



Grant agreement No. 101069852

Move2CCAM

MethOds and tools for comprehensive impact Assessment of the CCAM solutions for passengers and goods

HORIZON-CL5-2021-D6-01

D.2.2

Engagement activities summary – Mid-term

WP2 – Satellite network and engagement

Dissemination Level		
PU	Public	X
SEN	Sensitive	



Information

PROJECT

Project Acronym:	Move2CCAM
Project Full Title:	Methods and tools for comprehensive impact assessment of the CCAM solutions for passengers and goods
Grant Agreement No.	101069852 (HORIZON-CL5-2021-D6-01)
Project Coordinator:	BABLE
Website:	www.move2ccam.eu
Starting date:	01/09/2022
Duration:	30 months

DELIVERABLE

Deliverable No. & Title:	D2.2 Engagement activities summary – Mid-term
Dissemination level:	PU
Work Package No. & Title:	WP2 – Satellite network and engagement
Deliverable Leader:	BRTH
Authors (Contributor Organisation):	Jonatan Viejo, Ana Quijano (CARTIF) Héctor Cañas (BABLE) Paulo Anciaes (UCL) Paul Carroll, Selini Papanelopoulou, Katie Spittle, Lucy Farrow
Reviewers:	Héctor Cañas (BABLE), Siham Oukhrif (UCL)
Due date of deliverable:	Month 16 – December 2023
Submission Date:	07/06/2024



Disclaimer

The content of this deliverable does not reflect the official opinion of the European Union. Responsibility for the information and views expressed herein lies entirely with the author(s).

Copyright

© Copyright Move2CCAM Consortium consisting of:

- 1 (BEN) BABLE GmbH
- 2 (BEN) Moby X Software Limited
- 3 (BEN) Hakisa
- 4 (BEN) Fundación CARTIF
- 5 (BEN) Gemeente Helmond
- 6 (BEN) Gornoslasko-Zaglebiowska Metropolia
- 7 (BEN) North Aegean Region
- 8 (AP) University of California Santa Barbara Department of Geography
- 9 (AP) University College London
- 10 (AP) C M Monitor (Britain Thinks) Ltd
- 11 (AP) Oxford Institute for Energy Studies

This document may not be copied, reproduced, or modified in whole or in part for any purpose without written permission from the **Move2CCAM** Consortium. In addition to such written permission to copy, reproduce, or modify this document in whole or part, an acknowledgement of the authors of the document and all applicable portions of the copyright notice must be clearly referenced. All rights reserved.

Document history

Version	Date	Released by	Comments
1	01-12-2023	Selini Papanelopoulou (Thinks Insight)	Initial draft
2	05-12-2023	Cartif, UCL, Moby	Reviewed initial draft and provided comments
3	07-12-2023	Selini Papanelopoulou (Thinks Insight)	Revised draft after receiving comments from contributing partners
4	12-12-2023	Bable	Reviewed revised draft and provided final comments
5	22-12-2023	Selini Papanelopoulou (Thinks Insight)	Final version after receiving comments from reviewer
6	30-12-2023	Eleni Sarakinou (UCL)	Final Review



7	25-04-2024	Katie Spittle, Selini Papanelopoulou (Thinks Insight)	Revised draft
8	30-05-2024	Lucy Farrow (Thinks Insight)	Amends in response to reviewer comments
9	05-06-2024	Siham Oukhrid (UCL)	Final Review



1. Table of Contents

Information	2
Disclaimer.....	3
Copyright.....	3
Document history	3
Acronyms and definitions	6
2. Introduction	7
3. Recruitment process and pre-activity engagement	8
3.1. Overview	8
3.2. Citizens’ recruitment process IAMT Flowchart.....	8
3.3. Citizens and organisations pre-activity engagement.....	8
4. Use case of co-creation	9
4.1. Overview	9
4.2. Citizens face to face activities	9
4.3. Citizens online activities.....	9
4.4. Organizations face-to-face activities	10
4.5. Organizations online activities.....	10
4.6. Participating citizens and organisations in activities	10
4.7. Lessons learned from Activities 1 and 2	13
4.8. Engagement activities KPIs for activities 1 & 2.....	14
5. Business model co-creation	14
5.1. Overview	14
5.2. Organizations face-to-face activities	15
5.3. Organizations online activities.....	15
5.4. Participating organizations in activities	16
17	
5.5. Lessons learned from Activity 3.....	18
5.6. Engagement KPIs for activity 3	19
6. Qualitative assessment of impact.....	19
6.1. Overview	19
6.2. Citizens online activities.....	19
6.3. Citizens face to face activities.....	21



6.4.	Organizations face-to-face activities	21
6.5.	Organizations online activities.....	21
6.6.	Participating citizens and organisations in activities	21
6.7.	Lessons learned from activities 4 and 5.....	21
6.8.	Engagement KPIs for activities 4 & 5	22

Table of figures

Figure 1: Images from online citizen engagement platform	10
Figure 2: Images from face-to-face citizen workshops.....	10
Figure 3: Organisations' characteristics (all countries): type.....	12
Figure 4: Organisations' characteristics (all countries: geographic coverage)	12
Figure 5: Images from organisations face to face workshops	15
Figure 6: Images from organisations online workshop exercises.....	16
Figure 7: Organisations' characteristics (all countries): type.....	17
Figure 8: Organisations' characteristics (all countries: geographic coverage)	18
Figure 9: Images from online citizen engagement platform exercises.....	20
Figure 10: Images from online citizen workshop exercises	20
Figure 11: Images from face to face citizen workshops.....	21

Acronyms and definitions

Acronyms	Definitions
CCAM	Cooperative, Connected, and Automated Mobility
UK	United Kingdom
FR	France
NL	Netherlands
CY	Cyprus
GR	Greece
DE	Germany
SP	Spain
PL	Poland



2. Introduction

As outlined in D3.3 Primary and Secondary Data and the MOVE2CCAM Data Warehouse, Cooperative, Connected, and Automated Mobility (CCAM) is a new frontier for mobility. It allows vehicles to communicate with each other, the infrastructure, and other users of the transport network. CCAM creates new possibilities for both passenger and freight transport and could contribute to more efficient, equitable, and sustainable mobility systems. However, the potential impacts of this radical change are still not well understood. There is little knowledge on the many possible inter-relationships between the impacts of CCAM in different domains (for example, mobility, economy, environment), as well as on how these inter-relationships might evolve across time.

The MOVE2CCAM project (<https://move2ccam.eu>) is exploring these inter-related impacts, aiming at delivering methods and tools for systems-wide assessments of CCAM solutions. This exploration is done with input from the project “Satellites”, i.e., citizens and organizations in eight European countries (Cyprus, France, Germany, Greece, the Netherlands, Poland, Spain, and the United Kingdom), who are invited to participate in a series of co-creation activities throughout the project. Citizens represent diverse groups in society and organizations represent a range of stakeholders with interest in CCAM solutions. This ensures that the methods and tools developed in the project acknowledge the wide diversity of perceptions, needs, objectives across and within the eight countries in this project, and are potentially transferable to the rest of Europe.

Citizens and organisations taking part in the MOVE2CCAM project have been participating in:

- Activities where they have been co-creating CCAM use cases, scenarios, and business models.
- Activities where they have been sharing their views on the impacts of the use cases, business models, and scenarios, on eight domains (Mobility, Safety, Public Health, Economy, Environment, Land use, Network Efficiency, and Equity), considering the potential inter-relationships between them.

Deliverable 2.2 Engagement Activities Summary Mid-term describes the co-creation activities with citizens and organisations that have taken place to date, as well as the implemented methodology to deliver these activities.



3. Recruitment process and pre-activity engagement

3.1. Overview

A sample frame was developed to ensure that the MOVE2CCAM project targets relevant citizen groups to take part in the research, according to the specifications set out in the proposal. This involved the development of a screening questionnaire outlining key recruitment criteria that were consistent across all participating regions.

Additionally, both citizens and organisations were required to answer a short online questionnaire prior to taking part in the co-creation activities. The citizens' questionnaire focused on citizens' travel behaviour and attitudes towards autonomous vehicles. The organizations' questionnaire gathered information on each organization's sector, geographic coverage, and views of autonomous vehicles.

3.2. Citizens' recruitment process IAMT Flowchart

To achieve the aims set out for the MOVE2CCAM project, each region recruited between 30-40 citizens to take part in co-creation activities. Citizens were recruited according to a recruitment questionnaire, designed to meet the requirements of the project. Each region hired a recruitment partner to carry out the recruitment and screening process.

Recruitment specification and criteria were common across all regions identifying 8 distinct criteria:

- Criteria 1: 8 participants aged 18-34, minimum of 2 students.
- Criteria 2: 8 participants aged 35-64, with no children below 15 years old living in the household.
- Criteria 3: 8 participants aged 35-64, with children below 15 years old living in the household.
- Criteria 4: 8 participants aged 65+.
- Criteria 5: 8 people with a disability or long-term health condition affecting mobility, or carers of someone with this disability/health condition.
- Criteria 6: Minimum of 4 people living in a village with less than 2,000 inhabitants
- Criteria 7: Minimum number of people from an ethnic or national minority group
- Criteria 8: Minimum of 4 who have no driving license, or are unable to drive due to health or other reasons.

We also ensured a mix of women and men in each location.

3.3. Citizens and organisations pre-activity engagement

Prior to taking part in the co-creation activities for the first time, citizens were required to answer an online questionnaire. As described in D3.3 Primary and secondary data and the MOVE2CCAM data warehouse, the questionnaire included questions to capture the context in which each participant travels, their actual travel behaviour, as well as their attitudes and intentions regarding the use of autonomous vehicles.

Organizations were also required to answer an online questionnaire prior to taking part in the co-creation activities for the first time. As described in D3.3 Primary and secondary data and the MOVE2CCAM data warehouse, the questionnaire included general questions about the organization as well as each participants' views of autonomous vehicles.

4. Use case of co-creation

4.1. Overview

The first set of co-creation activities (i.e. Activity 1 and Activity 2) focused on identifying potential mobility services that can be provided by CCAM vehicles. Citizens and organisations in each region were invited to take part in qualitative co-creation sessions with the aim of co-creating CCAM use cases that could cater to daily mobility needs of citizens (e.g. travel for shopping, work, access to health services, leisure) and companies (e.g. freight distribution). These sessions also explored associated challenges, potential impacts, and the time-horizon in which the CCAM solutions could be deployed. A total of 52 use cases were generated in activities 1 and 2, reported in detail in D1.2 CCAM uses cases, business models, scenarios and KPIs.

4.2. Citizens face to face activities

Citizens from the Netherlands, Poland and Greece (the three prototypical regions) took part in 2-hour face to face workshops. Citizens were split into smaller groups (5-8 people each) during the sessions in order to co-create use cases. Groups brought together people with different characteristics (as described in 2.2 above) to encourage sharing of different perspectives. This allowed for a greater number of use cases being generated per session, with views on each use case being exchanged within each group.

During the workshops, participants co-created detailed descriptions of each use case, including describing the type of vehicle, size and ownership, service provided (e.g. trip purpose, locations served, distances travelled, time of the day, frequency of the service), target users and method of payment. Participants were also asked to identify any potential challenges and impacts for each use case. As a final exercise, they were asked to share their thoughts regarding the potential timeline of deployment for different CCAM use cases and vehicles, considering three-time horizons (i.e. 2025, 2030 and 2050).

4.3. Citizens online activities

Citizens from the United Kingdom, Germany, Spain, France and Cyprus took part in an online engagement platform named Recollective. They participated in the platform over the course of five days, for a total of two hours of engagement per participant. Each participant was asked to create a use case for a CCAM mobility service, involving detailed descriptions, potential challenges and impacts, as mentioned above in section 3.2. They were also asked to provide their thoughts on the potential timeframe of deployment for different CCAM use cases and vehicles as described above in section 3.2. After sharing their ideas and views, participants could interact with the rest of the citizens taking part in the engagement platform from their regions, by commenting on each other's posts and exchanging opinions within discussion forums.



Figure 1: Images from online citizen engagement platform

4.4. Organizations face-to-face activities

Organisations in the Netherlands, Poland and Greece took part in 2-hour face to face workshops following the format of the citizens' workshops (3.2).



Figure 2: Images from face-to-face citizen workshops

4.5. Organizations online activities

Organisations in the United Kingdom, Germany, Spain, France and Cyprus took part in a 2-hour Pan-European online workshop following the format of the citizens' and organisations' workshops (3.2 and 3.4). Participating organisations in all of these regions joined the workshop at the same time and were split into smaller breakout groups (4-5 people) for the majority of the session. After co-creating use cases and sharing views on potential timeframes, they were brought again into the main room to present their work and share feedback and views, allowing for opinions to be exchanged between regions.

4.6. Participating citizens and organisations in activities

As described in detail in D1.2 CCAM uses cases, business models, scenarios and KPIs, participating citizens and organisations in the first round of co-creation activities were required to complete a questionnaire before taking part in the activities. Table 1 shows the number of citizens and organizations that filled the questionnaire launched before the activities 1 and 2, per country.

Table 1: Sample size, per country

	NL	PL	GR	DE	UK	FR	SP	CY	All
Citizens	22	46	46	30	42	34	37	17	274
Organizations	10	8	15	3	7	3	3	0	49

Table 2 shows the demographic characteristics of citizens, per country.

Table 2: Citizens' demographic characteristics, per country (% of sample in each count)

	NL	PL	GR	DE	UK	FR	SP	CY	All
Age									
18-34	5	25	20	25	28	32	23	24	24
35-64	67	43	60	55	53	35	57	47	52
65+	29	33	20	20	20	32	20	29	25
Sex									
Man	48	45	35	54	43	47	49	47	46
Woman	52	55	65	46	58	53	51	53	54
Ethnic group									
Minority	15	0	0	15	20		9	0	9
Not minority	85	100	100	85	80		91	100	91

	NL	PL	GR	DE	UK	FR	SP	CY	All
Driving licence									
Have licence and can drive	95	53	55	81	80	74	69	88	72
Have licence but can't drive	0	15	0	2	3	12	9	0	5
Have licence but no car to use	0	8	18	0	8	0	6	0	5
Does not have licence	5	25	28	17	10	15	17	12	17
Qualifications									
Primary school	0	0	10	0	0	18	11	0	5
Secondary school	5	45	63	38	30	3	54	0	34
Professional qualification	33	0	0	31	8	15	0	0	11
University degree	52	25	25	29	48	26	26	41	32
Higher university degree	10	20	3	2	15	38	9	53	16
Still student	0	10	0	0	0	0	0	6	2
Residence location									
City centre	0	25	38	60	8	18	14	76	29
City, not in centre	81	20	5	0	63	35	34	6	28
Small town	5	13	0	25	20	24	37	6	17
Village	14	43	58	15	10	24	14	12	25

Figure 1 and Figure 2 show the characteristics of the participants representing organizations. Across all countries, 18% of these organizations were authorities or regulatory bodies, and 10% were research organizations. 35% had a national geographic coverage, 25% had a wider coverage (European or International, beyond Europe), and 38% had a narrower coverage (city or region).

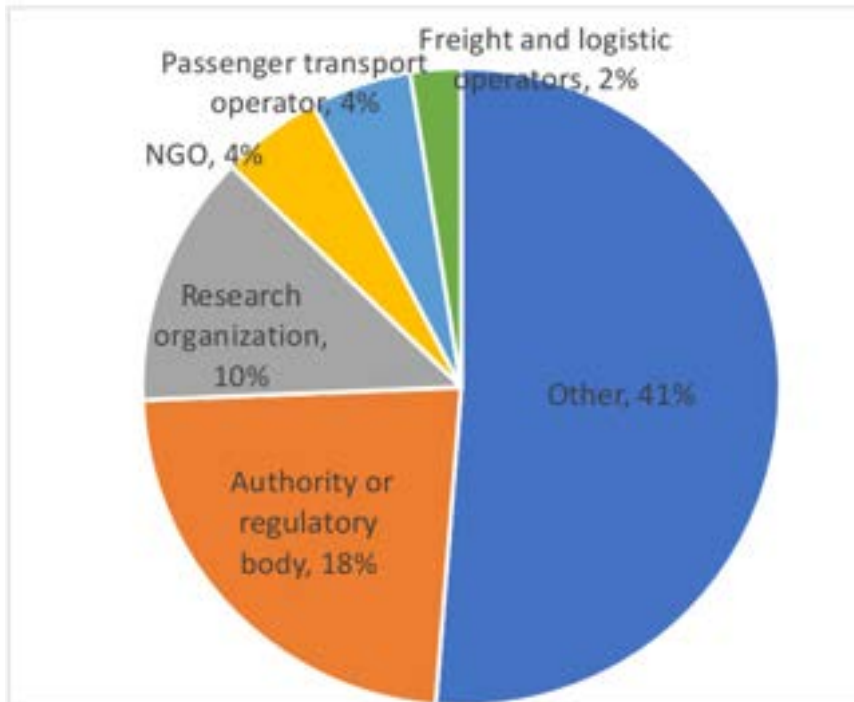


Figure 3: Organisations’ characteristics (all countries): type

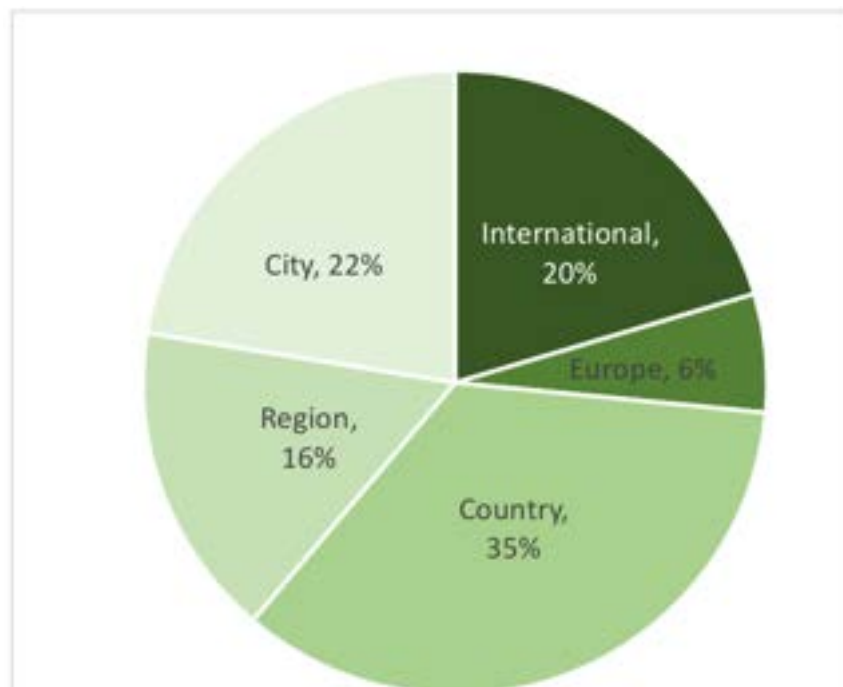


Figure 4: Organisations' characteristics (all countries: geographic coverage)

4.7. Lessons learned from Activities 1 and 2

Activities 1 and 2 allowed to collect hundreds of ideas on the type of services that autonomous vehicles can provide to cover the transport needs of persons and companies. This achievement was possible thanks to involving a diverse range of participants (i.e. organizations working in various sectors and different profiles of citizens across Europe) and to have shown during the first part of the activity all the possible vehicles that can be autonomous, and the different mobility needs that people can have. The flexibility of the activity design, where participants could describe in detail their ideas, also contributed to this output.

Key insights from activities 1 and 2 include perceptions of CCAM solutions as a product to cover mobility needs of vulnerable citizens (i.e. older people, those with disabilities / mobility issues) and lack of mobility services in rural areas. Also, CCAM solutions are seen in most of cases as existing vehicles but with a collective use. Additionally, during activities 1 and 2 similar ideas to those generated in previous studies emerged, but with more detailed descriptions of the solutions proposed.

The detailed findings from activities 1 and 2 are reported in D1.2 CCAM uses cases, business models, scenarios and KPIs. However key learnings and their implications for subsequent activities include:

1. Where people live now influences their expectations for CCAM in future

We found substantial variation in the use cases proposed by citizens and organisations in the eight different countries, and within each country we found further differences between those people living in rural and urban areas. Participants expectations for CCAM services in rural areas tended to reflect the perceived gaps in transport services, so focused mostly on cars and buses. In urban areas where existing transport and freight services of different kinds are already more available participants came up with much more varied suggestions. A key implication of this variation is to build in space for personalisation in the design of future co-creation activities, to ensure we are able to understand the full breadth of potential use cases and impact. In addition we will continue to focus on recruiting participants with a range of characteristics

2. Market acceptance was not a prominent concern, suggesting relative openness to CCAM

Neither organisations nor citizens reported market acceptance (resistance from the mobility sector, for example) as a potential constraint in activities 1 or 2. This is in contrast to the expert literature, and suggests either/both a shift towards higher general acceptance of CCAM solutions, and a difference in focus between citizens/stakeholders and experts. The consequence of this for the project is firstly in supporting its utility, and secondly in framing of subsequent co-creation activities around the nature of CCAM services, rather than whether or not they should be implemented.

3. Organisational levels of understanding of CCAM should not be overestimated

Activity one was the first major interaction with the Move2CCAM satellite members from organisations, and we found that the level of knowledge of CCAM services was highly variable. For some attendees this was at topic on which they had extensive knowledge, but in a narrow frame (e.g. one transport mode), others had more limited knowledge, and few had a strong sense of the overall picture across modes, sectors and geographies. Making the most of the knowledge of each attendee is essential to effective co-creation, so we adapted the design of activity 2, using



a simplified business canvas format, to ensure that attendees were able to participate fully. The wider implication for this is that the CCAM ecosystem is still in development, and we see an opportunity for the Move2CCAM programme through its training offer as well as the assessment model, to contribute to greater systems-based understanding of CCAM.

4.8. Engagement activities KPIs for activities 1 & 2

The engagement KPIs set out in Annex 1 – Description of the Actions (Part B) of the proposal, for activity 1 in terms of audience sizes were the following: 40 organisations in each of the three prototypical regions (NL, PL, GR), and at least 120 organisations in the remaining regions (UK, DE, SP, FR, CY). As for activity 2, the target was to include 30 participants from each region (a total of 240 citizens).

As described in Table 1 of section 3.6, participation levels ended being quite high for citizens, exceeding the original target by 34 citizens (274 in total achieved), this is due to concentrated recruitment efforts undertaken by partners and the recruitment agencies they hired, as described in section 2.2. Organisations' participation levels were significantly lower than originally anticipated. 49 organisations took part in total from all regions, as opposed to the original target of 240 organisations. This is mainly due to time constraints / lack of availability from identified organisations, despite partners' engagement efforts which involved sending out invitation emails and reminders to organisations ahead of the sessions.

Participating citizens and organisations exceeded the target of co-creating at least 30 use cases and scenarios for CCAM solutions, by 22 use cases (a total of 52 use cases were co-created). This is due to focusing qualitative sessions in activities 1 and 2 (both workshops and online engagement platform) in idea generation and exchange of views and inputs between participating citizens and organisations. These focused exercises, allowed for a larger volume of contributions and co-created use cases than originally anticipated.

5. Business model co-creation

5.1. Overview

To establish a framework for evaluating the economic and financial impact of CCAM use cases and scenarios, a set of prototype business models needed to be defined. These prototype business models were designed to offer a practical and focused approach to understanding the potential business viability of a larger scope of CCAM use cases and scenarios. These business models can enable organizations to evaluate real-world scenarios, such as ridesharing, goods delivery, or public transportation, and analyse the associated revenue streams, cost structures, and market dynamics for future CCAM services and products.

Organisations participating in the MOVE2CCAM project, across all eight regions (United Kingdom, France, Poland, the Netherlands, Germany, Cyprus, Greece, Poland) were invited to take part in 2-hour qualitative workshops, to review 15 use cases and co-create business models for each use



case (Activity 3). Each region invited 40 organisations to take part in the workshops (with 10-40 attending).

5.2. Organizations face-to-face activities

Organisations in the Netherlands, Poland and Greece took part in 2-hour face to face workshops. During the workshops, organisations focused on co-creating business models for five use cases (three of the use cases were co-created locally in each region, and two were common across all regions). Use cases involved both passenger and freight transportation.

During the workshops, organisations were split into small groups (3-5 participants), each working together on putting together a business model for their use case. Organisations focused on generating ideas structured around 3 key areas of the business models; Value Proposition, Business Structure and Business Impact.

As described in D3.3 Primary and secondary data and the MOVE2CCAM data warehouse, each area included the following elements:

- Value Proposition: Exploring how the proposed CCAM solution solves local mobility challenges and the degree of differentiation with other transport modes offering the same service.
- Business Structure: Defining pricing models and price range for the service. Identifying potential key stakeholders and their degree of interest. Establishing key activities to promote and distribute the service or product.
- Business Impact: Identifying the different ways in which the service could increase and maintain high user satisfaction.



Figure 5: Images from organisations face to face workshops

5.3. Organizations online activities

Organisations in the UK, Spain, Germany, France and Cyprus also took part in 2-hour online workshops following the same structure as described in 4.2.



Figure 6: Images from organisations online workshop exercises

5.4. Participating organizations in activities

Table 3 shows the number of organizations that participated in the activity 3 and filled the questionnaire launched before the activity, per country.

Table 3: Business model co-creation: sample size, per country

	Netherlands	Poland	Greece	Germany	UK	France	Spain	Cyprus	All
	6	14	14	6	6	9	15	10	80

It is important to notice, that more organisations attended the activity, however, a number of them did not fill in the questionnaire. The total number of participants in the activity is shown in Table 4,

Table 4: Business model co-creation: final number of participants per country

Moderating partner	Country	Participants
Thinks Insight	UK	11
Moby-X	Cyprus	15
Hakisa	France	9
GZM	Poland	17
North Aegean	Greece	20
CARTIF	Spain	13
BABLE	Germany	13
Helmond	Netherlands	13
TOTAL		111

Figure 3 and Figure 4 show the characteristics of the participants representing organizations. Across all countries, 27% of these organizations were authorities or regulatory bodies, and 11% were research organizations. 29% had a national geographic coverage, 32% had a wider coverage (European or International, beyond Europe), and 34% had a narrower coverage (city or region).

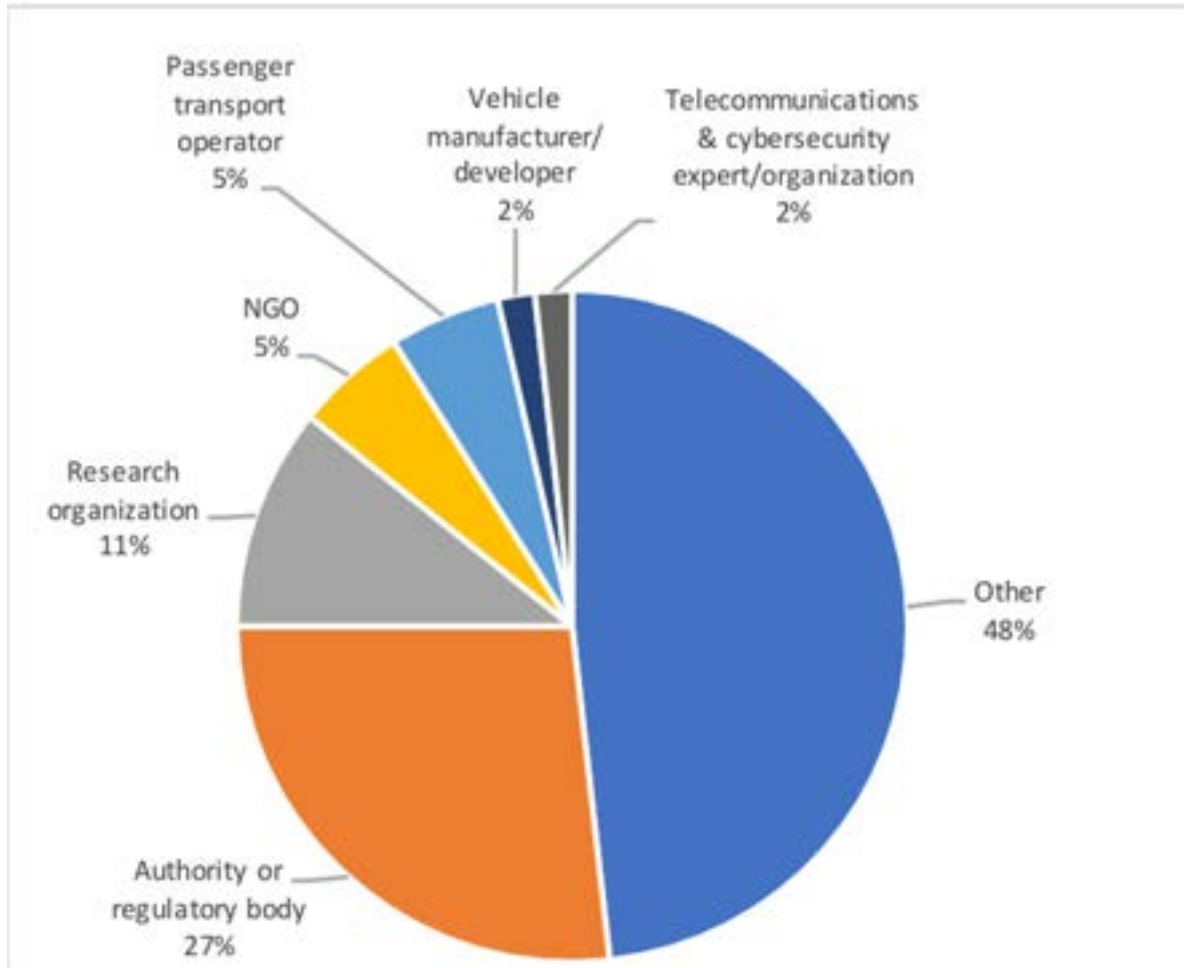


Figure 7: Organisations' characteristics (all countries): type

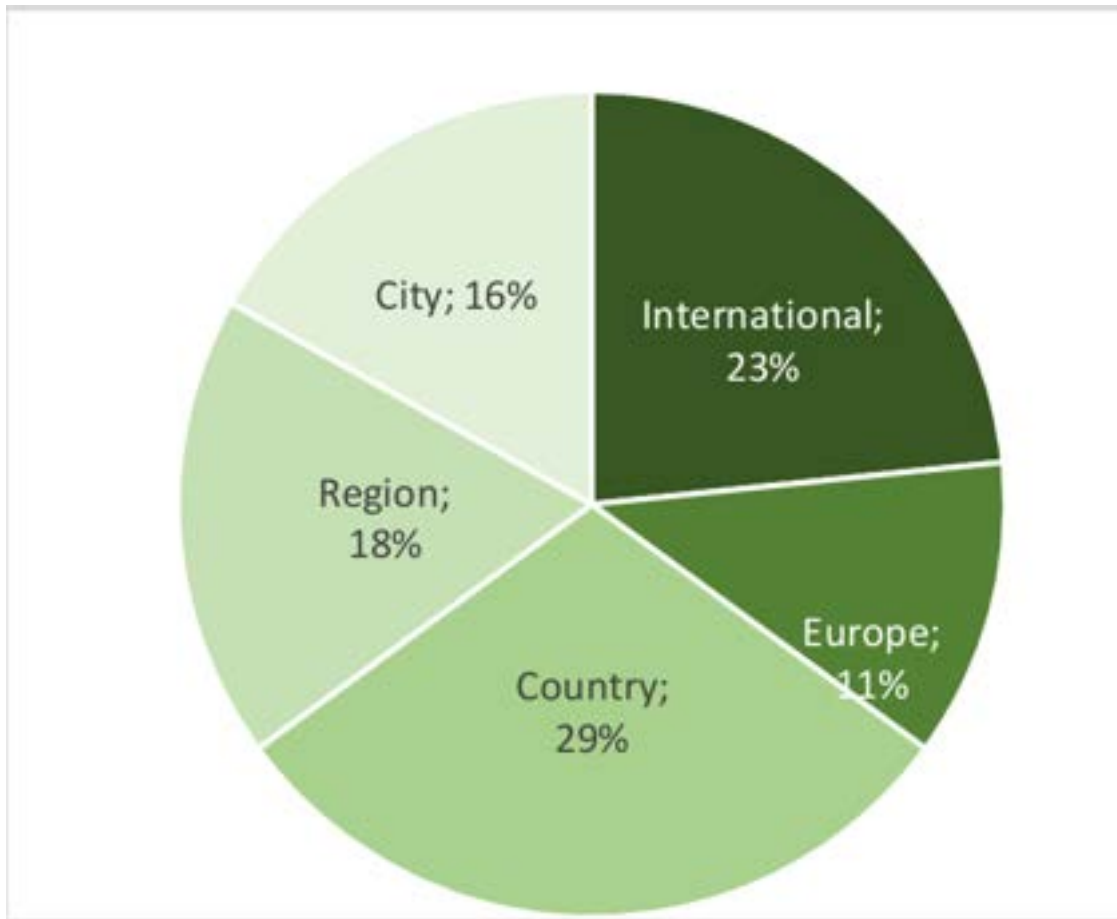


Figure 8: Organisations' characteristics (all countries: geographic coverage)

5.5. Lessons learned from Activity 3

Defining business models is still one of the most challenging and important steps when conceiving a service. For activity 3, since most of the use cases and scenarios were hypothetical and not yet commercially available, the business model development would have been strenuous. Therefore, the business modelling process was simplified, by deconstructing the usual business model canvas template (that oftentimes requires deep understanding of the intricacies of the service and technology) into a three-pillared canvas focusing only on the core aspects of the business model (value proposition, business structure, and impact). Moreover, we tried to avoid technical wording to facilitate understanding of the questions included within the template. From the feedback provided by participants and activity moderators this simpler version of the business model canvas facilitated engagement and the quality of contributions.

Above all, we believe that the most important piece of the puzzle in a business model is its value proposition. Specially in the context of MOVE2CCAM, where we are defining how specific CCAM scenarios add or subtracts value to its users. Perception of value is crucial in the procurement decision-making process. By clearly communicating the benefits and unique selling points, deployers and local authorities can create a positive perception, leading to increased user trust and loyalty towards AVs.

The detailed findings from activity 3 are reported in D1.2 CCAM uses cases, business models, scenarios and KPIs.

5.6. Engagement KPIs for activity 3

The engagement KPIs set out in Annex 1 – Description of the Actions (Part B) of the proposal, for activity 3 were the same as the KPIs set out for activity 1: 40 organisations in each of the three prototypical regions (NL, PL, GR), and at least 120 organisations in the remaining regions (UK, DE, SP, FR, CY).

As shown in Table 3 of section 4.4, participation levels were lower than originally anticipated. 111 organisations took part in total from all regions, as opposed to the original target of 240 organisations. This is a significant increase from activity 1, where only 49 organisations took part in the workshops in all regions. This is due to partners' reinforcing their engagement efforts and managing to secure a larger number of attendees. Again, lack of availability and time constraints on the organisations' side were the main reasons for not attending the sessions.

Participating organisations enabled achieving the target of co-creating 15 business models in total. Each region focused on a total of 5 use cases, allowing for more time to explore in detail their use cases and generate innovative and creative ideas for building their business models.

6. Qualitative assessment of impact

6.1. Overview

The qualitative impact assessment (Activities 4 & 5) focused on exploring citizens' and organisations' perceptions of the potential impacts of autonomous vehicle use cases presented to them. In each region, between 30 and 40 members of the public and 10 to 40 organisations considered a total of four use cases. Particular attention was paid to the relevance of use cases to the regions, based on the results of the sessions organised to co-create use cases and business models (MOVE2CCAM activities 1,2,3). Qualitative sessions were organised to understand impacts in terms of the eight MOVE2CCAM domains; mobility, safety, human health, environment, network efficiency, economy, land use, and equity. Citizens and organisations also considered the potential effects for identified impacts within each domain, co-creating causal effect diagrams for each use case.

6.2. Citizens online activities

Citizens across all regions joined a week-long online engagement platform with tasks designed to familiarise them with the use cases and domains ahead of the workshop sessions, and allow for a maximum amount of time in the workshops to develop the causal effect diagrams. For each use case, citizens answered questions on three of the eight MOVE2CCAM domains, giving in-depth data across the whole sample, while keeping the online engagement activity short enough to retain participant interest.

- All participants answered questions on mobility – as it is the domain where individual behaviour is most influential.

- All participants answered questions on one of these three domains; safety, economy, and environment – as previous sessions suggested citizens had the most developed views with regards to these domains.
- All participants answered questions on one of these four domains; health, network efficiency, land use, and equity.



Figure 9: Images from online citizen engagement platform exercises

After the online engagement was completed, citizens in the UK, Spain, Germany, France, and Cyprus participated in 2-hour online workshops, using the Zoom platform.

The workshops were designed to understand:

- What positive and negative impacts do citizens imagine will arise from the use cases proposed, and which impacts are the most important to them.
- What they see as the potential effects / consequences of identified impacts.
- Citizens' views on the timeline for deployment of each use case in the next few years.

Citizens were split into smaller groups within each workshop, each group looking at two-three use cases in detail and working together with the moderator to develop causal effect diagrams for each use case (including findings from the online engagement platform). Each group's work was then presented to another group, allowing a higher number of participants to review and input into each causal effect diagram.

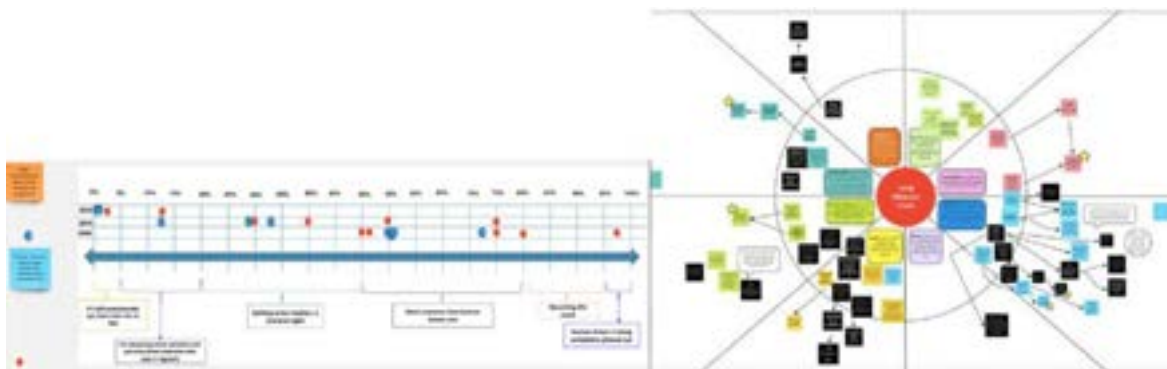


Figure 10: Images from online citizen workshop exercises

6.3. Citizens face to face activities

After taking part in the online engagement platform, citizens in The Netherlands, Poland and Greece took part in 2-hour face-to-face workshops, which followed the exact same format as the online workshops, only using materials in printed form.



Figure 11: Images from face to face citizen workshops

6.4. Organizations face-to-face activities

Organisations in the Netherlands, Poland and Greece took part in 2-hour face to face workshops following the format of the citizens' workshops (5.2 and 5.3). While organisations did not take part in the online engagement platform (this was determined to be unnecessary due to their existing expertise and lack of time), they received the use cases via email in order to familiarise with them and start forming views on their potential impacts ahead of the workshops.

6.5. Organizations online activities

Organisations in the UK, Spain, Germany, France and Cyprus also took part in 2-hour online workshops following the same structure as described in 5.4.

6.6. Participating citizens and organisations in activities

Table 5 shows the number of participating citizens and organisations in activities 4 and 5. Further detail on citizens' demographic information and organisations' characteristics (sector, area covered), will be presented in D2.4 Engagement Activities Summary Final, once analysis of collected data and information from activities 4 and 5 is completed.

Table 5: Sample size per country

	NL	PL	GR	DE	UK	FR	SP	CY	All
Citizens	33	40	40	28	34	11	291	17	232
Organisations	13	16	9	16	9	-	13	11	87

6.7. Lessons learned from activities 4 and 5

A combination of immersive and innovative approaches, such as the online engagement platform, co-creation workshops and an online collaboration platform (Miro), were implemented in activities 4 and 5 to enable citizens and organisations identify potential impacts of CCAM solutions.

While analysis of the findings from across the eight participating regions is ongoing and will be reported in detail in D2.4 Engagement Activities Summary Final, there are several areas of consensus among citizens and organisations.

There is a view that if CCAM mobility services improve connectivity for remote regions, lower congestion on roads, and create greater economic opportunities, this will support positive opinions and faster uptake.

However, several issues emerge which could undermine support and adoption of these services – especially concerns about passenger safety, failing to ensure equity (e.g. accessibility and affordability), and loss of existing jobs for drivers.

6.8. Engagement KPIs for activities 4 & 5

The engagement KPIs set out in Annex 1 – Description of the Actions (Part B) of the proposal, for activity 4 were the same as the KPIs set out for activity 1: 40 organisations in each of the three prototypical regions (NL, PL, GR), and at least 120 organisations in the remaining regions (UK, DE, SP, FR, CY). As for activity 5, the target was to include 32 participants from each region (a total of 256 citizens).

As described in Table 5 of section 5.6, participation levels were relatively good for citizens, just under the original target of 256 (232 in total achieved). This was enabled by reconvening recruited participants from Activity 2 and recruiting new participants, as much as possible, in cases where dropouts had occurred. Organisations' participation levels were lower than the original target. 87 organisations took part in total from all regions, as opposed to the original target of 240 organisations. Again, issues such as time constraints / lack of availability were the main reasons behind low participating levels.

The targeted design of the qualitative sessions allowed participants to explore in detail potential impacts for selected use cases, focusing on the eight MOVE2CCAM domains, referenced in 5.1 and 5.2. Data from the sessions will inform the design and development of the MOVE2CCAM Impact Assessment Modelling Tool and will be reported in detail in D2.4 Engagement Activities Summary Final.