

Fifth Annual Report
by the Transport Advisory Group
on the Development of the 7th Framework
Programme in the Thematic Area of
Transport (including Aeronautics)
Covering the Work of the Group in 2011

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1. Executive Summary

1.1. Introduction

The Transport Advisory Group (TAG) was established in 2006 to provide "*consistent and consolidated*" advice to the European Commission (EC) services responsible for developing the transport (including aeronautics) theme of the "cooperation" part of the 7th Framework Programme for Research and Development (FP7), within the structure defined and approved by the Parliament and the Council for the duration of the Programme.

The TAG is expected to provide advice on strategy, relevant objectives and scientific and technological priorities. It is required to submit a yearly written input to the EC, consolidating the contributions made during the year.

The first TAG's written report was delivered in July 2007, and advised on the priorities for the 2008 annual work programme (WP) of FP7, and the contents of the call implementing this WP. This fifth annual report covers the TAG's advice to the EC during 2011, and addresses the implementation of FP7 through the specific work programme for 2013 (WP.2013), as well as some considerations on the EC's plans on the continuation of the research and innovation programmes beyond 2013.

The annual scheme of work of the TAG is structured in two one-day meetings and one two-day meeting. In 2011, these meetings were held on March 22th, June 16th and October 6th and 7th. During 2011, the TAG's activities continued to focus on assisting the EC services in the preparation of the work programme (WP.2013) for the FP7 transport theme. This main activity has been complemented by others, including the TAG involvement in some preliminary activities for the definition of Horizon 2020 (the "Common Strategic Framework"), and information and discussion on initiatives for strengthening the ERA in the transport field (including cooperation with national research programmes through the ERANETs). These activities have increased the visibility of the TAG as an advisory body, and its interaction with other stakeholders in the transport research area.

1.2. Support to the Preparation of the WP.2013

At its first meeting, the TAG discussed at some length how to better influence the WP.2013 preparation process, and it was finally agreed that TAG would focus on the identification of remaining gaps (topics not covered in previous calls), and the preparation of additional topic proposals.

In order to facilitate the TAG input, the EC prepared a questionnaires ("issues for opinion of TAG for WP.2013"), focusing on those questions which are more relevant to the EC. The TAG prepared a preliminary version of its answers at its June meeting, and completed them at its last meeting in October.

As requested by the EC's questionnaire, the TAG's advice on WP.2013 focused on the following aspects:

- Concerning general issues, it was recommended to address in WP.2013 a limited number of "remaining gaps" (including demonstration activities) not considered in previous calls, to revisit already addressed topics of particular relevance (as a pre-study to further develop them within Horizon 2020), and to approach some new areas, not addressed within FP.7 yet, such as the impact of socio-economic variables on transport needs or testing novel tools for e-services in freight transport. Furthermore, some specific topics were proposed for prioritisation, and some proposals

were made aiming at better addressing intermodal questions. The proposals included considerations for including pre-normative activities within research projects and improving the participation of less performing actors. The need to support the development of a long-term, shared vision of the whole transport system was also mentioned as critical for the development of effective international cooperation in transport research.

- Concerning specific issues, a number of topics were proposed for prioritisation for all of the three transport programme areas: horizontal activities (TPT), sustainable surface transport (SST) and aeronautics and air transport (AAT).
 - o For the TPT area, the need to further strengthen research cooperation among transport modes was stressed: Transfer of research results among modes could be fostered through specific CSA-SA topics, and intermodal research should receive more attention from the SST and AAT areas.
 - o For the SST area, the main interests of the EC referred to electrification of road transport, rail development (aligned with the ambitious objectives of the Transport White Paper), sustainable waterborne transport (including emissions, safety and innovation), and urban transport. The TAG identified particular topics in all these areas, which should deserve attention within WP.2013.
 - o Within the AAT area, some level 1 and level 2 topics were identified, and it was proposed to make use of the support action instrument (SA) in order to build up familiarity and trust among the various research actors (industry, academia, east and west...). Concerning the future prospects for research (2014) within Horizon 2020, the positive role played thus far by ACARE was highlighted by the TAG, and it was proposed to build upon this integrated approach in future.

1.3. The Common Strategic Framework

The main concept behind the CSF communication (COM(2011)48) is to make better use of the EU innovation-related budget to implement the Europe 2020 strategy. The opportunity of the CSF proposals was discussed at length by the TAG. It was highlighted that the EU research and innovation themes (i.e. WPs) should keep trying looking more closely to market problems and needs, inter alia by stressing an industry-driven approach to research in some areas and by providing for more flexibility during the research projects' lifetime.

The TAG prepared a position paper as a contribution to the CSF consultation process (closed on May 20th), and participated at an informal discussion meeting on Transport Research and Innovation in the Common Strategic Framework (CSF), held back-to-back to the second TAG meeting. The general objective of the meeting was to hear the views of the stakeholders on the transport component of the CSF. The basis for the discussion were a set of presentations by EC officials on the results of the CSF consultation process held in May 2011, the on-going process for the preparation of the Strategic Transport Technology Plan, and a set of proposals on how the European Commission intends to address the needs of the transport sector in the forthcoming framework programme for research and innovation (Horizon 2020).

More than one hundred people representing relevant transport stakeholders were invited. Fifty-eight people from all major associations and organisations across all modes of transport attended the informal

discussion meeting, including 11 TAG members. The TAG rapporteur prepared a report of this informal meeting (Annex 3).

1.4. Review of the FP7 Cooperation with National Programmes (ERANETs)

This review was based on the presentations made at the last TAG meeting by representatives from all existing transport-related ERANETs, which raised the following considerations from the TAG:

- The added value of the ERANET initiatives. These initiatives have helped national transport research programme managers and owners to understand each other and to build up mutual trust, a fundamental step to move forward and "pool" resources. It has opened up national budgets to EU-wide research, although still at a modest level. All this should be important for expanding and consolidating the European Research Area in the transport sector.
- Currently, the ERANET procedures seem to be still too cumbersome compared to the research funds (and topics) mobilized, and it is unlikely that they will attract new researchers (in fact, the opposite may occur, as only researchers already familiar with this complex framework may be ready to prepare proposals). This is understandable at this stage, but should be improved in the future. In particular, it seems that joint transnational calls could in principle be better suited to SMEs than conventional EU calls, but there is no evidence of higher SME participation thus far.
- Many significant barriers remain in place for transnational cooperation. While agreeing on the topics to be funded may be easy, making the bureaucratic procedures compatible seems quite another story (for example in terms of deadlines, provision of funds, etc.). Considering that many EU countries do not have transport research programmes, particularly in Central and Eastern Europe, there is a risk for these countries to be further marginalized in the European transport research process, as trans-national initiatives become more important and attract more EU funding. In fact, currently there is some reluctance from a number of member states to dedicate more resources to ERANET Plus initiatives.
- As ERANET calls consolidate, this could represent further fragmentation in research funding. This is not bad in itself, as the innovation system is complex, and there should be flexible mechanisms to cope with the various contexts and needs, but careful attention should be paid to avoid unnecessary growth in bureaucracy and diversion of resources from actual research to management machineries.
- A particular advantage of transnational research cooperation and calls is their ability to adapt to particular problems, affecting only a number of countries and regions in Europe. In this sense, it is felt that ERANET initiatives (and particularly ERANET Plus) would effectively complement the framework programme. Furthermore, it would be interesting to open ERANET to third countries (particularly developed countries such as USA and Japan), as this would be a flexible mechanism to pool together resources for specific topics, in a much more effective way than the current international cooperation mechanisms.

1.5. TAG's activity beyond 2011

Concerning the activities of the TAG in the future, it was agreed that, in 2012, TAG will start advising on Horizon 2020 and will hold two one-day meetings, followed by one final meeting in the spring of 2013. The final TAG report will wrap-up the activities of the group during its whole 2006-2012 period of activity,

focusing on the added value of the group to the implementation of FP7 in the field of transport and the groups' advice on the future role for such a group within Horizon 2020.

As FP7 approaches its final period, it is necessary for the TAG to review its operation since 2006, and to identify the added value provided by the group to the definition of the FP7 activities. Furthermore, the TAG operation and internal dynamics are also worth analysing: Look at the TAG's current working routines, and effectiveness in achieving the TAG's main objective of providing the EC with independent, comprehensive expert advice on transport research policies and contents, as it defines the advisory structures to be put in place for Horizon 2020.

During these years the TAG has increasingly interacted with other key transport research stakeholders, including the ETPs, ERANETs, and many European organisations. There is an opportunity to build upon these interactions to increase the contribution of the TAG in this final phase of FP7, for example by including TAG members in consultation meetings, conferences and other events organized by the EC, together with representatives of those organizations.

Therefore, there are a number of issues, to which the TAG could make a valuable contribution for the remaining of the FP7, and particularly within 2012. These can be summarized as follows:

- Follow-up the remaining FP7 calls in the field of transport: review and assess the results of the WP.2012 calls, and approval, publication and results of the WP.2013 calls. This could be finalised with a general review of the topics addressed within FP7.
- Assistance to the definition of the Horizon 2020 approach in the field of transport. This would be a continuation of the 2011 activities, when the TAG actively participated in the Common Strategic Framework process conducted by the EC.
- Identification and assessment of the lessons learned within the 7-year experience (2006-2012) of the TAG's assistance to the EC.
- Ad hoc interaction with other transport research stakeholders at the EC's request, as a group or through some of its members.

2. Membership

Members are appointed and participate in the TAG based on their individual capacity. The research fields covered are broad, and while members specifically commit themselves to provide advice in their relevant fields of expertise, they are also expected to discuss "horizontal" research issues to the best of their ability and in the best interest of the research community.

The members' affiliation and background cover all the relevant fields for the transport research theme: European universities, other public and private research organisations, industry, consulting entities and public administrations with research responsibilities. Membership was revised on September 1st, 2008. At the end of the 2010 activities, 4 members resigned¹, and the group has now 21 members. A list of current members is attached to this report as Annex 1. The 2-year period of the members' mandate was automatically renewed by the EC until the end of FP7.

Since March 2008, the chairman of the TAG is Prof. George Giannopoulos (Director, Hellenic Institute of Transport). The group has appointed four of its members² to act along with its chairman as an executive committee. The TAG executive committee cooperates with the EC services in planning and structuring the meetings. One of the steering group members serves as rapporteur for the TAG and is responsible for the delivery of the annual report.

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² Angel APARICIO, Andrew MCNAUGHTON, Dieter SCHMITT and Katalin TÁNCZOS.

3. Meetings

The annual scheme of work of the TAG is structured in two one-day meetings and one two-day meeting. In 2011, these meetings were held on March 22th, June 16th and October 6th and 7th.

The meeting agenda is prepared by the EC services in consultation with the TAG chairman, and their priorities and practical schedule are agreed by the executive committee at its session held immediately prior to the TAG meeting. At each meeting, presentations from EC officials and research stakeholders alternate with the deliberations of the TAG in plenary sessions and in 3 subgroups: aeronautics and air transport (AAT), sustainable surface transport (SST) and horizontal issues, including policy-related issues (TPT). This format has proved to be effective in balancing the time spent on receiving necessary information, as a basis for in-depth discussion at the subgroup, and exchanging views and reaching agreement on recommendations at the plenary.

During 2011, the CIRCA TAG FP7 interest group has continued to provide a useful service to all TAG members, facilitating the access to documents relevant to the mandate of the TAG.

3.1. The 15th TAG Meeting, March 22, 2011

New EC's initiatives

The increased attention to innovation, following the Europe 2020 strategy³ and its flagship initiatives, has resulted in the change of name of DG Research, which is now DG Research & Innovation (DG RTD). In practical terms, this change has led to an increase in the policy tasks carried out within this directorate general. In this context, the horizontal cooperation between DG RTD and the sectoral DGs (particularly DG MOVE) has increased, fostered by the Commission and its president.

The interim review of the transport theme in FP7, launched at the end of 2009, been now completed, and preparation of the future FP8 (which has received the name "Horizon 2020") has started with the EC's consultation on its green paper "*From Challenges to Opportunities: Towards a Common Strategic Framework for EU Research and Innovation Funding*" (COM(2011)48), launched last February. This *Common Strategic Framework (CSF)* aims at better integrating the research and innovation initiatives of the EU including, besides the framework programme for research and development, the "*Competitiveness and Innovation Framework Programme (CIP)*", the European Institute of Innovation and Technology (EIT) and the actions in support of innovation within the Cohesion Policy. As the definition of Horizon 2020 takes shape, a transition period is expected, in which innovation and other particular issues will be emphasized, inter alia, within the next calls. In fact, the draft WP.2012 is already taking this perspective, thus getting better aligned with the "Innovation Union flagship initiative" (COM(2010)546).

A similar effort of alignment with the Europe 2020 strategy and its flagship initiatives is also taken place within the transport policy. The EC is expected to approve by the end of this month the new white paper on the European transport policy (transport white paper or TWP), with a focus on energy, decarbonisation, congestion and the need to cope with increasing mobility needs. DG MOVE is also making progress in the definition of the Strategic Transport Technology Plan (STTP), which should facilitate the link between the TWP's priority for innovation and the future transport component of Horizon 2020. In fact, the preparation

³ COM(2010)2020.

of STTP (led by DG MOVE) and the impact assessment of the common strategic framework (CSF) from a transport research & innovation perspective (led by DG RTD) are being handled in a coordinated way and should provide a good basis for the definition of transport research priorities in the future Horizon 2020.

Preliminary Outcome of the 4th Call for proposals (WP.2011)

The TAG was given a briefing from DG RTD and DG MOVE on the preliminary proposals of the 4th calls, published on July 20th 2010, with deadline for submission on December 2nd 2010. (FP7-AAT-2011-RTD-1, FP7-SST-2011-RTD-1, FP7-TPT-2011-RTD-1). The presentation of the evaluation results to the transport programme committee (TPC) should take place on March 31, 2011:

- FP7-AAT-2011-RTD-1 had an indicative total budget of € 121.3 Million. A total of 65 proposals were submitted (all of them were eligible, 39 above the threshold and 21 in the ranked list). Success rate: 32%.
- FP7-SST-2011-RTD-1 had an indicative total budget of € 91.25 Million. A total of 145 proposals were submitted (138 of them were eligible, 70 above the threshold and 30 in the ranked list). Success rate: 22%.
- FP7-TPT-2011-RTD-1 had an indicative total budget of € 6 Million. A total of 65 proposals were submitted (60 of them were eligible, 33 above the threshold and 6 in the ranked list). Success rate: 10%.

The results of the ERA-NET+ Electromobility call, the joint-call Ocean of Tomorrow and the joint-call Batteries were not provided (this accounted for an additional budget of € 10 Million).

Some discussion followed concerning the disparate success rate for the three calls and for the various areas and topics. It was also highlighted the increasing interest of researchers for horizontal topics, which has resulted in a low success rate in spite of the increasing budget dedicated to horizontal issues, not only within TPT, but also within the SST and AAT calls (in fact, most of the financing for horizontal issues come from these calls, rather than from TPT). It was also raised the fact that an increasing number of topics seemed to be coming "from above", following priorities identified at top EC political levels.

Transport 2012 Work Programme (WP.2012)

The framework for WP.2012 is established by two major policy documents: the flagship initiative "Innovation Union" and the new white paper on the European transport policy. WP.2012 addresses three main socio-economic challenges: eco-innovation (decarbonisation and efficient use of resources), safe and seamless mobility (ITS and logistics), and competitiveness through innovation. Although WP.2012 cannot enter in "market-pull" activities, it has emphasized its innovation focus through a number of instruments: more involvement of end-users, focus on foresight market needs, more attention within projects to exploitation aspects and to their innovation potential, etc.

The TAG appreciated the detailed information received, and the subsequent discussion raised some interesting topics, including concerns on the lack of resources to address horizontal issues (many topics have not received funding in previous calls, and this will probably happen again in the 2012 call); the need for research on the acceptance of innovative solutions by final users (raised particularly in connection to the "European Green Car initiative", EGCI), and the relevance of an adequate consideration of non-European markets (not only Asia) when supporting market-oriented innovation.

Conclusions of the FP7 Mid-Term Interim Review

This study has covered on-going research projects funded under WP.2007 and WP.2008, in order to assess the overall implementation and impacts of the transport research programme. The bulk of the reviews covered projects under the aeronautics (AAT), sustainable surface transport (SST) and cross-cutting (TPT) activities. The review confirms the strong European added value of the FP7 transport programme; the valuable contribution of the European Technology Platforms (ETPs) to the process, further pushing Member States towards common goals, and the stronger ambition of FP7 to address cross-cutting issues. The study proposes some recommendations, including the need to "*reinforce and modify the modalities of its support to multi-modal research activities*", the opportunities raised by joint technology initiatives (JTI) such as Clean Sky for innovative research management, which could be replicated in other transport modes, and the need for increasing articulation between the FP and the national research programmes of the Member States.

The discussion following this presentation raised questions on the reviewers' perspective and suggestions on the future role of TAG. It was mentioned that this could include the involvement of TAG at an earlier phase in the WP preparation process, as well as access to the monitoring of research projects' results, once completed, so that the preparation of WPs could benefit from this information. It was also discussed, whether the 3 subthemes (aeronautics, surface transport and horizontal issues) were currently moving in different directions, rather than converging, and whether the conclusions and recommendations of the review could reasonably be equally applied to all of them; furthermore, these trends, if confirmed, could be an indication that cross-learning among modes has remained quite limited until now.

The Innovation Union Flagship Initiative

A general presentation of the Innovation Union Flagship Initiative was made to the TAG. The presentation highlighted some indicators on the EU strengths and weaknesses compared to other developed and emerging economies and described the new strategic approach to innovation, based on raising the political profile of innovation as an overarching policy objective, steered and monitored at the highest political level and receiving massive investment in skills, research and innovation, especially through the "recovery packages". Three framework conditions are identified in the EC's communication as essential for the future: the development of modern standards (including the adaption of the EU standardization system to the new global environment), the creation of EU innovative procurement markets and the facilitation of access to venture capital markets. In this context, the new approach aims at tackling major societal challenges, while creating new business opportunities and opening new markets with the new ideas or responses to these new challenges and needs.

The Green Paper on the Common Strategic Framework

The main concept behind the CSF communication (COM(2011)48) is to make better use of the EU innovation-related budget to implement the Europe 2020 strategy. A consultation has been opened on the CSF communication (closing on May 20th), to be followed by a Conference on June 10th.

The opportunity of the CSF proposals was discussed at length by the TAG. It was highlighted that the EU research and innovation themes (i.e. WPs) should keep trying looking more closely to market problems and needs, inter alia by stressing an industry-driven approach to research in some areas and by providing for more flexibility during the research projects' lifetime. It was agreed to prepare a TAG position paper, based on the CSF consultation questionnaire, and four TAG members were asked to prepare draft responses to

each of the four blocks of the questionnaire. These inputs would be subsequently consolidated by the TAG rapporteur, circulated among TAG members and submitted by the rapporteur to the EC within the consultation deadline (May 20th).

The White Paper on the European Transport Policy and the Strategic Transport Technology Plan (STTP)

The TAG learnt that the new white paper on the European transport policy (TWP) was at its final stages for EC's approval. Although the policies proposed take a 10-15 year perspective, the TWP is based upon a strategic, long-term view (2050), aligned with the "resource-efficient Europe" flagship initiative⁴, and it includes a tough GHG emission reduction target for 2050. The TWP's policies are articulated around three main pillars: strengthening the internal transport market, creating an adequate infrastructure network, and considering innovation as a pre-condition for the transformation of the transport sector. The STTP should further develop the innovation pillar of the TWP.

Planning Ahead

Following its chairman's proposals (previously discussed by the executive committee with the EC), the TAG agreed to focus its activities for 2013 on three issues: the follow-up to the CSF consultation process, the preparation of the WP.2013, and the review of the FP7 cooperation instruments with national transport research programmes. For the latter topic, it was agreed to invite the existing transport-related ERANETs to make a presentation of their activities at one of the TAG meetings. It was discussed at some length how could TAG better influence the WP.2013 preparation process, and it was finally agreed that TAG would focus on the identification of remaining gaps (topics not covered in previous calls), and the preparation of additional topic proposals.

3.2. The 16th TAG Meeting, June 16, 2011

This meeting included the participation of the TAG members in the consultation session on "*transport research and innovation in the next Common Strategic Framework*", convened by the EC in the afternoon.

The "Issues Document"

During the meeting, the TAG received the EC's questionnaire "issues for opinion of TAG for WP.2013". This procedure to collect the opinions of the TAG on the next work programme was initiated in 2008, and since then it has proved to be an efficient way to structure discussions within TAG and to provide the EC with the expertise of the group, focusing on- but not necessarily being limited to- those questions which are more relevant for the preparation by the EC of the next work programme (WP.2013) in the transport (including aeronautics) theme.

The discussion on the questionnaire was supported by two additional documents, provided by the EC: the general strategy for WP.2012-2013 (already presented last year to TAG and included now in the introduction of the draft work programme 2012, mainly under the "policy context section) and the TPT topics map for WP.2012-13 (version 16-6-2011). Two presentations were made for the AAT and SST areas: "a gap analysis after the 4 first AAT calls" and "towards WP.2013: SST questions". These documents stressed the fact that WP.2012 and WP.2013 should be seen as two sequenced steps in the implementation of the strategy defined one year ago.

⁴ COM(2011)21.

The preparation of the answers to the questionnaire is usually made by the TAG in two steps. At the June meeting, a preliminary discussion is held at the three TAG's subgroups (AAT, SST, TPT) and at the plenary. An interim report on these discussions is circulated by the TAG rapporteur, and serves as a basis for the second discussion (subgroups and plenary), held at the October meeting.

As the EC would start the work on the strategy for WP.2013 in September, it was requested to the TAG to circulate the provisional report, covering today's discussions by 15 September. The TAG agreed to do so, and to focus the discussions in this meeting on those items within the questionnaire, which the EC considered to have a higher priority.

Strategy and policy news

The TAG was reminded that the remaining calls (WP.2012 and WP.2013) are expected to be the biggest in size. They benefit from the expertise built up in previous FP7 calls and they are expected to take full account of the new policies fostered by the Barroso II Commission in the fields of research and transport.

The TAG was informed about the latest transport research policy developments within the EC. The Common Strategic Framework (CSF) consultation process closed on May 20th, 2011 with 775 written contributions and 1300 responses through the online questionnaire. Transport stakeholders submitted 29 written contributions and 16 online responses. DG RTD and DG MOVE keep working together in the CSF process, preparing its transport chapter and they are also cooperating in the preparation of the strategic transport technology plan (STTP), for which the scientific assessment has been completed. More information on both issues was provided at the afternoon informal discussion meeting on "transport research and innovation in the CSF". The EC expressed its appreciation for the involvement of TAG in these activities, beyond the scope of the TAG mandate, both as a group and from some particular members.

Update on the WP.2012 Approval and Publication Process

The TAG was informed that the draft text would be presented to the transport programme committee (TPC) on June 22nd, and published on July 19th. As a novelty, a pre-publication of the draft, as endorsed by the TPC, would be made available on the web, probably from June 23rd.

The main changes, compared to the draft circulated at the previous TAG meeting, refer to a limited number of topics under the AAT and SST (ITS and logistics) and horizontal (TPT) (trans-national cooperation) sections. It is worth mentioning that in the new WP.2012, different ranking lists will be established for the TPT topics, so that it will be possible to transfer budget to lower ranking (but above threshold) proposals from other topics in case these topics are already covered by one proposal. The purpose is to cover more topics, avoiding the overlapping of funded proposals for the same topics.

Clarifications on the "Issues Document"

The questionnaire (Annex 2) "issues for the opinion of TAG on WP.2013" is organized in four sections (general, TPT questions, SST questions and AAT questions). Prior to the meetings of the 3 sub-groups, some TAG members asked for some clarifications from the EC.

It was agreed that question 3.5.1 (SST) on international cooperation and question 4.5 (AAT) on Vision 2020 were relevant to all transport modes, and would be moved to the "general" section and answered by all the sub-groups. However, the EC stressed its high interest in getting a specific modal answer to question 4.5

from the AAT subgroup, concerning transnational cooperation and the role of the ERANET scheme in this sector.

Concerning question 2.1 (TPT), which refers to recommendations on future TPT topics, it was clarified that, as there will be no budget for TPT topics in WP.2013, any such "horizontal" topics would be accommodated under the AAT or SST sections.

Finally, it was agreed that question 3.2.1 (SST, rail) should be answered within the SST group considering also non-rail surface transport modes.

TAG Participation at the Informal Discussion Meeting on Transport Research and Innovation in the CSF

The Common Strategic Framework (CSF) for Research and Innovation is under preparation by the Commission. A milestone in this process was the public consultation on the Green Paper 'From Challenges to opportunities: Towards a Common Strategic Framework (CSF) for EU Research and Innovation Funding' which closed on May 20th, 2011.

Using the input received from that consultation and from the public consultation on the preparation of the Strategic Transport Technology Plan, the Commission services are currently reflecting on the main orientations for the transport research and innovation component of the next FP proposal, to be adopted by the EC by the end of the year.

In this context, the Commission services organised this informal discussion with stakeholders on the transport component of the next CSF. The general objective of the meeting was to hear the views of the stakeholders on the transport component of the next CSF. Three presentations from the European Commission (EC) provided the general framework for the discussion. The first presentation provided an overview of the results of the CSF consultation process, with a focus on the answers from transport stakeholders. The second presentation gave an update on the on-going process for the preparation of the Strategic Transport Technology Plan. The third presentation advanced some suggestions on how the European Commission intends to address the needs of the transport sector in the forthcoming framework programme for research and innovation (Horizon 2020).

More than one hundred people representing relevant transport stakeholders were invited. Fifty-eight people from all major associations and organisations across all modes of transport attended the informal discussion meeting, including 11 TAG members. The TAG rapporteur prepared a report of this informal meeting (Annex 3).

3.3. The 17th TAG Meeting, October 6-7, 2011

Objectives and Structure of the Meeting

The main purpose of the October two-day meeting was to finalise the TAG's answers to the EC's questionnaire on the WP.2013, and to analyse the coordination of FP.7 with national transport research programmes. In order to support the discussion on this second issue, the transport-related ERANETs were invited to make presentations of their structure, objectives and activities.

Strategy and Policy News

The EC officials briefed the TAG on recent policy developments in the area of transport research and innovation, particularly on the state of play of Horizon 2020, and the on-going preparation of STTP.

Following the CSF communication and its consultation process, a proposal on "Horizon 2020", consisting of a package of actions and legislative initiatives, should be approved by the EC by the end of November. Horizon 2020 will be structured along 3 major priorities: scientific excellence, enabling technologies (industrial leadership) and societal challenges. Transport (*smart, green and integrated transport*) is included as one of the 6 major societal challenges on which funding will be focused. Accordingly, the priority areas for the transport theme in Horizon 2020 are expected to be "resource-efficient transport" (including propulsion systems, vehicles, vessels, aircraft, and urban transport systems), "seamless transport" (including concepts for curbing congestion and increasing safety and security), "global leadership for the EU industry" (including international cooperation activities) and "implementation". Some internal discussion within the EC services keeps on-going, mainly referring to the precise boundaries of the transport theme, particularly for Galileo and ITC applications for transport. The overall budget for Horizon 2020 would be some € 80 billion, according to the Multiannual Financial Framework 2014-2020 presented by the EC last June, but there are no indications on its distribution among priorities and themes yet.

Other recent initiatives of the EC, relevant to transport research, include the communication on partnership in innovation (COM(2011)572), published in September, and the proposal for a new directive on energy efficiency (COM(2011)370), published last June. The first one is a reflection on how to get the most out of the innovation-related EU budget, while the second includes a transport component in the framework of an analysis mostly related to buildings.

An "issues paper" has been produced internally for the WP.2013, updating the common strategy prepared one year ago for WP.2012 and WP.2013. This paper was distributed at the TAG meeting. Following the reactions from some programme committee members, the EC is revising it, and a new paper is expected in early 2012.

Update on the Preparation of the Strategic Transport Technology Plan (STTP)

The draft STTP communication is under preparation, supported by three staff working papers, and is expected to enter the EC's agenda after the EC's approval of the Horizon 2020 proposal. Two of the staff working papers have been prepared with the support of the JTRC. They refer to the "*state of the art*" and the "capacity map". The third staff working paper, addressing an initial description of the priority transport R&I areas, is under preparation. The final report of the STTP stakeholders' consultation process has been published in the STTP website (http://ec.europa.eu/transport/research/sttp/sttp_en.htm).

The comments and questions for clarification from TAG members on the STTP addressed the following issues:

- Whether a long-term vision (2050) was being considered in transport policy and in the STTP. In fact, this long-term vision was one of the main inputs to the preparation of the new transport white paper, and was made within the "Futures of transport" study, conducted in 2008-2010. The STTP certainly gets a long-term perspective, beyond the 2020 horizon, but there has been intensive interaction with the CSF process, which has produced the "Horizon 2020" proposal. Furthermore, the STTP takes a deployment

perspective, focusing on implementation "beyond" or "besides" the research and development perspective of the CSF process.

- Whether STTP is taking into account new developments in other developed countries, such as USA and Japan. Although this is indeed the case, data comparability has proved to be a major difficulty to get a practical input out of the revision of these countries' experiences.
- Whether the EU's Structural Funds should not be partially dedicated to implementation of innovation in general, and particularly in the field of transport, that is, to the implementation of the STTP. This is certainly the view of the EC, and this idea has also been included in the Horizon 2020 proposal, but the final destination of structural funds is mainly decided by member states.

Towards WP.2013

The basic calendar for WP.2013 approval is very much similar to WP.2012's. The topics' description will be drafted in the first quarter of 2012, and the adoption and publication will take place on July 19th and July 20th, 2012. The indicative budget for WP.2013 is € 310 to 330 million. As all the remaining resources reserved to TPT activities were consumed in WP.2012, WP.2013 will only include AAT and SST topics.

As a part of a multiannual strategy for 2012 and 2013, the next work programme will focus on the same three socio-economic challenges: eco-innovation (decarbonisation and efficient use of resources), safe and seamless mobility, and competitiveness of the European transport industry through innovation. Actually, the focus on innovation will be stressed, aiming at supporting and fostering the transformation of research outcomes into new products and services.

The contents for aeronautics and air transport (AAT) will keep the open level-0 call, as planned, and will put particular emphasis on level-2 topics, in order to strike a 50:50 balance between level-1 and level-2 projects at the end of FP.7. Level-1 topics will focus on "the greening of air transport", "improving cost efficiency", "customers' safety" and "pioneering the air transport of the future". Level-2 topics will aim at large-scale efforts in the field of greening (engine fuel saving and active wing for drag reduction), safety and security (resilience to face volcanic ash and other hazards) and competitiveness (integrated approach to maintenance and on-board power generation).

The SST part of WP.2013 will also look for a balanced combination of upstream and downstream research within the whole FP-7 period. Logistics and co-modality topics will be included within the EGCI. Rail research will continue to focus on attracting more users and ensuring that railway capacity will be able to accommodate the ambitious long-term traffic growth envisaged by the transport white paper and by ERRAC's strategic research agenda. Waterborne research will focus on ships' emissions, and will also be supported by a joint-call in the context of the "Ocean of Tomorrow" initiative. Policy-driven research in the field of urban transport and ITS will receive a particular attention, with a focus on co-modal applications.

Cross-cutting issues will be addressed within the AAT and SST sections. AAT will include a number of coordination and support actions in order to evolve from a bottom-up to a top-down approach in order to better support the EU research policy and to support mutual knowledge among member states on their industrial and research capacities. SST will include socio-economic and technology assessment research topics within the EGCI. International cooperation will be included in both sections.

The TAG welcomed the EC's approach to WP.2013, and highlighted some issues:

- Two additional topics, thus far not addressed within FP.7, were proposed for inclusion: the airport of the future and urban waterborne transport.
- There was a discussion on the maturity of the hybrid car technology developments, and the eventual need to dedicate more research resources to it, within EGCI.
- Several topics, which could be considered within the international cooperation area, were proposed.
- There were some concerns about the fact that there was no specific mention to Mediterranean neighbouring countries in the WP.2013 presentation. This was seen as contradictory with the question on these countries included in the EC's questionnaire to the TAG. The EC informed that cooperation with Mediterranean countries could be included within the "Ocean of Tomorrow" joint call.

TAG Activities in 2012

Following the EC's proposal and the discussion held at the TAG executive committee, it was agreed that, in 2012, TAG will start advising on Horizon 2020 and will hold two one-day meetings, followed by one final meeting in the spring of 2013. The final TAG report will wrap-up the activities of the group during its whole 2006-2012 period of activity, focusing on the added value of the group to the implementation of FP7 in the field of transport and the groups' advice on the future role for such a group within Horizon 2020.

ERANET Briefing Session

One of the areas to which the TAG members considered that the group could contribute in 2011 was the cooperation among national research programmes and activities. To this purpose, the EC invited all the transport-related ERANETs to present to TAG summaries of their objectives, structure and activities.

The ERANETs' presentations were preceded by a general introduction from the EC, which gave the general framework for these structures within FP7. ERANETs must be seen in the context of the construction of the "European Research Area" (ERA), which in particular aims at *"the restructuring of the European research fabric"*, with improved coordination of national research activities and policies. ERANETs were introduced within FP6 for the general coordination of national programmes; EU funding covered only coordination activities and member states had to agree in funding joint calls. Within FP7, the coordination dimension has been fostered, and the now called "ERANET plus" schemes requires that members states contribute to a joint trans-national call, for which EU contributes with up to 33% of the total joint-call budget. The main objective of the ERANET plus schemes should be, therefore, to organize a single joint-call for proposals; the joint call should pool together the financial resources of the participating national programmes and the EC would provide a financial top-up.

The participants in the ERANET schemes should be either, programme owners or programme managers from at least 3 member states or associated states. In some justified cases, programme owners without a research programme (but planning to set up one) are allowed to participate.

For the future, the EC is reflecting on how to simplify instruments supporting these (and other) public-public partnering, in the context of the recent communication on "partnering on research and innovation" (COM(2011)572).

The transport ERANET initiatives approved thus far are the following ones:

- MARTEC. (Phase 1: 2006-2009; phase 2: 2011-2014).
- Air TN. (Phase 1: 2006-2009; phase 2: 2009-2012).

- ERANET Road. (Phase 1: 2005-2009; phase 2: 2009-2012).
- ERANET Transport. (Phase 1: 2004-2008; phase 2: 2009-2011).
- ERANET Electromobility Plus. The only ERANET Plus scheme approved, thus far, in the field of transport. It has been articulated from ERANET Transport.

MARTEC II

The first MARTEC pilot call took place in 2008, with a budget of € 4.6 Million. Successive transnational calls have taken place every year afterwards, with a budget of €4.7 Million in 2009 and €4.8 Million in 2010. 14 research projects have been funded thus far. The MARTEC consortium is cooperating closely with the Waterborne Technology Platform, which acts as an advisory committee to MARTEC for the definition of the calls. The 2011 call has been closed now, and it is expected to fund 3 or 4 additional research projects, with a maximum contribution of €4.3 Million. The MARTEC priority areas for research refer to maritime transport and other maritime activities: ship building, maritime equipment and services, ship and port operation, inland waterborne and intermodal transport, offshore industry and technology, offshore structures for renewable energy, polar technology and fishing/aquaculture.

Although MARTEC includes 14 partner countries and 10 observer countries, only 8 countries have thus far participated in the transnational calls, by contributing to their funding.

AIR TN

The aeronautics sector is particularly in need of transnational research cooperation, as it is addressing a global activity. Organisations from 18 member states and associated states are participating in Air TN II. The consortium has set in place a collaborative process for exchanging information with ACARE and other relevant organisations in the aeronautics sector. The first transnational projects started on January 2009, with a total combined funding of €20 Million, shared between the German and the Austrian Aerospace Programmes (LuFo and TAKE-OFF). Following this approach, the British Technology Programme and the Austrian Aerospace Programme have opened their latest calls for proposals to consortia, including partners from both countries.

Air TN activities have included other joint activities, such as data collection, a concept on a call information system, a catalogue of aeronautical research infrastructures, workshops and seminars.

ERANET Road

ERANET Road was built upon the fact that many national road administrations in Europe have their own research programmes. Legal and financial issues are among the main barriers to cooperation initially identified by ERANET Road: the absence of a unified trans-national regulatory and legal framework, disparate national approaches to research procurement and intellectual property rights, inability for national research budgets to finance transnational research, etc. ERANET Road explored innovative ways to overcome these barriers. The new approach facilitates those countries interested in financing research on particular areas to prepare a joint call, which is opened to all researchers (including those from non-financing countries), thus matching the research priorities of financing countries with the research capacities of those countries involved in the selected research consortia.

Three pilot transnational project calls were prepared within ERANET Road to make sure that the innovative procedures could actually work. Afterwards, the first call was launched in 2008 (road owners getting to

grips with climate change), with a budget of €1.5 Million, and selected 4 projects. The 2009 call followed (safety at the heart of road design) with 11 funding partners pooling together a total budget of €1.650 Million, which funded 5 research projects. The 2011 call, with a total budget of €5.130 Million, includes 3 main areas: "mobility: getting the most out of intelligent infrastructure", "design: rapid and durable maintenance methods and techniques" and "energy: sustainability and energy efficient management of roads". 15 projects have been selected for funding within this last call.

After ERANET Road II is finished, it is expected to transfer management of transnational research calls to the Conference of European Directors of Roads (CEDR). CEDR has planned to launch a new call in 2012 with a tentative budget of €4.2 Million.

ERANET Transport

ERANET Transport was launched in 2004, and since then it has launched 23 thematic transnational funding initiatives. Although not all of them have succeeded in putting in place an actual joint funding action, they have all provided valuable experience. 10 successful funding initiatives have been launched, with a total budget of around €50 Million: two initiatives in 2006 (SURSHIP and Intelligent Logistic, €19.3 Million), two more in 2007 (Intermodal Freight and Keep Moving, €4.3 Million), 3 initiatives in 2008 (Dangerous Goods, Safety & Security and Sleepiness, 2.0 Million), 2 initiatives in 2010 (SURPRICE and E-Mobility, €1.5 Million), and the ERANET-plus initiative "Elecromobility Plus", with a budget of more than €20 Million, launched also in 2010.

ERANET Transport covers all transport modes, with a focus on SST-related topics, and has been joined by 14 partners from 12 countries. Membership is expected to increase in the next phase (ERANET Transport III) with national and regional national transport research programme managers and owners. ERANET Transport is preparing a research agenda for future calls, looking for complementarity with, and not overlapping, the EC's SST calls. Overall, ERANET Transport is being successful in progressively shaping national transport research programmes to transnational funding cooperation.

Electromobility +

Electromobility + is an ERANET-plus project prepared within a part of the ERANET transport community. Its consortium members have developed national initiatives on electromobility. Following the ERANET Plus concept, the EC earmarked a maximum of € 10 Million in the 2011 SST call for Electromobility +. This proved to be a strong incentive, and Electromobility+ has mobilized around € 20 Million from its consortium members.

Electromobility + launched its transnational call for proposals at the end of 2010. 40 proposals were submitted, and 20 of them were finally ranked as eligible after a lengthy two-step evaluation process. The final selection of proposals is expected to be made by the end of November. Although time-consuming, this two-step evaluation procedure is highly recommended, as it combines a national eligibility check and an international peer review; the total duration of the selection process should, however, be reduced, as it has taken almost one year in this first experience. Two additional lessons from this call is that it is necessary for participating countries to introduce some adaptations in their national research programme procedures, and to reduce the currently existing differences in these procedures.

In the subsequent discussion, the participants expressed their appreciation for the comprehensive information provided and made some considerations on the purpose and prospects of the ERANET and ERANET Plus concepts:

- The added value of the ERANET initiatives. These initiatives have helped national transport research programme managers and owners to understand each other and to build up mutual trust, a fundamental step to move forward and "pool" resources. It has opened up national budgets to EU-wide research, although still at a modest level. All this should be important for expanding and consolidating the European Research Area in the transport sector.
- Currently, the ERANET procedures seem to be still too cumbersome compared to the research funds (and topics) mobilized, and it is unlikely that they will attract new researchers (in fact, the opposite may occur, as only researchers already familiar with this complex framework may be ready to prepare proposals). This is understandable at this stage, but should be improved in the future. In particular, it seems that joint transnational calls could in principle be better suited to SMEs than conventional EU calls, but there is no evidence of higher SME participation thus far.
- Many significant barriers remain in place for transnational cooperation. While agreeing on the topics to be funded may be easy, making the bureaucratic procedures compatible seems quite another story (for example in terms of deadlines, provision of funds, etc.). Considering that many EU countries do not have transport research programmes, particularly in Central and Eastern Europe, there is a risk for these countries to be further marginalized in the European transport research process, as transnational initiatives become more important and attract more EU funding. In fact, currently there is some reluctance from a number of member states to dedicate more resources to ERANET Plus initiatives.
- As ERANET calls consolidate, this could represent further fragmentation in research funding. This is not bad in itself, as the innovation system is complex, and there should be flexible mechanisms to cope with the various contexts and needs, but careful attention should be paid to avoid unnecessary growth in bureaucracy and diversion of resources from actual research to management machineries.
- A particular advantage of transnational research cooperation and calls is their ability to adapt to particular problems, affecting only a number of countries and regions in Europe. In this sense, it is felt that ERANET initiatives (and particularly ERANET Plus) would effectively complement the framework programme. Furthermore, it would be interesting to open ERANET to third countries (particularly developed countries such as USA and Japan), as this would be a flexible mechanism to pool together resources for specific topics, in a much more effective way than the current international cooperation mechanisms.

4. TAG responses to "Issues for Opinion of TAG on WP.2013"

4.1. (A). General

A.1. How to make best use of the strategy for WP2012-2013 as concrete topics for the last call of FP7?

The last call of FP7 should address gaps in the overall programmes, as updated by the developments since they were originally developed.

In this respect, there are three aspects to be considered: topics for the last call could (1) address some remaining gaps in the topics already addressed, (2) revisit topics of particular relevance and urgency, or (3) refer to completely new areas. From this perspective, it is recommended to consider for the last call of FP.7:

(1) Remaining gaps.

- To complete the research already made in some areas with topics focused on demonstration projects (to explore the actual implementation potential of research results from previous FP.7 projects).
- Integration of travel information systems in road, rail and air transport to provide possibilities for the potential users/clients to compare the different routes, combination of transport modes according to their wide range of preferences (shortest, quickest, cheapest, having minimum environmental footprint and suited to given conditions).

(2) Revisit already addressed topics of particular relevance.

- To carry out pre-studies to identify and prepare those topics, which could be addressed in Horizon 2020, in particular in order to define the scope, boundary and interfaces of key topic areas.
- Within AAT, no gaps were seen. However, increase seems necessary in the fields of human factors (safety), airports (capacity and efficiency), flight physics (drag reduction).
- There is a need for more top-down initiatives to be investigated in rail transport to reach the ambitious targets of the new Transport White Paper (see question C.2.1). This would mainly refer to:
 - the application of right business structures (public, private) and institutional frameworks (holding, separated companies) for the main rail sector "players" (infrastructure managers, passenger and freight operators, large size station managers, traction, maintenance service providers, etc.), in order to provide for independency and to avoid, inter alia, positive discrimination of the incumbent service providers;
 - the capability to take into account external costs for all transport modes in order to approach a level playing field between modes (see C.2.2), and
 - the assessment of technological developments from the perspective of their actual contributions to the performance of the rail transport system (see B.2).
- Collection, storage, exploitation of databases for traffic and travel information. The description could be formulated as "an integrated road traffic monitoring and management approach for safe and seamless mobility in Europe", and it would entail investigating a "blueprint" for a new pan-European system for integrated road traffic monitoring and management system integrating all major known applications and initiatives developed so far. "A large- scale IP could be considered to address this topic.

(3) Completely new areas.

- A particular topic not addressed thus far is the impact of socio-economic variables (population density size and distribution, industry structure, geography...) on the transport needs of a society, and how a particular transport system can better serve those needs: it could be worth to establish guidance and develop quantitative tools (algorithms), which could support transport planning for any given economic and geographic area in Europe (including the selection of the best mix of transport modes).
- Comparison of the features (assessment of strengths and weaknesses) and efficiency of the different existing rail transport institutional frameworks in the old and new Member States of EU and in other countries (e.g. Switzerland, China) would be useful, in the framework of an international research project.
- Testing novel tools for a "community-based" approach to e-services in freight transport. Transportation supply chains require the persistence of an architecture for a distributed document management and records system within the freight community. Such a system would be based on a standard document that relates disparate pieces of information into structured knowledge. Creation of such document-centric, Business-to-business relationships in the freight transport sector are seen as a useful tool that can create interoperability and cooperation within the sector towards creating the so called "Freight Federation" i.e. an environment where common document services and exchange of relevant information is made available for use by the "community" in conjunction with other services in an interoperable and seamless way. (See also answer to C.1.7).

A.2. Based on the information on topics coverage in previous calls (to be given in subgroup meetings), what activities/areas need prioritization?

In general, prioritization is needed for the following activities:

- Activities addressed at removing the various existing barriers to the implementation of research results, including legal and organizational barriers, procedure-related barriers and national-protection barriers.
- Research results must be moved forward within the innovation process and achieve actual implementation. The current barriers/bottlenecks seem to be due more to lack of implementation of research results than to lack of research activity.
- Further improving coordination and complementarity among national transport research systems and the EU FP.

Some topics within particular research areas are considered to deserve further attention:

- To stimulate standardisation of the different "interfaces" in multimodal travels and supply chains.
- Further efforts should be made in order to encourage cross-cutting transfer of modal research results to other transport modes; specific activities/topics could be included in future calls aiming at this to address the unexploited synergies between the different modes in key areas. For example, infrastructure developments in all modes, airports, rail, inland waterways and roads should be encouraged. (See also B.2).
- Increase the focus on the operations side of air transport (i.e. airports and airlines). Interact with the Association of European Airlines (AEA) and the Airports Council International (ACI Europe).
- Motorways of the seas.
- Rail freight (both the infrastructure and train technology).

- Guidelines and recommendations for application of infrastructure research findings on TEN-T.

A.3. How best to address intermodal questions such as travel and transport information/services to customers?

Intermodality has in the past been looked at as intermodality between vehicles. In terms of intermodality between Air transport and Ground in general, the need is to look at systems around, moving passengers and freight between modes, decision making on the most appropriate/effective mode to be used in a particular case, etc.

Through CSA-SA actions, bringing together institutional stakeholders for reviewing how existing barriers could be overcome, and for promoting and fostering standardisation.

Active and not only passive information systems would be necessary to be developed. Active information systems should quickly be able to find alternatives (dynamic adaptation) for transport users in case of disruptions in transport services.

Encourage trans-modal use of technologies initially developed within particular transport modes. See also answer to question B.2 below.

After adopting best practices within one transport mode, expand them to the connected modes (e.g. air travel information systems have to be connected to the rail and interurban information systems, rail and bus information systems have to be merged and connected into urban and suburban public transport information systems).

Focus more on the passenger / freight intermodality (e.g. city-to-city intermodality) for integrated aircraft, train and bus.

Develop an intermodal information system to improve the passenger/ freight intermodality and allow the passenger to interact with it.

Developing better information flows to individual travellers or shippers of freight before and during their travel/ transport.

Include the special information needed at the interfaces between the modes used in transport chains.

Overcome different booking and real time planning systems per travel mode, in different European states.

Make systems accessible to all population (old, young, e-literate, not e-literate, used to public transport or not, etc.).

Watch for data protection/ privacy issues.

A.4. How research projects could better support pre-normative and co-normative activities?

- Improve procedures in the rule-making to increase the speed of introduction of new technology into air transport.

- Interact with EASA on certification/rule making research ("smart regulator").

The question is perceived as pertaining to standards. It also applies to protection of intellectual property. In the innovation chain more effort must be given to standardisation. This could be encouraged by the FP through more attention to standardization in the calls, including:

- More information has to be required to the proposals on standardisation issues.
- More emphasis has to be given to standardisation in the calls. This could be included as a specific request within the topic description.
- Within the constraints imposed by the limited resources that can be dedicated to the preparation of proposals, proposers should be asked to reflect on how to initiate the process of standardisation, including interaction with the industry and launching of workshops or standardisation groups. Project proposals should be required to address these issues.
- Topic description may encourage proposers to set up a "technical committee for standardisation" within the proposals approach and structure, where relevant.

There is a risk that, if too detailed, standards may freeze technological development: they may inhibit the dissemination of innovation instead of supporting it. To avoid this risk, it is recommended:

- To encourage and support the development of "open/free" systems and standards. These standards would be easily adopted by many small and medium-size industrial players and facilitate market access for "secondary" systems using them.
- To give more attention to the development of appropriate supporting structures, so that essential, dynamic interface/module standards needed to achieve interoperability could be more easily developed⁵.
- Explore how bring to bring together protection (of systems and inventions) and avoid petrifying technology. Are we "freezing" the right things? Where do benefits and cost form? How can the European industry benefit? How can we avoid negative effects of open-source technology (coexisting norms, complexity, incompatibility, etc.).
- Understanding the Goal Based Standard. This could be applied, in particular, to "low-risk" ships⁶.

A.5. How to improve participation of less performing actors (countries or organisations)?

As a first, necessary pre-requisite, the dissemination of research results has to be improved. This should include, where necessary, support for the translation of supporting material.

⁵ For example: European railways are implementing the GSM-R radio system as required by TSIs, yet it is based on 1990's digital technology (2G) requiring unacceptably wide bandwidth in the radio spectrum. The radio industry is already moving through 3G to 4G (Long Term Evolution) technology.

Although the Technical Specifications for Interoperability in general and the ERTMS in special should support the exchange of rolling stock between the networks, the implementation of ETCS reveals as being very complicated. In reality, the suppliers of trackside and on board units don't implement the standards in one unique way, so that there arise new barriers in using the on board unit on a track equipped by another supplier.

⁶ One aim could be to strengthen the competitiveness of the European SME shipbuilding community by developing and introducing low cost "green" automation and mechanization in shipbuilding and ship repair, conversion and maintenance. Focus will be on automation for shipyard processes including design, engineering, basic material processing, assembly and outfitting. Solutions should fit within shipbuilding collaborative practices.

Research proposals have to contain demonstrations, case studies for the illustration of the implementation of expected results. This is an excellent “entry point” for newcomers, as they are more easily accommodated within these tasks by already experienced consortia teams.

Benchmarking exercises, as well as focusing some topics on certain geographical areas or socio-economic environments can also facilitate the involvement of currently less performing actors.

As lack of participation may also be a result of lack of access to the appropriate research networks, there could be some mechanisms (e.g. through regional development policies) to be put in place in order to support the activity of less experienced but well qualified participants from those regions. This could both, empower the capacities of these players, and encourage the strongest players to cooperate with them.

Research projects that are especially focussed on local transport issues (including TEN-T developments) are especially relevant (see also A.6.1 and B.3)

See also answer to question D.2 below, concerning cooperation between industry and academia, and support to “less-known” actors (regions and industries).

A.6. International Cooperation

A.6.1. For which research areas do you see great potential for international cooperation?

In general: Further development of a shared, by-now lacking, long-term vision of the whole transport system (from urban to global flows).

In the AAT area, because of the Global nature of the interactions, there is need for international cooperation for research on safety, security, certification, ATM systems.

In the SST area:

- International co-operation with Russia, China and other Asian states in those sectors, where these countries have novel research results.
- Consider trans-shipment issues in co-operation with US.
- Infrastructure, including 5th generation roads as well as advanced modelling and information systems with developed countries including USA and Japan
- Review and implementation of results of previous research, which are by their nature more adequate for international cooperation (e.g. container security through application of the green lane concept, or environmental issues).
- Urban transport (addressed in questions C.4.1 and C.4.2 below) could be an excellent area for international cooperation within SST, focusing on questions such as biking systems (e.g. South Korea) and Bus Rapid Transit (BRT) systems (e.g. Latin America). More specifically: “climate change mitigation measures, congestion relieve/mitigation measures, pricing and traveller information (including standardisation and interoperability of charging systems).

4.2. (B). Horizontal Activities (TPT)

B.1. Based on the content and results of previous Calls, does the TAG have recommendations on technological research that it would be more efficient / beneficial to carry out at TPT level rather than in the modes?

- Intelligent infrastructure technologies (irrespective of mode, e.g. V2V, or V2I communication, interoperable data transfers, etc.).
- Maintenance technologies (planning, executing, monitoring).
- Integrated logistics.
- Materials, sensors, environmental impact issues, safety, transport-specific security, passenger freight interoperation systems, real-time management.

B.2. How can synergies between transport modes be better exploited and how to facilitate the transfer of findings from one mode to another?

- There is a need to analyse existing modal research results from the perspective of their potential adaptation to other transport modes: Specific CSA-SAs could be launched in order to review modal research results from this trans-modal perspective, and to assess their transfer potential.
- Considering the limited resources available in FP.7 for horizontal activities, research on interfaces within transport modes could be addressed by SST topics (for inland interfaces) or AAT topics (for interfaces including air transport). As TPT has run short of money in FP.7, the EC should consider a better balanced distribution of resources in Horizon 2020.
- There is a need to assess technological developments from the perspective of their actual contributions to the performance of the transport system (reliability, speed, energy consumption, environmental footprint). This could be particularly interesting in the rail subsector: to review and synthesize rail research results on infrastructure, vehicles (locomotives, carriages, motor coaches, wagons), signalling equipment and traffic management systems, in order to assess the impact of technological improvements (engine power, train speed, and rail traffic management system) on total travel time, energy consumed, or environmental footprint per p-km and t-km.
- See answer to question A.3, above (attention to systems moving passengers and freight between transport modes and decision-making).

B.3. In light of the events that took place lately in some Mediterranean countries what could be the evolution of the transport research international cooperation strategy with respect to neighbouring and Mediterranean countries?

- To increase the funds for cooperation with these countries, and include transport research within the respective multilateral and bilateral co-operation programs.
- Give or increase support (e.g. coaching and training) to these countries in order to provide safe and efficient air transport to these nations.
- Consider and include some topics specifically addressed to the Mediterranean and other neighbouring countries (including West Balkan countries). In fact, this was already done within FP5 and FP6 and laid the foundation for some multilateral activities in the transport sector.

- The global perspective of EU research should be strengthened. The three pillars for R+D cooperation at the international level are market expansion of European products/solutions, reaching good research partners and addressing global issues. Within this framework, some action (research topics?) would be necessary to investigate how innovative European products can better fit the requests and needs of global markets.

4.3. (C). Sustainable Surface Transport (SST)

C.1. Road and urban transport electrification

C.1.1. Intelligent roads (5th generation road) have been identified as a potential topic area for WP2013. What research is needed in order to develop roads which help to meet our main challenges, such as climate change, carbon reduction, road safety, energy generation?

Major areas in this field include:

- Asset management of ageing road networks (in cooperation with US).
- Speeding-up road development, which is currently extremely slow and time consuming, hindered by high construction costs, and opposition to the extension of roads (alternative design concepts could be helpful) and to major traffic disruptions during construction.
- Durability and upgrade of bridge structure is a major concern: bridge structures are often based on reinforced and pre-stressed concrete technologies from the 1970s. Such structures now need life extension and major refurbishment. Updated technologies and methodologies have not been comprehensively developed thus far.
- The maintenance/replacement of road infrastructure, including road surfaces. Maintenance issues should be expanded within WP.2013, including intelligent maintenance applications, and rail-road cross-fertilisation of maintenance techniques and tools.
- Traffic management should receive greater attention in order to reduce economic loss and carbon/energy usage, as a consequence of better car guidance, avoiding traffic jams and unnecessary braking/accelerating cycles in cars.

In short, topics on intelligent roads should address:

- Improved road pavements (including surface material and foundation): silent, durable, draining, self-healing solutions.
- Tools and techniques of road asset management and renewal, including such aspects as structures (bridges), road durability and time stability. There should probably be a continue call for these topics.
- Support active traffic management to avoid congestion, and to advise on detours.
- Explore new, innovative use of road space, such as the use of solar panels along roads/ rails to harvest energy.

C.1.2. What further research efforts are needed to improve the integration of Electric Vehicles in the transport system (e.g. vehicle to grid integration, charging infrastructure)? What about socio-economic research on how to improve the deployment of charging infrastructure?

Technical solutions of electrical cars/batteries are already comprehensively investigated. However, research on electric vehicles (E.V.) should better integrate safety aspects such as battery overheating or E.V. integration in the general traffic flow. Furthermore, it is not sure whether the use of electrical cars

under winter conditions (in Northern and Eastern Europe) is being appropriately addressed within research on electric batteries currently undertaken under the Green Car Initiative.

More research is needed on materials/ lightweight materials, especially carbon fibre or similar composite materials. Note that other industries such as rail will benefit from these materials, too. This is needed in any case, whatever the driving energy, and would apply to all kinds of vehicles, including rail vehicles.

Acceptance of electrical cars is still a problem, mainly due to the short distance range of E.Vs. The electrical supply grid is not in place yet, which makes consumers hesitate. Research should address:

- Socio-economic research on users' acceptance and users' needs and demands. This is a key issue for E.Vs, but it should be kept in mind that socio-economic research is needed in all transport modes as well as for intermodal solutions (which requests for a holistic approach to the broader topic of "acceptance of new mobility solutions").
- Support to the development of electrified light trucks (below 3.5t) for urban delivery. They would dramatically reduce both, noise and emissions. This sector is particularly suited to electrification as charging can be made at the distribution depots and the distances typically travelled are short. Also the noise reduction achieved with the use of these vehicles would be very positive, as they operate in quiet as well as busy times of days in cities.
- How to be able to switch from one energy source (stored or new energy) to the other.

Other topics related to this area were discussed by the group:

- Hybrid vehicle technology for heavy duty vehicles.
- Short term energy storage systems other than battery (flywheel?) to recover the lost energy in the car (e.g. braking).
- Have more than one energy source (e.g. sun and oil).

C.1.3. Do you think that an assessment of the on-going EGCI projects in terms of environmental impact is useful?

Consider including Life Cycle Analysis of different modes in road and car use. The assessment should also consider benefits to the environment, not only benefits referring to economic aspects.

C.1.4. A number of innovative transshipment technologies and new organisational and logistics concepts have already been developed. However, the implementation of these innovations is very limited. What are the main obstacles that have to be removed in order to stimulate innovation in the area of logistics?

- It would be worth reviewing research results from the perspective of their implementation, their potential transfer to other areas and to propose solutions for implementation based on that review.
- The development of organisational and business models is necessary to implement the new logistic technologies and concepts.
- We need better and more transparent cost/benefit allocation models within the intermodal chain (probably to be introduced first in the main transport corridors). These models would help to persuade customers to demand/accept intermodal rather than unimodal solutions.
- A number of obstacles do remain in the interfaces of the transport chain, such as lack of standardisation for data-exchange. All the relevant stakeholders should be brought together in this

effort, with a particular attention to get some public services (such as customs) fully involved and supporting it.

C.1.5. *In relation to transshipment and terminal/port technologies, should one focus on continuous but incremental research (such as improving the performance of cranes, more energy friendly propulsion of AGV's, etc.) or should one go for more radical but at the same time more high investment requiring solutions such as full automation of handling, new infrastructures?*

This question is linked to C.1.7. Both are necessary, but the support needed should probably come from different stakeholders in each case. Incremental research should be mainly supported by the private sector and by other programmes (outside the EU research budget), whereas radical concepts usually have very limited funding alternatives to EU-research programmes, and do need the current (and even more extensive) support from them.

It is recommended, therefore, to concentrate the EU research funding on supporting "daring" research. Radical solutions can then be transferred (even if only partially) into new practical applications. Do not support small-step, incremental research for research programmes, as they will not carry us sufficiently forward.

C.1.6. *Should research on flexible and modular truck-carrier concepts (which could include solutions which are beyond today's weight & dimension legislation) be a priority in order to improve the efficiency of long distance freight transport?*

We understand this question to be applied to giga-liners/ road trains and to out-sized loads (two different problems).

Should giga-liners be encouraged rather than rail? What advantages would they offer? Rail can use electricity, too. Giga-liners need:

- Special road corridors.
- To get current road safety concerns addressed.
- To develop ad hoc logistics in order to distribute goods from large carriers (on corridors) to small carriers (on local roads).

C.1.7. *Where do you see further need for research and demonstration in the area of logistics and co-modality (especially with regard to supply chain management and e-freight solutions)?*

- New technologies and techniques for trans-shipment (for road and rail) to permit depots with smaller land footprints to be used in urban areas. This is urgent given the increasing opposition to large traditional trans-shipment depots being constructed in urban locations. This is valid for inter and co-modality.
- Demonstrate cross-use ready information technologies for planning (depot management, availability of facilities (parking)) - early information, also across borders.
- Increasing the cooperation of carriers with innovative tools such as social networking, etc.
- Expanding implementation of e-freight techniques and intelligent cargo solutions.

C.2. Rail

C.2.1. What scientific advances would allow to increase passenger transport by 40% and freight transport by 70% by year 2020 compared to year 2000 with improved efficiency, reliability and customer satisfaction?

C.2.2. What are the research priorities that would allow above mentioned progress?

Joint response to questions 2.1 and 2.2:

It is considered that most of the technical solutions necessary to improve value for money and provide sufficient capacity in order to meet these targets already exist from research in FP6 and FP7. However, the barriers to implementation are not well understood, yet. Barriers are likely a mix of industry conservative attitude to innovation, legislative issues, lack of commercial and regulatory incentives to invest in rail infrastructure. Further delays in implementation often stem from the comparatively lower profitability of rail vis-à-vis other transport modes. That comparatively lower profitability arises itself, at least partly, from unbalanced competition conditions: current transport costs and prices calculations ignore part of or all external costs, which artificially lowers the economic full costs of rail competitors (road mainly but not only).

Scientific progress on itself cannot replace the lack of will for reform within the rail sector: therefore, scientific progress is probably not the key issue for the future of rail.

Needed:

- Research focused on an objective analysis of barriers to market uptake in order to determine the necessary changes in legislation, national or European regulations and industry incentives, to reach the level playing field with the other transport modes.
- Further research on the calculation of transport costs across modes (including external costs), so that the current divergence is overcome. There is an urgent need for a more accurate calculation, and a way to streamline its inclusion in policy-making.
- In accordance with the White Paper, intensify investments in rail infrastructure (bottleneck removal, capacity enhancement).
- Incentive measures for research activity leading to higher rail system efficiency.
- Consider research into fast freight (up to 200 km/h light (container) goods train), to intersperse freight trains among inter-city passenger trains. These would make better use of existing inter-city and high-speed tracks, increasing capacity and flexibility against network disturbances. New technology needed (aerodynamics, speed, acceleration, deceleration of freight trains to make them “passenger trains for freight”⁷).

C.2.3. What are the most important research priorities not covered in WP2012? Which one should be covered in WP2013?

Information flow to users of rail traffic (both people and goods) can be improved to achieve real time management of passenger and freight users. Up to now work has focused on the traffic management of whole trains rather than the dynamic management of individuals who are making diverse door-to-door

⁷ Given the difficulties of electrification of long distance lorry traffic and the current capacity issues on the rail network from the speed mix of fast passenger trains and slow freight trains.

journeys and only happening to share a particular train. Therefore train-based traffic management may not suit them at all - or, in disruption, to be advised merely to "seek alternative transport". This is especially true of urban transport where various alternatives may exist without any real time information to individuals to enable them to make choices based on their own needs destinations. This may include smart ticketing, smartphone-based traffic logistics similar to road-based satellite navigation based re-routing, at the same time keeping flexibility to respond to short-time and spontaneous decisions. Consider personal data protection concerns.

Research in this area (including logistics, terminal management, management of multimodality) would be needed, including implementation issues (in particular, support by legal regulations to the new concepts).

C.3. Waterborne

C.3.1. What are the technologies needed for new market development (service vessels for exploration or mining, vessels for off-shore wind parks/food-farms/multi-use platforms)?

Support intelligent ships, and include fishing ships (high sea or ocean fishing), because this opens new markets for fishing ships equipped with intelligent components. The EU is already highly competitive in the production of intelligent ships and components.

Support studies to increase European competitiveness in special ships and ship component production.

C.3.2. Which are the important research aspects to be further developed for reducing the emissions of ships, in particular, SO_x, NO_x, PM and black carbon?

Research on use of solar energy, liquid natural gas (LNG), wind energy. Rather than reducing emissions of present machines, focus on increasing the effectiveness of the ships and offshore construction, in order to save energy and decrease environmental impact.

Transfer results of other areas to ship building and shipping, such as new materials, new technologies and new organizational approaches.

C.3.3. Which are the main gaps to be explored to ensure the production of "zero accident" vessels?

This is linked to question C.3.6 below. The topics mentioned in this question and question C.3.6 have international aspects and could be included in international research programs.

It is recommended to further study the man/machine interface; a majority of accidents is man-generated - this is also included in other calls.

C.3.4. What kind of research or innovation action is needed to ensure the competitiveness of the shipping sector (shipbuilding, equipment, operators, new business models)?

Research is needed to support the competitiveness of the shipping sector by developing competitive logistics. This differentiates European ships from those from other regions (example: "motorways of the Sea", "oversize" cargo transportation).

Research is also needed for the development of innovative ships to be used in urban transport (design and construction), as an increasing number of European cities are including waterborne transport within their urban transport systems.

C.3.5. *Is there any specific research need for vessels design for short-sea shipping or inland waterways?*

This question is seen as more related to research in materials: creation of lighter ships for inland waterways with increased capacity. Focus should be on ships for inland navigation, new types of loading and unloading technologies, which in turn increases capacity of the ships and decrease the time of ship loading operations in ports.

Therefore, it would be needed to implement existing research on light materials, loading and unloading equipment and methods from other transport modes or other industrial sectors.

C.3.6. *Is there any research need in support to decision or potential decisions taken in IMO?*

- Explore ways/ tools to better implement and monitor IMO decisions and Memoranda of Understanding (MoUs).
- Develop tools to increase the dissemination of IMO decisions within national maritime administrations.

The main area for action would refer to the achievement of "zero accidents", developing research on both, ships in operation and new design ships. These developments should cover:

- Development of high fidelity tools and processes for accurate and efficient analysis of safety- and performance sensitive hydrodynamic problems in complex / extreme sea and operational conditions, including intact stability performance (surfing/broaching, parametric rolling, extreme motions), and added resistance.
- Extension and validation of hydrodynamic analysis codes for ship manoeuvring performance in safety-sensitive environments such as confined waterways including also particular aspects of shallow water hydrodynamics and slow speed behaviour as well as the interaction with other vessels and stationary structures in diverse environments and weather conditions. Validation of tools should be performed through dedicated model tests and full scale testing.
- Adaptation of multi-objective optimisation and integrated design environments for holistic operational performance and minimum powering requirement predictions to ensure the safe application of the design rules guaranteeing at the same time the right balance between safety, economic efficiency and greenness.
- Fire protection systems of ships with open decks (Ro-ro ships)

Another field of interest in the IMO framework is the development of the "Zero Emission Ship" concept, based on the use of new energies and minimizing environmental impacts. EU research should be oriented to:

- Establishment of a comprehensive overview of potential greening technologies.
- Development of integrated concepts combining the most promising options for specific ships and operational scenarios.
- Basic design of at least four ship types of particular relevance to Europe and adaptation of the critical technology.
- Detailed design and simulation of the critical technologies, in particular the energy chain.

- Development of a transparent and consistent assessment methodology to support the selection of the most promising concepts in view of energy efficiency, emission reduction, cost and safety.
- Selection of two concepts for the subsequent demonstration phase.
- Design and building of the critical components of two real-scale demonstrators (new building, retrofit or a suitable test platform).
- Test and validation of the critical components in the demonstrators.
- Documentation of results and dissemination towards policy makers, rule makers and the European maritime community.

C.3.7. What could be the priority topics for the "Ocean of tomorrow" call? Ideas: 1) Antibiofouling materials and coatings. 2) Marine sensors and related Information Technologies, applications in maritime transport, 3) Litter, treatment of garbage and waste.

Marine sensors etc. should receive low priority. Concerning garbage and waste, Europe has already legal regulations in place. Research priority topics in "Ocean of tomorrow" could therefore be:

- Antibiofouling materials and coating to decrease ships' resistance: develop antifouling materials and coatings, which are environmentally friendly.
- Marine sensors and related information technologies, applications in marine transport together with other sectors, such as navy, biology, etc.
- Research on litter, treatment of garbage and waste, which could improve environmental impact technologies, especially ballast water treatment (neutralize) in case of delivery ballast water from other oceans.

C.4. Urban transport

C.4.1. Topics related to accessibility, design of urban passenger infrastructure and the development and demonstration of automated city vehicles are addressed in the 2012 work programme. It is foreseen in the 2013 work programme to continue the CIVITAS initiative by supporting cities to develop and demonstrate integrated urban transport concepts. Which areas of urban transport research should be addressed in addition to CIVITAS in the 2013 work programme?

C.4.2. What about addressing integrated approaches, investigating links with land use planning and with societal challenges such as the ageing society?

Joint response to questions 4.1 and 4.2:

Develop infrastructure design concepts usable by different transport modes (trams/trains/buses): rails/lanes, stations/stops...

In general terms, legislation seems to be more relevant here than research. Further focus on the dissemination of good practices could be relevant: There is a need to try to identify more clearly which are the net results (research outcomes) of the urban research transport programme CIVITAS.

There is a need to find adequate channels to transfer or connect current research results with related "parallel" sections within the FP, such as land use planning, urban societal issues, etc. Links with land use planning and societal issues could be included within the CIVITAS initiative.

4.4. (D). Aeronautics and Air Transport (AAT)

D.1. WP2013 will be focussed on L2 projects. Does the TAG have recommendation on:

D.1.1. The approach for the identification of L2 topics?

- More emphasis on operational aspects of the integrated air transport system in areas not covered by Clean Sky and SESAR.
- Time Efficiency. Passenger handling systems – Control and Security including detection and information/data handling systems.
- Probably a need for an integrating “Human factors” project looking at how the system operates – information handling and the impact on operations efficiency and safety. This would be a relatively low cost L2.
- Integration of airports within the overall land transport system.

D.1.2. How to focus L1 projects? Shall some Activity lines be closed completely? Are there topics that should be urgently addressed?

- Need to allow for specific Aircraft aspects of “design for reuse/recycle/green disposal”.
- Air Freight Intermodality systems.
- HST and air transport for freight (there is a research project (www.eurocarex.com) currently working on this.

D.2. In which fields Support Actions would be helpful to support the Programme Implementation?

- Projects to build familiarity and trust towards cooperation between industry and academia, east and west, to exploit engineering capacity of non-traditional aeronautics sources. Could use small/medium aircraft and their systems to be the catalyst.
- Give regions/ industries the chance/possibility to present their capabilities to their peers in Europe. Start, e.g. specific support actions.

D.3. While Coordination Actions were widely open in the successive Work Programmes (available for all L1 topics), there were usually a limited number of proposals using this instrument. Is this instrument valuable for the research community? Is it given enough visibility in the Work Programme? Are there other approaches than the current approach that the TAG would recommend?

These should not be as open as in the past, but be specific to areas where coordination is actually needed.

Implementation of the next CSF will begin in 2014. The following questions address actions to be taken in WP2013 to prepare the implementation of the next CSF.

D.4. 'Flightpath 2050' set-outs long term objectives for the Aviation community in a holistic approach encompassing the aeronautics industry, air transport and institutions. Innovation is also a new

component in addition of research. How should the Commission approach to the Work Programme evolve to better address concerns of the air transport stakeholders (in particular, airlines and airports) and fully embrace innovation aspects?

The integrated approach used in ACARE- where most of the funders (Industry, National programmes, European programmes) adopted the ACARE agenda and actively cooperate in attempting to achieve its goals- worked well. This should be continued and built upon. The current impetus in understanding and cooperation should not be lost in the need to be seen to change. Areas for improvements include more active integration of National programmes and sharing of information; further extension of the tapping the untapped potential in using expertise and capability from non-traditional aeronautics companies and regions.

D.5. While 'Vision 2020' was broadly endorsed within EU Member States, there was no systematic approach to the consolidation of national information at European level. The ERA-NET approach progresses at a moderate pace but it encompasses only a part of national funds. Should the EU call for more efforts on the coordination of national research and innovation policies? If yes, how could this be achieved?

Specific to AAT:

The actual level of cooperation and exchange of information has improved dramatically over the 10 years of ACARE. Yes it can always be improved and such activity should continue to be encouraged using all of the available tools – monitoring, studies, networking, etc. The voluntary cooperation system currently works, we are not sure that compulsion would achieve the same success.

In general, for the overall transport system:

- If the European Union is willing to keep its competitive advantages in the international market, a systematic approach to the consolidation of national information at European level would be necessary, with special respect to aviation, while continuing the currently voluntary cooperation activities already in place.
- Beyond ERANET: joint programming or other coordination activities: Fund more coordination activities among MSs, besides ERANETs.
- Increase coordination with national research (in both directions: EC →M.S. and M.S. →EC).
- EU transport research working programmes could try to interact with Member States' national research working programmes, and vice versa.
- As some MSs do not have national transport research programmes, the EC could encourage those MSs to make use of EU funding (Structural Funds and Cohesion Funds) to establish/support national transport research calls.

5. Expected activities for the Transport Advisory Group in 2012

During 2011, the TAG's activities continued to focus on assisting the EC services in the preparation of the work programme (WP.2013) for the FP7 transport theme. This main activity has been complemented by others, including the TAG involvement in some preliminary activities for the definition of Horizon 2020 (including governance issues), and information and discussion on initiatives for strengthening the ERA in the transport field (including cooperation with national research programmes through the ERANETs). These activities have increased the visibility of the TAG as an advisory body, and its interaction with other stakeholders in the transport research area.

As FP7 approaches its final period, it is necessary for the TAG to review its operation since 2006, and to identify the added value provided by the group to the definition of the FP7 activities. Furthermore, the TAG operation and internal dynamics are also worth analysing: Look at the TAG's current working routines, and effectiveness in achieving the TAG's main objective of providing the EC with independent, comprehensive expert advice on transport research policies and contents, as it defines the advisory structures to be put in place for Horizon 2020.

During these years the TAG has increasingly interacted with other key transport research stakeholders, including the ETPs, ERANETs, and many European organisations. There is an opportunity to build upon these interactions to increase the contribution of the TAG in this final phase of FP7, for example by including TAG members in consultation meetings, conferences and other events organized by the EC, together with representatives of those organizations.

Therefore, there are a number of issues, to which the TAG could make a valuable contribution for the remaining of the FP7, and particularly within 2012. These can be summarized as follows:

- Follow-up the remaining FP7 calls in the field of transport: review and assess the results of the WP.2012 calls, and approval, publication and results of the WP.2013 calls. This could be finalised with a general review of the topics addressed within FP7.
- Assistance to the definition of the Horizon 2020 approach in the field of transport. This would be a continuation of the 2011 activities, when the TAG actively participated in the Common Strategic Framework process conducted by the EC.
- Identification and assessment of the lessons learned within the 7-year experience (2006-2012) of the TAG's assistance to the EC.
- Ad hoc interaction with other transport research stakeholders at the EC's request, as a group or through some of its members.

These issues are described in more detail below.

Follow-up to the remaining FP7 calls. This has traditionally been the main area of activity of the TAG, and should be carried on until the last work programme (WP.2013) is published and the last research projects are selected. Furthermore, this activity could be complemented by a general revision of the FP7 calls, as the TAG now has a unique vision of the evolution of the calls' approach since 2006, including changes in priorities, the capacity of the FP7 to be adapted to emerging priorities and eventual gaps that may have remained.

Formulating the new framework programme, Horizon 2020. The involvement of the TAG as a group and of some of its members as individuals in the preliminary activities conducted by the EC in 2011 for the definition of Horizon 2020 (particularly the "Common Strategic Framework", and the related Strategic Transport Technology Plan) provided a comprehensive and independent insight, complementary to the wide array of inputs from the stakeholders mobilized by the process. As the Horizon 2020 preparation process moves forward, this independent and cross-cutting vision would be valuable for the development of the Horizon 2020 structures and instruments, as well as for the initial identification of a renewed transport research agenda. The areas of advice could also extend to the programme architecture, simplification of procedures, financing instruments and efficient coordination and monitoring procedures of the research projects. An area of particular interest would be the identification of key stakeholders for Horizon 2020: FP7 witnessed an increased involvement of the industrial sector, particularly through the ETPs; as Horizon 2020 is stressing the importance of innovation and global competitiveness, including market-uptake, the effective involvement of final users, and an effective integration with the paradigm of sustainable development, could become major challenges for the next years.

The future Horizon 2020 TAG: lessons learned from FP7. The focus and working procedures of the TAG have evolved since the first meetings of the group back in 2006. The integration of expertise from the aeronautics and surface transport sectors, and the renewed and ever increasing interest in policy-oriented, cross cutting and horizontal issues have proved to be major challenges for the group's members, which have been successfully dealt with through a combination of various working methods (subgroups, plenary discussions, drafts circulated and revised via internet...) and a progressive capacity of interaction among different backgrounds and fields of expertise. Furthermore, the TAG has explored different initiatives for interacting with other key stakeholders within and without the EC services (ETPs, ERANETs, horizontal initiatives launched within the EC services, such as the "Sustainable Development Network", etc.). The TAG should make stock of this 7-year experience in order to identify the lessons learned and to make recommendations to the EC on how could the advisory and consultation activities be adapted to the new challenges and framework conditions of Horizon 2020.

Interaction with other key transport research stakeholders. The briefing activities made at some of the TAG meetings by different transport research stakeholders during the last years have provided the TAG members with a unique position to understand the complexity of the transport research community, and to complement the visions of these stakeholders with an original, independent perspective. This capacity should be exploited during the time remaining until the launching of Horizon 2020, through the mobilisation of some of the TAG members, or the group as a whole, in future consultation procedures, building upon the CSF experience in 2011.

In addition to these potential areas for contribution, the TAG would remain open, as in the past, to discuss any emerging issues proposed by the EC, which could arise during the transition period towards Horizon 2020.

These items will be addressed by the TAG through two one-day meetings in 2012 (June and October) and one final meeting in March 2013.

Final remark from the Chairman

The activities of the TAG for the year 2011 have been quite extensive and fulfilling, in many aspects. The Group has given mature and in depth advice on a variety of issues, besides, that is, the main item of our

work of advising on the Work plan of each call. The multitude of issues that were brought to our attention by the Commission services has given us the opportunity to interact fruitfully with a number of stakeholders in the field of transport, who were invited to come and present to us their work and views. The TAG members have also contributed to the consultation for the new Horizon 2020 CSFRI programme with an extended text giving detailed views and comments regarding the transport elements of this new Research and Innovation Framework for the period 2013 – 2020.

I am confident that in the remaining two years of work until the end of the 7th Framework Programme when the mandate of the TAG ends, we will be able to complete our work to a successful conclusion. For 2012 we present our work plan as outlined in the section above.

In doing this, we look forward to continuing our close cooperation with the Commission services. Their support and data which they have supplied to us continuously through the years of our work in the past have been fundamental for the success of our mission. In this sense, I am sure I am expressing all members of the TAG in thanking all the Commission officers who, under the coordination of DG RTD Director Mr. András Siegler, have provided an excellent support and guidance for our deliberations. Without them we would not be able to achieve what we have achieved so far.

6. Abbreviations

AAT	Aeronautics and Air Transport.
ACARE	Advisory Council for Aeronautics Research in Europe.
CEDR	Council of European Directors of Roads.
CSF	Common Strategic Framework.
EC	European Commission.
EGCI	European Green Car Initiative.
ERRAC	European Rail Research Advisory Council.
ETP	European Technology Platform.
FP7	7 th Framework Programme for Research and Development.
FP8	8 th Framework Programme for Research and Development (now known as Horizon 2020).
SST	Sustainable Surface Transport.
STTP	Strategic Transport Technology Plan.
TAG	Transport Advisory Group.
TPT	Transport Policy Themes. Horizontal activities for implementation of the transport programme.

Annex 1. Transport Advisory Group Members during the year 2011

- Fred ABBINK (Ex NLR. National Aerospace Laboratory)
- Ángel APARICIO (Universidad Politécnica de Madrid)
- Andreas CONSTANTINOU (Cyprian Ministry of Communications and Works)
- George GIANNOPOULOS (Hellenic Institute of Transport) Chairman
- Jim LAWLER (Enterprise Ireland)
- Annette LECHTENBÖHMER (Goodyear S.A.)
- Andraž LEGAT (Slovenian National Building and Civil Engineering Institute)
- Siv LETH (Bombardier)
- Libor LOCHMAN (Community of European Railways, CER)
- Guenter MARTIS (IATA)
- Andrew MCNAUGHTON (Network Rail)
- Ric PARKER (Rolls-Royce)
- Vytautas PAULUSKAS (Klaipeda University)
- Aisling REYNOLDS-FEIGHAN (University College Dublin)
- Claude ROSSIGNOL (consultant to SCNF)
- Francesca SANNA-RANDACCIO (Università degli Studi di Roma ‘La Sapienza’)
- Dieter SCHMITT (ex Airbus S.A.S.)
- Romana SLIWA (Technical University of Rzeszow)
- Katalin TÁNCZOS (Budapest University of Technology and Economics)
- Ulrich WEIDMANN (ETH Zürich, Institute for Traffic Planning and Systems)
- Yoram ZVIRIN (Technion – Israel Institute of Technology)

Annex 2. Issues for opinion of TAG for WP.2013

(A). General

- A.1. How to make best use of the strategy for WP2012-2013 as concrete topics for the last call of FP7?
- A.2. Based on the information on topics coverage in previous calls (to be given in subgroup meetings), what activities/areas need prioritization?
- A.3. How best to address intermodal questions such as travel and transport information/services to customers?
- A.4. How research projects could better support pre-normative and co-normative activities?
- A.5. How to improve participation of less performing actors (countries or organisations)?
- A.6. International Cooperation
 - A.6.1. For which research areas do you see great potential for international cooperation?

(B). Horizontal Activities (TPT-RTD)

- B.1. Based on the content and results of previous Calls, does the TAG have recommendations on technological research that it would be more efficient / beneficial to carry out at TPT level rather than in the modes?
- B.2. How can synergies between transport modes be better exploited and how to facilitate the transfer of findings from one mode to another?
- B.3. In light of the events that took place lately in some Mediterranean countries what could be the evolution of the transport research international cooperation strategy with respect to neighbouring and Mediterranean countries?

(C). Sustainable Surface Transport (SST)

C.1. Road and urban transport electrification

- C.1.1. Intelligent roads (5th generation road) have been identified as a potential topic area for WP2013. What research is needed in order to develop roads which help to meet our main challenges, such as climate change, carbon reduction, road safety, energy generation?
- C.1.2. What further research efforts are needed to improve the integration of Electric Vehicles in the transport system (e.g. vehicle to grid integration, charging infrastructure)? What about socio-economic research on how to improve the deployment of charging infrastructure?
- C.1.3. Do you think that an assessment of the on-going EGCI projects in terms of environmental impact is useful?

- C.1.4. A number of innovative transshipment technologies and new organisational and logistics concepts have already been developed. However, the implementation of these innovations is very limited. What are the main obstacles that have to be removed in order to stimulate innovation in the area of logistics?
- C.1.5. In relation to transshipment and terminal/port technologies, should one focus on continuous but incremental research (such as improving the performance of cranes, more energy friendly propulsion of AGV's, etc.) or should one go for more radical but at the same time more high investment requiring solutions such as full automatisisation of handling, new infrastructures?
- C.1.6. Should research on flexible and modular truck-carrier concepts (which could include solutions which are beyond today's weight & dimension legislation) be a priority in order to improve the efficiency of long distance freight transport?
- C.1.7. Where do you see further need for research and demonstration in the area of logistics and co-modality (especially with regard to supply chain management and e-freight solutions)?

C.2. Rail

- C.2.1. What scientific advances would allow to increase passenger transport by 40% and freight transport by 70% by year 2020 compared to year 2000 with improved efficiency, reliability and customer satisfaction?
- C.2.2. What are the research priorities that would allow above mentioned progress?
- C.2.3. What are the most important research priorities not covered in WP2012? Which one should be covered in WP2013?

C.3. Waterborne

- C.3.1. What are the technologies needed for new market development (service vessels for exploration or mining, vessels for off-shore wind parks/food-farms/multi-use platforms)?
- C.3.2. Which are the important research aspects to be further developed for reducing the emissions of ships, in particular, SO_x, NO_x, PM and black carbon?
- C.3.3. Which are the main gaps to be explored to ensure the production of "zero accident" vessels?
- C.3.4. What kind of research or innovation action is needed to ensure the competitiveness of the shipping sector (shipbuilding, equipment, operators, new business models)?
- C.3.5. Is there any specific research need for vessels design for short-sea shipping or inland waterways?
- C.3.6. Is there any research need in support to decision or potential decisions taken in IMO?
- C.3.7. What could be the priority topics for the "Ocean of tomorrow" call? Ideas: 1) Antibiofouling materials and coatings. 2) Marine sensors and related Information Technologies, applications in maritime transport, 3) Litter, treatment of garbage and waste.

C.4. Urban transport

- C.4.1. Topics related to accessibility, design of urban passenger infrastructure and the development and demonstration of automated city vehicles are addressed in the 2012 work programme. It is foreseen in the 2013 work programme to continue the CIVITAS initiative by supporting cities to develop and demonstrate integrated urban transport concepts. Which areas of urban transport research should be addressed in addition to CIVITAS in the 2013 work programme?
- C.4.2. What about addressing integrated approaches, investigating links with land use planning and with societal challenges such as the ageing society?

(D). Aeronautics and Air Transport (AAT)

- D.1. WP2013 will be focussed on L2 projects. Does the TAG have recommendation on:
 - D.1.1. The approach for the identification of L2 topics?
 - D.1.2. How to focus L1 projects? Shall some Activity lines be closed completely? Are there topics that should be urgently addressed?
- D.2. In which fields Support Actions would be helpful to support the Programme Implementation?
- D.3. While Coordination Actions were widely open in the successive Work Programmes (available for all L1 topics), there were usually a limited number of proposals using this instrument. Is this instrument valuable for the research community? Is it given enough visibility in the Work Programme? Are there other approaches than the current approach that the TAG would recommend?
- D.4. 'Flightpath 2050' set-outs long term objectives for the Aviation community in a holistic approach encompassing the aeronautics industry, air transport and institutions. Innovation is also a new component in addition of research. How should the Commission approach to the Work Programme evolve to better address concerns of the air transport stakeholders (in particular, airlines and airports) and fully embrace innovation aspects?
- D.5. While 'Vision 2020' was broadly endorsed within EU Member States, there was no systematic approach to the consolidation of national information at European level. The ERA-NET approach progresses at a moderate pace but it encompasses only a part of national funds. Should the EU call for more efforts on the coordination of national research and innovation policies? If yes, how could this be achieved?

Annex 3. Informal Discussion with Stakeholders on the Transport Component of the Next Common Strategic Framework for Research and Innovation. Meeting Report (Brussels, June 16, 2011)

Introduction

The Common Strategic Framework (CSF) for Research and Innovation is under preparation by the Commission. A milestone in this process was the public consultation on the Green Paper 'From Challenges to opportunities: Towards a Common Strategic Framework (CSF) for EU Research and Innovation Funding' which closed on 20 May 2011.

Using the input received from that consultation and from the public consultation on the preparation of the Strategic Transport Technology Plan, the Commission services are currently reflecting on the main orientations for the transport research and innovation component of the next CSF proposal, to be adopted by the college before the end of the year.

In this context, the Commission services organised on 16 June 2011 an informal discussion with stakeholders on the transport component of the next CSF.

Participants

More than one hundred people representing transport relevant stakeholders were invited.

Fifty-eight people representing all major associations and other relevant organisations across all modes of transport and other transport related issues attended the informal discussion meeting.

Twenty six interventions from stakeholders were recorded during the informal discussion.

Objective of the meeting

The general objective of the meeting was to hear the views of the stakeholders on the transport component of the next CSF. Three presentations from the European Commission (EC) provided the general framework for the discussion. The first presentation provided the audience with an overview of the results of the CSF consultation process, with a focus on the answers from transport stakeholders. The second presentation gave an update on the on-going process for the preparation of the Strategic Transport Technology Plan. The third presentation advanced some suggestions on how the European Commission intends to address the needs of the transport sector in the forthcoming Common Strategic Framework (CSF) for research and innovation (R&I) and launched two sets of questions to the audience:

- A. On the structure and content of the transport component of the next CSF:
 - 1. Does the approach as presented (green/integrated/competitive) reflect the main challenges?
 - 2. Does it match the expectations in terms of policy objectives/user needs/industry requirements?
 - 3. Should the modes be more visible?
 - 4. Are the more urgent R&I needs addressed?

B. On the innovation dimension:

1. Do the priority areas represent an adequate spread from basic research to potential application?
2. How best to foster future deployment (programme content/ type of funding/ partnership composition)?
3. Which topics require a demonstration component?
4. What role for Public-Private Partnerships, Joint Technology Initiatives?

Key messages of the informal discussion

A. *On the structure and content*

A.1 Does the approach presented by the EC reflect the main challenges [for transport R&I: smart, green and integrated]?

A number of contributions referred to the general CSF approach and the role of transport within the CSF. The CSF approach suits well the needs and challenges of the transport sector and the profile of the transport sector clearly justifies considering it as a priority theme within the next CSF policy approach. Transport is rightly considered within the CSF as a key societal challenge, but it should be kept in mind that transport is also a relevant contributor to the "science" pillar of the CSF, and a key condition for competitiveness. Furthermore, from a transport perspective, it would be necessary to highlight the need for close integration of the three pillars of the CSF (societal challenges, competitiveness and social aspects) within our vision of the future.

It is from this perspective that the next CSF should address the challenge of creating more effective transfer paths from research to industry in the transport sector. Furthermore, transport is an "integrator" of enabling technologies developed within other sectors (energy, information and communication technologies...), and an adequate environment for further facilitating the integration of all these technologies in transport applications should be pursued, i.e. greatly facilitated within the new CSF.

While the EC presentation on the transport component of the next CSF gives convincing reasons about why it is important for the CSF to include transport as a key theme, and why R&I policies will effectively promote the transport policy's goals (see the "rationale" slide within the EC presentation), it should be remembered the otherwise obvious principle that transport is necessary to provide people and businesses the mobility they need. The societal importance of transport should be stressed in order to make sure that it gets the attention the sector deserves within the CSF.

Coming to the three main challenges faced by the transport sector (green, integrated and competitive) and their corresponding solutions/strategies (innovative, seamless and smart solutions), the strong relationship among these three aspects was primarily highlighted. More precisely, the following aspects were raised on each one of these three "solution" paths:

- GREEN/ Innovative solutions. It was highlighted that innovative solutions should also address materials and manufacturing processes. Innovation in these areas would be critical to strengthen the global competitiveness of the European transport industry. To be effective, innovation requires better integration of the whole research-to-product cycle.

The concept of innovation should not be only technological, but also "social". The "social innovation" concept would include for example social concerns (SMEs, working conditions, road haulers) and should facilitate the link between the CSF and the "real economy": indeed, innovation will probably be the only way for many industries to survive.

- **INTEGRATED.** The concept of integration received attention from many participants. One of the core ideas should be that transport "products" are put together in order to provide "services". Integration should thus refer primarily to the provision of efficient transport services. Secondly, the "integration" concept should also mean making better use of existing research and innovation efforts within and outside the EU: accordingly, more attention should be given to "convergence and complementarity activities" (formerly known as "horizontal activities" within FP7), aiming at supporting international cooperation, as well as cooperation between national and EU activities. Thirdly, "integration" should also include cooperation among research themes (energy, ICTs, socio-economic...): indeed, lack of integration is a major barrier to full deployment of innovative solutions.
- **COMPETITIVE.** This dimension should take into consideration the fact that the EU transport industry competitiveness is currently decreasing in many areas, and that, therefore, a focus on global competitiveness is necessary. In particular, the question of the global competitiveness of the European transport infrastructure construction industry, including maintenance and retrofitting, could be quite relevant as emerging economies expand. Research on materials and manufacturing processes is also crucial.

"Reliability", including reliability of transport infrastructure is also a crucial issue for the transport system and hence should be considered when broadening the "integration" concept.

The concept of "Innovation Union" is at the edge of conflicting with competition rules, particularly if the deployment phase is to be reached. Adequate competition will require to facilitate and promote access to research opportunities for all, and to limit the current "advantage" of those players who have more knowledge of the R&I funding system and have more experience in acceding to research funding resources.

A.2. Does it match the expectations in terms of policy objectives, user needs, industry requirements?

POLICY OBJECTIVES.

In terms of policy objectives, it should be kept in mind that there are modal, intermodal, and modal-change issues that should all be consistently addressed within the structure of the programme. In the future, the EC should try to emphasise the coherence among transport policy guidelines, the contents of the research working programme and the identification of research topics: for example, modal change has been and still remains a key policy objective, but it was not quite well addressed in FP7.

From this perspective, the EC should keep trying to make a coherent use of the various transport policy documents while identifying research topics. (The recent experience of NAIADES for inland waterborne transport is mentioned to this respect).

There could be a gap between the extremely ambitious goals of the new White Paper on transport and the path towards their realisation. More reflection on how to address these goals in practice and how to prioritise actions is urgently needed. In fact, the STTP may be considered as a first step in this direction.

Re-regionalisation is an issue spreading all-over Europe. Within the R&I cycle, and particularly at the deployment stage, the EC should make an effort to further involve more local/regional stakeholders. This is a challenging task, as both, different government levels and technological sectors, are currently following contradictory paths.

USER NEEDS.

This is a most relevant aspect, and there were concerns about the necessity to give more attention to the users' needs within the transport component of the CSF. From this perspective, it would be necessary to give more relevance to research on socio-economic impacts and behavioural aspects of transport and mobility: behavioural research should definitely come back to the research agenda, including demand-management topics. These topics have gained relevance in the recent White Paper on transport, and should therefore be supported by research and innovation activities within the next CSF.

The question of users' needs and the need for research on mobility behaviour raised some comments on the importance for users to have alternative choices in order to cope with their mobility needs and to give adequate consideration also to users' preferences (what people want in terms of mobility).

Research on users' needs should address some basic questions, particularly in a new context of uncertainty on mobility costs due to the threats of high-price energy prospects. Why is mobility happening and how can affordable mobility be provided in different future scenarios should be central within the research agenda.

Probably this focus on users' needs further supports the idea mentioned above of keeping a view of transport as a sector providing services, and not merely products to the market. To be consistent with this approach, demonstration should not be limited to technological products, but also include novel systems and processes: the human factor should thus become stronger, more relevant in research and innovation.

The focus on users' needs should include people's accessibility and affordability needs: the "seamless travel" concept is a way of addressing these social issues. But the EC should consider how to involve users' needs and views along the whole innovation process.

INDUSTRY REQUIREMENTS.

The perceived attempt of the EC to move towards a "research for the industry" concept was very much welcomed. It was highlighted that within the transport industry there are many specificities (not only in terms of transport modes, but also geography- global, European, national and local industries-, parts of the mobility market addressed, etc.), which implies different needs in terms of R&I funding and the difficulties for market uptake.

One key requirement from the industry is the simplification of funding schemes and instruments. Within any review of those instruments the Commission should associate the research and innovation administrations, and the R&I community. Most stakeholders are already familiarised with at least some of the existing instruments, and any simplification should build on that rather than creating brand-new rules and templates. Within any simplification effort, the EC should try to keep the perspective of the users' needs rather than the bureaucrats'. Simplification is particularly critical for SMEs, as they may be running out of the FP, due to its bureaucratic complexity. Last, but not least, quick access of the beneficiaries to the approved research funds should be considered within any simplification effort: it was mentioned that getting funding in the EU currently takes longer than in any other region of the developed world.

A key component of the European transport R&I industry is the "supply side" of the R&I chain (research institutions...). Currently, this "supply side" is receiving limited attention within the CSF, and there is a risk for these institutions to lose relevance in the global context, in spite of the blooming global opportunities arising worldwide. Accordingly, specific instruments should be deployed to support the action of these stakeholders within the European context and at the global level, including instruments for networking and global outreach, such as "joint research initiatives" or "global mobility/presence".

A.3. Should the modes be more visible?

Many participants contributed on this particular question. Most of them agreed that the current approach ("beyond transport modes") was adequate at this stage, emphasising the relevance of the transport sector as a whole within the whole R&I policy and not being too specific. However, as the process progresses, it would be necessary to be more precise on how to address the R&I cycle, and then both, intermodal and modal issues, as well as freight and passenger specificities, would need to be considered in greater detail, including:

- the particular potential of each transport mode and its specificities, mainly from the perspective of each mode's industry;
- the particular role played by the industry (and other stakeholders) within each transport mode;
- the different dimension of the industry (from global to local), depending on the transport mode considered;
- the characteristics of the particular transport markets addressed (for infrastructure, vehicles, terminals);
- the innovation cycle differences that may arise from one transport mode to another;
- intermodal issues, such as the fact that transport vehicles and infrastructures can be used in different ways depending on the services they will provide (e.g. use of different vehicles within a public transport system, road capacity management...)

In certain cases, the different questions that will have to be addressed will be more intermodal in nature, and in other cases more relevant for particular modes. This should be dealt with by keeping an adequate balance between modal and general issues, and preserving the current vision of transport as a coherent, integrated sector.

A.4. Are the most urgent R&I needs addressed?

Yes, they are, in general terms. Transport has a strong, particular R&D profile, and this is rightly highlighted in the current approach. Transport is certainly not merely an area for application of technological developments provided by other research themes, but a sector with its own research needs. From this perspective, an "enabling framework" is necessary for transport R&I, including research infrastructures, funding, etc, as it is also the case for other priority research themes.

Within this general framework, a number of participants mentioned some particular transport R&I needs:

- The relevance of the demonstration stage, which should become a key component of research, and its continuation towards market uptake, particularly through public procurement.

- More adequate consideration to the technological dimension within intermodal integration topics: ticketing, passenger information, use of vehicles... The same could apply to modal change issues.
- The need to design specific research instruments in order to reinforce the supply side of European transport research (already mentioned above: joint research initiatives, mobility of research institutions and their networking...).
- The inclusion of "convergence and complementarity" activities, in order to support international cooperation (outside the EU), or cooperation between national and international transport research programmes.
- Support to the development of smart transport infrastructures. This includes cooperation with the ICT sector, which is moving fast forward. Adequate flexibility is needed to put in place cooperation instruments which can help the transport sector to effectively integrate those info technologies.
- This challenge of cooperation between transport and other research themes for the integration of enabling technologies may also be crucial within the deployment stage of some products, e.g. integration of developments on electric vehicles, energy production (renewables) and distribution, and users' needs and satisfaction.
- Provide for adequate attention to specificities (not only modal: also passenger vs. freight, geographical perspective, various industries, terminals...) and avoid "over-generalisation".

B. On the innovation dimension

B.1. Do the priority areas represent an adequate spread from frontier research to potential application?

Indeed, it was felt that the transport component of the future CSF would have as its main challenge to propose a well-structured set of goals and its corresponding identified R&I needs in terms of priority areas. The structure should be flexible enough to take on board new challenges as they could emerge in future.

The priority areas should give more attention to the major societal challenge of "inclusive, innovative and secure societies", and address the question of "social innovation" in transport. This is already discussed globally within the Innovation Union flagship initiative, but it would be necessary to better translate the concept to the transport sector within its R&I priority areas.

One concern is that the current articulation of challenges and solutions (green/integrated/competitive transport) could in practice favour an uncoordinated development of the priority areas in the three suggested directions; from this perspective, it was suggested that the concept of integration should be present also within the other two prescribed solutions (green and competitive) while allocating research topics to them.

Furthermore, integration (including standardization) across modes would also need new technological tools, for example, to allow for comparisons among modes on a life-cycle basis. There are currently some developments (e.g. within the Clean Sky initiative), which could yield some kind of spill-over to other transport modes, thus confirming the potential for a more systematic approach.

The "integrated" concept could also serve to avoid the current division of topics within FP7, when it is proving to be a barrier for R&I on a particular area. Joint calls have thus far attempted to address this, and further development of "enabling technologies" could require the continuation of these instruments in future, as needed. However, specific technologies should not be singled-out in the programme.

Two particular priority areas currently not mentioned were proposed by some participants. They are both of a cross-modal nature and mainly related to the "competitive" aspect of the challenges and solutions proposed by the EC: research on transport infrastructure, including maintenance and retrofitting as well as climate change impact, and materials and manufacturing processes. These were perceived as a key for global competitiveness and for the provision of affordable mobility.

B.2. How best to foster future deployment: programme content/ type of funding/ partnership composition?

PROGRAMME CONTENT

Again, flexibility was singled-out as the main challenge for the programme content and management. It was highlighted that the transport sector is now facing the challenge of a long-term vision (2030, as proposed by the White Paper on transport) and that the R&D policy will have a rather long (7-year) horizon. Transport is facing a particularly dynamic context, and transport R&I activities should be able to adapt quickly to political and social change, if necessary. This would mean both, flexibility at the management level, and flexibility within the research projects themselves to adapt to potentially changing objectives.

In order to foster future deployment, demonstration should probably become a key component of research activities. Specific instruments should be tailored to the different parts of the innovation chain, and particularly to system demonstration. Public procurement could certainly become more relevant, making use of mechanisms already in place in other parts of the world. International cooperation should in this respect gain in importance.

Deployment needs will probably require improved cooperation among transport and other research sectors, through joint calls or other instruments.

TYPE OF FUNDING

The fact was raised that the EU R&I policy has already a long history behind and that great efforts have been dedicated to put together the EU, national and industry budgets under a coherent strategy, particularly in the last 10 years. Further efforts should build upon this experience, fostering, rather than slowing down, the existing momentum.

The consideration of some innovative instruments of "financial engineering", including leasing of technologies, and further involvement of the EIB in the CSF were mentioned. It was also stressed that, at least for some transport modes, funding needs increase as research approaches the demonstration and deployment stages, and that funding should be tailored to this fact.

As one of the main CSF prospected features includes the complementarity of various funding sources, the adequacy of various funding sources to research needs was discussed. Some concerns were raised on the ability of structural funds to efficiently address research needs: in particular, the control systems and bureaucracy of structural funds seem to be today too complicated, should they be mobilised for research and innovation needs. On the other hand, it was felt that structural funds could be used at the implementation stage (or within public procurement) to foster the use of innovative solutions in EU-funded transport infrastructure projects.

PARTNERSHIP COMPOSITION

The consortia should include so-called "deployers" (i.e. stakeholders which will actually implement and make use of the innovations, and integrate them within transport services available to the users); the "deployer" is the link at the end of the chain, and should not merely be facing new products or concepts, but be actively involved in their design. (In this respect, some past experiences have been disappointing, for example in the field of smart charging and E-tolls solutions for roads: good research results, but not usable because the deployers were not consulted).

Fostering the involvement in R&D programmes of new member states (and some of the old member states) was mentioned as a potential goal for the next CSF. However, it was highlighted that those concerns could be better addressed within other policies (notably cohesion policies) rather than R&I.

B.3. Which topics require a demonstration component?

Most contributions suggested that demonstration should become a fully integrated part of the research cycle, rather than a component limited to some particular topics. Demonstration would not be limited to "transport products" but also include novel systems and processes. Therefore, CSF instruments should be tailored to the different parts of an "integrated innovation chain". The involvement of end users and clients would be most necessary at the demonstration and deployment stages, but they should probably be involved at an earlier stage, particularly where deployment of innovation seems to be facing more significant barriers (e.g. deployment of green solutions in the shipping industry).

B.4. What measures should we foresee to foster the use of results?

Apart from the already-mentioned suggestion to get final users better involved, and to provide the necessary funding for the sometimes expensive demonstration and deployment stages (see above), it was suggested that the "human factor" should be adequately addressed throughout the whole innovation cycle. Furthermore, the promotion of standards as a tool for the deployment of research results in the market should become a stronger element, more visible in the new programme.

B.5. What role for PPPs, JTIs?

Continuation of the JTI scheme was requested by some participants: JTIs, as well as PPPs, were seen as an effective instrument to help the industry in changing the way it has traditionally faced research, and to embark on a strategic, long-term perspective. In particular, the possible development of a JTI for rail transport was mentioned.