Welcome to
SUNRISE Workshop 9



Starts at 15:00 CET!

SUNRISE
SAFETY ASSURANCE FRAMEWORK FOR CONNECTED, AUTOMATED MOBILITY SYSTEMS

Role of society in CCAM Safety Validation

13 January 2025

Julie Castermans and Ainhoa Arrieta - ERTICO
Stefan de Vries - IDIADA
Jason Zhang - Warwick University

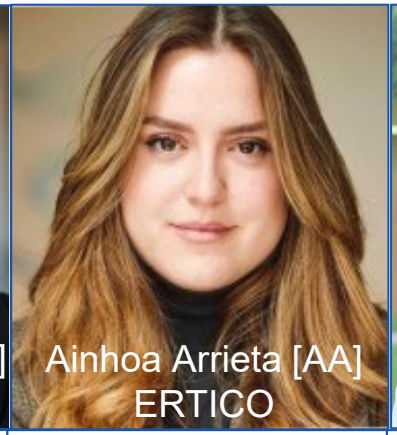
Funded by
the European Union

Welcome

Workshop details

Timeframe	13 January from 15:00 to 16:45 CET
Today's subject	Role of society in CCAM Safety Validation
Goal	Explore societal expectations and discuss strategies for building trust in CCAM systems

Workshop team

					
Julie Castermans [JC] ERTICO	Ainhoa Arrieta [AA] ERTICO	Stefan de Vries [SV] IDIADA	Jason Zhang [JZ] Warwick University	Giacomo Cantini [GC] ICOOR	Johanna Kallio [JK] VTT
Moderation	SUNRISE Dissemination	SUNRISE Coordination	SUNRISE SAF	SINFONICA	OPTIPEX

Agenda

15:00 Welcome & SUNRISE project introduction [by JC & SV]

15:10 SUNRISE Safety Assurance Framework [by JZ]

15:20 Questions from audience

15:25 SINFONICA presentation [by GC]

15:35 OPTIPEX presentation [by JK]

15:45 Questions from audience

15:50 Questions and open discussion with panelists and audience [by JC & AA]

16:40 Closing remarks [by SV]

16:45 Workshop close

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SAFETY ASSURANCE FRAMEWORK FOR CONNECTED, AUTOMATED MOBILITY SYSTEMS

SUNRISE project introduction

13 January 2025

Stefan de Vries - IDIADA

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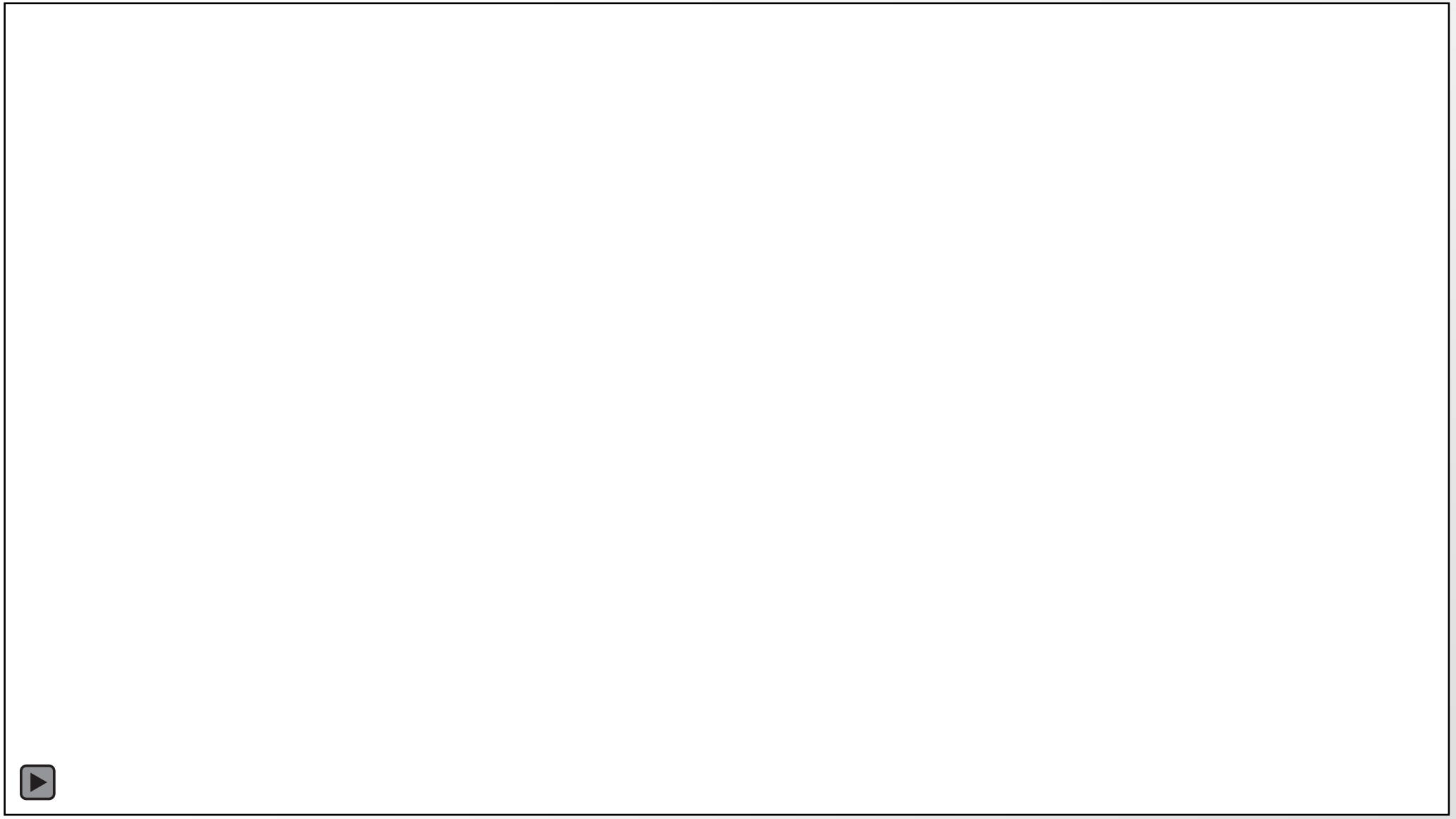
SUNRISE Animated video



Main goal

Develop and provide a harmonized and scalable **CCAM*** **Safety Assurance Framework** that fulfils the needs of different automotive stakeholders, for a continuously evolving number of use cases and scenarios.



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Safety ass**U**ra**N**ce f**R**amework for connected and automated mob**I**lity **S**yst**E**ms

Key facts

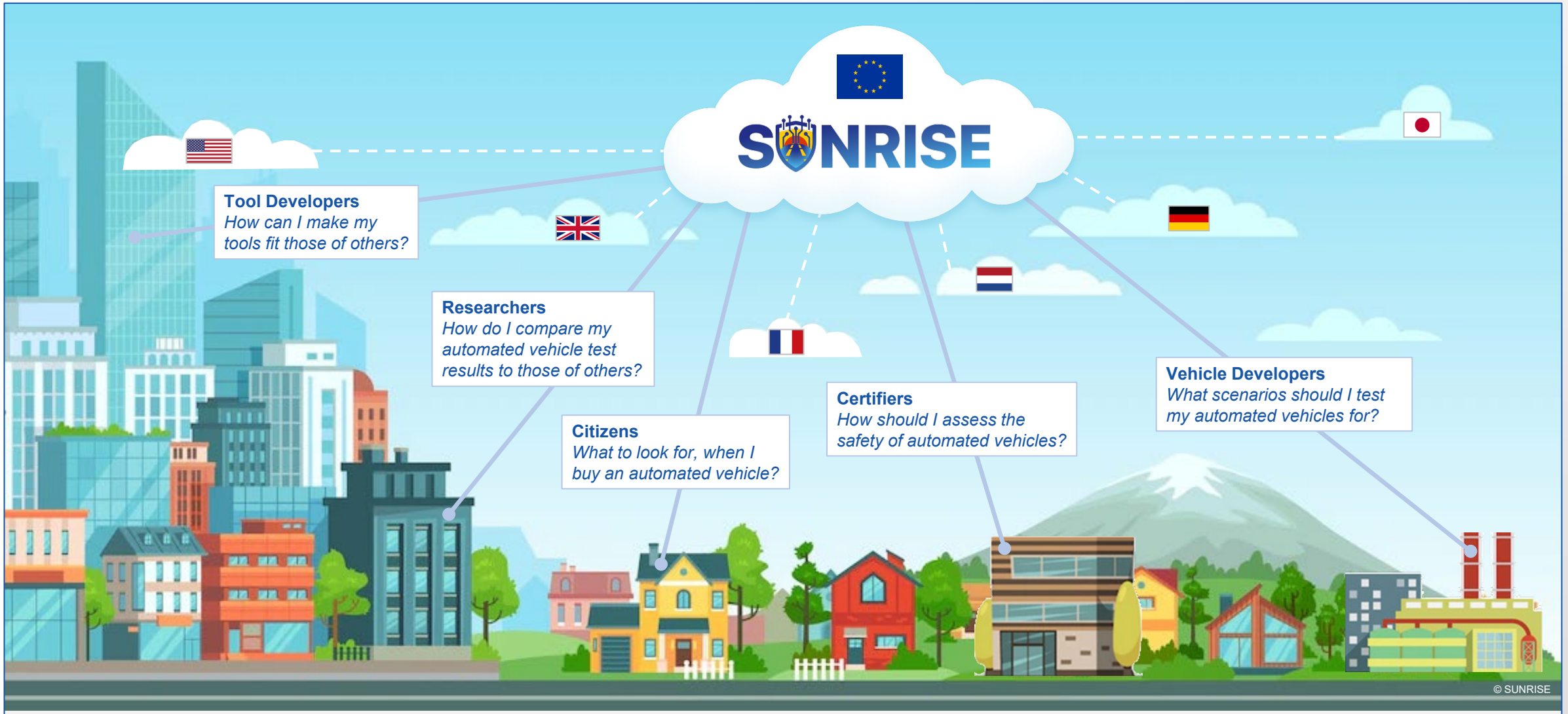
Run time	Sep 2022 – Aug 2025
Budget	13.455.866,25 €

Key one-liner

“The decade long debate in scenario-based assessment, converges into a common basis.”

* CCAM = Cooperative, Connected and Automated Mobility

Vision



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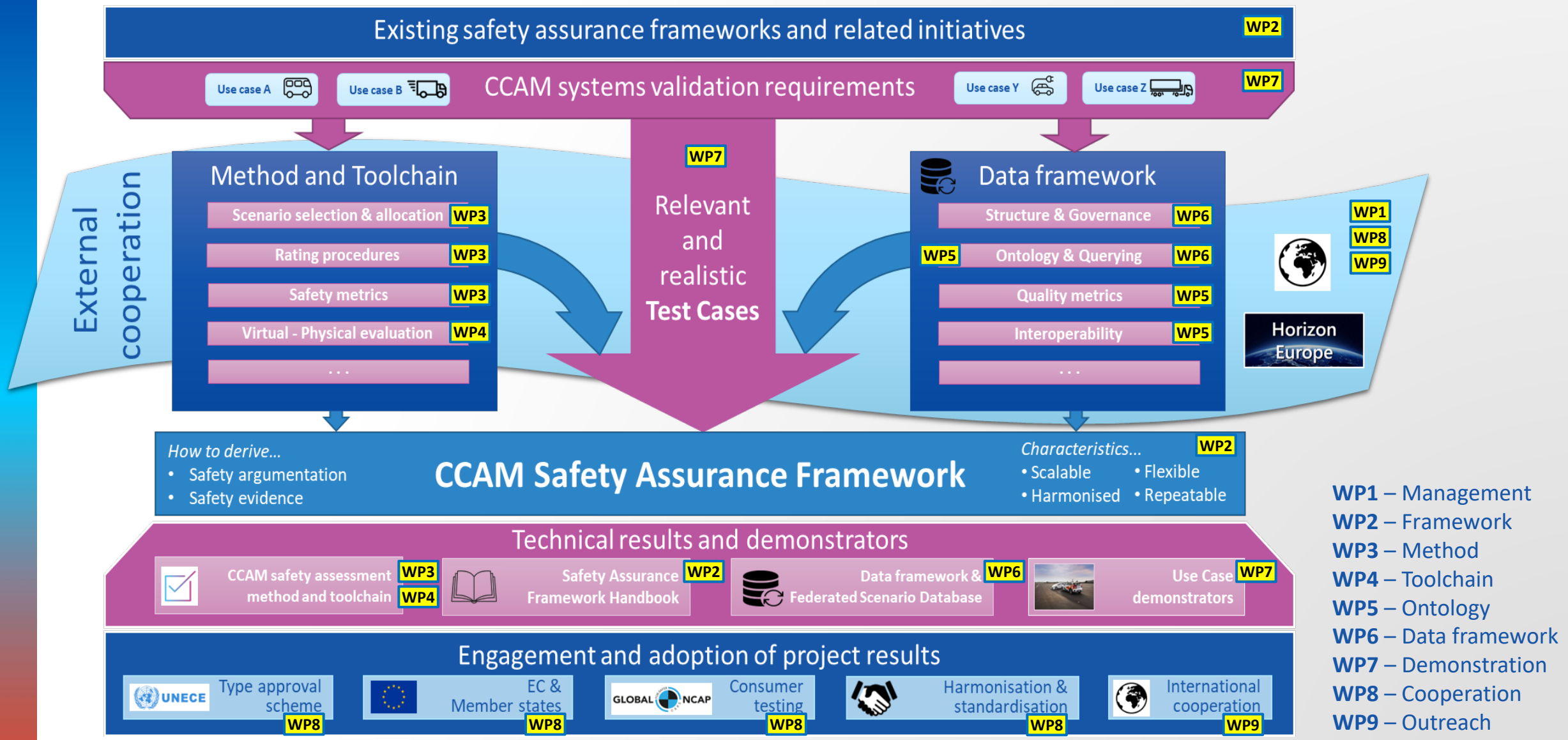
Project No. 101069573

Workplan



WP1 – Management
WP2 – Framework
WP3 – Method
WP4 – Toolchain
WP5 – Ontology
WP6 – Data framework
WP7 – Demonstration
WP8 – Cooperation
WP9 – Outreach

Partners

SUNRISE

+ External Experts
+ Related initiatives



TNO innovation for life
SIEMENS
WMG THE UNIVERSITY OF WARWICK
ERTICO ITS EUROPE
TOYOTA
TOYOTA MOTOR EUROPE
INSTITUT VEDECOM DU VÉHICULE DÉCARBONÉ ET COMMUNICANT ET DE SA MOBILITÉ
GROUPE RENAULT
Continental
vicomtech your R&D partner for smart digital solutions
CVC Centre de Visió per Computador
Applus IDIADA

CHALMERS UNIVERSITY OF TECHNOLOGY
RI. SE
bast
ika | RWTH AACHEN UNIVERSITY
deepen
infineon
AVL
virtual vehicle
UNIVERSITÀ DI TRENTO
ICCS

Partners


Canada
United Kingdom
Germany
South Korea
SUNRISE
United States
Japan
Australia
International
cooperation

Team



SUNRISE team members
General Assembly San Sebastian Oct 2024

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SAFETY ASSURANCE FRAMEWORK FOR CONNECTED, AUTOMATED MOBILITY SYSTEMS

SUNRISE Safety Assurance Framework

13 January 2025

Jason Zhang - Warwick University

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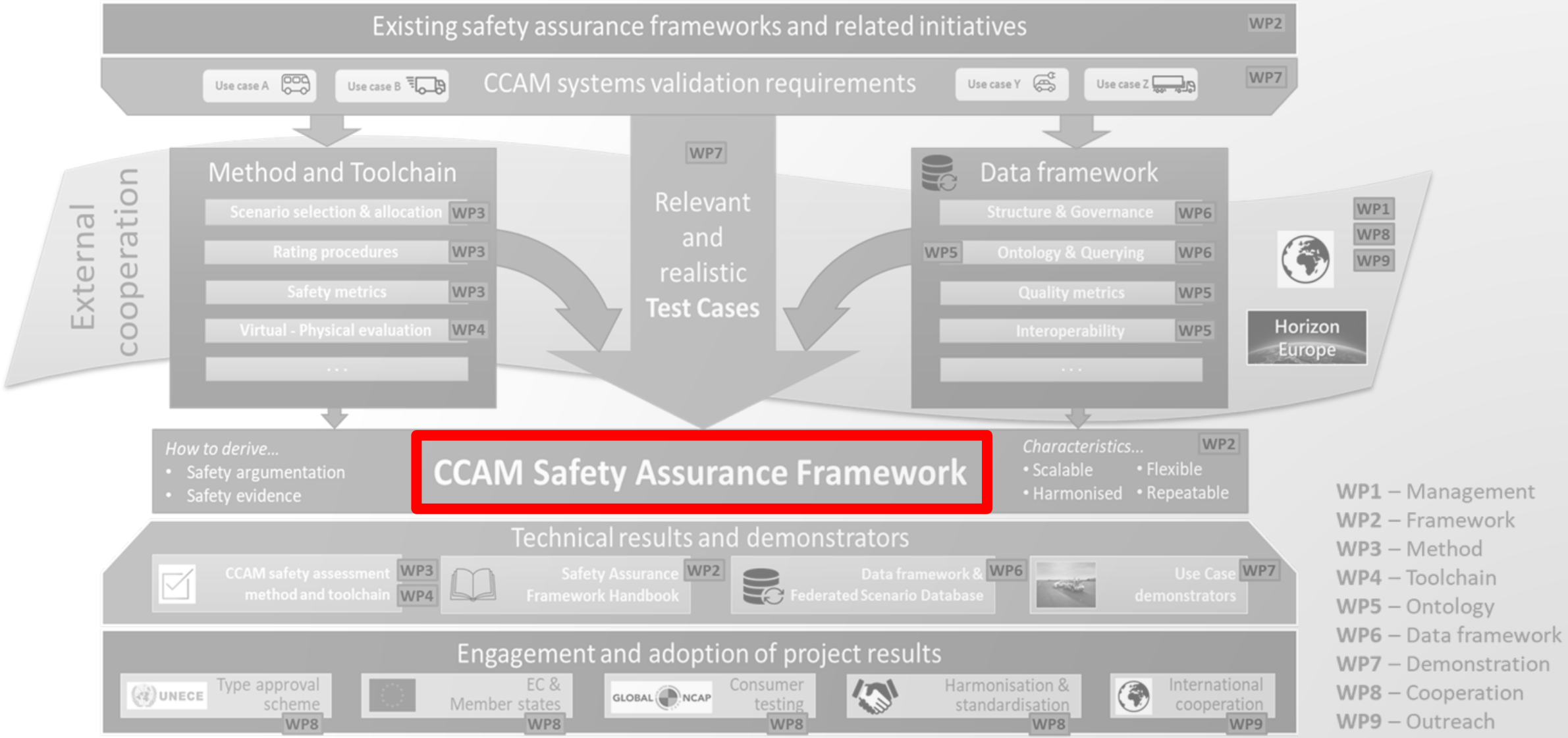
SUNRISE Safety Assurance Framework



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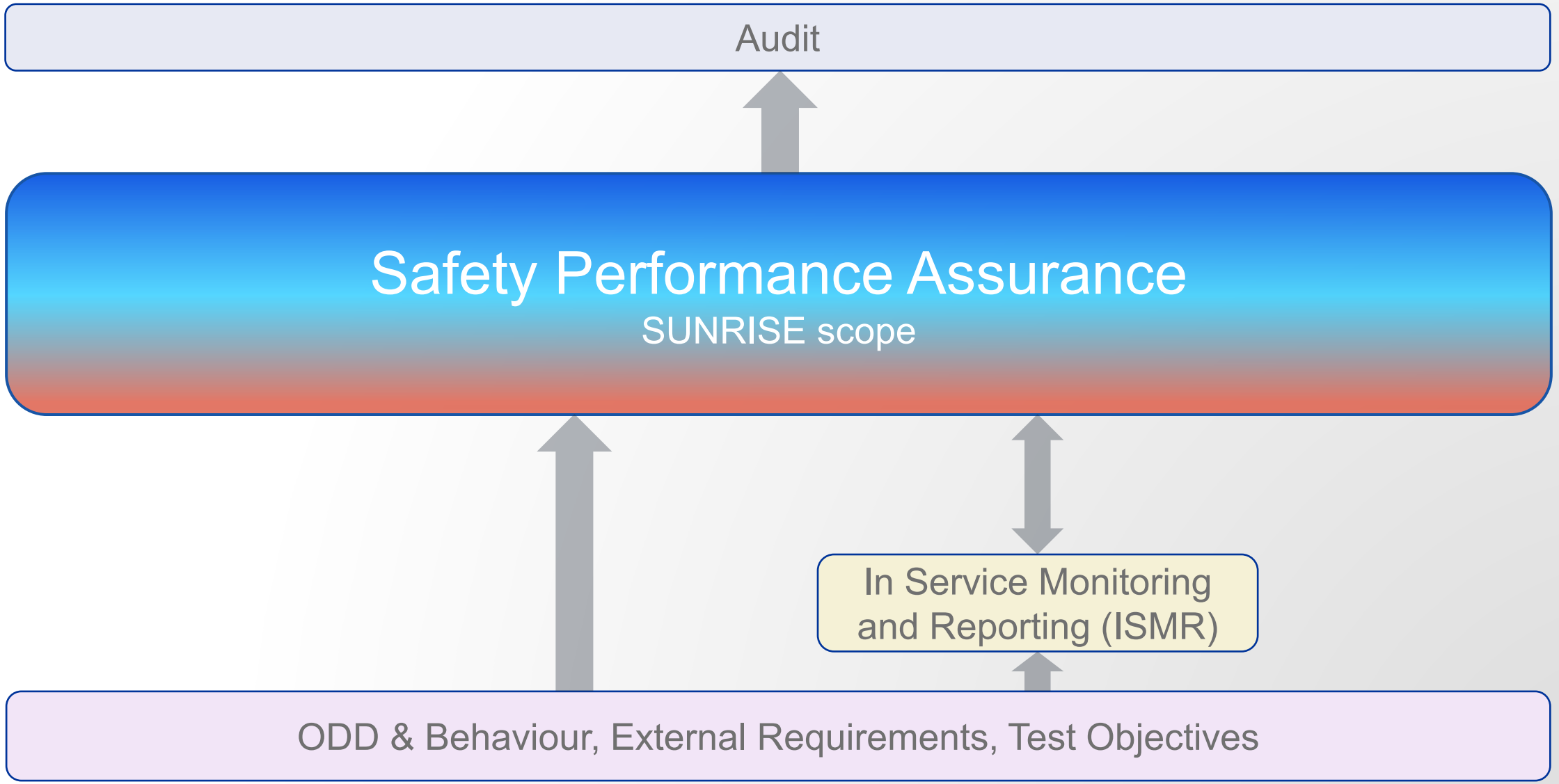
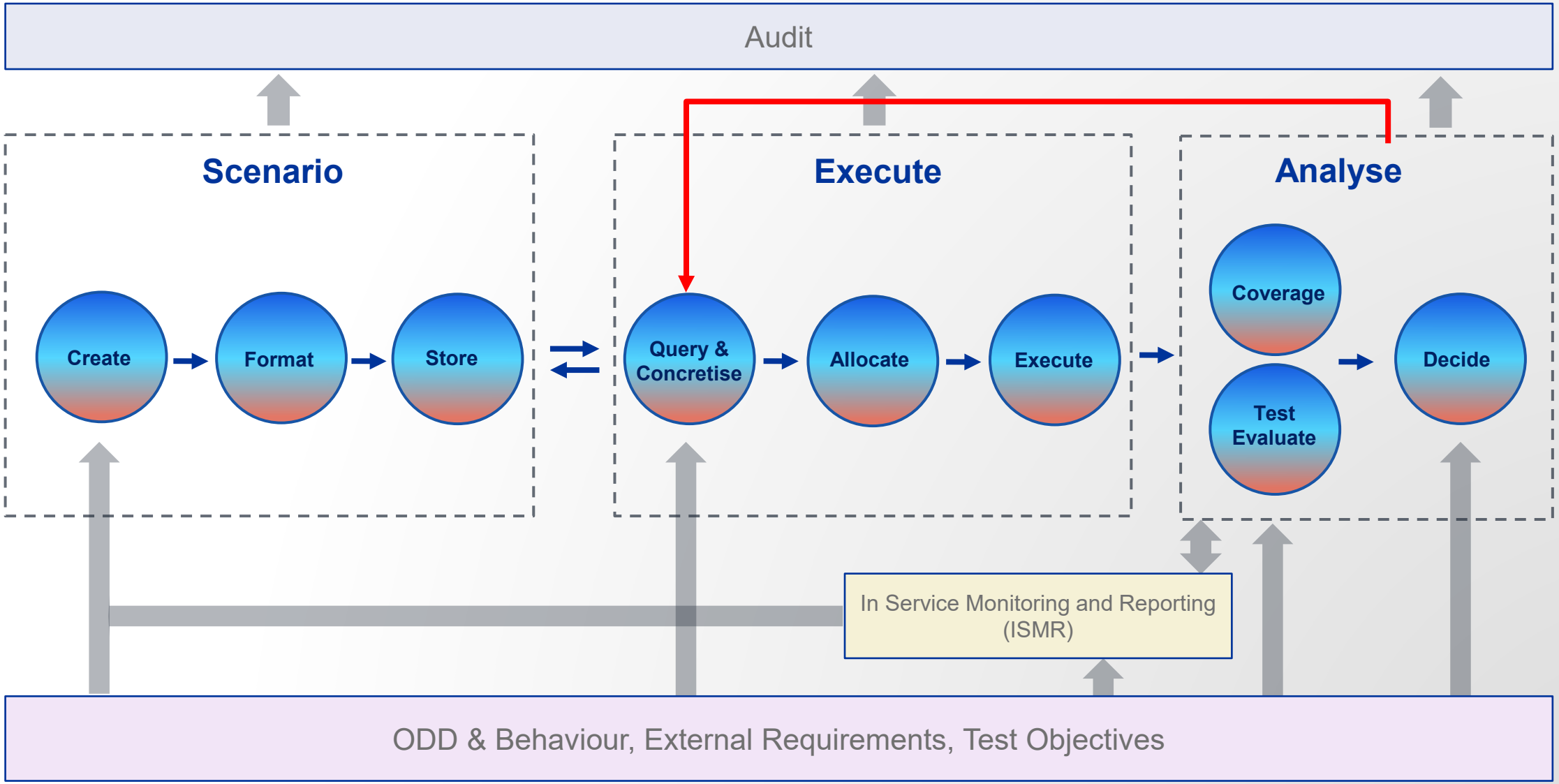
SUNRISE Safety Assurance Framework



SUNRISE Safety Assurance Framework



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SAFETY ASSURANCE FRAMEWORK FOR CONNECTED, AUTOMATED MOBILITY SYSTEMS

Questions from audience

13 January 2025

Stefan de Vries - Applus IDIADA

Jason Zhang - Warwick University

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SINFONICA

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13/01/2025

SINFONICA

Giacomo Cantini
ICOOR / UNIMORE



SINFONICA at a Glance

- **SINFONICA**: **S**ocial **IN**novation to **FO**ster i**N**clus**I**ve cooperative, **C**onnected and **A**utomated 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.



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Interviews, Focus Groups, Workshops and Survey



70 Interviews
9 focus group, 3 workshop



70 Interviews
9 focus group, 3 workshop



70 Interviews
9 focus group, 3 workshop



80 Interviews
9 focus group, 3 workshop

290 Interviews, 36 Focus Groups,
12 workshops +
4900 answers (European survey)

MIGRANTS
PEOPLE WITH PHYSICAL DISABILITIES
PEOPLE WITH COGNITIVE DISABILITIES
ELDERLY
SINGLE PARENTS FAMILY
RURAL INHABITANTS
CYCLISTS
YOUNG PEOPLE
INDUSTRY
DIGITAL VULNERABLE PEOPLE
GENDER RELATED VULNERABILITIES
PEOPLE WITH LOW INCOME
UNIVERSITY STUDENTS
SERVICE PROVIDERS
RESEARCH CENTRES
PEOPLE WITH EASY ACCESS TO P. T.
POLICY MAKERS
PEOPLE WITH EASY ACCESS TO P. T.
UNIVERSITIES
26-45 YEARS OLD
PEOPLE WITH DIFFICULT ACCESS TO P. T.
PEOPLE WITH HIGH INCOME
+66 YEARS OLD
PROJECTS
PEOPLE WITH MEDIUM INCOME
26-35 YEARS OLD
46-65 YEARS OLD

SINFONICA

DRAFT

Recommendations (focus on safety and security)

DRAFT



The role and necessity of on-board staff should be defined, considering communication needs with remote operators → Pick your strategy and communicate it. You can also try different strategies within the same pilot!



Driver presence, training, and role must be specified for vehicles with driving positions, including rules on attending to passengers while in motion → Once again: communicate!



CCTV should monitor passenger safety and security, with alerts for disruptive behavior → Explain what you are doing, why it is useful, how the data will be used…

DRAFT

Recommendations (focus on safety and security)

DRAFT



Trust in CCAM technology is deeply tied to perceptions of safety, with stakeholders stressing that automated systems must be perceived as safe for users to accept them.



Participants expressed concerns about the lack of a human driver to respond to emergencies in fully automated transport: Stakeholders across all cities advocated for the continued presence of human assistance to maintain user comfort and safety, particularly in emergency situations.

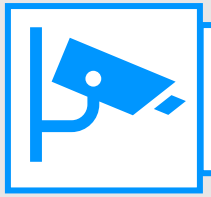


"If something happens when a bus drives autonomously, it will take a long time before someone is there, and there is only camera surveillance."

DRAFT

Recommendations (focus on safety and security)

DRAFT



Concerns were raised about the level of surveillance in automated systems, with a particular focus on ensuring privacy while maintaining security.



Stakeholders consistently requested clear safety features, such as panic buttons and the ability to access human support in emergencies (clear protocols for emergency situations are needed).



Safety was a top priority, encompassing both physical and social security. Participants valued environments that are clean and not overcrowded, with concerns heightened during evening hours or in remote areas.

Next steps with the SINFONICA project

Workshop on strategies to develop, test, deploy, operate, and evaluate CCAM

February 2025

Workshop on how to use the SINFONICA simulation framework

March 2025

Workshop about the SINFONICA results and the SINFONICA tool

May 2025



TOOLS DEVELOPMENT



GUIDELINES AND RECOMMENDATIONS

WOULD YOU LIKE TO JOIN?
DO YOU HAVE AN IDEA TO HAVE A COMMON WORKSHOP WITHIN YOUR PROJECT?
Drop us an e-mail:
Giacomo.cantini@icoor.it

SINFONICA

Funded by the European Union

13/01/2024



CCAM PARTNERSHIP PROJECT

Thanks for your attention!

Giacomo Cantini

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SINFONICA Project

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@SINFONICAeu

SINFONICA Project is funded by the European Union under the Horizon Europe Research and Innovation Program (Grant Agreement n° 101064988). Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the granting Authority can be held responsible for them. The SINFONICA Consortium Members shall have no liability for damages of any kind that may result from the use of these materials.

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OptiPEx - Optimising passenger experience in public transport

Workshop on the Role of Society in CCAM Safety Validation

13th of January 2025

Johanna Kallio

OPTIPEX

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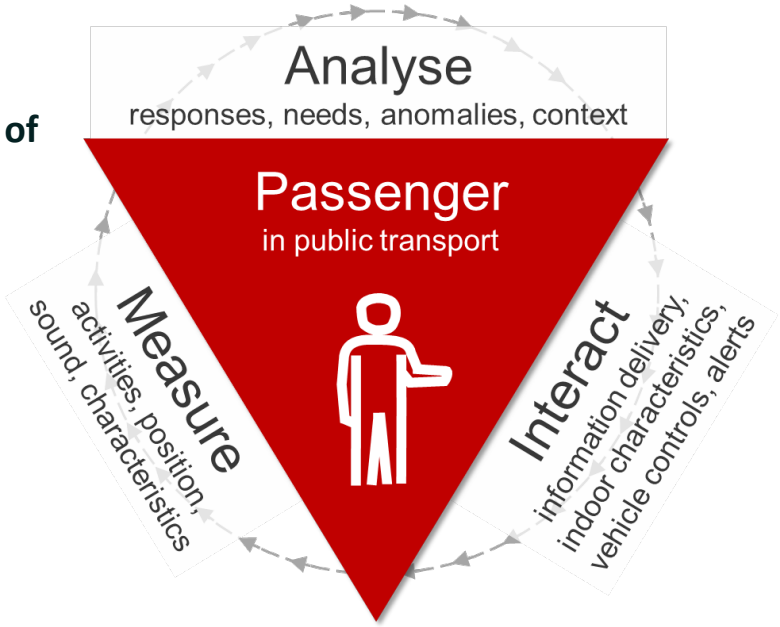
the European Union

What is the OptiPEx project about?

- OptiPEx will **co-create ethical passenger-aware public transport service solutions with user groups and other stakeholders** to improve passenger experience, promote inclusiveness, and build public trust in CCAM systems
- The service solutions will be built on advanced vehicle technologies that assess passenger experience in real-time and adjust the conditions **to enhance the sense of comfort and safety of the passengers, as well as ease of travelling**
- **The main expected results:**
  - **Passenger perspectives and service concepts** for the future autonomous public transport services
  - **Privacy-preserving data analytics methods** for continuous passenger experience assessment and situational awareness on-board, and when boarding/off-boarding
  - **Advanced vehicle technologies** for data-driven optimisation of on-board passenger experience in accordance with privacy and security standards
- The developed solutions will be demonstrated and validated with the target groups and other stakeholders in four living labs: three trams and one shuttle bus in Austria, Finland, Spain and Germany, respectively



OPTIPEX

For more information, see https://optipex.eu/

Co-creation for societal involvement

- OptiPEx applies co-creation as a method to gather insights into passenger requirements (e.g., for assistance or vehicle control) and to explore policy implications, trade-offs and technical limitations
- By engaging diverse target passenger groups – wheelchair users, passengers with large objects, individuals with limited mobility, tourists, and students – OptiPEx ensures that solutions are grounded in real-world needs
- Approach to co-creation:
  - **Phase 1:** Participatory methods, including online surveys and focus group workshops, to identify diverse passenger needs and preferences
  - **Phase 2:** Analysis of results to guide the development of service mock-ups that reflect passenger needs while addressing societal safety concerns
  - **Phase 3**: Evaluation of mock-ups through online and on-site questionnaires, gathering feedback from passenger target groups and other stakeholders
  - **Phase 4:** Refinement of service specifications and implementation of use cases
  - **Phase 5:** Demonstration of use cases and final evaluation of social acceptability with passenger target groups and other stakeholders



OPTIPEX

Main findings from the OptiPEx focus group workshops

- Main problems identified
  - **Safety and security concerns:** Disruptive passenger behaviour, fear of accidents, and overcrowding
  - **Need for inclusiveness and accessibility:** Mobility-impaired passengers and those with large objects face difficulties when boarding/off-boarding, while visually impaired passengers have challenges with insufficient information
  - **Environmental concerns:** Poor air quality, noise, strong odours, and uncomfortable temperature variations
- Key observations to highlight
  - **Consensus on accessibility**: All countries highlight the need for improved systems and infrastructure for mobility and visually impaired passengers
  - **Occupancy information**: Occupancy indicators are widely favoured to enhance passenger distribution and comfort
  - **Human oversight in automation:** Across all countries, participants agree on the importance of retaining some form of human presence or oversight in autonomous vehicles
  - **Preference for multi-modal communication**: Combining acoustic, visual, and tactile methods to ensure inclusivity in public transport



OPTIPEX



OPTIPEX

Thank you for your attention

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This project has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement No. 101146513.