Fourth Annual Report
by the Transport Advisory Group
on the Development of the 7th Framework Programme
in the Thematic Area of Transport (incl. Aeronautics)
covering the work of the group in 2010
The Transport Advisory Group would like to thank its rapporteur, Mr. Jorgen Christensen, who is retiring and leaving the TAG at the end of 2010. His contribution to the discussions and recommendations of the TAG, as well as in formulating its Annual Report for the last three years is gratefully acknowledged.

Prof. G. A. Giannopoulos
TAG Chairman
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1. Introduction

The Transport Advisory Group (TAG) was established in 2006 to provide “consistent and consolidated” advice to the Commission services responsible for developing the “Transport (including Aeronautics)” Theme of the “Cooperation” specific programme of the 7th Framework Programme (FP7) within the structure defined and approved by the Parliament and the Council for the duration of the programme.

Advice from TAG should be provided on strategy, relevant objectives and scientific and technological priorities. The Advisory Group is required to submit a written input to the Commission on a yearly basis consolidating its contributions during the year to the preparation of the annual work programme.

The first written report by the TAG was delivered in July 2007 and advised on priorities for the annual work programme (WP) for 2008 and the contents of the calls implementing this WP. This fourth annual report covers the TAG’s cooperation with the Commission during 2010 and addresses the implementation of the 7th Framework Programme through the specific work programmes in the years 2012 and 2013.

The perspective for the work of the TAG and for the advice provided during meetings and consolidated in this report has been that whilst financial management of the WP is now annual, the plans for 2012 and 2013 constitute a coherent bi-annual programme. WP2012 and WP2013 are therefore complementary.

2. Membership

It is fundamental to the work of the Group that members are appointed and participate in the Group in their individual capacity. The research fields covered by the Group 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.

Members are recruited from university research, other public and private research organizations, industry, consulting organizations and public administrations with research responsibilities. The first membership was recycled as of 1 September 2008 and the group now has 25 members. A list of current members is attached as annex 1.

The chairman of the Group since March 2008 is Prof. George Giannopoulos. The Group has appointed four of its members to act along with the Chair as a Steering Group that cooperates with the Commission 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.

3. Meetings

The annual scheme of work of the TAG comprises three meetings which in 2010 were held on 11 March, 17 June and 5-6 October.

Meetings are prepared by the Commission services in consultation with the chairman, and their priorities and practical schedule are agreed by the Executive Committee in session immediately before the meeting. During meetings presentations on key issues alternate with the deliberations of the TAG in subgroups as well as in plenum sessions. It is the opinion of the TAG that this form is efficient and ascertains a satisfactory balance between time spent on receiving necessary and relevant information from Commission officers and time allocated to the important discussions on which the advisory output of the TAG is based.

During 2010 the CIRCA TAG FP7 Interest Group private space on the internet has been operational and has significantly facilitated the access for TAG members to documents and information relevant to the mission of the TAG.

3.1. The 12th TAG Meeting, 11 March 2010

New Commission and Initiatives

The meeting on 11 March was the first meeting after the new European Commission had been appointed and the subsequent changes in the responsibilities of Directorates General had been implemented. This was, however, not expected to have any significant influence on the advisory function of the group. Members were advised to take note of the recently announced “Europe 2020 Strategy” Initiative, which was to be regarded as a showcase for what the EU Commission can do for the European future.

The proposed flagship initiatives “Innovation Union” and “Resource Efficient Europe” would have a very direct bearing on the development of transport and on transport research. The importance of the new focus on innovation and its dependence on research was made very visible by placing the Research Commissioner in the chair of the coordination group of commissioners responsible for developing the “Innovation Union” flagship.

The TAG was further informed that preparations were now underway for the development of a new White Paper on Transport Policy by DG MOVE with the support of DG RES, who expected to be able to take advice from TAG before finalizing its contribution, which was scheduled for September 2010.

Preliminary outcomes of 3rd calls for proposals

The TAG was given overview briefings on the preliminary outcomes of the calls for proposals which had been published on 30 June 2009 with deadline for submission on 14 January 2010. It was too

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1 Mr. Jorgen CHRISTENSEN, who was rapporteur for TAG since 2008, retired from the group at the end of 2010, and the group appointed Prof. Ángel APARICIO as its rapporteur from 2011.
early to report on the number of proposals which had been retained or even approved, as the evaluation was still underway.

- Call FP7-SST-2010-RTD-1 covered 21 topics with an indicative total budget of 93.8 M€. All (21) topics had been addressed by a total of 120 submitted proposals.
- Call FP7-TPT-2010-RTD-1 covered 11 topics with an indicative total budget of 6 M€. Nine (9) topics had been addressed by a total of 53 submitted proposals.
- Call FP7-AAT-2010-RTD-1 covered 47 topics with an indicative total budget of 101.3 M€. All (47) topics had been addressed by a total of 187 submitted proposals. Two proposal were ineligible.
- Call FP7-AAT-2010-RTD-CHINA covered 3 topics with an indicative total budget of 3 M€. Four proposals were submitted.
- Call FP7-AAT-2010-RTD-RUSSIA covered 5 topics with an indicative total budget of 4 M€. All (5) topics had been addressed by a total of 10 submitted proposals. Two proposals were ineligible.

**Transport 2011 Work Programme**

Prior to this meeting the TAG had received a Non-Paper Working Document on the Transport 2011 Work Programme, which would be further developed to become the final draft by the end of March before entering the usual three-stage approval process prior to the planned publication by 30 July 2010. The group now received an update and summary of the expected structure and content of the work programme, its topics, indicative budget distribution and funding schemes.

This important and extensive presentation was received with appreciation by the TAG, which noted with satisfaction that much of its advice was reflected in the structure as well as in the selection of topics. It was seen as a significant improvement and service to the reader that the text of areas where topics are not included in the calls of the WP are eliminated for the sake of clarity and to avoid confusion.

**Interim evaluation of FP7 Transport Research**

The third major agenda item for this meeting was a presentation and discussion of the plan for and some initial results of the interim evaluation of the achievements of research in the transport theme of FP7. The evaluation project was to be conducted under contract for the Commission by the Technopolis Group and was presented by the leader of the project.

The purpose of the evaluation was to provide orientations for future FP7 calls and to Inform the FP8 negotiation by assessing

- the overall implementation and management of the programme;
- the achievements and impacts of the transport research co-financed by FP7 with respect to its specific objectives, their environmental impact, the efficiency, effectiveness, relevance of the funding and the sustainability and utility of the different transport research programmes.

The scope of the evaluation was the activities of the 271 projects under the 2007 and 2008 work programmes, including indirectly the influence of the ETPs, the JTIs and the ERA-Nets in affecting the ability of the FP to set and achieve relevant objectives.

The methodology would comprise:

- Desk research (on policy and project documents etc.).
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- Analysis of the Commission’s project database.
- Interviews with
  - EC representatives (DG RTD and DG MOVE).
  - Coordinators and participants in EU FP7 projects.
  - Stakeholders including the TAG members.
- Case studies.
- Workshops with stakeholders.

Following the presentation of the project for the entire TAG, discussions were carried out in the three TAG subgroups which have primary competences in SST, AAT and horizontal transport research issues respectively. Based on additional statistics on the subset of projects in each of the three subthemes they were asked to respond to selected sets of questions regarding

- Coverage of research areas by the FP7 projects and adequation to future challenges.
- Coordination and coherence between national programmes/initiatives and the FP, and added value of the EC programme as compared to the national programmes.
- Coordination and effectiveness of structures aimed at informing the EC on relevant FP orientations.

Planning ahead

After his summary of the day’s meeting the chairman emphasized the need of the TAG to receive the Commission’s questions on issues to be considered by TAG for WP2012-2013 well ahead of the June meeting in order for members to have identified any questions that might need to be clarified by the Commission before setting out to work on the issues in the meeting. He reminded everybody that much work on the questions would have to be done in the June meeting, since part of the 1½ day meeting in October would be used by representatives of the ETPs who were invited to present the work of the ETPs towards their updated Strategic Research Agendas.

3.2. The 13th TAG Meeting, 17 June 2010

The “issues document”

Prior to this meeting the TAG received the “Issues for Opinion of TAG for WP2012-2013” (see Annex 2), which became the focus for this meeting and the next. The document used the concept for soliciting the opinions of the TAG, which was used also in 2008 and 2009 and with which the TAG was therefore familiar. The structure of the document would allow much of the discussions to be conducted in parallel sessions by TAG members with special expertise in the appropriate subtheme, leaving essentially only the “General” and “Horizontal” issues for further discussion in plenum or mixed fora.

The concept had worked well in 2008 and 2009, and it met the wishes of the members of TAG to make the most efficient use of the time available for developing their advice. The “issues document” was supplemented by a “Map of TPT topics for defining work programmes 2012 and 2013”. The document made it very clear that WP2012 and WP2013 should be seen as a sequenced implementation plan for the execution of one bigger entity.
Strategy and policy news

The first sessions of the one-day meeting were spent on dialogues about recent progress in transport research related events and plans within the overall policy context, based on briefings by Commission officers.

The TAG was told about the five headline targets of the EU2020 strategy including the 20/20/20 trio target on climate change and energy, with particular reference to its flagship initiative “Resource Efficient Europe” aiming to decouple economic growth from the use of energy, which calls for fundamental improvements of the transport sector while enhancing its competitiveness. Closely linked to this initiative is a publication on the research and innovation strategy planned for the autumn.

The new White Paper on Transport Policy (2010-2020) was planned for publication early in 2011 as a replacement for the current White Paper with DG MOVE as the lead service, strongly supported by DG RTD and with a heavy involvement of the DG RTD Transport Directorate in delivering important input on the research and innovation needs of the policies. Another document, a Strategic Transport Technology Plan (STTP), which would detail this issue with DG MOVE in the lead supported by DG RTD, was under planning. TAG advice would be sought on this document, and TAG was given broader orientation about this initiative later in the meeting. See page 11.

As important background information the TAG heard about the conference on “European Framework Programmes: From Economic Recovery to Sustainability” (Valencia, April) in which the ongoing PPP on Green Cars had been a prominent topic, and about the conference on “European Technology Platform” (Brussels, May) with three transport sessions headed by directors from RTD, MOVE and INFSO, thus demonstrating the interservice cooperation on the transport theme. Well-known to the TAG was of course the Transport Research Arena, TRA (Brussels, June), which had attracted researchers and stakeholders and was scheduled to reappear on the 2012 agenda.

Ratings of proposals from 3rd calls for proposal

Following-up on presentations at the previous meeting the Commission provided an overview of the outcome of the 3rd call of WP2010 for the Horizontal Activities (TPT), the Aeronautics and Air Transport and the Sustainable Surface Transport (SST) subthemes respectively. New to the TAG was the outcome in terms of proposals with ratings sufficient for negotiation:

<table>
<thead>
<tr>
<th></th>
<th>Proposals received</th>
<th>Above threshold</th>
<th>Retained for funding</th>
<th>Budget M€</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal Activities (TPT)</td>
<td>53</td>
<td>24</td>
<td>5</td>
<td>6.00</td>
</tr>
<tr>
<td>Aeronautics and Air Transport (AAT)</td>
<td>201</td>
<td>118</td>
<td>43²</td>
<td>108.29</td>
</tr>
<tr>
<td>Sustainable Surface Transport (SST)</td>
<td>121</td>
<td>44</td>
<td>39</td>
<td>93.79</td>
</tr>
</tbody>
</table>

² including 3 and 2 for coordinated calls with Russia and China respectively
TAG members expressed their surprise when observing the very high failure rates in some areas, such as the “Efficient interfaces between transport modes,” where all 11 proposals had failed, and in the TPT activities, where all 25 proposals on 5 topics had failed. The Commission found that several factors might have contributed, such as a lower quality of proposal for topics marked for CSA funding. It was concluded that the issue is important and that some kind of feedback could be necessary if the TAG was asked to help explaining this apparent anomaly.

Final update on WP2011

The work programme for 2011 was approaching the date of approval and publication and the TAG was therefore given a complete overview of its current contents, including the reinserted SST activity on urban mobility (CIVITAS) and the associated redistribution of the budget. The ensuing discussion touched upon the 6 M€ budget allocated to the TPT topics, which would be open for proposals. It was seen by some TAG experts as being insufficient. The Commission suggested that this problem might be partially solved by merging the two remaining TPT budgets into a single call funded by the remaining 12 M€, a way ahead on which the TAG had actually now been asked to give an opinion.

Several members of the TAG asked for a definition of the term “co-modality,” which was first introduced and defined in the 2006 midterm update of the Transport White Paper 2000-2010 where it helped solving a sensitive transport policy issue. It seemed that the use of the term today, where it has become synonymous with multimodality, has departed from its original meaning, calling for a redefinition of the term. The answers from the Commission officers confirmed that today a “co-modality approach refers to considering all the transport modes together and using them in a combined way and intelligent way”.

Strategic Transport Technology Plan

In a subsequent dialogue session the TAG was given a broad introduction to the Strategic Transport Technology Plan (STTP) with an opportunity to ask questions. The STTP initiative shall meet a demand for a stronger mutual alignment of Transport Policy’s need for a clearer long-term technology perspective and Research and Innovation Policy’s need for better management of innovation pathways.

The plan would constitute a comprehensive and detailed Strategic Research and Innovation Agenda. Priorities will be in line with EU 2020 Strategy and directions from new Transport Policy White Paper and it would thus serve as the basis for preparation of the transport theme of FP8 and as input to the debate on the next EU financial framework. The plan would be developed by an interservice task force in the Commission in interaction with a wide range of external bodies and was tentatively scheduled for completion and adoption by mid-2011.

The TAG emphasized the need of the STTP to recognize the specificity of the aeronautics sector, which needed a longer-term strategic vision than the one foreseen for the STTP and a global view rather than a narrowly European one. The Commission agreed to this and added in response to other questions that the Commission will not redefine the research policy but build on the

3 “co-modality,” i.e. the efficient use of different modes on their own and in combination” cf. pg. 2 in COM(2006) 314 final: Keep Europe moving - Sustainable mobility for our continent.
transport policy from the new transport white paper on and the research policy as it exits or as it may emerge in 2012 from the preparation of the 8th Framework Programme. TAG would be given a role in the process but it was too early to say how and when.

**Transport conclusions from recent ETP conference**

A final dialogue session elaborated on the conclusions of the three transport sessions of the ETP2010 Conference held on 11-12 May in Brussels. DGs MOVE, RTD an INFSO had joined their strengths to prepare presentations titled “Smaller Footprints - Decarbonisation of the Transportation of Passengers and Goods”, “Mobility - The Door-To-Door Strategy” and “Making Transport Safer and More Secure”. The conclusions of the sessions may be found in the report from the conference. Particular attention had been given by the conference to the keynote speech made by Commissioner for Research, Innovation and Science, Mrs. Máire Geoghegan Quinn, “An outline of the new Research and Innovation Strategy for Europe”. This text of this significant speech was circulated to the TAG and is included with this report as Annex 3

**Clarifying points in the “issues document”**

In preparation for this meeting’s major session on “Issues for the Opinion of TAG on WP2012-2013” members asked for clarification of a number of points raised in the question from the Commission:

1. The Commission’s understanding of “innovation” as used in several questions by the Commission
2. The definition of “end-users” in the context of Aeronautics and Air Transport
3. the proper understanding and scope of the recent “addendum from DG MOVE”

As regards (1) the TAG was referred to the above mentioned speech by Commissioner Geoghegan Quinn’s which makes mention of the term “research to retail” and highlights the need to create an innovation climate through areas unused so far outside the world of research to allow research results to find their way into products, jobs, patents, venture capital firms etc. EU will clearly have to move from supporting the research industry to supporting research for industry.

This requires another way of thinking, and reference was made to Thomas Edison, an inventor who did most of his innovative inventions using very efficiently existing scientific knowledge, knowing there was a market for it with a fair likelihood for profit. Thus, when focusing on innovation, the role of people with inventive minds cannot be neglected. The orientation towards innovation emphasizes the need for effective dissemination of research results and the regrets that none of the 11 proposals on the dissemination topic of the recent TPT call had sufficient quality to be retained for funding.

The concept of “end-users” (2) when applied to the AAT sector points to airlines, passenger groups and possibly airports and can be defined as people that ultimately are using the systems from the aeronautics industry. However, airlines and passenger groups are often lacking in the end users’ groups.

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Concerning (3) the TAG was informed that the three questions were rooted in the current situation where the directive and national laws increasingly restrict the use of heavy fuel for ships. The response seems to be to use light sulphur-free fuel in dual-use engines, but Scandinavia (notably Finland) is for short sea shipping going directly to liquid gas engines, which eliminate a number of problems that light fuels do not. The switch has not yet started for long-haul cruisers, and DG MOVE is therefore requesting a TAG opinion on whether the way forward is to skip the intermediate dual-use engine step and on the relevance of pushing for the development of new efficient gas engines.

Preparing TAG’s responses to the “issues document”

The remainder of the meeting was spent in three subgroups with personal competences in the fields of horizontal issues, sustainable surface transport issues and aeronautics and air transport issues respectively, followed by a joint discussion in TAG of the answers from the sub-groups. The results from the subgroup deliberations with adjustments and amendments from the plenum discussion and the follow-up from the TAG meeting on 5-6 October are all subsumed in chapter 4 which is the final response to the Commissions questions to TAG on issues of WP2012-2013.

3.3. The 14th TAG Meeting, 5-6 October 2010

Main structure of the meeting

In the two-day meeting on 5 and 6 October the TAG was as usual given a general update on the state of EU initiatives of importance for research on transport, followed by more in-depth information on selected activities on which the TAG depends and has important interaction. The concluding deliberations on the TAG response to “Issues for Opinion of TAG for WP2012-2013” was a major agenda item. So was also a series of presentations on the status and plans in the five ETPs on transport. TAG was invited to take note of the “Innovation Union” flagship, which would soon become a key reference for many activities, including the Framework Programmes on which TAG served as advisors.

Developing the strategy for WP2012-2013

In a new arrangement between DG RTD and MOVE work had been started on the strategy for WP2012-13 in a task force comprising both DGs, aiming for a consolidated strategy paper to be discussed soon after 15 November with the cabinets of the Commissioners for research and transport respectively. A draft WP2012 was scheduled for 21 March in order to follow the prescribed track to approval by the Commission and subsequent publication by 19 July 2011. The indicative total budget for WP2012 and WP2013 is 600 M€.

The new policy initiatives, which this WP must support, would include the framework for standards and innovations in ITS for road and interfaces as well as the EU2020 flagships which in addition to the “Innovation Union” also included “Resource efficient Europe”. Planned initiatives with impact on the WP2013 would include the new Transport White Paper, the Strategic Transport Technology Plan and a communication on Clean Transport Systems, all of which were DG MOVE responsibilities.
Finalization of TAGs responses to “Issues document – setting the scene”

As a lead-in to the concluding discussions of “Issues for Opinion for TAG for WP 2012.2013” the Commission listed a number of points to be discussed, distributed over the subthemes of AAT and SST and the Horizontal activities. In answers to immediate questions from TAG members the Commission explained that:

- Many long-distance transport topics belong under EGCI, including ICE efficiency, heat recovery etc. with the aim of “greening” also heavy duty transports for which electrification is still not possible.
- The problem of when to place a cross-cutting topic in the TPT category and when to include it in the more generously funded SST or AAT categories must find a solution in FP8.
- When talking about urban transport, “passenger infrastructure” comprises many non-vehicle elements, such as the use of e.g. ITS, as well as physical infrastructure that facilitate the servicing of passengers.
- Air Transport of freight should not be forgotten when addressing “Global efficiency” although this is under the heading of Surface Transport, and some TPT topics already have this interface onboard.
- The “Green Ship” concept does not exclude the issue of supply lines. In WP2012 it might appear so, but it is to be discussed again for WP2013.

The “Innovation Union” flagship

The thrust of “Innovation Union” flagship is how to get new jobs in a situation where public finances are dwindling, as opposed to the context of the Lisbon Agenda when the economy was on the rise. In a similar way global competition has changed significantly, forcing nations to look into sources of growth and jobs, so their determination is much higher and willingness for integration is much higher.

In highlights from the development of the “Innovation Union” flagship the TAG was informed about its proposal for European Innovative Partnership, seen as a partnership between the public and private sectors, public meaning European and national. Such partnership must have well defined goals and the perspective of becoming a world leader. One such partnership will be launched in 2011, but others will follow. Other novelties in this initiative will be:

- A scoreboard of 25 indicators to enable member states to assess their performance.
- An attempt to develop a single indicator for innovation
- Improved access to funding, e.g. from cross-border venture capital and use of the RSFF.

Transnational transport research

TAG takes a strong interest in the efforts to improve and expand the transnational transport research activities in various cooperation frameworks and welcomed an extensive update on the situation in this area, which develops on the following background:

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5 European Green Cars Initiative
6 Internal Combustion Engine
7 Risk Sharing Finance Facility
Most transport growth in the next decades will occur outside the EU27.

Competitiveness of established market leaders will be increasingly challenged by new players, often from emerging economies.

Integration of non-EU research and engineering competencies can help achieve results quicker and cheaper.

Learning through RTD cooperation helps develop and sell adapted solutions on emerging markets.

The very informative briefing was supported by two examples:

- In 1983, shortly after the economy of China was opened, VW decided to enter on the Chinese market by starting to assemble the VW Santana model, and it built up and worked through joint ventures since then. Today, VW operates the biggest fleet in China and still holds, despite the competition, about 20% of new car sales in the country.

- Maglev technology was more or less ready for the market in the 1990s, but governments in industrialized nations could not be convinced to employ this in an economic scale. So, in 2002 the first commercial line opened in China was building on German transrapid technology, and prompted by the Chinese state council a train called WuFleng, which is basically a Chinese version of the transrapid, was developed and brought on the market. The obvious IPR issue is being debated.

The lesson seems to be that when, like in the VW case, cooperation in research and technology is used to enter new markets at an early stage, then it is possible also to sell and learn from new products and be successful in emerging economies.

EU is therefore promoting and supporting international research cooperation on the basis of mutual benefit in areas that are especially suited for it such as pre-normative research, or global challenges such as traffic congestion, energy efficiency, and environmental impacts. This strategy was illustrated by highlights from a number of ongoing and future projects, including joint opportunity mapping activities, under the FP7 transport theme.

In their comments to this briefing on 3rd country cooperation TAG discussed the potential benefits from cooperation with Japan, who is ahead of Europe in most matters relating to organisation and management of intermodal transport. However, achieving research cooperation with Japan has so far proved difficult for reasons found in rules for use of European funding as well as Japanese hesitation to become involved. China, on the other hand, has adopted a strategy with an open approach to cooperation.

In regard to a very wide ranging project on a platform for transport planning and travel information currently being demonstrated in Athens, São Paulo, Beijing and Shanghai TAG emphasised the importance of transferring its results to Europe for the benefit of the citizens of large European cities.

**Impact Assessment of FP8**

With the approach of the 8th Framework Programme (FP8) DG RTD has initiated work on the important Impact Assessment (IA) as the primary tool for improving the quality and evidence base for its proposals and as a key device for communicating with other EU institutions, stakeholders.
and citizens. A DG RTD FP8 IA coordination group will prepare a (horizontal) synthesis of (vertical) in-depth reports from the DG RTD services responsible for the themes of FP8. Thus, a core group in the DG RTD Transport Directorate is contributing to the IA report for the FP8 proposal on transport. The final result of these efforts is scheduled to be available by 30 April 2011.

An crucial element in the IA is a summary of evaluations of past action and their impacts, and the TAG was given a review of the five recently completed evaluations of Transport Research under FPs 5 and 6 and the ongoing efforts to reach a set of global conclusions based on these evaluations. The overarching evaluation and monitoring environment of the entire FP7 was also described, as well as the ongoing FP7 Transport Interim Evaluation project with which TAG became acquainted at its meeting in March 2010 (see pg. 8). TAG members had recently participated in a series of workshops organized in this project and reported their impressions from these events, which are contained in Annex 4.

**Update on the Strategic Transport Technology Plan**

The preparations for the Strategic Transport Technology Plan (STTP) was first presented to TAG in the June meeting (see pg. 11). TAG was now updated on the progress of work on the plan, which would strengthen the alignment of key needs of Transport Policy with key needs of Research and Innovation Policy and assume an important role in preparations for FP8. The output envisaged by the Transport Directorate would include

- initial roadmaps for each of the key innovative technologies, covering the full innovation chain from research till market take-up and implementation;
- a paper on state of the art in technology and prospects: technology map based on scientific assessment of state of the art and prospects assessment from various sources; and
- a paper on research undertaken by Member States and industry: capacity map.

The STTP with a time horizon of 2025/30 would also include a look at ‘strategic’ research support for policy development.

External input would be collected through stakeholder hearings involving technology platforms, public-private sector initiatives e.g. JTIs, member state programmes, ERA –nets and scientific bodies as well as through internet consultations.

**European Technology Platforms in the transport sector – status and plans**

It is important for TAG to be aware of the visions and plans of the four transport ETPs, but few members of TAG are directly involved in any of these. At the request of the TAG the Commission had therefore invited all of them to this meeting to present summaries of the state of their work and a look into their expected communications about their longer-term research agendas.

As a lead-in to these presentations the TAG was given a summary of the Commission’s view on the role of ETPs as industry-led stakeholder forums that define and implement long-term visions and strategic research agendas (SRAs) in technological areas that require strong cooperation between research actors to address major economic or social challenges. The SRAs are important as one of the sources of ideas for FP7 research topics and for tailoring FP7 to better meet the needs of the industry, and major joint events as e.g. the ETP Conference in May 2010 can offer valuable advice
on how to develop, coordinate and cluster the processes by which the SRAs are updated and implemented.

**European Road Transport Research Advisory Council (ERTRAC)**
- is aiming with its Strategic Research Agenda 2010 for a 50% more efficient road transport system by 2030. This SRA is maintained and developed by working groups on Long Distance Freight Transport, Urban Mobility, Energy Efficiency, Road Transport Safety and the recently added group on Global Competitiveness.

**European Rail Research Advisory Council (ERRAC)**
- has translated the 6 main priorities of its Strategic Rail Research Agenda (SRRA) into a the ERRAC-Roadmap project with five workpackages (wp) paralleling the five EC priorities for transport research plus an “Evaluation and Rail Research Database”, a communications wp and an “Extended Support Group and Management” wp. Each wp will contribute to a common annual roadmap that is designed to serve as a basis for advice to the Commission for the Transport FP calls for proposals. The first of annual draft of the ERRAC Roadmap was published in September 2010.

**Advisory Council for Aeronautics Research in Europe (ACARE)**
- whilst emphasizing the successes of its Vision and SRA in steering European aeronautics research in recent years was now adapting to radically changing current conditions and facing even more changes in the future due to continued increase in air travel, financial pressures, and demands for competitiveness and environmental sustainability. The need for knowledge and solutions has therefore never been greater, and the formulation of a timely new vision for a horizon towards 2050 is essential.

**ETP WATERBORNE**
- is the R&D coordinator of the European Maritime Transport Community with the role to align, coordinate, develop and exploit research synergies in the sector. Its Vision 2020 and SRA define three priorities: (1) Safe, Sustainable, Efficient Operations; (2) Manage Growing Trade Volumes and Changing Patterns; and (3) A competitive Maritime Industry. TAG was shown how the EU funded research projects are mapped against the WATERBORNE implementation Route Map (WRIM) to monitor the implementation process and indentify areas of the WIRM not yet covered by the funded projects. It is planned to extend the horizon of the vision and the SRA to 2025.

**European Green Cars Initiative (EGCI)**
- is not an ETP like the four above, but a Public Private Partnership of the European Economic Recovery Plan from November 2008. It is implemented through the WPs 2010-2013 of FP7 and supported by an Ad-Hoc Industrial Advisory Group with members from 4 ETPs and five DGs and the EIB, integrating all involved sectors and the EC, providing for a strategic dialogue between Commission and industry and advising on the implementation of the Green Cars Initiative as a PPP. The EGCI has been given responsibility for three priority areas: Electrification; Long Distance Trucks; Logistics + Co-modality. The briefing to TAG detailed the challenges, milestones and Roadmaps for each of these.

In the subsequent discussion TAG members expressed their appreciation of the high quality information they had now received from the ETP presentations as well as their regrets that time
had not permitted a proper questioning and dialog with the speakers. They concluded that such ETP updates should be given at regular intervals, not as a stream in one meeting, but preferably distributed among the TAG meetings over a period of perhaps two years.

**New rapporteur**

Having been a member of the TAG since 2006, Jorgen Christensen had decided to resign from the group upon completion of his work on the Annual Report for 2010. Professor Ángel Aparicio accepted the group’s unanimous proposition to succeed him as their rapporteur.

4. **TAG responses to “Issues for Opinion of TAG on WP2011”**

4.1. **General**

1. **How to deal with the emphasis on Innovation of the upcoming Research and Innovation strategy in the Transport Work Programme?**

   Innovation is realized when new, competitively sellable or for society useable products or services are developed. In most cases, it is industry that asks for research and classifies a research product or idea as innovative by adopting it and transforming it to a marketable product or service.

   Two separate issues must be taken into consideration when addressing European innovation:

   - How to develop the technological competences in Europe distinct from the US and China.
   - How to take existing knowledge to the European level from single countries and sources.

   The Research and Innovation strategy should further

   - Take into account major societal challenges, and make sure that innovation will help the transport sector to address new mobility patterns and needs in the long term.
   - Consider social inclusion as a major reference: innovation should make transport services more accessible to all, while prioritizing sustainable mobility solutions.
   - Address the gap between research and innovation. The dialog between basic research in transport (mainly socio-economic and policy-driven research) and technological developments is difficult, and should be facilitated to gain mutual understanding.
   - The Framework Programmes play a key role in the pull-through of technology from the science base, hence adequate funding for the larger level 2 and 3 programmes in aeronautics must be maintained in Framework 8.

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8 Example: innovation on Canal Barges Ghent-Ternhuisen: the industry needed bigger ships; standards for canal barges were improved. In this case, the Ministry of Infrastructure drove innovation through contractors; research was pulled in (University)
There is a gap between research innovation results and market uptake (consideration of putting the product to the market is necessary); there is a need to further involve those entities, which could bridge that gap, such as technological centers.

The following remarks make special reference to aeronautics and air transport sector, which differs from other areas by its strong relation to defense and by the very long development and life cycle of transport aircraft, which makes this industry not very attractive for private financing:

- Aeronautics products are usually developed in a chain of 9 Technology Readiness Levels (TRLs). Usually the universities are in TRL 1-3, the research establishments in TRL 3-5 and the industry in TRL 5-9. For every increase in TRL innovation is needed. Normally to get from TRL1 to TRL 9 about 15-20 years are necessary.

- The EU supports aeronautical technology development through the ERC, Level 1 projects, Level projects and Level 3 projects till TRL 6.

- Level 0 projects are missing (esp. between basic research as promoted in ERC and the level 1 projects, which are running over 3-4 years with a fairly high budget of 2-6 M€). The CREATE\(^9\) project (final report expected by 01.11.2010) is proposing to introduce already during FP7 a new instrument, called “level 0” project with the specific objective to encourage long term research, looking at the horizon of 2030 – 2050 and exploring possible step changes in air transport. Programmes in which University groups can participate with industry partners paying own costs for oversight and advice to the programme, but otherwise making no financial contribution to the programme, should be developed and encouraged.

- The Framework Programmes play a key role in the pull-through of technology from the science base, hence adequate funding for the larger level 2 and 3 programmes in aeronautics must be maintained in Framework 8.

- To deal with the emphasis on Innovation it is of crucial importance to explain more effectively to the European Public and politicians how this innovation process works, how Europe has to act to remain worldwide competitive to maintain its economy, workforce, industry and good environment. Vision 2020\(^{10}\) was a good example of such a communication to the public and politician, emphasizing the societal needs of safe and environmentally friendly air transport (and gaining global leadership).

- New technologies in design and manufacturing have to be encouraged to be not only available for the already well-established industries but also to allow the creation of new companies to enter into the aeronautical sector esp. in the area of regional, business or General Aviation aircraft.

- What has changed in the last 20 years is the reduction of the number of airframe, engine, systems and avionics integrators and the increase of contributors to the supply chain. These second and third tier parties in the supply chain have to sell and compete worldwide. Supply chain management becomes increasingly important.

\(^9\) Creating innovative air transport technologies for Europe

\(^{10}\) European Aeronautics: A vision for 2020, ACARE, January 2001
2. (AAT) What are the most relevant technical/technological areas where research actions/support actions should be envisaged that are of common interest to SST and AAT?

AAT is seen as being the more innovative research sector and solutions from this field may well be adapted to other modes of transport. For example: transfer effective network solutions from aviation, where they exist, to surface transport with the purpose of facilitating the transfer of goods and/or passengers between transport operators – and be intermodal.\(^\text{11}\)

Many opportunities for joint cooperative AAT/SST research can be found in topics addressing issues of materials, structures, aerodynamics, IT, alternative fuels, noise, etc.

For example, design tools for

- more advanced material application and integration,
- better aerodynamic shape design, and
- more integrated overall vehicle design, reflecting safety and certification requirements as well as noise and emission optimization

should be envisaged to allow to integrate the technological development in electrical energy storage, new electrical motors as elements for a more electrical aircraft design.

Advanced technologies are required for electrical storage and energy conversion. The use of fuel cells to replace APU in aircraft should be investigated. Separation of gas turbine for power generation from electrically-driven propeller or fan for thrust should be studied. This can facilitate radically different aircraft architectures, just as it has revolutionized ship design.

This will be of common interest for SST and AAT.

Also: Further work is required on development of truly sustainable alternative fuels which can be safely and economically applied to air transport. This can be a common research interest for both fields but it will basically build on research from the SST sector.

Reduction of CO\(_2\) emissions from engines and noise will continue to dominate the environmental agenda for the next decade.

Another area of common interest could be Terminal design and operation, taking as an example Large stations (terminals) in large urban areas.

Large terminals/stations in large metropolitan cities are no longer mere access or alighting points for train passengers: they are becoming full-fledged commercial centers proposing an extensive range of services that go far beyond scarce services directly related to the train trip.

They also become the core of a transport interchange facility interconnecting all land transport modes, public and private (and even, in a few cases, air).

Surroundings reorganize and develop around them.

Very large stations resemble thus more and more large airports.

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\(^{11}\) Problem: containers are not well adapted to change of transport mode (e.g. aircraft vs. truck containers). One could fit small containers (for airplane transport) into large ones (truck, train). Why is that not done? The mindset of many users is still tied with one transport mode only; co-modality potentials are ignored.
With the progressive development of competition between rail operators in the EU, just as airports they are becoming facilities that service not only one “historical” operator but several ones.

And just as airports new financial schemes must be found to finance their multi-purpose development: BAA\textsuperscript{12} for instance, which operates seven large UK’s airports, among them Heathrow, Europe’s number one, is totally independent from BA\textsuperscript{13} and belongs to a Spanish infrastructure group. Municipalities, understanding the interest for them of such large commercial and transport interchange centers, that become a “lighthouse” of the metropolis, contribute to finance investments.

That move, initiated in Japan is sprawling in Europe.

Other areas:

- Potential study and research themes are numerous : for instance “reviewing best practices to foster rail traffic”, “analyse and compare economic models”, “lessons from airports experiences that could be of use for large rail stations”, “features that could apply to middle-sized stations”\textsuperscript{14}.
- Soft research support of issues like transport observatories and indicators, transport statistics, common KPIs, customer satisfaction measures
- Compatibility of load units between SST and AAT

\subsection*{4.2. Issues for Horizontal Activities}

General remarks:

- the budget is very small, and ought to be increased.
- some cross cutting activities have to be moved to SST and AAT so that they can be better funded.
- the number of topics not covered by past calls is too high.
- in some cases it is not necessary to make research work, it would be enough to prepare a study or a demonstration.
- there is a gap from research results to implementation in policy making; the CIVITAS experience shows that this gap can be closed through demonstration activities. This approach could be applied to some key questions of intermodality, like interurban passenger mobility.

1. Based on the coverage of topics in WP2007, WP2008 and WP2010, which of the activities/areas listed in the MAP OF TPT TOPICS FOR DEFINING WP 2012-2013 (see annex\textsuperscript{15} to the Questions) need prioritization?

\textsuperscript{12} British Airport Authority
\textsuperscript{13} British Airways
\textsuperscript{14} Among considered experiences, the Japanese one should not be overlooked
\textsuperscript{15} This annex is not included in this report
• Socio-economic research topics in general (currently there is only 1 project running from previous calls).
• Education, training in transport research: which kind of profile and knowledge we need for transport researchers capable for co-operative international research, outside the EU.
• Need to try and fund successful proposals with an additional criterion to cover a larger number of topics rather than selecting those with the highest score even if several among them address the same topics.
• Instead of CSA-SA, other types of instruments would be more efficient. This, however, is something to be considered in FP8.

2. Where does the TAG see gaps or emerging transport research and transport research policy needs?

• Low cost local transport solutions to avoid social exclusion.
• Problems, constraints and gaps in coordination between transport research in national and EU level (beyond current ERANETs’ efforts).
• Seamless integrated interoperability of existing traffic control, vehicle fleet monitoring, fee collection, traffic counting systems (better standardization, functional specification to an integrated solution).
• Dealing with peaks and seasonal variations in transport demand.

3. Which topics not covered in the previous calls (2007, 2008 and 2010) should be published again?

Collaborative:
• Socio–economic research and technological foresight towards an integrated European transport observatory utilizing the results of existing observatories and projects.
• Economic incentives for pricing transport services.
• Exploring global challenges and future transport paradigms in a long term perspective (2030-2050 and beyond).

4. What are the specific transport research and transport research policy areas where the TAG would see opportunities to reinforce innovation? Where are the bottlenecks?

Opportunities:
• Business environment management issues in transport research with a special view to the role of ITS for all modes of transport.
• Joining the topic of attending to the needs of the aging population with the application of logistics knowledge.
• Demonstration of integrated (multimodal) solutions, particularly for interurban passenger mobility.16

16 It would be recommended to consider together with the relevant DGs and programmes (e.g. the Galileo) the feasibility – architecture – and appropriate business models of deploying large interconnected databases with vehicle position data, at National levels, by exploiting Galileo and EGNOS systems. The
• Effective intermodal interfaces including loading units.
• Respect personal data protection regulations

Bottlenecks:
• Lack of coordination between national and international research.
• The lack of cross fertilization and dialog between technologically oriented research and basic horizontal socio-economic research.

5. What type of action should be taken in the TPT part of the Transport work programme to support innovation?

• Review the contents of the topics: the more technology-oriented ones should be assigned to SST or AAT (more innovation) instead of to horizontal action: e.g. intermodal services, connection between the reservation systems of different modes and operators. The limited resources available for TPT could then be better focus on innovation in the areas of policy making and socio-economic analysis tools and methodologies.

• Strong and aggressive dissemination actions of best practices in city logistics and similar actions of CIVITAS in urban public transport.

6. How many TPT calls are more appropriate for the whole period 2012-2013, one or two? The efficient use of resources (for the programme and for proposers), timing and other relevant factors should be considered.

• The TAG recommends that one TPT call be made in 2012 covering the whole 2012-2013 period.

4.3. Issues for Sustainable Surface Transport

1. Road and urban transport electrification
General remark: The urban transport electrification should not address road only. Instead rail bound modes implicitly using electric energy should be developed, thus contributing to the shift to electric transport modes in cities.

1.1. In the previous years 2 joint calls on batteries have already been launched (2010: joint call on electro-chemical storage, 2011: joint call: "Advanced eco-design and manufacturing processes for batteries and electrical components"). Shall battery research be continued in 2012/2013? If yes, what kind of research is needed?

focus should be on standardizing features of a single on-board unit, interfaces and data structures in a central application platform, which will then support a series of consumer and professional road related location sensitive services such as: automated toll collection and road pricing, traffic information, anti-theft/security, road side assistance, pay-as-you drive insurance etc. All identified applications of these data bases and their technology are addressing the mass market, and are benefiting both the public and governments, leading to successful public private partnerships (PPPs).
More battery research needed - it is fundamental for electrical cars, and to keep up with China. Do not drop the issue. Further improve:

- Lifetime
- Charging of battery
- Weight/ volume/ capacity per kg
- Recyclability

Battery research should be connected to other fields, e.g. new materials, nano-materials, processing, industrialization, cost etc.

- Emphasize the interactions of motors and batteries (hybrid motors)
- Have fundamental research in energy storage in general, also beyond cars
- Do include recharging system
- Assess influence on environment of any new developments, a lifecycle analysis is needed (internalization of external cost - rather than looking at subsidies)
- Usage of batteries onboard light rail/tramway vehicles to bridge non-electrified zones – research of specific duty cycle.

DG Energy is also active in this field - the effort should be controlled by one DG only.

1.2. **What type of research is necessary for the deployment of the recharging infrastructure for electric vehicles? How to overcome the "chicken-and-egg problem"?**

- Make a demonstration of electrical supply grid/ electrical cars in one congested urban area
- Make a simulation model (e.g. based on existing petrol stations) to study network and traffic effects. Base it on detailed and realistic input.
- Standardization/regulation will be needed
- Support demonstration of onboard electricity storage in light rail and trolleybus vehicles.

1.3. **For 2013 a joint call on light materials and structures for electric materials is envisaged. What kind of research should be considered in order to develop materials allowing for weight reduction as well as for recycling and sustainability?**

Electrical cars will need

- Priority issue: Consideration of safety (crush zones).
- Lighter car bodies through composite materials, alloys - as in airplanes,
- Material selections with novel properties rather than known materials in new structural designs – preferably from renewable resources.

Promote new materials and/or composites for transport applications.

- There is a need to know how much has been achieved already. New materials (light weight, renewable, environmentally friendly) can be used - with some adaption - to all transport vehicles. It would make sense to include rail vehicles, especially light rail, trams and suburban vehicles.

1.4. **Trucks: Truck engines are already close to thermo dynamical optimum. What is the maximum improvement of energy efficiency for road haulage by truck? What research**
priorities need to be defined in order to improve the energy efficiency of trucks: mild-hybridization, rolling resistance, longer trucks, etc.

"Mild hybridization" means the use of electric motors to run "support" features of a truck (e.g. air conditioning, refrigeration, lighting), which rely on a hybrid engine, or the use inertia of a truck running at a certain speed.

Most of this knowledge is available, e.g.
- the use of longer trucks
- steerable rear axles to make trucks more movable
- improved aerodynamics of trucks, where demo vehicles exist. The problem here: trucks must either exceed current size limits or reduce load. Regulation adaption is therefore needed.

Rolling resistance - research needed for details, include rolling resistance for trucks.

The existing infrastructure, e.g. bridges, roads, etc. is a bottle neck of productivity of truck transport. TAG therefore recommends:
- develop the road network to allow it to be used by new and heavier, longer trucks.
- find more efficient, cheaper and faster ways to upgrade roads to allow faster, more energy efficient transport.

1.5. Logistics: legislation on harmonization of intermodal containers (intermodal loading units) has been withdrawn. What kind of research is needed to overcome this lack of standardization?

ISO regulation of sea-going containers exist - no special European regulation is necessary.

2. Waterborne

2.1 What should be the research focus in terms of eco-innovation in Waterborne Transport in the Work programmes 2012/2013?

No green ship programme is yet in existence - starting one is recommended.

The research should focus on:
- Hybrid solutions: engine and sail. This needs control technology to move/hoist sails.
- Hybrid solutions: combine LNG and Diesel as fuel for large "hybrid ships"
- Intelligent routing according to wind, currents and weather conditions
- New materials for ships and ship structures: optimized hulls exist, but what about materials, like the thin hulls of special steel (used in frigates)? Consider the centre of gravity!
- Production of high tech vessels for hydrogen transportation (part of green ship programme)
- Solutions and best practice guidelines for efficient, safe and environmentally friendly refitting processes, including surface protection, considering the interaction of all actors involved on site in a retrofitting process.
- Energy generation technologies for auxiliary services based on renewable sources.
Novel holistic design approaches exploiting lighter materials and coating for drag reduction should be investigated to further reduce GHG emissions.

Improvement of equipment and technologies meeting the D-2 standards on ballast water management.

Some efforts on the above issues may be underway under other key words.

2.2 What research is needed in order to better exploit the potential of ships retrofitting for European shipyards as a new industrial activity?

TAG could envisage two approaches (A and B below), but could not yet decide on which to recommend.

A: Make a new industry for retrofitting of ships:
- Upgrade interior
- Upgrade engine
- Use new materials
- Upgrade to meet ecological standards

If this approach is followed, the following topics offer themselves for research and innovation:
- Any kind of equipment specifically suitable for refitting, e.g. by easy assembly, easy transport and quick set-up inside the ship during refitting or service, “plug-and-play” equipment;
- Solutions and best practice guidelines for efficient, safe and environmentally friendly refitting processes, including surface protection, considering the interaction of all actors involved on site in a retrofitting process;
- Energy management systems which could be retrofitted into existing vessels to improve their environmental footprint and reduce energy consumption based on existing equipment and IT solutions available at existing ships.
- Increase use and retrofitting of intelligent equipment health monitoring for all vessels to prevent unpredicted failure.

However: Where is the money in it? Will non-European shipyards not be cheaper? Can it be cost-effective?

And further: Old yards may not accommodate new big ships for repair - even "old" ships are larger and larger.

B: Build new ships for special purposes and markets:

A niche is opening for yards around the Baltic sea: new big fishing ships are not built, only old ones are repaired. The Japanese are active in this area. Investigate new materials, new machines for such new ships.

The exploration and exploitation of the Arctic will be a major driver on specialised ship design bringing need to ultra-clean technologies and novel hull forms.
But What about overfishing?
Shall money be put into any of these opportunities (A or B)? Is it worth at all?

Additional issue:
Ships in ports keep the engine running for their own power supply. Efforts are ongoing to force ships to cut the emissions, but the electricity grid of harbours cannot supply the ships.

Possible solutions:
- Clean the exhaust (and put the cleaned CO$_2$ back into the sea), having filters and scrubbers onboard the ship.
- Reduce emissions of ship engines
- Increased use of fuel cells as in-harbour power source of ships. Consider dock-side hydrogen infrastructure.

3. Rail

3.1 Rail freight transportation is decreasing. What could be the contribution of research to improve this situation?

General remarks to the question:
- This is not only a research topic, but a question of balancing conditions of transport mode, i.e. setting the regulatory framework so as to reach a level playing field for all transport modes. TAG recommends an analysis what this will require.
- The regulatory framework is only moving slowly and is lagging behind the needs of industry and society. Present regulation is not efficient and not consistent between the different countries. Track access charges differ significantly.
- However important, TAG is of the opinion that research on balancing conditions and regulations on the economic level is the responsibility of another area. But transport research should provide the information needed on the operational and technical behaviour of the railway system.
- In several countries, rail freight transport has increased substantially within the last ten years. Even the market share of rail could be strengthened. During the economic crises, rail has lost more demand than road, but is now recovering quicker.

Rail freight transportation is suffering from many deficiencies, e.g.:
- Irregular service (affecting reliable and in-time delivery);
- Terminals size and lay-out – cannot accommodate long trains, time loss;
- Terminal density and placement, terminal costs for users;
- (Time) reliability of train transport;
- No incentive for train transport to take freight;
- Noise, especially at night;
- Inefficient maximum load share of gross vehicle mass;
- Passenger trains get preference in scheduling;
- Nations have different regulations (hence change of driver at border);
Costs are not internalized (this applies to the competing modes as well, but the effects of this are not balanced);

Solutions have to answer the problems in one approach - the issues are interlacing/interfering.

Potential research topics to support rail freight include:
- Faster freight trains with better acceleration and breaking
- Automatic coupling of freight trains (like a lot of recent passenger trains)
- Information and location systems on freight trains, as part of an integrated rail freight information system
- Noise reduction of freight wagons
- The use of bigger clearance in order to carry double-stacked container trains on certain links, e.g. in the Hinterland of the big harbours and on the Asia-Europe corridor of the future.
- Faster slot planning processes in order to allocate quicker the paths needed by freight trains

In addition: Have an "out of the box" study for long range solutions, especially an investigation of the market potential and the operational/technical challenges on the Euro-Asia-Rail Corridor (Europe – China). Consider freight and passenger rail transport.

3.2 Which kind of research could help to increase the capacity of railway infrastructure (new rail infrastructure or implementation of ITS)?

What might be done?
- Remove known bottlenecks for freight.
- Invest in intelligent transport systems - research is needed here.
- Speed-up the development of the ERTMS Level 3 and alternative means for train positioning (e.g. through Galileo) in order to allow higher line capacity with lower equipment costs
- The long braking distances of trains reduce efficiency - develop new brakes - research is needed here
- Control command and signaling systems are outdated, affecting operating rules as well. A system approach to be developed to allow higher capacity & efficiency.(see also the comment in 3rd bullet above).
- Research on high speed long distance rail freight badly needed. A high precision railway operation is needed in order to use the capacity better by reducing the buffer times and reserves.
- Development of high performance slot allocation tools on OR basis for improved operational planning.

Note: On many issues research should not delay investment, e.g. the building of new lines or parallel track sections where fast trains may bypass slow trains.
Again: Consider future development - in 20 years (see answer to question 3.1)

3.3 What should be the role of rail transportation in the upcoming White Paper on transport decarbonisation?

The following rail borne transport types have a strong market potential:
- Long distance High Speed Lines
- Medium distance passenger transports between medium and big European cities.
- Long- and medium freight transports
- Passenger services in metropolitan areas
- Urban rail systems

Note: High speed rail is already competing increasingly with airplanes in medium distance travel, while an efficient and competitive European rail freight is still held back by second-rate services on the networks.

However, short and medium distance rail travel has to use existing systems. How to improve these?
- Innovate in light weight trains with simple signal systems (e.g. S-Bahn in some German cities).
- Increase research on urban rail transport.
- Implement a green urban train concept in a demonstration project.
- Electrification of the major part of the European network - research focus: low budget catenaries\(^\text{17}\) and power supply.
- Have focus on the role of rail in urban congestions - most passenger transport is happening there. This is a rail transport that will remain in the future, and helps to reduce CO2 emission (replacing short distance car travel).

Recommendation:

There should be a green train initiative, consisting of a platform, i.e. a train, which implements new green technologies inventions as means of demonstration. Different research partners would run their ideas. Such a platform could exist in parallel for passenger and for freight trains. It should be system approach, encompassing both vehicle and infrastructure (including consequences to the infrastructure).

Observation by TAG common to all surface and transport modes:

Infrastructure inefficiencies (road, rail, and harbours) pose a serious limitation to the rapid implementation of more productive and sustainable (freight) transport. Research is needed on ways to achieve the capability needed for efficient and rapid upgrading of such infrastructure.

\(^{17}\) A catenary is a system of overhead wires used to supply electricity to a locomotive, streetcar, or light rail vehicle which is equipped with a pantograph. (Wikipedia definition)
4.4. Issues for Aeronautics and Air Transport

General:
WP2012 will focus on Level 1 projects (CP-FP), will include Coordination Actions (CSA-CA) and Support Actions (CSA-SA) and may include some Level 2 projects (CP-IP).

1. The current balance in FP7 is roughly ~ 1000 MEur for L1 and L2 (with a 50% / 50% split) and 800 MEur for Clean Sky. Does the TAG find the balance between L1 and L2 appropriate?
   Yes, leave it at 50 – 50. Having in mind that level 3 projects are mainly dedicated to industry and technology demonstration, Level 1 projects should not have less than 50% if level 0 projects will be adopted (only 5 % of total AAT budget) they should be in addition. It must be recognized that Clean Sky (the only level 3 programme) addresses only the environmental impact of air transport. Level 2 and 3 programmes addressing European competitiveness are also required.

2. In WP2010 (dealing mostly with Level 1 projects), some topics were closed to focus the programme to avoid a too low success rate. Should a similar approach be taken for WP2012? Are there other possibilities?
   Yes, the Commission should follow the same procedure when necessary to avoid a too low success rate. A two step approach would take too much time.

3. There exists a Level 2 down selection process. Is there a need to formalize it further and is it relevant to call for L2 topics in WP2012 (for example in a 2 step evaluation procedure)?
   There may be a need to make the Level 2 down selection process more transparent, especially the internal industry – EC down-selection process. But there is no need for a more formal process. The existing process is working well and needs no change.

4. Intermodality – comodality is a topic that is often addressed in SST between surface transport modes and also in TPT but often with a centre of gravity closer to surface transport modes. Is it of interest to consider intermodality – comodality projects centered on the air transport system?
   Air, road, rail and waterborne transport modes is of great importance to the passengers and cargo transport companies. The cities and regions close to the airport usually have a large stake in the airports. Maybe a support action to involve the stakeholders of the airports and the airlines is a good first step. Local air quality around airports is also a significant issue. It may be economically and environmentally more sensible to address through efficient infrastructure, removing the need for cars at airports, than through further restriction on aircraft.

5. The participation of airlines and airports in the research projects is often small. How large are their RTD needs and were they well covered in the previous WP? Should this WP put specific attention on them? Should we look for types of involvements that are not direct partnerships but more of advisory nature?
It is true, that airports and airlines were in the past not really interested in aeronautical research. However with the increasing challenge from the environmental pressure (ETS, noise regulations, emissions etc.) they become more sensitive to R&T matters; we recommend to involve them at least more as advisors.

There are indications that some airlines (Lufthansa) and some airports (Frankfurt, Schiphol) become already more involved.

6. **End-users are not very present in our research programme: is there a need to have them more involved / represented?**

   Definition of end user: Passengers and consumers of air cargo products. Intermediate end users of aeronautical technology are airlines and airports/air traffic service providers.

   Yes there is a strong need to get passengers and air cargo consumers involved. But it is not simple. There are national and European organisations. Maybe also here a support action is possible. At least a big seminar/forum with all stakeholders and in addition some young students with technical, marketing and/or business background would be a good start.

   Very little research today is devoted to the enjoyment of the air travel experience. Focus on interior design, comfort and passenger health will be important.

7. **In WP2010, there were 2 coordinated Calls (one with Russia, one with China). Is this type of cooperation to be continued under the same way with these 2 countries? Extended to other countries?**

   The advice is to evaluate first the results of the cooperation programmes with Russia and China, before increasing the range of such programmes.

   The international cooperation projects should focus on non-competitive issues like regulatory aspects, safety and ATM implementation etc. There seems to be not enough awareness in the EC of the prevailing lack of respect for intellectual property by industry and research institutions in some important new global economic powers.

   India is also a country with major technological capabilities and a growing need for air transport, as well as its own industrial base in this area. It should, perhaps feature more strongly in future collaborative efforts in preference to Russia or China.

   It is perhaps a good idea to take up ATM research with Australia. Australia with its territory larger than Europe and its 22 million inhabitants is introducing much new technology in its ATM.

8. **Having in mind the ongoing support actions (CSA-SA), are there new topics to be covered or topics to be continued?**

   Keep supporting the conferences with EU interest.

   The introduction and standards for bio-fuels will continue to need support action.

   Avoiding disruptions from volcanic ash with improved modeling and better understanding of maximum exposure levels and times is a good topic for SA.

   Operation of UAVs in civil air-space is a major area requiring support action to encourage development of both aircraft technologies and ATM technologies, as well as advice for new regulation.
Better atmospheric modeling so effects of aircraft emission can be properly judged and quantified is a good area for support actions.

Other suggestions:

**ATM research seems not to be properly covered within SESAR.**

L1 and L2 programmes for Air Traffic Management are still missing. SESAR is not taking these up. The Research Establishments are very limited if ever involved in SESAR.

It may be a good idea to introduce the subject of UAVs and their operation in civil airspace. UAVs civil applications become more and more important. The new member states can relatively easy enter into this subject.

### 4.5. Addendum from DG MOVE

What is TAG opinion on:

1. **New directives and national laws restrict drastically the use of oil based fuel in the Baltic sea, spreading to the North sea and the English Channel. Yet this is targeting mostly short-sea traffic.**

2. **A pilot project 'MAGALOG' co-financed by TREN, monitored by the EMSA has shown interesting results, the preferred line of change is presently via an intermediary step (dual use engine) using light sulphur-free diesel fuel. Yet they are initiatives, specifically in Norway, showing a radical shift towards engines running on LNG only.**

3. **How do you see the direct substitution of Liquefied Natural Gas (LNG) engine to heavy fuel oil ones still in use by the shipping industry? Do we need to develop and test a new very efficient LNG engine?**

   The SST subgroup perceived the three point issue as one question, targeted to a very specific area.

   Member countries have adopted the directive mentioned above, but many states (around Baltic Sea) protest, because the price for sulphur-cleaned diesel is much higher than for untreated diesel. Ships exist for hybrid fuel.

   The discussion produced the following arguments:

   **Contra:**
   - LNG has to be stocked in harbours
   - Supply network for LNG has to exist
   - LNG is also fossil fuel.
   - LNG has to be kept refrigerated, which needs extra energy

   **Pro:**
   - LNG carriers themselves run on gas (methane)
   - Engines for LNG only can be developed
   - Structures to supply LNG in harbours are being studied
   - Project on an hybrid LNG/oil engine is underway - would be a more flexible solution
It is agreed that there is a need for
- developing an efficient hybrid LNG engine (using also other fuels (oil) or wind) for flexibility. This would be for short sea shipping (250 000 TEU/ 20 000 tons)
- Research on LNG terminals in the harbours.

Cautionary remark by the AAT subgroup:
The LNG will have no future role in Air transport. Air transport needs “alternative drop-in fuels”. The introduction of a completely new energy needs a major redesign of some 12 000 flying aircraft and this is commercially unacceptable.

4.6. **Q&A session of SST-subgroup with Commission representatives**

This session was held before the SST group started its deliberations on responses to the questions in the “issues document”.

Efficiency between transport modes is considered an important topic. Why did proposals for efficiency between transport modes in SST 2010 not pass evaluation? Were there special reasons?

Commission response:
- Most proposals lacked important stakeholders (customers, shippers, etc.)
- Academics dominating among project consortia members
- There was little innovation

SST observation:
- Perhaps the calls were for the development of tools for unclear purposes.

The question is how to address applicants and get more proposals?

SST observation:
- Send message through the technology platform
- Reissue the topic
- Issue a topic to consolidate different approaches: how can we make maximum use of what we already have?

SST general thoughts on innovation:

Innovation is always based on the need to solve a problem or quandary. Two approaches are possible:
- Achieve innovation by basing it on recent existing research - the answers exist and just have to be found, or
- Achieve innovation by looking for an answer to an idea, investing into research - special research is launched to answer an idea (Thomas Edison approach)

There is always a risk to implementing innovations, and industry will not run the risk as a contractor in a public procurement case unless it is shared by the purchaser, who again may be
penalized for taking any risks. This is a common reason why even promising innovations are not implemented.

5. **Expected activities for the Transport Advisory Group in 2011**

During 2010 the TAG continued its practice of answering to specific questions and issues posed to it by the relevant Commission services. In this way it provided focused advice on issues that were of immediate practical result to the Commission. It also interacted with the Commission services on the formulation of the Work-programmes for the Transport calls of FP7 for the last two years of the programme i.e. the 2012 and 2013 calls.

It is intended that this approach will be followed also in 2011 and will form the basis of the TAG work in the coming year. In the year 2011, however, the preparations for the new Commission’s new programme of research, the FP8 covering the 7 years beyond 2013, will take full strength and momentum and this will inevitably cause some “side” effects to the work of the TAG.

There are therefore a number of issues, to which the TAG members felt that the TAG could contribute usefully in the course of the coming year. These were brought up during discussions in the plenary and in the sub-group sessions and can be summarized in the following areas:

- Increasing the “visibility” of the TAG as an advisory body and of its interaction with other similar bodies within the Commission;
- Research governance issues within FP7 (and inevitably FP8);
- Advice on increasing cooperation with national research programmes and activities;
- Advice for integrating transport research in Europe and proliferating the ERA in the Transport field (ERA-T); and
- Input to the FP8 formulation process as required.

These issues are discussed in more detail below in order to better demonstrate their context.

*Increasing the “visibility”* of the TAG is considered to be important from the purely operational point of view i.e. for giving the TAG more opportunities for interaction with other related bodies, but also providing its members with more input for their discussions. It is true that the principle of “independence” of TAG’s advice is a paramount one, and this means that the TAG must be left uninfluenced from other bodies and approaches so that its advice is in a sense “original”. This however, is true up to a point and it is always necessary not to work “in a vacuum”. “Visibility” therefore in our sense would mean more information and exposure to what the surrounding environment is doing e.g. the ETPs, the relevant stakeholders i.e. organizations such as ECTRI, EARPA, FEHRL, FERSI, etc. It would also be relevant to have members of the TAG invited to Commission sponsored events and Conferences so that they can report back the main points and ideas put forward in these events.

*Research governance* issues, concerning (primarily) the FP7 but, inevitably, more relevant to the coming FP8, could also be of interest and relevance. The Commission, in preparation for the new FP8, has issued a number of papers such as green papers, communication papers, etc. In addition, the European Parliament has issued a number of parliamentary reports concerning simplification...
of procedures in the research FPs which contain a number of useful suggestions and prospects. The TAG could be invited to add its own advice on all these issues to the extent of course that it will not obstruct its main duties and focus on providing advice for the work plans of the FP7 calls.

As regards the possibility of having TAG giving advice on how to increase cooperation with national research programmes and activities, the idea is that the Commission could usefully employ TAG members’ experience from their national transport research programmes in order to get advice about how to better coordinate the research done under these programmes with the research effort within FP7 as well as with the work done in transport research under national programmes in other countries. The pioneering work of the ERANET programme needs to be commented upon and complemented with possible new actions and initiatives both within the remaining part of FP7 and the new FP8.

*Integrating transport research* at European level and thus further materializing the ERA in the field of Transport (ERA-T) should be a self-evident side activity of any transport research advisory body. In this respect, what is needed most is that the TAG is informed about the various initiatives taken to strengthen and expand the ERA-T in order to include supporting actions in the work-programmes. This is a horizontal activity that falls under the TPT part of TAG’s work but its strategic value could be very important and with strong multiplication effects. Thus it would be useful to devote a certain amount of time within the TAG’s programme in order to be informed and invited to comment upon, actions and initiatives to strengthen ERA-T.

Finally, in *formulating the new FP8*, the experience of the TAG in dealing with FP7 work programme formulation for the various calls should be of use when developing the new FP8 structures and instruments. The areas of advice should primarily concern the content of the new programme – especially in the Transport sector – but it could also extend to issues such as: programme architecture, simplification of procedures, financing instruments, and of course coordination and monitoring.

*International Cooperation* in Transport research as well as *Sustainable Development* and other horizontal issues (e.g. environmental impacts and climate change) will also remain a high priority and of particular interest to TAG’s discussions in the coming year 2011.

*In conclusion*, the main task of the TAG in this coming year 2011, will of course continue to be the discussion and analysis of the issues brought forward to it by the Commission services in both plenary and parallel sessions, as it has successfully been done in the past. The sub-thematic groups will continue to be formed along the lines of the three areas of the Work-Programme itself, i.e. Aeronautics and Air Transport (AAT) / Sustainable Surface Transport (SST) / Horizontal Issues (HI).

In addition, and as the transition period for the new FP8 in 2013 practically starts in 2011 the TAG will be ready to discuss (within the usual time frame of its meetings per year) other issues as outlined above.

**Final remark by the Chairman**

The TAG has reached now a mature state of work producing effective and practical advice for the Commission services. Its 2010 report is a proof of this. It is expected that in 2011 we will further increase our “productivity” as a team and iron out any initial difficulties and inefficiencies of previous years.
Annex 1

Transport Advisory Group (TAG) members during the year 2010

- Fred ABBINK (National Aerospace Laboratory)
- Ángel APARICIO (Universidad Politécnica de Madrid)
- Andreas CONSTANTINOU (Cyprian Ministry of Communications and Works)
- Jørgen CHRISTENSEN (RTR Facilitation)
- Etienne DEVISCH (Hutchingson Europe)
- George GIANNOPoulos (Hellenic Institute of Transport) Chairman
- Jim LAWLER (Enterprise Ireland)
- Annette LECHTENBÖHMER (Goodyear S.A.)
- Andraz 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)
- Tatiana MOLKOVA (University of Pardubice)
- Ric PARKER (Rolls-Royce)
- Vytautas PAULUSKAS (Klaipeda University)
- Aisling REYNOLDS-FEIGHAN (University College Dublin)
- Claude ROSSIGNOL (consultant to SCNF)
- Francesca SANNA-RANDACCIO18 (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)
  Kirsi TIKKA (ABS Europe Ltd.)
- Ulrich Weidmann (ETH Zürich, Institute for Traffic Planning and Systems)
- Yoram ZVIRIN (Technion – Israel Institute of Technology)

≤ : Members who departed from the TAG in 2010

18 Did not participate in meetings during 2010 due to sabbatical leave in the USA
Annex 2

Issues for opinion of TAG for WP 2012-13
17 June 2010

General

3. How to deal with the emphasis on Innovation of the upcoming Research and Innovation strategy in the Transport Work Programme?

4. (AAT) What are the most relevant technical/technological areas where research actions / support actions should be envisaged that are of common interest to SST and AAT?

Horizontal Activities (TPT-RTD)

1. Based on the coverage of topics in WP2007, WP2008 and WP2010, which of the activities/areas listed in the MAP OF TPT TOPICS FOR DEFINING WP 2012-2013 (see annex to the Questions) need prioritisation?

2. Where does the TAG see gaps or emerging transport research and transport research policy needs?

3. Which topics not covered in the previous calls (2007, 2008 and 2010) should be published again?

4. What are the specific transport research and transport research policy areas where the TAG would see opportunities to reinforce innovation? Where are the bottlenecks?

5. What type of action should be taken in the TPT part of the Transport work programme to support innovation?

6. How many TPT calls are more appropriate for the whole period 2012-2013, one or two? The efficient use of resources (for the programme and for proposers), timing and other relevant factors should be considered.

Sustainable Surface Transport

2. Road and urban transport electrification:

2.1. In the previous years 2 joint calls on batteries have already been launched (2010: joint call on electro-chemical storage, 2011: joint call: "Advanced eco-design and manufacturing processes for batteries and electrical components"). Shall battery research be continued in 2012/2013? If yes, what kind of research is needed?

2.2. What type of research is necessary for the deployment of the recharging infrastructure for electric vehicles? How to overcome the "chicken-and-egg problem"?

2.3. For 2013 a joint call on light materials and structures for electric materials is envisaged. What kind of research should be considered in order to develop materials allowing for weight reduction as well as for recycling and sustainability?

2.4. Trucks: Truck engines are already close to thermo dynamical optimum. What is the maximum improvement of energy efficiency for road haulage by truck? What research

19 Not included here.
priorities need to be defined in order to improve the energy efficiency of trucks: mild-hybridization, rolling resistance, longer trucks, etc.

2.5. Logistics: legislation on harmonisation of intermodal containers (intermodal loading units) has been withdrawn. What kind of research is needed to overcome this lack of standardisation?

3. Waterborne:

3.1. What should be the research focus in terms of eco-innovation in Waterborne Transport in the Work programmes 2012/2013?

3.2. What research is needed in order to better exploit the potential of ships retrofitting for European shipyards as a new industrial activity?

4. Rail:

4.1. Rail freight transportation is decreasing. What could be the contribution of research to improve this situation?

4.2. Which kind of research could help to increase the capacity of railway infrastructure (new rail infrastructure or implementation of ITS)?

4.3. What should be the role of rail transportation in the upcoming White Paper on transport decarbonisation?

Aeronautics and Air Transport

WP2012 will focus on Level 1 projects (CP-FP), will include Coordination Actions (CSA-CA) and Support Actions (CSA-SA) and may include some Level 2 projects (CP-IP).

9. The current balance in FP7 is roughly ~1000 M€ur for L1 and L2 (with a 50% / 50% split) and 800 M€ur for Clean Sky. Does the TAG find the balance between L1 and L2 appropriate?

10. In WP2010 (dealing mostly with Level 1 projects), some topics were closed to focus the programme to avoid a too low success rate. Should a similar approach be taken for WP2012? Are there other possibilities?

11. There exists a Level 2 down selection process. Is there a need to formalise it further and is it relevant to call for L2 topics in WP2012 (for example in a 2 step evaluation procedure)?

12. Intermodality – comodality is a topic that is often addressed in SST between surface transport modes and also in TPT but often with a centre of gravity closer to surface transport modes. Is it of interest to consider intermodality – comodality projects centered on the air transport system?

13. The participation of airlines and airports in the research projects is often small. How large are their RTD needs and were they well covered in the previous WP? Should this WP put specific attention on them? Should we look for types of involvements that are not direct partnerships but more of advisory nature?

14. End-users are not very present in our research programme: is there a need to have them more involved / represented?

15. In WP2010, there were 2 coordinated Calls (one with Russia, one with China). Is this type of cooperation to be continued under the same way with these 2 countries? Extended to other countries?

16. Having in mind the ongoing support actions (CSA-SA), are there new topics to be covered or topics to be continued?
Addendum from DG MOVE

What is TAG opinion on:

1. New directives and national laws restrict drastically the use of oil based fuel in the Baltic sea, spreading to the North sea and the English Channel. Yet this is targeting mostly shortsea traffic.

2. A pilot project 'MAGALOG' co-financed by TREN, monitored by the EMSA has shown interesting results, the preferred line of change is presently via an intermediary step (dualuse engine) using light sulphur-free diesel fuel. Yet they are initiatives, specifically in Norway, showing a radical shift towards engines running on LNG only.

3. How do you see the direct substitution of Liquefied Natural Gas (LNG) engine to heavy fuel oil ones still in use by the shipping industry? Do we need to develop and test a new very efficient LNG engine?
Ladies and Gentlemen,

I'm delighted to be here with you at what is my very first ETP conference. I look forward to attending many more.

Let me begin by thanking the Spanish Presidency, represented today by Secretary-General Hernani, for their support. This conference covers all three of the Presidency's priorities. Integration — forging stronger links between research and innovation — is a common thread throughout its sessions and workshops; Involvement — referring to tackling the major societal challenges — is its leitmotif; and Inclusion — enhancing the role of science and innovation to promote social cohesion and combat poverty — has guided the choice of many workshop topics. Mr Secretary-General, I assure you that these priorities will inspire us over the next two days.

I would also like to thank colleagues from national administrations for joining us. "Working Together on Societal Challenges" is the theme of this conference: challenges such as clean energy, low-impact transportation, sustainable consumption and production, and health and ageing. As national authorities, you play a paramount role in addressing these issues. I count on you to seize this unique opportunity to exchange views and experiences with ETPs on where Europe should focus its research and innovation efforts in order to tackle such challenges effectively.

I also very much appreciate the presence here of Herbert Reul MEP, the chair of the European Parliament's Industry, Research and Energy (ITRE) Committee, who will speak after me, and I warmly welcome the participation of other members of ITRE in the conference. Herr Reul, as I said at my first meeting with the Committee two weeks ago, I very much hope we can count on the support of your institution in driving forward the research and innovation parts of the Europe 2020 agenda. I'll return to Europe 2020 in a moment.

My particular thanks are due to the many representatives of ETPs in the audience. You have been and continue to be invaluable in helping guide our thinking. In recent years, you helped in shaping and implementing the Lead Market Initiative. You helped in designing and launching the original
three public-private partnerships as part of the European Economic Recovery Package and recently the new partnership on the Future Internet. Many of you served as springboards for the five current Joint Technology Initiatives, the JTI s. I believe that ETPs fulfil a crucial role in research and innovation policy-making, and I’m very glad you’re here today.

I’m well aware that you’re continuing to incubate fresh ideas and approaches as the research and innovation landscape changes. I know that a growing number of you are going beyond research agendas to develop what are often referred to as "innovation agendas". We’ll be hearing some examples of these in the next session of the conference, and I’m sure more will surface in the workshops later.

Concretely, I hear that more and more of you want to accelerate the commercialisation of products and services in your sector by tackling regulatory barriers and skills gaps, speeding up the development and consolidation of standards, and encouraging the public procurement of innovative solutions. I hear a lot about cross-cutting approaches to connecting R&D — the supply-side to such demand-side topics; or, in short, making better linkages in your activities between research and innovation.

This is music to my ears. Let me be very straightforward: I strongly believe this is the right direction to take. This is where you should be heading!

Let me explain.

As the Research and Innovation Commissioner, my job is to help create the conditions for a more dynamic Europe. A Europe where innovative firms want to do business, and where talented people want to live and work. A Europe based on a vibrant innovation economy, what I call an "i-conomy".

One of my first tasks is to draw up a new Research & Innovation Strategy that sets out how we intend to drive forward the research and innovation parts of Europe 2020. Europe 2020, you’ll recall, is the proposal that the Commission made in March for a strategy to enable the EU to exit from the crisis in a way that fosters the growth of a smarter, greener and more inclusive economy delivering high levels of employment, productivity and social cohesion. Research and innovation are at its very core.

This Research & Innovation Strategy will be ready by September, as the Heads of State and Government have decided to hold a special discussion on research and innovation at the Autumn European Council. As you can see, research and innovation are riding high in the political agenda, a sign of their growing importance for our economy and society.

Given the short timeframe, we’re moving rapidly to develop a robust, mutually supportive set of initiatives. Many of the details are still in the pipeline. Here, though, are the Strategy’s main features.

- It will make clear our intention to refocus research and innovation policies very clearly on the major societal challenges facing Europe and the world, such as climate change, energy and resource efficiency, health and ageing. It’s not a coincidence that these are very much in line with the overarching themes of this conference: they’re top priorities for policy-makers, and they also represent, as I’m sure those with an entrepreneurial outlook will agree, huge
commercial opportunities.
- It's important to understand that the Strategy will be based on a broad understanding of "innovation". Research-based, certainly: but also innovation in business models, management structures and processes, the delivery of services by the public sector, as well as innovation in design and marketing, and also social innovation — meaning innovation in, for example, working practices and community-building. So it’s clearly not only about research spending.
- The Strategy will aim to remove all major bottlenecks to the flow of knowledge and to the emergence of what we’re calling a "Single Market for Research and Innovation".

To be specific, the Strategy will give a vigorous push to reaching an agreement on an EU Patent. Enough is enough: let's finally finish the job!

It will also propose measures to improve the mobility and careers of researchers: I want to remove, once and for all, the pension and social security obstacles which hinder and at times prevent researchers from moving freely between countries.

And it will include measures to catalyse an increase in the public procurement of innovation. This will create new opportunities for businesses and lead to better services for citizens.

The Strategy will also propose the expansion of mobility schemes for top talents and nascent entrepreneurs. The circulation of brain-power is good for us all.
- Developing and optimising Europe's R&D performance will be a further core feature of the Strategy.
- It will include measures for developing world-class research infrastructures: everything from polar research vessels and bio-banks to particle accelerators and very large telescopes.
- And I want the Strategy to help put an end to the fragmentation of national research efforts and the wasteful duplication that this leads to. At a time when public finances are under such pressure, we must get the most out of every cent we spend.
- Talking of money, the Strategy will put a great deal of emphasis on financing the i-conomy. We need to ensure that innovative companies, especially high-growth SMEs, get easier access to funding. We will work harder on improving the crossborder provision of venture capital. We're already working with the EIB to increase, very substantially, the leverage finance available to support research and innovation.

Of course, to implement the Strategy we must make the best possible use of the current crop of EU-level funding instruments. Our Framework Programme — the biggest public research programme in the world — is up for review soon. I intend to tie it much more closely to the major societal challenges and ensure it has more leeway to fund innovation. And I will simplify its financial and administrative procedures so that it can be even more effective: you should read the Communication on Simplification adopted by the Commission two weeks ago as my declaration of intent.
I said at the outset of my description of the highlights of the Research & Innovation Strategy that we intend to refocus research and innovation policies on the major societal challenges that confront us.

To help solve particular and urgent problems connected with specific challenges — the very type of problems that you're going to be discussing in many of the workshops later today and again tomorrow — I'm convinced that we need to launch strategic partnerships, ambitious in scope and scale, that combine demand- and supply-side measures and weave together the many existing instruments already in play.

Here I'm referring to the JTIs, the Joint Programming Initiatives, the Lead Market Initiative, the Knowledge & Innovation Communities (KICs) launched by the EIT, the public-private partnerships of the Recovery Plan, the thematic priorities of the current and future Framework Programmes ... I'm sure you get the idea. This is far from an exhaustive list. We've been very creative!

For particular issues linked to particular challenges, these need to be gathered together, framed, and focused to maximum effect.

This idea was taken up in the Europe 2020 strategy. We're calling these strategic initiatives "European Research & Innovation Partnerships". Partnerships between the EU, the Member States, industry and all relevant stakeholders.

Let me be very clear: these Partnerships will not be another initiative, mechanism or instrument to run alongside existing ones. On the contrary, they will be a framework for integrating whatever is relevant. I see this as a great opportunity to simplify our actions and focus efforts on what is really important. The Research & Innovation Strategy will identify a first set of these Partnerships.

I mentioned that Partnerships will combine demand- and supply-side measures and weave together existing initiatives.

In addition, they will have clear targets; aim for results that have significant market potential on at least a European and ideally a global scale; be based on a roadmap showing who does what; engage the support of a significant number of EU countries; and have a simple governance structure. We're exploring funding options, starting with FP7 and the CIP, and will be seeking the strong political commitment of the Member States.

We're developing ideas on what the first set of Partnership topics could be and taking soundings with many interested parties. This conference has become part of that process, and I encourage ETPs, national representatives and other stakeholders to take this into account during the workshop discussions. The Commission colleagues involved will be very pleased to hear your views and share their own ideas with you.

I said earlier that I strongly encourage ETPs to move in the direction of combining R&D with the smart use of demand-side tools such as public procurement and standardisation. I expect you can see why: this will put you in an excellent position to contribute to the Research & Innovation Partnerships. Your contributions will be invaluable in speeding up the development and, I can't stress too strongly, the deployment of innovations in the marketplace.
This is a clear win-win situation: new technologies, services and products and approaches are needed to meet Europe's major societal challenges, and their development will open up new markets for business.

Ladies and Gentlemen,

This conference is providentially timed. The Commission is preparing its Research & Innovation Strategy, and I can assure you that this won't be a set of promises: it will contain an action plan. What you discuss over the next two days could make a significant contribution to formulating the Research & Innovation Partnerships that will help take this forward. There is serious work to do!

But let's remember that events like this are also an opportunity to meet people. I wish you many serendipitous encounters! Let me leave you with a quote from a compatriot of mine, the poet and dramatist William Butler Yeats. He said: "There are no strangers here; only friends you haven't yet met."

Thank you.
Annex 4

Workshops in the Interim Evaluation of FP7 Transport research

Background

On its 11 March meeting the Transport Advisory Group (TAG) received an orientation by the project leader from the contractor\(^{20}\) who was undertaking the Interim Evaluation of FP7 Transport Research for the Commission. In the subsequent dialogue session TAG had responded to a number of questions from the project.

TAG’s next encounter with the project was in September when the project had invited the TAG to be represented at three one-day workshops held on 14, 15 an 16 September in Brussels. The workshops should address: (1) issues of research in Aeronautics and Air Transport; (2) issues of research in Sustainable Surface Transport; and (3) issues of the cross-cutting area of transport research. The common objectives of each workshop were:

- To present the main results of the impact evaluation based on the subthematic report.
- To open a discussion on a list of key questions related to the results.
- To raise discussion on the future of FP7 Transport. In particular, the workshop should end up with clear recommendations on the coverage of research in terms of themes in the future.

At the October meeting of TAG the three members who had attended the SST workshop (2 members\(^{21}\)) and the TPT workshop (1 member\(^{22}\)) respectively communicated their observations from the workshops summarized below.

Workshop on Sustainable Surface Transport

The attendance at this workshop was probably too limited to enable the project to collect the kind of comments they were hoping for. There was e.g. only one representative from industry. The dialogue was troubled by a combination of bad acoustics and communication problems due to language barriers. The workshop also suffered from non-availability of any written documentation of the results achieved so far. The reason was presumably that the project was running behind schedule.

A series of power point slides introduced the key agenda items and the associated questions and it must be hoped that the project had some benefits from their limited harvest of ad hoc comments. The questions were good and indeed very pertinent, but many were left unanswered, because the participants could not offer opinions or knowledge, i.e. the pieces for the jigsaw-

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\(^{20}\) Technopolis Group France
\(^{21}\) Katalin Tánczos and Jorgen Christensen
\(^{22}\) Ángel Aparicio
picture of the helicopter view, which the project was attempting to assemble. It was difficult - and perhaps not the intention either – to get a clear impression of the status of the work at the time when the workshop was held.

A crucial element in the evaluation was a sample\(^\text{23}\) of the 143 projects on SST research included in the total of 271 transport projects funded under WP2007 and WP2008, and the project leaders had been interviewed. Several of these interviews had not been conducted as they had been planned to be, and it can be questioned just how representative is such an exercise.

We were told that the quality and the assumed impact of TAG’s advice in the WP planning phase was acknowledged by the project leaders. Thus, TAG is not invisible, which is of course comforting, but also obligating.

Discussions with members of the Programme Committee had shown a considerable spread in Member Countries commitment to the building of the ERA. This is a topic which TAG might look into in order to advise the Commission on how to stimulate country involvement where is still weak. The New Member States’ contributions and involvement in the programme as participants and project coordinators are still very weak.

An early, remarkable result of the evaluation is that only one third of the participants were able to define economic outputs of the projects in which they were involved. In a similar way, project participants have difficulties in defining environmental or other policy impacts of their projects, ongoing projects as well as finished ones. That is quite surprising inasmuch as such impacts must be clearly described as condition for being rated eligible as a project.

Sustainable Surface Transport have received 553 M€ of financing (2007 and 2008 calls). (142 M€ for 26 projects on “Urban Mobility”, 130,4 M€ for 31 projects on “Greening of Surface Transport”, 115,1 M€ for 40 projects on “Improving Safety and Security”, 89,5 M€ for 24 projects on “Encouraging Modal Shift” and 75,4 M€ for 22 projects on “Strengthening Competitiveness”). The average number of partners in the 143 Sustainable Surface Transport projects were 14.

**Cross-cutting issues**

This workshop confirmed that the fact that there are no ETPs for multi-modal technology makes it difficult to get industry involved in the cross-cutting topics, which mainly deal with multi-modal issues. The stakeholders and end-users of cross-cutting research are probably mainly governments (EU, national, regional and local), while it is difficult to identify the role of industrial partners. Transport consultancy companies could be seen as another category of end users, especially for methodologies and tools developed in horizontal projects.

The two ETP representatives expressed their doubts about the purpose and usefulness of cross-cutting research, which they characterized as a “philosophical” (i.e. useless!) exercise.

Other participants agreed on the disconnection among technological/industrial stakeholders and cross-cutting research, and suggest to make an effort from both sides to bridge the gap (e.g. big technological projects should include some activities on the socio-economic impacts of their

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\(^{23}\) A total of 70 projects were sampled from the 271 SST, AAT and TPT projects.
technological developments and contribution to the EU transport policy goals; cross-cutting topics should try to actively involve industrial partners).

New Member States seem to be more involved in horizontal activities, compared to other parts of the transport program.

There seems to be some lack of balance in the topics covered. This is due to the selection procedure (more than one project proposal can be selected within one topic, thus leaving other topics without any selected proposal).

Existing instruments may not be quite adequate for the objectives of horizontal research. In particular, for multimodal issues there is a strong need to move from research to demonstration. This happened in the past in the field of urban mobility, and was covered with the CIVITAS initiative within SST. The same could apply to interurban mobility for freight and (especially) passengers now. An instrument including demonstration activities would facilitate the involvement of "final users" (governments) and address the concerns of the industrial community about the applicability of research results.

There are difficulties to strengthen the links between FP7 and national research programs. Many countries, mainly the NMS, do not have a national transport research program, and the ERANET instrument has proved extremely slow at increasing cooperation between national research programs.

There is a need to define (and revise) a long term vision for the European transport system. Horizontal activities are particularly well-suited to provide elements for this. But, there should be a clearer strategy on how research is sustaining this kind of strategic, long-term discussion.

Availability of results should be assured, as horizontal activities should not have, in general, any confidentiality problems. But this is not the case yet. Final payment of EC contribution could be linked to the unquestionable availability and accessibility of reports on the relevant web sites.

Horizontal activities have received 48 M€ of financing (2007 and 2008 calls) (TPT topics receive 27 M€, horizontal activities within SST, AAT, 21 M€). CSA is the main instrument (take 63% of the budget, mainly for support activities, CSA-SA); CPs, 37%. The number of partners within projects addressing horizontal topics is typically 5-10. Average EC contribution amounts to 1-1.5 M€ (the instruments used for these topics have an upper limit of EC contribution of 1.5 M€).