



# Status and Outlook of CCAM R&I



Dr Stephane Dreher, ERTICO – ITS Europe



**THE | AUTONOMOUS**

**Spotlight Session**

**Driving the Future: The Rise of  
Software-Defined Vehicles**

**24 September 2024**

ARCADE is funded by  
the European Union Horizon 2020  
Work Programme



# CCAM PARTNERSHIP

## MISSION

Exploit the full systemic benefits of new mobility solutions

Assess impacts and understand user and societal effects to harmonise European R&I efforts to accelerate awareness and implementation of innovative CCAM technologies and services.

## GOAL

LIVE Large-Scale Demonstrations

To support the development and market uptake of connected and automated mobility and logistics services and systems thanks to Large-Scale Demonstrations.



Founded in  
2021



Budget:  
+1 Billion

Visit  
[CCAM.EU](https://www.ccam.eu)



+230  
Members

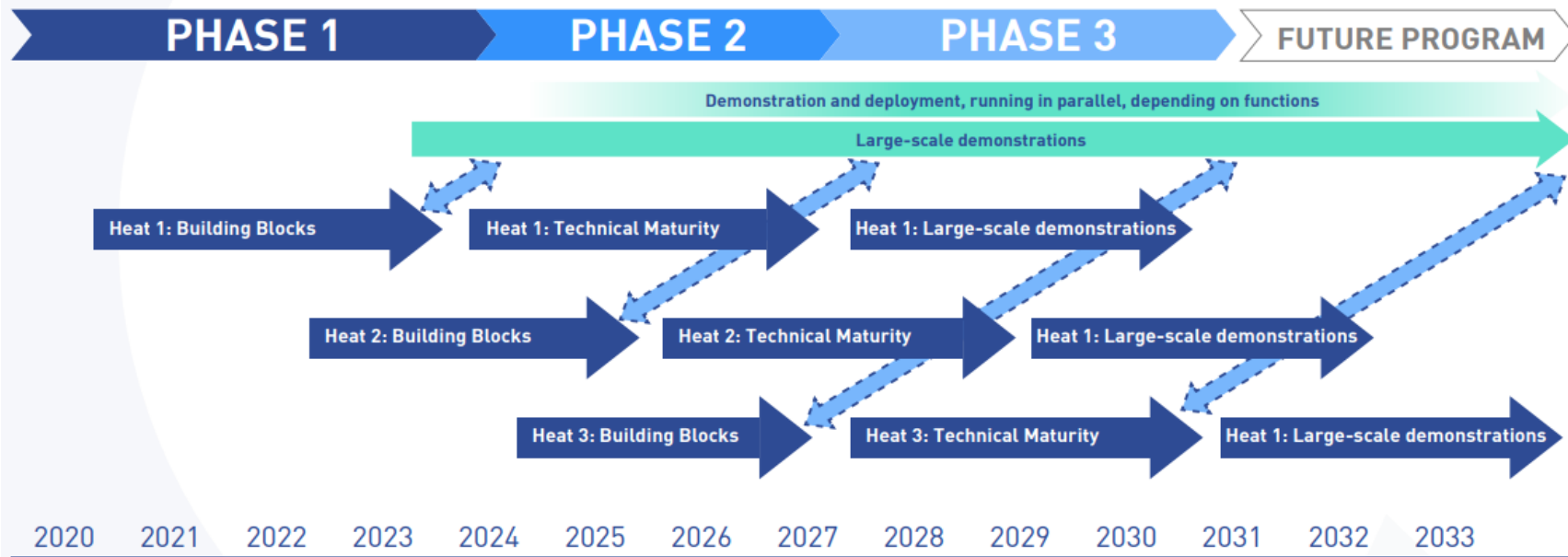


Cross-sectoral  
value chain



# CCAM timeline and challenges

- Different use cases will have different speeds of maturation and deployment



## Challenges

- Which are the most promising use cases?
- What is the societal benefit of different CCAM solutions?
- What is the specific business model for each of these solutions?



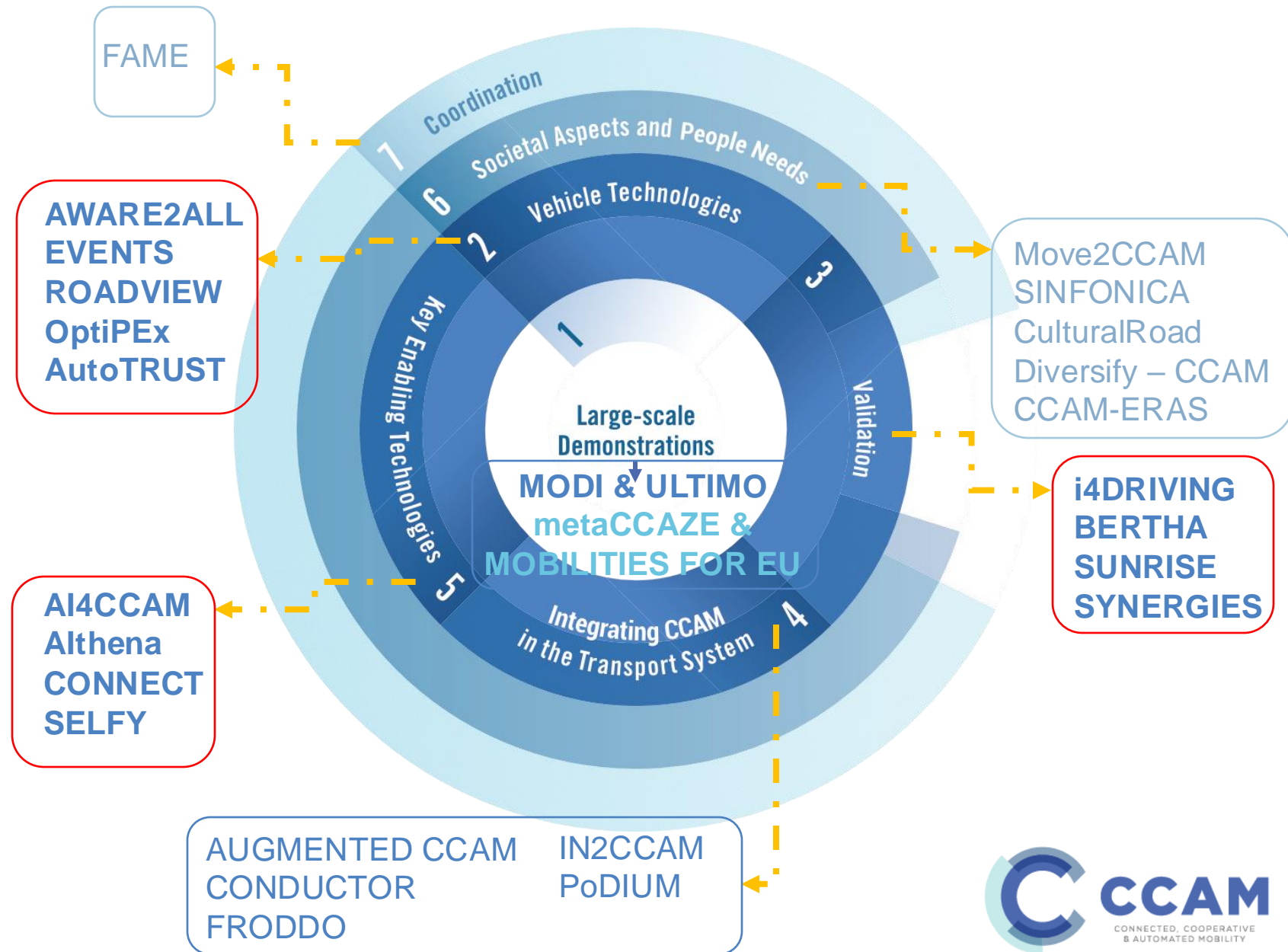
# Horizon Europe Cluster 5 WP

Destination 6  
Transport and Smart Mobility services

Calls 2021, 2022 & 2023 Projects

<https://www.ccam.eu/projects/>





ccam.eu



# SRIA R&I Priorities and ongoing projects

## Cluster 2 - Vehicle Technologies

- Safe and reliable on-board decision-making technologies
- Preventive and protective safety
- User centric development and HMI to enhance acceptance and trust

WP	Acronym		Budget	start date
2021	 <b>EVENTS</b>	Reliable in-Vehicle pErception and decisioN-making in complex environmenTal conditions <a href="https://www.events-project.eu">https://www.events-project.eu</a>	5,5M€	01/09/2022
	 <b>ROADVIEW</b>	Robust Automated Driving in Extreme Weather <a href="https://roadview-project.eu">https://roadview-project.eu</a>	6,6M€	01/09/2022
2022	 <b>AWARE2ALL</b>	Safety systems and human-machine interfaces oriented to diverse population towards future scenarios with increasing share of highly automated vehicles <a href="https://aware2all.eu/">https://aware2all.eu/</a>	8M€	01-11-2022
2023	 <b>OptiPEX</b>	Enhance the sense of comfort and safety of the passengers as well as the security and ease of travelling by co-creating ethical and passenger-aware public transport services together with specific target user groups	4 M€	01-05-2024
	<b>AutoTRUST</b>	Autonomous self-adaptive services for TRansformational personalized inclUsivenesS and resilience in mobility <a href="https://cordis.europa.eu/project/id/101148123">https://cordis.europa.eu/project/id/101148123</a>		01-05-2024
2024	HORIZON-CL5-2024-D6-01-01	<b>Centralised, reliable, cyber-secure &amp; upgradable in-vehicle electronic control architectures for CCAM connected to the cloud-edge continuum</b>	<b>12 M€</b>	





*Strengthened cooperation of EU OEMs and suppliers to co-design a standard cyber secure electronic architecture layout with harmonised interfaces, leveraging related developments on the open EU SDV platform.*



# SRIA R&I Priorities and ongoing projects

## Cluster 5 – Key Enabling Technologies

- Fail-operational and cyber-secure components & systems in their entire ODD
- Robustness and resilience
- New explainable concepts and training of AI for CCAM applications
- AI for situational awareness
- System architecture for data sharing

WP	Acronym		Budget	start date
2021	 SELFY	SELF assessment, protection & healing tools for a trustworthy and resilient CCAM <a href="https://selfy-project.eu/">https://selfy-project.eu/</a>	5,9M€	01/06/2022
	 CO CONNECT	Continuous and Efficient Cooperative Trust Management for Resilient CCAM <a href="https://horizon-connect.eu/">https://horizon-connect.eu/</a>	5,6M€	01/09/2022
2022	 AI4CCAM	Trustworthy AI for CCAM <a href="https://www.ai4ccam.eu/">https://www.ai4ccam.eu/</a>	6M€	01-11-2022
	 Aithena	AI-based CCAM: Trustworthy, Explainable, and Accountable <a href="https://aithena.eu/">https://aithena.eu/</a>	6M€	01-11-2022
2024	HORIZON-CL5-2024-D6-01-04	AI for advanced and collective perception and decision making for CCAM applications	10M€	



# CCAM WP 2025 – draft

CCAM clusters	Initial Areas
<b>Cross Cluster</b>	<i>Advancing remote operations as an enabler for sustainable and smart mobility of people and goods: operational and societal needs</i>
<b>Large-Scale Demonstrations</b>	<i>Preparing for CCAM large-scale demonstrations</i>
<b>Vehicle Technologies</b>	<i>Next-generation environment perception for decision-making in real-world CCAM operation: Error-free and secure while improving energy-efficiency, cost-effectiveness, and circularity *</i>
<b>Validation</b>	<i>Integration of human driving behaviour in the validation of CCAM systems</i>
<b>Key Enabling technologies</b>	<i>Approaches, verification and training for Edge-AI building blocks for CCAM Systems *</i>
<b>Coordination</b>	<i>Federated CCAM data exchange platform</i>

(\*) link to building blocks and tools from projects of the Software-Defined Vehicle of the Future (SDVoF) initiative under Chips JU



# General Expectations from SDVoF

- **Coordinate with CCAM and 2ZERO Partnerships**

The target is to enable automated / zero emission mobility – CCAM & 2ZERO require key technologies

- Cross references are made with ECS SRIA and CCAM/2ZERO SRIAs

- **Create a level-playing field for the entire automotive value chain**

Perspectives of OEMs and Suppliers on the role of software and hardware may be different

- Automotive hardware experts complementing SW Ecosystem

- **Practice openness and transparency**

Competitors need to adhere to compliance rules for common and open-source approaches

- Open ecosystem forum and associated partners supporting CSA Federate in pre-competitive R&I setup

- **Take a stance for European approaches**

Europe risks to jeopardise competitiveness in innovative SW and HW for VoF with respect to US and China

- Initiatives at EU, Member States and industry levels to support open strategic autonomy

- **Co-design of software and hardware with smart systems integration**

While software and hardware will become de-coupled, mutual awareness is essential

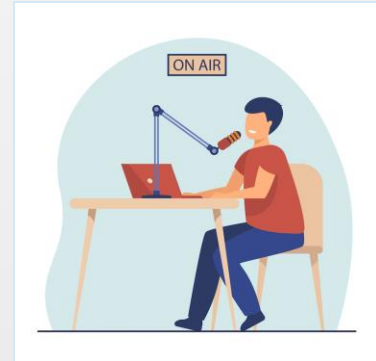
- Software Defined Vehicle-of-the-Future (SDVoF) reflecting smart integrated approach of the initiative

*Needs and opportunities of alignment for pre-competitive R&I*





# SUNRISE (& SYNERGIES) Expert & Cooperation Platforms



## Benefits

- Influence on the definition of a European **CCAM Safety Assurance Framework & EU Federated Scenarios Database**, laying the foundation for large-scale deployment.
- Opportunity to join the networks of top players in the field of CCAM safety assurance and being at the forefront of shaping the future of road safety worldwide.
- Competitive advantage thanks to first-hand information about developments and discussions in the field of CCAM safety assurance.

## Online Cooperation Platform

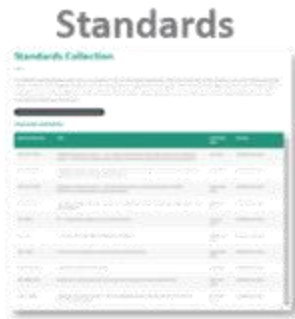
- Participate in forum discussions, working groups, webinars and workshops
- Exchange documents and research findings
- Collaborate on joint projects

## Connect with us

Registering will **allow you to influence the safety assurance of CCAM systems.**



# “ CCAM Knowledge Base One-stop shop” for all CCAM related activities in Europe



Maintained by FAME  
July 2022 – June 2025  
22 partners - 12 States



Contact:  [s.dreher@mail.ertico.com](mailto:s.dreher@mail.ertico.com)



**13-15**  
May 2025 Ispra | Italy

CONFERENCE  
**Connected and Automated Driving**



 [#EUCAD2025](https://twitter.com/EUCAD2025)

Thank you  
For your attention



Contact:

 [s.dreher@mail.ertico.com](mailto:s.dreher@mail.ertico.com)

**“Alone we can do so little,  
together we can do so much”** Helen Keller

**ERTICO Partnership**

[ertico.com](http://ertico.com) | [@ertico](https://www.instagram.com/ertico)