

Towards Passenger Intermodality in the EU



Workshop Briefing Paper

Towards Passenger Intermodality in the EU

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Annex

- A. Overview of the Study “Towards Passenger Intermodality in the EU”**
- B. Summary of Recommendations from EU Projects and Initiatives in the Area of Intermodal Passenger Transport**

1. Introduction

Perhaps you are reading this briefing paper on the way to the Workshop “Towards Passenger Intermodality in the EU” and you are using for your trip an intermodal combination of air and rail, rail and urban public transport or other combinations. In this case we hope that you have a journey as seamless as possible without information, ticketing, baggage or other hassle, as there is much room to improve European intermodal passenger transport (which is the reason for our workshop). Whether you are travelling right now or sitting in your office, we hope this briefing paper will answer your first questions regarding our previous work and what you can expect from the workshop and is expected from you.

The aim of this briefing paper is to give you a compact overview of the Consortium’s previous work in the study, to give you an idea of the wide field of topics that we think are important to passenger intermodality and to enable you to develop some fresh thoughts that will help to develop concrete recommendations for enhancing passenger intermodality that will be directed to the European Commission.

First a short explanation what the study “Towards Passenger Intermodality in the EU” is about and what we did so far:

The study has been commissioned by the European Commission (DG TREN G3, Motorways of Sea and Intermodality) to support the development of its policy on intermodal passenger transport.

We started in February 2004 with the first phase of the study which dealt with the “Analysis of the Key Issues for Passenger Intermodality”. In a comprehensive literature review with a focus on European research this phase examined the current status of passenger intermodality in Europe, key issues and barriers to implementation. The results of this phase, that was finished in April 2004, were summarised in a first report to the European Commission.

The second phase of the study titled “Analysis of the National Inventories on Passenger Intermodality” took place in the period from April to June 2004 and dealt with the analysis of existing policies, frameworks and practises in 28 European countries and Japan (as a case for comparison) to identify promising models for action and recommendation at the European level. Aim of the national inventories that were conducted by the Consortium Partners and subcontractors was to enrich the first analysis phase of the project and its sources with information and analysis on the national level.

End of August we started with the third and last phase of the study which will lead to the formulation of recommendations for advancing Passenger Intermodality directed to the European Commission. The workshop that you will attend is one of the core elements of this phase and of the whole study. Its goal is to develop proposals of possible measures and action fields in Intermodal Passenger Transport on the "European" level (any long-distance 100+ km trip passenger transport but including the "last urban mile") which can be usefully supported by the EU. An external written validation of these proposals by experts from very different backgrounds will follow and the results of this process will be incorporated in the final report on passenger intermodality for the European Commission.

The workshop programme that has been submitted to you, has already given you a rough idea of the contents of the workshop. As you see we will work in a large group, sometimes in two smaller groups in depth on the topic. The first step is to work on the identification of priority issues of passenger intermodality by giving you

some ideas from our side, but also by encouraging you to be creative and to look for aspects that we may have missed and that you think should be priority issues. We should come up with some priority issues which we will focus on in the following phases of the workshop.

In a second step we will work on concrete recommendations for advancing Passenger Intermodality on the European level for these priority issues.

During this process you should try to keep in mind that we are dealing with the generation of recommendations that shall help the European Commission practically to design an action programme for Passenger Intermodality. So, we should try to develop our ideas from the perspective of the European Commission. Therefore time horizons of possible actions, the question of necessary resources to realise them and the impacts of measures have to be kept in mind in the last phase of the workshop that will deal with the generation of concrete recommendations.

Of course we will not be able to develop a complete action programme during the workshop, but we should be able to provide a good base for further work on the study.

To give you a compact overview of the relevant information that enables you to prepare for the workshop you will find in this briefing paper:

1. Excerpts from the Consortium's first report to the European Commission that summarises the results of the first phase of the study "Analysis of the Key issues for Passenger Intermodality":
The included executive summary of the first report will give you a good idea of the scope of topics that we have identified. In the annex of this briefing paper we also provide a related list with 39 identified key issues for intermodality and a short list that tries to narrow down this wide scope. Please note: This is not an exhaustive or final list. There is room for your creativity to extend, amend or cluster issues.
2. Excerpts from the second report that summarises the results of the second phase of the study "Analysis of the National Inventories on Passenger Intermodality":
The included executive summary from the second report will provide you with the most important issues we analysed on the base of the national inventories. Furthermore you will find the conclusions from the second report, summarising some important aspects, and the chapter "Recommendations from the second report" which is a first careful listing of a possible scope of intervention for the European Commission which we extracted from the first two phases of the study. This is just a first step, giving rough ideas and should not narrow down your creativity in the workshop. It is just to give you some first input regarding possible recommendations. .
3. In the annex you will find a short one-page overview of the study, which you already have received with the invitation to the workshop. For reasons of completeness we provide it again in this paper. You will also find a summary of existing recommendations in the field of passenger intermodality and related topics that were extracted from EU projects and initiatives. This is an overview that gives hints of what others found to be important issues. You will see the wide range of topics, also including a lot of very general recommendations. See this chapter as background information

We hope that this briefing paper will answer your first questions. If you have any doubts left there will be room for questions at the beginning of the workshop. We hope this "starter" document will also contribute to the development of your own fresh ideas.

We look forward to welcoming you in Dortmund – and hope that your intermodal (European) trip to the workshop will be (or is – in case you are travelling right now) a positive experience!

2. Executive Summary of the First Report

The Context for Passenger Intermodality on a European Level

The study "*Towards Passenger Intermodality in the EU*" (02/04-01/05) has been commissioned by DG TREN to support the development of its policy on intermodal passenger transport. This report presents the results of the first phase of the study based on a comprehensive literature review with a focus on European research. The first phase has examined:

- current status of passenger intermodality
- key issues
- barriers to implementation

Intermodality is both a technical term for a specific type of journey including several modes of transport and a policy principle. This study is guided by the following definition: "*Passenger intermodality is a policy and planning principle that aims to provide a passenger using different modes of transport in a combined trip chain with a seamless journey.*" As such it can contribute to an integrated and efficient transport system which will establish networks of interconnected modes, where transfer from one mode to another is easy and comfortable and will offer more choice options to the travelling passenger.

Intermodality has been put forward in several European policy documents. The *Transport Policy White Paper (2001)* identifies integrated ticketing, baggage handling and continuity of journeys as priority aspects for passenger transport. In the follow-up of the White Paper DG TREN has put a priority on activities in the freight sector (MARCO POLO, intermodal loading units, freight integrators). A number of EU-research projects (regarding strategy, operations and design, technology) as well as standardisation activities have been carried out in the passenger domain.

With a view to the European Union remit it has been decided that the main focus for this study is the *inter-urban/long-distance dimension of passenger travel*. This includes international travel and also smaller scale cross-border traffic. Since seamless door-to-door chains and an integrated transport system are the aim, the last (urban) mile will be analysed from the viewpoint of the long-distance traveller.

Trips over long distances (> 100 km) only have a small market share of 1-2 % of total trips but account for about 20 % of person-km. They are of significance due to their economic importance, their high ecological impact and their above average growth rate. The traffic forecast of the TEN-STAC study suggests an average growth in inter-regional passenger transport from 2000-2020 of 28 % in the current member states and 74 % in the new member states. Air travel is particularly expected to grow with 88 % and 133 % respectively (European Commission 2003, p. 17).

A larger number of long-distance trips is for private reasons (31 % holiday, 47 % other private trips), whilst the share of business trips is 22 % (EU-15). Private car use is prevailing with 65 % of all long-distance trips, followed by aeroplane 14 %,

train 12 %, bus 6 % and other modes 3 %. There is a strong asymmetry both in mobility rates and in travelling intensity. In Germany, for example, only 10 % of the persons account for nearly half of all trips. In general the data availability for specific intermodal issues is rather weak.

Intermodal passenger journeys can include a range of different mode combinations. In order to arrive at priorities for a supporting policy several principles can be applied. Assessment methods for the specific benefits of intermodal measures are widely lacking. A look at costs and benefits must include total cost including externalities. European studies of total costs of transport modes consistently show rail to carry easily the lowest external costs, significantly below car and air modes. Therefore the *long-distance rail mode* should be preferred in transport policy. Both at international and urban/regional level the integration of rail into the transport systems is still neglected and concrete measures to improve this situation still have to be taken, which is generally realised on the European level. This includes interoperability as well as the intermodal combinations of air and rail, rail and urban public transport, cycling and walking as well as car access to long-distance trains in an integrated system. Priority setting must further acknowledge the contribution to other Community objectives such as economic and social cohesion, accessibility, European competitiveness or the protection of the environment.

Quality Elements of Seamless Journeys and Barriers for Implementation

In order to offer a seamless journey the product of "passenger intermodality" consists of several elements which need to be strengthened and integrated:

Networks and Interchanges: Infrastructure networks must be interconnected and interoperable. Within the physical transport infrastructure especially the rail network, which is a key element of intermodal long-distance passenger transport, still presents many problems of interoperability and can in many parts be characterised by a lack of integration with other modes of transport (e.g. air-rail, rail-urban public transport). Transport services of different public and private operators need to be co-ordinated to satisfy the passengers demand for a flexible, convenient and fast transport system. Especially with regard to the competition with the private automobile public transport services need to be improved in an integrated and customer oriented way, spanning over different levels (urban, regional, national, European). As a mode transfer results in a loss of comfort and/or time or involves a higher cost, interchanges are central elements within this field. Their quality in both physical design and operational integration (including co-ordinated management of interruptions) has a very strong influence on the quality of the intermodal journey.

Door-to-door Information: Integrated and real-time door-to-door information systems (both pre-trip and on-trip) are a key tool in developing workable and attractive long-distance and European passenger intermodality. Technology is a major driver of progress in passenger information. Information is often available only separately per mode and per network hierarchy level. Much progress on integrated information systems has been made at the regional/urban level, but there is no equivalent intermodal structure that would promote integrated information at national or European level.

Tariffs and Ticketing: Organisational and technical aspects are strongly interrelated. Technical solutions to the problem of integrated tariffs and ticketing (including booking and payment) are already available and will be further developed. Advancements in card technologies make electronic payment a viable option but could be impeded by a lack of a common European smart card system. Therefore stan

standardisation in this field has to be considered as a high priority. The main obstacle is a lack of co-operation among stakeholders, especially for long-distance and border crossing journeys.

Baggage Handling: Baggage handling is a specific burden for the elderly, travellers with children, persons with impaired mobility and those with heavy luggage. Solutions to baggage handling problems are still unsatisfactory but in the field of air-rail interesting concepts, e.g. check-in at the rail station, have successfully been implemented. It has to be further evaluated in which areas and transport chains baggage services are financially, organisationally and technically feasible.

Promotion of Intermodality: While it is essential to improve all parts of the transport chain it is also necessary to promote intermodality. Techniques of awareness raising through general campaigns and mobility management at individual and site level (e.g. through the employer for business trips) can be used to influence travel behaviour. Target group orientation is a governing principle but there is a lack of sufficient survey data for a market segmentation. For intermodal, especially long-distance and international journeys, it is not obvious who should take the initiative.

Societal and demographic developments of course play an important role when looking at the elements of a seamless travel chain. Demographic change and more concretely the ageing of the population for example are leading to different travel patterns and specific requirements with respect to intermodality. Not only elderly people but also the group of mobility impaired travellers in general needs special attention regarding baggage handling, accessibility of interchanges, user-friendliness of information systems and many other fields. Of course measures taken to facilitate easy intermodal travelling for elderly and mobility impaired people, in many cases also contribute to an easier seamless journey for other passenger groups and should therefore not be seen as only target group specific.

After having assessed the user needs and current status for the key elements of intermodal travel, the study moves on to identify major barriers for the implementation of intermodal solutions. These concern policy, planning and design issues, co-ordination and co-operation, legal issues, financing, technical issues and language.

Some of the relevant *obstacles* involve, among other things, a lack of:

- lobby support for intermodality (compared to single modes)
- data availability (market data, cost/benefit, evaluation)
- putting user needs regarding interchanges into practise
- network level planning of interchanges
- co-operation in a difficult multi-stakeholder and/or competitive environment
- successful business models for intermodal information systems

To improve the situation considerably a holistic approach with a strong combination of measures would be favourable. The potential technology base and also the user needs assessment are quite well advanced. It is therefore necessary to concentrate on a number of implementation gaps regarding services and infrastructure, including, for example, integrated information systems (national/international, multimodal, real-time, disruptions) or user-friendly interchanges (security, accessibility, short transfers, intermodal management of disruptions etc.).

Priorities from a European Policy Perspective

Policy development has to account for large-scale trends such as demographic change, market opening for public transport services, increasing air travel volumes or the enlargement of the European Union. The current understanding of the subsidiarity principle gives the EU limited scope to systematically influence national and urban systems unless directly related to the principle of European cohesion or as a condition on financing of measures related to social policy. As the Commission can only act where a real need for Community rules and common action can be proven, it is likely that the European approach to influencing passenger intermodality should be top-down in fields with a clear European interest: reviewing the European corridor focus of transport cohesion by applying the door-to-door principle of intermodality to its logical conclusions and defining strict requirements of door-to-door European systems. This of course is a challenging task and concrete strategies and actions still will have to be defined within the further work on this study (especially in the proposals phase).

Possible measures on a European level include regulations, funding, standardisation activities, research or the exchange of best practice. More emphasis might be placed on regulation topics and opportunities of direct intervention. Nevertheless, the long-term impact of policy recommendations, research and standardisation support can be great, and these issues will not be sidelined.

In terms of services and infrastructure, more natural points of stronger European intervention are holistic services such as information and ticketing systems, and therefore the successful implementation of these will form a greater priority in the study than issues of interchanges. Nevertheless, interchanges as key elements for intermodal passenger transport are an important target for standardisation work. With regard to mode combinations, the air-rail combination will receive special attention as it is closest to the European remit, with a large international market.

The study will move on to the second phase, the analysis of the national level. Here studies, legislation and good practise will be collected across Europe and in Japan. The work will be guided by the key issues identified in this report.

3. Overview: Key issues for Passenger Intermodality

Within the first analysis phase of the study, 39 key issues for passenger intermodality have been identified by the Consortium. This extensive list has been narrowed down to better manageable 14 categories of key issues that relate to the following three domains:

- A. Context,
- B. Products and Services,
- C. Planning & Implementation.

This defined the working structure for the national inventories and the second report.

We provide you at this point with both the short and the extensive list of key issues to give you an overview of the topics that we dealt with and that we think are important fields for passenger intermodality. This list is not necessarily exhaustive, so you may give us hints for amendments.

Short list: Domains and Categories of Key Issues

Domains	Categories of key issues
A. Context	1. The market
	2. Assessment and Evaluation
	3. Policy and politics
	4. Legal and regulatory framework
B. Products and Services	5. Networks and interchanges
	6. Information
	7. Ticketing/fares, booking/payment
	8. Baggage handling
	9. Highly integrated products/services
C. Planning & Implementation	10. Planning
	11. Co-ordination and co-operation
	12. Promotion
	13. Resources
	14. Technical issues

Extensive list of 39 key issues identified in the first phase of the study

No.	Domain Category Key Issues (by key word)
A. Context	
The Market	
1	Modal split, travel behaviour with regard to intermodality
2	Market weaknesses of intermodal travel
3	Market segmentation
4	European vs. national long-distance intermodality
5	Modal Conflicts, operator priorities
6	Disaggregated ownership
7	Impact of competition models
Assessment	
8	European long-distance transport models
9	Cost-Benefit analyses
Political, policy and Legal Framework	
10	Problems of political will and lobby for intermodality
11	EU policy and activities
12	National, regional and local policies and priorities with regard to intermodality
13	Policy consistency (between states, regions etc.)
14	Preferred modal combinations
15	Key Players (interests, power)
16	Legal Framework
17	Mega-trends (demographic change etc.)
B. Products and Services	
Networks and Interchanges	
18	Status of (intermodal) infrastructure
19	Integrated networks, interoperability
20	Interchanges: <i>location, accessibility, services, orientation, transfer/waiting, security, management etc.</i>

Services and Operation	
21	Integration of transport services, timetables
22	Information: <i>range/integration, accessibility/channels, real-time/dynamic</i>
23	Marketing
24	Ticketing/fares, booking/payment
25	Baggage handling
C. Implementation	
Planning	
26	User needs assessment
27	Network level planning
28	Integration with land use
Co-ordination and Co-operation	
29	Institutional structures (with regard to co-operation)
30	Operations/Management
31	Co-operation operators – authorities
32	Cross border co-operation
33	Data sharing (institutional aspect)
Resources	
34	Joint/mixed financing (public-public, public-private, several operators etc.) and business cases
35	European and National funding structures and levers (compatibility with inter-modality projects)
36	Human resources and institutions to implement intermodality concepts, training and education
Technical	
37	Standardisation
38	Interfaces to integrate existing products/services, procedures
39	Data exchange (technical aspect)

4. Executive Summary of Second Report

Context of the study

The study "*Towards Passenger Intermodality in the EU*" (02/04-01/05) has been commissioned by DG TREN to support the development of its policy on intermodal passenger transport. The first phase of the study was a comprehensive literature review with a focus on European research. The here presented report is the output of the second phase of the study and gives an analysis of the existing policies, frameworks and practises in 28 European countries and Japan in order to identify promising models for action and recommendation at a European level. The aim of this inventory phase was to enrich the first analysis phase of the project and its sources with information and analysis on the national level. Both analyses give input to the third phase of this study which will formulate recommendations on passenger intermodality for long distances and cross-border transport (both including the "last urban mile").

Methodology

In order to organise and administer the national inventories in the 29 countries in a common and structured way, the consortium agreed upon a national inventory along three products or outputs: for each country a country report, an assessment file and summaries of selected national material were produced.

The **country report** is written by each country's national expert, structured along three domains with 14 categories of issues:

- context: (1) the market, (2) assessment and evaluation, (3) policy and politics, (4) legal and regulatory framework;
- products and services: (5) networks and interchanges, (6) information, (7) ticketing, fares, booking and payment, (8) baggage handling, (9) highly integrated products/services;
- planning and implementation: (10) planning, (11) coordination and cooperation, (12) promotion, (13) resources and (14) technical issues.

As a way of guiding the writing of the country report, each category was introduced by a short text explaining the main contents and scope of the category and describing shortly the key issues related to it. Next to this, also a list of questions was formulated in order to focus the national expert on the information requested: asking for a description of the status of intermodal passenger transport, of good examples as well as bad practice, factors of success, barriers and recommendations.

A second element of the national inventories are the **assessment files**. These files consist of a limited number of open questions as well as a small pre-structured questionnaire asking the experts for an overall assessment of the status of passenger intermodality in the country analysed.

The third and final element of the national inventories are the summaries of the most interesting **national sources** that were used to produce the inventories. The result is an extension of the list of European references already compiled in the first analysis phase with more than 70 national references. These new references are gathered in a separate (internal) annex to the second report.

The national inventories were carried out by the consortium partners and a network of 13 subcontractors. The subcontractors are considered as experts with respect to passenger intermodality within their country. The result is that more than 100 interviews have been conducted with national key persons and more than 400 bibliographic references have been used to realise these country reports in the 29 countries.

General conclusions

In most countries, intermodality hasn't been a focus until recently and some countries are still in the phase of a unimodal focus on improving infrastructure. The inventory revealed that knowledge on the market for intermodality for long distance travel is rather poor. At the national level, little attention is given so far to the study of this market and its potential. Nor is much information available on the possible impacts of intermodality products and services through cost-benefit analyses or impact assessment studies. Nevertheless intermodality is becoming more and more an important topic. It is mostly mentioned in policy documents but the implementation is not yet that far. The first step in improving passenger intermodality is to raise the political awareness towards the importance of intermodality. In some European countries this condition is already fulfilled, but in the new members states of the European Union e.g. the political will is mostly not very strong. For them, their first concern is the construction of good basic infrastructure.

Co-operation is essential for the optimal development of long distance passenger transport, especially as many stakeholders are involved. In the countries looked at, there is generally no specific national or regional intermodal strategy. Similarly, at this moment no central independent institution or structure is responsible for the coordination role in long-distance intermodality - which is a barrier to the development of a platform for data exchange between stakeholders, an integrated timetable and ticketing system and other structures of importance for passenger intermodality. The national legal and regulatory frameworks in place are incapable to impede the possible negative effects of the liberalised market. Although co-operation between competing companies seems difficult to achieve, it is unanimously considered a prerequisite to a fully integrated transport network. A co-ompetition (co-operation and competition) is possible in certain market environments if a win-win situation can be created. A regulatory and legal framework is needed to give incentives for co-operation. But concepts in this field are widely missing, so that research regarding this topic would be important.

One of the key issues that have arisen from many of the country reports is the subject of international borders and cross-border travel. The lack of interoperability and co-operation across the border is a major barrier in Europe. It has been stated on numerous occasions that regional cross-border travel should no longer be considered as international travel. Cross border transport is even a weak point in countries with otherwise strong internal public transport networks.

There are at this moment not many intermodal products and services that are highly integrated. However this report gives an idea of initiatives that are the forefront of what is possible in intermodal passenger transport. Some of the best examples can be found in the combination of air and rail. The realisation of innovative solutions requires the involvement of many stakeholders and considerable investments need to be done. But apart from these highly integrated products there are developments in many areas, e.g. information or ticketing that can be a basis for further integration.

The best examples of intermodality are to be found in urban regions, at national and regional airports and in High Speed Train stations. The technology to provide a high-quality passenger information, ticketing and booking/payment systems is available. A group of forerunner countries proves that also organisational issues can be solved to implement such systems. However, it also becomes clear that within Europe, the state of passenger information systems is very heterogeneous and in large parts still unsatisfactory. Especially for the integration of timetables a greater co-operation and co-ordination between transport operators and providers is required. The national inventories show clearly that in most European countries data sharing is a difficult and sometimes sensitive topic regarding the aforementioned aspects. There are only few countries where a legal framework requires all operators to deliver their timetable and fare data to a central database or to make it accessible through a network that is used to provide integrated information.

New technologies like smart cards, GSM technology, internet applications give important opportunities on several fields of intermodality (e.g. ticketing and information). However this opportunity can be a barrier because of different technical standards. It is important to work towards an integration of the different technologies and standards.

Recommendations

The first report of the study already listed possible priorities from the perspective of the EU influence. These possible action fields concern measures regarding regulations, funding, standardisation activities, research or the exchange of best practice. Through the analysis of the national inventories the importance of these topics could be verified and filled with more details and some rough recommendations. This will also guide the study in the next phase that will elaborate in more depth the recommendations and proposals for the European Commission.

5. Conclusions from the Second Report

Within this report, the situation regarding 14 clusters or categories of issues about passenger intermodality has been analysed within 29 countries. About 1000 pages of national material has been gone through. The result is a portrait of the status of intermodality throughout Europe, a selection of the most interesting national, regional and local practices in intermodality issues (good as well as bad ones) and an overview of the most important barriers and factors of success. We give here briefly the main findings.

5.1 With respect to the context related issues

The knowledge of the market for passenger intermodality in long distance trips is generally rather poor.

The national inventories revealed that the knowledge about the market for passenger intermodality in long distance trips, its potential, strengths and weaknesses is poor. Only a few countries can present well documented market studies. At this

moment, there are still countries that do not even provide the basic information on the passenger transport market; e.g. data on the modal split are missing in most of the Eastern European states. An overall picture of the transport market based on a regular analysis of national travel patterns however is crucial to steer and plan transport investments from an intermodal demand perspective. In countries that do have good data on modal split by means of national surveys, we see that the long distance traveller is often not considered an important market segment to focus on, except in some larger European countries and in tourism trips. Little is also known about the combined use of different modes (trip chains) in long distance trips and the market segments for intermodality. At this moment, each transport operator studies his own (unimodal) market, the knowledge about needs and requirements of passengers on the combined use of modes is missing. The ageing society stresses the attention towards a better accessibility of interchanges and information. For this particular market segment, tourist trips are the main focus.

Little national research and evidence exist regarding the (possible) impacts of investments in passenger intermodality.

In some countries cost-benefit studies are made on a project basis but not for integrated networks. Important barriers are the absence of an overall tradition of cost-benefit analyses in transportation investments, the lack of crucial data on the market for intermodality and the multi stakeholder nature of these types of investments. At this moment, there is no set of monitoring indicators available to assess intermodality products and services. Some countries have developed a manual or guidelines on impact assessment but they are not widely used.

Most of the countries lack a national or a regional intermodality strategy. The political will is growing in many countries, for implementation it is often too early.

Generally no specific passenger intermodal strategy is in place at the national or regional level, and similarly no single institution is responsible for the coordinating role of long-distance intermodal transport. However in recent transport policy documents in several countries, the topic of intermodality gains more importance. At this moment, the highest political support for intermodality tends to be concentrated in metropolitan and larger urban areas, with dense public transport-networks and a high percentage of public transport-use where environmental problems and problems of congestion are more stringent.

In the new member states of the European Union the political will for enhancing passenger intermodality is generally less evident. Attention and priorities are more focused on the availability of transport funding; the lack of or the poor quality of existing infrastructure; the rigidity of current public transport management and operation (especially, the need to open up the market); a lack of information relating to travel patterns and needs; and increased travel demands associated with economic growth.

Conflicts between stakeholders and policy inconsistencies often relate to funding issues between different levels of government.

Key players generally include the national government along with principal transport operators, especially national rail and air.

The research has suggested that clear support for passenger intermodality at the national government level, backed up by clear integrated transport policies and

strategies are initial prerequisites for improvements in the passenger intermodal sector. Furthermore the establishment of a key independent organisation responsible for undertaking research, promotion, and for leading concepts is strongly recommended, especially in the context of an increasingly liberalised and disaggregated transport network.

Existing legal and regulatory frameworks are generally not suited to enhance intermodality in a context of decentralised transport markets that are increasingly opened to competition

The national inventory revealed that currently there are no laws or regulations in place across Europe that treat intermodality as a central issue. Nevertheless, some legal frameworks for individual transport modes do indirectly seek to improve intermodal travel characteristics in some countries.

Moreover, there are only a few legal frameworks in place to coordinate competition models for longer distance journeys. This is in spite of the increasing requirements for coordination resulting from the further introduction of competition to the transport sector.

Although it is generally the case that specific legal sticks to intermodality do not exist, these appear to be increasing with the privatization of bus and rail operators. In general, agreements on prices between firms are not allowed according to the competition laws.

In many of the new member states of the European Union, the focus of transport development is still on improvements to basic infrastructure, and consequently laws and regulations have not yet been prepared to cover intermodality.

5.2 Regarding intermodality products and services

Integration of networks and interoperability is weakest in cross border travel.

Regarding the level of *integration of networks and their interoperability*, one of the key issues that has arisen from many countries is the subject of international borders and cross-border travel. In many instances around Europe it is currently easier to travel from one side of a country to the other than simply get on a train and travel to a proximate city over the border. It has been stated on numerous occasions that regional cross-border travel should no longer be considered as international travel. Cross border transport is a weak point in countries with otherwise strong internal public transport networks, such as Switzerland and the Netherlands. Currently several stakeholders including public institutions, local authorities and operators are responsible and this requires diligent cooperation.

In most of the countries good progress is made regarding the general quality of the interchanges. However the situation remains very heterogeneous.

Experience regarding the *design and layout of interchanges* varies throughout Europe. The planning and location of interchanges is identified as one of the most important issues for success together with safe, secure and short transfers between points of interchange. Vice versa poor planning and location of interchanges with poor transfers is seen as a barrier to intermodality. The following 7 key issues are retained from the analysis of the national inventories: (1) logistics – locating the in

terchange in the center of a city, with access to all modes of transport, (2) interoperability between modes needs to exist; (3) passenger friendliness – provide up-to-date travel information; provide safe and clean waiting facilities; ensure that the layout of the interchange is easy to understand for visitors; (4) security – users need to perceive that the interchange is a safe place to be, not just for them but also for their bicycles and other equipment; (5) Finance – substantial investment is needed in order for the interchanges to reach high standards; (6) a document is needed that provides guidance on the planning, locating and design for interchanges including the provision of transfer between interchanges; (7) a standard is needed for travel information, safety, accessibility and other facilities at interchanges including the removal of language barriers.

Public and political support, cooperation and coordination between operators and providers and a regulatory and legal framework are crucial factors for the development of better integrated transport services and time tables

There are varying levels of integration of transport services and timetables throughout Europe. Good practices can be seen in a number of countries such as France, Denmark and Switzerland. Other countries exhibit good planning and intentions but poor time keeping disrupts actual integration. Many other countries have very little planning and integration or integration is made difficult by the competitive practices.

Greater cooperation and coordination between transport operators and providers is required, particularly in deregulated or less regulated environments, to facilitate the development of better integrated services. Although cooperation between competing companies seems difficult to achieve, it is a prerequisite to a fully integrated transport network. A co-ompetition (co-operation and competition) is possible in certain market environments if a win-win situation can be created (e.g. AiRail) which would serve as an example for other fields. A regulatory and legal framework is needed to give incentives for co-operation. Concepts in this field are widely missing, so that research in this field would be important.

It has been suggested for countries such as Great Britain and Spain to establish forums to consider and help facilitate longer distance internal trips, as opposed to local and regional trips that are presently considered by local transport authorities. More centralised countries such as France and Japan have developed fast and efficient national rail networks.

It is also important to note that the will of the country and the importance of public transport to its people is extremely important in terms of funding and implementing improvements to the integration of services.

Providing high quality passenger Information has largely evolved from a technological challenge towards an organisational challenge.

The technology to provide high-quality passenger information systems is already widely available. And a group of forerunner countries proves that also organisational issues can be solved to implement such systems. However, it also becomes clear that within Europe, the status of passenger information systems is very heterogeneous and in large parts still unsatisfactory, especially if border crossing elements are included in the trip chain. The intermodal long distance traveller still faces many problems when trying to obtain integrated total-cost information for his trip or in case of disruptions.

The strategy of the UK Government that aims at a one-stop-approach that not only includes passenger information but also ticketing seems to be the right direction to aim at a user oriented service.

Co-operation of authorities and operators – also border-crossing – and topics of financing are key aspects where action is needed.

The question of how to finance high quality passenger information systems should be paid more attention to. As mentioned before, standard methods of cost-benefit assessment are still widely lacking but are the key to establishing such systems. The questions of public funding and share of costs among operators are equally important as there seems to be a low willingness of users to pay for information systems.

In many problem fields it is possible to learn from good practice examples, where some institution took the lead to bring key players together and to realise high-quality information services.

Much work remains to be done to achieve an intermodal, door-to-door, total-cost information system on national or even European level, but many innovative ideas have been successfully realised in certain places and are possible elsewhere.

Truly intermodal tariff and ticketing systems are still widely missing, although there are a few good examples. The main obstacles in the field of tariff/ /ticketing systems and booking/payment services are organisational, not technical ones.

The status of ticketing, fare integration, booking and payment systems is very heterogeneous within Europe. Some forerunner countries like the Netherlands, Denmark, Belgium or Germany provide already a relatively high quality regarding these aspects, although they are far from being perfect. When aiming at a system that is user friendly for the European intermodal long-distance traveller a lot of work remains to be done. Many of the good practice can be found on the regional and urban level, but may be transferable to the long-distance dimension. However, especially in many Eastern and Southern European Countries ticketing systems, fare integration, booking and payment can be characterised as antiquated, lacking totally behind to what is already common standard in many other countries. Those countries will have to make considerable efforts to reach a decent status of only unimodal regional systems, whereas forerunner countries can make the further step towards real intermodal and nationally (or even European) integrated systems, using innovative technologies.

Particularly weak is the European integration of ticketing and fare systems. There are many good examples that technical solutions to solve this problem are available but organisation especially when border-crossing issues are involved is a challenging task.

Many of the national experts recommend to establish door-to-door through ticketing on national and European level. The introduction of smart card systems is seen as a way of promoting such an integration, and to solve difficult problems like revenue sharing. However, costs are considerable, and some experts warn to focus too much on expensive smart card systems. Alternatives like the use of booking and ticketing by normal cell phones, should be evaluated. Reliable cost/ benefit studies are a must to evaluate such concepts. Furthermore the use of highly developed technological concepts by vulnerable groups like elderly or impaired people has to

be evaluated as well, as many people are not able or fear to use these technologies.

Standardisation activities are mentioned as an important element of promoting innovative technologies. Particularly because of the high investments that are already made in e.g. smart card systems in the Netherlands or on regional and urban level, standardisation must be sped up if the chance for a European integration of such systems should not be missed.

Another important field which requires action is the liberalisation of the transport markets, which may lead to more heterogeneous ticketing and fare systems as well as booking and payment procedures, which may pose a severe barrier for the intermodal passenger. Concepts how to design regulatory and legal frameworks to handle this problems are still missing in most countries. The hope for better services for the passenger by creating more competition may be foiled by heterogeneous structures in important fields like fare integration.

In some countries, the promoting of innovative concepts among passengers has been mentioned as recommendation. Indeed many good solutions that are available could be used much more, if potential clients knew of them. Many times the focus of projects to implement innovations lies on the technical side and not enough attention is paid to the promotion so that passengers feel encouraged to really try them.

Finally what has been stated by many national experts and is worth mentioning was the recommendation to have generally low prices for public transport in place, as the best fare integration and ticketing system is useless if high public transport prices, especially for the occasional user, discourage the use of public transport. This is also the case for many border-crossing connections.

In most countries, the responsibility to carry baggage remains solely with the passenger.

The analysis has shown that truly integrated baggage services are widely missing across Europe. In most cases the passenger is responsible for the transport of his/her baggage which leads to inconvenience and poses a barrier to intermodality. Good practises have mainly been identified in the area of door-to-door transport and in air-rail co-operation, mainly in the central European countries.

For door-to-door transport the demand has been declining with the market penetration of rolling baggage. Current offers are often expensive. It needs to be seen how an attractive service can be offered that meets the expectations of the passenger with regard to value for money.

A further integration of the air and rail mode is necessary. Due to the high investment a check-in at the rail station is only possible in larger markets. Nevertheless this service can be expanded especially with regard to the city access of airports by rail. A more advanced integration with code sharing and integrated baggage handling to replace short flights only seems feasible for larger hubs (where competition for slots is high).

In the near future, the majority of passengers will still transport baggage on their own. To improve their situation, especially with regard to the use of rail as a main mode for intermodal journeys, a better accessibility of stations and enlarged space for baggage on trains are the main factors that need to be advanced.

In any case modal thinking has to be overcome. For baggage handling, co-operation of different operators is necessary. All good practice examples show that this is a primary condition to be met. This is relevant for both organisational matters (logistics) and financial matters (joint financing).

Security questions have to be answered for all integrated baggage handling schemes.

The few examples of highly integrated products and services¹ can be found in the combination air-rail, in the field of mobility packages or in the tourism sector.

There are currently only few truly intermodal products and services that are highly integrated. These initiatives are the forefront of what is possible in intermodal passenger transport. However, such concepts seem to be limited at the moment to countries with highly developed passenger transport systems. Even in such an environment the realisation of innovative solutions that require the involvement of many stakeholders and considerable investments are facing complex challenges. Questions of financial feasibility, the lack of cost/benefit studies in many fields and uncertainties regarding the user behaviour are problems to be mentioned in this context. Uncertainties and risks seem to be high for many of the involved stakeholders and large key players frequently hesitate to implement innovations if the risk involved can not be calculated. Successful co-operations require usually a win-win situation and also a will to be an innovator in an unknown field.

A concept like the German AiRail is widely discussed in the context of passenger intermodality but it should not be seen as solution that is transferable to many other fields or places. Such a concept can only work for major hubs.

“Mobility packages”² seem to be more universal, but questions of financing smart card systems and complex organisational matters may be severe obstacles, especially when thinking about implementation on the national and European level.

Cost benefit studies, in general a more detailed evaluation of innovative highly integrated concepts in passenger intermodality seem to be necessary to reduce risks and create a decision base for operators and authorities.

For the AiRail concept the application of the system, also in long-distance transport, may be feasible for major European hubs (e.g. Paris, London), which should be further evaluated by research projects. The “City Access” type of air rail services like already available in Vienna or London may be feasible for many larger airports, which would also have to be further analysed.

In the field of “mobility packages” standardisation activities regarding smart card or other systems seem to be necessary especially when aiming at a national or European introduction of such systems. Best practice transfer also may serve to spread this idea and the experiences of innovators. “Mobility packages” are currently focused on regional transport but give an example of the integration of different trans

¹ Highly integrated services/products include different transport modes or complementary services and require co-operation of different stakeholders, often using innovative technologies.

² Based on chip cards that integrate different modes or complementary services (e.g. public transport and car sharing).

port modes. Within the development of smart card systems, such mobility packages that are valid in inter-city travel are possible as well.

Linked to the idea of “mobility packages”, the idea of introducing “mobility providers” could be further developed. The concept of competing “mobility providers” that buy mobility services (rail, car sharing, rental cars, leasing cars, public transport, rental bike, taxi etc.) from the transport operators and sell them to the clients, maybe as an intermodal package, is discussed for example in Germany as one way of promoting intermodal transport chains, as clients would be able to get their mobility out of one hand. Competing mobility providers would have a real interest to offer their clients the most attractive mobility combinations. However, there are doubts if such a mobility provider service would be financially feasible. Nevertheless it is worth to further investigate such ideas.

5.3 Regarding planning and implementation

User needs assessments and intermodal transport network planning are no common practices in Europe.

User needs assessment in planning intermodality products and services is still not a commonly used practice. At this moment, monitoring of user needs and satisfaction is still done on a sectoral level; each operator (rail, bus, ..) measures the needs and satisfaction for his own customers and is not very inclined to provide this (confidential) information to found intermodal investments. A solution could be that national governments invest more in high quality data collection on user perception, needs and satisfaction.

Regarding the intermodal network planning, the most important issue is the cooperation between the several transport providers and also between the several levels of the authorities. Firstly, it is important that the national, regional and local authorities agree on the concept of the network and the potential for intermodality. And in a second step, they should create a platform to help the private companies with intermodality. The companies themselves are not inclined to stimulate intermodality because this needs investments that don't seem very profitable at first sight.

Cooperation and coordination is the main factor of success for realizing passenger intermodality. At the same time it is considered the main barrier.

In spite of the importance of co-operation and co-ordination of transport modes for the development of intermodality (expressed several places so far), the general situation is that there are no specific institutional guidelines to co-ordinate intermodal planning and operations. And in most of the countries this does not seem to be a first priority. Lack of co-operation and lack of interchange management and common management of disruptions has often been identified as a major barrier in many countries. As far as cross-border co-operation is concerned, this is at most places in Europe still a matter to be developed, except for some good practice examples.

There is still a predominance of short-term commercial considerations against long-term vision that works against co-operation between operators.

In general, transport operators have different interests and structures in public transport. As a major point of consensus, countries with a less favourable situation

still need to realise the formation of partnerships and to join efforts to contribute to the development of passenger intermodality.

The national inventories show clearly that in most European countries *data sharing* is a difficult and sometimes sensitive topic. Many national inventories conclude that it is necessary to approach problems of data sharing by setting a legal and regulatory framework and to establish a central data base, or a linked network that integrates different information systems in one interface for public transport which is co-ordinated (or supervised) by public authorities. An independent institution to gather data and to make it accessible seems to be a good way to deal with this issue and to guarantee free access to intermodal data. However, it has to be discussed critically what kind of data should be integrated into a central database or information network. Passenger information data regarding timetables seem to be rather uncritical, but many other data may be sensitive for operators in a competitive market and unwillingness to provide such data is understandable.

Awareness raising and promotion of passenger intermodality in long distance trips is rather an empty field throughout Europe.

Only a minority of the national experts has given information about awareness raising and promotion campaigns towards passenger intermodality in their country. The overall conclusion is that campaigns focused at 'intermodality' are non-existent nowadays. Indirectly however, intermodality is promoted in campaigns towards more sustainable mobility patterns (e.g. Car Free Days and Car Free Cities initiatives). Promoting long distance intermodal travel is also one of the core activities of the mobility centres and the number of these mobility centres is growing throughout Europe. In the tourist sector, here and there 'all in formula' are the promoters of long distance passenger intermodality.

In mobility plans for companies, commuting problems traditionally come on the first place. Up to now, little attention is given to sustainable business travel options.

Opportunities for joint financing of intermodality investments are often complicated.

Joint public-private financing of interchanges and transfer points is currently in place in many European countries, as are the use of European and national funding opportunities.

A key barrier is often the restriction of funding sources to single modes. Moreover in several countries opportunities for joint funding are complicated due to the complex nature of public transport funding, with the existence of several funding mechanisms and programmes and rigid sectoral based funding structures.

Some crucial success factors in attracting and use of finances is the need for a project initiator and manager, since a large range of actors are normally involved in transport schemes. There is also a need for shared agreement and responsibility of some form. Another factor in the attraction of funding support is the ability to demonstrate clearly the costs and benefits of a measure or project, through the completion of a comprehensive cost-benefit analysis. At last, there is a need for a win-win situation between all operators in an increasingly free market environment.

There is a strong need for standardisation of technologies used for intermodal products and services.

Smart Cards, contact or contact-less, are being developed in a number of countries. There are some attempts to standardise these systems across Europe. However, the picture drawn from these reports is that technology or systems are being developed separately and there is no evidence that the systems are compatible. Further information and discussion is required regarding the potential use of mobile phones for ticket and payment purposes.

In terms of rail and tram infrastructure and technologies, approaches need to be sought on ways of standardising infrastructure. This is required not only between neighbouring countries but also on a pan European basis.

6. First Recommendations from the Second Report

To conclude the second report it was necessary to determine fields on which to focus in the following proposals phase of the study. Those fields should be within the scope of action of the European Commission. Many of the recommendations made by the national experts aim at initiatives and concepts that are rather feasible for national governments or local authorities than for the European Commission. The EU has only limited scope to systematically influence national and urban systems unless they are directly related to the principle of European cohesion or as a condition of financing of measures related to social policy. Therefore fields of action that are opening realistic possibilities to improve the situation of long distance intermodal passenger transport in Europe have to be identified.

In the first report of this study that deals with the “Analysis of the Key Issues for Intermodality” certain priorities from the perspective of the EU influence have already been identified and possible fields of action have been listed. Now, with the results of the national inventories these action fields can be verified and filled with some more details. They will give guidance in the proposals phase of the study that will elaborate a set of practical recommendations and promising proposals for further study.

It has to be stressed at this point, that the national inventories showed a very heterogeneous status of passenger intermodality in different countries throughout Europe. Forerunner countries have already quite advanced passenger transport markets, many intermodal products and services are evolving and the topic is considered to be important whereas other countries mainly deal with conventional problems like the achievement of a decent public transport infrastructure and service. Due to the scope of different problems and potentials, it is difficult to give general recommendations how to improve passenger intermodality throughout Europe. It is realistic to assume that passenger intermodality will develop with different speeds and qualities in different European regions for many years to come. Where possible, concrete action should take into consideration individual problems and potentials by looking at each country case by case.

Also it has to be stressed that during the interviews for the national inventories, many experts mentioned that the “last urban mile” is an essential element of a long distance passenger transport chain and should not be neglected. It even has been

mentioned that limited resources in some cases are better directed to the urban and regional level, as this could have more impact on long-distance intermodality than expensive measures that focus solely on the long-distance dimension.

Keeping this in mind, general fields of intervention for the European Commission in the context of the analysis from the national inventories could be to:

1. publish a Commission communication to introduce a framework concept for passenger intermodality.

In the light of the in general poor status of intermodal long-distance passenger transport in Europe this seems to be a necessary first step. National inventories showed that many fields require action on European level as national interests are low or a lobby for such issues is missing. Border crossing transport for example lacks national lobbies and further European standardisation activities and integration of information, ticketing and payment systems also need support from the European level.

2. introduce directives or regulations, especially ensuring European co-operation.

The national inventories indicate clearly that a lack of co-operation between operators and authorities and among operators themselves is a main barrier for the implementation of high quality intermodal passenger products and services. It seems necessary that regulatory and legal frameworks are established to give incentives for co-operation or to force it where necessary. One example is the field of data sharing which normally does not work smoothly on a voluntary base.

Comments from many countries throughout Europe show that the liberalisation of passenger transport markets may be an evolving major obstacle to co-operation and impedes a voluntary co-operation especially among competing operators. Fields of passenger information, ticketing or timetable co-ordination may be affected seriously in a competitive environment and new barriers to the intermodal long-distance passenger may develop. Therefore the European Commission should evaluate in how far regulatory and legal frameworks to handle problems related to the liberalisation of the transport market can be provided or influenced by the European Commission.

3. support or finance European intermodality products and services.

This is a wide field, with much potential for European action. However, it has to be aimed at supporting the development of European intermodality products and services that may have a real impact on long-distance passenger intermodality and are financially feasible on the long run. From the national inventories the following fields have been mentioned that are considered to be of high importance for intermodal passenger transport and require support on the European level:

- The establishment of a one-stop-approach information and ticketing system on national and European level is recommended. This would include the establishment of door-to-door intermodal passenger information systems and door-to-door through ticketing (EU-Spirit could be first base for such an approach).

- Related to the topic of ticketing it is recommended by many national experts to support the introduction of a common European system for electronic ticketing, e.g. in form of a smart card system. However, it is also recommended not to focus solely on expensive smart card applications but also to evaluate alternatives that are financially easier to realise (e.g. mobile phone technology).
- In the field of rail traffic it is recommended to promote improvements of rail baggage handling for passengers, e.g. accessibility of stations and enlargement of space for baggage on trains and integrated baggage handling (e.g. in air rail integration).
- It is recommended to support the concept of integrated air rail services, by evaluating for which major European airports such a concept is feasible in connection with long-distance rail (e.g. the German AiRail concept seems limited to major hubs), and regarding the “last urban mile” as “city feeder” type (e.g. CAT Vienna).
- The promotion of innovative intermodal concepts and services among passengers needs support. National inventories frequently show that existing products and services are not very well known but have potential to be well accepted.

4. introduce and support intermodality co-ordinating organisations.

The national inventories frequently showed that good intermodal practice could evolve where intermodality was pushed by a key player and has a lobby. Co-ordinating organisations can play a key role in promoting passenger intermodality. National experts recommended to:

- establish a European platform that deals with cross-border co-operation and integration of services, research and good practice in the field of passenger intermodality. Especially cross-border issues lack a lobby on national level and therefore require European co-ordination. The support to establish trans-national forums in these fields could be one of the tasks of such a European initiative. Also an initiative to establish and promote better Trans-European data sharing, perhaps through an independent institution as a base for European passenger information and ticketing systems is recommended.

5. use financing programmes to fund intermodality measures of significance for cohesion, and use financing levers on other programmes to ensure intermodality compliance.

- Especially in the field of border-crossing passenger transport even forerunner countries have not yet developed comprehensive strategies. This field however is of important for cohesion and requires further support as mentioned above.
- It is necessary to review if funding sources are restricted to single modes.
- Funding and testing of innovative business models is lacking but may be a useful approach to promote passenger intermodality.

6. finance and organise standardisation activities.

Standardisation activities are of high importance for many fields that relate to passenger intermodality. From the European perspective it has to be considered as a high priority to establish European standards as otherwise heterogeneous implementations of intermodal innovations (e.g. smart card systems) throughout Europe may evolve as severe obstacle for a European integration of such systems.

- Standardisation activities on European level regarding electronic ticketing, booking and payment systems. In this context the integrative possibilities of e.g. smart card and other systems as intermodal “mobility packages” (also for long distance travellers) have to be kept in mind.
- Standardisation activities related to the design and layout of interchanges have been mentioned in some national inventories as recommended field of action. Signage at interchanges for example is lacking and poses a barrier especially for the international long distance traveller. European standardisation activities to provide general comprehensible and self explaining signage and other elements of interchanges (e.g. removal of language barriers) is recommended.

7. finance research and studies.

Passenger intermodality is still a field with many open questions which are a barrier for the implementation of innovations in this field. Research and studies may provide essential information on such topics. Some fields that require support are the following:

- Research that provides better knowledge about the market in Europe for intermodal passenger transport is necessary to fill some gaps. Target groups of intermodal products and services and the market potential of such concepts have to be identified more clearly (e.g. potentially transfer the approach of the INVERMO research project – see Ch. 2.1.3 - to the European level).
- As mentioned above regulatory and legal frameworks to promote intermodal passenger transport (e.g. through data-sharing, ticketing co-operation) are highly important. Concepts and strategies regarding this topic still seem to be missing in most countries and research to provide guidance seems necessary.
- Cost-benefit studies regarding intermodal products and services are widely missing. Better knowledge in this field is necessary to remove uncertainties for operators and other key players that are willing to implement such concepts. Also the willingness of users to pay for certain intermodal products and services and other ways of ongoing financing have to be better evaluated (e.g. field of information systems). Impact assessment methods regarding intermodal products and services have to be developed.
- It has to be investigated by further research how innovative technologies and concepts are accepted and can be used by vulnerable groups like elderly and impaired people to avoid exclusion of these travellers.

- Innovative organisational concepts as the one of “mobility providers” (see Chapter 2.9) should be evaluated regarding their potential.

8. make policy recommendations.

Policy recommendations may be made in many fields related to intermodal passenger transport. They should focus on activating potential for intermodal products and services on European, national, regional and local level. Policy recommendations may aim at the creation of responsible institutions or departments (e.g. in national ministries) that would have a genuine interest to push the topic of intermodal passenger transport, as it was shown that main obstacles are organisational ones and it needs key players that feel responsible and bring various stakeholders together in a complex network. Other policy recommendations could refer to the liberalisation of passenger transport markets and ways to deal with negative impacts in fields that are of importance for passenger intermodality.

9. provide and help set up professional training programmes and exchange of best practice.

The national inventories proved that a lot of good practice and knowledge how to promote passenger intermodality is available throughout Europe but not well accessible. The development of Europe wide guidance and good practice was recommended by the national experts for example on good interchanges and facilities (e.g. location, design, transfer), passenger information, impact assessments, and innovative intermodal products and services (e.g. mobility packages, treintaxi, car sharing in combination with public transport).

The aforementioned recommendations that developed out of the national inventories cover a wide range of topics. It has to be further evaluated in the proposals phase of the study which areas should and can be fields of European intervention. For this purpose a workshop with a small group of experts on passenger intermodality and a following larger scale expert validation in written form will be held to provide an in depth analysis and focus on the most important questions.

ANNEX

A. Overview of the Study

“Towards Passenger Intermodality in the EU”

Context	Intermodal Passenger transport needs the same attention as its freight counterpart to achieve the aim of <i>seamless journeys</i> . The Commission White Paper defines key areas for policy action. The proposed study will assist policy makers in their activities.
Objectives	The aim of the proposed study is to deliver sound recommendations for the course of European Union initiated direction, recommendation and action which is based on the key issues involved and to provide good overview on the status of intermodal passenger travel in the EU and the candidate countries. The study will focus on the inter-urban/long-distance dimension of passenger travel. Since seamless door-to-door chains and an integrated transport system are the aim, the last (urban) mile will be analysed as well from the viewpoint of the long-distance traveller.
Work Plan	The work plan sets out three steps: <ol style="list-style-type: none"> 1. Analysis of the key issues of and barriers for passenger intermodality 2. Inventory of national studies, practises and frameworks 3. Generation of practical proposals for Commission action
Methods	Each step of the study will be supported by appropriate methods. A first scoping, literature review and analysis will be undertaken by a small team of experienced researchers. In the inventory phase working with a broad but coordinated network of researchers puts the focus on a high quality of information. The generation of recommendations will see a balanced approach by researchers from the consortium plus carefully selected external experts for validation purposes.
Output	The output of the study includes a thematical report for each stage (analysis, inventory, proposals) both in English and French, a database of the national inventories and a final presentation in Brussels. An address list of all included experts is supplied for further work of the commission.
Timetable	February 2004 – January 2005 Analysis: 16 weeks, Inventory: 25 weeks, Proposals: 21 weeks (running partly in parallel)
Contact	ILS NRW Institut für Landes- und Stadtentwicklungsforschung und Bauwesen des Landes Nordrhein-Westfalen (ILS NRW) Fachbereich Mobilität und Siedlungsentwicklung Postfach/P.O. Box 10 17 64, 44017 Dortmund, GERMANY Guido Müller Tel.: + 49 2 31 / 90 51-268 Fax: + 49 2 31 / 90 51-280 guido.mueller@ils.nrw.de Sebastian Bührmann Tel.: + 49 2 31/ 90 51 - 274 Fax: + 49 231 / 90 51 – 280 sebastian.buehrmann@ils.nrw.de

B. Summary of Recommendations from EU Projects and Initiatives in the Area of Intermodal Passenger Transport

As background information for our own work on recommendations to the European Commission for advancing passenger intermodality we provide at this point an overview of recommendations that have already been made by other European projects and initiatives that deal with or relate to the topic of passenger intermodality.

In general it can be stated that most recommendations from EU projects that dealt with or related to the topic of passenger intermodality were of very general nature. Most research projects did not give much practical advice how to improve specific aspects of passenger intermodality with concrete measures that would be feasible for DG TREN.

However, some general and some more specific recommendations could be extracted from the large amount of sources that have been reviewed. Highlighted in this context have to be the very specific recommendations of the Rail Air Intermodality Facilitation Forum (RAIFF), a group of industry experts from both the rail and air transport modes to develop recommendations for encouraging operational integration of air and rail services for the benefit of travelers and operators. This group has been brought together on initiative of the European Commission and presented very specific recommendations on how to promote air-rail integration. A cornerstone of the group is the proposal to the European Commission, the European Parliament and the Council of Ministers to launch an action programme on passenger air-rail intermodality, covering the main issues in the information/distribution, legal and operational areas (RAIFF 2004). At this point the RAIFF proposals can not be explained in depth. Some aspects however will be mentioned beneath. For details please refer to the original RAIFF report (available from: http://europa.eu.int/comm/transport/rail/raiff/doc/2004_finalreport_en.pdf).

Beneath, a summary – structured by the possible fields of intervention that have been identified by the Consortium – will give an overview of recommendations from various EU projects, institutions and initiatives.

Directives and regulations

The introduction of directives and regulations has been identified by the Consortium as one field of possible intervention for the European Commission. This issue however is only dealt with in few sources. In many cases not direct recommendations are given, but the contents imply possible action fields that could be further elaborated by the European Commission:

- The most detailed recommendations in this field have been made by the RAIFF group. To enable and encourage operators to offer integrated air-rail services it has been proposed that the European Commission should for example take an initiative aimed at harmonizing the VAT rates for intermodal transport services at a zero rate to serve all operators providing integrated transport services in the internal market. Further the RAIFF group provided detailed advice on actions to ensure the legal protection of passengers in case of problems, either in form of self-regulation by the industry, as already practiced in some instances, or in form of legislation by the European Community. The RAIFF group also gives advice on other very specific details like the adaptation of distribution fees to the value of segments sold (RAIFF 2004).

- Very general statements regarding directives and regulations have been made by the European Conference of Ministers of Transport, that published in 1999 the proceedings of their Conference on Transport Chains and Disables persons, stressing the need to build a solid legislative framework and appropriate use of standards and guidelines to improve access for people with mobility handicaps (CEM 1999).
- The PORTAL teaching material on “Integrated Transport Chains” mentions the need for a good regulatory framework for incident management (e.g. delays of departures, guaranteeing links between modes and services and reducing waiting time) (PORTAL 2002).
- The CARISMA³ project mentions that a strong framework for local public transport is needed to ensure an inter-operable and co-ordinated system while introducing more competition at the same time. Strong regulation (legislation) is for example needed to enforce co-operation of operators with important issues being time tabling and shared information on high priority service disruptions (CARISMA 2000).
- The CONPASS⁴ project, that dealt with cross-border public transport, recommended not to wait for a change in legal conditions for improved services. It recommends to deal with barriers caused by different national legislation and regulation frameworks that are causing unpleasant framework conditions for border crossing public transport by aiming at “infiltrating” the different frameworks and bridging existing gaps and differences out of a local perspective.

Support or finance intermodal products and services

To support or finance intermodal products and services is a possible field of intervention that has been covered widely by previous EU projects.

The most concrete recommendations have – again – been made by the RAIFF group, which covered a wide range of products and services regarding air-rail integration. Technical issues are dealt with very practically. The RAIFF group also recommends EU financial start up support in the form of a Passenger Intermodality Programme, similar to the European Commission’s Marco Polo programme in the freight sector. This would contribute to the development and promotion of intermodal products and services in the air-rail sector. Such a programme could aim at actions that directly or indirectly shift the transport of air-rail passengers or their baggage to the airport from private car and feeder flights to intermodal public transport (modal shift actions). So called facilitating actions could support baggage handling, information systems, integrated ticketing, reservation systems, software developments, check-in operations, security logistics or any other action facilitating modal shift to air-rail. Common learning actions as a third element could contribute to the improvement of co-operation by structurally optimising working methods and procedures in the land transport chain of the air passenger and their baggage.

Compared to the RAIFF group proposals, most recommendations from other projects and institutions stay at a very general level, leaving many open questions regarding the practical implications. Priority fields for improving intermodal products and services that have been identified by a large number of projects and institutions are:

³ CARISMA - Concerted Action for the Interconnection of Networks (1997-2000).

⁴ CONPASS – Better Connections in European Passenger Transport (2000-2002).

- Intermodal Passenger Information Systems

Most projects and institutions that dealt with questions of passenger intermodality came to the conclusion that intermodal passenger information systems have a high priority for providing the user with a seamless travel chain (e.g. EU-Spirit⁵, Task Force Transport Intermodality, STEMM⁶, CARISMA; TRANS-ITS⁷, RAIFF). Aspects that have been mentioned linked to this field were the provision of real time information, multilingual services, clear and visible signs as well as personalised information services.

- Integrated ticketing and booking

This has been identified as a second area of high importance (e.g. ARCH⁸, EU-SPIRIT, HSR-COMET⁹, Task Force Transport Intermodality, MINIMISE¹⁰, CARISMA). Also the EC's White Paper "European transport policy for 2010: time to decide" mentions integrated ticketing as one of the three fields that should be given priority in the short term by the member states (EC 2001, p. 76-78).

Integrated ticketing in some projects is recommended for specific modal combinations like air-rail, public transport-rail or taxi-rail. Other projects recommend a general integration of ticketing for all modes to achieve a truly seamless system. The introduction of smart card systems was mentioned in a few sources as promising action to improve conditions for multimodal and integrated ticketing. At the same time it was mentioned that tariff regulations have to be adapted to integrated ticketing, e.g. in border-crossing transport (CONPASS). The use of the internet and other technologies for intermodal booking was recommended as well.

Most projects scratch on the surface of the topic. An exception this regarding are the recommendations of the RAIFF group, that gives specific proposals for the EC how to promote the development of software required for selling integrated services in the air-rail sector.

- Baggage services

Baggage handling issues have only been dealt with in relatively little sources. However, it was considered to be an important topic, mostly related to rail or air-rail services (EUROTRACS¹¹, HSR-COMET, RAIFF). Baggage handling was one of the fields mentioned as a priority action field by the EC's Transport White Paper. The RAIFF group dealt in depth with (remote) check-in issues in the air-rail sector, giving a good idea of practical problems and how to approach them.

⁵ EU-Spirit – European System for Passenger Services with Intermodal Reservation, Information and Ticketing (started 1998, after completion of the EU research project the participants decided to continue the work).

⁶ STEMM – Strategic European Multi-Modal Modelling (1996-1999)

⁷ TRANS-ITS (2001-2003) – a thematic network project with the aim to define research priorities for public transport ITS within the EU.

⁸ ARCH – Alternatives to Short Distance Air Connections through Organisational Measures (1999-2001).

⁹ HSR-Comet – Interconnection of the High Speed Rail Network with other Transport Modes: Connection in Metropolitan Areas of HSR Terminals (1996-1997).

¹⁰ MINIMISE – Managing Interoperability by Improvements in Transport System Organisation in Europe (1996-1999).

¹¹ EUROTRACS – within the TAP-Programme, defined user-needs for European inter-modal travel including information requirements and multimodal baggage management.

Further fields that have been identified as being important for improving intermodal products and services are:

- Interoperability between networks and harmonisation of schedules – contributing to seamless travel chains and enhancing the quality of the journey for the traveller (CARISMA).
- Park and Ride services (MINIMISE).
- Improved access to railway stations and accessibility of rolling stock especially for mobility impaired and elderly travellers (COST 335¹², PORTAL “Integrated Transport Chains” 2002, CEM 1999¹³).
- Marketing: development of conditions and strategies for intermodal and interoperable service operations (COST 335), making passengers and sales agents aware of air-rail offers with an air-rail EU logo (RAIFF).
- Mobility Management (PORTAL 2002).

Introduce/ support intermodality co-ordinating organisations

Organisational questions have been identified by many projects as key for an improvement of the intermodal travel chain. Concrete recommendations in this difficult field however, are mostly lacking.

For some specific fields that relate to passenger intermodality the following more useful recommendations have been made:

- Standardisation related to passenger intermodality: The CEN BT/WG 141 Workgroup “Intermodal and Interoperable Transport-Telematics” sees the need to ensure that the responsibility of the harmonisation of standardisation activities in the area of multimodal transportation is assigned, for co-ordination, to an appropriate organisation, as an ongoing task (e.g. ICTSB ITS Steering group).
- Traffic and Traveller Information (TTI) service deployment: The ATLANTIC¹⁴ project sees need to establish a European consensus building process for TTI service deployment and, recommends to create an independent central body as a driving force.
- Integration of border crossing public transport: The COMPASS project developed recommendations for practitioners how to improve co-ordination in border-crossing public transport, starting on a voluntary basis and increasing the grade of liability in a co-operation in a step-by-step approach.
- Air-Rail: The IATA’S ATCS Air/Rail study¹⁵ recommends to the EC to support the creation of a syndicated group of smaller competitors to enter jointly the intermodal market as intermodality may act as a barrier for this group (insufficient critical mass, technical issues) in the field of air-rail intermodality.

¹² COST 335 – Passengers’ Accessibility of Heavy Rail Systems (1996-1999).

¹³ CEM – European Conference of Ministers of Transport, Conference proceedings “Transport Chains and Disabled Persons” (1999).

¹⁴ ATLANTIC – A Thematic Long-Term Approach to Networking for the Telematics and ITS Community. (2001-2003).

¹⁵ IATA’S ATCS Air/Rail study – seminal document on air-rail intermodality analyses in depth the issues for development and promotion of high speed rail and intermodality where there is competition with air services.

Use financing programmes for cohesion/ financing levers

Only few projects have made comments on this topic.

- The CONPASS project, that dealt with border-crossing public transport gives advice how to use public funding from the INTERREG and PHARE initiatives, but does not provide further recommendations.
- The CARISMA project states generally that TEN-T guidelines should be revised so that interconnection with local networks receives higher priority (e.g. information and payment systems).
- More specific are the recommendations of the ATLANTIC project for the field of Traffic and Traveller Information (TTI) services, aiming at the provision of financial incentives for integrated planning and realisation of TTI services in support of policy goals and regional development objectives. One important recommendation is to provide public funds for the transition from successful demonstration to permanent operation, and for take-up projects.

Finance and organise standardisation activities

Some projects and institutions mention the need for standardisation of certain products and services. The standardisation body CEN for example dealt in several Technical Committees and in the Workgroup BT/WG 141 “Intermodal and Interoperable Transport – Telematics” with a wide range of issues to be covered. Also in other EU projects and initiatives the need for standardisation to enhance the quality of intermodal travel chains has been stressed (e.g. CONPASS, RAIFF, SORT-IT¹⁶, CARISMA), but mostly in less detailed.

Examples of fields where CEN and others see the need for standardisation activities are the following fields:

- (European) standardisation of interfaces at the level of components that make up a multimodal system.
- High priority: Electronic ticketing (e.g. European smart card system) and common European travel planning systems.
- Standardisation of data exchange formats for border crossing passenger transport.
- Standards and guidelines for the accessibility of transport chains, especially regarding the multimodal transport of people with disabilities.

Finance research and studies

Passenger intermodality is a field with many open questions, which is reflected in the large number of recommendations from EU projects and other sources to do more research and studies in this field. At this point only a small excerpt from the wide range of recommendations can be given:

¹⁶ SORT-IT – Strategic Organisation and Regulation in Transport (1996-1999).

- Costs-benefits studies of intermodal products and services seem necessary to remove uncertainties (ATLANTIC, VOYAGER¹⁷, COST 318¹⁸) for operators and other key players(ATLANTIC, VOYAGER, COST 318).
- More detailed knowledge of the market for intermodal products and services is required (IATA ATCS study, Task Force Transport Intermodality).
- In the air-rail sector the further development of mobile check-in technologies is recommended (RAIFF).
- Privatisation and regulation may have adverse effects on co-operation and integration of public transport services. Therefore the CARISMA project sees the need to further investigate the effects of different contracting schemes on the quality of seamless travel.
- The development of standardised agreements for co-operation in the air-rail sector by reviewing existing intermodal agreements is proposed by IATA's ATCS study.

Make policy recommendations

This field has only been touched by very few EU projects. Some aspects mentioned are:

- The VOYAGER project sees policy recommendations as most significant for the improvement of public transport. Incentives for public transport operators, improvements of stakeholder interactions, clear EU mobility policies and a stronger public transport image are mentioned as some of the relevant fields.
- In the ATLANTIC project, TTI policy formulations and the promotion of mainstreaming of TTI into sectoral policies is seen as highly important to foster a more co-ordinated and integrated approach in European and national policy domains and programmes.
- Land-use planning and integrated mobility policies should be linked. Urban and regional plans should include the aspect of passenger intermodality (CARISMA, PORTAL).
- The EU funded research project SORT-IT recommends to focus first on the introduction of more competition in the European transport market and then in a second step, once the strategic reorganisation of the transport market is consolidated, to focus on increasing interoperability, interconnection and intermodality.

Provide/ help set up training programmes/ exchange of best practice

Good practice guides are already available in some important fields (e.g. border crossing passenger transport – CONPASS). However, there is still need to spread good practice and to raise the level of professional skills in the field of passenger intermodality, as the Task Force Transport Intermodality already stated in 1997.

A few reviewed sources provide proposals which fields should be approached:

¹⁷ VOYAGER (2001-2004) – Thematic network for local and regional public transport development covers two important workgroups for intermodality: seamless inter-modal networks and services and the public transport ITS group.

¹⁸ COST 318 – Interactions between High Speed Rail and Air Passenger Transport (1994 – 1997).

- As already mentioned the RAIFF group recommends “Common learning actions” in the field of air-rail. These actions should aim at improving co-operation by structurally optimising working methods and procedures in the land transport chain of the air passengers and their baggage. Knowledge transfer between operators of different modes, European training programmes for intermodal services and the production of a (air-rail) manual or check list (strategic, economic, and operational aspects) for potential investors are examples of feasible measures.
- The COST 335 project and the CEM conference on “Transport Chains and Disabled Persons” identified the need to provide training and work on disability awareness amongst transport operators, passengers, general public and planning practitioners to improve the accessibility of transport chains especially for these groups.

The ATLANTIC project recommends to create awareness and provide training Europe-wide on TTI services, involving all stakeholders, and provide targeted training for key actors at all levels.