



Deliverable 6.2

First Responsible Robotics Expert Group Meeting



www.robotics4eu.eu
info@robotics4eu.eu

PARTNERS
CE · ROBOTEX · LOBA · LNE · DBT · AFL · NTNU



D6.2

First Responsible Robotics Expert Group Meeting

DELIVERABLE TYPE Report	MONTH AND DATE OF DELIVERY December 23, 2021
WORK PACKAGE WP 6	LEADER NTNU
DISSEMINATION LEVEL Public	AUTHORS Yu Cheng, Roger A. Soraa, Mark Kharas, Sofia Moratti

// Programme	// Contract Number	// Duration	// Start
H2020	101017283	36 Months	January 1, 2021
//	//	//	//

Contributors

NAME	ORGANISATION
Roger A. Søraa	NTNU
Yu Cheng	NTNU
Mark Kharas	NTNU
Sofia Moratti	NTNU

Peer Reviews

NAME	ORGANISATION
Anneli Roose	CIVITTA
Agnes Delaborde	LNE
Mette Vingaard Hellerung	DBT
Marco Lopes	LOBA

Revision History

VERSION	DATE	REVIEWER
0.1	21/12/2021	All four

The information and views set out in this report are those of the author(s) and do not necessarily reflect the official opinion of the European Union. Neither the European Union institutions and bodies nor any person acting on their behalf.

Index of Contents

1. Executive Summary	4
2. Introduction	4
3. Robotics4EU Expert Group Members	4
4. Meeting overview and notes	7
2. Topics of the meeting	7
3. Discussion on Citizen Consultations	8
4. Discussion on the Maturity Assessment Model	10
Appendix 1: Agenda	13
Appendix 2: Letter of Consent	14
Appendix 3: Presentations	15

Index of Figures

<i>Figure 1: Anneli Roose</i>	16
<i>Figure 2: Mette V. Hellerung</i>	17
<i>Figure 3: Agnes Delaborde</i>	17
<i>Figure 4: Federico Manzi</i>	17
<i>Figure 6: Cecilie Campbell</i>	18
<i>Figure 7: Mirta Michilli</i>	18
<i>Figure 8: Francisco Javier Perez</i>	18
<i>Figure 9: Ericka Johnson</i>	19
<i>Figure 10: Morten Lind</i>	19
<i>Figure 11: Egil Petter Stræte</i>	19
<i>Figure 12: Maja Hadziselimovic</i>	20

Index of Tables

<i>Table 1: Keynotes presenters</i>	14
-------------------------------------	----

1. Executive Summary

The Robotics4EU project has convened a 10-member Expert Group consisting of representatives from previously funded EU projects, the robotics industry, citizens, and policy/decision-makers in robotics. This group will have at least two formal meetings during the duration of the project. One digital meeting by Month 12 (December 2021) and one physical meeting by Month 28 (April 2023). This Deliverable reports on the first of these meetings.

2. Introduction

The Robotics4EU project has convened a 10-member Expert Group consisting of representatives from previously funded EU projects, the robotics industry, citizens, academia, and policy/decision-makers in robotics. The group comprises experts covering the four robotics areas investigated by Robotics4EU—healthcare, agri-food, inspection and maintenance of infrastructure, and agile production. This group will have at least two formal meetings during the project's duration, one digital meeting by Month 12 (December 2021) and one physical meeting by Month 28 (April 2023). In addition to the formal meetings, the Expert Group will provide informal consultation within their domain expertise and promote the activities and findings of Robotics4EU. This deliverable constitutes a report of the first meeting. It consists of an overview of the Expert Group and the agenda, advanced materials, presentations, and minutes from the meeting.

3. Robotics4EU Expert Group Members

The Robotics4EU Expert group consists of 10 experts in different areas of robotics. It is gender-balanced—with five women and five men, with members across European regions. The 10 Expert Group members are:



Cecilie Campbell, Manager of Center for Learning about Welfare Technology, ALV is a network organization owned by several municipalities and NTNU Ålesund

Country: Norway

Sector: Healthcare

Constituency: Public employees, policymakers

Cecilie Campbell works for the local government through a network organization located in the Ålesund municipality in Norway, where she is responsible for investigating, developing, and implementing Welfare Technology—technology that can help support the health, welfare, and social inclusion of older adults—including in long-term care facilities operated by the municipality.



Maja Hadziselimovic, Automation Engineer, [SKAN AG](#)

Country: Switzerland

Sector: Agile production

Constituency: Robotics community

Maja Hadziselimovic is an Automation Engineer at SKAN AG, which produces isolators, cleanroom devices, and decontamination processes for the biopharmaceutical industry. She was previously the national coordinator in Bosnia and Herzegovina for the European

Robotics Week that featured public events highlighting the importance of robotics, also a member of the Board of Directors of euRobotics.



Francisco Javier Péres Grau, Head of Perception and AI, [Advanced Centre for Aerospace Technology, CATEC](#)

Country: Spain

Sector: Inspection and maintenance of Infrastructure

Constituency: Robotics community

Francisco Javier Pérez Grau works on projects related to avionics and unmanned aerial systems, especially those associated with computer vision, perception technologies, and autonomous systems.



Ericka Jonson, Professor, Department of Thematic Studies, [Linköping University](#)

Country: Sweden

Sector: Healthcare

Constituency: Academia

Ericka Johnson is a Science and Technology and Medical Sociology scholar. Her research concerns how humans relate to technology, especially in healthcare settings, and how medical technology involves patients reconceptualizing human bodies and genders.



Morten Lind, Professor Emeritus, Department of Electrical Engineering— Automation and Control, [Danish Technical University](#)

Country: Denmark

Sector: General industrial settings

Constituency: Academia, industrial research

Morten Lind is a Professor Emeritus at the Danish Technical University and is associated with KAIROS TECHNOLOGY as a principal specialist. His research interests include automation design, supervisory control of complex industrial systems and infrastructures, functional modeling and application of agent technology, and knowledge-based systems in automation.



Federico Manzi, (from January 1, 2022) Researcher in Developmental and Educational Psychology, [Università Cattolica del Sacro Cuore](#)

Country: Italy

Sector: Developmental and Educational Psychology, Human-Robot Interaction

Constituency: Academia

Federico Manzi studies developmental and educational psychology in relation to technology, in particular to social robotics. His main research topic is the study of the Theory of Mind and psychological dynamics in human-robot interactions from a lifespan perspective.



Mirta Michilli, General Director, [Fondazione Mondo Digitale](#)

Country: Italy

Sector: General AI and robotics

Constituency: Citizen advocacy organization

Mirta Michilli is the Co-Founder and General Director of Fondazione Mondo Digitale, a non-profit organization founded by the City of Rome, the Lazio Region, and six major ITC companies in 2001. FMD promotes social and digital inclusion through innovative public education initiatives partnering with schools, companies, non-profit organizations, and local, regional, and national authorities.



Egil Petter Stræte, Senior Researcher, Ruralis - [Institute for Rural and Regional Studies](#)

Country: Norway

Sector: Agri-food

Constituency: Academia

Egil Petter Stræte is an agricultural economist with expertise in researching food-related restructuring and organization of innovation in firms and organizations; structural changes and power in food supply chains; rural development; and agricultural advisory service. His work has concentrated mainly on the food sector and agriculture, with a particular emphasis on the dairy sector.



Ott Velsberg, Government Chief Data Officer, [Estonian Ministry of Economic Affairs and Communications](#)

Country: Estonia

Sector: General AI and robotics

Constituency: Policymaker

Ott Velsberg is the Chief Data Officer for the Estonian government. He oversees the strategic coordination of data science and data governance in Estonia, including domains like artificial intelligence and open data. He is also a Ph.D. researcher in the Department of Informatics at Umeå University. His research concentrates on the use of information systems in the public sector, with a special focus on the use of the Internet of Things (IoT).



Diane Whitehouse, Principal eHealth Policy Consultant, [European Health Telematics Association \(EHTEL\)](#)

Country: Belgium

Sector: Healthcare

Constituency: Multi-stakeholder

Diane Whitehouse is a Principal eHealth Policy Analyst at EHTEL. Her focus over time has been on the societal, organizational, ethical, and innovation aspects of digital health, eHealth, including telemedicine. Her career background has covered work in the European Commission's DG CNECT on ageing, disability, and health.

4. Meeting overview and notes

1. Meeting participants

The first Robotics4EU Expert group meeting took place on **December 20, 2021**, as an online meeting with attendance of 8 experts and 8 consortium members, in total there were 16 participants.

Expert group	Robotics4EU
1. Federico Manzi , Università Cattolica del Sacro Cuore	Mette Simonsen , DBT ¹
2. Cecilie Campbell , ALV network	Mette Hellerung , DBT
3. Egil Petter Stræte , Institute for Rural and Regional Studies	Agnes Delaborde , LNE ²
4. Ericka Johnson , Linköping University	Anneli Roose , CIVITTA
5. Mirta Michilli , Fondazione Mondo Digitale	Anton Hvidtjørn , DBT
6. Morten Lind , Professor Emeritus	Roger A. Søråa , NTNU ³
7. Francisco Javier Perez , CATEC	Yu Cheng , NTNU
8. Maja Hadziselimovic , SKAN AG	Marco Lopes , LOBA

Table 1 Participants of the Expert Group meeting

2. Topics of the meeting

The meeting (agenda is in Appendix 1) was moderated by Roger A. Søråa & Yu Cheng (NTNU) divided into three main parts.

- First, project coordinator Anneli Roose (Civitta) gave a detailed overview of the whole project with key insights this far, introducing the consortium members, the project aim and summary, the challenges, and methodologies. She introduced the activities and achievements of the project so far and presented the factsheets, deliverables, and workshops organised.

¹ Danish Board of Technology

² Laboratoire national de metrologie et d'essais

³ Norwegian University of Science and Technology

- Secondly, the eight attending Expert Group members were given a chance to present themselves for about 5 minutes each. Here we learned about the heterogeneity of the members, as they came from all the four priority target areas (healthcare, inspection and maintenance of infrastructure, agile production, agri-food) of robotics. While some were in academia, others represented industries, municipalities, and other organizations.
- The third and largest part of the meeting consisted of Q&A after hearing two in-depth project deliverable presentations from Mette Hellerung from DBT on citizen engagement and Agnes Delaborde from LNE on maturity assessment model, as described below.

3. Discussion on Citizen Consultations

Mette Hellerung's presentation of citizen engagement posed three critical questions for discussion.

The first question, “At which stage in development will citizen feedback be valuable for the robotic producers?” had the following reflections by the Experts:

- Cecilie Campbell points out that the testing stage should receive user feedback. For example, the developers in Norway need to check the interactions with the users, and in her experience in Norway, we should not feel discouraged to show unfinished robots. Welcoming different ideas to improve the current conditions when you meet other professionals is critical. For example, she worried that the robot Pepper was not ready to meet patients when tried out, but the patients showed surprising and great reactions to meeting the robot.
- Ericka Johnson had two different opinions: 1. Super early, the technology is not “there” yet, but there are discussion groups about the development. Even if it is just an idea. 2. Tech is wonderful, there is no need to regulate – the citizen feedback should be at every point of development and depend on regulation. Ericka Johnson thinks the project they have involved in citizen input and smart cities, although the technology is not there yet, the great discussion was carried out, could serve as inspiration. She recommended the book “Design Justice” <https://mitpress.mit.edu/books/design-justice> MIT publisher.
- Several members commented that regulations are important, and Morten Lind pointed out that different responsibilities depend on the technology. Some create more resistance; therefore, it is crucial to bring people early in the stage, but this is not easy.

For the second question: “How do we motivate robotic producers in agile production to get citizen feedback” the experts had the following comments:

- Cecilie Campbell thinks that the producers that don't take their users in early, might not get a technology that is *really* developed to fit the needs of the users. So, why should I buy something that is not made for me?

- Federico Manzi thinks that citizens might have other expectations than the professionals on how the robot works. With children, the elderly, and professionals, and other groups and communities, it is essential to set up goals at different levels. It might be important to look at “different levels of citizens”. That is, look at a way to divide the citizens so it is not just one singular group. In Italy, the middle community between the citizens and producers is essential. We need some language translations from professional terms to common languages. Federico Manzi agrees with Morten Lind, an example in agriculture, that people have different expectations, such as autonomous trucks. It is crucial to create a culture where the users and developers can share their knowledge and opinions.
- Egil Petter Stræte thinks it is important to get the citizens’ feedback, even for technology producers that are more or less hidden from society. It also depends on the type of robot. However, it is important to have a second opinion in the early stage of robot development. Maybe some consequences are negative. However, it can help the developers to adjust in the early stage.
- Morten Lind thinks that people consider what impact the robot has on society, and people who know about this field will consider the long-term effects.
- Federico Manzi thinks that people are more scared of humanoid robotics than for example a tractor. It is important to create a culture on this topic. The citizen should have some more knowledge – their views can often be disconnected from real technology.
- Cecilie Campbell thinks that citizens believe that some technologies in the early stage are different products. The municipalities do not buy products that cannot help the citizens.
- Anneli questions if, in Scandinavian countries, the unions represent citizens; we could also think of them as experts - to invite citizen-experts to the business consultations where a person maintaining the safety of the bridge feels together with designers and developers about a robot who could take over the tasks.
- Maja pointed out how technology is already helping us create a life we have now and that perhaps the discussion is not brand new. Will focusing on “what we have” instead of “what we want” change the discourse? The stigma about robotics can be changed or fade away. It is just something that is getting into more of our everyday lives, not just hidden in a factory. It is in our homes, hospitals etc. Remind citizens that it is already here.

For the third question, “How do we get robotic producers to participate” these thoughts were shared:

- Mette HELLERUNG further raised more questions: How do we get the robotic producers to participate? How do we find them? And will they have any barriers to participating? Is there an issue with intellectual property? Because they are going to be presenting their robotic solutions to the citizens through this online platform? Will there be some barrier for the producers to share this robotic solution with us? And how do we overcome that barrier?

- Morten Lind agrees that it would be a problem. This is very difficult. After all, this would be a very competitive area for the companies, because this is a new kind of new technology, and so on. So, they will all fight to soak it as part of the market.
- Maja Hadziselimovic knows that some companies are also dealing with the social impact of robotics on society. She is curious about which information for them to share? We don't want to know what kind of motor they want to use or standards or whatever. So maybe the citizens are more critical of showing how we're going to interact with these kinds of robots. So not some super detailed information, more sort of usability, and where we're going to reach? Where can we use those robots? And how and so on?
- Mette Hellerung agrees we're not going to ask them to share any plans, detailed models, or anything like that. We just want to show the citizens a small video clip or graphic or picture of the robot. So yeah, that may make it a little bit easier. But the question is how careful robotic producers are with intellectual property.
- Francisco Javier Perez thinks this is sketch approach about tackling specific tasks, just click what abidance looks like in describing a system and this kind of thing. So maybe the unique character that needs to be taken in this kind of description exhibits how you plan to solve a specific task.
- Mette Hellerung asks if anyone knows any robotic producers in this kind of stage who might be interested in getting feedback from citizens on their robotic solutions, so please get in touch with us. Or write to Roger A. Søråa; he can set you in touch with her. And she likes to hear more.

4. Discussion on the Maturity Assessment Model

5.

For Agnes Delaborde presentation on the Maturity Assessment Model, these comments were made:

- Morten Lind believes that the way you usually ensure the maturity of technology is to have a process from the design. "And so, the implementation and use and maintenance. You have to look at the product in a life cycle and what problems are improved by updates. So, you think there's some kind of standard model of a lifecycle model around the product. And the way you ensure maturity is that you had these life cycles working. For the parameters, maturity, maturity parameters, are requirements, we should be satisfied with the robot, the legal and the safety and so on in the ethical. But the way you ensure these requirements are fulfilled is that you have a lifecycle model used by the industry to provide that technology." We can note here the importance, for the maturity assessment model, to consider all aspects of the life cycle of the device, but also to pay attention to the decommissioning phase (for environmental reasons in particular).
- Egil Petter Stræte thinks it's helpful, but it also depends on the perspective you have here; you should do measurement to give a sort of index and give it three stars or one star or something like that. At his organization, they have developed a tool that is based on nine levels of readiness, with five related categories or dimensions; the technology itself must be considered, but also the target market. In this regard, one should address the relevance of the robot with this specific market, and the applicable regulation. In the case of a disruptive technology, the

problem is that the regulation may constitute a hindrance. Ensuring social acceptance is another aspect to consider: what does society say? The robot designer may need to develop a new value chain and need a business model to make this work. For the agricultural sector, smart farming, Egil Petter's organization contributed to the creation of a calculator. The maturity assessment model could then include the need for the robot designer to carry out impact analyses among potential end users, and to ensure that regulatory requirements are well taken into account.

- Ericka Johnson, based on their theoretical perspective, considers that the subjective aspects of the assessment cannot be overcome (they cannot be transformed into objective elements). She recommends not to try to transform them into objective elements, since interactions are in themselves subjective. She notes that one must always be very clearly aware of the context, and that there are some specific structures and social contexts that contribute to the design of the interactions. And they will always be subjective, so the assessment procedure must be designed in a way that properly manages subjectivity. Ericka Johnson also recommends taking inspiration from works from Suchman, L., Bloomberg, J., Orr, J.E., Trigg, R.: *Reconstructing Technologies as Social Practice*. *American Behavioral Scientist* 43, 392 (1999) 10. 5. For the maturity assessment model, we deem it important to ensure that this knowledge is shared with the robot producers and adapted to them, to help them apply this good practice in terms of psychological and sociological experimental procedures, knowing that they may potentially not be experts in the domain.
- Federico Manzi agrees with Ericka Johnson that what is subjective is also an experience; the human interacts with a system in a way that depends on the subject; he can say that it's important, for instance, to consider some kind of a subjective profiling of the user in the assessment, to ensure that the assessment concerns aspects that are relevant to this specific category of users. For example, autistic children's expectancies and needs are not the same in other domains of application, with other types of users.
- Federico Manzi further said that depending on the degree of the severity and pathology, a sense of psychological assessment of the users could be very interesting. Some measurement is possible, such as interpretation derived from physiological elements (eye gaze, heart rate, and other biological aspects). Such methods could be applied by robot designers when performing the assessment, if they need to be able to, in some way, estimate the robot's maturity based on less subjective elements.
- Ericka Johnson highlights the facts that, in the context of care for example, we are not even sure that the care workers really require that the robot matches with the ethical framework. The robot may not be expected to perfectly mirror the ethical values of a human. This means that in Robotics4EU, we must first make sure that the requirements are really important for these users, we cannot design overall requirements/checkpoints in the maturity assessment model, they must be adapted to the domain, the task, and the type of users.
- Morten Lind notes the relationship between subjective and intersubjective criteria. Intersubjective measurement can help address the interpersonal

variability related to subjectivity. So, the robot designer could also design experimental methods that consist in analysing the responses from panels of users on subjective elements, and in considering their responses in reaction to a specific robot, for example when a prototype is ready.

- Ericka Johnson also suggests that Robotics4EU considers both laboratory-based experimentation and in-the-wild observations. The latter is harder to control but would allow obtaining more realistic results.

Following the discussions, Roger A. Søråa and Anneli Roose gave the Expert Group Members information on the path forward and the next meeting, and the meeting was thus concluded.

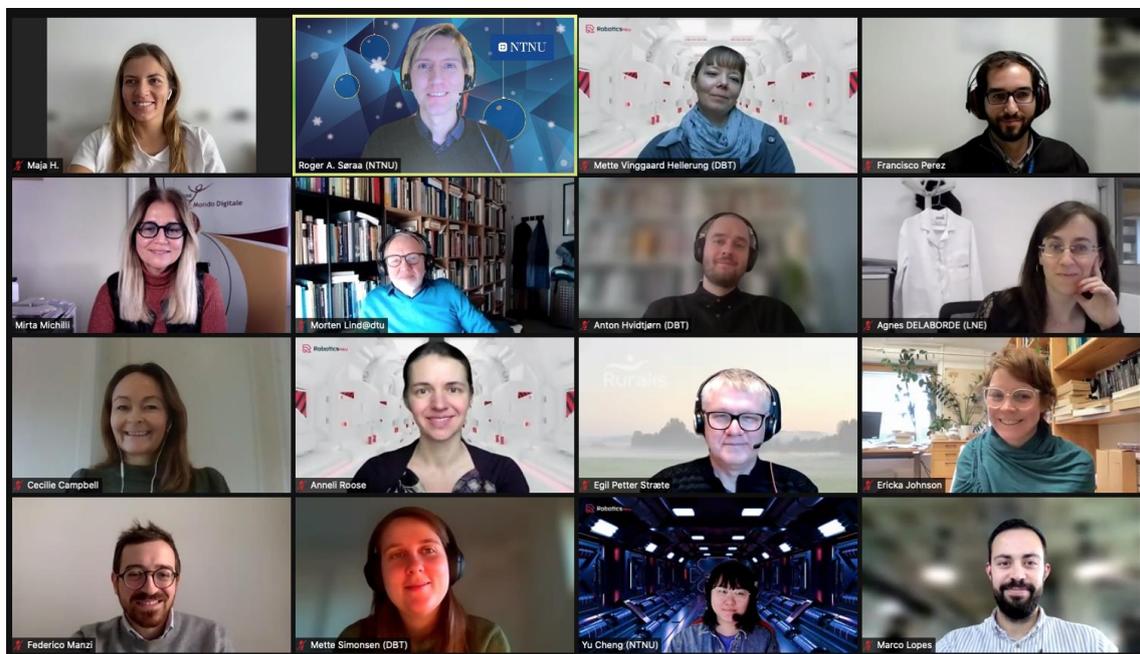


Figure 1: Participants of the Expert Group meeting

Appendix 1: Agenda

Here paste the agenda and everything sent to the Expert Group to prepare for the meeting.

Agenda:

- 9:00 Welcome & agenda for the day (Roger A. Søråa, NTNU)
- 9:10-9:30 General introduction to project (Anneli Roose, Civitta, Project Leader)
- 9:30-10:30 5 min self-presentation by expert group members
- 10:15-10:30 Coffee break
- 10:30 Presentations with discussion/feedback Mette Hellerung from DBT on Citizen Engagement
- 11:10 Presentations with discussion/feedback Agnes Delaborde from LNE on Maturity Assessment Model
- 11:45 Path forward & summary (Roger Søråa & Anneli Roose)

The meeting was held on Zoom and had 3 factsheets attached as preparation readings.

- [Project infographic](#)
- [Societal readiness plan](#)
- [Responsible robotics maturity assessment model](#)

Appendix 2: Letter of Consent

A consent form was retrieved from participants before the meeting:

Letter of Confirmation to participate in the Robotics4EU Expert Group

15/12/2021

I declare my intention to become a member of the “Expert Group” formed under the Robotics4EU project, funded by the European Commission under the HORIZON 2020 Framework Programme.

The project aims at bringing together different robotics stakeholders, ICT developers, SSH researchers, and other stakeholders (NGOs, citizens, and users, e.g.) across Europe and beyond to activate the constructive interactions between stakeholders leading to a responsible approach to research and innovation through engagement with the robotics community.

1. I acknowledge that the objectives of the project are of interest to me. I further believe that my professional expertise can contribute to the project.
2. I intend to be involved in the Expert Group **voluntarily**.
3. I express my willingness to contribute to and complement the project work, acting as the Expert Group member.
4. The results of the Expert Group activities will be the exclusive property of the Robotics4EU consortium.

This letter of interest is not legally binding and simply demonstrates my intention to support the Robotics4EU project. For any questions regarding this letter of confirmation, please contact the project data protection officer: Olena Nedozhogina: olena.nedozhogina@civitta.com.

Signature & date

Appendix 3: Presentations

Here paste in any presentations that were given at the meeting (perhaps 2 or 4 slides a page to save space?)

Who	Topic
Anneli Roose, Civitta	Robotics4EU Expert Group meeting Introduction
Mette Hellerung, DBT	Robotics4EU WP4.1 and WP4.2 - Citizen Engagement
Agnes Delaborde, LNE	Robotics4EU Maturity Assessment Model Objectives and Methodology

Table 1 Keynotes presenters

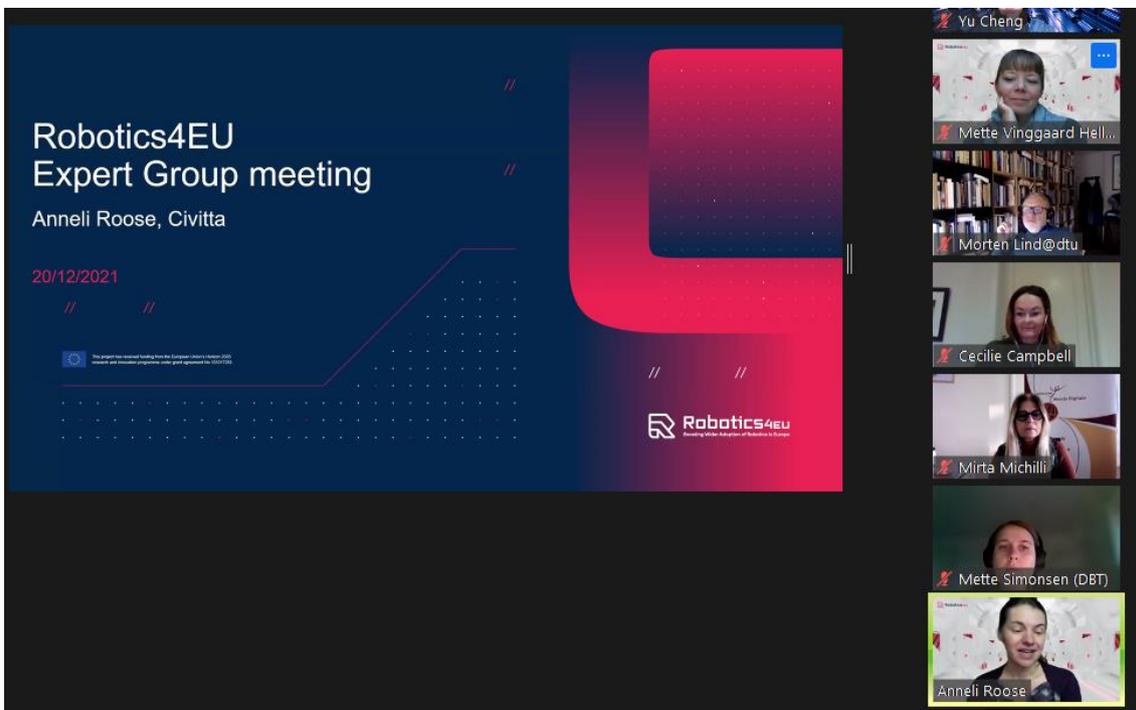


Figure 2 Anneli Roose

WP4.1 and WP4.2 – Citizen Engagement
Danish Board of Technology

Expert Group Meeting, 20th of December 2021

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017283

Robotics4EU
Boosting Wider Adoption of Robotics in Europe

Mette Vinggaard Helling (DBT)

Figure 3 Mette Helling

Robotics4EU material

DESK RESEARCH PUBLIC CONSULTATION POLICY-MAKERS CONSULTATION INDUSTRY CONSULTATION

MATURITY ASSESSMENT MODEL

Robotics4EU

Agnes DELABORDE (LNE)

Figure 4 Agnes Delaborde

Expert group members

 Federico Manzi, Catholic University of Milan (Sacred Heart) Italy	 Cecile Campbell, Alesund Kommune, Norway	 Mirta Micheli, Fondazione Mondo Digitale, Italy	 Francisco Javier Perez, CATEC, Spain	 Ericka Johnson, Linköping University, Sweden
 Morten Lind, Danish Technical University, Denmark	 Egill Peltzer Strøms, Ruralis, Norway	 Maja Hadziseimovic, euRobotics/SKAN AG, Bosnia and Herzegovina	 Diana Whitehouse, EHTEL, Belgium	 Dit Velsberg, Government Chief Data Officer of Estonia

Robotics4EU

R4EU ppl

Federico Manzi

Figure 5 Federico Manzi

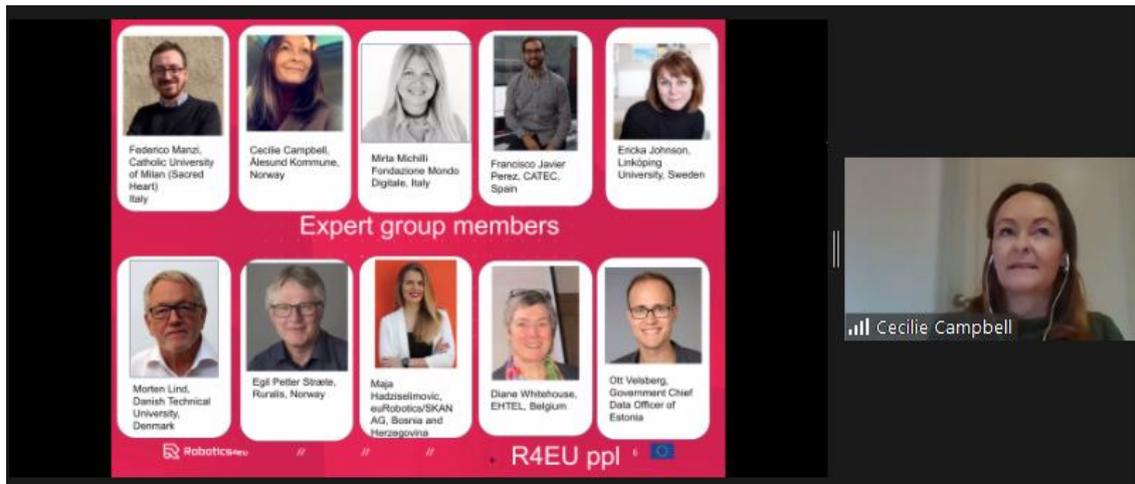


Figure 6 Cecillie Campbell



Figure 7 Mirta Michilli

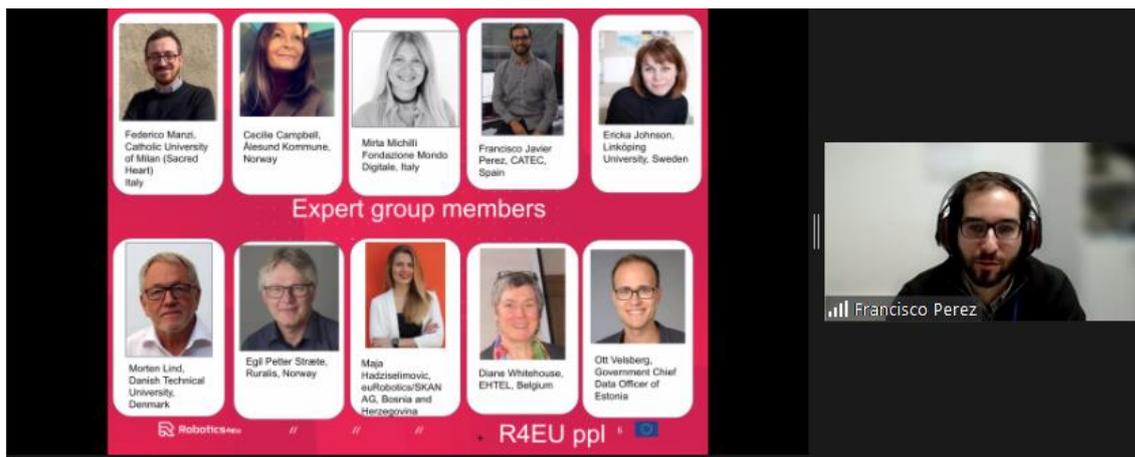


Figure 8 Francisco Javier Perez

The ethics and social consequences of AI & companion robots.
Learning trust, empathy and accountability

Discuss trust, empathy and accountability through robotic encounters and their imaginaries

Using collaborative research design to engage across academic disciplines



Figure 9 Ericka Johnson



Figure 10 Morten Lind

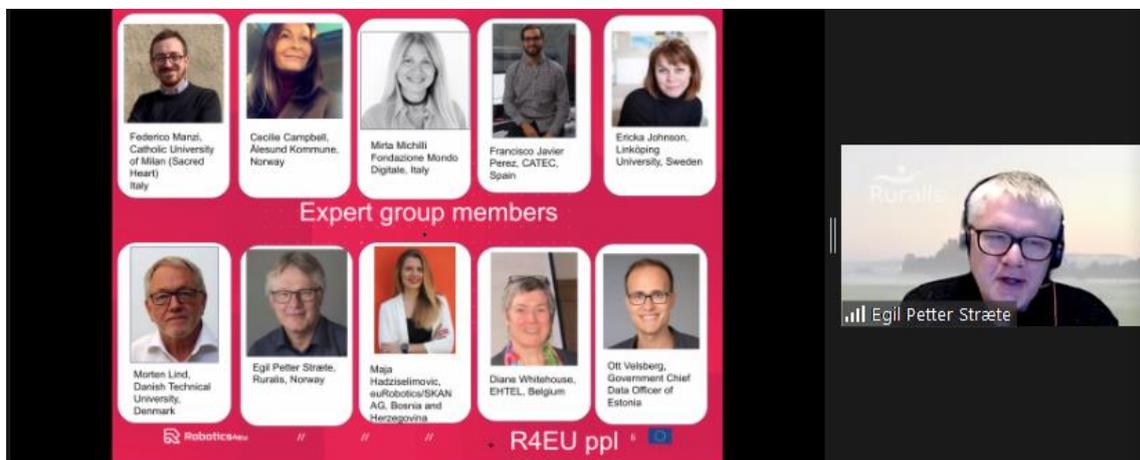


Figure 11 Egil Petter Stræte

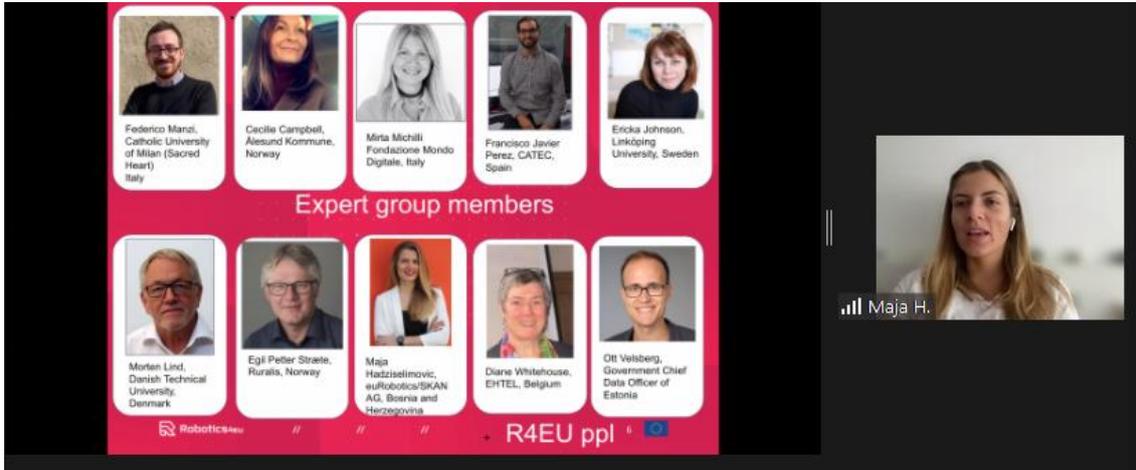


Figure 12 Maja Hadziselimovic

//	//	//	//
//	//	//	//

consortium

CIVITTA

robotex
International

LOBA[®]

LABORATOIRE
NATIONAL
DE MÉTROLOGIE
ET D'ESSAIS **LNE**



AgriFood **DIH**
Lithuania

 **NTNU**
Norwegian University of
Science and Technology



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017283

 **Robotics4EU**
Boosting Wider Adoption of Robotics in Europe

    [@robotics4eu](https://www.instagram.com/robotics4eu)