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1. Introduction

In recent times where multiple economical, political, social and environmental objectives are urged to be met, the transportation sector, as one of the most important civil infrastructure components, is forced to provide the necessary conditions for social welfare improvement. For achieving such objectives one of the most important aspects is to coordinate forces that lead the organization of the transportation sector. This role of coordination (by providing the means for dissemination of new ideas and ultimately an international forum that can help provide a necessary fore-sighting transportation-related think-tank) has already start to be constructed within the European community, with the series of the Transport Research Arena (TRA), that have already taken place in Sweden (2006), Slovenia (2008) and Belgium (2010). Under this perspective the TRA 2012 to be held in Athens Greece, aims to cover the multidiscipline content of the transportation sector, providing an inter- and ex-changing forum of ideas and best practices selected from across the globe, organized in such a way that all stakeholders (public and private authorities, researchers, practitioners, etc) can benefit from.

This proposal for organizing TRA provides the main/essential steps for expanding the influence and significance of the great opportunity that Conference of European Directors for Roads CEDR, the European Commission-EC, the European Road Transport Research Advisory Council-ERTRAC, the European Rail Research Advisory Council-ERRAC and the European Technology Platform Waterborne-WATERBORNE is endorsing by taking the responsibility to organize the Transportation Research Arena. The concepts that this effort is made are based on the lessons learned so far from past TRA organizations, international experience and the minutes of the last TRA kickoff meeting held in Brussels last June (at the end of the TRA 2010). The proposal starts by presenting the Mission and Objectives of the new structure of the TRA. This is followed by some of the boldest Lessons Learned from past TRAs, helping to identify issues that could strengthen future organizations. The proposed new architecture is presented by detailing the Structure and Organization of 2012 TRA, while Special Events and Pre/Post-TRA Activities are integrating the new form of the event. Finally, the proposed Plan of Action offers the necessary initiatives that should be undertaken so that, no time is wasted, that could harm the success of the event.
2. Mission and Objectives

In recent times where multiple economical, political, social and environmental objectives are urged to be met, the transportation sector –as one of the most important civil infrastructure components- is forced to provide the necessary conditions for sustainable social welfare improvement. Under this perspective, the mission of the Transportation Research Arena, as it is exposed by its successful past experience, is to provide a vibrant forum covering the activities of the wide spectrum of stakeholders in the transport sector, giving the opportunity to exchange their ideas, needs and future plans within the community.

For achieving this mission the TRA 2012 to be held in Athens Greece, the main objective is to cover the multidiscipline content of the surface transport sector (including road transport, rail transport, waterborne transport and their interfaces), in such a way which can provide an inter- and ex-changing open forum of ideas and best practices selected from across the globe, organized in a manner that all stakeholders (public and private authorities, researchers, practitioners, etc) can benefit from (e.g. ERTRAC, ERRAC and WATERBORNE). By achieving this objective an unofficial but invaluable fore-sighting tool into future industrial and scientific trends is constructed, widening the perspective and information of the European and Global delegates and helping the expansion and strength of networking within the members of the community of transport planners and policy makers, an element that is essential in a contemporary/modern form of government. It should be stressed that the importance of this aspect has been explicitly identified by the EU, since an Open Call within the FP7 is dedicated to the support of such an action.

3. Lessons Learned from Past Organizations

The Transport Research Arena has been organized for three consecutive bienniums with considerable success and results for an event of this difficulty and complexity. By taking into consideration all past organizations and concentrating on the two most recent (Slovenia 2008 and Belgium 2010) some remarks should be taken into consideration for the restructuring endeavor that is presented in this proposal. Starting from the TRA2006 in Goteborg, Sweden, a financial support issue was raised (included in the Wrap up Report). The issue of not standing to the scientific level that was expected is mentioned and proposals/wishes for next TRA on tackling those difficulties are raised for the first time.
Concerning the following event (TRA2008) and reviewing the booklet of the TRA Conclusions, the event was organized by focusing on particular aspects (as reflected in the TRA mottos: Greener, Safer, Smarter and Urban Mobility) of the transportation sector. This choice gave the opportunity to attract the attention of specialists and experts on these issues and increasing the competition on the awards that have been offered there. On the other hand, this restriction in the Call discouraged researchers and industry fellows to participate in the TRA. In this regard, the first point that should be stressed is the need for broadening the audience of the TRA by widening its thematic aspects, an issue that might be considered in the reformation of the TRA 2012. The paper review process was based actually on the Abstract Review strategy, affecting the submitted and the presented papers.

Moving on to TRA2010, the organization this time was greatly expanded, covering issues that can be classified into broader categories, namely, *Future Transport, Sustainability and Urban Mobility*. This time the audience was marginally widened but by no means was the organization given the opportunity to be representative of the transport sector. The paper review process was based first on the Abstract Review and then the Full Paper Review strategy with (more or less) the same results on the quality of the papers presented. Having taken into consideration the two previous TRAs, a structural reorganization is proposed, following the standards of the most successful and established International Conferences in the transport sector. This reformation is provided in the following section.

4. Structure and Re-Organization of the TRA: TRA2012

The previous short description of the lessons learned from past TRAs, the alterations, modifications and additions proposed here are concentrated mainly on the following issues: the broadening of the TRA scope and elevation of future submitted papers quality. These can be achieved by the thematic re-organization of the TRA and by the papers management process (from the Call-for-Papers to their final publication and dissemination). A complete proposal for these two aspects is provided below.

The re-structure of the TRA starts from its thematic re-organization. The thematic re-organization for the TRA2012 now aims to span the entire spectrum of the transportation sector and involve industry, authorities, professionals and the academics. Additionally, in terms of the approach, it should be significantly broadened for incorporating surface modes (road and railways), waterways, and their common interfaces.
The proposed TRA organizational structure identifies 8 distinctive *Thematic Pillars* which are of both European and global interest and that give the opportunity for fore-sighting into the transportation sector. The proposed formation (which is indicative and not restrictive) has been synthesized based on the international experience on relevant serious events and the recently released (8.30.2010) *Terms of Reference (ToR)*.

These are:

1. *European Surface Infrastructure R&D*
2. *Management of Transport Infrastructure*
3. *Mobility Management (Transportation Planning)*
4. *Transport Safety and Security*
5. *Vehicle-Infrastructure Interaction*
6. *Public Transportation*
7. *Energy, Environment and Sustainability*
8. *Multi-modal Transport*

This broad list of Thematic Pillars that is proposed for the TRA2012 (but also provides the base of future TRA activities) actually are, individually, a conference by itself and the TRA offers the mean to integrate them into a consistent framework that eases both dissemination as well as the agglomeration of information related to (at least the most important aspects of) transport. These Thematic Pillars are presented in Figure 1.

![TRARestructureProposal](image)

**Figure 1.** The proposed Thematic Pillars of the TRA

Then, each Thematic Pillar is further composed of (sub-)committees covering the elements of each theme, in a modular way and these are further analyzed in sections and actions for deepening into each aspect. The structure of a typical Thematic Pillar is presented in Figure 2.
As shown to all the above description, the TRA are now significantly broadened and actually constitute (if approved and successful) a Global Event for the transportation sector, involving 8 large conferences into one framework. The success of this endeavor is based on two aspects, namely, the organization and the personality of the experts that will serve each position. Starting from the organizational structure of the TRA, this should ensure both a centralized decision-making process (for maintaining the standards of the TRA) as well as a de-centralized freedom to the members of each action (to ensure flexibility and the blossoming of initiatives). To achieve these two conflicting objectives, the organization and the management of the TRA is proposed to be based on the scheme that has been followed up to now. In particular the three committees that actually govern the TRA (the Management Committee-MC, the Program Committee-PC and the Organization Committee-OC) continue intact with their duties, names and organization since they have been successful in their missions. In Figure 3 the structure of the TRA management organization is provided.

**Figure 2:** The proposed structure of a typical Thematic Pillar
On the other hand, the duties and the members of the PC are proposed to be altered, in order to cope with new TRA needs. As so, the PC should be comprised of three distinctive classes of appointed members: the first being members of the past PCs (Chairman, Deputy Chairman, the former PC Chairman and a number of experts, nominated by the Stakeholders and through invitation of the PC and approved by the MC), the second being the Heads of the Thematic Pillars (they will carry most of the workload) and the third by internationally experts and/or distinguished members of the transport sector that could pursue their influence in attracting papers and activities of increased value from authorities, academia and industry:

**Table 1. Proposed formation of the PC**

<table>
<thead>
<tr>
<th>European Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chairman</td>
</tr>
<tr>
<td>Deputy Chairman</td>
</tr>
<tr>
<td>Former PC Chairmen’s</td>
</tr>
<tr>
<td>A number of experts, nominated by the Stakeholders</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Head of Pillars</th>
</tr>
</thead>
<tbody>
<tr>
<td>- European Surface Infrastructure R&amp;D</td>
</tr>
<tr>
<td>- Management of Transport Infrastructure</td>
</tr>
<tr>
<td>- Mobility Management</td>
</tr>
<tr>
<td>- Transport Safety and Security</td>
</tr>
<tr>
<td>- Vehicular Technology and Vehicle-Infrastructure Interaction</td>
</tr>
<tr>
<td>- Public Transportation</td>
</tr>
<tr>
<td>- Energy, Environment and Sustainability</td>
</tr>
<tr>
<td>- Multi-modal Transport</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Distinguished Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 10 Members</td>
</tr>
</tbody>
</table>

**Figure 3.** The management structure of the TRA2012
The total number of the PC should not exceed 40 members such as to allow for flexibility and ensure rapid consensus.

After addressing the issue of outlining the architecture of the scientific and program organization (assigned to the PC), the second step concerns the review process for the papers to be uploaded to the TRA. It is necessary to be reminded that this step has an effect on the quality of the papers that will be presented at the TRA and also to the legacy and the post-TRA eco. At first a Full Paper Single-Blind Review (the reviewers will have the names and affiliations of the authors but the authors will not be informed on the reviewers set) strategy should be followed for the TRA2012. In terms of the review process, if the preliminary abstract- and then full-paper review process is to be maintained (as in the previous events), this should be the last time. It is proposed that such an important event should be considered to have one deadline for papers submission and this should be for the full paper submission.

In the review process, each reviewer will be supported by a scale-based ranking tool for each paper and will provide his/her comments on each paper, taking into account the Review Guidelines (provided earlier by the PC), which will seek to approve papers that are not either strictly theoretical nor industrial/application-oriented. The selected papers –broadly- should provide/present a balanced mixture of applied (but sufficiently theoretical supported) and methodologically innovative studies, covering all aspects of R&D: from basic sciences, socio-economic research, to applied sciences and demonstration activities.

The reviewers should provide a thorough review on the papers and suggestions on three issues:

i. Should the reviewed paper be considered for presentation at the TRA2012 and included to the TRA compendium?

ii. Should it be re-considered for journal publication?

iii. Is it eligible and suggested for some award?

The reviewers should provide their recommendations to the Head of each Thematic Pillar, who will be responsible for the final editorial decision.

4.2 PC Members Job Description Summation

The PC members, specifically the Head of Thematic Pillars are responsible for four main duties. The first concerns the suggestion to the PC of the names for recruiting the Chairman of each sub-committee and Section. These should be provided by the end of this year (2010). Next, and up to the end of the Abstract Submission date, they should come up with a tentative list of possible reviewers, for supporting the activities of each Thematic Pillar.
The next duty is to follow the reviewing process and be responsible for the final suggestion on paper acceptance/rejection. Finally, they should recommend the publication possibilities in international peer-reviewed scientific journals. This should be completed by the end of the Abstract Reviewing process.

5. Publication Process

One of the most important elements affecting the quality of the papers attended to the TRA is paper exposure and readability opportunities. To cover this important feature, two actions are proposed. The first concerns (in addition to the provision of a well documented Compendium of the TRA Papers) the online exposure of all papers titles, authors’ names and abstracts, well before and after the TRA.

The second and most important feature that is expected to attract papers of increased quality is publication opportunities. The treatment of this issue can follow two options:

i. The announcement (under the responsibility of each Pillar Chair) in each thematic Pillar the publication of selected papers to be recognized in International Journals (preferably included in the ISC index). This strategy provides the opportunity that the authors have an additional incentive to prepare a quality paper, due to the publication opportunity.

ii. The establishment of a new publication (something similar to the TRA-Record), covering all thematic Pillars. Under this strategy, all recommended papers can be included in this special edition, thus achieving two objectives, namely, improving the quality of papers but also (and most importantly) strengthening the legacy of the TRA. The Editorial Board of this edition will be formatted by the Program Committee members and selected scholars and industry members that have provided their help to the TRA by serving as sub-committee chairs. The term of the Editorial Board (Editors) as well as of the Editor-in-Chief should not be less than two terms of the TRA, while the replacement rate of the Editorial Board should not exceed 40% of the places, for achieving both renewal but also continuance. The publication of this new edition can be executed in two ways. The first is to negotiate the publication with an established and well-known International Publisher, who can incorporate this edition within his/her series. This has the advantage of relying on and benefiting from the reputation of the publisher. On the other hand a new publication can be established ‘from scratch’ relying on the reputation of CEDR, the European Commission, ERTRAC, ERRAC and the WATERBORNE.
The final decision on this issue should be discussed amongst the Management and Program Committees. Also, pending is the issue of the total number of the papers that will eventually be published to the Journal(s).

Finally, an important element is post-TRA evaluation. This should be organized by surveys among the TRA delegates and attendants and by the members of the three TRA Committees.

6. Special Events

6.1 TRA Awards
To attract the interest of high-quality papers and the presentation a number of focused awards can be offered. Some thoughts on these possible awards can be the following:

- **Best Paper Award.** This award applies to all papers eligible for presentation on the TRA. No age or other distinction is taken into consideration but to the quality of the paper. Again, an initial suggestion will be given by the reviewers to each Pillar Head and then all suggested papers will be scrutinized by the Scientific Committee which will make the ultimate decision.

- **Practical or Professional or Industrial Innovation Award.** To strengthen the link between the TRA and Industry, a presented work of industrial innovation will be provided. The suggestion will be given by the reviewers but the final decision will be made by a pre-selected group of industry-fellows.

- **Best Presentation Award.** This award focused on the quality of the presentations. The chair of each session will make an initial suggestion and the final decision will be made by a Scientific Committee (members from the PC), based on the presentation video.

6.2 Year Young Researcher Award
This award is focusing on the vibrant community of young researchers who are entering the transportation field (reflecting the very successful action now named Year Young European Transportation Research Arena Award). The award should be given to a (or a team of) young Ph.D. candidates (under 35) that provide a paper of the highest quality, as determined by its review results. An initial suggestion will be given by the reviewers to each Pillar Head and then all suggested papers will be scrutinized by a Scientific Committee (members from the PC, EU, FP7 Project and International Experts) which will make the ultimate decision.
6.3 Workshops/Sessions

Taking advantage of the presence of important delegates and the mixture of the attendees, a great opportunity for information and knowledge dissemination is available. As so a number of Workshops and Special Sessions can be held within the activities of the TRA, organized by invitation or by proposition of a distinguished scholar, an industry member or an international association of the transport community. The call for workshops/sessions and the special invitation for organizing the workshops/sessions remain on the duties of PC and the MC, whom are also responsible on the final decision/approval of these activities. It is explicitly noted that the papers included in the special sessions should follow the same review path, as the standard papers submitted to other TRA sessions.

Regarding the workshops/sessions open call, these should be included on the formal Call for Workshops that will be ‘aired’ on the full paper submission closing date. Each potential workshop/session organizer should be addressed to each Pillar Chair, providing a description on the content and value of the workshop theme. Moreover, each Pillar Head can initiate a workshop/session by inviting a special guest (or a team of experts) to offer their expertise, on an issue of special and/or current theme.

7 Knowledge Center

One of the most important issues for the success of the series of conferences (like the TRA) relies to the formation and maintenance of a knowledge base. As far as the PC is concerned, this can be achieved by a well-designed website and its continuous management such as to constitute a knowledge center. The knowledge center should be open and regularly updated, in order to comply with the following principles:

i. Provide a forum for the dissemination of past and future events. The site should be the official source of information for the activities concerning the TRA and it is important that it should be maintained for all TRAs to come. Also, all TRA activities and paper management should be done through the knowledge centre, increasing the site ‘hits’ and thus importance and relevance.

ii. Provide access to all papers presented and/or published at the TRA. This is important since such a service is greatly appreciated by the possible authors of the papers (because it provides exposure and importance to their work), elevating the quality of the papers submitted. Several issues should be arranged for this action, such as the access policy, pricing strategy, etc.
iii. In should manage and service the registration database since this is the ultimate step of finalizing the TRA program (a process that the PC should be aware and informed of). All relevant issues (banking services etc) must be handled through the website.

iv. Consolidating the legacy of the TRA. A properly designed website provides the means for the TRA think-tank to influence the transportation industry. It should be explicitly highlighted that the knowledge centre is an organization by itself that should be carry over and maintain its information and brand (in a seamless manner) for all TRA in the future.

The responsibility of the TRA website should be under the authority of the PC and OC committees (or possibly to a suitably selected sub-committee of 3-4 persons of the PC). The knowledge centre should be immediately scheduled and implemented.

8 Dissemination

An issue affecting the success of the TRA 2012 is the information dissemination process. The area of the transportation conferences (but in general for scientific conferences) is highly competitive, with a number of active such events now available (at least 3-4 per year). In order for the TRA series to be taken into serious consideration (and schedule) by the transportation research community, a thorough dissemination strategy should be formatted by establishing a communication task force, under the auspices of the OC. This involves an extensive exposure of the event to the relevant magazines and international journals, presentations to international conferences, appearances in relevant websites etc. A decision should be taken on the dissemination plan and in particular if this will be executed by the members of the PC or a media/public relations brand (with significant expertise on relevant activities) will be assigned for supporting this action. In any case this is an important and demanding issue that should be carefully treated.

9 Plan of Action

The success of the TRA 2012 is obviously based on actions that should be immediately undertaken. The plan of action for the near future is comprised of at least the following tasks (not hierarchically but simultaneously):

i. The first action that is essential (or critical) to be taken is the formation and the uploading of the preliminary Call-for-Papers. It is an urgent task since it actually constitutes the kick-off point for the next TRA. A draft version of the ‘Call’ is attached (note that the final arrangement of the artwork is still ongoing), while the final version (containing the PC names and final topics) is anticipated until the deadline of the Abstract Submission.
ii. The Chairman of the Program Committee should take the responsibility and effort to contact the proposed Pillar Heads and ask for their participation in this great event. Following these contacts, the Pillar Heads should take some time (one month) to suggest any modifications or improvements to the initial TRA modulus setup and to come up with some distinguished scholars or industry fellows to staff the sub-pillar sessions. This recruitment activity should not be undertaken without the certification on behalf of the Program Committee (or the Chairman of the Program Committee) for each suggested member. An update of the Call, containing the names of the PC will be made after this action is completed.

iii. After completing the full pillar sub-committees recruitment a meeting of the Program Committee should take place (probably in Brussels) for setting up the standards of the organizational and executional issues. Such issues concern the dissemination of the information regarding the TRA to all forums of interest (e.g. International Conferences, Journals, and Magazines), the formation of the reviewers’ team for each Pillar, workshop organization, etc.

iv. The formation of the knowledge centre should be (in parallel) designed and implemented. At this point, the electronic infrastructure available from 2008 will be used (e.g. the CEDR artwork), while future improvements will be based on the same line.

An important issue is raised concerning the support of the above actions.

10 Timeline

A proposed timeline of the TRA preparation is presented in Table 2. Following the MC meeting in September, the Program Committee should bear in mind that a tight time schedule concerns 1.5 years of preparation. A draft program of the important dates follows:

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Launching the Call for Papers</td>
<td>30 October 2010</td>
</tr>
<tr>
<td>Abstracts Submission</td>
<td>30 March 2011</td>
</tr>
<tr>
<td>Decision on Abstracts/Invitation to prepare paper</td>
<td>15 May 2011</td>
</tr>
<tr>
<td>Full paper submission</td>
<td>15 September 2011</td>
</tr>
<tr>
<td>Decision on full papers</td>
<td>15 November 2011</td>
</tr>
<tr>
<td>Submission of final papers</td>
<td>30 December 2011</td>
</tr>
<tr>
<td>TRA 2012</td>
<td>23-26 April 2012</td>
</tr>
</tbody>
</table>

Table 2. The Draft TRA Call Schedule