EUROPEAN COMMISSION

DIRECTORATE-GENERAL
JOINT RESEARCH CENTRE

Report of the STTP Stakeholder Workshop on Rail Transport

Participants:

Stakeholders: M. Burkhardt (UIRR), M. Clausecker (UNIFE), L. Dongiovani (EIM), L. Lochman (CER); H. Segerer (UIP), W. Steinicke (EURNEX), G. Travaini (ERRAC), J. Wisniewski (UIC)

Chairs: G. Troche (DG MOVE), F. Sgarbi (DG RTD), S. Gouvras (DG INFSO)

Rapporteur: A. Krasenbrink (JRC)

Venue: Brussels, 18 February 2011

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1. SCOPE OF THE WORKSHOP

The European Commission is currently developing a Strategic Transport Technologies Plan (STTP). The adoption of the STTP is foreseen for mid-2011 and it will play a main role in the definition of the Commission's future transport research and innovation priorities. The aim of the STTP is to match the most appropriate policy instruments to the needs of different technologies at different stages of the development and deployment cycle. It will address the entire innovation chain, from basic research to market uptake. The STTP will facilitate coordination of European and national public and private efforts and help achieve greater leverage through flagship EU instruments.

The STTP will include roadmaps for a set of leading edge technological solutions, including the supporting organisational, financial and governance frameworks, which are necessary for a future competitive and clean European transport system. The availability of appropriate research coordination structures has been identified as a potential critical issue for the transition to such a transport system.

The involvement of the stakeholder community is crucial to reach a shared European vision on the role of transport technologies as a follow-up to the White Paper and to produce a credible and widely supported STTP. At the same time, the process of preparing the STTP will help to identity the measures needed from the different stakeholders to attain their goals, and will exploit synergies across them.

2. SETTING THE CONTEXT

A presentation on the STTP provided the stakeholders with insights on: rationale, objectives, structure, preparatory phase and indicative planning as well as expectations from stakeholders' hearings. It was emphasised that the term 'technology area' within the STTP is a comprehensive set of methods, practices and technologies with a shared focus of application.

Discussion during the workshop has been structured in accordance with a previously circulated questionnaire in: (1) Transport Vision and Activities: current status, development perspectives and expected impacts in first block; (2) competitive solutions; (3) Achieving the Vision, essentially focussing on: barriers, shortcomings, funding and organisational requirements; (4) Specific Questions on intelligent transport systems across modes.

The discussion therefore centred on how technology areas are expected to help the European Commission achieve its transport policy and transport research policy objectives, on the one hand, and how the European Commission can optimise resource use by investing in properly selected and prioritised technology areas via properly designed governance and funding schemes.

Stakeholders' advice is one of the inputs to the scientific process leading to the STTP Communication, as work is now focussed on identifying key technology areas in the Rail transport sector. It was made clear that an internet consultation will open soon for 8 weeks and stakeholders are also welcome to give their opinions either through the internet consultation or by sending emails to move-sttp@ec.europa.eu. The Commission will take into consideration any input received in time.

3. SUMMARY OF MAIN DISCUSSION POINTS

3.1. Transport Vision and Activities

The rail sector has to face several specific constraints not existing in other transport modes. Rail business consists of a large number of players, infrastructure managers, rail operators, supply industries. After opening the rail sector for competitors the number of rail operators on the market has increased significantly, together with the internal competition. Cost issues are the main driver for all rail industries.

Another very specific rail issue related to technology development and innovation cycles is the long life span of infrastructure and rolling stock. This means that any new development will reach market only after 15-20 years or so, and will come with implications on the whole system. Past technology research results might still need strong support to be sufficiently deployed in near future due to the slow market penetration of products in this sector, whilst future technologies need to be compatible with current technologies.

Despite these drawbacks the rail sector's vision within a single European Transport Area is the development of a clean, efficient, safe and accessible rail transport system with the potential to increase its market share for passenger and goods transport. This vision can be achieved with a competitive and innovative European rail industry helping to develop technologies for improved infrastructure, vehicles and operational systems.

3.2. Achieving the Vision

To achieve the vision, the rail sector must focus the resources on innovative research – innovative technologies and to a certain extend also a higher level of automation and standardisation will contribute to lower the costs. A continuation of the support to competitive research (and therein the SME in the European Rail industry) through framework programme projects is needed. In addition, the rail industry (the European rail industries all represented by UNIFE) strongly recommends the installation of a new "Rail JTI" as suitable and efficient instrument closer to market!

Improving co-modality and develop better interfaces for seamless door-to-door transport chains is seen as one of the research areas with large improvement potential, whilst competition should focus on the performance within the transport chain rather than on performance between the different modes.

Further improvement of accessibility of rail as element in the transport chain would be needed to obtain better cost effectiveness. Improved comfort and user-friendliness are essential to increase attractiveness.

4. CONCLUSIONS AND NEXT STEPS

The STT-Plan should help to join forces for system deployment within the given time horizon 20-30 years. The STT-Plan should provide instruments for deployment. The close cooperation through the technology platform – ERRAC, supported by intensive mutual industry-sector cooperation should be maintained. The manufacturers call for the establishment of a new Rail JTI which is probably one of the major items to be discussed in view of the future rail technology research. This new instrument would – according to the rail industry – improve the step from development to market. Furthermore the support to the SME in the European rail industries should continue.

The stakeholder meeting pointed out a couple of areas open to innovative research in support to competitiveness improvements. The specific (strategic) technologies and technology areas are listed below:

- Rail Control Systems technology area including Security system aspects, strategic new technologies:
    - New generation of ERTMS
    - New generation CBTC
    - Supervision systems (management of degraded mode, alarms)
        - Address interoperability between: infrastructure/rolling stock and users
    - Cyber-Security

- LOC and Passanger rolling stock technology area, strategic new technologies:
    - New TCMS solutions
    - Improved / breakthrough traction technologies
    - Next generation bodyshell for lighter trains
    - Next generation bogies
    - New brake systems
    - Improved auxiliary equipment
    - Integration of:
        - Vehicle concepts
        - Technology fundamentals
        - Energy aspects
        - Multimodal aspects
    - Innovative services on:
        - Maintenance
        - Certification and homologation
    - Onboard Robust & reliable Video Solutions

- Freight technology area, strategic new technologies:
    - Low noise wagons and brakes
    - Technology for heavier/longer trains (e.g. electrical brakes and infrastructure)
    - Automatic coupling/driving
    - Maintenance optimisation
    - New mechatronics approaches
    - New goods distribution systems
    - Security for freight : scanning (container) & tracking (dangerous material) Data transmission solutions

- Infrastructure technology area, strategic new technologies:
    - Innovative energy supply systems on:
        - Energy regeneration
        - Innovative AC supply and protection systems
        - CBTC, ETCS energy efficiency
        - Energy management

- Improved auxiliaries and station equipment:
  - Contact lines
  - Catenary
  - Smart grids
- Innovative asset management:
  - Condition monitoring solutions
  - Automated maintenance
  - Fleet monitoring and rolling stock management

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APPENDIX 1

Stakeholder hearing
Rail transport

Friday, 18 February 2011, 09.30 – 13.00
Meeting Room DM 24 03/47

- AGENDA -

Chairpersons: *G. Troche*, DG MOVE
S. Sgarbi, DG RTD
S. Gouvras, DG INFSO

09.30 – 09.40	Welcome and introduction of the participants (*All*)
09.40 – 10.00	Objectives of the STTP, purpose of the hearings (*M. Rommerts*, DG MOVE)
10.30 – 11.30	General questions (Part 1 of questionnaire) (*All*)
11.30 – 12.30	'Air transport and aeronautics' specific questions (Part 2 of questionnaire) (*All*)
12.30 – 12.50	Open floor for further stakeholder interventions (*All*)
12.50 – 13.00	Summary (*Chairpersons*)

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APPENDIX 2

Road transport
Questionnaire

1. INTRODUCTION

These questions are designed to facilitate the stakeholder hearings. We would appreciate, if you could send us your answers to the questions 1 week before the next meeting. Please answer them in the way you consider most appropriate to convey your key messages. It would be helpful, if you could identify to which mode/technology area your answer relates to. To help answering the questions some suggestions are given regarding what could be explained under each question.

2. GENERAL QUESTIONS

2.1. Transport Vision and Activities

2.1.1. Current state of play within transport?

Indicate: market readiness/penetration of the different technologies within the activity area for each mode or cross-modal issues; on-going or planned public, public-private or private initiatives relevant for the STTP; type and scale of initiatives at which level -International/EU/MS/Regions

2.1.2. Likely evolution of transport?

Indicate*:* major trends in the transport sector (technology and actors); evolution of transport needs (volume and quality); likelihood of structural changes as a result of new business models, globalisation, competition, ageing population; influence of the market structure on future market potential; possible effects of legislation etc

2.1.3. Key technology penetration targets (2020, 2030, and 2050)? What are the main assumptions underlying these estimates? What are the main barriers to overcome to achieve them?

Indicate*:* main constraints and showstoppers, risks, needs for technological breakthroughs, resource/feedstock availability, consequences for the current infrastructure, etc

2.1.4. If these targets are met, what will be the contribution to EU policy goals in the field of transport?

Indicate*:* Contribution to (1) achieving low-carbon transport (reducing CO2 emissions and dependency on imported oil), (2) achieving seamless mobility in a Single European Transport Area (establishment of a seamless European TEN-T network that is intelligent, efficient, and green, single European 'transport ticket' for passengers and freight), (3) competitiveness and innovation (e.g. future market sizes for a given technology, European share of new market, additional jobs,

export revenues), (4) other policy goals (such as reduction of congestions, local/urban pollution, noise reduction, damage to cultural heritage, etc.)

2.1.5. Contribution to the overall ('well to wheel') energy efficiency?

Indicate: Effects on energy efficiency in electricity and fuels supply, as well as in use; evolution over time and depending on market penetration, etc

2.1.6. Are there any interactions with other community policies and initiatives?

Indicate*:* Potential contribution of the technology to other EU policies; need for measures and initiatives in other policy areas to support the market penetration of the technologies

2.1.7. Which are the main competing or synergetic technologies within the activity area? (in relation to the indicated market penetration targets)

2.2. Achieving the Vision

2.2.1. Is your vision achievable under a 'business as usual' scenario?

Indicate*:* Current support programmes and policy measures and their expected impact

2.2.2. Are there barriers to innovation? Is there a need for change in the innovation system?

Indicate*:* For the mode in question any weaknesses in the current system

2.2.3. Does the considered mode/sector already benefit from or plan to set-up initiatives to bridge the gap between the current state of technology and a cost-effective market entry? What would be the critical mass (e.g. investment) needed for such initiatives? What new approaches could be considered to accelerate innovation?

Indicate*:* i.e. how could the STTP help the sector; which actions of it would be most effective; what impact could be expected with respect to 'business as usual (i.e. No STTP)?

2.2.4. What actions need to be carried out at European level? What actions would be better implemented at national and or regional level? Is there a need, or a potential benefit, to integrate or to better coordinate action carried out at different levels?

2.2.5. International Dimension - Is there a potential for international cooperation? What type of cooperation?

Indicate*:* Major initiatives in other countries; assessment of specific opportunities for international cooperation

3. SECTOR/ISSUE SPECIFIC QUESTIONS: RAIL TRANSPORT

3.1. With respect to competitiveness and clean & efficient rail transport: should on the propulsion side most emphasis be given on cleaner and more efficient combustion engines, including alternative drive trains, hybrids and alternative fuels, or on the efficiency improvements of electric engines and components?

3.2. What areas need improvement to increase rail competitiveness with inland waterway transport, short distance air transport, long distance road transport? What are the main technologies needed for these improvements?

3.3. What are the main (rail) interfaces to be improved for seamless transport of goods and people?

APPENDIX 3

List of Respondents

- CER (Community of European Railway and Infrastructure Companies)
- EIM (European Rail Infrastructure Managers)
- ERRAC (European Rail Research Advisory Council)
- EURNEX (European rail Research Network of Excellence)
- UIR (International Union of Combined Rail-Road Transport)
- UNIFE (Association of the European Rail Industry)