Towards a Partnership for Cooperative, Connected and Automated Mobility

POSITION PAPER

October 2019

The European Conference of Transport Research Institutes (ECTRI) is an international non-profit association that was officially founded in April 2003. It is the first attempt to unite the forces of the foremost multimodal transport research centres across Europe and to thereby promote the excellence of European transport research.

Today, it includes 29 major transport research institutes or universities from 20 European countries. Together, they account for more than 4,000 European scientific and research staff in the field of transport. ECTRI as the leading European research association for sustainable and multimodal mobility is committed to provide the scientifically based competence, knowledge and advice to move towards a green, safe, efficient, and inclusive transport for people and goods.
Towards a Partnership for Cooperative, Connected and Automated Mobility

Through its multiannual research and innovation framework programmes, the EU provides funding to strengthen industrial innovation that develop into viable products with real commercial potential, while addressing major social concerns, such as climate change, sustainable transport and renewable energy. The cluster of Climate, Energy and Mobility\(^1\) will host a multitude of partnerships covering most of the cluster. It is essential for ECTRI that all these partnerships enforce the key paradigms of the framework programme\(^2\) in facilitating these two major goals.

ECTRI appreciates the initiative to support the research and development of *Cooperative, Connected and Automated Mobility* (CCAM) and the intended promotion of these technologies towards their deployment at the European level. We see benefits by strengthening the industries’ role to foster market uptake and diminish the gap to implementation of CCAM in Europe. This can ensure that the development of high TRL (technology readiness level) projects are more streamlined towards industrial needs and map closely to the demands of the sector.

Wise market adoption of **CCAM has a great potential in terms of road safety** and can contribute significantly to a **more sustainable and efficient transport system**. Hence, **ECTRI welcomes the initiative to emphasize research and development in this domain and the push for concrete results addressing the societal targets.**

Partnerships are common instruments in the transport research area and the research community has gained some experience with them over the past framework programmes. This experience has shown that partnerships have a significant impact on the research in the correlated target domains in both thematic and non-thematic aspects. **ECTRI considers it of high importance to address potential risks in setting up a partnership** to mitigate the negative effects that partnerships can have for the results and the community as further explained in the following paragraph.

As partnerships absorb the research in their domain (e.g. Shift2Rail in rail research, CleanSky and SESAR in aviation research) it is imperative to clarify that **any partnership that largely replaces open collaborative research in mobility is also responsible to deliver aspects that go beyond high-TRL and a push towards deployment.** This is particularly important to reach the recommendations of the **LAB–FAP–APP report**\(^3\) and the EC’s goals of research\(^4\).

Partnerships in different sectors and their effects on the European research and innovation landscape are well understood in the transport domain from observations of e.g. CleanSky, SESAR, Shift2Rail and EGVIA. From the experience of its Members, **ECTRI can give the following recommendations to implement a CCAM partnership:**

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\(^1\) *Proposal for a Decision of the EP and of the Council on establishing the specific programme implementing Horizon Europe – the Framework Programme for Research and Innovation*, COM (2018) 436 Final, June 2018: A cluster of Climate, Energy and Mobility is foreseen for Horizon Europe, the 9th framework programme (p.3)


\(^4\) See **Open Innovation, Open Science, Open to the World, a vision for Europe**, European Union, 2016
A balanced approach between maturity levels

It is understandably tempting to prioritize close-to-market developments to gain short term market introduction benefiting primarily the leading stakeholders. In mid- and long term this weakens fresh ideas and depletes future innovation that relies on these ideas.

There is therefore a clear need for a good balance of TRL levels addressed. Recent partnerships have focussed heavily on higher-TRL research and innovation to produce tangible results in minimal time. Assuming that a partnership comprises all EU-research in that domain, the overall effect is that low-TRL research is underrepresented. In the mid- to long term this will hamper bottom-up developments and hence stunt new and fresh ideas in terms of research results that are foundations for new innovations in the future. This seems particularly evident for this emerging topic.

A balanced approach towards thematic coverage

The current discussion regarding CCAM focuses on vehicle technologies and specific technical enablers while failing to address core challenges of mobility, such as social exclusion, widening income gaps or mobility of vulnerable groups as social concerns. Expanding the CCAM into a broader and more inclusive context, centred on society and users, all across Europe, will increase the prospects of substantial industrial adoption and societal acceptance, and thus true contributions to societal goals.

A good balance is particularly needed in terms of social and technological aspects. The current state of play seems to favour technological driven topics, such as 5G, cybersecurity, vehicle technology and data Management. As much as these are valid technologies that offer large potential in the domain there are also non-technical aspects, such as human factors, that will have a significant impact on e.g. user acceptance, affordability, uptake and universal access to CCAM. Due emphasis should be given on the development of new skills, business and insurance models and coverage of all key ethical and data use issues. The developed solutions should be attractive, effective and persuasive. Hence it is essential to cover technical and non-technical topics in a balanced manner.

Focus on multimodality

It can be observed that in general multimodality in transport is weakly addressed in the current research. This makes this pressing topic even harder to address once it is re-introduced into EU research as the legacy is missing and new ideas and concepts need to be re-developed. The research efforts towards multimodality in general are significantly undermined by individual sectors not embracing this aspect. Transfer of knowledge on automated operations from and to the other modes is essential to the future multimodal transportation changes.

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5 e.g. EC Roadmap on Cooperative, Connected and Automated Mobility, Ares(2018)5386378 - 19/10/2018
**Governance**

Recent partnerships favour governing boards that are dominated by industrial interests. It is understandable as there are good financial reasons for the long-term involvement of industry. It also implies that the entire partnership is affected by industry policy. This makes it unnecessarily challenging to introduce new ideas and innovation into the work programme and also dampens the introduction of e.g. societal aspects, such as inclusion, that are not commercially viable. This is particularly true for scenarios in which the industry has a technology champion that wants to avoid rival technologies reaching maturity. ECTRI suggests **strengthening the role of a scientific advisory body** that mitigates these aspects from an independent standpoint in governing a partnership. This might help the industry to focus on their mid-/high-TRL interest in CCAM, influencing mid-/low-TRL development towards industrial needs and still maintain the pursuit of new concepts and ideas in low-TRL research. Furthermore, by leveraging and promoting relevant research activities and test facilities, a scientific advisory body would ensure the partnership’s support of missions, analogous to those discussed in Horizon Europe. A strengthened scientific position can also help to address issues of transparency and accountability observed in recent partnerships.

**Links to other Partnerships**

Recent partnerships created silos of isolated topics (e.g. rail research). This particularly hinders advancements in sustainable and multimodal mobility. While CCAM is focussed on road transport, it is part of a mobility ecosystem and comprises modes like buses (or people movers) as well as freight and logistics. **It seems essential that the partnership implement thematic topics in this regard.**

As the cluster Climate, Energy and Mobility involves several partnerships it seems useful that these **can collaborate in the form of interfaces between them**. These have been problematic particularly on an administrative level in the past. There were significant issues that hindered partnerships trying to collaborate. Particularly aspects of IPR, rules of participation, collaboration agreements and responsibility have been problematic in the past despite their relevance for the domain.

**Financial commitment**

Larger partnerships function via financial or in-kind contributions, hence favouring those who can afford to buy-in. This has a significant effect on the smaller partners aspiring to get member status of a partnership. While the lack of participation of smaller organisations, such as SMEs, has been a predominant effect of partnerships in the past this is equally true for mid- and smaller sized research organisations. This has been criticised in the past and **clearly a more open approach is needed, that does not discriminate against small participants** or confines their contributions to de-classed programmes of the partnership.
ECTRI is convinced that a dedicated partnership for CCAM can bring good advancements in both technical and non-technical aspects to the domain and hence strengthen CCAM in Europe. Given an adequate focus on key research areas, this has the potential to contribute to make our traffic safer and more efficient, and to reduce pollution while catering for societal mobility needs and promoting the competitiveness of the EU industry. Well executed it also will address social mobility challenges in the EU and contribute to social cohesion, mitigating increasing social gaps.

To ensure those benefits, ECTRI is asking for a balanced approach that contributes to all maturity levels (across the different TRLs) and particularly promotes research leading to future innovation. As partnerships comprise the R&I funding in the target domain it is necessary to maintain a broad thematic approach to avoid lack of innovation in alternative paths and to take into account multimodality and transfer of knowledge across the different modes.

Industry is needed to drive CCAM towards deployment and a more dominant role in partnerships ensures their involvement. But the involvement of other stakeholders, such as research providers and universities, is fundamental for their success. Hence, it is crucial to find a good balance of governance in partnerships. This is particularly relevant for administrative aspects, such as rules of participation and funding rates, to ensure attractiveness also to academia. The vast majority – if not all – of the calls should remain open to all participants.

A partnership on CCAM needs to form advantageous links into other thematic areas of mobility research. It is only by expanding beyond an isolated effort with a vehicle-centric focus, into a true, well-balanced collaboration between partners that it can realize the expected successful contribution to societal and business goals.

As partnerships absorb the specific research of their target domain and despite implementing the explicit rules of the hosting framework programme the funding rate suffers by the administrative burden of a partnership. Particularly Joint Undertakings require financial contributions that burden the funding rate for no tangible benefit to the participants. Particularly smaller beneficiaries suffer from these cuts in funding rate in contrast to open collaborative research where this effort is taken by the EC and its agencies.

Thus, independent of the instrument to be used, open calls for all topics and actors (especially for SMEs and research performers) should be guaranteed.