. http://ec.europa.eu/smart-regulation/impact/docs/scgl_pc_questionnaire_en.pdf

[2] European Commission, op cit., 2014, p.1

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(4) who have the knowledge and expertise to propose strategies and solutions on the issue at hand.

In some cases, stakeholders may come from more than one stakeholder type."[3]

For the TechEthos ADIM board experts were invited that were considered to be leaders in the various areas of relevance to the project, in particular from (3) and (4). They formed a permanent body of independent experts throughout the TechEthos project and were chosen from relevant stakeholder categories such as researchers, international networks, professional bodies, standard bodies, media, policy (related organisations) and NPOs, both in Europe and internationally.

1.2 Function of the ADIM board for the TechEthos project

As it is implied by the name the ADIM (advisory and impact) board has two main functions.

First, it has an advisory function; its members enlarge the knowledge base of the project and help to overcome its blind spots by sharing views on how they perceive the different issues. They do this by commenting and contributing to all activities of the project in the way of participating in workshops, by taking part in interviews and surveys, and by reviewing important deliverables and other outputs of the project.

Second, the ADIM board members have an ambassadorial function. They help to make the TechEthos project better known and give the project's results not only a higher impact but also support the sustainability of the project outputs.

This report focuses on the advisory function as the actual impact of the stakeholders' actions is difficult to measure.

Before going into the details of how this has been achieved for the TechEthos ADIM board, some information is given on the management structures that had been developed to establish and maintain the board, its composition, and the communication with the board – all of which are prerequisites for the smooth and effective functioning of the board in the sense that the members are actively involved in the project.

2 Building and managing the ADIM board

The TechEthos ADIM board was established as a working unit with the start of the project in January 2021. As the technologies with the highest socio-economic impact were not known at the beginning of the TechEthos project and still had to be selected the project started with a small core board comprising experts with a more general knowledge such as e.g. risk assessment or social responsibility. Once the technologies were selected the board would open up to gain experts in the selected fields. The selection criteria for the

[3] European Commission, op cit., 2014, p.10.

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board were next to the above-mentioned criteria for the expertise to gain at least one representative of the stakeholder categories of researchers, international networks, professional bodies, standard bodies, media, policy (related organisations) and NPO with a good representation of European countries and gender balance.

A **letter of invitation** was developed for the potential ADIM board members that had expressed their interest to become a member of the board before the start of the project with a specification of their roles and another one for potential new members that were to be gained in the course of the project.

A non-disclosure agreement (NDA) was developed and sent for signing to the ADIM board members.

As well the **work plan** for the management of the board was elaborated which included the planning of the six (face to face and online) ADIM board meetings with timelines.

Also, the approach of **gaining new stakeholder board members** was established as well as criteria for new members to keep a well-balanced and representative ADIM board with high expertise. The partners were requested to suggest adequate contacts which were then selected according to the criteria of adequate expertise, and an adequate representation of gender and countries.

All the **profiles** of the TechEthos ADIM board members (including the name, institution, the homepage, and the interest in ethics of emerging technologies and a photo) have been put on the TechEthos website with their consent. See more in section 4.2 communication.

Finally, the activities of the ADIM board had to be coordinated within the TechEthos project to avoid "overuse" and fatigue of its members and to ensure a good timing of events to guarantee a maximum input. To achieve this goal, the first contact went via the ADIM board coordinator who balanced the activities.

3 Composition of the ADIM Board

As mentioned above, one of the features and challenges of the TechEthos project was that the most disruptive technologies with high socio-economic impact that the project dealt with were not identified at the beginning of the project but were selected within the first six months. Accordingly, it was not possible to gain experts with a specific knowledge in these technologies. This challenge was overcome in the case of the ADIM board by selecting people with a more general or broader knowledge at the beginning of the project who formed the core board and expanding it once the technologies were chosen. As there were some ideas what could be the most disruptive technologies some experts with a specific knowledge also joined at the beginning.

3.1 The core board

The project started with the rather small core board comprising 13 members that were all contacted before the beginning of the project and had confirmed to join at its start.

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Name	Institution	Type of organization	Country	Gender
Ashworth, Peta	University of Queensland	Academia	Australia	F
Biele, Cezary	OPI National Information Processing Institute	National Research Institute	Poland	M
Florin, Marie-Valentine	International Risk Governance Council (IRGC)	NPO	Switzerland	F
Gefenas, Eugenijus	Director of the Lithuanian Bioethics Committee	REC, international network	Lithuania	M
Giovannini, Chiara	ANEC	Consumer organisation	BE	F
Guston, David	Arizona State University	Academia	USA	M
Hiney, Maura	Irish Health Research Board, ALLEA	RI/international network	Ireland	F
Mocchio, Elena	Italian Standard Body	Standard organization	Italy	F
Parker, Andrew	Director SRM Governance Initiative	CSO/international network,	Lithuania	M
Philbeck, Thomas	World Economic Forum (left)	Company	CH	M
Rementeria, Maria José	Social Analysis Group, Barcelona Supercomputing Center (BSC)	Academia	Spain	F
Renn, Ortwin	Institute for Advanced Sustainability Studies Potsdam	Academia	Germany	M
Vakhshtayn, Victor	Moscow School of Social and Economic Sciences	Academia	Russia	M

Table 1 The core ADIM board

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The ADIM board comprised 6 women and 7 men and representatives from all categories but media and policy (related organisation) that were to be gained later. It also comprised representatives from diverse European countries and beyond.

3.2 Expanding the board

In the middle of the second year of the TechEthos project (July 2021) the selection of emerging technologies with the highest socio-economic impact was finalised and the expansion of the ADIM board started. This process went on till January 2023 when the last expert joined the board.

For this phase, experts were enrolled on the basis of their explicit knowledge in the selected emerging technologies: Digital Extended Reality (DXR), Climate Engineering (CE) comprising both Solar Radiation Management and Carbon Dioxide Removal, and Neurotechnologies (NT). In addition, experts in media with a focus on the chosen technologies were selected. As a result, nine additional experts joined the board. Four experts in the field of NT, two experts in the field of CE and two experts in the field of DXR were enrolled as well as an expert in media. Finally, the board was completed.

Name	Institution	Type of organization	Country	Gender	Tech
Ashworth, Peta	Curtin Institute for Energy Transition	Academia	Australia	F	CE
Biele, Cezary	OPI (Poland), National Information Processing Institute	National Research Institute	Poland	M	
Chneiweiss, Hervé	CNRS Centre national de la recherche scientifique	Academia	France	M	NT
Florin, Marie-Valentine	International Risk Governance Council (IRGC)	NPO	CH	F	
Friedrich, Orsolya	University of Hagen	Academia	Germany	F	NT
Gefenas, Eugenijus	Director of the Lithuanian Bioethics Committee	REC, international network	Lithuania	M	
Giovannini, Chiara	ANEC	Consumer organisation	BE	F	
Guston, David	Arizona State University	Academia	USA	M	CE

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Hiney, Maura	University college Dublin, ALLEA	RI, international network, RFO	Ireland	F	
Honegger, Matthias	Perspectives	Company/NGO	CH	M	CE
MacNish, Kevin	Sopra Steria	Company	UK	M	DXR
Mocchio, Elena	Italian Standard Body	Standard organisation	Italy	F	
Momcilovic, Milica	World Federation of Science Journalists Montréal, Canada	Media, NPO	Serbia	F	
Ovadia, Daniela	Center for Ethics in Science and Journalism	Media, professional body	Italy	F	NT
Parker, Andrew	Director SRM Governance Initiative	CSO/int network, CE governance	UK	M	CE
Philbeck, Thomas	Swiss Foresight and Technology (SWIFT)	Company	CH	M	
Rementeria, Maria José	Social Analysis Group, Supercomputing Center (BSC)	Academia	Spain	F	DXR
Renn, Ortwin	Institute for Advanced Sustainability Studies Potsdam	Academia	Germany	M	
Stieglitz, Thomas	Imtek University of Freiburg, CorTec	Company/Academia	Germany	M	NT
Vakhshtayn, Victor	Moscow School of Social and Economic Sciences	Academia	Russia	M	DXR
Winickoff, David	OECD	Policy related	France	M	CE
Yamshchikov, Ivan	Max Planck Institute	Research Institute	Germany	M	DXR

Table 2 The expanded ADIM board

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The ADIM board comprised 22 members, of which three were experts in NT, five experts in CE, four experts in DXR, two in media, all from a variety of European countries (including Switzerland) as well as the US, Australia and Russia. Gender balanced worsened a bit, the number of female professionals being 9 compared to 13 male professionals. The expanded ADIM board achieved sufficient expertise in all selected technology families while remaining manageable in size.

4 Communication with the board

This section describes the communication with the board and contains a section on the direct contact with the board members in the forms of emails, reports, personal contact and one section on the indirect contact that happened in the wider context of the entire TechEthos project including newsletters and the website.

4.1 With the board only

As a well-working relationship with the ADIM board members was crucial for their active participation in the TechEthos project, it was made a rule that all mails were addressed to the respective ADIM board members personally even though this is time-consuming. But this strategy guaranteed a much higher response rate and much higher involvement in the project than sending mass mails.[4]

The ADIM board members received three (annual) reports on the progress of the TechEthos project and the ADIM board in particular. The reports contained relevant news about the outputs of the various tasks of the project and about the ADIM board meetings. They were delivered at the end of each project year.

In parallel, interviews were held with all members that joined the expanded board later, in order to integrate them smoothly into the project that had been running already for some time. As this was an important factor in establishing a good relationship with the board members a separate section is dedicated to this which follows in the next paragraph.

4.2 With the board in the wider context of TechEthos

The majority of the TechEthos ADIM board members subscribed to the project newsletter and received also other information such as press releases and invitations to webinars and other project related activities.

All the profiles of the ADIM board members (including the name, institution, position, the homepage, and the interest in ethics of emerging technologies and a photo) were displayed on the TechEthos website with their consent. To this end, a short survey was created to collect the information in a coherent way. Below is the result on the TechEthos website.

[4] Once a mass mail was sent due to urgency combined with lack of time to which there was no answer at all. Usually, the response rate was between 40-80%.

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Board Members

Peta Ashworth
Curtin Institute for Energy Transition, Curtin University
Perth, Australia

Cezary Biele
National Information Processing Institute
Warsaw, Poland

Hervé Chneiweiss
INSERM
Paris, France

Marie-Valentine Florin
International Risk Governance Center, EPFL – Ecole Polytechnique Fédérale de Lausanne
Lausanne, Switzerland

Orsolya Friedrich
Fernuniversität in Hagen
Hagen, Germany

Eugenijus Gefenas
Center for Health Ethics, Law and

Chiara Giovannini
ANEC – European consumer voice in

David H. Guston
Arizona State University

Maura Hiney
University College Dublin – Institute for

Matthias Honegger
Perspectives Climate Research

Kevin Macnish
Sopra Steria
Yorkshire, United Kingdom

Elena Mocchio
UNI – Ente Italiano di Normazione
Milan, Italy

Milica Momcilovic
World Federation of Science Journalists
Montréal, Canada

Daniela Ovadia
Neuroscience and Society Lab at the University of Pavia & Center for Ethics in Science and Journalism, Milan
Italy

Andrew Parker
SRMGI – The Solar Radiation Management Governance Initiative
Bristol, United Kingdom

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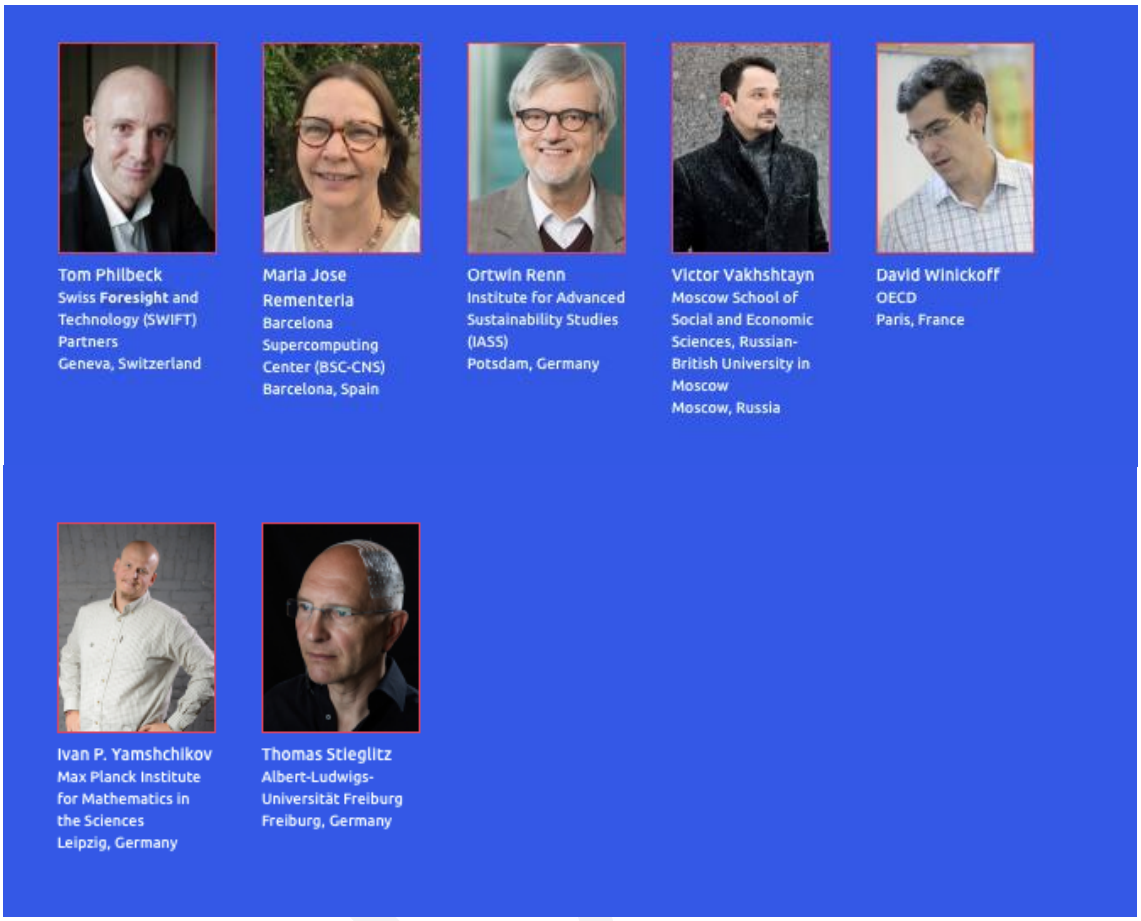

Figure 4 ADIM board members on website

On the website, visitors get further information about the respective ADIM board member by clicking their picture.

Figure 5 Detailed description of ADIM board members on website

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5 Personal interviews with the board members

For an advisory board to function optimally, it is essential to establish a) a sustainable working relationship and b) ensure active and effective participation from the experts involved. That means that they contribute in a way that suits them and the project best. This was particularly relevant for the new members of the ADIM board who joined the project later and had to be integrated in the project. Interviews were conducted with all the new experts. The ADIM board members who had joined the project from the beginning had the opportunity to attend an ADIM board meeting in the early stages of the project which served (next to informing the ADIM board members about the project) to get to know each other, build up a working relationship and find out in which ways they could (and would like to) contribute. More details can be found in section 6.1.1.

5.1 Goals and approach of the interviews

The interviews served a variety of goals. A) They informed the new ADIM board members about the project and what had happened so far. B) They made a start to establish a good contact and build a sustainable relationship with the ADIM board members to keep them involved in the project. C) The ADIM board coordinator could get an idea in what ways the ADIM board members can and want to bring in their expertise that serves their and the project's interests best. D) Finally, the motivation of the ADIM board members was to be figured out: what do they want to get out of the project? An answer to this question is important because this will keep them motivated and involved during the project since they receive no official payment. In the end, the main purpose of the interviews was to get the ADIM board members interested and engaged in the TechEthos project.

To achieve these goals the following steps were taken.

1. The TechEthos work package and task leaders were informally asked: What is their interest in the ADIM board members? In which tasks do they need what contributions of them? The answers were collected according to the various work packages and tasks.

2. Based on the responses an informal interview for the first personal contact with the ADIM board members was developed that lasted a maximum of one hour.

3. All new ADIM board members were interviewed in a semiformal open way. In the interviews the TechEthos project and its tasks were shortly depicted as well as the various possibilities to get involved in the project. It was also the opportunity for the ADIM board members to ask questions about the project and their role in it. Then they were asked which kind of participation (meetings, interviews, reviews, networking etc.) suited them best. Last but not least, they had the opportunity to state their own interests in the outcomes of the project as well. The latter is an important information to keep them motivated; the ADIM board members will not be engaged in a project if it does not serve their interests also.

4. In the last step the interests of the partners were matched with the interests of the ADIM board members.

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5.2 Results of the interviews

The interviews served the main purposes well. All ADIM board members expressed clear interest in TechEthos and the willingness to contribute. They enjoyed the possibility to talk about the project. It was an important step in building a good relationship and keeping them engaged.

The success of building this relationship was visible till the end of the project. The percentage of the ADIM board members taking part in the ADIM board **meetings** was high, in particular among the new members.

Also, the ADIM board members that were interviewed were willing to serve as **ambassadors** of the project to increase its impact. They said they would mention the project and invite their peers to join the TechEthos network and thus increase the project's impact.

All ADIM board members interviewed were willing to **review papers**. Their limited time is of course the limiting factor in contributing. Nevertheless, they provided important input to all the important deliverables.

6 Activities of the ADIM board

This section describes the activities of the ADIM board members. The ADIM board members were actively involved in all important activities of the TechEthos project such as meetings, reviews etc. Of particular importance and relevance for the TechEthos project were the ADIM board meetings in which the project got the most (valuable) feedback to its outputs. Thus, there are described here in some detail. Listed here as well are other important meetings in which ADIM board members took part and played a vital role on and other activities such as reviews or taking part in surveys and interviews and last but not least some specific activities that increase impact.

6.1 ADIM board meetings

Six ADIM board meetings were held in total, two of them in person and four online. In these meetings the TechEthos project got the most important feedback to results and recommendations of the experts how to go on. Therefore, they are described here in some detail. One of the in-person meetings was held together with the TechEthos consortium meeting to be able to integrate the ADIM board members recommendations immediately into the TechEthos work. The last ADIM board in-person meeting was merged into the final conference as many members of the board played a crucial role in the event.

6.1.1 First ADIM Board Meeting

In June 2021 eight ADIM board members and eight TechEthos partners met online for the first ADIM board meeting. The meeting served two main purposes. First, the ADIM board members were to get to know the TechEthos project and its partners as well as each other as networking and getting to know interesting peers was mentioned by the ADIM board members in the interview being of particular importance to them. Second, the process of selecting the emerging technologies with the highest socioeconomic impact was presented and discussed.

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1. The meeting started with a round of introduction that gave all experts and partners the opportunity to present themselves in some detail. This was followed by an overview of the TechEthos project. In the next step the experts could state in an interactive exercise their interests in the project and their fields of competence(s).

Figure 6 Interests and competencies of ADIM board members

On the left are some of the interests of the ADIM board members in the TechEthos project. And on the right are some of the competences that they would like to bring into it.

2. The meeting continued with a presentation and discussion of the process of selecting the most relevant emerging technologies and of the first results of this process. To be more precise: first the impact assessment criteria of the emerging technologies were discussed and then the actual selection process. Relating to the impact assessment some clarity was gained on which impact assessment criteria seem most important to consider and what is missing from the list of technologies to inform the final selection. The selection process was discussed along the lines of what could be further selection/exclusion criteria to identify the technologies apart from the ones mentioned by TechEthos. Valuable feedback could be gained that helped with the further process, in particular with the final selection of the technologies.

The meeting was considered a success as the participants were inspired and motivated in the end and TechEthos gained some important insights. The agenda of this meetings (and of all other ADIM board meetings) can be found in the annex.

6.1.2 Second ADIM Board Meeting

In March 2022 seven ADIM board members and eight TechEthos partners met online to feedback the finalised selection of the emerging technologies with the highest socioeconomic impact and to enter the discussion of the ethical implications of them.

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The meeting started with a presentation of the selected technologies and the possibility to ask questions on the selection and the technologies: digital extended reality, climate engineering and neurotechnologies. This ensured that the ADIM board members were familiar with the chosen technologies.

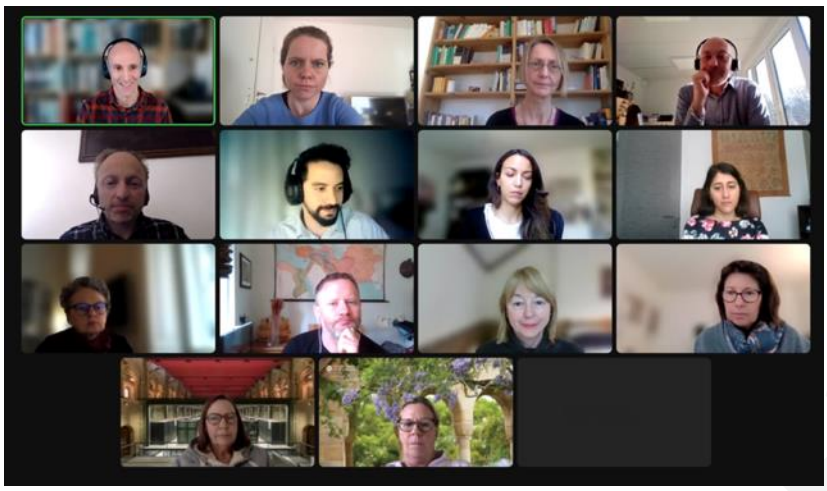

Figure 7 Second ADIM board meeting

After the presentation of the TechEthos technologies an open discussion started on the ethical implications of the technologies that were collected via literature research.

Below is one example of the implications that were discussed. The discussion was helpful for understanding the broader implications and requirement in the regulation of the technologies.

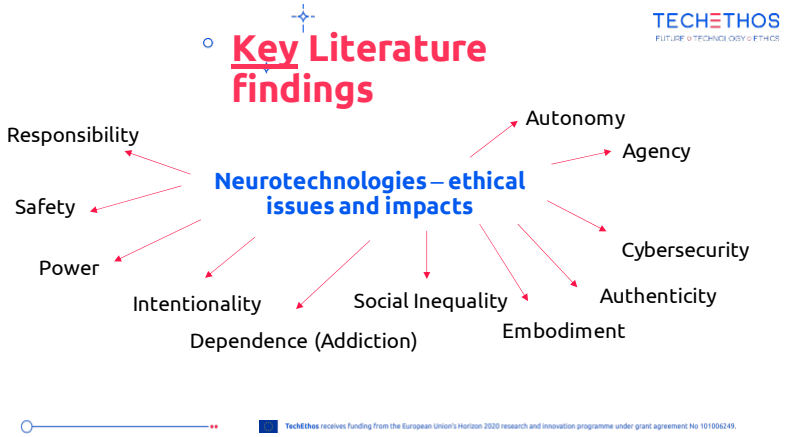

Figure 8 Some key findings in NT

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6.1.3 Third ADIM Board Meeting

Figure 9 Third ADIM board meeting

In June 2022 the core ADIM Board met for the last time. 10 of its (overall 13) members participated in the meeting to discuss the detailed ethical analysis of DXR, NT and CE with its TechEthos authors. First some important results were presented and then discussed along the following lines. Clarity: Is the meaning of the value in the context of this technology family clear and comprehensible? Completeness: Is the main argument in the subsection complete? What should be added? Operationalization: Are the questions at the end of the subsection helpful operationally? Is anything missing in that aspect? What else do you find interesting and worth mentioning about this technology family? All the valuable feedback went straightway in the report which was published some weeks later (as Deliverable 2.2)

6.1.4 Fourth ADIM Board Meeting

This was the first meeting in which members of the expanded board took part and the first in-person meeting. It took place end of November 2022 in Brussels. Eight partners of the TechEthos project met in Brussels with five members of the ADIM board in person and seven more ADIM board members that joined the meeting online.

It was great to meet in person and have a lively exchange about some highly relevant results of the TechEthos project: the work on the ethical and legal frameworks and ethical operational guidelines.

Figure 10 Meeting in Person

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After a general presentation of the progress of the TechEthos project followed four sections on ethical and legal issues of the technologies. The meeting started with a presentation and discussion of the ethical issues of CE, DXR and NT. This was followed by a presentation of the ethical guidelines to handle these issues: which guidelines are around and what makes a guideline a good guideline? After the break the discussion turned to the question: how can we create operational ethical guidelines for the technologies? To this end a use case was presented and discussed in each of the technologies with the question: what are the important principles in this use case and how can they be incorporated in a guideline? In the last section the ethical and legal aspects were linked. After a presentation of the key legal issues at the European level the following questions were discussed: how can they best be addressed? Can we link ethics to regulation? In which issues do we need regulation and in which issues ethics would be enough.

Again, the feedback was fed into the corresponding reports of WP5 (Deliverable 5.1 and 5.2).

6.1.5 Fifth ADIM Board Meeting

In April 2023 nine ADIM board members met with seven TechEthos partners to discuss further results of the TechEthos project. After a short summary of the progress of the TechEthos project in general the Social Readiness Tool developed in TechEthos task 5.5 was presented and some important design questions of the tool discussed: Among which potential user group(s) is there the most need for a tool of this kind? To which existing tools and resources should we refer? What problems should we anticipate, e.g. how significant is the danger of "ethics washing" and how can it be avoided? The feedback went into the further development of the tool.

In the second section of the meeting the focus was on legal aspects, to be more precise on enhancing (national and international) legal frameworks. (The question of enhancing European legal frameworks was discussed in the previous meeting.) After a presentation of regulatory challenges of DXR, CE and NT the following questions were debated:

The meeting ended with a wrap up and an overview of the next steps to come.

Figure 11 Fifth ADIM Board meeting

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6.1.6 Sixth ADIM Board Meeting and final event: Ethics for the Green and Digital Transition

A policy event on the ethical governance of emerging technologies for the green and digital transition

The TechEthos final event was merged with the last ADIM Board meeting as ADIM board members (and Cluster members, refer to section 3.3.12 in Part B) played a key role in the activity.

This policy event on the ethical governance of emerging technologies for the green and the digital transition took place on 14 November 2023 in Brussels co-hosted by TechEthos and Barbara Thaler, MEP and STOA Panel Member. It explored the intersection of EU policy, ethics, and technology. This in-person gathering delved into the challenges and opportunities for the governance of emerging technologies for the green and digital transition.

Moderated by science journalist and broadcaster Vivienne Parry, the event brought together high-level experts in these fields, including EU policymakers, researchers from academia, and industry representatives to share insights on how to navigate this evolving landscape responsibly. From ethical considerations in climate engineering to the responsible use of AI-enabled digital extended reality, this event was thought-provoking and inspiring and offered a unique opportunity to learn from experts, engage in meaningful discussions, and network with like-minded individuals.

After the opening remarks coordinator Eva Buchinger presented TechEthos in a nutshell. This was followed by an enthralling keynote of Laura Weidinger (Deep Mind) on the ethical challenges of emerging technologies for the digital transformation.

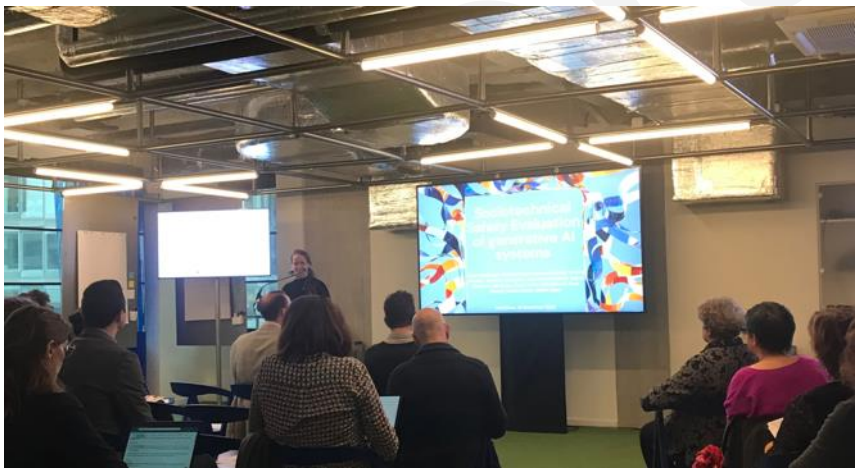

Figure 12 Key Note Laura Weidinger

The subsequent panel was made up by her, Alexei Grinbaum presenting TechEthos, Alina Kadlubsky (member of the TechEthos cluster) and Ivan Yamshchikov presenting the ADIM board who jumped in for another member of the board that was scheduled but could not participate.

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After lunch Behnam Taebi gave the keynote on the governance and ethical challenges of emerging technologies for the Green Transition. This was again followed by a panel in which he, Dominic Lenzi presenting TechEthos, Dušan Chrenek presenting DG Climate Action and ADIM board member Matthias Honegger had an inspiring discussion. Member of the ADIM David Winickoff was scheduled to take part but had to cancel his participation.

Figure 13 Panel on green transition

In the last section Maura Hiney of the ADIM Board and the TechEthos partners Eva Buchinger, Laurence Brooks and Renate Klar presented highlights and outlooks of the work done in TechEthos.

More ADIM board members joined the meeting online and brought questions into the debate.

In sum the ADIM board members contributed a lot to make this meeting a successful one bringing in their expertise and giving the event high impact.

6.2 Other project meetings

The ADIM Board members were actively involved in many other important meetings of the TechEthos project that required expert input also.

WP1: The ADIM board played a key role in the selection of the technologies that were to stand in the focus of the TechEthos project. Their participation in the discussion of the selection process was described above in the first ADIM board meeting. The ADIM board members were also involved in the final selection of the technologies to which end a special workshop was held: the final selection workshop. In this workshop first the results of the horizon scan were presented and discussed and then the five pre-selected technologies (Environment & Climate, Data Processing, Cognitive Technologies, Artificial human & Neuro Technologies and mobility) were introduced and discussed in interactive group processes. At the workshop the three final technologies were selected along the guiding questions: Why should TechEthos work in this technology family and which are the right final technologies (i.e.

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technologies with the highest socio-economic impact)? The ADIM board members played a crucial part bringing in their expertise to determine the selection.

WP3: ADIM board members took part in the scenario expert workshops in which experts' attitudes and awareness of experts towards the future ethical implications of the technologies were captured through the scenarios developed by TechEthos partners. A set of three scenarios for each technology family was explored and each scenario discussed in-depth. Experts were asked to join randomly generated breakout groups and discuss ethical issues surfaced by the scenario. After breakout groups, participants were invited back to a plenary discussion that a) reviewed the ethical issues discussed in each breakout group and b) asked people to discuss possible responses to the ethical issues identified. Participants were encouraged not to seek consensus to collect a wide range of expert opinions on the technology families and associated ethical issues and responses. This process was repeated for each scenario.

WP5: As described before the ADIM Board was heavily involved in the work of this WP, in particular in the enhancement of ethical and legal frameworks and the development of operational ethical guidelines. Both were discussed in the third and fourth ADIM board meetings. In the development of operational ethical guidelines there were additionally three online meetings, one in each technology, with the experts of the respective technologies to discuss the refinement of the guidelines. One crucial question was always from which guidelines to start with; in this point the exchange with the ADIM board contributed a lot. In task 5.4 (on the role of ethics review in emerging technologies) ADIM board members contributed to a survey and participated in a workshop on the adaption of guidelines on ethics review.

6.3 Reviews and other activities

The ADIM board members were involved in providing feedback to all important deliverables of the project. This happened as mentioned in the previous section during the ADIM board meetings in discussing selected topics of them, but also by reading and feedbacking the deliverables themselves. To this end the draft deliverable was sent to the entire ADIM board and the ones interested and with the necessary expertise would usually contribute their expertise in a written form, either directly in the text or in the form of a summary. This is particularly true for the deliverables 5.1 and 5.2 on the enhancement of ethical and legal frameworks, for deliverable 5.3 on operational guidelines and for the deliverables of WP2 (most notably 2.2) also. They reviewed all the policy briefs also.

Additionally, the ADIM board members were involved in the expert survey in WP1 and in a series of informal interviews organised within WP5 that helped to develop the enhancement of the ethical framework and the operational guidelines for the chosen technologies.

6.4 Impact

The ADIM Board Meetings were described in some detail as this was the place in which the members were informed about the project and where they got the information and inspiration to spread the news about

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the project among their peers. To the latter end, a press kit[5] was prepared that could be used by the members to present the TechEthos project at conferences.

The impact in this form is difficult to measure as very often the activities of the ADIM board members did not get back to the board coordinator.

The ADIMs also contributed in more visible forms to the impact of the project one of them being writing opinion pieces for the website. The first one to publish was Ivan Yamshchikov[6]. At the time of writing, we were waiting for Hervé Chneiweiss and Ortwin Renn to finalise their articles.

Additionaley, as mentioned before they increased the impact of the TechEthos final event bringing in their expertise and passion for the ethics and regulation of digital extended reality and climate engineering. After the event Milica Momcilovic, an ADIM board member in media volunteered to write an article together with the TechEthos communication team.

7 Conclusion

A working advisory board is of the highest importance for a project as it expands its knowledge base and minimizes blind spots. To guarantee a good cooperation two things must be kept in balance. On the one hand side it must be found out and coordinated how the ADIMs can best contribute to a project. And on the other side the ADIM board members must be motivated to contribute their expertise throughout the entire project. This can be done by firstly building up and maintaining a working relationship and secondly and more important by producing excellent results that not only awake their interest but inspire them to share them with their peers. Both happened in the TechEthos project and some of the built-up contacts will be maintained for the next project.

[5] https://www.techethos.eu/media-corner/
[6] https://www.techethos.eu/can-you-change-the-world-with-12-5-euros-a-day/

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PART B Cooperation and Clustering Activities

1 Introduction

This part of the deliverable gives an overview of the cooperation, clustering, and liaison activities within task 6.2 of the TechEthos project with other EU-funded projects that work on ethics in technologies.

Each project has its specific aims and foci and is at the same time embedded in a research environment of other projects dedicated to related topics. It is essential to avoid redundant efforts and, instead, prioritize collaboration and the creation of synergies. Therefore, a cluster of projects that work on related topics to the ones of the TechEthos project was formed with the aim to interact with the other projects, to find out about overlaps and similarities, to update each other on activities and publications, and to engage in shared activities.

The TechEthos cluster consisted of projects that have a focus on similar technologies and ethics. According to the Description of Action regular calls between representative of the projects and joint meetings both online and face-to-face took place and are described in this part of the deliverable together with the other activities of the cluster projects.

2 Building the Cluster

The cluster of EU-funded projects was started at the beginning of the TechEthos project and was continuously enlarged as required, and engaged throughout the duration of the project.

2.1 Selection Process of Cluster Projects

It was a challenge to build the cluster and select the participating projects at the beginning of the TechEthos project as the final technologies were not chosen yet. Nevertheless, the clustering work started early, resulting in some of the projects not fitting TechEthos as well as the others. Once the TechEthos technologies were defined, cluster projects in adjacent fields could be chosen specifically and the final composition of the cluster started to take shape.

As new projects came into existence during the TechEthos project, the cluster was expanded continuously during the entire course of the TechEthos project using the following selection criteria.

The cluster projects invited are funded by the EU and work either in the field of research ethics or responsible research and innovation (RRI) and in some way on ethical and/or societal challenges. The projects chosen had

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to be relevant for at least one of the TechEthos technology families. The projects must have still been running[7], and the projects must have had ethics as a relevant part of their work, meaning that they should have (at least) one work package or some relevant tasks in ethics. Projects with a focus on technologies only were excluded.

The identified projects were then approached and invited by email to join the cluster (see Annex for the invitation letter). Usually, the projects accepted the invitation as they had a shared interest in cooperation activities.

2.2 Overview of final Cluster of Projects

The finalised cluster comprised 19 projects (including TechEthos) which are listed below including the links to their websites.

Table 3 Cluster of projects

Project Name	Project Website
TechEthos	https://www.techethos.eu/
SYNCH	https://synch.eucoord2020.com/
NIMA	https://nima-project.eu/
CONBOTS	https://www.conbots.eu/
B-CRATOS	https://www.b-cratos.eu/objectives/
DARLENE	https://www.darleneproject.eu/
ASSISTANCE	https://assistance-project.eu/

[7] Projects that were already finished were analysed for common elements in deliverable 6.1 Scan of publicly available Research Ethics and Integrity results.

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CO2FOKUS	https://www.co2fokus.eu/
STARLIGHT	https://www.starlight-h2020.eu
FLEXIGROBOTS	https://flexigrobots-h2020.eu
pop AI	https://www.pop-ai.eu/
GENIE	https://genie-erc.github.io/
HR-Recycler	https://www.hr-recycler.eu/
Co-Change/ AIT AI Ethics Lab	https://cochangeproject.eu
HYBRIDA	https://hybrida-project.eu/
Robotics4EU	https://www.robotics4eu.eu/
XR4HUMAN	https://xr4human.eu
ETAPAS	https://www.etapasproject.eu/#topPagina
iRECs	https://www.irecs.eu/

Out of the 19 cluster projects, 4 projects have a focus on research ethics and/or RRI in general or in technologies that do not all overlap with the TechEthos technologies (e.g., iRECs covers four technologies, DXR is overlapping, and the overall focus is on ethics review in emerging technologies). 5 cluster projects belong to the field of DXR, 4 are in the field of climate engineering and 5 in the field of neurotechnologies.

This is visualised in the graphic below.

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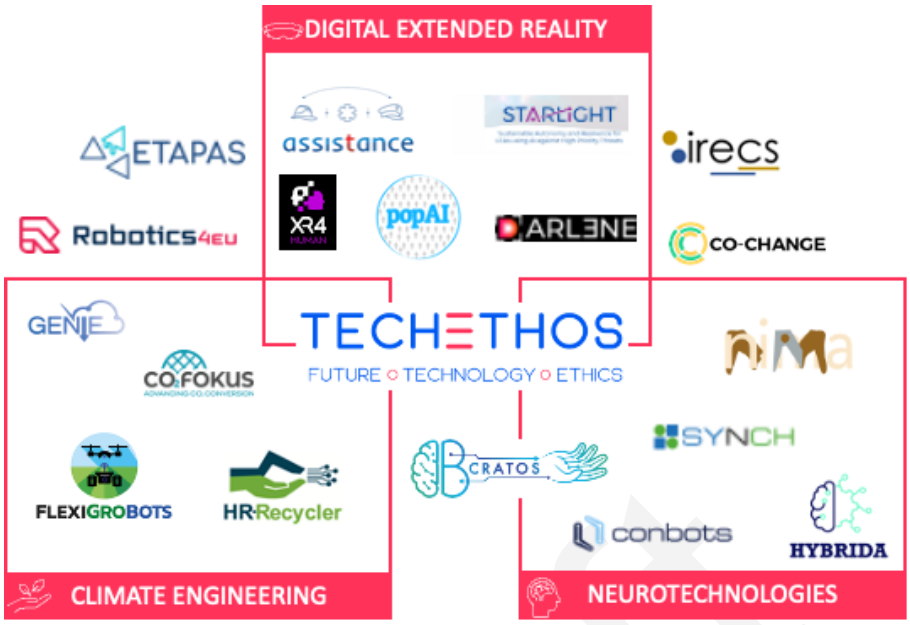

Figure 14 Cluster of projects

All 19 projects of the TechEthos cluster with their logos are represented on the TechEthos website. Clicking the relevant logo gives access to some information on the project and a link to their website.

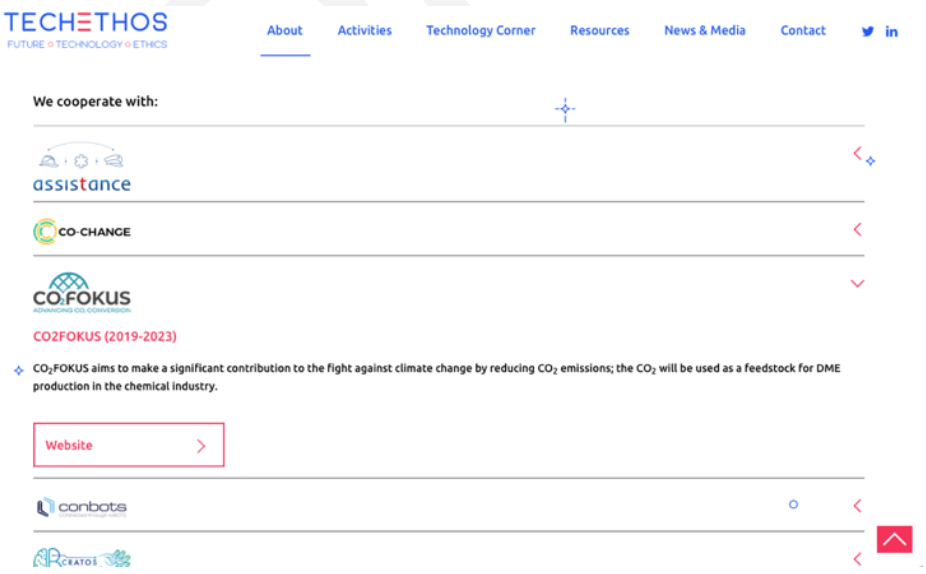

Figure 15 Representation of Cluster on website

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2.3 Memorandum of Understanding

One action described in the description of action is the formulation and implementation of a Memorandum of Understanding between the different cluster projects. This Memorandum of Understanding aims to set out the general objectives and conditions for collaboration and stresses the continued independence of the cluster projects as well as their full ownership of any work produced in the context of their project. Over the course of the TechEthos project, eight cluster projects have returned a signed Memorandum of Understanding to the cluster coordinators, whereas the remaining projects did not respond to repeated requests. The full text of the memorandum of understanding is in the Annex.

3 Activities of the cluster

In this section, all activities of the cluster are described. Section 3.1 focusses on the continuous informational activities such as the exchange within the cluster informing about all the clusters' activities and enabling the projects to engage in them. Section 3.2 is dedicated to the cluster meetings which were highly important for exchange and cooperation. Section 3.3 describes the engagement of TechEthos partners in cluster projects activities and conversely, cluster projects engaging in TechEthos activities.

3.1 Continuous exchange within the cluster

The managing team developed a Google Document as a living document to encourage and facilitate the communication between cluster projects. Throughout the project, TechEthos cluster members could use the to share information and ideas relevant to the projects. The Google Document was reviewed and distributed regularly and contains:

- An up-to-date e-mail list of all cluster members
- An overview of the cluster projects, including contact persons and websites
- Suggestions for new cluster projects to invite by cluster partners
- Links to minutes and slides from meetings and relevant news features
- Ideas for exchange and collaboration on concrete topics
- Invitations for cluster members to upcoming events by all cluster partners

In particular, the Google Document was used to share information about upcoming events that were of interest to the cluster projects. For highlights of the cluster project events in which TechEthos partners took partner and the TechEthos events in which cluster projects took part, see Section 3.3 below.

3.2 Meetings of the cluster

This section describes the three main (online and in-person) cluster meetings organised by TechEthos: the online kick-off meeting on 4 March 2022, the in-person workshop in Vienna on 23 May 2022, and the online cluster event on 28 March 2023.

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3.2.1 Online Kick-Off Meeting (March 2022)

By early 2022, TechEthos had established a cluster of 16 EU-funded projects, creating first opportunities to exchange, collaborate and explore synergies together. On 4 March 2022, these 16 EU-funded projects came together for an online kick-off meeting. This first meeting allowed to establish many overlaps particularly highlighting that almost all projects aimed to identify ethical and societal challenges, to find legal gaps and to develop strategies to close these gaps. In order to facilitate these discussions, all cluster projects contributed one slide each to a shared Google Slides document, which remained available as an online resource to provide overview of the different project objectives, anticipated outcomes, and ethics components (see presentation).

After an introduction on the TechEthos project by coordinator Eva Buchinger and a general overview of the cluster objectives, the represented cluster projects separated into three thematic break-out groups on neurotechnologies, climate engineering, and digital extended reality (see detailed Agenda in the Annex).

During these sessions, each of the projects briefly introduced itself by presenting its main objectives, envisioned outcomes, and further detail on the ethics component in the projects. Subsequently, the participants engaged in a general discussion to explore potential synergies and overlaps. Below are some outcomes of the general discussion:

- The projects clustered in the field of climate engineering are quite different in nature as they are working on different levels and are not all are related to CE. This sub-cluster is currently quite small, and it would be desirable to identify and include additional relevant projects.
- The projects clustered in the field of neurotechnologies also turned out to be quite different as they are working on very different levels and are not all related to neurotechnologies directly. Nevertheless, broader themes, such as human-machine interaction and human enhancement might be an overlap worth exploring.
- In general, it is worth asking how we go from values/principles to operationalisation. Researchers/engineers are often well-aware of relevant ethical codes and guidelines in their fields, but this is not routinely implemented in their work in an ethics-by-design fashion. They often lack the time and resources to implement these codes and guidelines and there is a lack of training and test-environments. Is there a need for intermediate level guiding documents that translate from high level abstract guidelines to direct application for researchers/engineers?
- Many of the projects aim to improve the ethical and legal frameworks in their fields through recommendations, tools and guidelines for users, researchers, ethics bodies, policymakers, and other stakeholders. The cluster will continue to inform each other on their progress to avoid duplicating efforts.
- Given the distinct nature of the different projects, it was at this point still uncertain if sufficient overlap between the cluster projects could be identified to consider the preparation of joint position papers. Possible overlaps will be further explored in the in-person workshop on 23 May 2022 in Vienna (see Section 3.2.2 below).

Following the online kick-off meeting, a blogpost was published by Lisa Tambornino in April 2023 which is on the TechEthos website: https://www.techethos.eu/joining-forces-with-like-minded-projects/. The blog post was also shared via LinkedIn and Twitter/X.

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3.2.2 In-Person Workshop in Vienna (May 2022)

At the initial online kick-off meeting on 4 March 2022, the different cluster projects had the opportunity to get to know one another, learn about each other's objectives, and anticipated outputs. Whereas we learned a lot about the different projects, no concrete topics and ideas were identified yet for further collaboration.

On Monday 23 May 2022 (14:00-18:00h), 12 TechEthos consortium members and 12 cluster members met for an in-person workshop in Vienna. The aim of this meeting was to more concretely explore ethical, societal, and legal/regulatory challenges that are of mutual interest between (at least a subset of) the cluster projects.

To start the discussions, each of the cluster projects gave a ~5 minutes presentation that focused around three key questions (see detailed Agenda in the Annex):

- Which ethical and societal issues are most challenging in the research field of your project?
- Are you facing any legal/regulatory challenges? If yes, which ones?
- How do you think this cluster can work together to address these challenges?

Following this, the participants split up into three World Café tables. The key questions for three tables were:

- Table 1: On which ethical challenges can we work together and how?
- Table 2: On which societal challenges can we work together and how?
- Table 3: On which legal/regulatory challenges can we work together and how?

Main outcomes from Table 1 on ethical challenges:

- It is unclear what "ethical framework" means exactly. This could be an ethics checklist but can also be about ethical awareness trainings or exchange on specific ethical challenges.
- One concrete idea for collaboration would be to translate the high-level assessment criteria for trustworthy Artificial Intelligence (AL-TAI) into recommendations and guidelines that are relevant to the different cluster projects. Although this may be of interest to some projects, the majority of cluster projects, including TechEthos itself, does not deal with AI directly.
- More generally speaking, the different projects could benefit from one another by exchanging potential stakeholders for project workshops or expert meetings.

Main outcomes from Table 2 on societal challenges:

- There was broad agreement that new technologies should be transparent in their working and underlying values, and guarantee accountability, equity, security, and sovereignty.
- There is often a disconnect between the speed in which new technologies are being developed and brought onto the market and the readiness of potential users to start adopting them.
- It was noted that there are large cultural differences in the adoption of new technologies, but cross-cultural factors (such as generational differences, confidence that tech works in agreement with our values, the level of experience with technologies, gender) should not be underestimated.

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- Lack of readiness to adopt new technologies is often linked to insufficient trust in and trustworthiness of these technologies, their developers, or even trust in institutions/governments more broadly.
- To establish trust, the development of new technologies should be user-centred, taking into account a thorough evaluation of technology acceptance, social simulations and ethics experts from the start.

Main outcomes from Table 3 on legal/regulatory challenges:

- There was a general sense that there is a disconnection between research/EU projects and legislators. There is a need for better communication between EU projects and legislators in the EU parliament as well as legislators in national parliaments, especially science departments should cooperate with EU projects.
- Questions of responsibility and accountability are crucial when it comes to emerging technologies.
- Legislation is often working with old definitions or based on old debates. Are traditional definitions able to cover new emerging technologies? Do we need new definitions?

During the World Café table brainstorming, as well as the plenary discussions, it became apparent that the research questions of the different projects are often very far apart (this is the case already within the "sub-clusters", but even more so in the complete cluster). It was therefore concluded by the participants that working on joint position papers is not feasible. Instead, cluster projects agreed to continue regularly updating each other on their progress, publications, and events, interact in higher-level discussions on ethics in technology, and exploit the TechEthos cluster as a platform for bilateral collaboration.

3.2.3 Online Cluster Event (March 2023)

As it became clear from the above sections, it is not so easy to identify issues that all projects have in common to work with. But as all the projects have a section that focuses on ethics the idea arose in the planning team to work with the values and principles that are relevant for the projects and the technologies they work with and find out together how they find their way into the actual work of the projects in the form of legal and ethical frameworks and (operational) guidelines.

It seems as if this endeavour was of some interest to the cluster projects as 14 representatives from 11 projects met with 6 TechEthos partners to discuss these questions in an online meeting on 28 March 2023 in a plenary discussion and group activities.

The meeting started with presenting the aims of this meeting and linking it to the last one and a subsequent brief introduction of all projects as some (iRECs and ETRAPAS) were new to the cluster.

Then TechEthos presented the central values and principles that play a role in the TechEthos work. To this end, an overview on a Miro board was shown and discussed: Are the values complete? Which other values are of relevance to the technologies (or technology fields) of the cluster project? The values mentioned by the other projects were added to the Miro. Thus, the similarities and overlaps became visible which ignited a discussion on the question if there are values that are important for all projects and can be considered as

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core values. The results of the discussed was that there are many overlapping values and principles and that with the correct wording these overlaps become even more visible.

After having discussed the ethical principles and values the focus was on the question on how they find their way into the TechEthos work. To this end the TechEthos ethical guidelines and the legal work were presented as basis for the discussion on what the other projects do. Next to legal frameworks and ethics guidelines issues of stakeholder engagement and the possibility of ethics by design were discussed.

This is the result of the discussion visualized on the Miro Board. The agenda of the meeting with the guiding questions is in the Annex.

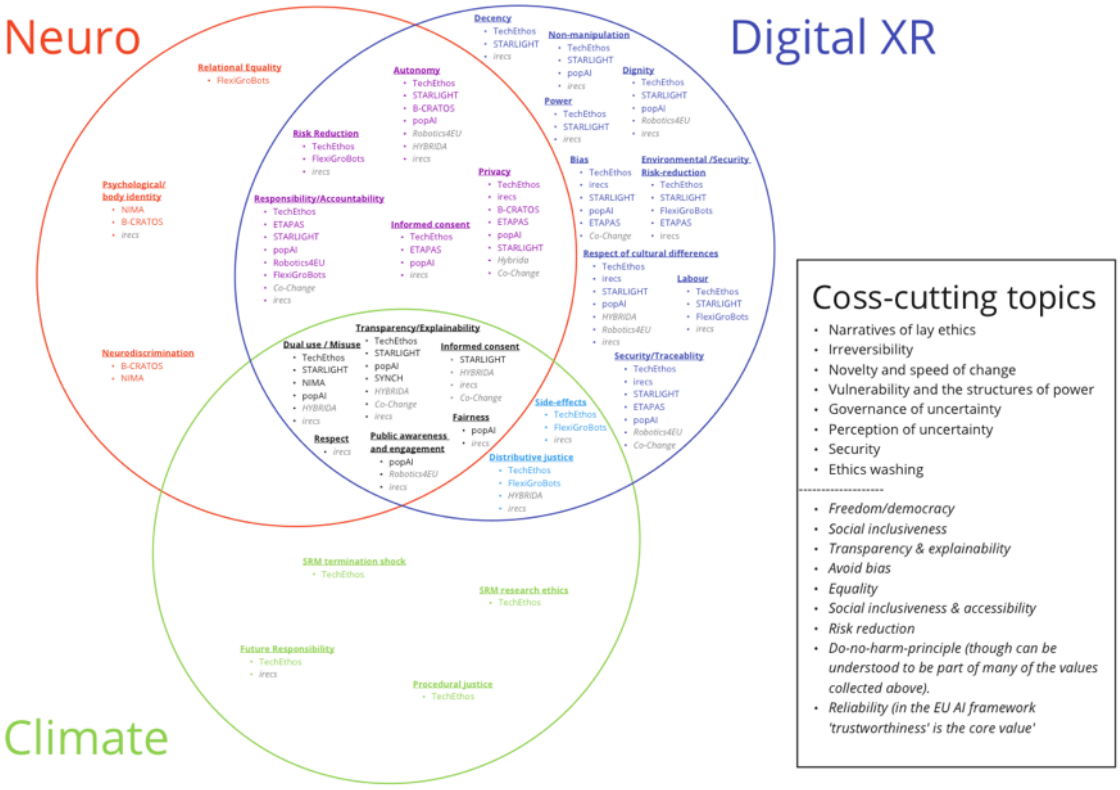

Figure 16 Results of Cluster meeting on Miro

3.3 TechEthos and Cluster Projects Activities

Members of the TechEthos consortium actively collaborated with other EU-funded projects. On the one hand, TechEthos partners were actively involved in many clustering activities of which the key examples are described in the section below. On the other hand, the representatives of the cluster projects were invited

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to the TechEthos activities. As many TechEthos activities were organised by other partners, it is not known how many cluster projects representatives took part in the meetings and webinars.

All activities between cluster projects can be found in the Cluster Google Document. Here we make a short description of only those events in which TechEthos partners had an active part in or were organised by the TechEthos project.

3.3.1 Hybrida and TechEthos

As it was specified in the Description of Action to have a specific cooperation with the SwafS-29-2020 project[8] (on the ethics of organoids) which later turned out to be Hybrida there was a close cooperation between TechEthos and Hybrida from the start of the Hybrida project. Throughout the project, members of the TechEthos consortium engaged in regular exchange with the Hybrida project (https://hybrida-project.eu/). The main interactions points are summarised below:

- One partner of Hybrida is member of the TechEthos ADIM board (Hervé Chneiweiss).
- First Interaction workshop between Hybrida and TechEthos in February 2021
- Participation of TechEthos cluster coordinator and project coordinator in the online Hybrida Kick-off meeting in March 2021 online.
- On 10 November 2022, several TechEthos consortium members participated in "TechEthos-HYBRIDA interaction workshop" dedicated to exploring ways to harmonise the project deliverables.
- During October-December 2022, Hybrida participated in the stakeholder consultation as part of the revision the European Code of Conduct for Research Integrity, in the context of TechEthos Task 5.4 (see TechEthos Deliverable D5.5).
- On 28 April 2023, TechEthos representatives were invited to participate online in the Hybrida General Assembly in which the interaction between the two projects was presented, as well as a discussion on the next steps.
- On 11 September 2023, TechEthos and Hybrida consortium members met online to update each other on the projects' progress and check for potential conflicts in their outputs. TechEthos coordinator Eva Buchinger presented the TechEthos project.
- On 14 November 2023, Hybrida coordinator Søren Holm participated in the TechEthos final event.
- In November and December 2023 Hybrida did a cross-reading of the TechEthos deliverables to check the projects' outputs for inconsistencies (see the end of this section for more information).

It should be noted that whereas the Hybrida project has a complete work package dedicated to cooperation with TechEthos, the resources available in TechEthos to actively pursue this were much more limited. Nevertheless, early drafts of the TechEthos operational guidelines developed in Work Package 5 have been shared to inform the development of the recommendations by Hybrida (which was due at a later date). Also, the exchanges have contributed to fine-tuning the contents of the different deliverables and to enhanced

[8] The other projects mentioned in the DoA have finished already. Overlaps were examined in Techethos deliverable 6.1 Scan of publicly available Research Ethics and Integrity results.

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mutual understanding of the general and subject-specific challenges of developing such guidelines. Main outcomes from the interactions are summarised below:

- Following discussions on the development state of the different technologies and the scope of the envisioned outcomes from the two projects, it was concluded that the TechEthos technology family that links most closely to organoid research is the one on neurotechnologies. However, also in this case, it should be noted that the two technologies are at a completely different stage of development: there is a huge gap between neurotechnology (more mature) and organoids (less mature). Also, the ethical issues are different. For example, deep brain stimulation that directly impacts cognitive activities and raises issues such as mental integrity and influence on decision making will never be raised from organoids. Ultimately, the overlap between the two projects represents a very small corner on the map of highly innovative technologies.
- Neural organoids have been already used as research tools. But they are still away from being implemented as therapeutical tools, even though they are used as diagnostic tools or tools that provide treatment choices in some cases.
- Together, this creates a serious issue on how much harmonisation is feasible between TechEthos and Hybrida outputs, even at the seemingly overlapping/neighbouring fields of organoids and neurotechnologies.
- In more general terms, overarching areas of open science, data management, reliability of research outputs, and science communication will be relevant to all technology families. It therefore makes sense to cross-check these sections of the different outputs for consistency.
- Another area of common ground between the two projects is the way societies are affected by highly innovative technologies (e.g., narratives of lay ethics, use of metaphors, irreversibility, speed of change, vulnerability and the structures of power, governance and perceptions of uncertainty, security, and ethics washing).
- Both projects develop recommendations on the adaptation of the ethics review process. The TechEthos recommendations on ethics review are of a broad nature and address the challenges of the ethics review process in emerging technologies in general. They were addressed not only to Research Ethics Committees (RECs) but to other target group such as funders, conference organiser, publishers and policy makers also. Hybrida developed operational guidelines out of which there is one section, the evaluation checklist for organoid ethical studies comprising two documents, one for scientific evaluation and the other for ethical reviewing by international review board namely RIOs and RECs. This work is very specific. Despite both focussing on ethics review there is not much overlap in the two reports.
- As Hybrida has a dedicated work package on the synergies with TechEthos there was a cross-reading of all relevant TechEthos deliverables such as the ethical frameworks, operational guidelines and the recommendation for the adaptation of ethics review to avoid contradictions with the outputs of Hybrida.

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3.3.2 ROSiE and TechEthos

Over the duration of the TechEthos project, the Cluster management team took part in most of the meetings of the Cross-SwafS Stakeholder Forum organised by the Horizon-funded ROSiE (Responsible Open Science in Europe) project. These meetings provided a regular update from different EU-funded projects related to research ethics and research integrity, and surfaced that the main overlap between TechEthos and ROSiE was related to TechEthos Task 5.4 on the revision of the European Code of Conduct for Research Integrity (see TechEthos Deliverable D5.5). In this context, Mathijs Vleugel (ALLEA) and Maura Hiney (TechEthos ADIM Board & ALLEA) actively participated in several round-table discussions, workshops, interviews, and online meetings, with the aim to facilitate incorporation of knowledge and insights from the 2023 Revised Edition of the European Code of Conduct for Research Integrity into the development of complementing guidelines on good research practices in relation to Open Science (see here).

3.3.3 IRECS and TechEthos

TechEthos partners continuously collaborated with the Horizon-funded project iRECS. Both TechEthos and, to a larger extent, iRECs worked on the adaptation of ethics review to emerging technologies. In TechEthos, the differences between traditional ethics review in the biomedical field and ethics review in emerging technologies with a focus on DXR, CE and NT were sharpened, the corresponding challenges were identified, and recommendations developed on how to overcome these challenges and adapt the ethics review process. iRECs focuses entirely on the latter question and will not only develop recommendations for the adaptation of ethics review in four chosen new technologies but also develop trainings and implement both trainings and recommendations at three pilot universities. There has been a lot of informal exchange through calls between the two cluster projects as the findings of TechEthos deliverable 5.4 on Criteria for ethics review for RECs in the identified Technologies feed into the iRECs work. TechEthos partners took part in the iRECs cluster meetings and conversely.

3.3.4 PopAI, Starlight and TechEthos

On 25 and 26 January 2023, TechEthos partners Alexei Grinbaum and Laurynas Adomaitis (CEA) took part in a joint conference on "Ethical and Legal Aspects of AI for Law Enforcement", organised by the projects ALIGNER, AP4AI, popAI and STARLIGHT at the CEA premises in Brussels. The conference brought together a diverse range of stakeholders from the European civil security ecosystem to discuss the specific challenges and needs of the development, deployment and use of AI by actors from different perspectives such as national Law Enforcement Agencies, researchers, civil society, ethicists, legal and social experts, industry, policy makers and European Agencies. For a press release about the event, see here.

3.3.5 PopAI and TechEthos

On 14 March 2023, TechEthos partner Laurynas Adomaitis took part in the popAI Plenary Meeting in Rome in a dedicated session with related projects, one of them being TechEthos, focusing on an exchange between

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popAI partners and external experts with the aim to provide critical feedback on each other's' work and the potential exploitation of the results. One focus was on foresight scenarios and projects' recommendations.

3.3.6 SYNCH and TechEthos

On 20 April 2023, TechEthos partner Alexei Grinbaum took part in the workshop on "Future Emerging Technology in Neuroscience: ethics and social implication", organised by the EU-funded SYNCH project in Padova (see programme). He reported on the findings of TechEthos on the core ethical dilemmas in neurotechnologies.

3.3.7 Hecat, Etapas and TechEthos

On 26 May 2023, TechEthos partner Laurynas Adomatis took part in the Policy Launch: Public Service AI /// Trust – Values – Accuracy in which three policy briefs of the three projects were presented.

Figure 17 Hecat ETAPAS TechEthos

This is what organiser ETAPAS write about the event: "Contemporary Public Services are rapidly expanding their use of technology and IT solutions as digitalisation continues to take hold globally. With this comes increased data-availability, which facilitated the rise in use of statistically modelling and mathematic-based solutions within Public Services. Here, Artificial Intelligence (AI) plays an expanding role in service provision."(link).

While an array of benefits can be enacted from the adoption of such technologies, the risk of substantial misuse is ever present where such mechanics are adopted. As such, we find ourselves in an age where increasing consideration for ethical AI adoption and utilisation in public service is warranted.

This event explores three key ethical dimensions of Public Service AI – Trust, Value and Accuracy. Joining together in synergy, three EU Research projects; HECAT, ETAPAS and TechEthos will launch the following policy briefs:

- Algorithm Profiling in Public Employment Services; Reporting Standards – HECAT
- ETAPAS and ALTAI: Two European Trustworthy AI Assessment Methodologies – ETAPAS
- XR and General Purpose Ai: From Values and Principles to Norms and Standards – TechEthos

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3.3.8 XR4HUMAN and TechEthos

Between 7-10 June 2023, the Japanese Society for Science and Technology Studies hosted the 23rd biennial international conference of the Society for Philosophy and Technology on "Technology and Mobility" in Tokyo. On 7 June, TechEthos partners Alexei Grinbaum and Laurynas Adomeitis and XR4HUMAN had a joint track on "epistemology and ethics of extended reality and metaverse" chaired by Alexei Grinbaum.

3.3.9 TechEthos Hybrid event

In September 2023, TechEthos partner Andrea Porcari (AIRI) organised a hybrid event with NanoInnovation on Managing digital assets in research and innovation – applications and impacts of Web 3.0 and blockchain techs in which partners of the cluster project with an invest in this technology took part as well as other TechEthos partner.

This is what the organisers write about the event: "Contracts, deeds, and patents: are they already obsolete? How can we manage and use data and digital data and assets coming from research and innovation processes? What are the ethics and socioeconomic implications?" (link).

Novel technologies for analysing and organizing data, such as blockchain, distributed cloud, non- fungible tokens, and their combinations with AI powered techs for processing of sensorial data and communication with humans (e.g., virtual reality, chatbots) opens completely new approaches in the gathering, use and management of data of any kind.

On the one hand, this enables new uses and application for data collected during both research and innovation, and product development. On the other hand, this "revolution" challenges existing knowledge, practices, norms and models of society and business, and researchers in the fields of civil law and ethics have been investigating the consequences on people's and firms' everyday life.

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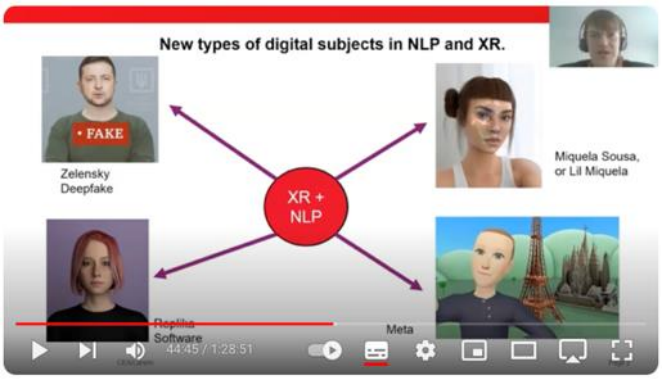
3.3.10 Flexigrobots and TechEthos

In October 2023, TechEthos partner Laurence Brooks (University of Sheffiled) took part in a panel discussion of the in-person event "Beyond nice words: Standardising Trustworthy AI", organised in the context of the three-year FlexiGroBots project. The event drew attention to the development of standards that will accompany the implementation of the AI Act and discussed questions such as: What does the implementation of trustworthy AI look like in practice? What are good practices and tools to ensure proper implementation of trustworthy AI? How can these be transformed into standardised procedures? Which challenges can emerge in applying standards to a broad range of use cases, in particular in agriculture?

3.3.11 Webinars

As there were a lack of common topics concerning all cluster projects, it was decided not to have separate webinars of the entire cluster as it was highly difficiultto generate common content relevant to all. Instead, forces were joined with other projects to yield webinars of events in which TechEthos representatives took part or which TechEthos organised.

Cluster projects were involved in the TechEthos final event that was streamed and gave room for discussion with external audience. This led to two webinars which can be found here https://t.ly/Gj0lb and https://t.ly/nbrxv



Another webinar was created out of the Joint ETAPAS Hecat TechEthos event (see Section 3.3.7), which can be viewed here: https://www.youtube.com/watch?v=OqkqUbA-6PI

Figure 18 Webinar TechEthos Hecat ETAPAS with Laurynas Adomaitis presenting TechEthos

3.3.12 TechEthos Final Event

The TechEthos final event was described in some detail already in Part A (see section 3.1.6) of this report and shall not be repeated here in toto. Included are only the parts that are related to the cluster activities.

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After the opening remarks Laura Weidinger delivered a keynote on the ethical challenges of emerging technologies for the digital transformation which was followed by a panel on the same issue. Alina Kadlubsky presenting XR4humans took part in this panel.

Due to the special status of the Hybrida project, its coordinator Søren Holm took part in the event in person as well as some other partners of cluster projects such as i.e. Paula Gürler representing FlexiGroBots; more joined online.

The first and the second parts of the event were streamed as webinars and can be found here https://t.ly/Gj0lb and https://t.ly/nbrxv. Details of the keynotes and the discussions can be found in a news feature by Mathijs Vleugel (of the TechEthos cluster management team) on the final event: https://allea.org/techethos-holds-final-policy-event-on-ethics-for-the-green-and-digital-transition/

Figure 19 Panel with Alina Kadlubsky

4 Conclusion

There was much interest between the cluster projects to cooperate and create synergies. The cluster of projects was quite large and diverse for two reasons. First, at the beginning of the project the technologies that TechEthos would deal with were not yet known. Nevertheless, the work with the cluster had to be started and related projects joined the cluster. Second, the TechEthos project dealt with three different technologies. There are overlaps between neurotechnologies and digital extended reality but not with climate engineering. Therefore, it was a challenge to engage in activities with the entire cluster. However, the cooperation was successful as the challenge could be met in discussing overarching topics such as values and principles and how they are integrated in the outputs of the projects. Still, the cooperation was even more successful when it focussed on overlaps between projects with the same technology fields joining in bilateral or trilateral activities. It must be concluded that it is most effective to cooperate with few similar projects with greater overlaps than to build up a big cluster with many projects that work in similar fields only.

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Annex Part A

- Invitation letter
- Agenda of first ADIM Board Meeting
- Agenda of second ADIM Board Meeting
- Agenda of third ADIM Board Meeting
- Agenda of fourth ADIM Board Meeting
- Agenda of fifth ADIM Board Meeting
- Agenda of 6th ADIM Board Meeting – combined with TechEthos final event
- Agenda of final Technology Selection Workshop

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20.06.2022

Invitation as ADIM Board Member of the TechEthos Project

Dear XXX,

We are very pleased that you join the TechEthos Advisory and Impact (ADIM) Board and welcome you warmly to the TechEthos Project and the ADIM Board in particular. And we would like to give you some more information about the project and your role in it. Most information you received in the invitation mail by Dirk already.

What is TechEthos about?

Emerging technologies bring with them new ethical challenges and societal consequences that need to be addressed. TechEthos will develop guidance for the development and deployment of these technologies to ensure high ethical standards at the EU level. This is how the TechEthos project is going to proceed.

It will firstly carry out a horizon scan to identify three or four new technologies with very high socio-economic impact. It will then analyse the ethical issues raised by the selected technologies (to maximise their societal benefit and minimise harm) and examine their impact. As well the societal awareness and attitudes of various stakeholder groups towards the ethical implications of the selected technologies will be explored. On the basis of that work a legal and regulatory analysis will be carried out and ways to enhance legal frameworks proposed. This is accompanied by operationalization, complementation and revision of existing ethical frameworks. One work package is dedicated to build synergies with other relevant projects and stakeholder engagement, and here the ADIM board is located. And last but not least, the results of the project will be disseminated and made known to a wider public.

What is your role as a member of the advisory and impact (ADIM) board?

The ADIM board is a permanent body throughout the project and will comprise individuals who are thought leaders in the various areas of relevance to the project (industry, civil society, policy-makers, professional bodies, academia and the media).

The main role of the ADIM board members will be twofold:

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- Bring in technical expertise in the project to broaden the knowledge base
- Act as ambassadors to the TechEthos project to help maximize impact.

The main activities of the ADIM board members will be:

- Comment on the activities such as giving feedback to draft reports, guidelines and codes developed
- Bring in their expertise in relevant project workshops
- Take part in ADIM board meeting twice a year (one online and hopefully one physical meeting)
- Communicate and share the project findings and results to your organisation and networks
- Foster joint cooperation.

The benefits for the ADIM board members will be:

- Have information on cutting-edge science and involvement in actual research
- Help to influence the outcomes of the project which is having a lot of policy attention.

We look forward to having you on board.

Best regards,

Renate Klar

(ADIM Board Coordinator, TechEthos)

_____

EUREC (European Network of Research Ethics Committees)

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TechEthos First Online ADIM Board Meeting: Draft Agenda

Meeting Date: 16th June 2021
Meeting Time: 10.00-13.00 CEST
Meeting Connection Details: Please join the meeting from your computer, tablet or smartphone via Zoom:
https://zoom.us/j/94450021497?pwd=Z1l4VW1DYWQzU040MWNSS2hic0NMQT09

10.00-10.30 Welcome and Introduction

10.00-10.30

- Welcome to meeting (Renate Klar and Eva Buchinger)
- Introduction Round (Renate Klar)

10.30-11.15 The TechEthos Project and ways of being involved

10.30-10.45

- Introduction to the TechEthos Project (Eva Buchinger)

10.45-11.15

- Plenary discussion (Renate Klar)
  - What are your interests in the TechEthos project?
  - What would you like to contribute to the project?

11.15-11.30 Break

11.30-12.45 Selection of emerging technologies with high socio-economic impact

11.30-11.45

- Presentation (Andrea Porcari and Manuela Kienegger)
  Process of selecting the technologies and first results

11.45-12.45

- Plenary discussion of first results and steps forward (Renate Klar)
  - Impact assessment
  - Selection process
- Presentation (Michael Bernstein):
  Follow up selection technology workshop on 2nd July 2021

12.45-13.00 Concluding round

- Wrap up and feedback round (Renate Klar)

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TECHETHOS
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TechEthos second ADIM Board online meeting

Date: 9th March 2022
Time: 10.00-12.00 CET
Connection details: Please join the meeting from your computer, tablet or smartphone via Zoom: https://zoom.us/j/91481753696?pwd=QmY0OHUyRWdGWUV0b0QvK0tQbTRzQT09
Meeting ID: 914 8175 3696
Passcode: 592162

10.15-10.45 10.00-10.15 Welcome and introduction

- Welcome to meeting (Eva Buchinger, Renate Klar and Lisa Häberlein)
- Introduction round (Renate Klar)

10.15-10.45 Session 1

10.15-10.35

- Presentation of the selected technologies (Andrea Porcari and Gustavo Gonzalez)

10.35-10.45

- Questions and answers (Andrea Porcari and Gustavo Gonzalez)

10.45-10.50 Break

10. 50-11.50 Session 2

- Discussion of ethical dimensions of the selected technologies (Laurence Brooks and Nitika Bhalla)

11.50-12.00 Closing remarks

- Wrap up (Renate Klar)

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TECHETHOS
FUTURE ○ TECHNOLOGY ○ ETHICS

TechEthos Third Online ADIM Board Meeting: Draft Agenda

Meeting Date: 13th June 2022
Meeting Time: 15.00-17.00 CEST
Meeting Connection Details: Please join the meeting from your computer, tablet or smartphone via Zoom:
https://zoom.us/j/94450021497?pwd=Z1l4VW1DYWQzU040MWNSS2hic0NMQT09

Meeting ID: 873 3115 0915
Passcode: 157787

Welcome and Introduction

15.00-15.15

- Welcome to meeting (Renate Klar and Eva Buchinger)
- Introduction (Renate Klar)

Presentation of Results of Ethical Analysis

15.15-15.45

- Presentation of relevant results (Alexei Grinbaum)
- Questions and answers

Discussion of Results

15.45-16.45

- Plenary discussion of the three technology families of the TechEthos project according to the following questions:
  1. Clarity: Is the meaning of the value in the context of this technology family clear and comprehensible?
  2. Completeness: Is the main argument in the subsection complete? What should be added?
  3. Operationalization: Are the questions at the end of the subsection helpful operationally? Is anything missing in that aspect?
  4. What else do you find interesting and worth mentioning about this technology family?

15.45-16.05

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- Plenary discussion for extended digital reality (Alexei Grinbaum)

16.05-16.25

- Plenary discussion for neurotechnologies (Laurynas Adomaitis)

16.25-16.45

- Plenary discussion for climate engineering (Laurynas Adomaitis)

Conclusion

16.45-17.00

- Wrap up and outlook (Renate Klar)
- Feedback round (Renate Klar)

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TechEthos Fourth ADIM Board Meeting: Draft Agenda

Meeting Date: 29th November 2022
Meeting Time: 12.00-17.30
Meeting Location: Sparks, 60 rue Ravenstein, 1000 Brussels

12.00-13.30	**On Arrival**
12.00	• Registration
12.00-13.30	• Buffet Lunch (optional)
13.30-14.00	**Welcome and Introduction**
	• Welcome and round of introductions (Renate Klar) • Aims of meeting (Renate Klar)
	• Presentation: overview of TechEthos progress (Eva Buchinger)
14.00-14.20	**First Section: The ethical issues of climate engineering (CE), neurotechnologies (NT) and digital extended reality (DXR) – a brief overview**
	• Presentation: sketch of ethical issues (Laurence Brooks) • Plenum: questions and answers
14.20-14.50	**Second Section: Ethical guidelines to handle the issues for CE, NT and DXR**

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	• Presentation: overview of a map of guidelines (Laurence Brooks)
	• Plenary discussion: what is a good guideline in CE, NT, DXR?
	  ○ Are important guidelines missing?
	  ○ Best practice examples
	  ○ What works in a good guideline?

	• Plenary discussion: criteriology of good guidelines in CE, NT, DXR
14.50-15.05	Coffee break
15.05-16.00	**Third Section: How can we create operationable ethical guidelines for CE, NT, DXR?**
	• Breakout session: discussion of an application case in CE, NT and DXR: which ethical principles are involved and how could they be incorporated in a guideline?
	• Plenum: presentation of group results
16.00-17.00	**Fourth section: linking the ethical and the legal aspects**
	• Presentation: what are the key legal issues? (Julie Vinders) • Plenary discussion: how can they best be addressed? • Plenary discussion: can we link the ethics to regulation? In which issues do we need regulation? In which issues ethics would be enough?
17.00-17.30	**Wrap up and Outlook** • Wrap up and looking forward (Renate Klar) • Concluding round
18.00	Dinner

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TECHETHOS
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TechEthos Fifth ADIM Board Meeting: Draft Agenda

Meeting Date: 25th April 2023
Meeting Time: 14.00-16.00 CEST
Zoom Link: https://us06web.zoom.us/j/81990642174?pwd=djVTbFVDQ0N0ZkJlSGM0L0FBeWpkdz09

14.00-14.15	**Welcome and Introduction**
	• Welcome and round of introductions (Renate Klar) • Aims of meeting (Renate Klar)
	• Presentation: overview of TechEthos progress (Eva Buchinger)
14.15-15.05	**First Section: The Social Readiness Tool (SRT)**

	• Presentation: concept of the tool (Bennet Francis)
	• Plenary: discussion
	  ○ Among which potential user group(s) is there the most need for a tool of this kind?
	  ○ To which existing tools and resources should we make reference?
	  ○ What problems should we anticipate, e.g. how significant is danger of "ethics washing" and how can it be avoided?

15.05-15.10	Break
15.10-15.50	**Second Section: Going from ethical values & principles to enhancing legal frameworks (national and international)**
	• Presentation: introduction of regulatory challenges of the three technologies (climate engineering, neurotechnologies and digital

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	extended reality) for which the project is developing recommendations (Julie Vinders)
	• Plenary discussion for each technology:
	  ○ What regulatory challenges are best addressed at the national or international level, and how?
	  ○ Who is responsible for the desired regulatory change or enhancement?
	  ○ What are the circumstances necessary to achieve these changes?

15.50-16.00	**Wrap up and Outlook** • Wrap up and looking forward (Renate Klar) • Concluding round

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TECHETHOS
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TechEthos sixth ADIM Board Meeting: Draft Agenda and

Ethics for the green and digital transition

A policy event on the ethical governance of emerging technologies for the green and digital transition

Event proposal

The TechEthos project is planning a one-day policy event in Brussels in November 2023

Event date: Tuesday, 14 November 2023
Location: Sparks Meeting centre, Brussels, Belgium
Event facilitator: Vivienne Parry

Time	Programme
10:00-10:30	Registration & Networking coffee
10:30-10:50	Welcome by the facilitator Vivienne Parry and the TechEthos coordinator **Opening remark:** Barbara Thaler, MEP and STOA Panel Member **Introductory statement**: Joanna Drake, Deputy Director General DG RTD
10:50-11:00	**Ethics of emerging techs: TechEthos in a nutshell** (Eva Buchinger TechEthos Coordinator)
Ethics for the Digital Transformation	
11:00-11:45	**Keynote**: Laura Weidinger DeepMind on the ethical challenges of emerging technologies for the Digital Transformation
11:45–12:15	**Coffee break**
12:15–13:15	**Panel discussion on the ethics of digital extended reality** • Introduction by TechEthos on key ethical, social and regulatory challenges (5-10') • Panel discussion on XR (panelists): ○ Alexei Grinbaum CEA (TechEthos partner) ○ Kevin MacNish SOPRA STERIA ○ Ivan Yamshchikov CAIRO, THWS ○ Alina Kadlubsky Open AR Cloud Europe • 15' interactive QA with audience
13:15–14:15	**Lunch break** • Networking (TechEthos Game & TechEthos Cluster)

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Ethics for the Green Transition	
14:15–15:00	**Keynote**: Behnam Taebi TU Delft WKR on the governance and ethical challenges of emerging technologies for the Green Transition
15:00–15:15	**Coffee break**
15:15–16:15	**Panel discussion on the ethics and governance of climate engineering** • Introduction by TechEthos on key ethical, social and regulatory challenges (5-10') • Panel discussion on CE (panelists): ○ Dominic Lenzi UT (TechEthos partner) ○ Dušan Chrenek DG CLIMATE ACTION ○ Matthias Honegger Perspectives Climate Research ○ Douglas Robinson OECD • 15' interactive QA with audience
Highlights & outlook	
16:15–16:45	• The role of TechEthos in an ethical research eco-system: Maura Hiney • Legacies: foundation and continuation – Eva Buchinger, Laurence Brooks, Renate Klar
16:45	Adjourn

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TECHETHOS
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Agenda Workshop "Technology Family Selection Workshop"

2 July 2021, 10:00-15:00 CEST
Location: online
Zoom: https://zoom.us/j/93663369444?pwd=Wk5MaWxkbUo1ODVzYWRiUjJXMkptQT09

10.00 – 10.15 Welcome and Introductions

10.15 – 11.00 Technology horizon scanning results up to now

11.00 – 12.30 Refining five pre-selected technology families (group interactive work)

MURAL 1: Refine, regroup (narrow down) our five selected technology families, also considering elements from the other (not selected) families

11.00 Round 1 | 11.15 Round 2
11.30 Break
11.45 Round 3 | 12.00 Round 4 | 12.15 Round 5

12.30-13.20 Lunch

13:20–14:30 Reflecting joint outcome of group interactive work (plenary)

MURAL 2: Why should TechEthos work on this technology family?

14.30-15.00 Selecting the right technology families (plenary)

Which three (four) technology families and can make a strong portfolio for TechEthos, to develop guidelines for ethical analysis of new and emerging technologies?

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Annex Part B

- Cluster Invitation letter
- Memorandum of Understanding
- Agenda for online cluster kick-off meeting, 4 March 2022
- Agenda for cluster meeting in Vienna, 23 May 2022
- Agenda for online cluster workshop, 23 May 2022

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Cluster Invitation Letter

Dear X,

We are contacting you as the coordinator of the X project. We have seen on your project website that your project also looks at ethical issues related to x . This is of great interest to us as a partner in the TechEthos consortium – an EU-funded project looking at ethical values in the design of new and emerging high-impact technologies. We are convinced that there can be major mutual benefit from exchanging knowledge and experience between EU-funded projects, and we are forming a small cluster of projects working on the technology families that our project is also concentrating on for the purpose of mutual exchange.

What is TechEthos?
The TechEthos project is coordinated by the Austrian Institute of Technology. It involves ten scientific partners and six science engagement organisations, and runs until the end of 2023. The project aims to produce operational ethics guidelines for three technology families for users such as researchers, research ethics committees and policy makers. These technology families are XX, YY and ZZ. To reconcile the needs of research and innovation and the concerns of society, the project will explore the awareness, acceptance and aspirations of academia, industry and the general public alike and reflect these in the guidelines.

How and why we would like to collaborate with you
We are forming a small cluster of EU-funded projects working on the above-mentioned technology families and would like to invite you to join the cluster as a representative of the X project. We plan to bring the cluster together in a first online meeting in early 2022 to discuss how to get the most out of our collaboration. We envisage regular online meetings, joint webinars and joint position papers, for example, as well as an in-person meeting in May 2022 funded by the TechEthos project. Joining our cluster does not entail any formal obligations and you can terminate your membership at any time with no further ado.

We look forward to hearing if you or another relevant partner from the X consortium would like to accept our invitation.
In the meantime, don't hesitate to contact us if you have any questions or queries.

With best wishes,

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Memorandum of Understanding

Preamble and rationale

Various EU funded projects address the development of new and emerging technologies, as well as the benefits and challenges they bring to society. Such projects have unique objectives, target groups and methods, but also similarities and overlapping tasks. Identifying these overlaps and fostering synergies between EU funded projects (hereafter named Parties), networks and initiatives is crucial. This cluster, initiated by the EU H2020-funded TechEthos project (Grant Agreement No 101006249), brings together different EU funded projects that dedicate (part of) their activities to research ethics (RE) and research integrity (RI) related to such emerging technologies. The cluster comprises projects focused on three technology families, namely Climate Engineering (interaction with the planet), Digital Extended Reality (interaction with the digital world), and Neurotechnologies (interaction with the human body). Building on these RE and RI projects, the cluster aims to create a platform for exchange of experiences, knowledge and future directions.

Modes and areas of collaboration

The partnership focuses on areas of work where several or all Parties are already active and would derive mutually beneficial outcomes, and is intended to stimulate and facilitate the scope of activities of these Parties and their collaboration. Various activities are envisioned in the cooperation of this cluster, including regular online update meetings, face to face meetings/workshops, joint webinars/panels, and the development of position papers on topics of shared interest. Together, these activities aim to identify common interests and reduce research duplication.

Ownership and governance

This Memorandum of Understanding shall not create any legal or financial commitments or give rise to any right, obligation or liability for the Parties with respect to any collaboration within the cluster. The Parties may at any later stage agree on more specific activities of collaboration.

Each Party acknowledges that all Intellectual Property Rights owned by the other Parties of the consortium are and shall remain the sole property of the other Parties. Any joint activity or publication requires approval of all Parties involved and result in shared ownership by these Parties.

Each Party acknowledges that all Parties of the consortium will retain full autonomy with regard to their current legal status, administrative structure, executive committee, projects and activities etc.

Duration of this Memorandum of Understanding

This Memorandum of Understanding is at will and may be modified by mutual consent. The Memorandum of Understanding shall be effective on the date of its signing and will remain in effect until modified by mutual consent or terminated unilaterally or by mutual consent of the cluster.

[date]	[date]
[signature]	[signature]
[name]	**Eva Buchinger**
[role], [project]	*Project Coordinator, TechEthos*

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Agenda for online cluster kick-off meeting, 4 March 2022

Time	Item	
10:00	Welcome	
	Introduction to TechEthos (Eva Buchinger)	
	Objective of the TechEthos cluster (Lisa Tambornino)	
10:15	Exchange and discussion in three sub-cluster working groups (Neurotechnologies, Climate Engineering and Digital Extended Reality)	Introducing the TechEthos technology family
		Project presentations (4 min. each project)
		Discussion on potential overlaps and joint activities
11:20	Report from the three sub-cluster working groups in the plenum and general discussion on cluster activities	
11:40	Next steps (Mathijs Vleugel)	
12:00	Meeting ends	

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Agenda for cluster meeting in Vienna, 23 May 2022

Time	Item	Chair
14.00	Welcome and introduction	Chair: Lisa Tambornino (EUREC)
14.30	Reports from all project representatives on ethical challenges in the specific fields Each project approx. 5 minutes presentation on three key questions: • Which ethical and societal issues are most challenging in the research field of your project? • Are you facing any legal/regulatory challenges? If yes, which ones? • How do you think this cluster can work together to address these challenges?	Chair: Philipp Hövel (EUREC)
15.30	Coffee Break	
15.50	**World Café workshop** Three key questions for three tables: • Table 1: On which ethical challenges can we work together and how? • Table 2: On which societal challenges can we work together and how? • Table 3: On which legal/regulatory challenges can we work together and how?	
17.10	Report from the world café workshop and exchange on ideas for concrete collaboration	Chair: Mathijs Vleugel (ALLEA)
17.40	Next steps and closing	
18.00	Meeting ends	

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Agenda for online cluster workshop, 23 May 2022

1. **Introduction and welcome (15 mins)**
   - Aims of meeting and connection to last meeting
   - Short round of introduction of all projects

2. **Central values/principles in technologies of cluster projects (60 mins)**
   - Presentation of values and principles in TechEthos (Laurence Brooks)
   - Discussion of values
     - Are our values complete?
     - Which other values are of relevance to the technologies (or technology fields) of your project?
     - Which values are important for all projects?
     - Are there core values that are always implied?

3. **Application of values in the work/How do the values find their way into our work? (30 mins) Ethical and Legal aspects**
   - Presentation of how the values and principles find their way into the TechEthos ethical and legal work (Laurence Brooks and Julie Vinders)
   - Discussion: what do the other projects do?

4. **Miscellaneous**
   - MoU reminder
   - Reminders to share events in Google Doc
   - Project updates: upcoming events/deliverables
   - Final conference TechEthos – save the date

5. **Closing meeting (15 mins)**
   - What did you take home?

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