

TRA 2008 Conclusions

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1. General conclusions

The Transport Research Arena 2008 has been addressing the key questions about transport raised among others by Commissioner Potočnik in his opening speech, when he said:

“How do we maintain the freedom and prosperity that transport gives us today, without increasing pollution, congestion, deaths, and greenhouse gases? How do we break the link?”

Building sustainable road transport needs a systemic approach that links vehicles, infrastructure and users, and that links users with other users. This means:

- maximising capacity of road transport infrastructure,
- optimising traffic flows,
- integrating safety solutions,
- new intelligent mobility systems for urban environments,
- improving links between different transport modes.”

All these issues have been addressed in the TRA 2008 programme through the pillars that have followed the structure from TRA 2006 and to great extent correspond to the 4 pillars of ERTRAC (European Road Transport Research Advisory Council).

1.1 General about TRA 2008

Organising TRA2008 in Ljubljana was a challenge after the successful first conference in Goeteborg. Based on the Wrap-up report from Goeteborg conference a heavy advertising campaign was initiated which among others included:

- Socialising: in order to allow all road transport stakeholder to meet and talk to each other, long breaks of 45 minutes were preserved. For the same purpose, several social events and technical tours have been organised.
- Sending invitations to around 12 000 email and around 5 000 mailing addresses, which does not include private mailing lists from EC, CEDR and ERTRAC. It is estimated that emails were sent to around 18 000 email addresses.
- The Organising committee (OC) has with the help of the Program Committee (PC) and the Communication Task Force (CTF) printed 7 brochures, from the First announcement to the Final Programme, plus 11 other printed issues.

- CTF has with the help of OC performed severe media activities, which resulted in 115 journalists being registered for TRA 2008. Several press conferences and press briefings were organised for them.
- All plenary and strategic sessions, as well as one half of thematic sessions were taped and the presentations of those speakers who have granted permission to do so, are available on www.videlectures.net.
- As a result of all abovementioned activities, 1272 participants registered for TRA 2008, which is 30% increase compared to TRA 2006. 33 exhibitors were present and the exhibition was left opened for general public on Wednesday afternoon and Thursday morning.

1.2 Conference Programme

Conference programme followed the recommendations of the TRA 2006 wrap-up report which suggested:

- to keep the slogan “Greener, Saver and Smarter Road transport for Europe”,
- to reduce number of parallel strategic and thematic sessions; the later were therefore reduced from 10 to 6,
- to improve the scientific quality of contributions.

During the course of preparation it was agreed:

- to reject only those papers that really did not fit the conference objectives or their quality was poor and
- to invite the authors that would not be selected to give oral presentations in the thematic sessions to prepare posters; seventh parallel interactive (poster) sessions were organised for this purpose.
- To select as the main topics of the conference:
 - Transport and Climate Change,
 - Green and Smart Transport and
 - Traffic Safety.

These topics were introduced through the plenary sessions (the first two as round tables) in order to provoke discussion in the following programme.

1.3 Program committee

The Program Committee was composed of 18 core and 22 corresponding members from 16 countries and representatives of 3 Directorates General (DGs for Research, Information Society and Transport and Energy). Special thanks for successful organisation of the conference programme goes to:

- 7 pillar leaders who have organised paper reviewing, selected papers for oral or poster presentations and proposed the moderators; a full electronic web based paper revision system was developed to facilitate the reviewing process,
- CEDR, ERTRAC and EC who have contributed to the programme and have taken responsibility for organising a number of strategic and thematic sessions,
- paper reviewers who have requested improvements and selected the papers that were presented,
- CTF who played in important role in organisation of plenary sessions and
- moderators who have successfully run the programme during the conference.

Programme was organised around plenary and strategic session, where most speakers were invited to give presentation or take part in round tables. From the 36 thematic sessions, 9 were organised mainly by different DGs, while the remaining 27 were filled with speakers who submitted papers. 118 authors presented posters in additional 5 poster sessions.

423 abstracts were received, 416 authors were invited to submit papers. As a result, 324 full papers were received that were evaluated by the PC. 133 were selected for oral presentations, which with additional 74 invited speakers resulted in 207 speakers in 50 sessions.

Index of the Conference Proceedings lists over 700 authors and co-authors.

1.4 YEAR – Young European Arena of Research

One of the main successes of the TRA 2008, that did raise the scientific quality of the event, was organisation of YEAR competition. Despite the very late start of activities, caused by late evaluation of the 7th Framework Programme proposal that financially enabled the competition, contributions from 294 PhD students and other early-stage researchers from most European countries were received. 50 best, selected by a jury of eminent experts in the fields, were invited to prepare posters and present them at TRA 2008. 47 of them actually arrived to Ljubljana. Commissioner Dr. Potočnik, ERTRAC Chairman Dr. Steiger and the responsible pillar leader presented medals to the three winners in each of the 6 pillars/topics. Preparations of YEAR 2010 have started immediately after the TRA 2008.

1.5 New Member States issues

One of the main drawbacks of the Goeteborg conference was extremely low number of participants from the New Member States and other non-EU European countries. To correct the picture, the local organisers and FEHRL¹ have successfully defended a project proposal under the 7th Framework Programme that provided financial support to invite 70 to 100 participants from these countries to Ljubljana. Financial grant varied from registration fee + some travel expenses to ½ of the registration fee. In addition, TRA was heavily advertised in these countries, among others with a special brochure dedicated to these participants. As a result, apart from 237 delegates from Slovenia, 186 participants from other NMS and non-EC European countries registered for TRA 2008, which is around 20 times more than came to Goeteborg. A special strategic session on NMS issues was organised by the CERTAIN² project. The main results were that among researchers strong interest exists for better involvement into European Research Area, but several obstacles remain, among others insufficient national support for implementation or results and lack of co-funding of the EC co-funded research projects.

1.6 On the move to TRA initiative

TRA is not another conference but an arena that should bring together all stakeholders in the area of road transport. Therefore a slogan:

“On the move to TRA”

has been initiated to be used at every event (conference, seminar, workshop...) between the two Transport Research Arenas, in order to remind participants that the next TRA is approaching.

¹ Forum of European National Highway Research Laboratories

² Central European Research in Transport Infrastructure, a 6th FP coordination action

1.7 Other activities

TRA has really made a major step towards and arena in the area of road transport. Apart from the regular programme it has welcomed the following committees and consortia who had organised events during, before and after the conference:

- IRF (International Road Federation) General Assembly and safety awards presentation,
- OECD (Organisation for Economic Co-operation and Development) and ITF (International Transport Forum) workshop on Long-Life Pavements,
- CEDR Governing Board,
- FEHRL General Assembly,
- eSafety workshop,
- 2nd FEHRL/SHRP (US Strategic Highway Research Program) workshop on non-destructive testing and
- 11 other project meetings.

2. Scientific conclusions

TRA 2008 has reported outcomes and activities which relate to research across the arena of road transport. Some research was fundamental and basic; some was related to technical developments, some to the findings of trials and demonstrations and some to the development of future visions. The research has been reported in the various presentational sessions, at the exhibition stands and through some excellent poster sessions. In particular, the student competition demonstrated for the first time the quality of research the next generations of European researchers are producing.

It is impossible to do justice to all contributions to the TRA 2008 in just a few paragraphs. The following summary is based on inputs from most of the sessions' chairmen and some personal observations. It does not give a blow by blow account of each session, but it is trying to draw together some concluding comments under the following topics:

- Environment,
- Safety,
- Vehicles,
- Mobility,
- Roads,
- Network management,
- Design and production,
- Future and
- General comments.

As the comments have been largely derived from the session chairman and, as such, the emphasis is on what is still to do as well as what has been achieved. Generally, substantial progress has been made in all the areas of the technologies, systems and behavioural understandings since the last TRA in Göteborg. Most particularly the Global warming has become an overweighing issue. Many research studies initially focused on areas such as safety or congestion, but have now included global warming impacts in their work. These four very clear and compelling characteristics from the first plenary session well described the *21st Century climate challenge*:

1. It is cumulative.
2. The effects are irreversible.

3. Time lags are large – today's emissions are tomorrow's problems.
4. It is global.

If we can successfully address the global warming challenge, many of the other issues of congestion and safety will also be met.

2.1 Environment

The main conclusions were:

- Global warming is the most important issue facing society and transport has a crucial role to play in meeting the aggressive targets for CO₂ reduction. How we will do this still largely remains to be addressed, but some research indications and suggestions have been presented.
- Much evidence was presented of the likely evolution of fuel use from current petrol/diesel model to electric/hydrogen based fuels. This is driven by the availability/price of oil as well as carbon reduction.
- Many papers reported on non CO₂ emissions, their reduction and trade offs between NO_x, CO, particulates, CO₂ etc. Noise reduction was also a significant focus of research activity.

2.2 Safety

The main conclusions were:

- There are large variations in accident levels across Europe which could and should be addressed by conventional approaches. Infrastructure, training and enforcement measure are crucial to delivering safety and best practice is known and presented.
- We should focus on serious injury accidents as well as fatalities as this will increase statistical evidence and perhaps lead to innovative solutions.
- The involvement of different disciplines is crucial to the understanding of accident causation and remedial actions, and there were several examples of how these could be brought together in projects.
- Human factors research is delivering new understandings of driver behaviour and the safety implications will become increasingly important with changes in driver functions, and population characteristics.
- Vehicle manufacturers will continue to deliver increasing levels of safety but a more integrated stakeholder approach is necessary to generate market penetration and the integrated systems of the future.

2.3 Vehicles

The main conclusions were:

- Research has shown the potential benefits of cooperative driving systems to improve safety and reduce environmental impact.
- More research is needed to further develop technologies and to construct viable business models for all stakeholder groups and roll-out strategies for safe and sustainable vehicles.
- Considerable recent and ongoing research into powertrains, and dealing with energy loss as general, is providing substantial incremental benefits in terms of efficiency and the environment.

2.4 Mobility

The main conclusions were:

- Innovative vehicle types and technologies being researched will contribute a rich mix of opportunities for mobility systems and services for both people and goods.
- Demonstration programmes such as CIVITAS already show benefits to a wide range of stakeholders. Larger scale projects would show impacts more effectively and could demonstrate and encourage the step changes in mobility systems and services, which may be necessary for the future. Show cases are important.
- New approaches backed by hardware and software are offering opportunities for more efficient, safe and sustainable goods movement.
- The effects of a wide range of ways of improving public transport services are increasingly available to inform better policy decisions.
- The systems and services are not yet in place to provide ubiquitous information to travellers and shippers.

2.5 Roads

The main conclusions were:

- Much more innovation is needed in highway engineering to improve safety, reduce pollution and congestion, better cater for truck movements and deal with the problems of aging infrastructure.
- This includes maintenance and renewal techniques to minimize disruption and the effect of climate change.
- There are substantial opportunities for collaboration with the US on highway design and maintenance (This is one of several areas of potential TRA/TRB linkage).
- New approaches to managing and prioritising road space are needed.
- Innovative approaches are needed to generate the resources to improve infrastructure. Risks and their management need to be better understood.

2.6 Network management

The main conclusions were:

- Access management by charging is technically sound and proven approach. Evidence shows that once introduced it is accepted by the public. Taxation remains an issue to serve political support.
- New hardware, software systems and services are needed to deliver network state estimation.
- Integrated system management approaches are needed.

2.7 Design and production

The main conclusions were:

- New concepts and approaches to design and production are being developed, which will contribute to international competitiveness.
- New organisational structures are being developed
- Detailed design and production techniques have been shown for powertrains and new materials for vehicles.

- Pavement material research is delivering more durable and cost effective design opportunities.

2.8 Future

The main conclusions were:

- A comprehensive and long term strategic vision should be developed.
- Research is needed for policy development and implementation, including the roles of all stakeholder groups.
- Understanding attitudes and behavioural change are crucial for the implementation of technology strategy. Changing mobility levels (for access) will have social and other impacts which need to be better understood and managed.

2.9 General conclusions

The main conclusions were:

- EC funding is important and essential for innovative, large scale and cross section activities.
- A multi-stakeholder, multi disciplinary approach is increasingly accepted by all actors. This is fundamental to ERTRAC approach.
- More third country participation is needed.
- Radical and innovative approaches are required if we are to make the step changes essential for the delivery of sustainable future. We must provide sustainable and acceptable choices for all transport users. A system approach is needed to bring together the systems, services and users.
- We as community are still growing up for climate change related research and we can expect major developments being presented at the next TRA in Brussels. As a result of the research presented here transport is already moving toward a smoother, safer, smarter future!