

Presidency compromise proposal on the Framework Programme SMART, GREEN AND INTEGRATED TRANSPORT

4.1 Specific objective

The specific objective is to achieve a European transport system that is resource-efficient, climate- and environmentally-friendly, safe and seamless for the benefit of all citizens, the economy and society.

Europe must reconcile the growing mobility needs of its citizens **and goods and the changing needs shaped by new demographic and societal challenges** with the imperatives of economic performance and the requirements of an **energy-efficient** low-carbon society and climate resilient economy. Despite its growth, the transport sector must achieve a substantial reduction in greenhouse gases and other adverse environmental impacts, and must break its dependency on oil **and other fossil fuels**, while maintaining high levels of efficiency and mobility **and promoting territorial cohesion**.

Sustainable mobility can only be achieved through a radical change in the transport system **including in public transport**, inspired by breakthroughs in transport research, far-reaching innovation, and a coherent, Europe-wide implementation of greener, safer, **more reliable** and smarter transport solutions.

Research and innovation must bring about focussed and timely advances **for all transport modes** that will help achieve key Union policy objectives, while boosting economic competitiveness, supporting the transition to a climate-resilient, **energy efficient** and low-carbon economy, and maintaining global market leadership **both for the service industry as well as the manufacturing industry**.

Although the necessary investments in research, innovation and deployment will be significant, failing to improve the sustainability of **the whole transport and mobility system and failing to maintain European technological leadership in transport** will result in unacceptably high societal, ecological, and economic costs in the long term, **and damaging consequences on European jobs and long term economic growth**.

4.2 Rationale and Union added value

Transport is a major driver of Europe's economic competitiveness and growth. It ensures the mobility of people and goods necessary for an integrated European single market, **territorial cohesion** and an open and inclusive society. It represents one of Europe's greatest assets in terms of industrial capability and quality of service, playing a leading role in many world markets.

Transport industry and transport equipment manufacturing together represent 6.3 % of the Union's GDP.

The transport sector's overall contribution to the Union economy is even greater, taking into account trade, services and mobility of workers. At the same time, the European transport industry faces increasingly fierce competition from other parts of the world. Breakthrough technologies will be required to secure Europe's future competitive edge and to mitigate the drawbacks of our current transport system..

The transport sector is a major contributor to greenhouse gases and generates up to a quarter of all emissions. **It is also a major contributor to other air pollution problems.** Transport is **still** 96 % dependent on fossil fuels. ~~Meanwhile,~~ **It is essential to reduce this environmental impact through targeted technological improvement, bearing in mind that each mode of transport faces varying challenges and is characterised by different technology integration cycles. Moreover** congestion is an increasing problem; systems are not yet sufficiently smart; alternatives **options** for shifting ~~between different~~ **towards more sustainable** modes of transport are not always attractive; road fatalities remain dramatically high at 34 000 per year in the Union; citizens and businesses expect a transport system that is **accessible to all**, safe and secure. The urban context poses specific challenges **and provides opportunities** to the sustainability of transport **and for a better quality of life**.

Within a few decades the expected growth rates of transport would drive European traffic into a gridlock and make its economic costs and societal impact unbearable, **with adverse economic and societal**

repercussions. If trends of the past continue in the future, passenger-kilometres are predicted to double over the next 40 years and grow twice as fast for air travel. CO₂ emissions would grow 35 % by 2050.⁴ Congestion costs would increase by about 50 %, to nearly EUR 200 billion annually. The external costs of accidents would increase by about EUR 60 billion compared to 2005.

Business-as-usual is therefore not an option. Research and innovation, driven by policy objectives and focused on the key challenges, shall contribute substantially to achieve the Union's targets of limiting global temperature increase to 2°C, cutting² 60 % of CO₂ emissions from transport, drastically reduce congestion and accident costs, and virtually eradicating road deaths by 2050.

The problems of pollution, congestion, safety and security are common throughout the Union and call for collaborative Europe-wide responses. Accelerating the development and deployment of new technologies and innovative solutions for vehicles³, infrastructures and transport management will be key to achieve a cleaner, **safer, more secure, accessible** and more efficient **intermodal and multi-modal** transport system in the Union; to deliver the results necessary to mitigate climate change and improve resource efficiency; to maintain European leadership on the world markets for transport related products and services. These objectives cannot be achieved through fragmented national efforts alone.

It is also essential to support existing solutions by creating effective, smart, interoperable and interconnected systems related to SESAR, Galileo, EGNOS, GMES, ERTMS, RIS, SafeSeaNet, LRIT and ITS systems. Initiatives such as eSafety and eCall must also be continued.

Union level funding of transport research and innovation will complement Member States' activities by focussing on activities with a clear European added-value. This means that emphasis will be placed on priority areas that match European policy objectives; where a critical mass of effort is necessary; where Europe-wide, interoperable **or multimodal integrated** transport solutions **can help remove bottlenecks in the transport system; need to be pursued**; or where pooling efforts trans-nationally **and making better use of and effectively disseminating existing research evidence** can reduce research investment risks, pioneer common standards and shorten time-to-market of research results.

Research and innovation activities shall include a wide range of initiatives, **including relevant public-private partnerships**, that cover the full innovation chain **and follow an integrated approach to innovative transport solutions**. Several activities are specifically intended to help bring results to the market: a programmatic approach to research and innovation, demonstration projects, market take-up actions and support for standardisation, regulation and innovative procurement strategies all serve this goal. In addition, using stakeholders' engagement and expertise will help bridge the gap between research results and their deployment in the transport sector.

Investing in research and innovation for a greener, smarter and ~~more~~ **fully** integrated **reliable** transport system will make an important contribution to the Europe 2020 goals of smart, sustainable and inclusive growth and the objectives of the Innovation Union flagship initiative. The activities will support the implementation of the White Paper on Transport aiming at a Single European Transport Area. They will also contribute to the policy goals outlined in the flagship initiatives on 'Resource Efficient Europe', 'An Industrial Policy for the Globalisation Era' and 'A Digital Agenda for Europe'. **They will also interface with the relevant Joint Programming Initiatives.**

4.3. Broad lines of the activities

The activities will be organised in such a way as to allow for an integrated and mode-specific approach as appropriate. Multiannual visibility and continuity will be necessary in order to take into account the specificities of each transport mode and the holistic nature of challenges, as well as the relevant Strategic Research and Innovation Agendas of the transport European Technology Platforms.

¹ Commission White Paper on "Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system" COM(2011) 144 final.

² Commission White Paper on "Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system" COM(2011) 144 final.

³ "Vehicles" is to be understood in a broad sense, including all means of transport.

(a) Resource efficient transport that respects the environment **and public health**

The aim is to minimise transport's **systems'** impact on climate and the environment (**including noise and air pollution**) by improving its **quality and** efficiency in the use of natural resources, **fuel**, and by reducing **greenhouse gas emissions and** its dependence on fossil fuels.

The focus of activities shall be to reduce resource consumption, **particularly fossil fuels**, and greenhouse gas emissions and **noise levels, as well as** improve **vehicle transport and vehicle** efficiency, to accelerate the development, **manufacturing** and deployment of a new generation of **clean** (electric, **hydrogen** and other low or zero emission) vehicles, including through breakthroughs **and optimization** in engines, **batteries energy storage** and infrastructure; to explore and exploit the potential of alternative **and sustainable** fuels and innovative and more efficient propulsion **and operating** systems, including fuel infrastructure **and charging**; to optimise the **planning and** use of infrastructures, by means of intelligent transport systems, **logistics**, and smart equipment; and to increase the use of demand management and public and non-motorised transport, **and intermodal mobility chains**, particularly in urban areas. **Innovation aimed at achieving low or zero emissions in all modes of transport will be encouraged.**

(b) Better mobility **and accessibility**, less congestion, more safety and security

The aim is to reconcile the growing mobility needs with improved transport fluidity, through innovative solutions for seamless, **intermodal**, inclusive, **accessible, affordable**, safe, secure, **healthy**, and robust transport systems.

The focus of activities shall be to reduce congestion, improve accessibility **and interoperability, passenger choices** and match user needs by **developing and** promoting integrated door-to-door transport, **mobility management** and logistics; to enhance inter-modality and the deployment of smart planning and management solutions; and to drastically reduce the occurrence of accidents and the impact of security threats.

(c) Global leadership for the European transport industry

The aim is to reinforce the competitiveness and performance of European transport manufacturing industries and related services (**including logistic processes, maintenance, repair, retrofitting and recycling**) while retaining areas of European leadership (e.g. aeronautics).

The focus of activities shall be to develop the next generation of innovative **air, waterborne and land** transport means, **ensure sustainable manufacturing of innovative systems and equipment** and to prepare the ground for the following one **future transport means**, by working on novel **technologies**, concepts and designs, smart control systems and interoperable standards, efficient production processes, **innovative services and certification procedures**, shorter development times and reduced lifecycle costs **without compromising operational safety and security**.

(ca) Smart logistics

The aim is to reconcile growing new consumer patterns with an efficient resource supply chain and optimal last mile freight distribution.

The focus of activities shall be to better understand the impact of new and future consumer patterns and urban freight logistics, traffic and congestion; develop new IT and management tools for logistics, by improving real time information systems to manage, track and trace freight flows, integration and communication on vehicle and with infrastructure; to develop unconventional systems for goods distribution; to develop competitive intermodal solutions for the supply chain and logistics platforms that improve freight flows.

(d) Socio-economic **and behavioural** research and forward looking activities for policy making

The aim is to support improved policy making which is necessary to promote innovation and meet the

challenges raised by transport and **mobility and** the societal **and individual** needs related to it. The focus of activities shall be to improve the understanding of transport related socio-economic **impacts**, trends and prospects, **including the evolution of future demand**, and provide policy makers with evidence-based data and analyses. **Attention will also be paid to the dissemination of results emerging from these activities.**

The organisation of all transport-related activities will follow an integrated and mode-specific approach and be in line with the Strategic Research and Innovation agendas of European Technology Platforms. Multiannual visibility and continuity are essential in order to ensure true Union added-value and to take into account the numerous specificities of each transport mode.

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