TRANSPORT CHALLENGE IN HORIZON 2020

ECTRI POSITION ON THE THIRD WORK PROGRAMME (2018-2020)

"Towards low carbon mobility"

July 2016

The European Conference of Transport Research Institutes (ECTRI) is an international non-profit association 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 28 major transport research institutes or universities from 21 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.

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Building on previous contributions, ECTRI would like to support the **preparation of the third Work Programme** of Horizon 2020 in the **field of transport** by calling through this position paper for a new **guiding theme "Towards low carbon mobility"** and putting forward **four main areas as perceived by the ECTRI research community as key drivers for accelerating the transition** toward this mobility: 1. Systemic approach, 2. Resilience; 3. Human factors, and 4. Policy-making.

This position paper has been elaborated by the ECTRI Task Force (TF) on European transport research and policy. This TF has been set up in view to promote the positioning of ECTRI regarding the development of the European Research Area and the transport research agenda for Horizon 2020 against the background of transport policy developments. As a strategic backbone, the Task Force identifies main cross-cutting and research areas of interest. It also prepares policy advice in support of European institutions through, e.g., making recommendations on current and upcoming challenges; delivering opinions on European Commission (EC) policy papers; or answering to EC consultations or other requests. The Chair and other members are listed, together with their contact details, in page 6.

In the next weeks, **ECTRI will provide more detailed contributions in the format of the topic descriptions of the previous Work Programmes** (WPs). Those **research topics will be identified by the ECTRI thematic groups** which gather high level experts in different transport domains. A number of those research topics will relate to the above keys drivers in view to **support the achievement of low carbon mobility**. They will be completed by some research topics addressing other important transport issues, e.g., safety.

Impact-oriented, accelerated transition of mobility: Towards robust, safe, clean, and inclusive transport systems and user-oriented services

1. The **purpose** of this position paper is to identify some important issues in the current implementation of the Transport Work Programme (WP) of the Horizon 2020 (H2020) and to propose corrective measures, which we view as necessary to achieve the transition towards up-to-the-task mobility systems and to accelerate this process.

2. Since its foundation in 2003, ECTRI has constructively contributed to the preparation of the transport research agenda in successive EU framework programmes (FPs). **ECTRI Members** have been conducting **R&D in framework programme-funded projects**; some of them since 1994, when transport was highlighted as a specific research field (FP4).

3. ECTRI has always welcomed the EU's commitment with the achievement of a proper **integrated transport system**, which is seen as the cornerstone to cope with the environmental, societal, and economic challenges of mobility Europe is facing. Basic and applied research as well as innovation are crucial to keep moving ahead in this direction, with significant contributions by the research community.

4. However it is fair to say that in spite of significant research contributions, the actual **implementation of integrated systems has been slow**, so that transport in Europe remains largely **split into the traditional modal silos**.

5. Transport **system integration** is not an end in itself. In accordance with EU policy, it has to be a mean **for facilitating the transition towards low-carbon transport**. Already in 2011, the White Paper on Transport proposed a GHG emission reduction target of 60% by 2050, compared to 1990 levels. Furthermore, the climate change mitigation targets recently agreed under the Paris commitment (COP21) cannot be achieved without a significant contribution from the transport sector.

6. While **progress** in the integration of the EU transport system is taking place, it is materialising at a **disappointingly low path**. The current focus on the industry's global competitiveness and job creation capacity has resulted in a move away from exploring radical innovative solutions. Instead, a conservative focus on short-term, incremental improvements and a shift away from strategic research and policy towards technological developments has been chosen.

7. The increased involvement of the EU industry in the last FPs does not seem to have accelerated the transition path; on the contrary, it could be argued that it has resulted in a **move of resources towards incremental improvements** to consolidate the position of established technologies and industries.

8. Consequently, there is a **need for a more balanced approach** to transport research in H2020: it must **take care of both, short-term opportunities** to support the competitiveness of the EU industry at home and at the global level, **and disruptive R&D** to drive innovation that differ from short-term gains, which are incremental by nature and cannot cope with the grand challenges ahead – inherently they only slightly improve the status quo – and to **reflect this complementary approach in structure and budget of the next Transport WP**.

9. The lack of a balanced approach results in continued isolation among transport modes, a defensive attitude towards more stepped-up innovative solutions, and little, if any **support**

to newcomers (vs. incumbents), whose competitive opportunities are often linked to disruptive innovation.

10. In summary, ECTRI **strongly encourages** the Commission to employ the Transport WP for the remaining of **H2020 period to accelerate the transition towards low-carbon mobility**, based on an integrated, robust, safe, clean and inclusive transport system.

A focus on low-carbon mobility in 2018-2020

11. Based on the Specific Programme's four broad lines of activities [(1) resource-efficient transport, (2) better mobility, (3) global leadership for the European transport industry, (4) Socio-economic and behavioural research and forward looking activities for policy making], ECTRI proposes to **stress the commitment of the Transport WP on resource efficiency with a primary focus on low-carbon mobility**, for the remaining of H2020. In this way, the necessary knowledge base can be established in order to undertake decisive policy action in the post-2020 period. Therefore, the next Transport WP (2018-2020) should provide a reasonably detailed transitional roadmap, for the research community and the transport sector.

12. Although technology plays a central role in the transition process, low-carbon mobility also implies **crucial changes in the way mobility needs are satisfied for people and freight**. It also requires more decisive involvement of the expertise of infrastructure operators and mobility service suppliers and, last but not least, changes in the regulatory framework and the institutions and agencies managing the transport system.

13. It seems necessary to reconsider the current approach to the activity on "global leadership for the European transport industry", in order to accelerate the transition towards a low-carbon transport system. The experience from the past shows that the current approach firstly has strengthened, rather than bridged, the traditional barriers among transport modes, secondly has been increasingly controlled by incumbent players, and thirdly has not accelerated the emergence of more radical even disruptive innovations.

Key areas for the transport research programme 2018-2020

14. Fig. 1 shows the **four main drivers** for accelerating the transition of mobility: **systemic approach**, **resilience**, **human factors**, and evidence-based **policy making**.

15. **Systemic approach.** Considering H2020's new instruments (e.g. Joint Technology Initiatives-JTI, Joint Undertaking-JU), a systemic approach to transport is still far from being materialized in many parts of the FP. This is a major barrier, jeopardizing the integration of the transport system in the real world due to limited research results and uncertain research-to-market implementation roadmaps. Furthermore, low-carbon technologies and concepts will require significant changes in the supplying industry, citizens' mobility patterns and logistics (e.g., requiring new business models for original equipment manufacturers (OEMs), new mobility practices such as those related to sharing and automation, a different approach to resilience). Strengthened cooperation among modal stakeholders could be fostered starting from the research level in a variety of areas, such as developing user-focused modelling and supporting tools for multimodal mobility services. Automation and

internet-of-things are expected to radically transform the users' perception of the transport experience. There are enormous synergies in encouraging a cross-modal approach in this field, facilitating the convergence of the quality of service and safety level users can expect, independently of the transport modes actually chosen.

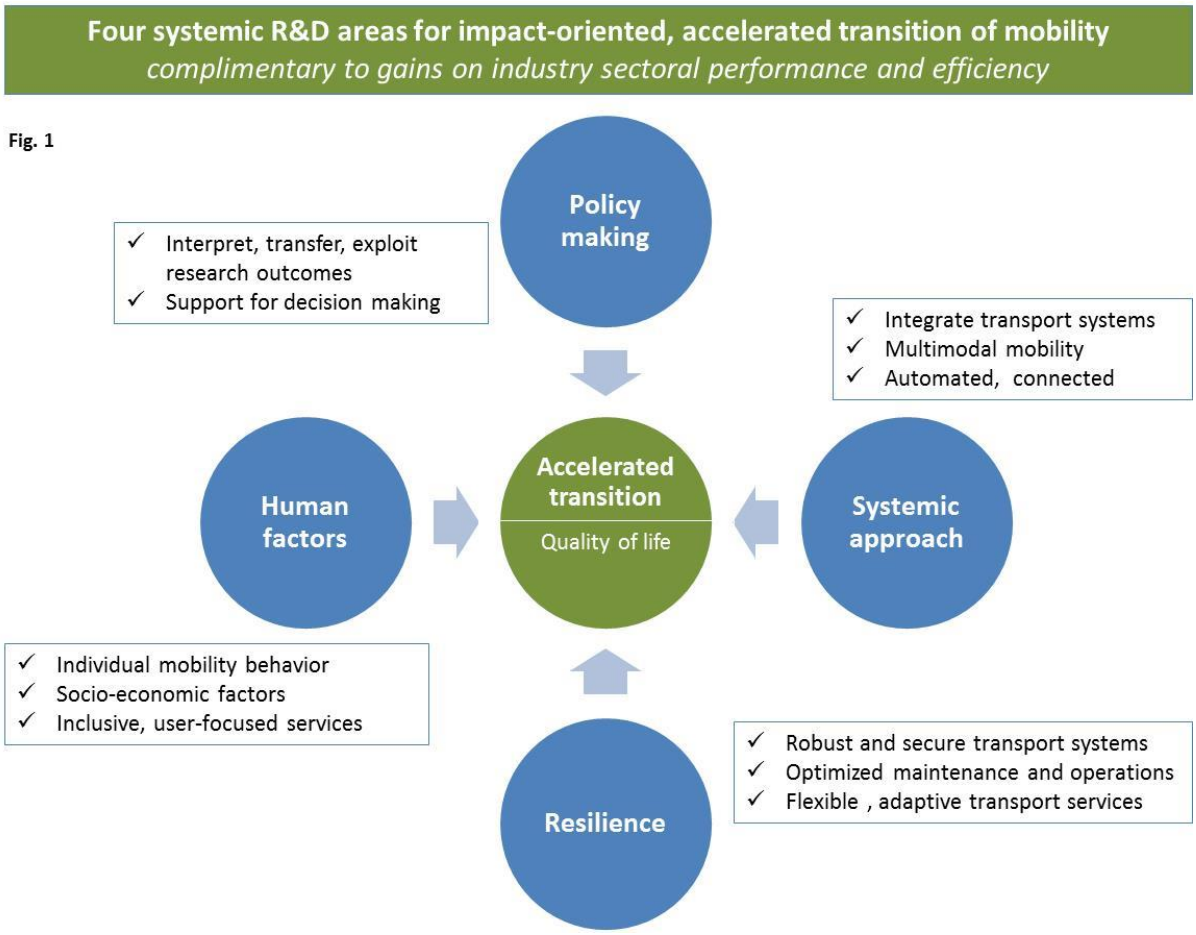

Fig. 1

16. **Resilience**. Resilience covers the traditional robustness concept and security, but goes beyond. It refers to the capacity of people and freight to cope with mobility needs under stressing conditions. Notwithstanding the expectations to gain robustness in each transport mode, research on this area should identify the opportunities for multimodal-based redundancies and also explore expected trends in the mobility needs of people and businesses and freight in Europe in the future, including ways to reduce overdependence of the European society and economy on transport, as new technologies are deployed and new business, production, and lifestyle models emerge.

17. **Human factors**. A transition of mobility will change the traditional patterns for mobility provision, and it is crucial to screen and assess in advance the social implications of low-carbon mobility models, in order to integrate inclusion as a core value to preserve. Classic research questions related to safety, accessibility, affordability, financing or users' behaviour have to be revisited considering the new mobility concepts and their social implications.

Furthermore the low-carbon transition is also relevant in terms of quality of life for all those living in Europe, and not only for transport users.

18. **Policy making**. Choices for low-carbon mobility, particularly those of a technological nature, are conditioned by their acceptability at the global level and their capacity to fit the needs of regions outside Europe, particularly those of emerging and developing economies. There is a need to increase the weight of topics of a global dimension in the EU research agenda, and to build up a global vision for the transport system: whereas low-mobility concepts are relatively well-understood in urban transport, this is not yet the case for long-distance mobility and particularly for global flows.

19. This **renewed focus** on drivers for accelerated transition with a focus on low-carbon transport (systemic approach, resilience, human factors, evidence-based policy making) can be strengthened by **dedicated changes in the current structure of H2020**. For example, establishing a clearer distribution of roles and a bolder relationship between Mobility for Growth (M4G) and the modal joint technology initiatives (e.g., Clean Sky, Shift2Rail, EGVI, ART). Beyond setting an adequate agenda of topics, the research and innovation effort demands better coordination among the various instruments and funding sources. There is a need to revise the current split between JTIs and M4G for higher effectiveness and efficiency in responding to the future challenges in transport.

20. In this sense, **JTIs should be encouraged to evolve towards a cross-modal vision**, such that they are not deepening fragmentation, remaining in their isolated silo structure; and to increase the involvement of R&D organizations, currently marginal players in the JTIs' decision-making processes and their realization (and hence increase their transparency). Consequently, this position paper is also an urgent call to re-think the links between JTIs, M4G, and the transport research community.

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