



Capacity-building webinar 1

**Connected and Automated
public transport policy,
information and awareness**

15 July 2025



Welcome! Housekeeping

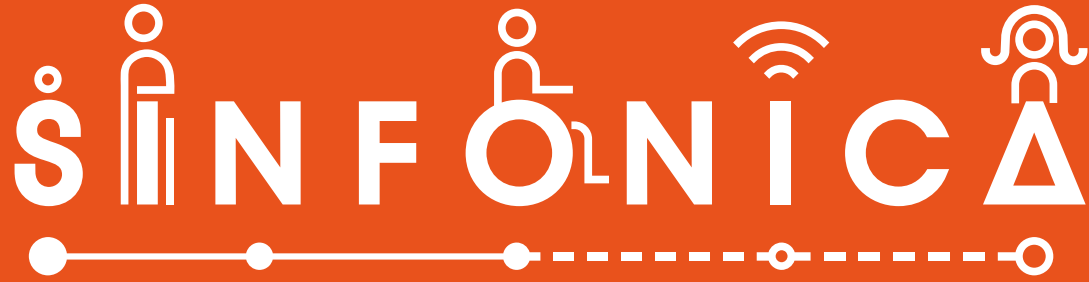
- Please feel free to use the Teams chat function to post questions and your comments.
- Please raise your hand if you would like to ask a question at the end of each presentation.
- Please turn off your camera unless speaking.
- Please mute your microphones when you have finished speaking.
- This session will be recorded and shared on the website of SINFONICA.

Agenda



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Time (CET)	Item	Presenter
10:00	Introduction to SINFONICA	Mauro Dell'Amico, UNIMORE
10:05	Introduction to the webinar and background to the work	Andrew Winder, ERTICO
10:10	Equity practices and social indicators for CCAM in European projects and legislation overview in selected countries	Riccardo Enei, ISINNOVA
10:20	Policy approach in Noord Brabant, The Netherlands	Lars Meijer, Provincie Noord Brabant
10:35	Policy approach in the West Midlands, UK	Matthew Shelton, Transport for West Midlands
10:50	Recommendations for CCAM policy: Rules and regulations; Market-based instruments; Infrastructure development	Riccardo Enei, ISINNOVA
11:10	Recommendations for CCAM policy: Information and awareness	Andrew Winder, ERTICO
11:25	Wrap-up and upcoming events	Andrew Winder, ERTICO



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Introduction to SINFONICA at a glance

Professor Mauro Dell'Amico

University of Modena and Reggio Emilia (UNIMORE) /
ICOOR

Capacity-building webinar 1: Connected and
Automated public transport policy, information and
awareness, 15 July 2025

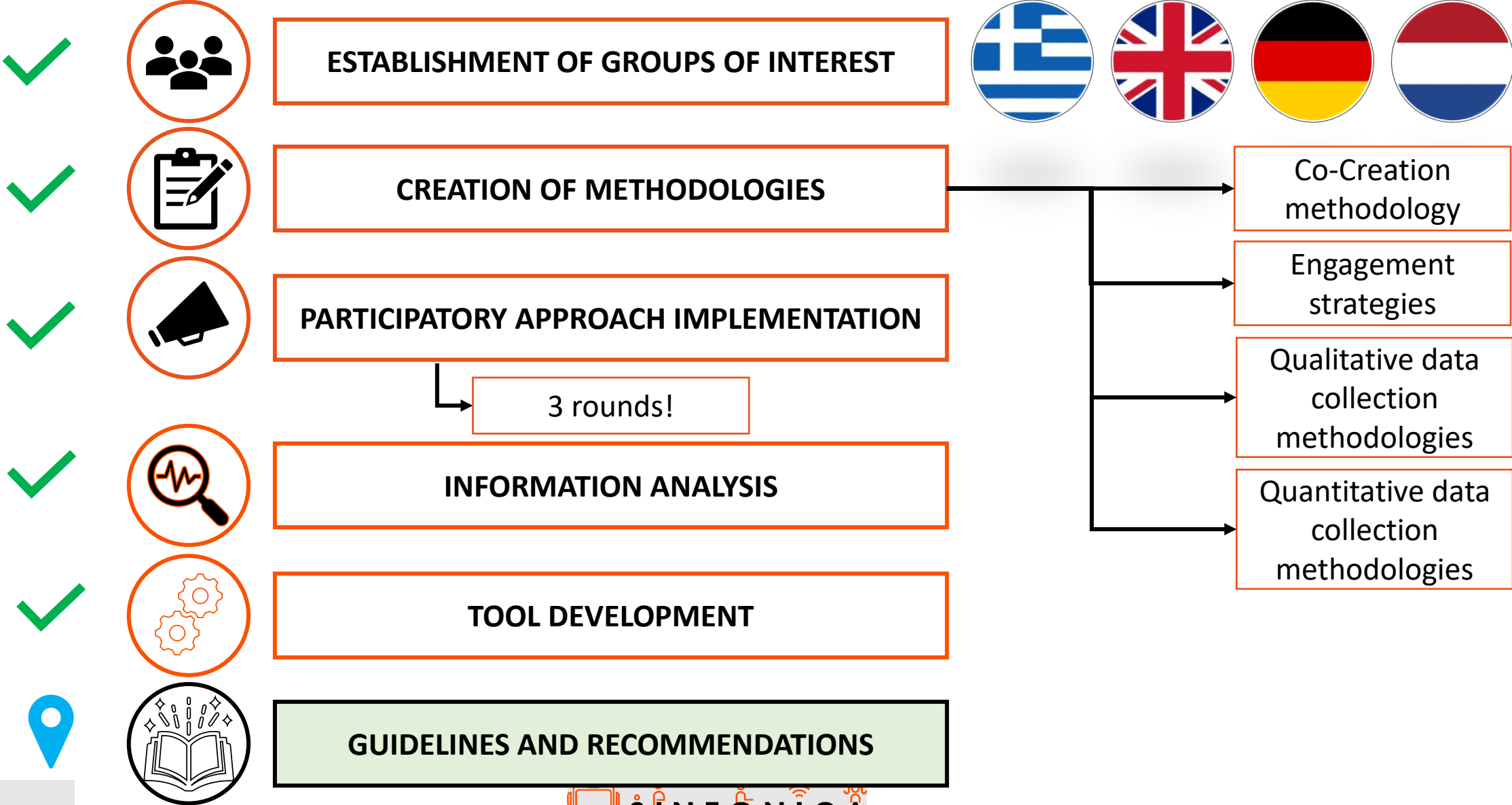


SINFONICA at a Glance

- **SINFONICA: Social INnovation to FOster iNclusive cooperative, Connected and Automated Mobility**
- **Call identifier:** HORIZON-CL5-2021-D6-01
- **Topic:** HORIZON-CL5-2021-D6-01-05 (Area B)
- **Time frame:** 2022 – 2025
- **Partners:** 13 + 1 (7 countries)
- **Budget:** 3 759 723,75 €
- **SINFONICA Goal:** to develop functional, efficient, and innovative strategies, methods and tools to engage CCAM users, providers and other stakeholders to **collect, understand and structure in a manageable and exploitable way their needs, desires, and concerns related to CCAM.**



Methodology



4 countries
300 Interviews
36 focus groups
20 workshops
4200 questionnaires

Participatory Approaches



INTERVIEWS

70

70

70

80

290

FOCUS GROUPS

9

9

9

9

36

WORKSHOPS

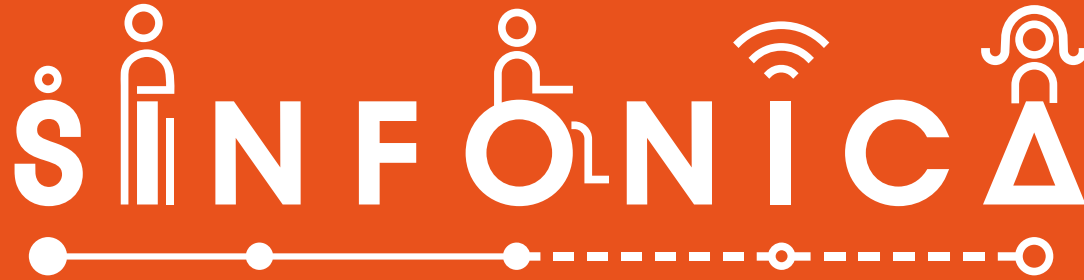
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Introduction to the webinar and background to the work

Andrew Winder
ERTICO – ITS Europe

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Elements of SINFONICA

**Webinar 2
(August)**

Shaping the SINFONICA strategy to capture the mobility needs of users (demand side) and CCAM challenges (supply side)

- Stakeholder engagement strategies, participatory methods to capture mobility needs, user factors, simulation models for upscaling needs

Understanding **expectations, concerns, and desires** toward CCAM

- Participatory approach implementation: engagement and consultation with groups of interest and local actors in 4 cities/regions, data analysis and scaling up

SINFONICA Knowledge Map Explorer

Strategies, methodologies, and recommendations for an inclusive equitable and accessible future CCAM

- Equity practices and social indicators
- Definition of limits and possibilities of CCAM solutions
- Long-term policy recommendations
- Guidance on communication
- Guidance on implementation
- Recommendations for large-scale demonstration projects

Webinar 1 (this one)

**Webinar 3
(September)**

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Webinar July 2025

Equity practices and social indicators for CCAM in European projects and legislation overview

15 July 2025

Riccardo Enei, ISINNOVA



Equity practices and social indicators for CCAM in European projects and legislation overview



1) Equity practices and social indicators for CCAM in European projects

- Knowledge Base on Connected and Automated Driving (CAD)

<https://www.connectedautomateddriving.eu/projects/>, showing more than 300 projects dealing with automated driving

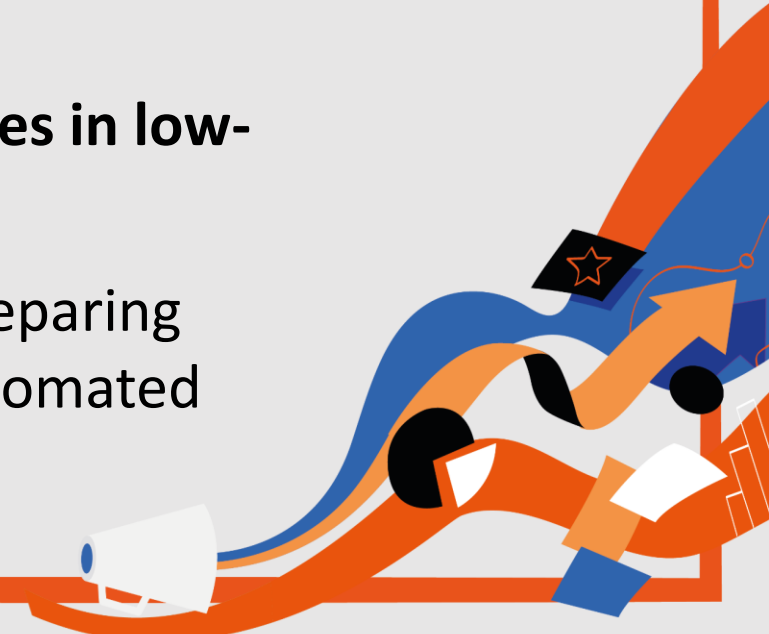
For a closer look:

- SINFONICA Deliverable 5.1 “Equity practices and social indicators”, October 2023

EU Projects review

Criteria for the EU project identification :

1. **Projects should deal with autonomous buses**, examining tests and pilots in several European cities. A special attention has been devoted to projects completed over the past 10 years
2. **CCAM services should focus on the problems arising from the integration** of the new automated services in the public transport network. Accessibility for people with mobility challenges
3. Other fields of interest are the **provision of such new services in low-demand areas** and the factors affecting users' acceptability
4. **Projects should deal with strategic and technical issues**, preparing the future public transport systems to accommodate for automated solutions, e.g. future mobility planning challenges



EU Projects review

40 EU projects have been selected, organized in four clusters:

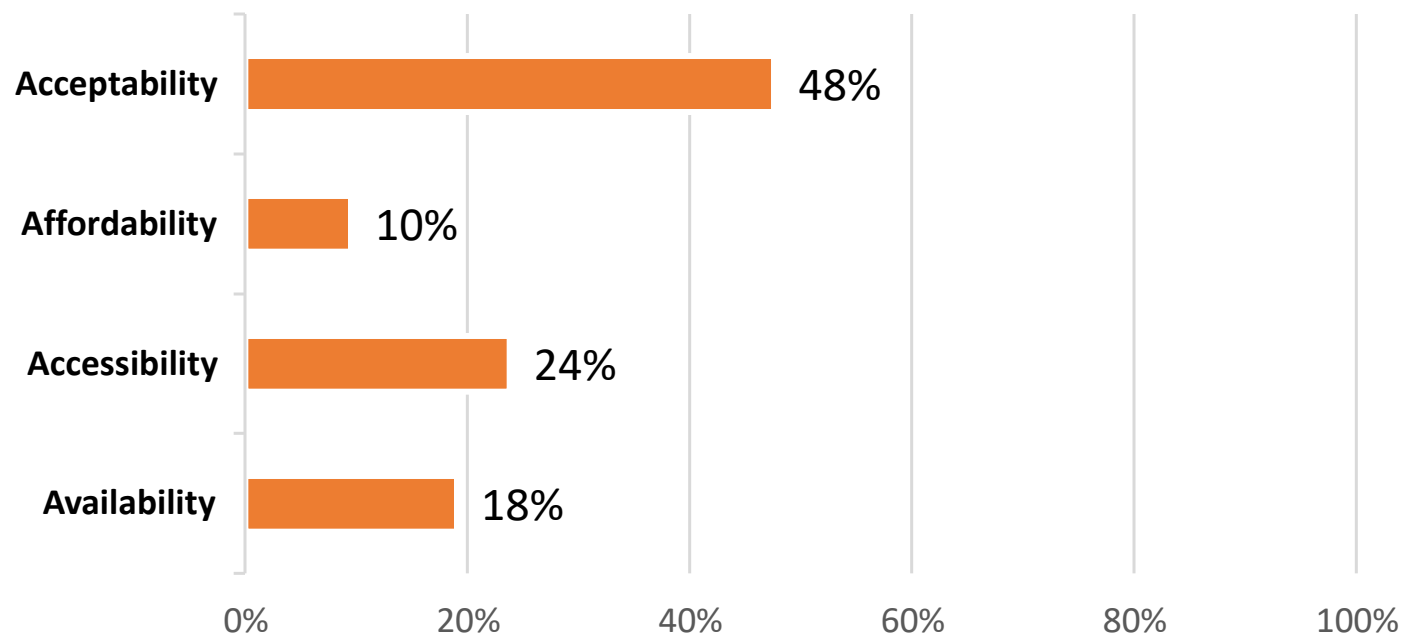
1. Nine CCAM projects dealing with strategical issues (e.g., governance, emerging business models, acceptability, etc).
2. Seven CCAM projects dealing with the public transport domain, i.e., autonomous buses and shared services.
3. Twelve CCAM projects dealing with acceptance of automated vehicles, both on the technological and behavioural point of views.
4. Twelve CCAM projects dealing with the implementation of new technological solutions



EU project review

Which aspects of social equity are most frequently addressed?

Social equity components addressed in the sample of 40 CCAM projects

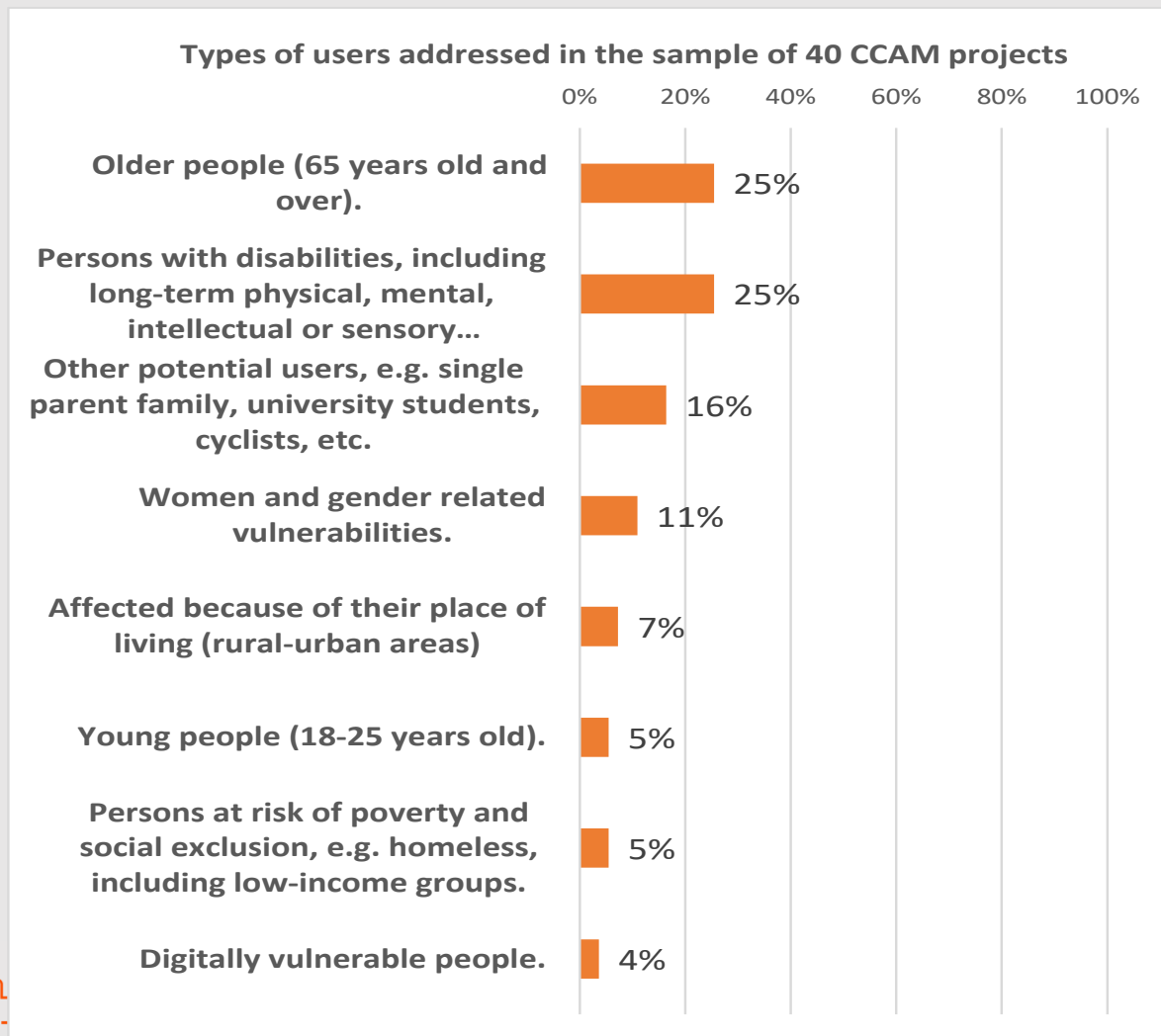


1. Acceptability of future drivers (trust, perceived safety, comfort) and pursuing accessibility for everyone represent 72% of social equity indicators

2. Downgrading of affordability (only 10% of all occurrences), which is hardly justifiable, considering the potential discriminations on the demand side, due to lower users' spending capacity and income levels

EU project review

Which CCAM types of users are most frequently addressed?



1. It may be observed that across the 40 CCAM projects, elderly (people with more than 65 years) and persons with disabilities (physical and cognitive) account together with 50% of the overall occurrences

Equity practices and social indicators for CCAM in European projects and legislation

overview



2) Legislation overview

- France, Germany, Greece, Italy, The Netherlands and UK

For a closer look:

- SINFONICA Deliverable 5.3 “Vision policy recommendations for user-centric CCAM”, March 2025

EU legislation review

Five recurring topics on AV:

1. Safety and technical standards. In France, the key legislative framework is based on the LOM (Loi d'Orientation des Mobilités, 2019) and further modifications, allowing CCAM to operate without a human driver under predefined conditions, provided they meet safety standards. In Germany, there is the Autonomous Vehicle Act (2022). Harmonization of safety regulations is a priority, and despite national variations persist, the EU legislation in the sample of countries under examination is on the way to define common standards and binding rules. Lack of reference when vulnerable groups of users are involved.

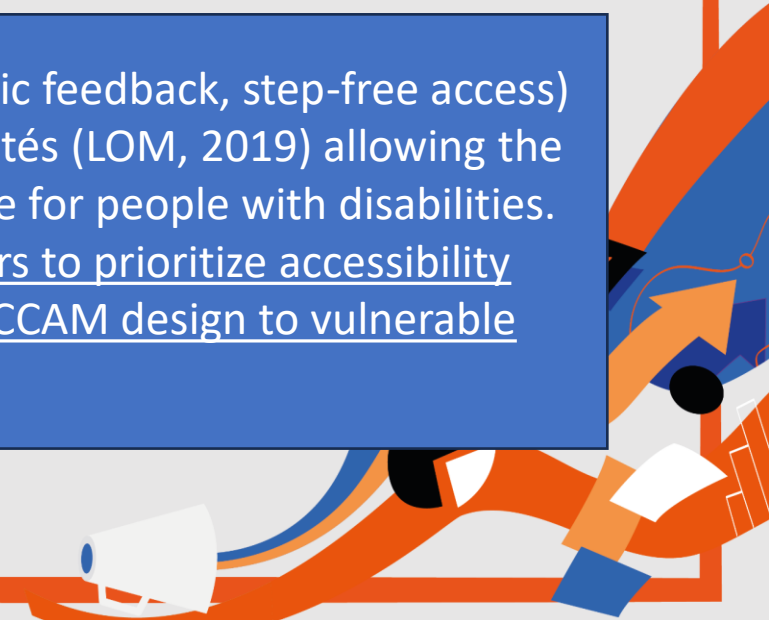
2. Liability and insurance. Some legislations (UK, Germany) require separate insurance policies for autonomous vehicles, but Italy currently applies its general liability regime to autonomous vehicles, as there are no specific liability rules tailored for autonomous vehicles. In UK, in terms of regulatory framework, the most relevant reference is the Automated Vehicles Act (2024). This foundational law provides the legal basis for insurance and liability related to autonomous vehicles. It ensures that all autonomous vehicles have insurance coverage rules that cover damages caused when the vehicle operates in automated mode. Challenges in this topic concern a lack in harmonised rules at EU level.

EU legislation review

Five recurring topics on AV:

3. Ethical and legal considerations. Some regulatory frameworks (such as the Ethical Guidelines for autonomous vehicles in Germany) prohibit autonomous vehicles from making choices based on individual characteristics (e.g. age, gender). This area's key challenge is related to the difficulties in defining global ethical frameworks that guide AI-driven decision-making in emergencies.

4. Accessibility and inclusion. Mandatory accessibility features (voice control, haptic feedback, step-free access) are being integrated into CCAM design. The French Loi d'Orientation des Mobilités (LOM, 2019) allowing the circulation of fully automated vehicles especially public transport, to be suitable for people with disabilities. The key policy challenge in this topic is to ensure private CCAM manufacturers to prioritize accessibility beyond government-mandated public transport projects, through a tailored CCAM design to vulnerable groups of users.



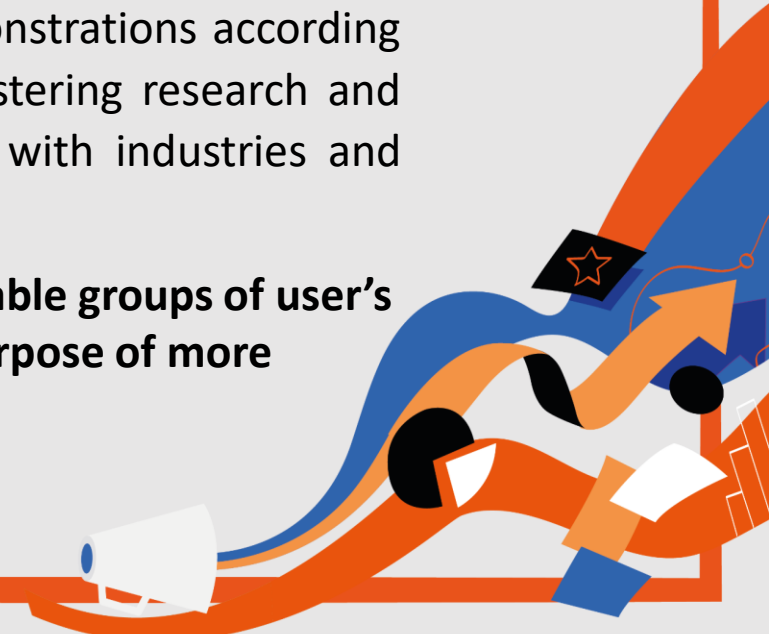
EU legislation review

Five recurring topics on AV:

5. Cybersecurity and data protection. EU legislation is progressing; cybersecurity measures are also enforced to protect against hacking and data breaches. Key challenges concern with the lack of harmonisation: internationally, standards differ.

Conclusions: The sample of EU countries shows two main trends: 1) integration of autonomous vehicles in the national Road Code, specifying conditions to run trials and demonstrations according to national safety standards. 2) Dispositions for funding R&D in the sector, fostering research and trials on automated vehicles and promoting Memorandum of Understanding with industries and research institutes.

What is still needed is a more decisive step towards the consideration of vulnerable groups of user's needs. Requirements on how to design and adapt CCAM services serving the purpose of more inclusivity are lacking in the EU legislation.





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Webinar 1 – 15/07/2025

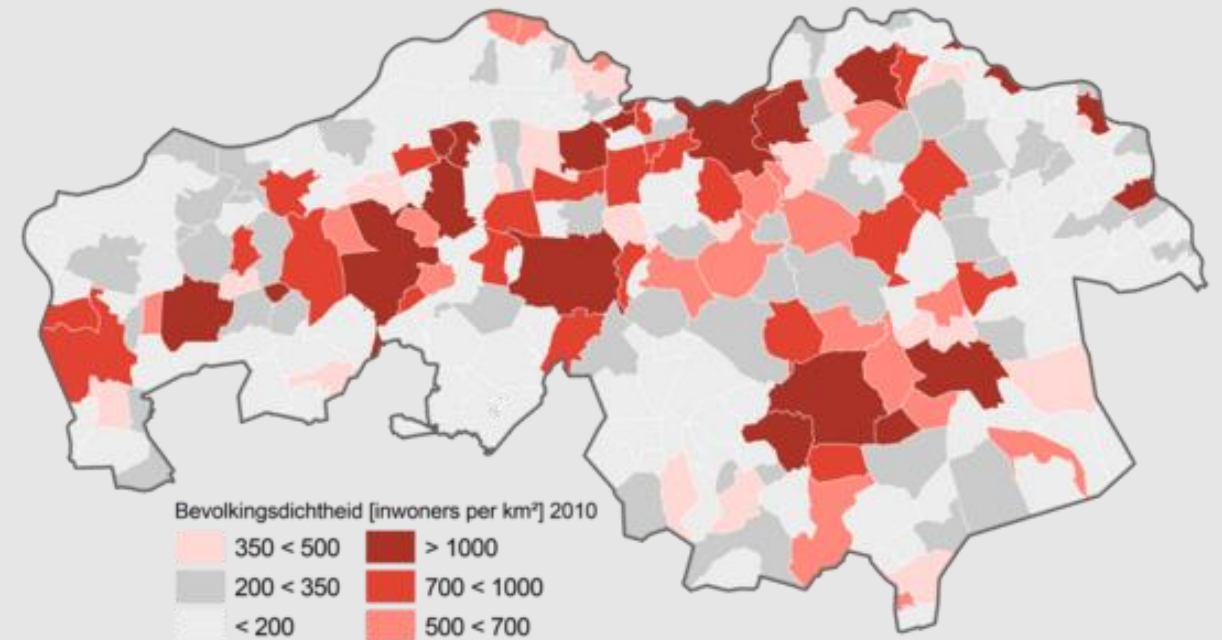
Policy approach Provincie Noord-Brabant

Lars Meijer



Provincie Noord-Brabant

- **56 municipalities; 2,5 million inhabitants**
- **Characteristics:**
 - Brainport Region (Innovation)
 - Delta Rhine Corridor (Economic)
 - Efteling (Leisure)
 - Big cities (Eindhoven, Tilburg, Breda, Den Bosch) vs. Rural areas (De Peel, Kempen en Meierij)
- **Public Transport Services:**
 - Train (National)
 - Bus (Province = PTA)
 - Paratransit (Municipalities)
- **CCAM Services:**
 - Bravoflex



Why is North Brabant a partner?

- Are involved in innovations in mobility from SmartwayZ.NL > CCAM
- Focuses on policy recommendations for CCAM, particularly aimed at vulnerable target groups
- Contribution to public transport accessibility policy
- Collaboration with one of the bus operators in Brabant: Arriva

Vulnerable people addressed

Target groups (besides general target groups):

- **People in rural areas:** Living in small villages and less access to public transport
- **Migrants:** Not used to Dutch public transport system + language barrier
- **Single parent families:** Financially not always easy

9 focus groups (±8p)

3 workshops (±20p)

80 interviews

565 respondents survey



Policy recommendations from Noord-Brabant

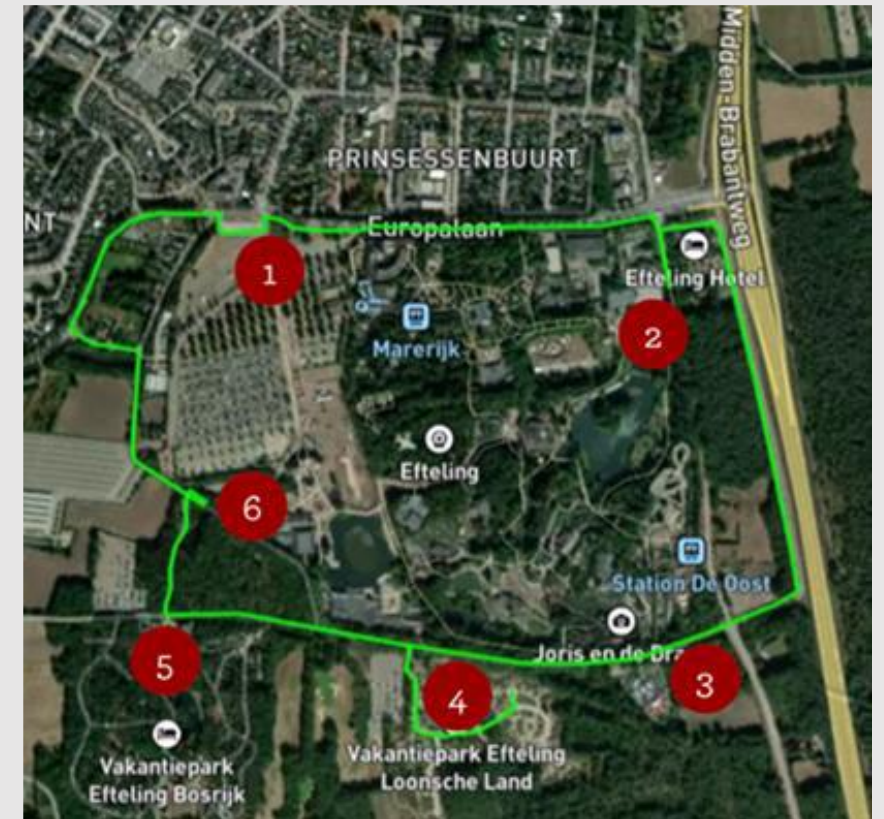
1. Travel assistance (possibility to stay in contact with a person)
2. Meet accessibility requirements of PT
3. Good information provision (developments of apps)
4. Safe and comfortable seats inside bus
5. Digital booking system must be simple, especially for digitally illiterate

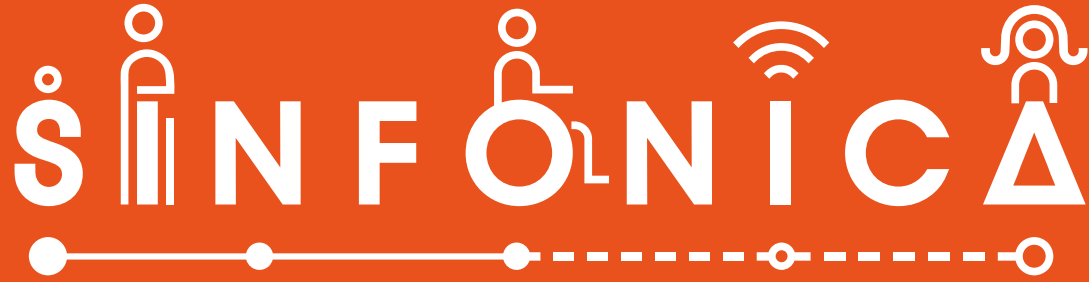
Implement policy recommendations in current and future concessions

1. Fixed platform for each bus line
2. Information kiosks with audio description capabilities
3. Development of app for bus to stop
4. Working facilities: wheelchair ramp, stop announcement system

Autonomous shuttle Efteling

- Together with Arriva
- Link with public transport and visitors of theme park
- Focus on acceptance of vulnerable users
- Including policy recommendations





Webinar 1 – 15/07/2025

Policy approach Transport for West Midlands

Matthew Shelton



West Midlands Combined Authority

- **7 Boroughs; 2.9 million inhabitants**
- **Characteristics:**
 - Birmingham 2nd City of the UK
 - Black Country former industrial heartland
 - Coventry Rich Automotive History
 - Solihull Home to JLR, Birmingham Airport & NEC
 - Big cities (Birmingham, Coventry, Wolverhampton) vs. Rural areas (Solihull)
- **Public Transport Services:**
 - Train (Regional & National Operators)
 - Bus (Comprehensive coverage ran by Operators)
 - Metro (Operated by MML an arm of WMCA)
 - Birmingham Airport



Why is the West Midlands a partner?

- The West Midlands has been running CCAM projects for the last Eight years. These have tended to focus on the CCAM technologies. However, these pilots have only run for a few days or week and not sustainable long-term.
- A key interest for Transport for West Midlands is to understand how to turn small CCAM scale pilots than run a few weeks or months into sustainable, viable services going forward. It will be therefore interesting to understand, according to the citizens and future users, how demonstrations can ensure a starting point for real, long-term implementations.
- In this group of interest, commercialisation and business models will also be widely analysed as these aspects are just as important as user needs: a CCAM solution that meets user needs but has no viable financial model will not be successful.



**West Midlands
Combined Authority**



**Transport for
West Midlands**



Vulnerable people addressed

Target groups (besides general target groups):

- **People with physical disabilities:** Informing us of accessibility challenges they have using traditional Public Transport
- **People on Low Income:** Informing us of financial challenges they have using traditional Public Transport

9 focus groups ($\pm 8p$)

3 workshops ($\pm 15p$)

80 interviews

521 respondents survey



Policy recommendations from West Midlands

1. Clear and concise wording about what Automated Vehicles are
2. Automation is part of a Multi Modal Toolbox
3. Safety and the perception of safety is critical
4. Accessibility must be at the centre of design
5. Consistent pricing with other transport modes

Project SCALE

- Consortium project located at the NEC (National Exhibition Centre) in Solihull
- Connects large business park to the NEC site, airport and Rail Station
- Project ongoing until end of 2025
- Precursor to ITS World Congress at the site in 2027





Webinar July 2025

Recommendations for CCAM policy: Rules and regulations; Market-based instruments; Infrastructure provision

15 July 2025

Riccardo Enei, ISINNOVA



Recommendations for CCAM policy: Rules and regulations; Market-based instruments; Infrastructure provision



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Taxonomy of policy tools

- Rules and regulations
- Market based instruments
- Infrastructure provision
- Information and awareness

For a closer look:

- SINFONICA Deliverable 5.3 “Vision policy recommendations for user-centric CCAM”, March 2025



Taxonomy on policy tools

The taxonomy of policy tools identifies four categories:

1. **Rules and regulations**, command & control measures, e.g. decrees, laws, regulatory framework, etc,
2. **Market-based instruments**, involving economic instruments like subsidies and taxes, Research & Developments grants, etc.
3. **Infrastructure provision**, supply side measures, involving actions in terms of infrastructure integration, urban planning and development
4. **Information and awareness**, soft measures, e.g. awareness and communication campaign



Rules and regulations

Recommendations for better provision of inclusive CCAM services:

- **Common EU Standards on Safety**
- **Liability:** Regulations should also clarify liability in case of accidents
- **Common standards for Privacy and Data Protection**
- **Permits for Operators:** Operators of automated transport services should be required to obtain a permit to operate, and this permit should be conditional on meeting accessibility criteria



Market-based instruments

Recommendations for better provision of inclusive CCAM services:

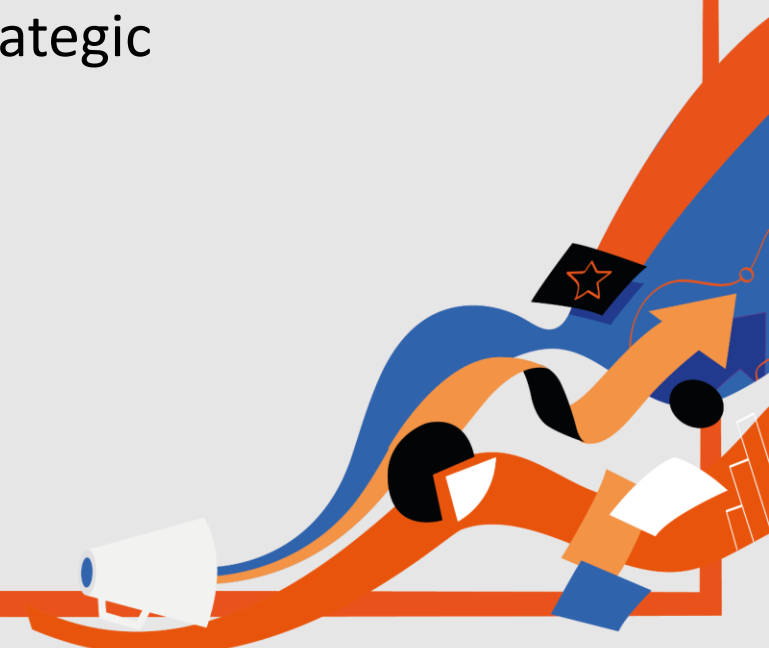
- **Better incentives and Subsidies, more grants and R&D support**
- **Public-Private Partnerships (PPP)** Public-private partnerships (PPP) could be an effective tool for financing and implementing automated transport services
- **Pricing Strategies:** CCAM service prices must be competitive compared to alternatives, considering different users' willingness to pay



Infrastructure provision

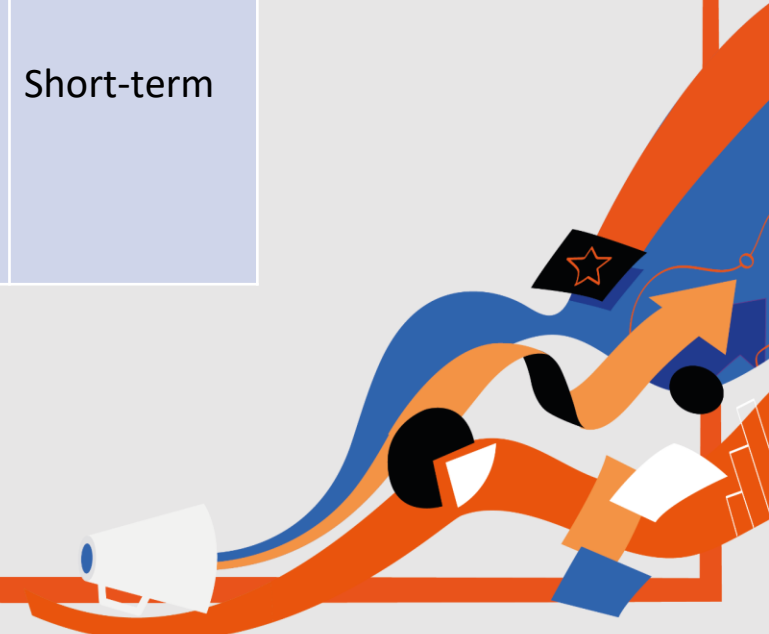
Recommendations for better provision of inclusive CCAM services:

- **Digital Infrastructure:** Beyond physical infrastructure, it is crucial to develop digital infrastructure to support connectivity and communication
- **Physical Infrastructure:** Existing physical infrastructure is often inadequate to support CCAM services and accessibility
- **Planning & Coordination:** the need for a coordinated and strategic approach at urban/regional level (e.g. SUMP)



An overall view on policy recommendations

Policy tool	WHAT	WHO	WHEN
Rules and regulations	<ul style="list-style-type: none"> • Safety and liability standards • Privacy and data protection • Ethical issues 	Policy makers at EU and national level	Long-term
	<ul style="list-style-type: none"> • Vehicle design and standards for vulnerable users • Infrastructure Interoperability • Public Service Obligations for vulnerable groups 	Policy makers at EU and national level Transport Authorities, Operators and manufacturers Transport Authorities and Operators	Short-term



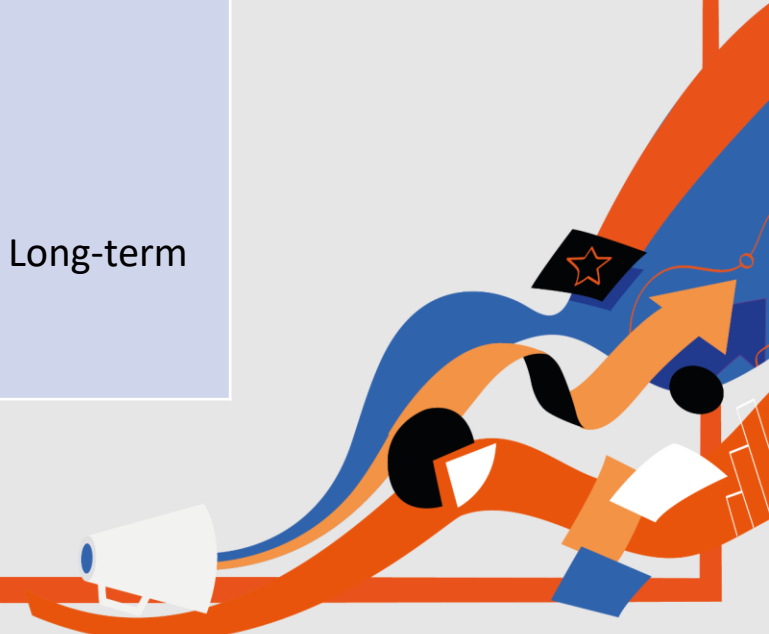
An overall view on policy recommendations

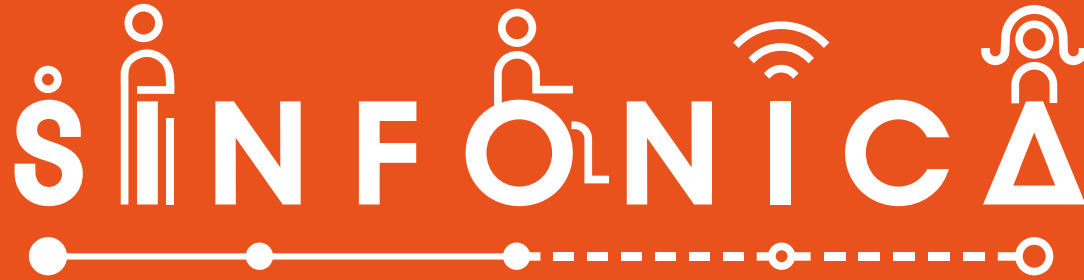
Policy tool	WHAT	WHO	WHEN
Market-based instruments	<ul style="list-style-type: none"> Incentive & subsidies MoU, Public Private Partnerships R&D programmes 	Policy makers at EU, national and local level, Transport Authorities, Operators, manufacturers	Short-term
	<ul style="list-style-type: none"> Sustainable business models 	Operators	Long-term



An overall view on policy recommendations

Policy tool	WHAT	WHO	WHEN
Infrastructure provision	<ul style="list-style-type: none"> • Accessibility (physical infrastructure) • CCAM integration in urban network • Planning & coordination (SUMP, local and national strategies) 	Local and national policy makers, infrastructure managers, Vulnerable groups of users' associations, operators	Short-term
	<ul style="list-style-type: none"> • Set up of Digital infrastrture 		Long-term





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Recommendations for CCAM policy: Information and awareness

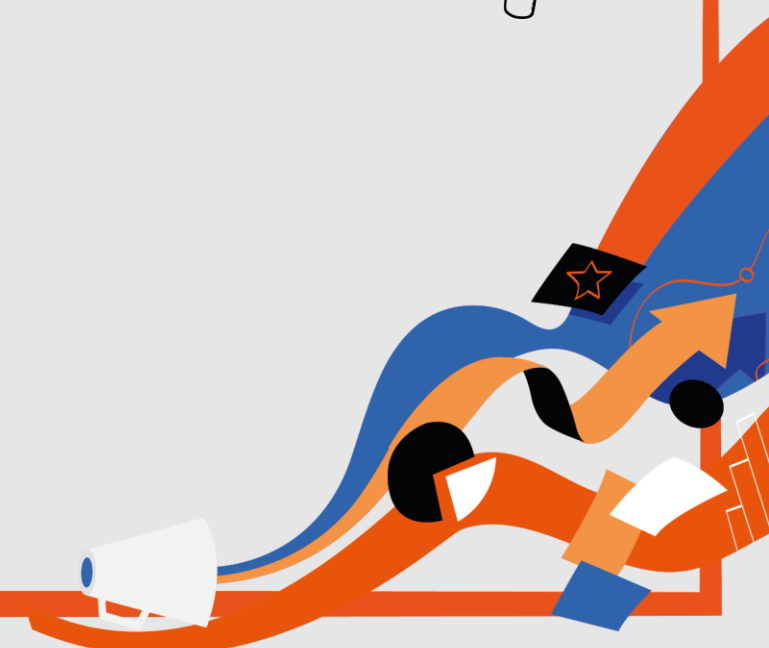
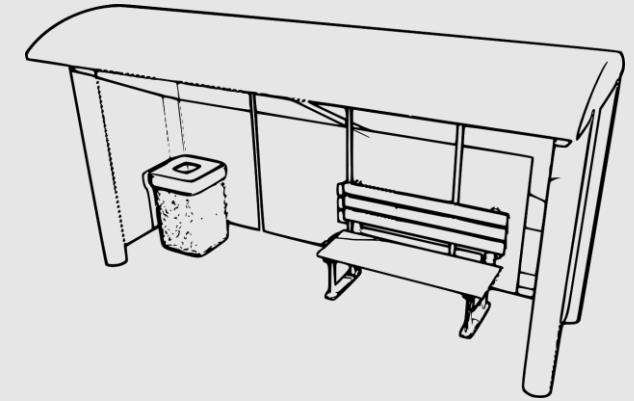
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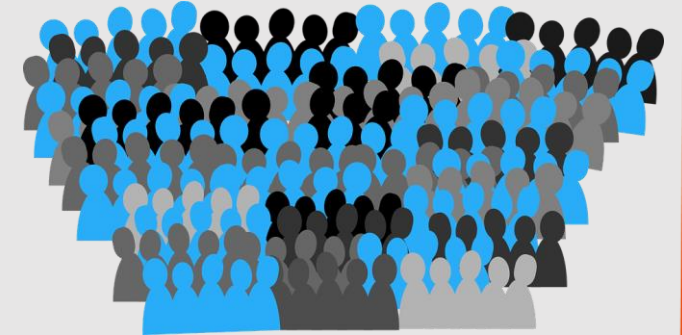
Pre-service information and communication with users and the general public

- User involvement in design:
 - Actively involve people with special mobility needs in the **design process of automated transport vehicles** and services through co-design and prototype testing to ensure the services meet their needs.
 - Co-creation not only for vehicles but also infrastructure, information provision, software design, payment systems, etc.
 - *Vehicle manufacturers, public transport authorities*



Pre-service information and communication with users and the general public

- Increase awareness:
 - Raise awareness of the existence and benefits of automated minibus services through communications and social media campaigns to increase the likelihood of their use.
 - *Policy makers (National/Local)*
- Promote active participation:
 - Organise meetings with citizens to obtain feedback on their needs and concerns, so as to improve the integration of automated minibuses into the public transport system.
 - *Policy makers (National/Local, PT operator) Infrastructure managers*



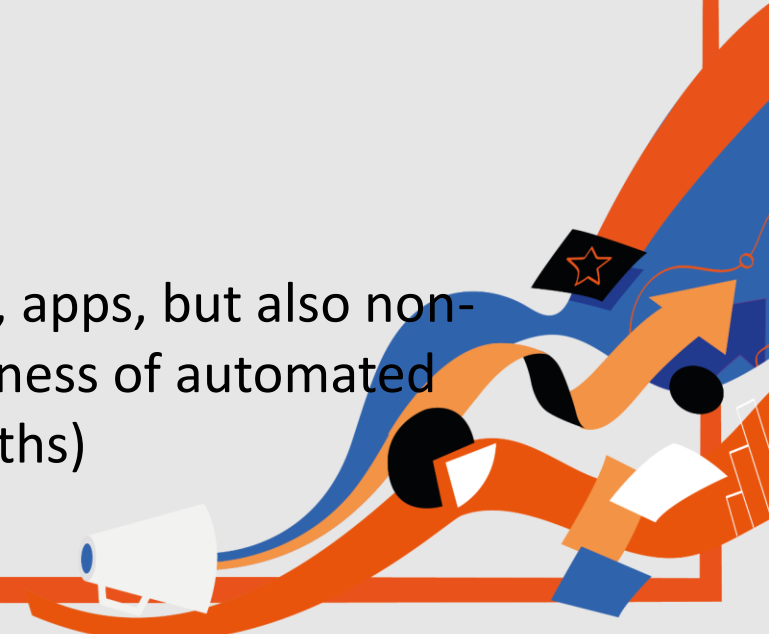
Pre-service information and communication with users and the general public

- Clarity on benefits:
 - Instead of focusing on driver absence, highlight what these new services have to offer and what concrete benefits they will bring to potential users, such as improvements in personal mobility, efficiency, environmental impact and safety.
 - Often a need for better public transport in towns and smaller cities: CCAM can help with this, as well as the challenge of expanding PT when driver availability is scarce.
 - *Policy makers (National/Local)*
- Management of concerns:
 - Openly address public fears and hesitations regarding automated minibuses, especially regarding safety, using transparent and accessible communication
 - *Policy makers (National/Local)*



Pre-service information and communication with users and the general public

- Targeted communication:
 - Use targeted communications campaigns to inform the public about the benefits of automated minibuses and to convince those who are open to the idea.
 - Emphasise real benefits for potential customers, such as flexibility, security and convenience
 - Consider potential users with no bank account, no internet connection, etc. Also children, e.g. to/from school
 - *Policy makers (National/Local)*
- Use appropriate communication channels:
 - Use the right communication channels, such as social media, apps, but also non-digital media, to reach a wider audience and increase awareness of automated transportation services (benefits, how to use, debunking myths)



Pre-service information and communication with users and the general public

- Demonstrations and road tests:
 - Practical demonstrations and road tests can help improve public perception of the safety and ease of use of the technology.
 - Confidence of the public is an issue, especially older people and the less digitally literate. Demonstrations can help build this.
 - Useful for training passengers with specific needs to use the vehicle.
 - *Policy makers, PT authorities and operators*



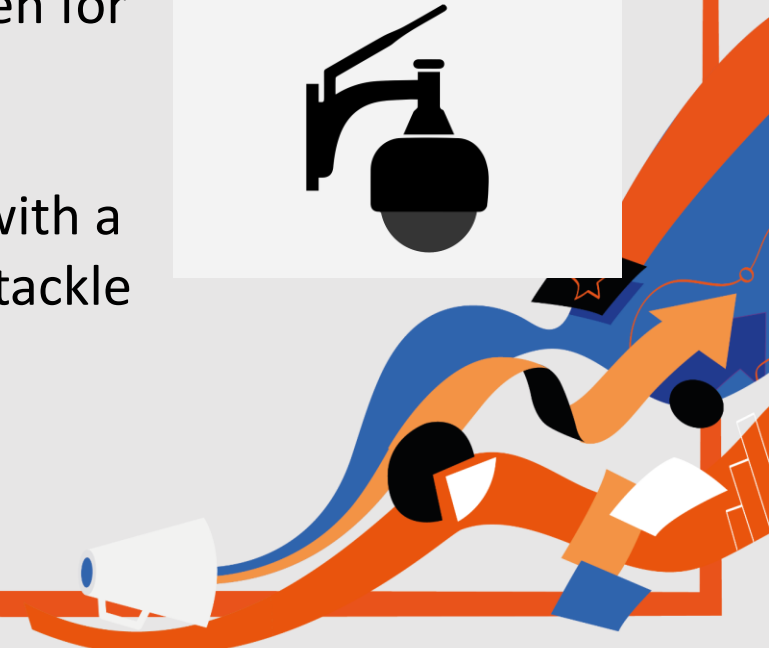
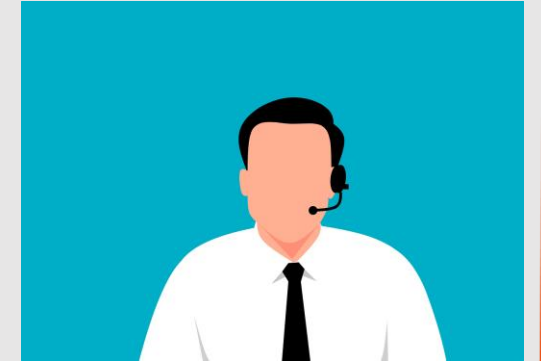
Information and communication with users and the general public

- Staff training:
 - Even with automated vehicles, it is crucial to train staff who may be on-site or available remotely (or nearby_ to assist passengers.
 - Staff should be equipped **to offer support and reassurance**, particularly for those who are less confident in their travel
 - *Infrastructure managers, PT operators*
- Access to information:
 - Provide **clear and reliable information**, both before and during travel,
 - **Accessible formats** such as tactile signage, audio and visual cues with high color contrast, easy-to-read fonts, icons.



In-service information to passengers

- Assistance systems:
 - Ensure that assistance systems for individuals with special mobility needs are **fully reliable and easy to use independently**, without the need for third-party assistance. This includes features like wheelchair ramps and attachment systems for mobility aids.
 - Cameras on vehicles can help them become “safe areas”, even for people not intending to travel, they can seek refuge in an automated vehicle if threatened, as they would be under surveillance and able to speak with an operator. Build trust with a good onboard response system can help users feel safe and tackle problems like sexual harassment.
 - *PT manufacturers, PT authorities, operators*



In-service information to passengers

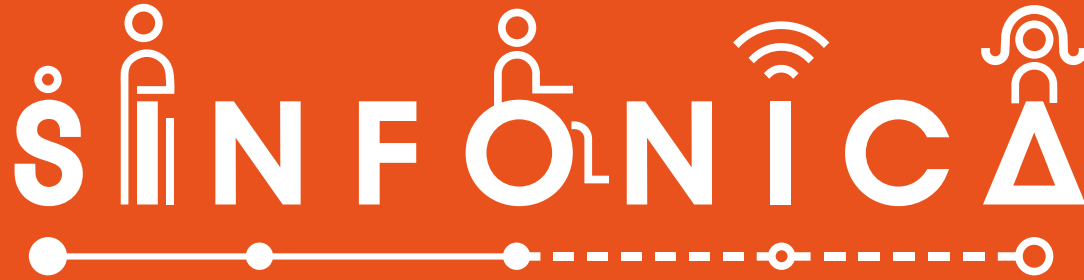
- Communication during emergencies:
 - Ensure effective communication systems for emergencies, including alternatives to the intercom for people with communication difficulties.
 - Also consider internal vehicle monitoring systems and audio systems to provide up-to-date information.
 - *PT manufacturers*



In-service information to passengers

- Passenger identification technologies:
 - Technologies that can identify passengers with special mobility needs to facilitate easier access to the service, for example, systems that detect when a wheelchair user is waiting at a stop.
 - Potentially a useful tool but raises privacy concerns, and people might not wish to be “identified” as having specific needs by such technology. Even with something clearly identifiable by AI, such as a person in a wheelchair, could have different needs and levels of mobility autonomy.
 - *PT manufacturers, PT operators and authorities*





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Wrap-up and upcoming events

Andrew Winder
ERTICO – ITS Europe

Capacity-building webinar 1: Connected and Automated public transport policy, information and awareness, 15 July 2025



Upcoming events

SINFONICA Capacity-building webinars 2 & 3

- Webinar 2: Planning for Connected and Automated public transport: How to engage with citizens
 - 25 August
- Webinar 3: Operation of Connected and Automated public transport: Recommendations for demonstration projects and public services
 - 15 September 2025

- Register for events / Keep up to date at:

- <https://sinfonica.eu>
- LinkedIn: SINFONICA project
- LinkedIn: SINFONICA Group of Followers

SINFONICA Final Event

- 28 August 2025
- The Hotel, Brussels
(near Louise / Porte de Namur metro)
- Free registration at SINFONICA website below by 31 July
- Members of the Group of Followers may apply for travel reimbursement (project partners excepted; to be agreed in advance)



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Thank you!



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