SHOW 1st Pan-European Workshop
“How to make CCAM in cities a reality”
18th September 2020

CCAV in Cities:
Opportunities, challenges and expectations

Patrick Mercier-Handisyde
European Commission
DG Research & Innovation
Directorate Clean Planet
Future Urban and Mobility Systems
EC Communication on Automated Mobility

- Part of the 3rd Mobility Package (17 May 2018)
- Comprehensive EU approach to support the development and deployment of connected and automated vehicles in Europe

What needs to be done?

- SAFETY
- APT LEGAL FRAMEWORK
- SOCIETAL & ETHICAL ASPECTS
- INVESTMENT IN RESEARCH & INNOVATION
- COMPETITIVENESS
H2020 - Calls on "Automated Road Transport"

- Focus
  - Large-scale demos of automated driving systems for passenger cars, trucks and urban transport
  - Safety and end user acceptance
  - Road infrastructure to support automation
  - Traffic management solutions
  - Connectivity for automation
  - Testing and validation procedures
  - Assessment of impacts, benefits and costs of CAD systems
  - Support for cooperation and networking activities
  - Human centered design of AV


H2020 - Overview of Large-scale Demo Projects

**5G for automation** (5GMED, 5GROUTES, 5GBLUEPRINT – road, rail, waterways)

**5G for automation** (5GCroCo, 5GCarmen, 5GMobix)

**Shared AV fleets in urban areas** (SHOW)

**Fully automated urban road transport** (AVENUE)

**Automated trucks in real logistics operations**

**Multi-Brand Platooning** (ENSEMBLE)

**Highly Automated Vehicles**

**ICT infrastructure for automation** (ICT4ART)

**L3 Pilot**

**AutoPilot**

Years:
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024
- 2025
- 2026
The urban transport challenges

Moving towards a more sustainable urban mobility: A Growing concern to European citizens with 72% of the population

- Better meet the diverse urban transport and mobility needs of citizens, businesses and industry; offer more and more attractive choices for liveable cities
- Contribution to economic growth and access to jobs
- Reduce the negative impacts of urban transport

... and the challenge to integrate new mobility patterns and innovations: Mobility as a Service (MaaS), e-scooters, car sharing/ridesharing, IoT, big data, Uber, e-deliveries, C-ITS, autonomous vehicles, ...

...
Two main trends in road automation

- **Fully Autonomous Car Shuttles**
- **Partially Autonomous Cars**
- **Cars with ADAS**
- **Present Cars**

**Automation Level**
- **SAE Automation Level**

**Segregation Level**
- **without**
- **total**

**Automated Road Transport Systems**
- **Automatic Metro PRT/GRT**
- **Shuttles/Cybercars**
Possible deployment paths

- City centre
- Businesspark campus
- Parking lot
- Rural road
- Highway
Possible deployment paths

- City centre
- Businesspark campus parking lot
- Rural road
- Highway

Deployment paths:

- Low velocity
- High velocity
- Low complexity
- High complexity
Widening Participation and Strengthening the European Research Area

Pillar 1
Excellent Science
- European Research Council
- Marie Skłodowska-Curie Actions
- Research Infrastructures

Pillar 2
Global Challenges and European Industrial Competitiveness
- Health
- Culture, Creativity and Inclusive Society
- Civil Security for Society
- Digital, Industry and Space
- Climate, Energy and Mobility
- Food, Bioeconomy, Natural Resources, Agriculture and Environment

Joint Research Centre

Pillar 3
Innovative Europe
- European Innovation Council
- European innovation ecosystems
- European Institute of Innovation and Technology

Widening participation and spreading excellence
Reforming and Enhancing the European R&I system
Horizon Europe European Partnership on CCAM

- Initiative where the Union, together with private and public partners commit to support jointly the development and implementation of a Research & Innovation programme in the area of CCAM

- European partnership aims to

  ✓ better align EU R&I efforts in the field of CCAM

  ✓ increase the effectiveness of R&I and accelerate market take-up of innovative solutions, contributing to maintaining and extending industrial leadership.

  ✓ develop a common Strategic Research and Innovation Agenda (SRIA)
European Partnership on CCAM - State of Play

• Potential partners:
  ✓ The EU, represented by the Commission
  ✓ Wide range of stakeholders
    ▪ Industry, Representative bodies, Member States & regional and local authorities, Mobility service providers, Regulatory bodies, Research organisations

• Preparations to set up a European Partnership on CCAM have started
  ✓ Strategic Research and Innovation Agenda (SRIA) under preparation
  ✓ Contractual arrangement/MoU between the Commission and the partners under preparation
  ✓ First calls for proposals will be open early 2021 (based on the SRIA priorities)
CCAM European Partnership: 7 Clusters

1. Shared automated mobility solutions (11)
   - Highly automated passenger vehicles (13)
   - Automated commercial/freight vehicles (14)

2. Environment perception (1)
   - Passive & active safety (3)
   - On-board decision making (4)
   - Human Factors requirements (6.1)

3. Validation of CCAM systems (5)
   - Validation of Human Factors (6.2)

4. Remote operation and surveillance (7)
   - Physical and digital infrastructure (8)
   - Connectivity / Cooperative Systems (9)
   - Fleet and (mixed) traffic management (12)

5. Cyber-secure electronics (2)
   - Artificial Intelligence (10)
   - Data Storage and sharing (21)

6. Societal needs analysis (15)
   - Socio-economic and environmental impact analysis (16)
   - Workforce development (22)

7. European framework for testing on public roads (17)
   - Data exchange platform (18)
   - EU-wide knowledge base (19)
   - Common evaluation framework (20)