



Deliverable D2.3

Overview of roadmaps and process implementation



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List of abbreviations and acronyms

Acronym	Meaning
ALICE	The Alliance for Logistics Innovation through Collaboration in Europe https://www.etp-logistics.eu/
CAD	Cooperative and Automated Driving
CCAM	The European partnership on Connected, Cooperative and Automated Mobility https://www.ccam.eu/
CEDR	Conference of European Directors of Roads https://www.cedr.eu/
CSA	Coordination and Support Action
D	Deliverable
EC	European Commission
EGVIA	European Green Vehicles Initiative Association
ERRAC	European Railway Research Advisory Council https://errac.org/
ERTRAC	European Road Transport Research Advisory Council The ETP for Road Transport https://www.ertrac.org/
ETP	European Technology Platform
EU	European Union
EUCAR	European Council for Automotive Research and Development https://www.eucar.be/
LCA	Life-Cycle Analysis or Assessment
LDFT	Long Distance Freight Transport
M	Month, in relation to the start of a project
MaaS	Mobility as a Service
MS	Milestone
ODD	Operational Design Domain (used in this case as related to the operation of connected and automated vehicles).
OEM	Original Equipment Manufacturers (often used as a synonym for automotive vehicle manufacturers and/or tier 1 suppliers thereto)
POLIS	The network of cities and regions cooperating for innovative transport solutions https://www.polisnetwork.eu/
R&I	Research and Innovation
RTR	Road Transport Research
Q	Quarter, as in a period of a year
SDGs	Sustainable Development Goals
SM	Social Media
SRA	Strategic Research Agenda
SRIA	Strategic Research and Innovation Agenda
STRIA	Strategic Technology Research and Innovation Agenda
TEN-T	Trans-European Transport Network (https://transport.ec.europa.eu/transport-themes/infrastructure-and-investment/trans-european-transport-network-ten-t_en)
ToC	Table of Contents
ToR	Terms of Reference
TRA	Transport Research Arena
UM	Urban Mobility
UN	United Nations
WG	Working Group
WP	Work Package
2ZERO	European partnership on green vehicles (towards zero emission vehicles) and mobility solutions https://www.2zeroemission.eu/

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1 Introduction

1.1 Project Abstract and Reference to the Work Plan

STREnGth_M is a coordination and support action (CSA) co-funded by the European Commission (EC) under the call for project proposals topic HORIZON-CL5-2022-D5-01-11. The objective of this topic is to promote sustainable road transport in Europe and at international level. This CSA contributes to a further harmonisation of research and innovation activities and, therefore, to European strategies for future transport systems. The action helps reduce the time to market of new mobility solutions, by stimulating a wider participation in EU activities and supporting worldwide dissemination of the results therefrom. In addition, this CSA supports climate action and air quality improvement in line with the Green Deal's objectives and contributes to the United Nations (UN) Sustainable Development Goals.

The STREnGth_M project contributes to the planning of research and innovation in Europe by identifying future research needs in the field of road transport, by updating and supporting the coordination of strategic research agendas and roadmaps in the field, and by facilitating continuous exchange between road transport research related Horizon Europe partnerships and platforms. Further, STREnGth_M analyses research, innovation and cooperation capacities in Member States, explore funding instruments at national and regional levels, and assess national and regional roadmaps. Within STREnGth_M, the global progress of electric mobility has been tracked whilst measuring the feasibility of innovative solutions for prospective and emerging markets in Africa, Asia and Latin America. Thus, STREnGth_M strengthens existing and even forge new links between European, national and regional programmes, and support structures for international cooperation task forces. The project partners have also identified barriers that may exist for the deployment of research results at European and international levels, and identified education and training actions to contribute to capacity building. In order to inform and engage the stakeholder community, policy makers, the civil society, the consortium has developed dissemination strategies, supported the dissemination and organisation of European and international road transport research related events. This way, the dissemination of the contribution from road transport to the realization of the European Green Deal targets and the Paris Agreement has been ensured. Via the establishment of the Multiplier Group, the engagement of the various stakeholders has been facilitated during the project.

Designing road transport for 2050 is a long-term process that requires collaboration between all stakeholders in both the public and private sectors. Flexibility and adaptability to emerging technologies and societal changes are key to ensuring the success of such activities. However, only proper investment in research and development for existing and emerging transport technologies can meet societal and economical goals. Moreover, designing road transport in Europe for the future involves considering a wide range of factors, including sustainability, technological advances, population growth, urbanization and the environment. As an example, to show the complexity of the road transport research and innovation roadmapping, a short, not comprehensive, list of factors involved in the design of road transport of the future is indicated: green safe and resilient transport; sustainability and environmental impact; electrification and alternative energy carriers (vectors, fuels); autonomous and connected

vehicles; high-speed, energy-efficient and well-connected public transport systems; sustainable urban mobility; mobility as a service (MaaS), road infrastructure; regulation and policy; circular economy; and, public engagement.

From the considerations above, the importance of an overview of the activities related to the planning of various roadmap updates, their creation, the processes involved and the related activities is evident and will be reported herein.

1.2 Connection to European Technology Platforms and/or Horizon Europe Partnerships

As reported on the ERTRAC web site, the STREnGth_M CSA is directly connected to ERTRAC, the European Technology Platform (ETP) for Road Transport recognized and supported by the European Commission.

Preceded by EAGAR (2008-2010), FUIRORE (2009-2013), SAFIER (2009-2012), FOSTER-ROAD (2013-2016), FUTURE-RADAR (2017-2020) and FUTURE-HORIZON (2021-2023), STREnGth_M aimed to contribute to the planning of research and innovation in Europe by:

- Specifying future research needs in road transport
- Updating and supporting the coordination of strategic research agendas and roadmaps in the field
- Facilitating continuous exchange between road transport research-related Horizon Europe partnerships and platforms
- Identifying existing barriers to the deployment of research results at European and international levels
- Measuring the feasibility of innovative solutions for prospective and emerging markets in Africa, Asia, and Latin America.

In particular, this contribution is towards the activities of ERTRAC. However, other partnerships are of relevance to the project, these are, for example, the 2Zero Partnership and the CCAM Partnership.

1.3 Related STREnGth_M Work Packages and Tasks

In line with the goal of the STREnGth_M project, Work Package 2, entitled “Research and Innovation Planning”, has the objectives to:

- Ensure harmonized research and innovation plans in order to strengthen the European road transport research arena and Europe’s future transport systems
- Identify future research needs in road transport
- Layout the plan needed for the roadmapping activities at the ERTRAC Working Group level
- Support ERTRAC Working Group (and CO₂ Evaluation Group) activities
- Facilitate cooperation between ERTRAC and road transport research related Horizon Europe partnerships
- Support the Horizon Europe mid-term review of the partnerships’ Strategic Research and Innovation Agendas.

This work package is divided into three tasks:

Task 2.1: Identify future research priorities in road transport (M1-M22);

Task 2.2: Update and coordinate strategic research agendas and roadmaps in the field of road transport (M1-M36);

Task 2.3: Facilitate exchange between road transport related platforms and partnerships (M1-M36).

These tasks have related deliverables. For Task 2.2, to assist with the overview and coordination of research planning activities during the project, the deliverable, D2.2, “Timing for Roadmap Updates”¹ was made during the first year of the project. As such, in this deliverable, D2.3, “Overview of roadmaps and process implementation”, at the end of STREnGth_M, the activities conducted in line with the planning expressed in D2.1 are reported, in relation to the achievement of, in particular, the first three objectives given above.

1.4 Scope of this Report

In the previous deliverable, D2.2, some background to the role of ERTRAC, in relation to research planning, and how this role has been fulfilled during the first 20 years of the Technology Platform’s existence was given. Further, based upon this background, a projection of the likely activities related to research and innovation planning, in particular those from the ERTRAC Working Groups, was shown. This included the details of the proposed working group activities together with other, related activities, e.g. those for the update of the ERTRAC Vision and its Strategic Research Agenda (which was covered in Task 2.1 and, partly in Task 2.2a), the ERTRAC CO₂ Evaluation Group (which was covered in Task 2.2b), and Road Transport Related partnerships (which were covered in Task 2.3) over the duration of STREnGth_M. As such, this report gives an overview of the activity of much of ERTRAC during the second half of the STREnGth_M project, related to research and innovation planning during the mid-part of the Horizon Europe framework programme and input into considerations for the next framework programme.

This report should not be read nor considered in isolation. There are related reports generated for the deliverable of other parts of STREnGth_M, in particular from Work Package 1 related to the methods of research planning, for roadmapping². Furthermore, there are publications within the Working Groups of ERTRAC or from the ERTRAC Plenary, which will provide further content to the plans outlined in this report. Similarly, the publications from the partnerships, such as 2Zero and Member States or international bodies.

It should be recalled that research and innovation needs, as represented in roadmaps, are an essential tool for the stakeholder community to formulate the demands of and opportunities offered by the ever growing scientific and technological landscape in the road transport domain. Further, that these roadmaps are one of the instruments for funding bodies at

¹ https://www.ertrac.org/wp-content/uploads/2024/03/STREnGth_M_D2.2_approved.pdf

² https://www.ertrac.org/wp-content/uploads/2024/03/STREnGth_M_D1.2_approved.pdf

European, Member States and international levels to properly orient the allocation of resources for such research and innovation in this domain.

1.5 Method

The activity which has led to this deliverable report took place in several steps, including those reported in D2.2:

1. Review of the documents created at the outset and during the first ten years of ERTRAC, to better understand the formal definition of the role of the technology platform and the intention of how that was to be fulfilled (reported in D2.2 and referenced herein).
2. A review of the timing of the publication of the various documents from ERTRAC, in particular those related to road transport research and innovation, e.g. the working group roadmaps, and that in relation to the timing of the EU framework research programmes, to better project the timing needs for the delivery of the coming research plans (again, reported in D2.2 and compared with herein).
3. ERTRAC Strategy Meetings annually, wherein the activity plans, in particular of each working group but also related partnerships, was presented, discussed and agreed.
4. The normal activities of the ERTRAC Working Groups, the ERTRAC Plenary and the related partnerships (in particular the 2ZERO and the CCAM partnerships), which led to the publication of many new documents, as published by ERTRAC etc.³
5. The generation of this deliverable report on the basis of the above.

The findings of each of these activities will be reported in the following chapters of this deliverable report.

In parallel with the above steps the activities, e.g. of the individual working groups and of work packages and tasks within STREnGth_M yet outside of Task 2.2a, have continued and had some bearing on what is reported here.

1.6 Outcome

Previously, see D2.2, based upon the activities above etc., it was recognised that several aspects of the research and innovation mapping activities of ERTRAC needed to be planned and enacted within the duration of STREnGth_M:

- Given the timing and duration of the Horizon Europe Framework Programme, it was clear that activities to support the input of ERTRAC towards the planning of the second half of Horizon Europe and beyond, i.e. through to Framework 10, needed to be initiated during STREnGth_M. In particular, these activities were:
 - a. An update of the ERTRAC Vision 2050 and of the ERTRAC SRA.
 - b. An update of the ERTRAC CO₂ Evaluation Group study, and consideration of its next steps, including supporting partnerships with related activities.
 - c. Updates of the majority of the ERTRAC working group roadmaps, to a greater or lesser degree depending upon the working group.

³ See <https://www.ertrac.org/documents/> for example

- d. Consideration of other topics requiring the attention of another ERTRAC group, as a Task Force and the possible need for further or alternative Working Group activities.

Additionally, activities within the partnerships (e.g. related to STREnGth_M Task 2.3), in particular their monitoring, the update of their SRIA and the determination of the possible organisation of partnerships within the automotive sector within Framework 10, were made.

These aspects are represented on a simplified Gantt chart in Figure 1, below, which is an update from that given in D2.2, reflecting and representing the status of activities towards the end of STREnGth_M.

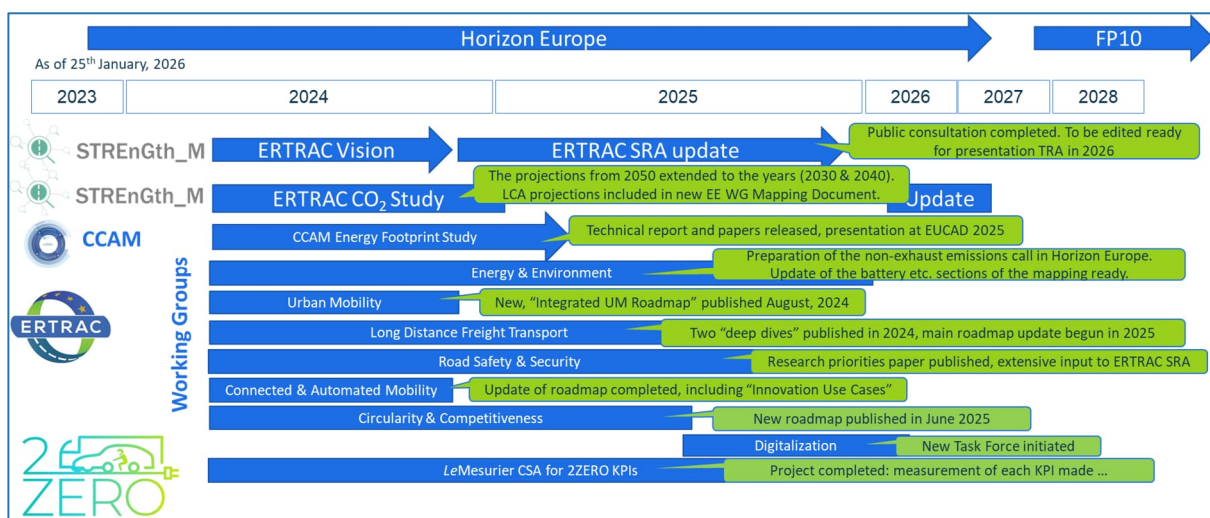


Figure 1. RTR Planning Activities and Status as of the end of STREnGth_M (updated from D2.2)

During step 2 of the Method, noted above and as reported in D2.1, it was found that the update frequency reported for ERTRAC, at just over every two years, is consistent with practice in other regions and countries. Further, as reported in more detail below, it was seen, during the second half of STREnGth_M that this update frequency was maintained (e.g. by the majority of the Working Groups) and exceeded by ERTRAC, as a whole, given the reporting of STREnGth_M and the need to prepare, position ERTRAC within the road transport sector in relation to its rapidly changing landscape, the occurrences thereto and the planning initiated for Framework 10.

Updates of the roadmaps included cooperation between working groups, to aid consistency between them. More generally, it is to be recognised that the activities of the ERTRAC working groups in particular, but naturally ERTRAC as a whole and of the other partnerships, will not end during STREnGth_M or immediately thereafter.

Given the above considerations, in the subsequent chapters, here, the progress made within the activities identified above and indicated within Figure 1 are reported. For reference, the status of the ERTRAC roadmap publications as of the beginning of 2023 was reported in D2.2, as represented in Figure 2, below.



Figure 2. ERTRAC Roadmaps Published (status 2023 (from D2.2))

2 ERTRAC Working Group Activities

2.1 Introduction

The ERTRAC Working Groups are currently those of:

- Urban Mobility
- Long Distance Freight Transport
- Energy & Environment
- Road Transport Safety and Security
- Circularity and Competitiveness (formerly known as Global Competitiveness)
- Connected Automated Driving

together with a new Task Force related to Digitalization aspects within road transport.

Once a year the co-leaders of the WGs, together with the ERTRAC Board and the leaders of associated partnerships, i.e. 2ZERO and CCAM, come together to discuss pertinent topics: during such strategy meetings in Q3, 2024 and 2025, i.e. M20 and 32 of the STREnGth_M project, on the basis of the timing needs identified in Chapter 2 of D2.2, some of the WG presented their immediate plans. In this chapter, the results of the work conducted, published etc. in the context of these plans, together with those relevant aspects from the partnerships and within STREnGth_M WP2, are reported.

2.2 Urban Mobility

Soon after the start of the second period of STREnGth_M, the paper, “Urban Mobility Towards the 15-minute city”, a “Discussion paper on the future R&I topics for Urban Mobility and the 15mc”, was published in December 2023.



Figure 3. The UM 15-Minute City paper published during STREnGth_M (extract)

The concept of the 15-minute city was defined, particularly in relation to Urban Mobility, and European research projects there to documented. Thereafter, roadmaps and their elements relevant to the concept were given, before suggestions as to how the concept could be realised, overcoming barriers, challenges, and considering the aspects of user needs and behaviours, tools and the policy, planning and regulatory frameworks. Consequently, conclusions were drawn and future research topics indicated.

The latest roadmap published by the Working Group is the “Integrated Urban Mobility Roadmap” in 2024, an update from the 2017 version. This was released in accordance with the planning made at the beginning of STREnGth_M and published in D2.2.



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Figure 4. The UM WG Roadmap Update during STREnGth_M (extract)

The new roadmap was published as a result of the joint work between ERTRAC, ALICE, ERRAC, with contributions from other ERTRAC WGs, many associations, and about twenty other institutes or organisations. The document was extensive, with about ninety pages in length, many tables and figures, together with a comprehensive list of references. The introduction gave the background and scope to the document. Policy Drivers were reported as well as Research and Innovation Methodologies. Research Needs, Priorities and Milestones were documented in relation to Frameworks and Enablers; Innovative Urban Mobility Solutions and Services.

In the Introduction, it was noted that urban mobility constantly evolves along with technological and non-technological progress, economic changes, societal and environmental challenges, trends and behaviours, actions and reactions to the marketplace. There is common agreement that urban transport, for both passengers and goods, should be environmentally friendly, convenient, accessible, affordable, and resource-efficient for all.

The document presented a comprehensive and integrated perspective on urban mobility, identifying research and innovation needs and laying the groundwork for the future - towards optimising urban mobility systems and addressing related challenges ahead. The roadmap

brought the perspectives of experts and different types of stakeholders, thus representing a holistic perspective on the urban mobility system, and integrated the learnings of thematically focused roadmaps and papers produced by the Working Group over previous years. This included an appreciation of research and innovation projects in the urban mobility field that have been funded so far and the extent to which they addressed research, innovation, and deployment priorities identified in earlier ERTRAC urban mobility documents.

2.3 Long Distance Freight Transport

The latest Long Distance Freight Transport (LDFT) roadmap was published in 2019, an update had been initiated during the second half of 2023, for publication by the middle of 2024. The update was made in two steps, as planned (see D2.2).

The paper on “Decarbonizing Freight Transport with Available Green Energy” was published in March, 2024. After giving the background and noting the trends and major assumptions for the analysis reported, i.e. that decarbonizing transport requires access to sufficient green energy at affordable prices and that the current EU legislative framework does not address energy access for road transport enough, questions were raised about who will take the risk of investment in the sector, hence, key issues were recorded:

- How to speed-up the rate of change executed in the transport sector
- Which are the common technology building blocks that can be deployed and would benefit from additional scaling
- If it is possible to change the carbon intensity of road transport with new operational business models, from a system wide multi-sectorial perspective

Hence research needs were identified, relating to customers, infrastructure, vehicles and powertrain systems, and energy.



Figure 5. The LDFT WG deep dive on Decarbonisation during STREngth_M (extract)

The ten-page paper on “Paving the way for infrastructure and LDFT cooperation” was published in June 2024. The paper started with a context and problem statement, relating to the Ageing Road Infrastructure and Budget Constraints; New Infrastructures: Energy and Information, Thereafter, the Prospects for Infrastructure-Vehicle Cooperation was introduced and some key issues, bottlenecks and challenges documented. Finally, the Research and Development Needs related to this topic were noted:

- A Global assessment framework for benefit-driven use cases of Infrastructure-Vehicle Cooperation;
- An investigation into the impact of IVC on humans (drivers, road users, logistics and the population in general); and
- An analysis of regulatory and technological frameworks.



Figure 6. LDFT WG deep dive on Infrastructure during STREnGth_M (extract)

2.4 Energy and Environment

At the start of STREnGth_M, the Energy and Environment WG had recently (2022) published a major, extensively updated version of its roadmap, which, along with the themes of energy carriers and powertrain technologies towards net zero carbon road transport, also took into account infrastructure and road transport users plus system aspects. Hence, activities during STREnGth_M took a smaller scale, as noted in D2.2, with specific updates to sections of the roadmap, which are now nearing completion, under the renewed leadership of the WG.

In addition to the roadmap updates and workshops, a more extensive update of the ERTRAC CO₂ Working Group findings was made through to Q2, 2024. Previously, the ERTRAC CO₂ Evaluation Group had conducted two studies on European road vehicle system energy consumption projects for 2050:

- Tank to Wheels (during FUTURE-RADAR)

- Well to Wheels (during FUTURE-HORIZON)

This analysis has been published in two scientific journal papers (and several conference presentations). Through STREnGth_M, the analysis methods and findings, were used as a basis for making further projections for the transition years towards 2050 (i.e. at 2030 and 2040). The possible energy and emissions consequences of the decarbonization of road mobility towards 2030 and 2040 were evaluated on a well-to-wheels basis together with initial indications of the trends should a life-cycle analysis be made. The decarbonisation evolution was related with the research activities at European level, such that the work feed into the monitoring and measuring aspects of the 2Zero Partnership, as enacted during the LeMesurier⁴ project. Thereafter, it was suggested that the study techniques be extended to include: life-cycle effects (over the same time period); emissions (CO₂ etc. but possibly also tyres and brakes); material flows and circularity; resource needs; and possibly, other critical resource requirements (e.g. water). The timing, collaboration between other representative organisations, and detailed extent of this subsequent activity still has to be determined: this will take place during Q1, 2026.

2.5 Road Transport Safety and Security

The latest roadmap from the ERTRAC safety WG was published in 2021. An update paper to the latest roadmap was worked on during 2023, for completion by the end of the calendar year as an input into topics for the second half of Horizon Europe and/or Framework 10.



Figure 7. The Safety WG Roadmap Update during STREnGth_M (extract)

⁴ <https://lemesurier-project.eu/>

In November 2023, the paper entitled, “Safe Road Transport Research Priorities for 2025”, sub-titled, “Safer and more Sustainable Mobility for All” was published (see Figure 7), as a supplement to the existing roadmap, one which highlighted the remaining research and innovation needs. Hence, this document gave the background, policy context, challenges and objectives whilst reiterating the importance of European road safety research and innovation. Three research priority topics were identified:

- Safe Human-Technology Interactions in the Coming Decade (particularly related to the developments in CCAM and in-vehicle sensor technologies);
- The Safety of Bicyclists and the Users of other Micro-mobility Devices (particularly related to risk detection and analysis, behaviour, passive safety (e.g. infrastructural) and data analytics, leading to possibly new concepts, designs and regulatory approaches);
- The Safety of Users of Small Electric Vehicles (those from L6 to above L7) (particularly related to in-vehicle and infrastructural safety aspects, minimum safety requirements, protective systems and operational domains thereto).

2.6 Circularity and Competitiveness (previously Global Competitiveness)

During STREnGth_M this working group transitioned to looking at the topics of Circularity and Competitiveness. The plans and activities of the WG were newly defined: an update of these plans agreed by the end of 2023.



Figure 8. The Circular Economy & Competitiveness Roadmap published during STREnGth_M (extract)

During the second half of STREnGth_M, the WG transition was completed, including new leadership and increased activity from a team with representatives from OEMs, Tier 1 Suppliers, RTOs, Academia and representation groups throughout Europe whilst gaining input and feedback from many others. This led to the publication of a new roadmap, “ERTRAC

Roadmap Circular Economy and Competitiveness of the European Road Transport” in June, 2025.

The roadmap recommended a two-layer approach for future research and innovation programmes at both European and national levels: Firstly, it proposed three large-scale, industry-led lighthouse projects at a European level, supported at the highest possible level within the sector, with ample funding and the best available project management practices and capable human resources, following international best practice. Since, only by deploying substantial private and public resources in the multibillion-euro range the EU will be able to leapfrog circularity and competitiveness to the next level in a timely manner. Secondly, it was noted that these large projects should be complemented by smaller and highly connected initiatives and projects on national and/or European levels that focus on specific research and innovation needs. It was recommended that these projects should be embedded as soon as possible in national and/or European public, academic, and corporate research and innovation frameworks.

The document emphasized the urgent need for the automotive industry to transition towards a circular economy (CE) to enhance sustainability and resource sovereignty complementing the efforts towards zero-emission road transport. A CE model was defined, as one that promotes the continuous reuse, repair and recycling of materials, contrasting sharply with the traditional linear economy characterized by a take-make-dispose approach. The document highlighted the significance of the 9R principles—Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Recycle, and Recover—as essential strategies for implementing a circular economy.

The significant challenges, faced by the automotive industry were stressed. Whilst the EU's reliance on material imports, the pressing need for improved resource productivity and to reduce the carbon footprint, were identified as critical issues that must be addressed. The EC strategy and regulatory initiative thereto were noted as designed to modernize existing legislation, reduce the environmental impact associated with vehicle production and disposal, and improve access to recycled materials.

Several research priorities essential for advancing the circular economy for zero-emission vehicles within the automotive sector were outlined. Additionally, the importance of digital solutions for tracking, tracing and managing products, components and materials throughout their lifecycle was emphasized, given that the automotive industry plays a pivotal role in driving economic growth and innovation in Europe, contributing significantly to the region's GDP and employment. It was noted that achieving a true circular economy requires collaboration across various sectors, including manufacturing, energy, finance and waste management.

In conclusion, the document advocated for a comprehensive transition to a circular economy in the automotive sector; underscoring the necessity for innovative research, supportive policies and cross-sector collaboration to effectively address environmental challenges and enhance the competitiveness of the industry and, when interlinked with the transition towards zero-emission road transport, circular economy will become a competitive edge for Europe.

2.7 Connected and Automated Driving

From the ERTRAC WG on Connectivity and Automated Driving, in combination with the CCAM Partnership, the update of Chapter 2 of the CCAM Roadmap (a planned, see D2.2) was completed during the second period of the STREnGth_M project, see “Connected, Cooperative and Automated Mobility Roadmap. Update of Chapter 2 “Agenda 2030” on Innovation Use Cases”, which was published in February, 2024. This document provided an update of the ERTRAC CCAM Roadmap (Version 10) published in 2022: specifically reviewing its Chapter 2, “Agenda 2030”. A new, revised structure considering the framework conditions for large-scale demonstrations and the opportunities created by infrastructure involved was given together with six specific domains for innovation:

- Connected and Cooperative Services
- Parking;
- Confined areas;
- Highways;
- Urban and peri-urban transport for people and goods;
- Rural and secondary road networks.

This chapter update focussed on innovation use cases: proposed an operational agenda for research. This update was to be seen as supplement to the SRIA of the CCAM Partnership, providing further concrete direction to better understand the feasibility of use cases for their application in Large Scale Demonstrations. As this roadmap update is clearly focussing on research and innovation, it did not give short-term policy recommendations.



Figure 9. CCAM WG Roadmap update published during STREnGth_M (extract)

2.8 Digitalization

During the second period of the STREnGth_M project the need and potential of a further ERTRAC Working Group, related to the aspects of digitalization within the road transport sector was raised and acted upon. The matter was raised during ERTRAC strategy and plenary meetings, such that a new Task Force was proposed and presented during the second half of 2025. This proposal was accepted, leaders for the group agreed and the Task Force kicked-off in October 2025: at least two meetings of the group have taken place during the final months of the STREnGth_M project. Experts from this group have consequently been involved in the drafting activities for the future, single automotive partnership within Framework 10.

3 Related Partnership Activity Plans

3.1 EGVIafor2ZERO

The 2ZERO SRIA was updated during 2023, given the mid-timing of the Horizon Europe Framework Programme. Similarly, the monitoring report of the Partnership was conducted Q1 2024. Thereafter, the projected impact of the Partnership towards its targets, as measured by its key performance indicators (KPI), was assessed during a complementary CSA named “LeMesurier”, which started in January 2024 and completed in December 2025.

3.2 Connected and Cooperative Automated Mobility

The CCAM SRIA was updated by December 2023, during the transition of from Period 1 to Period 2 of STREnGth_M. Aspects of this updated were illustrated in Figure 10, below.

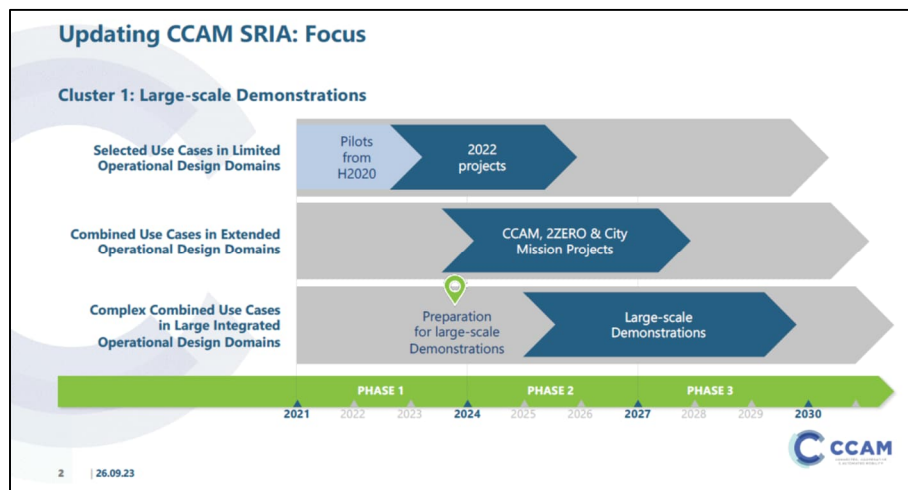


Figure 10. The Focus for the CCAM Partnership Activities (from D2.2)

The Partnership had identified the need to research (to investigate, to examine) the net energy impact of introducing automated vehicles in the road transport domain. A study to do this was defined and initiated during Period 1 of STREnGth_M. This study was executed through 2024 with the involvement of the JRC. Since there were complementarities between this CCAM study with those of the ERTRAC CO₂ Evaluation Group, cooperation was realised through the STREnGth_M project, with ERTRAC partners having an advisory role in the CCAM study. The study was started in March 2024, entitled “On the energy intensity of road transport in the presence of CCAM Services” and its findings were published in 2025, being reported at the EUCAD Conference of that year⁵.

⁵ See <https://www.ccam.eu/ec-jrc-study-on-the-energy-intensity-of-road-transport-in-the-presence-of-ccam-services/#:~:text=The%20CCAM%20Partnership%20initiated%20a,the%20full%20press%20release%20here.>



Figure 11. CCAM Study on Energy Intensity published during STREnGth_M (extract)

4 Updating the ERTRAC Vision and Strategic Research Agenda for FP10

This activity was supported throughout 2023 to the end of 2025 by partners within the STREnGth_M project. Since policy targets require fundamental changes to the transport system, STREnGth_M made use of a cross-thematic, high-level approach complementing the established bottom-up approach for the identification of research priorities. This was based, as a first step, on a common vision of the future European road transport system, see STREnGth_M Deliverable D2.1 and the ERTRAC release, which was published in June 2024⁶. This was a preparatory step, a prerequisite, for an update of the ERTRAC SRA.



Figure 12. The ETRAC Vision 2050 adopted during STREnGth_M (extract)

⁶ See <https://www.ertrac.org/wp-content/uploads/2024/06/ERTRAC-Vision-2050-adopted-ERTRAC-Plenary-24-06-2024.pdf>

The ERTRAC SRA was updated from that in 2017, based upon the positions expressed in the ERTRAC Vision 2050 and updated research needs and challenges identified during the workshops thereto. Progress on the drafting of the new SRA was reported to the ERTRAC Plenary throughout 2024 and 2025. A final version of the updated SRA was released for public consultation in December 2025⁷. At the time of reporting, the public consultation has been concluded, the input received is being integrated into the SRA document. Further, a brief, two-page summary of the SRA will be created to supplement the extensive document.



Figure 13. The ERTRAC SRA document released for public consultation during STREnGth_M (extract)

The SRA, its extensive collation of research needs and challenges, has formed a prime source for the positioning of ERTRAC and partners on the future of European road transport research, see Figure 14, and work by the drafting team of the future, single automotive partnership.



Figure 14. A Selection of the Position Papers related to the Horizon Europe Follow-up Research

⁷ See https://www.ertrac.org/wp-content/uploads/2025/12/ERTRAC_SRA_for_FP10_-_final_draft_for_public_consultation_05-12-2025-1.pdf