

## **FEHRL's Position Paper for the Horizon 2020 Work Programme 2016 – 2017**

### **1. Introduction**

With the preliminary experience from the first calls of Horizon 2020 Work Programme 2014-2015, we thought it would be worthwhile to reflect on how the Work Programme 2016-2017 may best contribute for the Mobility for Growth.

Likewise Transport Ministers have often declared that “the harmonious and sustainable development of infrastructures is crucial to the smooth functioning of the internal market and to the Union's economic and social cohesion”, we, in FEHRL, encourage that road and transport infrastructures keep receiving great recognition, even greater than in the current work programme in order to provide solutions to the challenges of developing transport infrastructure despite dwindling national budgets.

Along this line, we would like to present hereafter our immediate priorities for the second work programme 2016-2017 of H2020.

### **2. General recommendation: to narrow the scope of the topics**

While we understand and welcome the positive effect of the concept of H2020 enabling (a) bridging the gap between the research community, the industry and the societal challenges and (b) stimulating innovation by fostering inter/trans/multi-disciplinarity research across transport modes, we have also observed a drastic increase and even a saturation of the first calls of the work programme 2014-2015 (e.g MG 8.1 & MG 8.2). The ERA-Net Plus - INFRAVATION has welcomed similar overwhelming interest. As a result, various good proposals could not be supported due to too little funding.

In the long run, the process for the preparation of proposals may turn to be too expensive for the research providers in respect to the very low success rate, hence may put at risk the innovation capacity for which Europe excels in. In response to this feedback, we would suggest narrowing the content of the future calls in the Work Programme 2016-2017.

### **3. Recommendations for Research Areas**

As a result of a cross-analysis of the “preliminary results” of the 1st call (H2020 – 2014; especially in MG 8.1, & 8.2) on the one hand, and on the other hand, the implementation of the two FEHRL research programmes (Forever Open Road<sup>1</sup> and FORx4<sup>2</sup>) as well as the Joint ETPs Roadmap for cross-modal transport infrastructure innovation<sup>3</sup>, a number of “white spots” have been identified. These “white” spots”, presented below constitute the main research areas priorities that FEHRL strongly recommends to support for effective cross-modal infrastructure innovation and integration.

#### **3.1. Maintenance of Transport Infrastructure**

40% of every Member State assets are invested in the field of transport infrastructures. With the budget cuts, these assets have lacked maintenance in several regions of Europe. This has led to serious deterioration of transport infrastructures leading to the necessity to move from maintenance to rehabilitation operations which costs are considerably higher. To avoid such multiplication of cases throughout Europe, and taking into account the crucial role of transport infrastructure in European competitiveness (1 % increase of GDP is underpinned by 1.5 % increase for transport infrastructure) as well as the medium to long-term timeline for implementing new R&D&I results, R&D&I about seamless and affordable maintenance of transport infrastructures is of outmost importance and urgent. As a consequence, while carrying-on supporting research on new construction, FEHRL recommends putting an emphasis on engineering solutions in the field of maintenance of road and transport infrastructure.

The innovation themes required are:

- Adaptable Transport Infrastructure:
  - Long-life infrastructures;
  - Asset Management.
- Automated Transport Infrastructure:
  - Novel sensing to support the management of infrastructures (e.g. Crowd sourcing from cars for road condition and safety / risk assessment);
  - Adapting infrastructure standards and specifications to automated driving concepts.
- Resilient Transport Infrastructure:
  - Development and implementation of risk-based methodologies at infrastructure and network level (risk assessment framework based on remote monitoring including weather as variable).

### **Recommendations for Research Initiatives**

FEHRL recommends to undertake the aforementioned innovation themes through the following initiatives:

- Call 2016/7: Research and Innovation Actions (RIA) (+ 10 Million Euros); Coordination and Support Activities (CSA) (+ 4 Million Euros);

#### **3.2. Greener Transport Infrastructure, spatial quality and society**

In order to accommodate the forecasted increase in transport demand while coping with the shortage of energy and natural resources, as well as the need to better integrate transport infrastructure in its natural and societal environment, R&D&I is necessary in the field of green transport infrastructure as well as in its integration with spatial quality and society.

The innovation themes required are:

- Cross-modal reduction of environmental pollution;
- Energy harvesting infrastructure;
- Transport Infrastructure Integrated with Land Use Planning.

### **Recommendations for Research Initiatives**

FEHRL recommends to undertake the aforementioned innovation themes through the following initiatives:

- Call 2016/17: Research and Innovation Actions (RIA) (+ 5 Million Euros); Coordination and Support Activities (CSA) (+ 2 Million Euros);

#### **3.3. Safer Transport Infrastructure**

Safe transport infrastructures are designed according to two essential principles: being self-explaining (active safety by leading the users to adopt a behaviour compatible with the infrastructure reducing therefore the probability of having a crash) and being forgiving (passive safety by limiting the consequences of a crash). Current design criteria are very far from these essential principles and based on a mobility structure that is now obsolete due to the dramatic changes that road transport and related technology has undergone in the last decades. There is a strong societal need for improving road safety by defining a new way of designing and, most importantly, re-designing existing roads as part of a new system that has new users, new mobility issues, new vehicles, new technologies and new safety needs. Furthermore the new road design concepts have to move towards performance based design concepts based on the evaluation of cost-efficiency of different solutions to enable the implementation of innovative solutions for achieving safer transport infrastructures for all users.

As a consequence, FEHRL recommends supporting R&D&I in the field of Safer Transport Infrastructure.

The innovation theme required is:

- Safe transport infrastructure design – Making them self-explaining, forgiving and interactive to the benefit of all transport infrastructure users.

### **Recommendations for Research Initiatives**

FEHRL recommends to undertake the aforementioned innovation themes through the following initiative:

- Call 2016/17: Research and Innovation Actions (RIA) (+ 2 Million Euros).

#### **3.4. Governance, Management and Finance of Transport**

The goals and ambitions of the White Paper on Transport (WPT) and the National Transport Policies (NTP) can only be achieved if transport infrastructure innovation is taken to the integrated system level. Current trends in society, technology, economy and policy will impact heavily on the transport system level. Examples are rapid deployment of ITS, alternative fuels, tolling, automated vehicles and civil IT services. This underlines the urgency to take effective steps forward towards infrastructure integration that would support and embed these trends and provide the citizens of Europe with concrete gains in service and cost-benefit.

As a consequence, FEHRL recommends supporting R&D&I in the area of Governance, Management and Finance of Transport.

The innovation themes required are:

- optimal availability and capacity of transport infrastructures;
- optimal inter-connectivity between the modes;
- optimal cross-modal investment decisions;
- fully shared data/information base across the modes;
- interoperable interface, open to the infrastructure user;
- affordable in terms of Total Cost of Ownership.

### **Recommendations for Research Initiatives**

FEHRL recommends to undertake the aforementioned innovation themes through the following initiatives:

- Call 2016/17: Research and Innovation Actions (RIA) (+ 2 Million Euros) ; Innovation Actions (IA) (+ 2 Million Euros); Coordination and Support Activities (CSA) (+ 5 Million Euros) on building a meta level of decision supporting data, methods and models.

<sup>1</sup> Forever Open Road: Redefining Road Transport for the 21st Century (2010)

Forever Open Road: The Adaptable Road – A Roadmap for Research (2012)

Forever Open Road: The Automated Road – A Roadmap for Research (2012)

Forever Open Road: The Resilient Road – A Roadmap for Research (2012)

<sup>2</sup> FOR x 4 – Forever Open Road, Railway, Runway and River – A Cross-modal transport initiative for research (11/2013)

<sup>3</sup> Roadmap for cross-modal transport infrastructure innovation - Joint ETP Task Force on Transport Infrastructure Innovation (ERTRAC-ERRAC-Waterborne-ACARE-ECTP - 06/2013)