Additional Information Document

2nd Call for Proposals
DECEMBER 1999

Task Descriptions

Key Action
"Sustainable Mobility and Intermodality"

Thematic Programme
"Competitive and Sustainable Growth"

5th Framework Programme

15 December 1999

INTRODUCTION

This document gives additional information concerning the specifications and objectives of all tasks foreseen in the second call for proposals of the Key Action "Sustainable Mobility and Intermodality" of the Thematic Programme "Competitive and Sustainable Growth".

All proposals submitted for this Key Action in the framework of the second periodic call should address one of these tasks, all of which are linked with the strategy and priorities defined for this call in the work programme, as updated.

The first three digits of the reference number mentioned together with each task title indicates the work programme reference number. An example is: 2.1.1 stands for "Socio-economic scenarios for the mobility of people and goods", subheading "Quantitative tools for decision making". The number after the slash is the sequential number of the task within one research area following the last number of the first call.

This document can also be downloaded from the Homepage of Programme 3 on the Internet:

http://www.cordis.lu/growth

Appended to this document, you can find the list of tasks launched in the 1st call (March 1999) and the lists of tasks, which are planned for the 3rd call (June 2000).

TASK DESCRIPTIONS

2nd CALL. DECEMBER 1999

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2nd CALL. DECEMBER 1999

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Objective 2.2 Infrastructures and their interfaces with transport means and systems

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Objective 2.3 Modal and intermodal transport management systems

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2.3.1/12 Assessment of new concepts for ship and shore traffic management and information systems (VTMIS) to improve efficiency in waterborne transport operations

2.3.2 Transport and mobility services

2.3.2/7 Innovative intermodal transport solutions for non-unitised cargoes and other specific market segment
2.3.2/8 Integration of air freight transport in the intermodal transport chain

2.1.1/8 Thematic network on Trans Alpine Crossing

1. Problem description

The Alpine area is one of the most sensitive areas in Europe for transporting people and goods. All the aspects of the integration of transport in the territories concerned need to be carefully assessed and addressed. The growing importance of transalpine traffic due to the closer integration of the European economies, including the future enlargements to Eastern countries, justifies that the problems encountered in the Alpine area are addressed in a coherent and systematic way.

Against this background, it appears to be necessary to create the conditions for a consensus among all the interested researchers on the essential parameters to be taken into account in any analysis of the past, actual and future situation of transport in the area. It should embrace the importance of traffic flows for all modes of transport, including maritime transport (importance of short-sea shipping for the intra-community North-South transit), the capacity of the various infrastructures concerned and the elements for infrastructure charging, the measurement of the environmental impact of traffic, the possibilities of modal shift, etc…

For instance, for railways, there is a need to understand the evolution of the market and the factors driving it in two particular areas, the rail infrastructure and the services offered. Rail traffic may be constrained by physical factors, which could cause potential bottlenecks, limiting the commercial attractiveness of rail. The implications of these differences and the costs and benefits of action to alter the situation should be assessed on the basis of sound data and information.

The recent agreement on land transport between Switzerland and the European Union has created a more predictable legal situation and offers the possibility to analyse transport issues against a number of agreed principles. A lot of work had been done, on an individual basis, before and during the negotiations of this agreement by the various parties. There is now the need to gather and refine all the necessary knowledge available with all the concerned parties to help the future implementation of such agreement.

Past and ongoing research activities under FP4 have addressed the Alpine area, e.g. the data collection and modelling capabilities are subject of the on-going MESUDEMO project; passenger origin destination matrix developed in MYSTIC looked at the transalpine key corridor; PETS looked recently at marginal cost pricing in this area; SCENES, when trying to define specific scenarios for Europe for 2020, paid a specific attention to the Transalpine corridor etc…

It is now time to build on these agreements and works done to create an agreed scientific basis for analysing the situation in the Alps, for monitoring it and help decision makers to take into account all the necessary components needed for a comprehensive and sustainable policy.

2. Task description

The thematic network should be open to all research organisations of at least the concerned countries and possibly other able to contribute substantially and able to involve all stakeholders who may help to understand the transport situation. The issues to be addressed by the network should be discussed in a technical and neutral way. It should begin with a state of the art analysis based on all regional, national and European relevant projects (see item 7: links).

It should at least address the following issues:

- the general strategy for the collection of data on traffic and the transport infrastructure, safety and environmental effects and including the full identification of such data needs, while paying attention to the European strategy being developed;
- the modelling capacity required to explore and analyse the various transport problems of the trans Alpine region,
- the elements for the development of Geographic Information Systems addressing the specific concerns of the area;
- methodologies to assess the functioning and the efficiency of the various modes of transport in relation with the constraints of the area, eg. the analysis of bottlenecks;
- the transferability of the methods used in the transalpine area to other similar sensitive areas in Europe such as Pyrenean crossings.

A steering group made of officials from the Commission and the various countries concerned should be set up to help the network to focus its activities.

3. Expected results
The outcome of the network should be to help develop common methodologies as well as to establish a wider consensus between the researchers, the policy makers, the transport operators and other interested parties on the various issues to be analysed and assessed in order to build a sound foundation for a consensus on transalpine crossing matters.

4. Type of the contract
Thematic Network (up to 100% funding)

5. Timing / Duration
2nd call (Dec. 99)/ 30 months

6. References
EU/ Switzerland Agreement on land transport of 21 June 1999 (still subject to ratification), Alpine Convention of 7 November 1991, other transport agreements dealing with alpine crossings.

7. Links
MESUDEMO, CONCERTO, ASSEMBLING, SCENARIOS, SCENES, PETS, STEMM, EUFRANET, LIBERAIL, EUROPTRIP, INTELFRET, IQ, Passenger Mobility Expert Group
(FP4 Transport program), task 2.2.1/17 Optimising railway network, task 2.2.1/10 Improved tools for railway infrastructure capacity and access management, and task 2.1.1/2 Transport Network accounts and marginal costs from 5th FP "Sustainable Mobility and Intermodality" 1st, 2nd and 3rd calls, and national projects (e.g. Swiss PNR 41).

8. Involvement of non-EU countries
Switzerland, Slovenia, Liechtenstein as Alpine countries should be fully involved in the network.

9. Consortium profile
Small core consortium able to understand and summarise the issues and to organise, co-ordinate workshops - and to report on them -,involving a wide variety of members and experts.

2.1.2/4 Cluster on socio-economic impacts of transport investments and policies and network effects

1. Problem description

Transport policies – investments in transport infrastructure and services, pricing, traffic demand management and regulation – have both direct and indirect impacts that appear at different geographical levels. The direct impacts consist of transport users' money and time costs, accidents, emissions and noise. These direct impacts often have implications in and interlinkages with other sectors and regions. These are often called indirect or secondary impacts. Examples of such indirect impacts are the links between transport policies, economic growth and employment, transport costs and competitiveness of companies, environmental impacts of transport and attractiveness of a city, public transport and local regeneration, etc.

Second, another type of indirect impacts links transport networks to spatial organisation and urban hierarchies. Although many other variables like lifestyle, industrial organisation, etc. are key to understand the transport demand and the spatial organisation of the territory, regional policy goals and transport policy goals are in practice intrinsically linked. In the European Union, the Trans-European Networks for Transport (TEN-T) are one the main instruments for social and economic cohesion, hence to reduce the disparities between regional development. Yet, the interrelationships at stake are not well understood.

Third, yet another type of an indirect impact of a transport infrastructure project concerns the role a specific link or node (terminal) has on the modal network or on the whole transport system. These network impacts can be positive or negative and they can stem both from qualitative improvements of the existing infrastructure or of the introduction of new capacity. They can be assumed to be especially relevant for cross-border projects, such as the TEN-T. These impacts are closely linked to the spatial organisation and interaction between countries.

Fourth, as a horizontal aspect cutting across the questions raised above, the distribution of the impacts – both direct and indirect costs and benefits – among different groups in the society, such as citizen groups, industries or regions, is becoming an increasingly important issue to policy and decision-making in the transport sector. As most investment projects and policies have both winners and losers, even if overall they might be beneficial at a country or at the European level, possible compensatory measures, if necessary, can only be defined if these groups can be identified and the respective benefits and costs measured and assessed.

Fifth, the conventional cost-benefit analysis normally takes account only of the direct impacts, as the inclusion of indirect impacts would often mean double counting, as they are normally reflections of the direct impacts in other markets. On the other hand, many assessment methods based on multi-criteria analysis often include some of the indirect impacts without paying much attention to the risk of double counting. For distributional impacts the theoretical framework exists for their inclusion in the form of equity weights, derived from a social welfare function. However, the operationalisation of such a function and weights has been very rare in the transport sector.

Decision and policy-makers are increasingly requesting information on the indirect impacts as well as on the distribution of both direct and indirect impacts among citizen groups, industries and regions, which follow the introduction of a transport policy or project. These impacts can have very different implications depending whether they are assessed at European/national levels, where local level costs and benefits often cancel out, or regional/local levels, which are of interest especially for the distributional implications.

The existing state-of-the-art methodologies are normally capable of assessing the direct impacts of transport infrastructure projects. The methodologies are best developed for road and rail projects, maritime and air have received less attention. These methodologies, however, perform less well when it comes to measuring the impacts of different transport policies, whether they cover all the modes (e.g. efficient pricing, TENs) or an individual mode (e.g. rail revitalisation, reducing noise at airports, etc.). For indirect impacts, no consensus exists in the literature on the adequate approach, or sometimes even on the direction of causality (e.g. transport infrastructure and employment). Results of research have therefore often been controversial or even contradictory.

2. Task description

The aim of this cluster is to look at the most pertinent questions, identified above, regarding indirect and distributional impacts of transport policies and investment projects. The cluster will consist of four

independent subtasks plus a fifth one, which, in addition to horizontal technical work, will cluster the other subtasks. The four subtasks will develop appropriate modelling or other methodologies, which are able to measure and assess the broader socio-economic impacts, indirect and distributional impacts, of transport investments and policies.

Subtask 1: The role of transport in macro-economic development and employment.
The subtask will look at the macro-economic impacts of transport infrastructure investments (TEN-T) and pricing policies. The focus will be at European and national levels and the analysis will focus on how transport policies and investments influence economic growth, incl. employment, and competitiveness of businesses, and the distribution of these impacts among citizen groups and economic sectors.

The research should identify different country/region specific, transport system related or other factors that could have a role in strengthening/weakening the macro-economic impacts of transport investment and policies.

Subtask 2: Integration of transport, regional and land-use planning
The project will develop/use a methodology to evaluate and forecast the interactions between the TEN-T and other associated transport policies and Community funding on the one hand and the regional dynamics at European level on the other hand. The role of infrastructure, market deregulation, harmonisation, interconnection and interoperability, and access to the network will be analysed.

Research will have to further develop and validate the set of existing tools and data, in view of their use in the European Spatial Development Perspective. Research will build on 4th Framework Programme projects on scenarios and policy assessment and is expected to include theoretical work on economics of industrial and settlement location choice, critical review and refinement of regional accessibility indicators, economies of scale and agglomeration etc. It will also look at the collection and integration of data into the Commission's database (land-use and land-cover data, including airborne and satellite data, other regional data and transport data). The results are expected to further the integration of land-use dynamics in strategic transport models and scenarios.

Subtask 3: Urban transport and local socio-economic development
The need to make local and regional transport systems more sustainable and to shift away from an excessive dependence on the private car has been highlighted in many transport policy proposals. The aim of this subtask is to analyse how changes in the design of local and regional transport systems affect the socio-economic conditions and citizens welfare of the areas they are serving. Coherent methodologies for analysis and comparable data are currently lacking at a European level.

The subtask will collect and analyse comparative data from at least 10 European cities where large-scale changes in the transport offer have taken place and where good before and after data are available or can be easily collected. A good example is for instance the network design, or the development and implementation of a new transport technique such as light rail transport. Particular attention should be paid to effects on employment, urban re-generation and economic development and well as to the supporting policy and organisational frameworks.

Subtask 4: Quantification of network effects of a transport infrastructure project
The aim of the subtask is to define and develop a methodology to measure and assess network effects of transport system improvements. The subtask should first identify and describe the different types of network effects from a transport infrastructure investment. These effects should cover both those stemming from quality improvements as well as system effects that follow from changes in the network size, including bottleneck elimination. All modes of transport should be included as well as terminals and intermodal connections. Particular attention will be paid on cross-border implications.

In the second step the research should develop a methodology for the measurement, quantification and assessment of network effects. The methodology should be able to address both positive and negative changes in the network size and level of service as well as modal and intermodal implications. The model should be applicable to links as well as nodes (terminals). The developed methodology should be demonstrated for selected TEN-T projects, covering all transport modes, links and nodes as well as intermodal interfaces. These case studies should be selected as to represent different geographical and economic contexts.

Based on the results of subtask 5, this subtask will also look at what part of network effects is internal and possibly already taken into account in socio-economic cost-benefit analysis and what part is external and currently not included. The eventual implications to the socio-economic feasibility of TEN-T projects should be assessed. Implications for financing of the TEN-T and on public-private partnerships should also be addressed. The results of existing feasibility studies should be compared to those using the methodology within this subtask 4.

Subtask 5: Indirect impacts and network effect in cost-benefit analysis
The aim of this subtask is to analyse the assumptions underlying the theoretical cost-benefit analysis and to derive rules for the inclusion / non-inclusion of indirect socio-economic impacts and network effects. These rules should take account of the various constraints and distortions prevailing in the relevant sectors and in the economy as a whole. The results should be validated, using the case studies from subtasks 1-4.

In addition to the theoretical work described above, this subtask is also envisaged to offer a discussion platform for the other subprojects of the cluster. This platform should take the form of meetings of researchers around topics of mutual interest; these could include e.g. methodological development, comparison of results, linking the macro-level analysis to the micro-level, etc. The subtask is also expected to liase with the 1st call thematic networks on Transport modelling and exploration tools (task 2.1.1/5) and on Policy and project evaluation methodologies (task 2.1.1/3) to ensure efficient coordination and feedback to the methodological development.

3. Expected results
Better understanding and enhanced modelling tools to assess the indirect impacts and network effects of transport policies and projects. A coherent methodology for taking these impacts into account in transport policy development and decision-making. A coherent set of project results and recommendations intended for wide use mainly by local/regional authorities will be produced, based upon a set of comparable data and a validated methodology for socio-economic impact assessment.

4. Type of contract
Accompanying measure (up to 100% EC funding). Separate contracts can be signed for the five subtasks. The subtask 5 can be merged with anyone of the other four subtasks. In order to ensure effective co-ordination and discussion platform, the subtasks will be clustered under the subtask 5.

5. Timing / Duration
2nd call (December 1999) / Subtasks 1-4 24 months, subtask 5 30 months.

6. References
Communication on The Common Transport Policy, Sustainable Mobility: Perspectives for the Future (COM (1998) 716 final), various references especially paras 5, 8, 16, 44. Communication on Developing the Citizen's Network.

7. Links
ASTRA, ECONOMETRIST, ECOPAC, EUNET/SASI, PROFIT, SCENARIOS from the FP4 Transport Programme. COST317, COST 332. DG-ECFIN study on network effects, UK SACTRA work on Transport Investment, Transport intensity and Economic Growth and other national equivalents.

8. Involvement of non-EU countries
Given the different economic situations and transport systems in the Accession Countries and other Eastern European Countries, participation of one or more of these countries could give important insights of the relationship between transport policies and the economy. Also the US research experience in this matter could be useful.

9.Consortium profile
Academia and research institutes experienced in economic modelling, impact assessment methods, welfare economics, cost-benefit analysis and distributional analysis.

2.1.3/2 Implementation of marginal cost pricing in transport

1. Problem description

Marginal cost pricing has been identified, both in the economic literature and recently in the Commission White Paper on *Fair payment for infrastructure use*, as the pricing regime that maximises the efficiency of the transport system. However, the concept of marginal cost pricing is still viewed as theoretical and difficult to be implemented in practice. Therefore examples of implementing marginal cost pricing in transport are rare and regulatory measures have been far more common.

Ideally marginal cost pricing should be implemented simultaneously for all the individual modes. This is, of course, not always possible in practice, given the different starting points and initial distortions, prevailing in the different modes in different countries. The Commission White Paper proposed a phased approach for the implementation of marginal cost pricing at the system level. For practical implementation and decision-making, this system approach needs to be broken down taking into account the specifities of the individual modes and countries, the current situation in urban and inter-urban charging and taxing practices, and possibly other transport policy objectives to ensure level playing field.

2. Task description

The objectives of the *first part* of the task are twofold:

- To suggest necessary steps to be taken towards the theoretical optimum of marginal cost pricing in such a way that distortions in competition between modes are minimised.
- To determine how efficient pricing can be implemented in the short to medium term given different traffic and geographical contexts for the different modes.

The research will start by defining the theoretically optimal end-state of how to implement marginal cost pricing in transport, including all the individual modes and covering urban and interurban contexts. At least the following cost elements should be considered: infrastructure costs, accident, environment, noise, congestion and scarcity. The view will be on the long-term horizon and the questions related to the optimal balance between simplicity and transparency of the pricing system, and cost relatedness of the charges will be addressed. The costs and benefits and their distribution of the efficient pricing will be assessed at the European, country and regional levels and compared with the welfare losses due to the current "inefficient" pricing.

Given the "optimal" end-state, the research will then determine the necessary steps to implement efficient pricing for all the individual modes in the short, medium and long terms. In defining the priority ordering of these steps, the different traffic contexts of countries and cities within the Community and Accession Countries should be taken into account as well as different institutional settings. The welfare implications of the suggested steps will be assessed. Distortions in competition between the modes, which are due to inefficient pricing, should be minimised at every step. The impacts of different cost recovery targets on the optimal implementation path will be also assessed.

Finally, eventual constraints of every step in different policy contexts should be analysed and solutions to them developed. These constraints should include among others public and political acceptability, international competitiveness, implementation and operation costs of the systems, etc.

In the *second part* of this task, a thematic network will be set up (follow-up to the CAPRI concerted action of the 4th Framework Programme). Its aim is to bring together researchers, policy makers and operators in order to facilitate the use of research results in pricing policy implementation but also to inform the researchers of relevant policy questions. The thematic network will focus on the concrete issues of implementation of transport pricing and dissemination of best practices across Member States, the Accession countries and other interested parties. The topics to be covered are among others: phasing of measures to ensure fair competition between modes, constraints of and solutions to problems of implementation, ex post / ex ante perception of benefits and costs of pricing and regulatory measures, successful mitigation measures, and marketing and other measures to improve acceptability.

The thematic network will liaise with the 1st call thematic networks on Testing the Effectiveness and Acceptance of Urban Pricing Schemes (task 2.3.1/8), Transport modelling and exploration tools (task 2.1.1/5) and Policy and project evaluation methodologies (task 2.1.1/3), to ensure efficient coordination and

feedback to the methodological development. It will naturally feed in the research work on Pricing implementation, described in the first part of this task.

3. Expected results
First part: Clear view of the steps to be taken when implementing marginal cost pricing in transport, of the pros and cons of the phased measures and of necessary mitigation measures to improve equity and/or increase acceptability. Estimate of the welfare losses due to current inefficient pricing in transport and of the benefits of "optimal" pricing. Modelling framework for assessing the welfare implications of various economic and regulatory measures.
Second part: identification and dissemination of best practices of implementing transport pricing.

4. Type of contract
First part: accompanying measure (up to 100% EU funding)
Second part: thematic network (up to 100% EU funding)
Two separate contracts will be signed.

5. Timing / duration
Both tasks 2nd call (December 1999). First part 24 months and second part 36 months.

6. References
White Paper on Fair Payment for Infrastructure Use: a Phased Approach to a Common Transport Infrastructure Charging Framework in the EU (COM/98/466 final 22.07.19998); Communication on the Common Transport Policy, Sustainable Mobility: Perspectives for the Future (COM(1998) 716 final), various references especially 15, 42, 10 on Fair and Efficient Pricing; High Level Group on Infrastructure Charging.

7. Links
AFFORD, CAPRI, COST342, PATS, PETS, PRIMA, TRENEN from the FP4 Transport Programme, tasks 2.1.1/2, 2.1.1/3, 2.1.1/5, 2.1.1/6, 2.3.1/8, 2.3.1/9 of the 1st call of the FP5 key action Sustainable Mobility and Intermodality.

8. Involvement of non-EU countries
The prioritisation of the steps to be taken could be expected to be different depending on the economic and social context of a country. Inclusion of the Accession Countries would thus bring useful insights to the migration policy and need of mitigation measures.

9. Consortium profile
First part: Academia and research institutes involved in research on definition and practical implementation of marginal costs pricing, regulation, impact measurement and assessment.
Second part: Small core team with experience in managing scientific networks, with good communication skills and contacts with researchers and policy-makers and with a thorough understanding of transport pricing issues.

2.2.1/10 Improved tools for railway infrastructure capacity and access management

1. Problem description
This task will support the establishment of railway infrastructure management in accordance with directive 91/440 and the new railway infrastructure directives, by dealing with the following topics. Firstly, by developing the necessary new tools for modelling the management of railway infrastructure. Secondly, by evaluating improved methods for capacity and resources management for railway infrastructure managers. Thirdly, by improving the Life Cycle Cost (LCC) calculation methods, which include the elements related to vehicle-infrastructure interaction and external costs. Fourthly, by providing improved data background in support of charging for use of railway infrastructure.

2. Task description
The work to be undertaken will be divided into four subtasks, which all should be covered in a single proposal:

Subtask 1. Business Process Re-engineering toolbox for railway infrastructure managers.
Development of the necessary tools for modelling of the customer chain, business processes and market orientation of railway infrastructure managers. Comparison of the infrastructure managers' products and benchmarking of infrastructure managers' business processes against best practice. Evaluation of the relationship between the implementation of European rail directives and the performance of the infrastructure managers. Determination of annual indicators which can be used as a management tool by individual infrastructure managers. Special attention should be given to best practice in: Charging for use of infrastructure; Safety performance; Procurement procedures and procurement costs; Financing of new infrastructure; Creation of extra revenues from "affiliated businesses".

Subtask 2. Improved methods for railway infrastructure capacity and resources management.
Development and validation of improved methods for both long term and medium/short term capacity management. The long term methods should cover long term business modelling with decisions on maintenance/renewal and the related problems with degradation of infrastructure, which lead to reduced performance with regard to capacity and quality of infrastructure. The medium/short term methods should cover improved approaches to management of capacity and resources for both line capacity and support infrastructure, and the interfaces to the capacity management and path allocation in the ERTMS Traffic Management Layer as developed in the OPTIRAILS project.

Subtask 3. Life Cycle Costs at railway system level to support contractual relationships between infrastructure managers and their equipment suppliers on one side and the operators on the other side.
Development of common definitions and methodology for LCC, which covers the costs related to vehicle-infrastructure interaction (e.g. the contribution of vehicles to infrastructure maintenance costs and of infrastructure to train delay costs). Establishment of a common platform for exchange of LCC related data between different actors in the railway sector, which should help implementing the developed methodology for LCC and the use of this together with RAMS data in contractual relationships.

Subtask 4. Establishment of an improved data background for cost based charging for use of railway infrastructure.
Collection of existing data and carrying out of the necessary measurements in order to gain the appropriate knowledge of how infrastructure costs vary with the degree and type of infrastructure use (e.g. variation according to type of vehicle, speed and load).

3. Expected results
Subtask 1 should result in improved tools (handbooks, computer tools, case studies etc.) which together with existing tools can form a complete toolbox for railway infrastructure managers. The benchmarking and best practice activities should be used for agreeing on the establishment of annual indicators, which can be used as a management tool by individual infrastructure managers. Subtask 2 should lead to computer tools for long term business modelling for infrastructure managers, and a fresh view on which tools are most appropriate for medium/short term capacity and resources management. Subtask 3 should contribute to the implementation of harmonised LCC calculation methods at railway system level for optimal decision making, for exchange of LCC data, and for use in contractual relationships. Subtask 4 should contribute to establishing an improved data background in support of harmonised charging for railway infrastructure use.

4. Type of contract
RTD project (up to 50 % EU funding).

5. Timing / Duration
2nd call (December 1999) / 24 months.

6. References
Communication on "The Common Transport Policy, Sustainable Mobility: Perspectives of the Future", COM (1998) 716 final:
Para 3: Charging for infrastructure and external costs, White Paper "Fair Payment for Infrastructure Use"; Para 10: White Paper "A strategy for revitalising the Community's railways" COM (1996) 421 final; Para 15: Charging for marginal social costs; Para 42: Methods used for calculating different cost components internal and external; Annex I: Railway Infrastructure Package COM (1998) 480 covering capacity allocation, charging for infrastructure use, safety certification, licensing of railway undertakings, and the separation of infrastructure management and transport operations into distinct business units.

7. Links
FP4 Transport Programme projects: LIBERAIL, EUROPE-TRIP, CRMA, REMAIN, OPTIRAILS, PRORATA. FP5 Thematic Network on "Maintenance and Management of Railway Infrastructure" (1st call). FP5 Thematic Network on transalpine crossing (task 2.1.1/8)

8. Involvement of non-EU countries

9. Consortium profile
Railway infrastructure managers, Member State authorities/decision makers, supply industry, research establishments and consultants. Partnerships that include experience from similar work in the road sector is strongly recommended.

2.2.1/11 Road infrastructure pavement maintenance management

1. Problem description
Although approaches to road construction and maintenance have improved over the last few decades, the increases in traffic levels have increased even faster, and thus the associated congestion, safety and environmental problems have progressively grown. This has led to a significant desire for minimisation of the number, duration and physical size of roadworks. The objective of this task is to optimise all aspects of the road maintenance process in order to ensure greater efficiency and safety, and also reduced pollution, on the road network.

2. Task description
The work will include the development, and selective demonstration, of innovative maintenance strategies, techniques and procedures for road pavements. Cost-benefit analysis methods should be defined in order to ensure their optimisation. The main issues considered should be speed of application, durability and potential for congestion reduction.
Another important element of the work will be the identification, within the techniques and procedures, of ways to maximise the safety of both vehicle occupants and road workers. New technologies, techniques and procedures for monitoring of infrastructure condition should also be identified and developed, in order to ensure the optimum timing of maintenance intervention in relation to structural condition and traffic levels.

3. Expected results
Innovative strategies, techniques and procedures for minimisation of the number, duration and physical size of roadworks, and particularly those in high congestion areas.
Associated cost-benefit methods to ensure optimal use of available funding.
Methods to maximise vehicle occupant and road worker safety at roadworks.
New technologies, techniques and procedures for monitoring of infrastructure condition.

4. Type of contract
RTD project (up to 50% EC funding)

5. Timing / Duration
2nd Call (December 1999), duration approximately 36 months

6. References
RETRAEST (Transport R&D Co-operation with Central and Easter European Countries) Multi-Annual R&D Programme.

7. Links
ALT-MAT, AMADEUS, ARROWS, ART, PARIS, PAV-ECO, POLMIT, RIMES, and WAVE Transport RTD Projects. COST Actions 323, 324, 325, 333, 334, 336 and 343. Phare Multi-Country project on Road and Motorway Management in the Phare Countries.

8. Involvement of non-EU-countries
Given the importance of a well-functioning road system in Central and Eastern European Countries, their participation is particularly welcomed, and participation from North America where appropriate.

9. Consortium profile
The expertise needed to cover the full scope of the task would at least include civil engineering (road traffic engineering, pavement engineering, safety engineering), ergonomics, environmental engineering, operational maintenance management, and economics.

2.2.1/12 Thematic Network on airport activities

1. Problem description
Over the last decade, European air traffic demand has grown t rates of between 5% and 7% *per annum*, for both passengers and cargo, and these growth rates are forecast to continue for at least the next ten years.

The acknowledgement of this critical situation has increased research activities in all relevant areas to such a level that improved co-ordination is essential in order to avoid expensive and sometimes disruptive overlapping.

2. Task description
The aim of this task is to provide administrative and technical support for the assessment and consolidation of the results of the various projects in the airports domain, and to facilitate their dissemination to the Member States and other parties. The activity will also require some technical effort to integrate results and explore issues not yet covered by other projects.

It will focus on the activities which are relevant to the airside operations and to those on the land-side within the airport perimeter.

This thematic network will address airport authorities, service providers and users as well as manufacturers and research centres part of the European aviation community.

3. Expected Results.
Organisation of dissemination workshops with experts, including secretariat activities.
Preparation of synthesis documents for consultation and dissemination.
Preparation of supporting technical analysis.
These activities will lead to the creation of a forum where airport specialists will be able to confront new ideas and will find a structured information on the ongoing activities.

4. Type of Contract.
Thematic network (up to 100% EU funding)

5. Timing.
Second Call. 3 year duration

6. References
Communication on The Common Transport Policy, Sustainable mobility: Perspectives for the Future (COM (1998) 716 final) *Paras 12,13,30,46,49*

7. Links
Airports related projects from ECARDA (DG-Transport, DG-Research and DG-Information Society) projects from 4FP and in particular OPTAS-B.

8. Involvement of non-EU countries
Participation from accession countries is welcome as well as that from ECAC States.

9. Consortium profile
The consortium should not be too wide, but should include organisations from service providers, users and other aviation community players.

2.2.2/6 Use and Integration of New-generation Vehicles and Radically Improved Propulsion Systems in the Transport System

1. Problem description

Many new-generation vehicles are introduced into the transport system without the infrastructure interface being properly set up, and without certain safety aspects being clarified. As a result, their full benefits cannot be exploited, as they do not reach sufficient market share. The present task will develop a framework for the operation of such vehicles on the transport network under the best possible safety conditions. This framework will give guidance to road operators, users and manufacturers of such vehicles in order to enable a smooth phasing in of the technologies compatible with conventional propulsion systems.

2. Task description

Firstly a comparative assessment of new generation vehicles, powered by different types of engines/fuels will be carried out, focussing on the issue of new and specifically gaseous fuels, such as DME (Di-methylether), CNG (compressed natural gas), high-pressure CNG, hydrogen, but also bio-fuels and methanol. Different types of road vehicles, such as short/long distance cars, LGV, HGV, etc would be included. This assessment should be performed, both from a specific vehicle point of view (with reference to the environment, vehicle safety, vehicle operation and infrastructure features), and from a systems viewpoint, and should consider the efficiency of the road transport system, including socio-economic and legal issues.

Secondly, implementation strategies should be devised for the integration of such vehicles into the existing road system in technical, operational, infrastructure and safety terms. Barriers to wider implementation should be identified, and strategies should be devised in such a way that these barriers can be overcome. The project will also address transition issues, involving the steadily increasing shares of such vehicles in the overall fleet. The project will identify conditions of customer acceptance (particularly perceived safety of gaseous fuels for different user aspects, e.g. refilling of gaseous fuels, partly or fully automated, storage safety, use of in-house car parks). This work should draw on new or existing demonstrations.

3. Expected results

Requirements for operators of road infrastructure, including ancillary infrastructure, based on investment scenarios and cost estimates for fuel provision derived from this.

Recommendations for the industry (car manufacturers, operators of ancillary infrastructure) on how to foster acceptance of such vehicles among end users.

Recommendations for legislative, (pre-) standardisation and EU harmonisation action to be taken at different levels.

Recommendations on user benefits both in monetary and non-monetary terms.

Recommendations for enhancing environmental rating schemes of cars (eco-labelling).

4. Type of contract

Combined Project (RTD + DEMO, up to 50% funding)

5. Timing / Duration

2nd call (December 1999), duration 36 months

6. References

Common Transport Policy Action Programme: "Towards 2000 and Beyond": safety, development of vehicles, engine and fuel standards accompanied by measures to promote and secure their application, transport aspects of UN conferences on climate change. Partners specifically interested in demonstration of fuel cell equipped vehicles should also take account of work planned under Thematic Programme 4.

7. Links

Links need to be established with the Thematic Network on the 'Integration of new generation vehicles into the transport system' launched under the 1st Call of this Key Action. Work in the present project will be co-ordinated with other Key Actions through the Inter-service Co-ordination Group on 'New generation vehicles'. The project will take up results from the FANTASIE project, which produced a forecast on transport technologies. Besides, the UTOPIA project has produced an inventory of new propulsion systems and demonstration sites. Results from this project will be used as input to the present task.

8. Involvement of non-EU-countries
As appropriate

9. Consortium Profile
The consortium needs to have expertise in road infrastructure operation (fuelling stations and fuel supply chain, maintenance, emergency services), vehicle and fleet operation.

2.2.2/7 Assessment and development of mitigation measures and procedures for environmentally friendly shipping operations

1. Problem description

Mitigation of the environmental impact of ships and shipping operations is primarily achieved through the use of technical, managerial and economic means. At both the international and European level, currently, main issues of concern are ballast water management, the use of anti-fouling paints and air pollution from ships. Extensive knowledge of the associated risks and the resultant impact on the environment is considered to be very important prior to developing any remedial solutions.

Ballast water has to be taken on-board to ensure the stability of the vessel at sea. It is estimated that globally about 10 billion of ballast water are transferred each year. Concern regarding the environmental damage (e.g. harmful algae blooms) caused by the introduction of unwanted aquatic organisms contained in ballast water is steadily increasing. The exchange of ballast water at deep sea creates different problems in relation to the stability of the vessels. Anti-fouling paints are used to prevent ship hulls to be covered by e.g. algae which leads to a decrease in speed of the ship and therefore to an increase in fuel consumption. Anti-fouling paints often contain organotins such as TBT (tributyltin) which have been shown in studies to have a severe impact on the environment and possibly entering the food chain. Another main concern is the quality of fuel and related air emissions. Marine bunkers contain remains, in particular sulphur, of the oil refining process which have the potential to damage the environment. In particular for emission-related issues appropriate measurement systems should be developed.

2. Task description

Prior to the development of any pro-active and cost-effective remedial solution aiming at limiting the introduction of non-indigenous organisms into local ecosystems, the potential dangers and environmental implications associated with changing ballast water at sea should be analysed and determined. Potential remedial solutions to be considered are the sterilisation of ballast water during loading operations as well as on-board water treatment (filtration, thermal, chemical, radiation). The work should include also all aspects related to ship safety such as the ships' stability. The work should lead to recommendations for the development of ballast water management plans.

The International Maritime Organisation considers to ban the use of anti-fouling paints, which contain organotins such as TBT. Some industrial interests claim that suitable alternatives will not be available in the near future, while certain elements of the paint industry claim that suitable alternatives will be available within a reasonable time frame. Therefore, the industrial potential for replacing TBT anti-fouling paints with appropriate alternatives needs to be evaluated, including an inventory of substitutes (copper-based coatings, silicon-based paints), followed by an assessment of their applicability and cost-efficiency. This global assessment should also consider other alternatives including under water cleaning solutions or ultrasonic or electrolytic devices in terms of applicability and cost-effectiveness. The results of this global assessment should help policy makers to define their strategies and policy priorities.

Another main concern is the quality of fuel and related air emissions. Marine bunkers contain remains, in particular sulphur, of the oil refining process which have the potential to damage the environment. There are moves to limit the amount of sulphur in marine fuels in order to reduce acid rain levels. Shipowners are interested in using low-sulphur and better quality fuels at an economic cost in order to improve engine performance and to reduce wear and tear. RTD should investigate the present situation in terms of the cost and quality of fuels, it should address the measurement of emissions, the technical and economical challenges faced by oil majors/manufacturers if reduced sulphur content is mandated, possible standards for marine fuel quality as well as the costs and benefits to shipowners of using low sulphur fuels. The economics of operating ships which cross into sulphur emission control areas, taking into account the compatibility of proposed measures with international agreements, is also of particular importance.

3. Expected results

- Technical and operational solutions for the treatment of ballast water
- Recommendations for ballast water management plans
- Safety assessment of ballast water transfer
- Inventory and assessment of existing anti-fouling paints, substitutes, any other technical solution
- Global assessment of environmentally-friendly cost-efficient alternatives to the use of anti-fouling paints

- Economic impact assessment and cost-benefit analysis of the use of low-sulphur marine fuels
- Reliable methods to measure emissions and identification of acceptability levels
- Proposals for standards for marine fuel quality
- Operational benefits to shipping companies, transport and environmental authorities and organisations, classification societies, transport and infrastructure planners.

Provide technical and managerial solutions in order to ensure both a strong European industrial position and the necessary flexibility to comply with international regulations.

4. Type of contract
RTD project (up to 50% EU funding)

5. Timing / Duration
2nd Call (December 1999) / 30-36 months

6. References
The work at IMO (International Maritime Organisation) has to be taken into account. This includes in particular a) any changes to MARPOL (International Convention for the Prevention of Pollution from ships) or any new convention to tackle the subject of ballast water management, b) the ongoing work at IMO in relation to a possible prohibition of organotins in anti-fouling paints and c) on-going work at IMO in relation to marine fuels and air emissions e.g. MARPOL – Annex VI or any other guidelines to limit the emission levels.

7. Links
Concerted Action on Formal Safety and Environmental Assessment, Projects such as EMARC (FP4 Transport Programme).

8. Involvement of non-EU countries
No particular participation foreseen at this stage.

9. Consortium Profile
The different areas addressed in the task description may be subject of one proposal or of separate proposals. However, different expertise might be required, which should be reflected in the consortium composition and structure (e.g. cluster approach). The consortium/consortia should represent a balanced composition between research institutions and laboratories, industrial key stakeholders (e.g. shipping companies, ports, shipbuilding industry, chemical and oil industry etc.), and decision makers dealing with policy or related matters (maritime administrations, classification societies) as well as any other environmental interests.

2.2.3/8 Drivers' and Riders' Physical Fitness and Physical State

1. Problem description
The physical state of a person determines to a large extent his or her fitness/ability to drive a car or to ride a bicycle, moped or motorcycle. This physical state can be influenced by several factors, such as illness, perceptual deficiencies, and the use or abuse of alcohol, illicit drugs and/or medicines, fatigue, or age. But it still is not clear to what degree these various factors may impair a person to drive/ride, as well as the relationship between these factors and (relative) risk exposure.

2. Task description
The research will cover comprehensive experimental and possibly epidemiological research on impact of alcohol, various types of drugs and medicines, their interactions on driver behaviour, and it will assess relative risk exposure for the different substances and possible combinations. Comprehensive epidemiological research (possibly added with experimental research) of various types of illnesses, notably diabetes, epilepsy and sleeping disorders, including effects of medical treatment, and assessment of relative risk exposure. Experimental research covering visual performance, and notably visual acuity. Epidemiological/experimental research covering fatigue and road use.

3. Expected results
Validated tolerance levels for the various impairing factors, covering suspected illnesses, alcohol, the use of illicit drugs, and the use and abuse (e.g. high doses) of prescribed medicines.
With respect to visual acuity, the project will have to determine the criteria for dusk/night-vision as well as useful field of vision, and describe possible methods for testing vision, the equipment to be used and the impact of such tests.
Assessment of the potential of in-vehicle driver status (physical state) monitoring and interlock systems, including acceptance and other implementation issues and cost/benefit or cost-effectiveness assessment.

4. Type of contract
Accompanying Measure (up to 100% EU funding)

5. Timing / Duration
2nd call (December 1999) (re-launch from 1st call), duration 36 months

6. References
Policy relation with the EC Road Safety Communication (Promoting Road Safety in the EU) COM(97) 131 final.
Project will be part of the Thematic Network on Cost/Benefit and Cost-Effectiveness Assessment Tools for Road Safety/Environment Measures.

7. Links
Links with 4FP ROSITA and CERTIFIED projects. Work should take into account the results from the SAVE-project (from the 4FP Telematics Application Programme).

8. Involvement of non-EU-countries
Potential area for research co-operation with USA, Canada and Australia if in conformity with Community interest.

9. Consortium profile
The following areas of scientific expertise can be expected to be required to carry out this comprehensive task in full: medicine (physiology, psychophysiology, toxicology, pharmacology, epidemiology, ophthalmology), psychology, ergonomics, and biomedical engineering.

2.2.3/9 Safety in tunnels

1. Problem description
There is a need for a common European approach to handle the safety in tunnels, both road and rail, in order to prevent accidents and incidents, to develop methods and routines for managing evacuations and providing security for persons and goods and assessing and investigating occurred incidents. It is important to study both accidents of persons, goods (dangerous goods as well as non-dangerous goods) and collective transport. As some recent accidents have shown, the organisational aspects of tunnel management are of great importance. It is therefore appropriate to investigate organisational needs and to identify and propose solutions for national and cross-border traffic and to demonstrate the best practises.

The problems with tunnel safety are mainly with the existing tunnels. The work should therefore focus on finding innovative solutions to enhance the safety in existing tunnels (including tunnel redesign/reconstruction) with less focus on new (not yet built) tunnels. The primary focus should be on road tunnels. A special attention should lie on the assessment of solutions for preventing accidents ("active safety") and methods for how to stretch the time-gap after an accident has happened until passengers are safely evacuated ("passive safety").

2. Task description
With a view to improve transport safety policy impacts, the work should include the following actions:
To assess traffic management methods in tunnels and on access routes (traffic monitoring, surveillance and control, information and communication with drivers) both for normal, incident and accident conditions in tunnels.
To assess and validate methods and routines ameliorating tunnel safety for accident prevention, including tunnel maintenance management and incident/accident detection, taking into account already existing and new solutions of incident detection equipment.
To integrate, demonstrate and validate methods and techniques in order to minimise the consequences of accidents when they have occurred. This means for example fire and smoke and air control, smoke and fire propagation models, evacuation and intervention management, infrastructure design for evacuation (service tunnels, escapes, emergency lighting, passenger survivability space), fire fighting equipment (manual/automatic, infrastructure based/on-board).
To develop a harmonised calculation method for estimating the safety level of tunnels, taking account the individual characteristics, e.g. road type, traffic volume/composition, cross section, tunnel length and active/passive safety measures/equipment.
To investigate further needs for data collection for tunnel accident investigation systems/protocols to be able to carry out follow-up investigations and reconstruction of incidents as well as tunnel risk assessment.
To demonstrate the systems, concepts, and techniques mention above in order to obtain an integrated approach to safety in tunnels and evaluate its cost-effectiveness.

3. Expected results
Guidelines for passenger evacuation, incident and accident management methods and systems
Proposals for and assessment of tunnel and traffic monitoring systems
Tools for tunnel risk assessment
Proposals for harmonisation, legislation and standardisation
Benchmarking evaluation tools for dedicated solutions

4. Type of contract
Combined project (RTD + DEMO, up to 50% EC funding)

5. Timing / Duration
2nd Call (December 1999), duration 24 months

6. References
Policy relation with the EC Road Safety Communication (Promoting Road Safety in the EU) COM(97) 131 final.
PIARC (World Road Association) report from June 1999 on recommendations on smoke and fire evacuation and coming report from OECD/PIARC concerning dangerous goods in tunnels.
Civil Protection Action Programme.
UN/ECE/WP1 (United Nations/Economic Commission for Europe/Working Party 1) on road signals for tunnel application.

7. Links
PIARC C5 Road Tunnel Committee
TEN (Trans European Networks) projects, e.g. CORVETTE and SERTI.
Action Line 1.5.1 of the IST Workplan 2000.

8. Involvement of non-EU-countries
As appropriate

9. Consortium profile
The consortium should reflect on the cross-border and cross-regional specific problems. Relevant authorities must be involved, such as road and civil protection authorities (in order to co-ordinate the research with on-going activities) police and tunnel operator.

2.2.5/5 Training concepts for improved cross-border train operations

1. Problem description

The training and qualification of personnel is one of the key issues related to safe and efficient cross-border train operations, and it has been identified as one of the key factors for true interoperability without change of train crews at borders. The FP4 project HUSARE has provided a detailed analysis of the risks associated with human factors in cross-border train operations. The main aim of this task is to identify the required skills and to develop and validate the training methods to be used for the training of train crews, traffic control staff and other staff involved in cross-border train operations. The work should be closely linked to the activities foreseen in relation with the communication and directive on interoperability of conventional rail as well as the work with the Social Partners in the railway sector. An important dimension of this task will be the ongoing restructuring of the railway sector and the need for re-training staff to deal better with the customer and market orientation of railways, the use of new technology, the increased demand for cross-border travel and the integration with other transport modes.

2. Task description

The main focus of this task should be on the development of solutions to achieve the interoperability of "train crews" involved in cross border operations with particular emphasis in practical problems such as: differences in the areas of language, left/right side driving, safety philosophies, operating rules and route characteristics. The work should include the assessment and integration of simulator systems and concepts. This could either include the adaptation of existing simulators/multimedia tools or the use of new technical developments from other Key Actions.

The new tools should be validated and demonstrated in the railway environment as part of a new training concept and a new system for certification of train crew competence in accordance with the new communication and directive on interoperability of conventional rail. It is particularly encouraged to have an involvement of all relevant stakeholders for at least one border crossing, where it could be possible to demonstrate the training and certification of staff qualifications, as well as the practical implementation of cross-acceptance of staff qualifications on both sides of the border.

It could also include the development of suitable training courses for train crews and traffic control staff, which address the use of a common language and common operational procedures in both normal and degraded mode operation as well as in emergency situations. In addition to the main priorities described above, the work could also be extended to cover other staff involved in handling of cross-border train operations, for instance: "station", "terminal", "train preparation", and "maintenance" staff. The work on new training methods and certification of qualifications should be based on a broader assessment of the job, qualifications and career developments for staff involved in cross-border train operations.

3. Expected results

The work of this task should provide input to the implementation of the train crew cross-border interoperability foreseen in the communication and directive on interoperability of conventional rail. The project should demonstrate tools and methods suitable for ensuring the necessary qualifications for staff involved in the handling of cross-border trains, and demonstrate the certification and cross-acceptance of staff skills in some cross-border situations.

4. Type of contract

Combined project (RTD+DEMO up to 50 % EU funding).

5. Timing / Duration

2nd call (December 1999) / 30 months.

6. References

Communication on "The Common Transport Policy, Sustainable Mobility: Perspectives of the Future", COM (1998) 716 final:
Para 3: Social aspects; Para 10: White Paper "A strategy for revitalising the Community's railways" COM (1996) 421 final, Trans-European Rail Freight Freeways; Para 17: Working conditions; Annex I: Railway Infrastructure Package COM (1998/480), Communication on interoperability of conventional rail; Annex II: Evaluation of the social impact of he functioning of the market in different transport modes, harmonised training and other standards for mobile railway workers.

7. Links
FP4 Transport Programme projects: HUSARE, HEROE, ERTMS/ETCS.

8. Involvement of non-EU countries
Switzerland and other 3rd countries as required.

9. Consortium profile
The consortia composition should reflect all the knowledge required to fulfil the relevant issues and in particular include the following actors: railway operators, safety authorities, research establishments, consultants and equipment supply industry.

2.2.5/6 Development of methodologies and performance measures to assess long term safety implications of new in-vehicle technologies including HMI for road transport

1. Problem description
New technologies to assist and protect the driver and other vehicle occupants will become more and more available on the market without road safety consequences (negative and positive) having been tested or approved or evaluated with long-term objectives. The long-term safety risks are not being properly assessed today. There is also a risk associated to the fact that different types of new technologies and systems, portable as well as fixed installed, are introduced in parallel to the market without any assessment of how they work together (cumulative effects). There is a need to prepare for a second step after that the proposed recommendations of a European Statement of Principles on Human Machine Interface for In-Vehicle Information and Communication Systems has been adopted and deployed.

2. Task description
Risk assessment of the use of new in-car technologies, portable as well as fixed equipment.
Development of a set of quantifiable policy performance standards and usability tests for in-vehicle HMI, focusing initially on in-vehicle information systems, but also studying the feasibility of extending the procedures to other areas of application. Identification of scenarios in which those performance and usability tests should be applied.
Development of a draft European certification procedure to help policymakers to define strategies for testing in-vehicle HMI for road safety objectives.
Provide recommendations on the need of standards or self-certifying quality assurance methods for the safety and the durability of in-vehicle telematics/advanced electronic control systems.
Assess the risks that will be caused by tampering or bad maintenance of in-vehicle equipment.
Assess the policy impact of in-vehicle diagnostics systems for safety including the feasibility of extending the on-board-diagnostics system (EuroIII-standards) for emissions to vehicle safety
It could be of interest to take into account a possible differentiation in needs and performances between professional and non-professional drivers.

3. Expected Results
- Risk assessment methods, performance standards and usability tests for in-vehicle HMI and technologies
- Proposal for a European certification or quality assurance procedure for testing in-vehicle HMI.
- Recommendations on testing equipment and techniques

4. Type of contract
RTD project (up to 50% EC funding)

5. Timing / Duration
2nd Call, duration 24-36 months.

6. References
EC Road Safety Communication (Promoting Road Safety in the EU) COM(97) 131 final.
ETSC (European Transport Safety Council) report on “Intelligent transportation systems and road safety”.
UK DETR (United Kingdom Department of the Environment, Transport and the Regions) report “A safety checklist for the assessment of in-vehicle information systems”.
Relevant UN/ECE, CEN, CENELEC and ISO-standards

7. Links
COST Transport Action 338 ‘Drivers visual information overload’.
On-going European research such as 5FP ADVISORS-project and DG Information Society 4FP RESPONSE-project. .

8. Involvement of non-EU-countries
Where appropriate.

9. Consortium profile
The consortium needs to have expertise in car manufacturing, electronic equipment manufacturing, transport safety research, ergonomics, human machine interface, design and evaluation, and legislation.

Task 2.3.1/11 Thematic Network on Air Transport and ATM Validation activities

1. Problem description

There is need for close interaction between various projects from a number of programmes, in order to have a suitable co-ordination between projects and to let stakeholders participate through a collaboration environment. This co-ordination takes the form of both a 'high level' interaction with users and policy makers at the air transport policy level, and a lower 'working level' which will provide the necessary co-ordination and co-operation environment to ensure that the large-scale ATM validation activities that will be carried out in the 5th FP, will be conducted efficiently and effectively. Part of the role of this Thematic Network will be to establish a consensus on the validation elements that will form the large-scale validation. In this respect, a number of elements are already under development and/or improvement through other projects or planned activities. However, policy initiatives are underway to develop a more efficient European Airspace Structure (Single Sky) and the airspace model to be used for the validation activities should reflect this development. Consequently, there is also a need to initiate an accompanying measure to develop this airspace model and to validate both its feasibility and benefits.

2. Task description

Subtask 1: Thematic Network

This task shall create the appropriate co-ordination and collaboration environment to gain transparency between projects engaged ATM validation activities. This task shall also form the advisory group of all stakeholders having an interest in ATM validation and the validation activities performed. Finally, the task shall provide support to the other tasks, in particular the tasks on the master plan and validation trials.

To set up an environment in which projects from different programmes shall be provided with a focal point for collaboration and the stakeholders in ATM can meet and exchange views on ATM validation and to follow the validation activities. User groups should be established and interact with projects. Also, this task shall continue the work done in 4th FP project CAVA and provide dissemination support.

Subtask2: Accompanying Measure

This task should, based on existing and projected traffic patterns, develop proposals for a European airspace structure which is able to provide an efficient traffic flow based on needs rather than on existing national structures. These proposals should be validated, through appropriate modelling and/or simulation, to demonstrate the feasibility of such an airspace management system and its potential benefits in terms of increased capacity, reduced flight times etc. In addition it should make recommendations on how such an airspace system could be most effectively implemented within the constraints of existing infrastructure. It is anticipated that the resulting airspace model, to be discussed within the Thematic Network, would then be used for the large-scale validation activities in the 5th FP.

3. Expected Results

- The high level advisory group will provide co-ordination and consultation between the policy makers and air transport stakeholders to help in the prioritisation of RTD investment for the maximum benefit for air transportation as a whole.
- A collaboration environment for ATM stakeholders and projects. Support activities for the concept consolidation, ATM master validation plan and the large-scale integration and validation projects in the 5th FP.
- A demonstration of the feasibility and benefits of a European Airspace Management System

4. Type of Contract.

Thematic network and Accompanying measure (up to 100% funding)
Each sub-task should be subject of a separate proposal.

5. Timing / Duration

2nd call (December 1999). Thematic Network 3 year duration, Accompanying Measure 9 months.

6. References

Communication on The Common Transport Policy, Sustainable mobility: Perspectives for the Future (COM (1998) 716 final) *Paras: 13,30,39,41,49,* Communication on the creation of a single European sky (Dec 99)

7. Links
All 'ATM and Airports' tasks Safety/Environment tasks, DG-Research and DG-Information Society tasks, CAVA, AVENUE TORCH, EVAS, OPTAS A and B, SAMS

8. Involvement of non-EU countries
In particular accession countries and States belonging to ECAC would be welcome as members of the Thematic Network.

9. Consortium profile
TN – Small specialised team to provide the secretariat of the Network
Accompanying Measure – airspace management design and planning, airspace modelling and simulation capability

2.3.1/12 Assessment of new concepts for ship and shore traffic management and information systems (VTMIS) to improve efficiency in waterborne transport operations

1. Problem description:
Vessel Traffic Services (VTS) concepts focus on the management of waterborne traffic in order to enhance navigation and safety and have been clearly defined by IMO (International Maritime Organisation) and IALA (International Association of Lighthouse Authorities). VTMIS (Vessel Traffic Management and Information Services) is a concept which originated under FP4 and which has been developed by the Member States and key industrial stakeholders in the Concerted Action on VTMIS. VTMIS provides services in response to public and private sector demand with the aim of minimising risks for safety and environment, while maximising the efficiency of waterborne transport. VTMIS reflects also the change from a single transport mode approach to one, which is user-oriented and supportive of a comprehensive transport system, which involves interaction between all modes. The efficient shaping of such as system which aims at achieving seamless and customer-oriented door-to-door services requires safe and efficient individual transport modes as well as their optimal integration. Within this framework, VTMIS aims at enhancing safety, efficiency, interconnectivity and interoperability. It paves the way to evolve from traffic to transport management, resulting in the efficient provision of information on traffic and cargo flows and in the sustainable allocation of resources and services. The task aims at the further enhancement of vessel traffic management (VTM) capabilities for navigational and safety purposes, as well as at the further validation of the VTMIS concept. The further integration of emerging or existing technologies, and new applications, in support of additional added value services, will lead to new requirements for operational procedures, equipment design and education and training, as well as for the overall organisational and regulatory framework.

2. Task description:
The work should ensure that the requirements of all stakeholders as well as any new possibilities resulting from emerging technologies are taken into account when integrating traffic and transport management and information services and concepts to enhance waterborne transport. The results generated in the related concerted actions and thematic networks should be used as the baseline for all integration, demonstration and validation efforts. When carrying assessment related tasks, methodologies such as formal safety assessment should be used as a baseline.

The work should integrate both onboard and shore-based information and should enhance ship-to-ship and ship-to-shore communications. The work should identify applications based on existing technologies such as satellite communication, AIS (Automatic Identification Systems), GIS (Geographical Information Systems), in particular ECDIS (Electronic Chart and Display Information System), and should integrate them into operational scenarios in order to provide additional added value services for traffic and resource management.

Applications to be considered are for example tracking and tracing of 'high risk' vessels (including technical, operational and acceptance-related elements) and remote sensing for both hydrographical surveying and environmental monitoring (e.g. oil slick identification) and for the collection of traffic statistics (e.g. for use in the risk analysis in the VTMIS concept). The applications should be assessed on the basis of their contribution to additional or enhanced added value services. Services to be addressed are for example SAR (Search and Rescue), calamity abatement, shore-based supported pilotage (deep sea, channel/river, harbour), cargo and resource management, journey planning, etc.

The work should also address the validation of enhanced navigation and traffic routing aids (with a particular view to the specific needs of high-speed vessels) and their onboard integration. In particular, the assessment and validation should involve tools for real-time weather routing and forecasting, prediction models for Estimated Times of Arrival (ETA), ECDIS in order to respond to demands which result from the use of modern positioning systems and Geographical Information Systems (GIS) in general. The work should provide recommendations for the potential use of additional information provided by new technologies as well as for an adaptation of operational procedures (e.g. for collision avoidance). It should further address issues such as traffic management in congested waters and routing assistance in traffic separation schemes (TSS).

Links with other concepts, such as those addressing River Information Services (RIS) and supply chain management should be established, assessed and validated. This part of the work has to be based on a common definition of data as well as on harmonised procedures and interfaces.

Further aspects to be addressed are the financing, cost-effectiveness (e.g. low cost solutions) and allocation of responsibility for such a system. Legal, organisational and financial aspects of implementation also need to be addressed. The potential for VTM/VTMIS to support the implementation of policy initiatives such as HAZMAT should be assessed. Again, the work in the related concerted actions/thematic networks should be taken into account.

3. Expected results

- Integration of technologies and applications into VTM/VTMIS
- Validation and integration of additional/enhanced added value services
- Policy user requirements for the smooth integration of information generated by different types of services (safety/trade operations)
- Validation of enhanced navigational and traffic routing aids
- Operational procedures
- Guidelines for bridge design
- New education and training schemes
- Legal, organisational and financial framework

The overall objective of the further enhancement of VTM/VTMIS is to provide the framework for a seamless exchange and flow of information, thereby significantly reducing repetitive reporting procedures and overcoming associated cost and availability problems.

4. Type of contract

Combined Project (RTD + Demo, up to 50% EU funding)

5. Timing / Duration

2nd Call (December 1999) / 30-36 months

6. References

The work at IMO (International Maritime Organisation), for example the International Convention for the Safety of Life at Sea (SOLAS), as well as work at IALA (International Association of Lighthouse Authorities) should be taken into account. At European level, the work undertaken by the Concerted Actions on Vessel Traffic Management and Information Services (VTMIS) and on Inland Navigation should be taken into account.

7. Links

Concerted Action on VTMIS. Projects such as RTIS, TAIE (FP2 EURET). Study 'VTMIS' (APAS). COST 326 and projects such as Comfortable, Movit, VTMIS-Net, Vasme, Bopcom, Marnet, Prosit developed under FP4-Transport Programme as well as projects such as Poseidon and Echo developed under FP4-Telematics Application Programme.

8. Involvement of non-EU countries

Where appropriate.

9. Consortium profile

It is recommended that the different areas in the task description should be subject to one single proposal. However, as different and varied types of expertise will be required, those should be reflected in the consortium composition and structure (e.g. cluster approach). The consortium should further represent a balanced composition between research institutions and laboratories, industrial key stakeholders (e.g. shipping companies, ship equipment manufacturers, service providers, port authorities, shippers, transport operators, coast guards, pilots, vessel traffic services), and decision makers dealing with policy and related matters (maritime administrations, classification societies).

2.3.2/7 Innovative intermodal transport solutions for non-unitised cargoes and other specific market segment

1. Problem description

The Communication on Intermodality and intermodal freight transport in the European Union (COM97/243) shows that the transport system in the European Union is showing signs of inefficiency from a socio-economic point of view. This is mainly due to the growing freight traffic and increasing imbalance in the use of the various transport modes and infrastructure. The "business as usual" scenario, is unlikely to be able to cope with the complexity of today's and tomorrow's mobility requirements in a sustainable manner. An overall systems approach is needed. The furthering of intermodality is a promising and innovative tool that can support a transport systems aimed at a more balanced and efficient use of the available transport capacity (infrastructure, rolling stock, handling equipment etc.). In order to create a common understanding of the concept of intermodality, the Commission considers Intermodality as "a characteristic of a transport system, that allows at least two different modes to be used in an integrated manner in a door-to-door transport chain". Intermodality becomes a quality indicator of the level of integration between the different modes: more intermodality means more integration and complementarity between modes, which provides scope for a more efficient use of the transport system.

Within this framework it becomes essential to further investigate intermodal transport potential in market segments that are not traditionally using intermodal transport like non-unitised goods and waste disposal but that could have a significant potential to use it. Waste disposal for example, being not time sensitive, easy to bundle and not having special demand on transport units, represents a theoretical high potential for intermodal transport. Dangerous and bulk goods should also be analysed with a view of shifting goods to safer transport modes.

The present task address the integration of non unitised-cargoes into intermodal door-to–door transport chains in the European Union.

2. Task Description

The present task aims at analysing identifying and testing intermodal transport solutions for non unitised-cargoes in door to door intermodal chains considering all modes in European territory.

Within the framework of the present task, a specific analysis of the market should be done. The market potential for intermodal transport should be identified and modelled.

Limits, bottlenecks and opportunities for the development of new intermodal services for non unitised-cargoes should be identified at economical, technical operational and political level.

The viability of intermodal transport for non unitised-cargoes should be assessed and demonstrated on specific traffic relations

3. Expected results

Assessment of intermodal transport market potential for non unitised-cargoes.
Assessment and demonstration of door to door intermodal transport solutions for specific non unitised-cargoes transport demand
Guidelines and recommendations for the development of intermodal transport services for non unitised-cargoes.
Test on real environment of specific transport equipment and vehicles adapted for intermodal transport of non unitised-cargoes.

The target group is: intermodal transport operators, industry, logistic managers, transport planners, freight forwarders, policy makers at local and regional level.

4. Type of Contract

Combined project (RTD + DEMO, up to 50% EU funding)

5. Timing / Duration

2nd Call (December 1999) – duration: 24 months

6. References
Communication on "Intermodality and Intermodal Freight Transport in the EU" (COM(97) 243 final).
Communication on the progress of the implementation of the action programme of the Communication on Intermodality (COM(1999) 519 final).

7. Links
none

8. Involvement of non-EU Countries
Where appropriate

9. Consortium profile
Research institutes, consultants, intermodal transport operators, logistics experts and main transport actors involved in the subject for the research part. Industry, intermodal operators, logistic companies and road hauliers participating in the demonstration part.

2.3.2/8 Integration of airfreight transport in the intermodal transport chain.

1. Problem description
In the process of the setting up of the Trans-European transport networks, efforts are currently made to promote all forms of intermodal transports involving different modes of transport such as road, rail and inland waterways. It seems equally essential, taking into account the importance of air transport, to also encourage intermodal co-operation involving this mode.

For different reasons, the air transport industry has organised its structures with hubs constituting air nodes as well as distribution points. The position of these hubs in Europe and their capabilities to access to surface modes of transport as rail must become an important concern for the EU.

Until now, the air cargo industry has built an environment according to its own particular characteristics. The air/road integration for cargo is already a reality, for pre and post delivery of long haul air traffic, as well as for intra-European traffic, for which airlines are often using trucks. The main issues for air intermodality at present are the integration of rail infrastructure and services at airport.

Intermodality can stimulate the European market. However, the functions of technical interoperability (compatibility of the standards), of interconnectivity of the various modes between themselves and of accessibility to sites for all the Member States must be guaranteed.

The aim of this task is therefore to validate different possibilities for the integration of air freight transport in the intermodal door-to-door transport chain.

2. Task description
Based on ongoing national concepts to be extended and adapted at a European level, on European RTD and on new innovative concepts, test trials should be set up to validate integrated solutions for the following areas:

Setting up and validation of innovative organisational and operational rail transport concepts or to and from airports and between airports by using combined/intermodal transport in order to have door to door transport services. This should take into account the communication and information problems in the proposed transport chain (with the integration of adequate tracing and tracking systems)
Development and integration of adapted loading and unloading systems and adequate loading units for the transport of goods (either air cargo pallets or air containers), compatible with existing equipment for door to door intermodal transport concept.
Integration of freight centres in airports: development of logistic activities and added value services, in and around airports.

3. Expected results
Validation of innovative air/rail freight transport concepts at European level.
Development of integrated and intermodal systems including air freight transport improving sustainable mobility.

4. Type of contract
RTD project (up to 50% EU funding)

5. Timing / Duration
2nd Call (December 1999) – Duration: 24 months

6. References
Communication on “Intermodality and Intermodal Freight Transport in the EU” (COM(97) 243 final).
Communication on the progress of the implementation of the action programme of the Communication on Intermodality (COM(1999) 519 final).

7. Links
FP4 projects: AFTEI, HISPEEDMIX.
PACT activities
FP5 Thematic Network on Rail freight services

FP5 Thematic Network on Terminals / Transfer points
FP5 Combined project "Fast cargo trains in cross-border traffic" (3rd Call)

8. Involvement of non EU-Countries
Where appropriate.

9. Consortium profile
Intermodal transport operators, industry, logistics experts and companies, air transport companies, railways and main transport actors involved in the subject. European or International organisations for dissemination aspects.

ANNEX

LIST OF TASKS

3rd CALL. JUNE 2000

THESE TASKS **ARE NOT OPEN** IN THE 2nd CALL

WARNING

The Commission reserves the right to introduce changes in the task descriptions based on new and relevant information. An updated version of this document will be made available at the opening of the 3rd call.

LIST OF TASKS
3rd CALL. JUNE 2000

Objective 2.1 Socio-economic scenarios for mobility of people and goods

2.1.1 Quantitative tools for decision-making

2.1.1/9 Development of a European Transport policy Information System (ETIS) as a basis for transport planning and policy formulation

2.1.1/10 Designing a database structure for in-depth road accident investigation

2.1.2 Driving forces in transport

2.1.2/5 Economic, environmental and social conditions and mobility decision choices for the sustainable development of transport

2.1.2/6 Implications of non-transport policies and societal developments on mobility

2.1.2/7 European transport visions beyond 2020

2.1.2/8 Potential of intermodal freight transport for modal shift

2.1.3 Policies for sustainable mobility

2.1.3/3 Thematic Network on common issues of transport research concerning European and North American Countries

2.1.3/4 Economic instruments, regulation and physical measures for achieving transport policy objectives

2.1.3/5 Thematic Network on public transport

2.1.3/6 Best practices in decision-taking on local and regional transport schemes

2.1.3/7 Designing local transport policy to integrate freight transport

Objective 2.2 Infrastructures and their interfaces with transport means and systems

2.2.1 Infrastructure development and maintenance

2.2.1/13 Improvement of intermodal freight terminal operations at border crossing terminals including CEECs

2.2.1/14 Improvement of intermodal transport operations in terminals

2.2.1/15 Assessment of the availability of intermodal transport means and suitable infrastructure in CEECs to implement co-operation on Trans-European intermodal transport between EU and CEECs

2.2.1/16 Strengthening the interoperability in intermodal transport chains at the level of equipment, infrastructure and transport means

2.2.1/17 Optimising railway network development

2.2.1/18 Road Infrastructure Materials

2.2.1/19 Integration of passenger terminals in intermodal transport networks

2.2.1/20 Arrival/departure/ground movement integration for air transport operations

2.2.1/21 Enhancement of port operations and management to improve Quality Shipping

2.2.1/22 High-speed vessels: identification of requirements and impact assessment

2.2.2 Environment

2.2.2/8 Vehicle/tyre/road noise abatement measures

2.2.2/9 Thematic network on the integration of environment in the transport policy

2.2.2/10 Reducing the impact of noise and emissions from land transport in urban areas

2.2.2/11 Assessment of environmentally friendly operations for dangerous goods in ports and other terminals

2.2.3 Safety

2.2.3/10 Thematic network on cost/benefit and cost/effectiveness assessment tools for road safety measures
2.2.3/11 Impact assessment of procedures and technologies to increase air transport system capacity and safety, and reduce environmental impact
2.2.3/12 Emergency evacuation of Very Large Transport Aircraft
2.2.3/13 Increased aircraft passenger survivability through the application of automotive design philosophies

2.2.5 Human factors

2.2.5/7 Improved accessibility between station platforms and trains for heavy rail

Objective 2.3 Modal and intermodal transport management systems

2.3.1 Traffic management systems

2.3.1/13 Demonstration of an integrated management and communication system for door-to-door intermodal transport operations
2.3.1/14 Requirements for urban train control systems
2.3.1/15 Specification and assessment of data collection and communication strategies for road traffic data management and traffic information systems
2.3.1/16 Road speed management methods assessment
2.3.1/17 Operational Platform for a European ATM system in the medium term timeframe (2005 – 2010)
2.3.1/18 Advanced airport approach procedures implementation
2.3.1/19 Operational Platform for River Information Services (RIS)

2.3.2 Transport and mobility services

2.3.2/9 Door-to-door services for less than container load (LCL) and small consignments
2.3.2/10 Fast cargo trains in cross-border traffic
2.3.2/11 Intermediate mass transport: innovative bus/tram concepts
2.3.2/12 Integrated mobility services in low-density rural areas
2.3.2/13 Cross-border intermodal traveller information, reservation ant ticketing services complimentary to rail journeys
2.3.2/14 Thematic network on the development of European strategies to promote short sea shipping, sea-river and inland navigation
2.3.2/15 Optimised waterborne operations in support of a European Northern Dimension

ANNEX

LIST OF TASK

1st CALL. MARCH 1999

THESE TASKS **ARE NOT OPEN** NEITHER IN THE 2nd NOR IN 3rd CALLS

LIST OF TASKS
1st CALL (March 1999)

Objective 2.1 Socio-economic scenarios for mobility of people and goods

2.1.1 Quantitative tools for decision-making

2.1.1/1 Testing of methodologies for long distance passenger travel data
2.1.1/2 Transport network accounts and marginal costs in relation to fair payment for infrastructure use
2.1.1/3 Thematic network on policy and project evaluation methodologies
2.1.1/4 Understanding and predicting mobility trends and transport patterns
2.1.1/5 Transport Modelling and Exploration Tools
2.1.1/6 Analysis of the cost structure of door-to-door intermodal freight transport services and the conditions to optimise it.
2.1.1/7 Thematic network on Benchmarking in transport

2.1.2 Driving forces in transport

2.1.2/1 Effects on Transport of Trends in Logistics and Supply Chain Management
2.1.2/2 Role of third party logistics service providers and their impact on transport
2.1.2/3 Influencing transport intensity of economic growth

2.1.3 Policies for sustainable mobility

2.1.3/1 Changing legal and organisational frameworks in local public transport: assessing the impacts on roles and activities of key players

Objective 2.2 Infrastructures and their interfaces with transport means and systems

2.2.1 Infrastructure development and maintenance

2.2.1/1 Integration between local and regional rail, incl. cross-border aspects
2.2.1/2 Improvement of cross-border connections for local and regional passenger transport
2.2.1/3 Optimisation of the use of semitrailers in the intermodal transport chain
2.2.1/4 Thematic Network on freight transfer points and terminals
2.2.1/5 Integration of horizontal transhipment techniques in intermodal transport operations
2.2.1/6 Total Airport Optimisation by Simulation, including land-side
2.2.1/7 Thematic Network on maintenance and management of railway infrastructure
2.2.1/8 Condition based, and reliability centred, maintenance of railway infrastructure
2.2.1/9 Automated underground distribution and tube transportation systems

2.2.2 Environment

2.2.2/1 Thematic network on transport and the environment
2.2.2/2 Monitoring emissions from transport, including particulates
2.2.2/3 In-service Test Procedures for Road Vehicle Emissions
2.2.2/4 Thematic network on the integration of new generation vehicles into the transport system
2.2.2/5 Tools and strategies for reduced source noise and vibrations from trains

2.2.3 Safety

2.2.3/1 Cost/benefit analysis of regulations and investments to optimise air transport safety

2.2.3/2 Improve the regulatory framework for the implementation of new operational concepts and technologies in air transport

2.2.3/3 Thematic Network on Safety Assessment in Waterborne Transport

2.2.3/4 Cost-efficient integration of new safety technologies to improve Quality Shipping

2.2.3/5 Thematic Network on Cost/Benefit and Cost-Effectiveness Assessment Tools for Road Safety/Environment Measures.

2.2.3/6 Further Development of Road Vehicle Safety Standards

2.2.3/7 Drivers' and Riders' Physical Fitness and Physical State.

2.2.4 Security

2.2.4/1 Security in local and regional public transport

2.2.5 Human factors

2.2.5/1 Training to improve the safety of air transport operations

2.2.5/2 Driver Training and Hazard Perception

2.2.5/3 Thematic Network on Maritime Education, Training and Certification

2.2.5/4 Promoting the take up of project results by leading educational institutions

Objective 2.3 Modal and intermodal transport management systems

2.3.1 Traffic management systems

2.3.1/1 Extension of ERTMS System specification

2.3.1/2 The definition and management of a master plan for ATM validation

2.3.1/3 Full Airport A-SMGCS Test Trial

2.3.1/4 Assessment of User Needs for Traffic Information and Traffic Management and their Reaction to Methods of Information Provision.

2.3.1/5 Enhanced Road Traffic Simulation for Transport Strategy Assessment.

2.3.1/6 Implementation scenarios and impact assessment of advanced driver assistance systems

2.3.1/7 Thematic Network for the creation of an intermodal framework for freight transport information and management services.

2.3.1/8 Designs for inter-urban road pricing schemes

2.3.1/9 Testing the effectiveness and acceptance of urban pricing schemes

2.3.1/10 Thematic Network on Waterborne Traffic Management and Information Services

2.3.2 Transport and mobility services

2.3.2/1 Thematic Network on rail freight services

2.3.2/2 Innovative Waterborne Transport Concepts

2.3.2/3 Thematic Network on an Operational Platform for Quality Shipping

2.3.2/4 Thematic Network on movement of goods in urban areas

2.3.2/5 Mobility management - new partnerships to encourage sustainable travel

2.3.2/6 Travel awareness, communication, education and publicity