



# **DEFINITION AND SCOPE OF *ECTRI*'s LONG - TERM STRATEGY**

## **THE *ECTRI* VISION OF A SUSTAINABLE MULTIMODAL TRANSPORT SYSTEM IN THE EUROPE OF THE FUTURE**

**October 2003**

**(Approved in ECTRI' s Assembly  
Budapest, 28<sup>th</sup> October 2003)**

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<sup>1</sup> Safe, secure, efficient, cost effective, and environmentally friendly.



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# Executive Summary

This document presents the strategic vision and mission of ECTRI. It begins with some basic «realizations» about the future of European Transport. These realizations, in effect describe the overall picture of the future European transport shared by the members of ECTRI. The most important of these «realizations» are the notions of an ever increasing demand for travel and transport, increasing traffic congestion in all parts of the networks of today, the need for higher quality of (transport) services, higher sustainability of the transport operation, safety and security, and the importance of the user / customer.

In addition to the above “realisations” the role and importance, of a number of “elements” or “factors” that affect the “overall” result i.e. the proper functioning of the transport systems and their innovations, is also stressed. These elements refer to the:

- Society’s trends and attitudes and the societal policies followed,
- Industry’s views, plans, and innovations (industrialists and operators)
- Attitude and the role of the various stakeholders
- Transport or transport related policy environment, and the policy making process,
- State and results of transport or transport related research, and finally
- The organisation and functioning of the different markets (transport or others).

A number of other potential future key issues are then mentioned and these are the following:

- Quality and affordability of transport services.
- True pricing of transport services through external costs calculation.
- Training and public information in the field of transport.
- Integration and optimization of the ICT<sup>1</sup> and their applications in Transport so as to achieve a truly integrated ITS in the Europe of the future.
- In relation to the previous point, provision of accurate certification mechanisms for products and new services especially in relation to the functioning of the European ITS.

- Integration of the various Transport services to form truly multi-modal networks.

The report is then presenting the relationship that exists between (transport) research and commercial applications of the research products, and shows that there is a close interaction in all stages of the 5 – 20 year cycle that is necessary to elapse between initial research and development until full market acceptance and integration. In relation to this “relationship” (which is diagrammatically shown in Figure 1), the report then goes on to define the role of each of the main “stakeholders” in the provision of transport services, and namely of the following:

- The Industry
- The policy environment and policymakers
- The operators / service providers and of the owners of infrastructures
- The users / customers and society as a whole
- The scientific community, and finally
- The public and private research funding structures.

Within the light of the above considerations and based on the founding aims and objectives of the ECTRI Association, it is stated in a clear and concise way that the core area of ECTRI’ s focus is:

*To work primarily towards a Single European Transport System which is truly multi-modal, safe and secure, heavy user of ICT, and reconciling the objectives of efficiency and environmental protection.*

The long - term **vision** of ECTRI is defined by a number of more specific “visions” which are as follows:

**A.** To achieve **Integration of European Transport Research** (starting with its members) primarily by effecting *common priorities* and programme of work, *mobility of researchers*, and working towards developing *Joint European Infrastructures (JEIs)* in some key areas of Transport research and / or research related activities. This calls, among others, for devising a way to jointly utilizing the current infrastructures within each Institute,

<sup>1</sup> Information Communication Technologies

and joining forces for building new ones at European level. Particular emphasis and priority will be given to integrating Institutes and research organizations from the new member states.

**B.** To provide an **independent – “intellectual” dimension of advice** towards the research funding bodies of the EU or member states whose thinking is currently heavily solicited by industry.

**C.** As an extension to the previous «vision», to create practical and usable **“links” between the results of applied research** and their **industrial transformation** into “products” or services.

**D.** To work (together with other relevant European Organizations and bodies like for example FEHRL, FERSI, and others) against European fragmentation of Transport research and provide a **uniform European representation** towards Transport research in the US, Japan, and Asia.

**E.** Promote coordinated and high quality **European - wide training options** for Transport executives.

**F.** To expand the European transport related experience and know-how to other countries and environments and vice versa.

*In materializing all the above strategic objectives, ECTRI will strive to create at the end a single European virtual Transport Research Institute incorporating the strengths and potential of all its members and utilizing their expertise and / or infrastructure in the different domains, to achieve the best possible results, while having a truly horizontal coverage of its core-area of focus.*

The **mission** of the ECTRI Association can be specified as follows:

- a. To create an ECTRI sponsored network of research infrastructures available for joint programmes of research or projects.
- b. To help European researchers especially young ones, to increase their mobility and training opportunities. The emphasis will be to young researchers from the new member states as well as the associated ones.
- c. To reinforce the position of its member Institutes and research Organizations in

their countries as primary Transport research bodies and centers of excellence in Transport research.

- d. To acquaint its members with the policies and practices followed by each other within their National research priorities and policies, and promote discussion with a view to reconciling these policies vis-à-vis the ECTRI’s common vision, and the EU’s policies for Transport research.
- e. To create and keep open, permanent links and liaisons with the EU’s three DGs that are active in supporting transport research (i.e. RTD, TREN, and INFSO) with a view to providing advice and assistance in their (transport research) policy formulation and helping them to go beyond their “industrial focus” of today without neglecting the needs of other DGs like DG ENTR or DG ENV.
- f. To create and keep open, acting in co-operation with other European Organizations, permanent links and liaisons with the US TRB, and similar bodies in Japan, Korea, China, India, and Australia.
- g. To promote an open and free exchange of information on what happens in Transport Research at national level by creating state-of-the-art reports, and organizing other appropriate events and activities.
- h. To promote dissemination of research results and knowledge transfer between European researchers, especially in an East - West notion.
- i. In the sense of the previous point, to support its members in formulating and promoting joint proposals for research within the current 6<sup>th</sup> FP calls (or other programmes and calls) as a first step towards co-ordination and co-operation of its member Institutes and research Organizations.
- j. To produce a Joint Programme of Activities (JPA) valid for 3 years periods that pursues the ECTRI vision and defines the ECTRI business in the same time period (ECTRI 3-year Business plan).

In fulfillment of its above mission ECTRI formulates and updates regularly a specific 3-year *Joint Programme of Activities* (JPA). This is an internal document approved by the ECTRI Assembly and forming the background to all of ECTRI’s activities.

# Main Report

## 1. BACKGROUND AND FRAME OF REFERENCE

### 1.1 Introduction

1. ECTRI was created as an Association, at the beginning of the 2003 in order to fulfil what was perceived by its founding members (themselves leading European Transport Research Institutes and Organisations) as an overwhelming need for concertation, coherence, and integration in European Transport research. This perception stemmed from a wider perception of the needs and priorities for European Transport in the coming decades, as they appear to shape now based on the current European socio-economic environment, the trends of EU enlargement, and the Transport policies currently formulated by the EU and the National European governments.

2. This perception of the needs and priorities for European Transport in the coming decades, i.e. what we call the “ECTRI’s vision of a safe, efficient, cost effective, and environmentally friendly multi-modal transport system in the Europe of the future” is our starting point.

3. There are several studies and “Scenarios” relating to the future needs and priorities of European Transport that have seen the light of publicity recently. ECTRI notes in particular the “vision” projected by the EU’s White paper on Transport Policy<sup>1</sup>, which in itself is a “de facto” basis for looking at the future. There are however, still important differentiations and “precisions” that have to be made in order to take into account the “National dimension” i.e. the specific conditions and restrictions that apply in each country. In fact one of the main reasons for creating ECTRI, was to help towards more “harmonisation” and “consensus building” about the desired and/or advisable future Transport or Transport related policies and priorities and to help towards their integration and harmonisation at European (EU based), National, and local or regional levels.

4. Besides this, we strive to underline the role and importance, of a number of “elements” and “factors” that affect the “overall” result i.e. the proper functioning of the transport systems and

their innovations. These elements refer to the:

- Society’s trends and attitudes and the societal policies followed,
- Industry’s views, plans, and innovations (industrialists and operators)
- Attitude and the role of the various other stakeholders
- Transport or transport related policy environment, and the policy making process,
- State and results of transport or transport related research.
- The organisation and functioning of the different markets.

### 1.2 Some basic realisations about the future

5. As we run the first decade to 2010, and look towards 2020 and beyond, transport in Europe stands at a crossroads of technological development opportunities that will radically change its face, but also of yet unresolved institutional and other policy issues that will determine the range and extent of these changes.

6. As the remaining restrictions to trade and travel are gradually removed and the liberalisation of the transport market in European Union countries becomes complete, transport organisation and operation at European level will seem to proceed at two speeds. One, characterised by higher organisational efficiency and freedom, and led by technological solutions that are now already at various stages of development, and one lagging behind in technological and operational efficiency and marred by restrictions and other impediments.

7. A first common realisation is that Transport volumes (passenger or freight) are likely to further increase, both overall and within certain modes. By some forecasts cross border traffic is expected to grow by 2-3% per year while by 2010 some 20-40% more trucks are expected on the EU roads. It is an open issue whether the current predominance of road transport will continue to increase in the coming decades.

<sup>1</sup> “European Transport Policy for 2010: time to decide”, White paper report no. COM (2001) 370 of 12/9/2001.

This issue is likely to remain open until credible alternatives are presented to the users either in the form of rail or multimodal transport. At the same time, a shift of the transport flows (freight predominantly) can be foreseen from Western European corridors to Eastern and South – Eastern ones as development moves at higher rates in these parts of Europe and as the great majority of new EU member states are from this area. In a more “local” level a similar shift of traffic flows is foreseen towards the rural areas as they will become increasingly, destinations of more and more transport movements. The needs of these areas will increase both for freight and passenger transport and are likely to be posed much more strongly than today. Any improvements there will therefore have to be materialized alongside with interlinked improvements to transport services for urban and inter-urban areas.

8. **R**elevant to this first realisation, is that traffic congestion in all transport modes, but more particularly in the road network, will become more and more serious and likely to require urgent and technologically advanced measures. For urban transport more particularly and given the difficulties of creating new infrastructure, this will require urgent investments in intelligent Urban Traffic Management systems, urban transit, and urban logistics, but also on ways to manage transport demand and induce people’s travel behaviour to adjust to the available capacity in each corresponding network. Transport problems in the suburban areas coupled with the continuing trend of urban sprawl are also likely to become more pronounced.

9. **A** second major expectation is that the quality of services to be provided by our future Transport system will be higher (indeed much higher) than today’s. The future European transport system will have more market-induced quality and is expected to be:

- More multi-modal;
- Routinely using more Information & Communication Technologies (ICT);
- Widely available to small and medium sized users;

- More environmentally compatible; and
- More user (customer)-oriented.

10. **O**ur third expectation concerns the increased role and importance of sustainability in the field of Transport with primary goal easing the various transport related environmental problems. This will make in the future, as a top priority research subject but also of development and commercial applications, among others, the issue of alternative fuels and dual mode vehicles. Directly related to the issue of “sustainability” are also the organizational measures and actions to effect urban travel habits and transport services (particularly urban freight) in order to achieve environmental objectives.

11. **F**ourthly, ECTRI would like to emphasize the increasing role and importance of the “user” (or “customer”<sup>1</sup>) and society as a whole in forming and implementing successful transport policies and projects. In the coming years this social dimension of transport policies must be given a far more thorough and increased role in facing the various transport problems.

12. **S**afety and Security of Transport will remain as key issues in the coming decade(s). Reducing the number of people killed or injured in Transport accidents must remain as one of the main objectives of transport policies together with that of providing secure transport services especially for the more vulnerable modes (e.g. air transport). The actions taken in the field of road safety by certain states and the very positive results they have achieved so far must form a useful guide as to what all European countries should do in the future.

13. **A** number of other potential future key issues do exist besides the above. These refer to all modes of Transport, and are the following:

- Quality and affordability of transport services.
- True pricing of transport services through external costs calculation.

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<sup>1</sup> The important difference between a «user» and a «customer» is that in the second there is a strong element of choice in its behaviour. For example the «customer» who chooses a particular airline for a trip (among many) is the «user» of the air traffic control system.

- Training and public information in the field of transport.
- Integration and optimization of the ICT<sup>1</sup> and their applications in Transport so as to achieve a truly integrated ITS in the Europe of the future.
- In relation to the previous point, provision of accurate certification mechanisms for products and new services especially in relation to the functioning of the European ITS<sup>2</sup>.
- Integration of the various Transport services to form truly multi-modal networks.
- Future development of the industries providing vehicles, components, or systems of Transport.

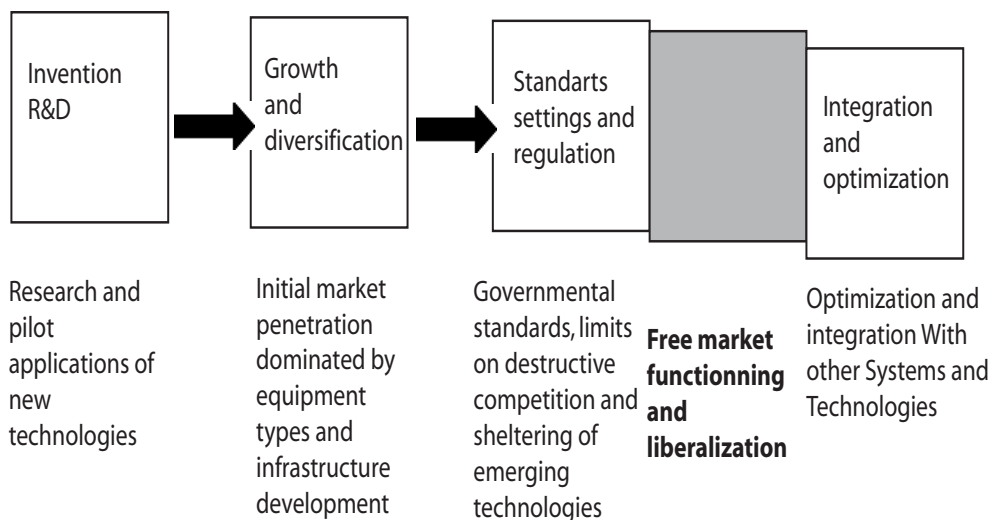
14. ECTRI refers to all the above issues and prospects as the *Sustainable European Transport system of the future*, i.e. the (desirable): *safe, efficient, cost effective, and environmentally friendly multi-modal transport system that we want for satisfying our mobility needs in the future*.

15. In the following we look at the role of research in fostering this vision of the European Transport system of the future, and correspondingly the key research issues for the next decade. Then we also look, briefly, at the role of each of the other major stakeholders in shaping this future system, before we finally present the “vision” of ECTRI regarding its role and strategic objectives within this overall framework.

## 2. THE ROLE OF TRANSPORT RESEARCH AND SOME KEY RESEARCH ISSUES

### 2.1 *The process from (Transport) research and innovation to product and technology application*

16. **T**he ability to understand, plan for, and monitor all these expected changes as well as to produce the necessary “tools” in order to manage and operate the new systems of the future is based primarily on efficient, focused, and widely coordinated research. Research and technological development always precedes new products and services. Even if it is more and more evident that Transport innovation is no more following a linear curve it is easier to present the transition from initial R&D to products and commercial systems, diagrammatically, as in Figure 1.
17. **A**t the beginning i.e. the pre - competitive stage research produces the invention of new systems, technologies or organisational schemes and provides the necessary pilot applications to demonstrate the validity and practicability of the new ideas.
18. **A**fter this first phase of research and initial development, there is a phase of “growth and diversification” during which the new ideas, technologies, systems, etc, have an initial market penetration. This is largely based on “isolated” – “manufacturer specific” equipment and/or infrastructure, and is a phase where the market is “exploring” the new product. The crucial factor here is the achievement of a so-called “*critical mass*” of users who will allow for a cost efficient operation of the new system or service.
19. **W**hen a “critical mass” is achieved and the new system is accepted by the market a third stage begins which is characterised by the setting of the “rules” and regulations for the orderly function of the market with respect to this product or service. This third phase also includes (in some cases of products or systems) the “certification” of the system so that the users can have full confidence in its quality and specifications.
20. **T**hen as the number of users increases, full market functioning and “liberalisation” is achieved and the “new” system is ready for its final stage of “*Integration* with other systems and its *optimisation*”. This final stage of full optimisation and integration achieves the highest user satisfaction and acceptance and can be said to be the full application of the initial innovative idea or system.
21. **H**ere, the fact must be underlined that the (Transport) market is not like an “ordinary” market. In it there are a number of necessary “restrictions” such as “public service obligations”, the application of specific rules and regulations concerning safety and security, environmental protection restrictions, etc. Similarly there are also very important “restrictions” in the transfer of innovation created by public funded research (i.e. done within the auspices of government Organisations or departments) to private companies and other “market forces” that would then convert them to “products”. The difficulty here is that such action could be considered as “state – aid”. Therefore the transition from R&D innovation to market products and function in the Transport sector is a very complex process and one that requires more complex and more specialised research methods and analyses.
22. **T**he whole cycle, from initial R&D and “invention” to full market integration and optimisation, as diagrammatically shown in Figure 1, may take anything from 5 to 20 years or more to complete. This is because the process may have long loops and trial and error phases and depends on the type of technology tested, its cost, market appeal, and other factors.
23. **R**esearch and development work is involved in all 4 stages from the first one, where it is exclusively R&D work, to all the others where it contributes either by helping to calibrate or modify equipment and systems to fully fit user demands and thus help attract the “critical mass” of users (second stage) or set the necessary standards and certification (third stage), or help towards final integration and optimisation (fourth stage).
24. **T**he obvious conclusion is that R&D is the necessary pre-requisite for competitiveness of the European (Transport and related industries)



**Figure 1 : The process for the development and market penetration of new products and systems**

market and a necessary “ingredient” of all steps of development of new products and services from initial conception to market penetration and application or implementation.

## 2.2 The key transport<sup>1</sup> research issues

25. ECTRI believes that the most challenging issue in the field of European Transport research is the coordination (at first) and integration (ultimately) of the research performed at National level, and at individual centres across the continent. The adoption of the notion of the *European Research and Innovation Area (ERIA)* as a long-term strategy for European research by the EU heads of government in Lisbon<sup>2</sup>, aims to fulfil the same aim.

26. Integration however, cannot be achieved simply by (co-) funding common European research projects and programmes, as it has been the norm until today. It needs institutionalised cooperation and investment in common (research) infrastructures, mobility of researchers, knowledge sharing and common knowledge management, as well as joint focus and priorities for the research themes.

27. A well functioning and integrated transport system is essential for the economy at all levels, from the pan-European one to the individual household. Societies spend large resources on transport, which accounts for a large share of public investment, production, and

individual consumption. Therefore, a vital key issue of Transport research is to enhance our understanding of the economic impact of Transport policies. A number of important side - issues can be raised in this connection, e.g.:

- Economic integration (especially within the enlarged EU) and economic development in the new member states is likely to lead to increased trade and thus increased transport demand.
- Increased accessibility may improve the functioning of the labour market, which has implications for employment and productivity. Transport investment and regulation must therefore need to take this into account.
- Environmental impacts of transport and sustainable development must be seen in conjunction with the wider economic impacts as well as the two-way relation between transport and land use and planning within a unified decision support framework.
- Freight Transport must be seen as part of the whole supply chain logistics. A well functioning freight transport system has far reaching impacts on logistical costs to industry, transport demand, and the distribution of traffic on the network(s).

28. The issues raised in paras 26 and 27 above, have been key issues in the reasoning for creating ECTRI. Therefore ECTRI’s long-term goal and strategy is to assist towards their proper handling and materialisation of corresponding policies.

<sup>1</sup> or transport related research

<sup>2</sup> European Council Statement on e-society and e-knowledge society including ERIA and ERA, Lisbon, March 2001.

29. In a first effort to find the grounds for a common research agenda, ECTRI performed a comprehensive survey of its member's research priorities and focuses as regards transport research for this decade. The result was a list of 5 principal Themes (or areas) where these research interests and priorities of the 15 ECTRI member-Institutes coincide. Given that the ECTRI members represent in their majority, major National transport research centers closely linked and tuned to National policies, one can say that these 5 research themes and their interrelation represent the areas where national (research) policies coincide and thus their acknowledgement can form a valuable first step on which to build truly integrated research efforts and services. These 5 areas are the following:
1. **Issues for a sustainable Transport system.** Here are all the aspects of *energy* and the *environment* that are connected to the existence and function of the Transport system. Of particular interest is research for alternative fuels.
  2. **Intelligent Transport systems (ITS).** All aspects related to applications in the field of Transport (passenger or freight) of Information and Communication Technologies (ICT) as well as space-based technologies (GALILEO, GMES, etc) and the functioning of the European Intelligent Transport Systems and services, are included here. Of particular interest to ECTRI are the various issues of certification for the new ITS systems that are being put gradually in service by the industry. This could be done through the creation of virtual European Laboratories in this field (s). A first area of activation in this field could be the certification of *Driver Aid Systems*, such as navigation and route guidance systems, cruise control systems, and driver warning systems.
  3. **Traffic and Transport Safety and Security.** Here, there is a core area of research in almost all ECTRI members since there is a common view that a lot more attention must be paid to vehicle design and infrastructure safety issues for all modes (in addition that is, to the issues related to driver behaviour and awareness).
  4. **Behavioral and societal aspects of traffic and transport.** This is an increasingly interesting area for research that follows the almost exclusive emphasis to technological developments and applications in the field of Transport, given in the 90s. In this area one should include the consideration at both the micro level, i.e. focusing on the individual user, to the macro level including planning and implementation issues.
  5. **Transport Economics.** This, like safety and security, also seems to be a core area of interest. It includes topics like pricing for the use of infrastructure, proper pricing of Transport services, (econometric) modeling, evaluation methods of economic policies in the field of Transport (where the money goes and what are the real choices), pricing policies, etc. As mentioned previously a most important topic is also the "economics" of productivity, employment, and land use interaction of the transport system as well as the "economics of multi-modality", i.e. the investigation of the costs and prices for making multi-modal Transport more competitive.
30. A further horizontal area in which ECTRI members see a common European focus and interest is the research and study of **Transport systems of the future**, i.e. the integrated (in a European sense) and visionary study of the future of a number of Transport and Traffic related items such as infrastructure development (Trans-European Networks), organizational, political, institutional issues, traffic flows, etc.
31. The above 5 research areas of ECTRI focus must not lead to the interpretation that ECTRI members are only interested in Technology development research. In all the above areas an important dimension is also the non-technological issues i.e. those related to society, the economy, human factors, the needs of the handicapped and the aging, and so on. All these issues are considered to be of equal importance with technology and are the issues that determine the acceptability and ultimate success of the policies and technologies applied.
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### 3. THE ROLE OF THE OTHER STAKEHOLDERS

#### 3.1 *The role of the Industry*<sup>1</sup>

32. The role of the “industry” in the future shape and functioning of the Transport system is undisputable. It is, like research, a fundamental factor from the initial stages of conception to the end stage of integration – optimisation as referred to in Figure 1. In the initial stage, the “industry” supports research by funding (or co-funding) of the research projects that develop the initial concepts and prototype products. In the last stages it takes the primary role in developing, and promoting products and to some extent “creating” the necessary market conditions.

33. Therefore one can say that if the research is a fundamental key to “success” as described earlier, the “industry” is the other fundamental factor. The point that must be born in mind is the need to find the right balance between the contributions of the “industry” and the “research” sides, in the development of the future research agenda and the eventual transformation of research into new products and services. The critical points are:

1. What should the role of industry be in shaping the “agenda” of research and in participating in its execution, and
2. How best the results of research could be taken up by industry for their industrial transformation into “products”.

34. ECTRI believes in the critical importance and need for a strategic allegiance between research and Industry. However, in shaping the (Transport) research agenda of the future, one should have **independent – “intellectual” advice** from the research supply side (i.e. the scientific - technological research side) with inputs only from the “industry” side. As regards now the results of research and how best they could be taken up by industry for their industrial transformation into “products”, there the role of the “industry” should obviously be more pronounced.

#### 3.2 *The role of policy and policymakers*

35. Past experience teaches us that achieving consensus and political agreement is perhaps the most difficult and time-consuming part of change

and implementing innovation. Basic economic and social history also teaches us that all human and economic behavior, preferences, and trends have a cyclical nature. The policy makers are the “stakeholders” most well placed to affect these preferences and advance the political consensus (about transport research) towards new directions.

36. ECTRI believes that it is perhaps of equal importance, with the advent of the new technological possibilities, to take into account the crucial horizontal and other policy issues that will have to go hand in hand with any new developments in the future. A number of these issues are the following:

- Horizontal and vertical integration of systems and applications.
- Establishment of new European and international standards to cover the functioning of the new systems.
- Establishment of mechanisms for continuous monitoring of the function of the market and if necessary intervening, in order to safeguard the interests of the end user.
- Solving some outstanding institutional and legal issues especially when it concerns the wider market implementation of new technological systems.
- Making sure that the implications to society and social justice are addressed and dealt with, and finally
- Finding ways to bring into the picture the much discussed, in the past, external costs such as the environmental costs associated with transport operation of all modes.

37. Policies to facilitate innovation and to resolve some of the contradictions and sustainability questions that arise in the evolution from the “Invention” to the “Integration - Optimisation” phase of Figure 1, will always be necessary.

38. In the current technology led (r) evolution of a market driven transport operation in Europe, National and International governmental policies should focus primarily on a number of horizontal issues that will form the necessary guiding paths of development, and will make sure that the interests of the final users are secured.

<sup>1</sup> The term “Industry” is used to denote all transport vehicle, components, or systems manufacturers or suppliers, as well as the transport systems of services integrators and service providers.

39. The ECTRI as an Organisation of leading Institutions for transport research and policy advise can help to provide a “bridge” between National and International transport policy requirements and help the EU harmonise transport research priorities with National ones, and also help provide the necessary inputs for policy formulation at both ends.

### 3.3 *The role of the operators / service providers and of the owners of infrastructures*

40. The role of this category of stakeholders is obvious. They are those directly involved with the functioning of the system and the outcome of their contribution directly reflects on the users and their satisfaction with it. They are “intermediaries” who, within the given technological and administrative / legal environment in which they operate, can either perform well and thus increase the level of satisfaction of the users, or perform badly and diminish any benefits or advantages.

41. The role of the *operators / service providers* is twofold. In the first place they are the users of data and services from the *infrastructure owners*, and thus they are “users” themselves. In the second, they provide services and data or information thus being also “providers”. Since they are those directly in contact with the end-users of the system they have a crucial role to play in the final outcome i.e. the quality of transport services and the degree of satisfaction to the end-user achieved.

42. The *owner of the infrastructure* is a notion that, especially in recent years, has been separated from this of the *operator* although many “operators” still own and maintain their infrastructure. Their role in creating and maintaining the proper transport infrastructure is crucial in the operation of the whole system and has to be underlined. Both categories in paras 41 and 42 will continue to be, an all too important element in the functioning of the Transport system of the future.

### 3.4 *The role of users / customers and society as a whole*

43. As the EU’s white paper on Transport Policy puts it: “*the user must be put in the middle of it all...*”. The importance of the “customer” or end-user and society as a whole in all the stages of Transport provision is becoming central in European Transport. It would not be an exaggeration to say that the decade of 2000 – 2010, is likely to be the decade of the user.

44. The needs and aspirations of society as to their desired characteristics of the Transport system are the guiding line for determining its characteristics from the planning stage until the final integration and optimisation stage. The attitude of the end-user, will determine the success or failure of new systems and at the same time the attitude of the society as a whole will define the limits and restraints under which this system must operate.

45. This role of society has been clearly understood since the end of the nineties but we must now find practical ways to understand it better and include it in the process of shaping our Transport system of the future.

46. ECTRI is of the opinion that research into the characteristics and “contributions” in the above sense, of the end-user and society as a whole must take priority in the coming years. The results of such research will be beneficial in a number of ways and above all will give us the much-needed guidelines for planning and implementing the future integrated and technologically upgraded Transport system that we all strive for in the future.

### 3.5 *The role of the scientific community*

47. Transport research and innovation requires the input and active contribution of a well educated and scientific community using all the most recent “knowledge products” in a number of scientific disciplines such as:

- Engineering sciences,
- Planning,
- Social sciences,
- Economics,
- Life sciences,
- Information and Communication technologies,
- Etc, etc .

48. **A**lready the role of this community as an independent – “intellectual” advice provider has been stressed (see para 34). The critical point there, was the need for the funding agencies of research to have the advice and contribution of the “industry” *but not to be heavily solicited by it.*

49. **T**here is no notion of (Transport) research without the notion of a well educated, trained, and equipped scientific community covering all the above areas and disciplines. To prepare the next generation of transport related scientists and professionals is a crucial element in securing the competitiveness of Europe, its robustness (socially, culturally, and economically), and its further integration.

50. *ECTRI wants to be part of this endeavour and will commit a substantial part of its activities to facilitating the preparation of the new generation of transport related scientists and professionals. In this sense it will act as the “hub” in a number of “spokes” activities linking to professionals and scientists in industry, (technology related) services, and education establishments.*

### **3.6 The role of public and private research funding**

51. **E**xperience so far shows that we have not found the right balance between publicly funded (“public”) and privately funded (“private”) research. The big industrial corporations are always able to fund their own research and to transfer their research based knowledge from one country or continent to the other thus in practice affecting the competition between the continents. Small and medium sized private companies however, commit minimal funds (or even no funds at all) for research and they rely on public contribution for their research

a fact that, as they complain, does happen more often for the big companies.

52. **A** pertinent question therefore is to find the right balance between public and private funding for transport research. Should, in other words, public funding be used for supporting private research when this latter fails or for complementing it when it is successful? Also should public research be managed by public bodies or by private ones? The answer to these questions may provide the clue to some recent trends in EU funding of transport research in which some sectors of transport such as public transport, freight, or even railways, seem to get proportionally less share of public funding for research.

53. *ECTRI intends to look more closely into this question of public and private transport research funding starting with a state-of-the-art review in each European country. As a result of this review it expects to be able to provide sound advice to the National and International research funding bodies in Europe about their future (transport) research funding policies and for providing the right incentives to the private sector to commit more funding for transport research.*

#### 4. THE FRAMEWORK PLACED BY THE EU TRANSPORT POLICY AND ECTRI'S CONTRIBUTION

54. Ten years ago, in the first White Paper on the Common Transport Policy (European Commission, 1992) **sustainable mobility** appeared for the first time and lasted throughout these years as the primary objective towards the integration of the European Transport market.

55. In continuation of this Common Transport Policy, the White Paper "*European transport policy for 2010: time to decide*", attempts to provide solutions to the traffic congestion on the existing transport networks, which is anticipated to further increase, due to the expansion of the European Union to new member states, and the consequent demand for passenger and freight exchanges throughout the European territory.

56. The main objectives of the European transport policy focus on the **optimization of the utilization of the alternative transport modes**, along with the exploitation of the new technologies, as well as the **increase of the interoperability of the transport networks** between the old and the new member states.

57. The above objectives have been formulated in an ambitious program, constituting of the following measures:

(A) Concerning the overall transport system:

- *Turning multimodality into reality*, through technical harmonization and interoperability among systems (mainly in freight transport)
- *Building the trans-European transport network*, through the completion of the routes anticipated to accommodate traffic flows, and to provide accessibility to outlying areas.

(B) Concerning each mode:

- *Revitalizing the railways*, by restoring the credibility of the mode (regularity, punctuality), especially for freight transport

- *Improving quality in the road transport sector towards a fair competitive environment*, through modernization of the services, adaptation in the social legislation and workers' rights, and harmonization of the inspection procedures.

- *Promoting transport by sea and inland waterway*, by building sea motorways, with good connection to land networks, improving maritime safety, and introducing a unified maritime traffic management system.
- *Striking a balance between growth in air transport and the environment*, through the implementation of an air traffic management system, which assures reduction of the noise and air pollution caused by the aircrafts, despite the expansion of air carrier capacity.

(C) Other measures:

- Improving road safety
- Promotion of equity
- Adopting a policy on effective charging for transport
- Recognizing the rights and obligations of users
- Developing high quality urban transport
- Putting research and technology at the service of clean, efficient transport
- Managing the effects of globalization
- Developing medium and long-term environmental objectives for a sustainable transport system

58. *ECTRI amongst its other objectives and priorities adopts these policy principles as a starting point. It will strive to both coordinate and provide innovative research to compliment these objectives, and also to help monitor and revise these policy guidelines where and when it is necessary in the coming years.*

59. Having said the above, ECTRI would like to underline the fact that a number of EU policy objectives have failed to materialize over many

years, a typical example being the objective of shifting the modal split to be more favorable to rail and public transport. Thus a number of persistent and pertinent questions must be set for transport research to answer: why are these policies ineffective? What are the real reasons for modal shift? Why innovation seems more penetrating on private transport and not on public transport services? Why multi-modality seems to falter or even fail to expand despite the stated policy aims and direction? Can we have multi-modality without the active participation of the operators?

60. The contribution of research in answering the above questions is indisputable. Answering these questions (and similar ones) would make for an invaluable contribution to achieving Transport policy objectives for National and International government in Europe. *ECTRI sets as its long-term objective to foster research that will provide these answers and thus make its contribution to achieving an effective Transport policy agenda for Europe in the future.*
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5.1 *The Long-term vision of ECTRI*

61. **B**ased on the previously outlined vision of the future and the likely priorities and needs, the overall long-term vision of ECTRI as to its role in European Transport research, is to create a **structured and institutionalized framework of co-operation** between the National Transport Research bodies of European countries. This co-operation will aim to harmonize the Transport research agendas in European countries and achieving the common “*European Research Area*” concept in the Transport field. It will also strive to provide practical answers and insights for all too important questions of future transport research directions and policies, the public / private research funding, and the formulation and implementation of successful Transport policies in Europe.

62. **G**iven the other existing related European – wide organizations and bodies and their focus in different but mainly uni-modal areas of the Transport field, ECTRI’ s core-area of focus is defined as:

*To work primarily towards a Single European Transport System which is truly multi-modal, safe and secure, heavy user of ICT, and reconciling the objectives of efficiency and environmental protection.*

63. **W**ithin the above overall vision, a number of more specific “visions” can be defined:

**G.** To achieve **Integration of European Transport Research** (starting with its members) primarily by effecting *common priorities* and programme of work, *mobility of researchers*, and working towards developing *Joint European Infrastructures (JEIs)* in some key areas of Transport research and / or research related activities. This calls, among others, for devising a way to jointly utilizing the current infrastructures within each Institute, and joining forces for building new ones at European level. Particular emphasis and priority will be given to integrating Institutes and research organizations from the new member states.

**H.** To provide an **independent – “intellectual” dimension of advice** towards the research funding bodies of the EU or member states whose thinking is currently heavily solicited by industry.

**I.** As an extension to the previous “vision”, to create practical and usable **“links” between the results of applied research** and their **industrial transformation** into “products” or services.

**J.** To work (together with other relevant European Organizations and bodies like for example FEHRL, FERSI, and others) against European fragmentation of Transport research and provide a **uniform European representation** towards Transport research in the US, Japan, and Asia.

**K.** Promote coordinated and high quality **European - wide training options** for Transport executives.

**L.** To expand the European transport related experience and know-how to other countries and environments and vice versa.

64. **T**he long term vision of ECTRI can also be stated as follows: *in materializing all the above strategic objectives ECTRI will strive to create at the end a single European virtual Transport Research Institute incorporating the strengths and potential of all its members and utilizing their expertise and / or infrastructure in the different domains, to achieve the best possible results, while having a truly horizontal coverage of its core-area of focus.*

5.2 *Mission Statement*

65. **T**he mission of the ECTRI Association is to work towards achieving the joint Vision of the Associated Institutes.

66. **W**ithin this overall aim, the mission of the ECTRI Association can be further specified as follows:

k. To create an ECTRI sponsored network of research infrastructures available for joint programmes of research or projects.

l. To help European researchers especially young ones, to increase their mobility and

training opportunities. The emphasis will be to young researchers from the new member states as well as the associated ones.

- m. To reinforce the position of its member Institutes and research Organizations in their countries as primary Transport research bodies and centers of excellence in Transport research.
- n. To acquaint its members with the policies and practices followed by each other within their National research priorities and policies, and promote discussion with a view to reconciling these policies vis-à-vis the ECTRI's common vision, and the EU's policies for Transport research.
- o. To create and keep open, permanent links and liaisons with the EU's three DGs that are active in supporting transport research (i.e. RTD, TREN, and INFSO) with a view to providing advise and assistance in their (transport research) policy formulation and helping them to go beyond their "industrial focus" of today without neglecting the needs of other DGs like DG ENTR or DG ENV.
- p. To create and keep open, acting in co-operation with other European Organizations, permanent links and liaisons with the US TRB, and similar bodies in Japan, Korea, China, India, and Australia.
- q. To promote an open and free exchange of information on what happens in Transport Research at national level by creating state-of-the-art reports, and organizing other appropriate events and activities.
- r. To promote dissemination of research results and knowledge transfer between European researchers, especially in an East - West notion.
- s. In the sense of the previous point, to support its members in formulating and promoting joint proposals for research within the current 6<sup>th</sup> FP calls (or other programmes and calls) as a first step towards co-ordination and co-operation of its member Institutes and research Organizations.
- t. To produce a Joint Programme of Activities (JPA) valid for 3 years periods that pursues the ECTRI vision and defines the ECTRI business in the same time period (ECTRI 3-year Business plan).

### 5.3 *The ECTRI Joint Programme of Activities (JPA)*

67. For the first period of ECTRI's life it is indented that the main objectives of its activities should be put along the lines of ECTRI's mission statement. These are presented in detail in a separate internal document. The JPA contains a number of specific activities and is indented to establish ECTRI in the Transport "world" as a push-puller for the next generation of transport research, scientists, and professionals.
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## FORMS OF CO-OPERATION FORESEEN BETWEEN ECTRI'S MEMBERS

All members of the ECTRI Association have signed a Co-operation agreement, which specifies the forms and objectives of their co-operation. This co-operation does not limit competition and follows the “co-operator-competitor” principle.

From the beginning this ECTRI member co-operation was based on the following main principles:

- 1) Voluntary base: the co-operation should be based on the needs of the participating members and be in their mutual benefit. Terms as ‘*à la carte*’ and ‘*variable geometry*’ fit into this principle. ECTRI-members are free to choose the co-operation agreements they want to join.
- 2) Flexibility: the co-operation patterns should be open and flexible: partners should be able to join at a later stage or abandon the co-operation initiative. On-going commitments should of course be respected at all times
- 3) Openness: the co-operation is aimed at strengthening the knowledge base of the participating institutes. The results of particular activities are available to other ECTRI members. Specific co-operation in projects for third parties (on a commercial base) is a practical way of developing the knowledge base. Here other principles may rule the co-operation and openness towards other ECTRI-members may not be fully possible.
- 4) Fairness in applying the ECTRI co-operation agreement.

As regards the forms that such co-operation takes place, these are (depending on the case at hand) the following:

### A. ‘Clearing House’

This activity is restricted to the exchange of information (reports, papers, articles in newspapers etc.) on specific themes. This happens via a central point (one of the interested institutes). It requires some effort in structuring the information (information analyst) and a common language (translation effort).

### B. ‘Connecting professionals’

Here the effort aims not so much at connecting explicit knowledge and information, but the ‘embedded’ knowledge of the professionals. It can be done via seminars, meeting at congresses or bilateral exchanges. Important is to establish personal contacts between experts in order to incorporate them in each other’s network.

### C. ‘Communities of practice’

A community of practice is a more active approach and fosters multilateral contacts. On the other hand it is –as such– more anonymous. The principle is the establishment of a virtual network (via internet/e-mail) under the responsibility of a moderator (the French term *animateur* looks more appropriate), who will be in charge of maintaining an active debate and exchange of information.

### D. Ad hoc co-operation in projects

Another possibility is to incorporate expertise of other partners in ongoing projects of the ECTRI-members. Depending of the nature of those projects, some contractual arrangements may be necessary. Secondments (for a short period of time) may be a way of effectuating this form of co-operation.

**E. Structured co-opération in projets**

In this case ECTRI-members decide to define projects to be carried out in common and incorporate these projects in their respective planning. Based on the 'Expressions of Interest' we are preparing proposals for FP6. Those proposals not being retained by the European Commission could e.g. be transformed into projects for this form of co-operation.

**F. Structured Integration of Networks of Excellence**

In practice the process of implementing the ECTRI's JPA will in effect constitute the creation of pan-European Network of Networks of Excellence. The role of ECTRI is to maintain and strengthen this NNoE, and to facilitate knowledge transfer at all levels and all field of transport related scientific knowledge and research.

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