Joint ERTRAC-2Zero-CCAM Position Paper on Road Transport Research

December 2024

Powering Europe Green and Digital transformation: the imperative of automotive R&D investment in FP10

In preparation of the new multi-annual financial framework of the European Union, we, the European Technology Platform ERTRAC and the European Partnerships 2Zero and CCAM, representing the Road Transport Research community, call on the European Union to urgently take strong actions to support the transformation of the sector towards digitalisation and decarbonisation and to defend its competitiveness in the face of a fierce international competition challenging the European economic sovereignty.

The vital role of Road Transport in Europe society and economy

Road transport is an essential part of the daily life of European citizens and businesses: road mobility provides everyday access to schools, offices, shops, healthcare etc. It is key for both passenger transport and freight and logistics: cars, vans, buses, trucks and two-wheelers play a vital role in the functioning of our society and our economy. Road transport, connecting with all the other modes and including various private, shared and public transport options, enables the social and economic life across Europe, from within city centres to remote rural areas. The road transport sector is fundamental for the economic development and the competitiveness of Europe. The sector employs around 13 million workers and contributes to 7% of the EU GDP. It supports the economic position of Europe worldwide with more than €100 billion of positive trade balance. Additionally, it provides an important contribution to the budget of public authorities across the EU with over €390 billion of government revenues. In terms of research investment, it is the highest spending sector in Europe with almost €60 billion invested annually in R&D. (figures from ACEA, the FIA and European Commission.)

Investing in Research and Development: a crucial pathway for European Competitiveness

As highlighted in the recent Draghi report, continuing to massively invest in Research and Development is absolutely necessary to keep Europe competitive worldwide, and to reach the major societal objectives of the EU Green Deal, Industrial Plan and Digitalisation policy. Innovation in road transport plays a pivotal role not only in the journey towards carbon neutrality but also in enhancing road safety and traffic efficiency, while it fosters affordability, accessibility and the resilience of transport systems. Investing in automotive R&D, future technologies, infrastructure and services is essential to meet the EU's ambitious targets for 2040 and 2050, and to achieve the twin transition, green and digital, with solutions made in Europe that will ensure sovereignty in a world of uncertainties. For that, a robust cooperation between public and private actors is a necessity. The next EU Framework Programme must also enable the setup of large-scale flagship projects, with appropriate budget, allowing to scale-up and reach faster implementation of R&I outcomes.

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The transformative potential of collaborative partnerships

The Vision 2050 developed by the European Technology Platform ERTRAC identifies the key research fields where road transport can bring major benefits for European citizens, the environment and good functioning of the economy. Two European Co-Programmed Partnerships, Towards Zero Emission Road Transport (2Zero) and Connected, Cooperative and Automated Mobility (CCAM), have proven to be effective instruments to address the two specific challenges of Decarbonisation and Automation. The portfolio of projects they initiated delivered concrete impacts and they created unique R&I eco-systems by gathering hundreds of members from across Europe. Regardless of the tools implemented in FP10, this collaboration of research stakeholders must be continued, combining public and private investments.

Co-Programmed Partnerships have demonstrated that they are efficient, transparent, open and lean instruments to jointly identify a research agenda and define medium-term R&D priorities. The multi-stakeholder approach supports the development of research eco-systems at European level, providing added value compared to national, fragmented activities. The two Partnerships have each built a specific community of industries, research institutes and universities, also including SMEs, who represent a unique high-level gathering of expertise, tailored to their field and skilled to identify the next key topics for research and innovation. To continue benefiting from the momentum, and cross-stakeholders commitment, we should build on the existing network and fruitful collaboration.

Expanding the scope of 2Zero and CCAM

The areas currently covered by the 2Zero and CCAM partnerships are necessary to address the European Union objectives: on decarbonisation and electrification for 2Zero, and on road safety, efficient, accessible and inclusive mobility for CCAM. An ambitious initiative for these two innovation fields is necessary to provide a strong European support scheme, with a dedicated budget and tailored objectives, attractive for excellent innovators. Europe can stay competitive in the context of fierce international competition from the US and China only through a strong commitment into research and innovation. Through the evolution of these Partnerships Europe can strive to keep its technological sovereignty and resilience, while achieving its environmental targets. Europe can only aim at a world leadership position in these fields if ambitious actions are taken.

The members of the 2Zero Partnership seeks to extend its scope in the field of circularity: the system approach of “vehicles in their use phase”, including the integration with the energy system, needs to be further enlarged to cover the production phase and the end-of-life management. With this all-encompassing approach towards circular economy, more research efforts are needed on alternative materials, material usage, resource efficiency, design processes, recyclability, circular processes and improved digital and AI tools and services to support this transition. Therefore, 2Zero should become an initiative aiming at building a green road mobility eco-system embracing the circular economy principles.

The members of the CCAM Partnership also aim to evolve from a focus on technology and society readiness to a comprehensive ecosystem approach that strengthens Europe's competitive edge in the global market while having positive impacts on the society. This includes a deeper integration with physical and digital infrastructures and translating CCAM technologies into innovative mobility services that meet the needs of both passenger and freight transport. By focussing on scalability, accessibility and affordability, the CCAM Partnership evolution will support a seamless transition to deployment, enhancing public, private and shared transport, for interurban, urban and rural areas. To achieve these goals, the future activities on CCAM will prioritize digital transformation. This includes shifting from hardware-based to software-centric and electronics-supported vehicle control, integrating trustworthy AI-based functionalities as well as cybersecurity. In doing so, a unique CCAM ecosystem will be built, aimed at the transformation of road mobility through digitalisation and AI, thereby securing Europe's competitive position in the global advanced road mobility sector.

Set a next EU Framework Programme enabling flexibility and cross-sector collaboration

Complementary to the two pillars of "decarbonisation" and "digitalisation", currently covered by the partnerships, ERTRAC supports the continuation of horizontal transport calls, where important research topics addressing other EU policy objectives can be covered, usually in a multi-modal setup, e.g. innovation in urban mobility, efficiency of logistics, safety and security in transport, physical infrastructure, preparedness and resilience of the transport system etc. The research programme should always maintain some flexibility and openness to address new priorities identified by public authorities and stakeholders. Topics can address all modes together when it makes sense, but should also allow mode specific topics when there is a specific need, e.g. road safety, non-exhaust emissions, infrastructures etc.

Looking beyond road transport research, ERTRAC and the Partnerships call for an enhanced collaboration across sectors, to harvest the innovation potential coming from enabling technologies. For 2Zero, collaboration with the batteries and hydrogen sectors, for example, is very important. While for CCAM, collaboration with the sectors of chips, data, software and artificial intelligence is key. Coordination among Partnerships exists already today, via joint activities, memorandum of understanding, and some joint calls. But the next EU Research Framework Programme should encourage this further. As the automotive and mobility sector is an important user of these enabling technologies, it is key that specific requirements and expectations are properly considered. This would contribute to an overall higher effectiveness of the Programme.

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More should also be done to support the uptake of research and innovation outcomes. The signatories strongly support the idea to create "European Flagship Projects" to demonstrate the impact of innovation at large scale. Funding tools in FP10 should offer the possibility to support this kind of Trans-European Innovation Investments. The areas to be covered should be identified by the existing communities, together with the European Commission, and with a strong involvement of industrial stakeholders, ensuring quick subsequent additional activities and investments. Technology Platforms, such as ERTRAC, can play an instrumental role in identifying these flagships projects by bundling the latest results from research and providing concept for integration into the initiative.

Collaboration is a strong advantage for the innovation eco-systems of Europe. In order to maintain this competitive advantage, the new EU Research Programme must allocate the appropriate ring-fenced budgets and instruments to these initiatives. This will deliver strong and fast progress on the important policy objectives of the sector, such as climate neutrality and road safety, bringing concrete impacts to society, and supporting the European industry and economy, which have a very urgent need to preserve their competitiveness. An ambitious research support scheme can ensure that automotive and mobility will remain a strong sector in the future in Europe.

SIGNATORIES:

European Technology Platform for Road Transport

European Partnership Towards Zero Emission Road Transport

European Partnership on Connected, Cooperative and Automated Mobility