# SHOW 3rd Pan-European Workshop

State of play: Connected, Cooperative and Automated Mobility (CCAM)

Suzanna KRAAK DG Research and Innovation European Commission



# Table of content

- 1. Policy context
- 2. CCAM Partnership
- 3. Horizon Europe: WP 21-22 and WP 23-24
- 4. CCAM priorities and challenges



## Policy context

## European Green Deal

December 2019

## February 2020

### December 2020

- Making the EU transport system sustainable, smart and resilient
- Automated mobility deployed at large scale by 2030

SUSTAINABLE & SMART

MOBILITY STRATEGY

- 82 initiatives in 10 key areas
- Deployment and management of ITS and connected and automated mobility, facilitate cross border AV, recharging infrastructure, 5G

 Deliver at least 100 climateneutral and smart European cities by 2030

MISSIONS

- Ensure these cities are experimentation and innovation hubs to support all European cities to become climate-neutral by 2050.
- 112 Mission Cities selected



- Increasing the uptake of zeroemission vehicles
- Making sustainable alternative solutions available to the public & businesses
- Supporting digitalisation & automation
- Improving connectivity & access

 Establishment of EU-wide common, interoperable data spaces including a Common European mobility data space

THE EUROPEAN

DATA STRATEGY

**DIGITAL FUTURE** 

SHAPING EUROPE'S

- Review of the ITS Directive and its Delegated Regulations
- Stronger coordination mechanism federating National Access Points

December 2020

🚯 🎗 🦺

## Cooperative, Connected and Automated Mobility (CCAM)

### **CCAM** has the potential to:

- Bring us on the path towards near zero road fatalities
- Increase accessibility of mobility services
- Help reduce harmful emissions from transport by making traffic more efficient

### Main objective

Accelerate the deployment of innovative CCAM systems and services for passengers and goods

## **EC** vision

We want CCAM solutions that

- are fully integrated in the transport system, accompanied by the right support measures by the public sector
- support new mobility concepts, shifting from a drivercentred to mobility-user oriented approach

## European Partnership on CCAM

### **Ambition:**

• Support the development and market uptake of connected and automated mobility and logistics services and systems.

### **European Partnership objectives:**

- Better align EU R&I efforts in the field of CCAM
- Develop and implement a coherent long-term agenda to coordinate investments in R&I and pre-deployment
- Implement large-scale demonstrations of inclusive and user-oriented CCAM solutions for people and goods across Europe by 2030.

### Budget: 1 Billion € (500 M€ EC contribution)

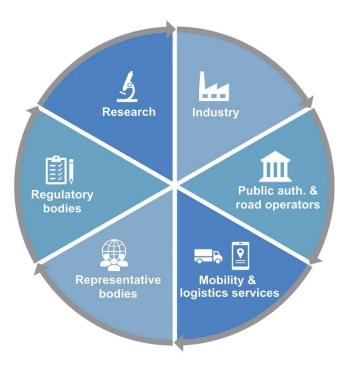
## State of play:

- Strategic Research and Innovation Agenda (SRIA) published
- MoU between the Commission and Partners signed in 2021
- Projects resulting from first HE Calls started in Q3 2022
- WP 23-24 under final review for publication Q1 2023

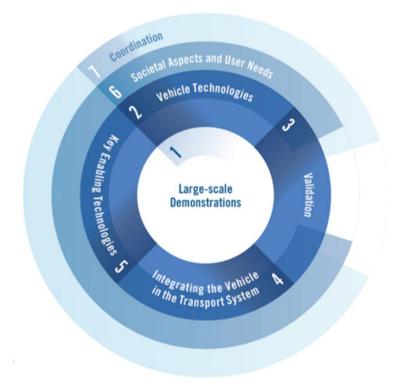


## European Partnership on CCAM

### Partnership sectors and stakeholders



### Strategic Research & Innovation Agenda



 $\rightarrow$  187 member companies / organisations

Partnership website: https://www.ccam.eu/

- → Multiannual roadmap to guide the Partnership
- → Describes the portfolio of activities, resources, and timeline for 7 key R&I areas.

## Planning for CCAM implementation 2021-2030

Phase 2 Phase Phase 3 Phase 1 – Developing 100% the building blocks Large-scale demonstration of user-oriented and well-integrated CCAM solutions for mobility of people and goods in at least 30 demonstration 90% sites across Europe Societal impacts are sufficiently addressed and assessed Increased public awareness of demonstrated benefits for users and 80% society by 2030 Phase 2 – Advancing **Deployment Readiness** 70% technical maturity Enable trustworthy interaction between all traffic participants and CCAM 60% Accepted safety standards for automated mobility on public roads Improved synergies for public and private implementation plans to deploy 50% Phase 3 – Trials and CCAM solutions Exploit new and emerging knowledge fields for large scale demonstrations living labs all over 40% Europe 30% Common evaluation framework fostering exchange and reuse of R&I results 20% Long-term coordination framework for R&I and large-scale testing activities 10% Expand and disseminate the knowledge base on CCAM solutions during the entire Partnership duration 0% 2020 2021 2022 2025 2027 2028 2030 2031 2023 2024 2026 2029

## Horizon Europe – CL5 Climate, Energy and Mobility

**WP 2022** 

8 projects funded

Projects start in Q3

• Total EU funding: 84.2

5 topics

2022

M€

#### Vehicle technologies

 On-board perception and decision-making technologies for complex environmental conditions

#### Validation

 Safety validation of CCAM systems

#### Integration transport system

• Physical and Digital Infrastructure, connectivity and cooperation

### Key enabling technologies

 Cyber secure and resilient CCAM

#### Societal aspects/ user needs

 Socio-economic/ environmental impacts & user needs

#### Coordination

 Coordination of large-scale demos and EU-wide knowledge base

### WP 2023-2024

- Co-drafted with CCAM Partnership
- Under internal review
- Publication Q1 2023

### WP 2021

- 6 topics
- 10 projects funded
- Projects start in Q3
  2022
- Total EU funding: 67.3 M€

### Focus areas

- Large-scale demos of shared, automated and zeroemission mobility solutions in cities
- Generation of scenarios and validation of CCAM technologies and systems
- Optimised and inclusive on-board experience of CCAM solutions
- Mixed traffic orchestration
- Hybrid artificial intelligence
- · Impact on jobs and education

#### Large-scale demos

 European demonstrators for integrated shared automated mobility solutions for people and goods

#### Vehicle technologies

HMI and occupant protection technologies

#### Key enabling technologies

• Explainable and trustworthy Al concepts, techniques and models

#### Integration transport system

• Fleet and traffic management systems



## **CCAM priorities and challenges**

Validated safety and security, improved robustness and resilience of CCAM technologies and systems

Secure and trustworthy interaction between road users, CCAM and "conventional" vehicles, infrastructure and services to achieve safer and more efficient transport flows (people and goods) and better user of infrastructure capacity

High public acceptance and adoption of CCAM solutions by 2030 with clear understanding of its benefits and limits as well as rebound effects.

Better coordination of public and private R&I actions, large-scale testing and implementation plans in Europe

Advance the technological maturity

2

3

4

- Scale up demonstrations to identify R&I needs
- Involvement of local and regional actors
- Integration into transport ecosystem and with other modes

- Diversify use-cases
- Alignment with national strategies
- Harmonise investments
- International collaboration



### = Towards smart and sustainable mobility !

# Thank you



© European Union 2020

Unless otherwise noted the reuse of this presentation is authorised under the <u>CC BY 4.0</u> license. For any use or reproduction of elements that are not owned by the EU, permission may need to be sought directly from the respective right holders.



Slide xx: element concerned, source: e.g. Fotolia.com; Slide xx: element concerned, source: e.g. iStock.com