ECTRI RESPONSE TO EC STAKEHOLDER CONSULTATION

ON

POTENTIAL PRIORITIES FOR RESEARCH AND INNOVATION IN THE 2018-2020 WORK PROGRAMME OF HORIZON 2020 SOCIETAL CHALLENGE 4 'SMART, GREEN AND INTEGRATED TRANSPORT'

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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 27 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.

The European Conference of Transport Research Institutes (ECTRI) welcomes the opportunity of replying to the "stakeholder consultation on potential priorities for research and innovation in the 2018-2020 Work Programme of Horizon 2020 societal challenge 4 'smart, green and integrated transport' launched by the European Commission.

These responses reflect the position of the ECTRI association and can be made publicly available.

1) **What are the challenges in the field of Societal Challenge 4 ' Smart, Green and Integrated Transport' that require action under the Work Programme 2018-2020? Would they require an integrated approach across the societal challenges and leadership in enabling and industrial technologies?**

A European transport system that is resilient, resource-efficient, climate- and environmentally friendly, safe and seamless for the benefit of all citizens, the economy and society is still the challenge for the next work programme but more focus is required to face the critical challenges of environment and social issues, and to moderate the current overwhelming priority to the industry's needs and agendas.

The economic crisis is increasing the differences among Europeans, both within and between countries. Better knowledge is needed about the mobility needs of Europeans, particularly those in disadvantaged conditions, and the search for reasonable, low-carbon and affordable mobility means and services for them. More efficient, integrated multimodal transport systems could be an appropriate answer to cope with these mobility needs, but it cannot be taken for granted that the current research agenda on multimodality is taking on board the social issues associated to transport in a time of economic difficulties.

There is a need to better understand the societal challenges associated to transport in future. The study on "strategic foresight" provides some useful ideas. One key question for consideration is that the assumption in H2020 that industry-led research would increase competitiveness, create jobs and spur prosperity has not been confirmed. On the contrary, Europe seems to be losing ground to other regions. The challenge of technological leadership was taken on board in H2020 with little discussion about the necessity to foster disruptive technologies and systems (which incumbent industries generally ignore). This should be discussed in more detail now. Rather than just relying on current big technological incumbents, H2020 could consider to further empower emerging challengers (particularly SMEs) to become the technological key players of the future by developing disruptive concepts. This probably requires a bolder leadership from the public sector, less dependency on the big players and more attention to the needs of a much distressed society.

The current Work programme is divided into three calls, Mobility for Growth, Automated Road Transport and European Green Vehicles Initiative. Based on the previous observation that too much focus is given to industry-driven research and development, it could be worth exploring ways to better coordinate the programmes in the future, eventually aiming at a future integration (probably beyond H2020) into one single call. This call would cover the four broad lines of activities from the previous calls.

2) What is the output / impact that could be foreseen? Which innovation aspects could reach market deployment within 5-7 years?

In 5-7 years, it would be important for the EU that the low-carbon mobility vision could be partly materialized: integrated multimodal services available for passengers and freight, at least in the more congested/dense parts of the EU; affordable mobility properly defined and guaranteed to all throughout the EU with low-carbon transport means; and information on transport demand and supply fully accessible to researchers, policy makers and service providers through open data systems, in order to encourage the emergence of multimodality and the integration of transport modes. To reach market deployment, it is probably necessary to better match technological innovations with social and environmental needs. It seems necessary to better understand the social changes in Europe and the emerging mobility practices among Europeans. The new technological options should be better integrated within new mobility models, which should be explored in the next work programme. In this way, it could be expected to get in the next 5-7 years:

- Low-carbon mobility solutions, well suited to new mobility models and addressing the huge social equity challenge Europe is facing.
- Attractive and inclusive urban areas, providing for the mobility and transport needs of society and makes European cities worldwide attractive.
- Making multimodality a much more attractive option than it is today. Automation can provide innovative solutions to further integrate transport modes. One related question is to integrate multimodality and automation within the low-carbon paradigm; otherwise, the technological innovations may result in keeping the dominance of current carbon-based transport modes.
- A global competitive industry strengthened with new, creative players, focusing on the development of new transport concepts including automation and sharing economy.
- An open data system will be detrimental in the new digitalized transport system to achieve a continuous improvement in knowledge of the system based on free research and to create a competitive environment open for new innovations and companies. The open data system needs to be followed by necessary security considerations and protect the private interest.

3) Which gaps (science and technology, innovation, markets, policy) and potential game changers, including the role of the public sector in accelerating changes, need to be taken into account?

A few gaps are worth considering for discussion among the R&I community:

- Further development and integration of a user-centric approach (human factors) in research and development of transport technology and mobility solutions, taking into consideration the plurality and fragmentation of users within Europe.
- Automation integrated into transport systems, overcoming the current car-centric approach.
- Fostering systems areas and systems R&D as new innovation frontiers

There are a few general potential game changers, which it would be worth to explore how they can influence the current R&I paradigm in Europe:

- Demographic trends and migration movements, which can change in short time due to the economic climate and security in other regions of the world;
- The role of governments at all levels, which could take a more proactive role in accelerating the transition to low-carbon mobility and to take on board social equity as a priority for transport in times of stress;
- The consolidation of new global industrial players in transport, offering lower cost technologies beating incumbent European industries (e.g. Chinese competition for high speed train, electric vehicles, etc.).

Some more concrete "game changers" can be added, for specific aspects of the transport system, such as:

- The changing role of cities in Europe: the consolidation of competitive urban innovation areas in European cities, building on efficient and sustainable transport systems; urban migration trends and the resulting societal changes, with the opposing forces of individualization and community-integration; the increasing regulation of transport means in cities, to reduce carbon footprint and improve air quality.
- The impact of the implementation of key innovations and their influence on current business models, such as digitalization of transport, the transition of the automotive industry towards a mobility system provider paradigm, or the unprecedented connectivity of people and things through automation and connectivity of people, passengers, drivers and the Internet of things.
- Some innovations can also influence behaviour and practice of people and businesses (e.g. same day and shorter b2c delivery).
- Open data could also be a game changer in transport, empowering the research community and innovative industrial players to further collaborate and accelerate the path for changes in the transport system.

4) Which areas could benefit from integration of horizontal aspects such as social sciences and humanities, responsible research and innovation, gender aspects, and climate and sustainable development?

Low-carbon mobility is associated to different production and social patterns, which should be better explored. Technological progress in the integration of the transport system should be coupled by social research including aspects such as improved regulation and control, and transparency and public participation.

5) Taking into account the current technological transformations (e.g. digitalisation), policy imperatives (e.g. decarbonisation) and socio-economic trends (e.g. on-demand economy), what areas of transport R&I should be prioritised in the short-medium term in order to reconcile economic efficiency, sustainability and user convenience?

Climate change is probably the most critical issue, and needs to be much better integrated in transport R&I for both, mitigation and adaptation. It would be necessary to better align the research agenda regarding the integration of the transport system with emerging socio-economic trends, including on-demand and collaborative economy, location patterns, and a focus on increasing inequalities in Europe (collaborative economy is a good example of a trend with mixed consequences in terms of equality: on the one hand improving access to services, on the other hand reducing the number of jobs, particularly those with lower qualification needs, and with a potential to further decreasing social working conditions).