



ERTRAC Roadmap on CCAM

Focus on Large-scale Demonstration

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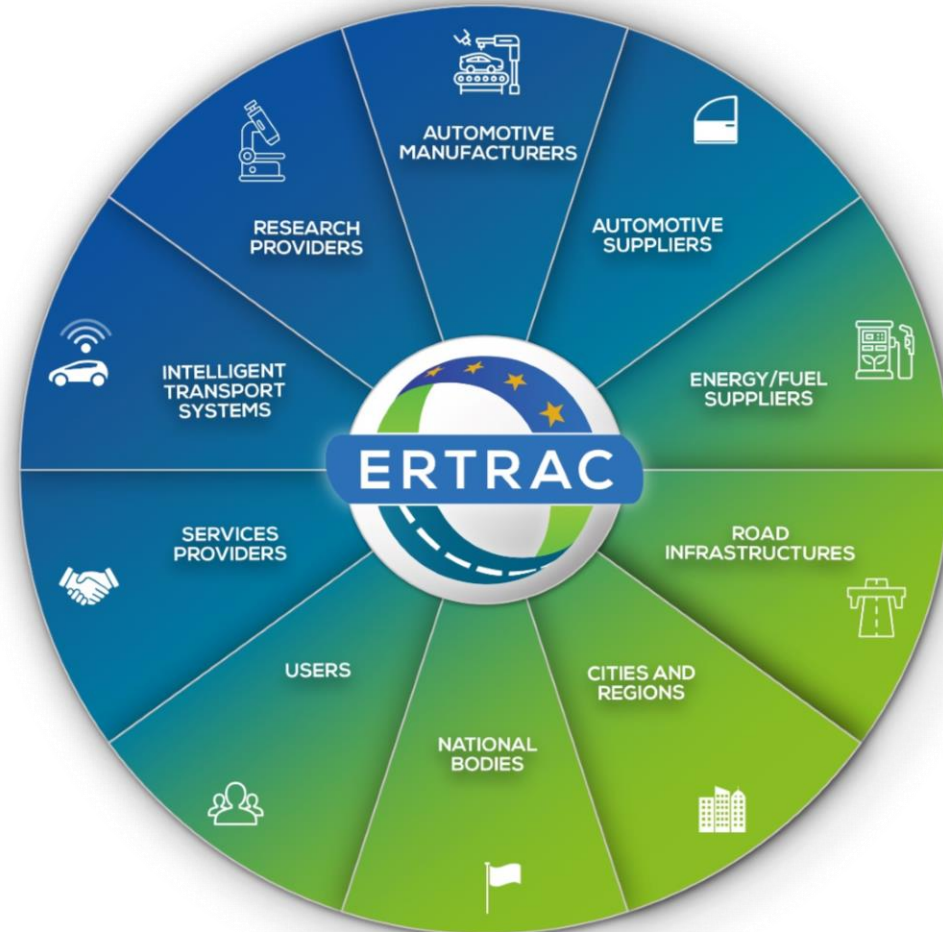
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ERTRAC is the European Technology Platform for Road Transport recognized and supported by the European Commission.

Members gather all the stakeholders of Road Transport Research: involving industry and researchers, private and public organisations, including authorities from national and local levels.



ERTRAC Working Groups

Urban Mobility

**Energy &
Environment**

**Safety &
Security**

**Long Distance
Freight
Transport**

**Circularity &
Competi-
tiveness**

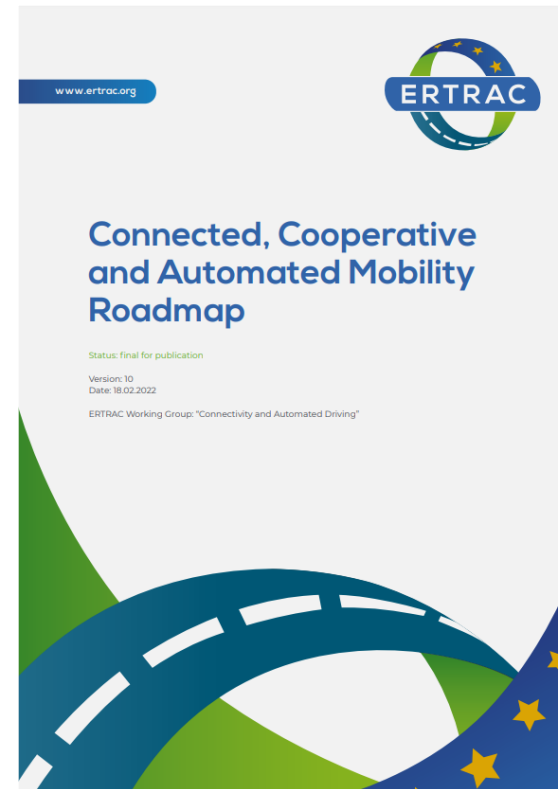
**Connectivity &
Automated
Driving**



ERTRAC CAD WG & CCAM Partnership: A complementary approach.



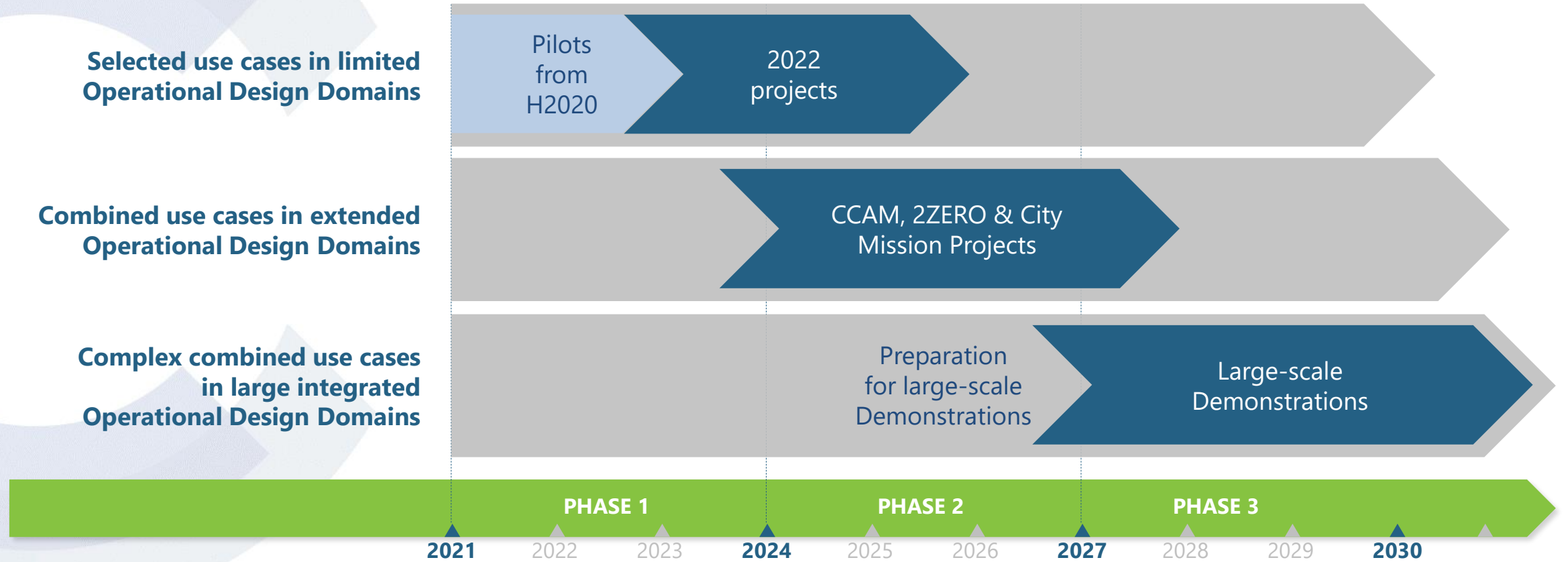
The SRIA is the reference document of the partnership aiming at identifying research and innovation priorities, detailing the expected impacts as well as the Key Performance Indicators.



The ERTRAC Roadmap is the position of the independent technology platform aiming at drawing the overall long-term picture as well as the concrete next steps referring to ambitious and realistic use cases.

Strategic Research & Innovation Agenda by the CCAM Partnership

Large-scale Demonstrations



Criteria for successful Large-scale Demonstration (LSDemo)

The ERTRAC Roadmap describes different **Domains for innovation** of CCAM products and services.

They differ in various characteristics, develop in different timeframes and offer a large variety of **use cases**.

Select use cases for LSDemo along concrete criteria, e.g.:

- High TRL today, functional development close to final
- Which concrete problem will be solved?
- Who is ready to pay for solving the problem?
- What is in for People, Planet, but also Profit?
- Which collaborations are needed to ensure an uptake of the services after the projects' end?

Criteria for successful Large-scale Demonstration (LSDemo)

What will stay after a LSDemo project ?

- Technical standardisation shall be supported
- Type approval and road regulations shall be developed along the demo (trusted framework for users and infrastructure)
- **The demo site must have a sustainably improved situation after the demo project has ended!**

Differentiation of use cases for their suitability for LSDemo:

- Innovation ⇒ close to deployment, clear candidate for LSDemo
- Development ⇒ will still take some years, possible candidate for demo at limited scale
- Research ⇒ can deliver specific demos at small scale

Innovation domains can deliver strong impacts on the mobility of people and goods.



Parking

Automated Valet Parking (AVP) with strong infrastructure support (Type 2) and based mainly on vehicle technologies (Type 1).



Confined areas

Various use cases with specific environment, traffic and legal requirements. An early demonstration will further drive industrialization, adding newly designed service functions with higher levels of automation.



Highways

ODD extension for all vehicle types on the primary road network with infrastructure support to demonstrate robust and reliable automated driving interoperable across countries and brands.



Urban

and peri-urban transport for people and goods

The most important contributor to the societal objective of energy efficiency and liveability in urban areas, linked to peri-urban areas generating traffic due to commuting transport needs, and first and last mile.



Rural

and secondary road network

The biggest challenge, combining high vehicle speed with full traffic complexity, even limited coverage of digital infrastructure in the long-term. The most important contributor to safety, accessibility, and inclusiveness.

Connected and cooperative services

Improving traffic and logistics/mobility services also without higher levels of automation, adding connectivity and digitalisation to existing services (including remote assistance and management).

Strategic opportunities created by infrastructure involvement

- To achieve the goals of **green mobility**, charging infrastructure is vital, with cooperation models being necessary to provide those in sufficient quantity and where needed.
- The future of digitalisation in mobility is driven by data, with **digital twins** integrating all elements of the road transport system as necessity for CCAM. ⇒ Cooperation models between automotive industry and national road authorities are being elaborated.
- Infrastructure is crucial in providing data that vehicles cannot gather themselves.
⇒ Create basis for data sharing and extension of the **e-horizon** via communication technology



Concrete opportunities created by infrastructure involvement

- **Incident /emergency detection and management** offer high potential to increase safety and efficiency on roads. ⇒ Cooperation models between fleet management and traffic management centres, operators of shared fleets and city authorities are necessary.
- National road authorities are able to offer not only the **environment for large-scale demonstration**, but also the associated infrastructure support and data for a digital twin and e-horizon to enable safe and efficient introduction of CCAM.
- **Cooperation opportunities** with national road authorities are currently being developed in the CCAM Partnership (e.g. States Representative Group) as well as by CEDR-EUCAR cooperation.



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