FINAL PUBLISHABLE REPORT

Status P

CONTRACT N° : **1999-RD.10480**

ACRONYM : **CONPASS**

TITLE : **Better Connections in European Passenger Transport**

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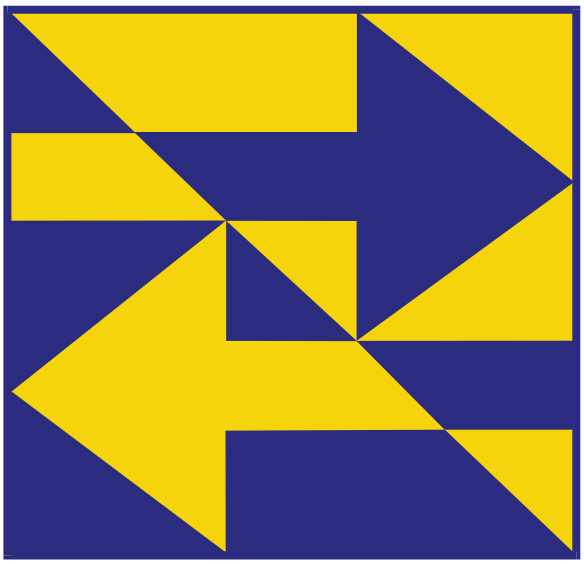
REPORTING PERIOD : **from 01-01-2000 to 30-06-2002**

PROJECT START DATE : **01-01-2000** **DURATION :** **30 Months**

DATE OF ISSUE OF THIS REPORT : **12-11-2002**

Project funded by the European Community under the 'Competitive and Sustainable Growth' Programme (1998-2002)



CONPASS

*Better **CON**nections in European **PASS**enger Transport*

Final Publishable Report

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Document name: D5_021112_publ.doc

Document source: http://www.conpass.org/download.htm

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1 EXECUTIVE PUBLISHABLE SUMMARY

Until recently, borders between member states of the European Union were a clear barrier, not only in terms of culture and language, but also in terms of transport planning and marketing. With increasing European integration **borders are loosing their importance and their separating effect**. Nowadays, people cross borders for daily work, shopping and leisure in ever increasing numbers. However, they make most of these trips by private car and not by public transport or other sustainable modes. Consequently, cross-border car usage is rapidly increasing, whereas ridership on public transport stagnates.

Generally, little has been done so far to assist the improvement of cross-border connections in public transport whether at national or supra-national level. The **CON***PASS* project aims at providing support in this field. The project deals with experience-based strategies to improve **cross-border local and regional passenger transport in urbanised areas**. Special emphasis is given to public transport connections. A major contribution of the project is a comprehensive insight into the nature of existing border barriers throughout Europe as well as providing the necessary tools and experience of best practices on how to overcome these barriers.

The **scientific approach** of **CON***PASS* is structured in three steps: (1) The current extent of cross-border passenger transport in urbanised areas is assessed in 42 border areas by means of a questionnaire survey in order to obtain a state-of-the-art overview. (2) A methodology for in-depth data collection and analysis of cross-border passenger transport connections is developed and applied to 21 case studies all over the EU. A cross-site analysis of case study findings is performed to reveal the existing border barriers and the recently applied measures to improve cross-border connections. (3) Practical concepts and tools to overcome the most critical and important barriers in cross-border transport are applied as small scale measures in 6 border areas which enables a compilation of recommendations for cross-border passenger transport.

The project contributes to innovation in the field of local and regional cross-border passenger transport by the ‘Toolbox’ which is a **handbook-style collection of all main findings** of the project. It presents in a user-oriented way transferable examples and strategies as well as recommendations to assist local actors who are involved in cross-border public transport planning and operation (e.g. authorities, operators, cross-border institutions).

Access to the project results is freely granted on the web site of the **CON***PASS* project at http://www.conpass.org. Among other documents, the ‘Toolbox’ is provided either as a web-based electronic version or as a print version for download on the Internet (http://www.conpass.org/toolbox).

2 OBJECTIVES OF THE PROJECT

The **CON***PASS* project aims at developing strategies and concepts for improvements as well as compiling tools for experience based enhancement of cross-border public transport supply. The project puts special emphasis on **local and regional cross-border public transport in urbanised border regions**.

A major goal of the project is to provide a **comprehensive insight into the type and nature of existing border barriers** throughout Europe. This mainly includes transport-inherent or transport-internal aspects (e.g. barriers within the public transport system itself which are deriving from the specific border situation). It is therefore not a primary objective of **CON***PASS* to provide recommendations to overcome socio-economic and socio-cultural barriers in border regions (e.g. by harmonising the taxation regulations or the school systems, improving the general knowledge of foreign languages) in order to increase the overall cross-border traffic volume in public transport.

Finally, it is the **primary objective of the project** to provide tools and experience of best practices directly to practitioners in border region on how to overcome these barriers in local and regional public transport. This is done in form of the handbook-style 'Toolbox on cross-border public transport' (cf. chapter 3.8). It contains the validated methodological framework for data collection and analysis as well as the technical and organisational recommendations. The toolbox which is designed to assist local activities of improving cross-border connections in an experience based way by providing transferable examples and strategies as well as proven recommendations.

Furthermore, **CON***PASS* aims to contribute to the **further development and improvement of local/regional cross-border passenger transport services** by: (1) providing a state-of-the-art overview, (2) elaborating an analysis methodology for cross-border transport connections, (3) performing dissemination activities in EU member states and in accession countries.

The targeted **user groups of the project's results** are local, regional and national authorities, transport operators and cross-border institutions who all have a key interest in European integration by improving cross-border passenger transport. The reasons for this interest are the likely impacts on economic growth and - as far as transportation is concerned - on modal shifts towards public transport as well as associated implications for the environment and community lifestyle.

3 SCIENTIFIC AND TECHNICAL DESCRIPTION OF RESULTS

3.1 METHODOLOGICAL APPROACH

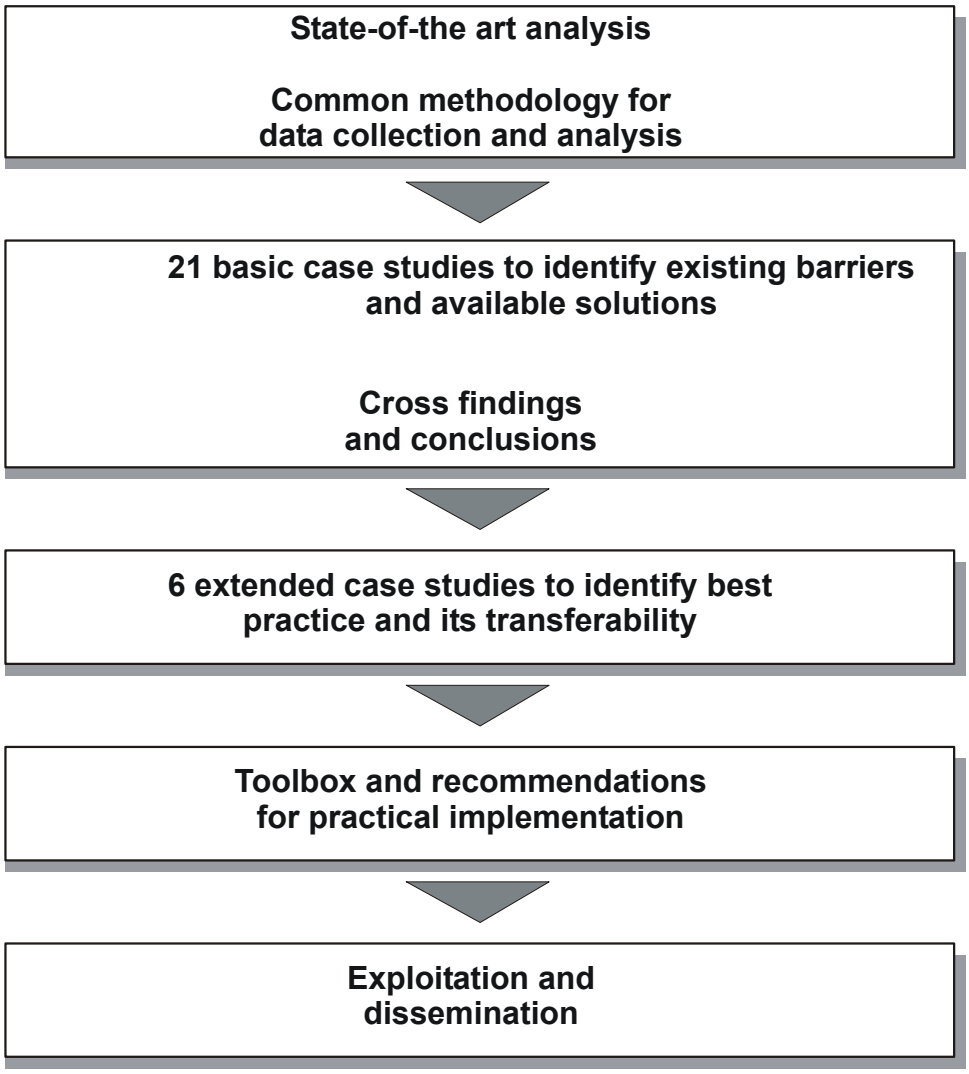
3.1.1 PROJECT WORK PLAN

The work plan of the **CON***PASS* project is organised into 5 technical work packages which comprise the **scientific and application-related project processing**. The intermediate results of the technical work are collected into a co-ordinated structure starting from macro level (State-of-the-art analysis of cross-border public transport) down to micro level (6 extended case studies) which provides the necessary preconditions to set-up a handbook to support practitioners at a certain site. Major steps of the work programme are:

- A quantification of the current extent of cross-border public transport throughout the EU is obtained by a **state-of-the-art analysis** of the local/regional cross-border situation in public transport in the EU.
- The development of a **common methodology for data collection and analysis** of cross-border passenger transport connections builds the analytical framework for case study analyses within the project as well as for future applications.
- **21 basic case studies** with different local characteristics present an in-depth information about the problems and barriers associated with cross-border public transport and outline the variety of available solutions to improve the overall situation.
- A cross-site analysis of case studies reveals the types and commonality of border barriers as **cross findings and conclusions** regarding the existing barriers.
- **6 extended case studies** in a selected number of areas throughout Europe (including accession countries) contribute to the identification of best practice examples in cross-border public transport and recommendations on their transferability to other border regions.
- Finally, all case study findings present the basis for a **handbook-style toolbox** for practical use.

This **co-ordinated project structure** is shown in Figure 1. By that, the output of the project leads to best possible universally applicable, experience-based aids for improving local/regional cross-border public transport in Europe.

Figure 1 Methodological approach to the CONPASS project



3.1.2 CASE STUDIES AND STUDY SITES

CON*PASS* is a **case-study based project** collecting necessary information and data from study sites in order to draw conclusions from cross-findings and to condense the consolidated results in a meaningful way to recommendations for practitioners at site level elsewhere.

In the **CON***PASS* project, a **top-down approach consisting of three levels** is used to select the most appropriate case studies for the respective analyses of the work programme:

- **State-of-the-art analysis (Goal: 'Stock-taking' of all border regions)**
  A comprehensive overview of all existing border regions in Europe has been compiled and, furthermore, each region has been checked whether it can be regarded as an urbanised border region according to the **CON***PASS* research objectives. For this check, the following characterisation of urbanised border regions has been applied:
  - A **clear relation across a national border** exist.
  - At least one country is an **actual member of the EU**.
  - The area has **at least one major centre**, regardless at which side of the border.
  - The **population** of the whole area adds up to more than 100.000 inhabitants.
  - The **diameter** of the area or the distance between the major border cities should not exceed 50 to 70 km as the crow flies.

  As a result, **42 out of 67 regions throughout Europe** clearly fit to the above given definition (see Table 1).
- **Basic case study analysis (Goal: Identifying existing barriers)**
  One goal of the state-of-the-art survey has been to **identify 21 cases for basic case study analyses** in order to check which barriers are obstructing cross-border public transport connections. Based on the following criteria, the study sites have been selected for basic analysis:
  - The **geographical distribution throughout Europe**, to achieve a good balance of "good" and "bad" practice examples,
  - The **coverage of all types of public transport modes**,
  - The **coverage of all types of approaches and specific situations**,
  - The **willingness of local actors** to participate in a further in-depth analysis.

  As a result, **21 regions** have been selected as basic case studies (see Table 1).
- **Extended case study sites (Goal: Identify best practice and check transferability)**
  Hence, a selection of 6 extended case study sites out of the 21 basic case studies for an in-depth analysis of best practice examples and their transferability needed to consider additionally rather practical elements like the willingness of actors at the site to co-operate with the project or the availability of best practice examples to ensure proper case study results.

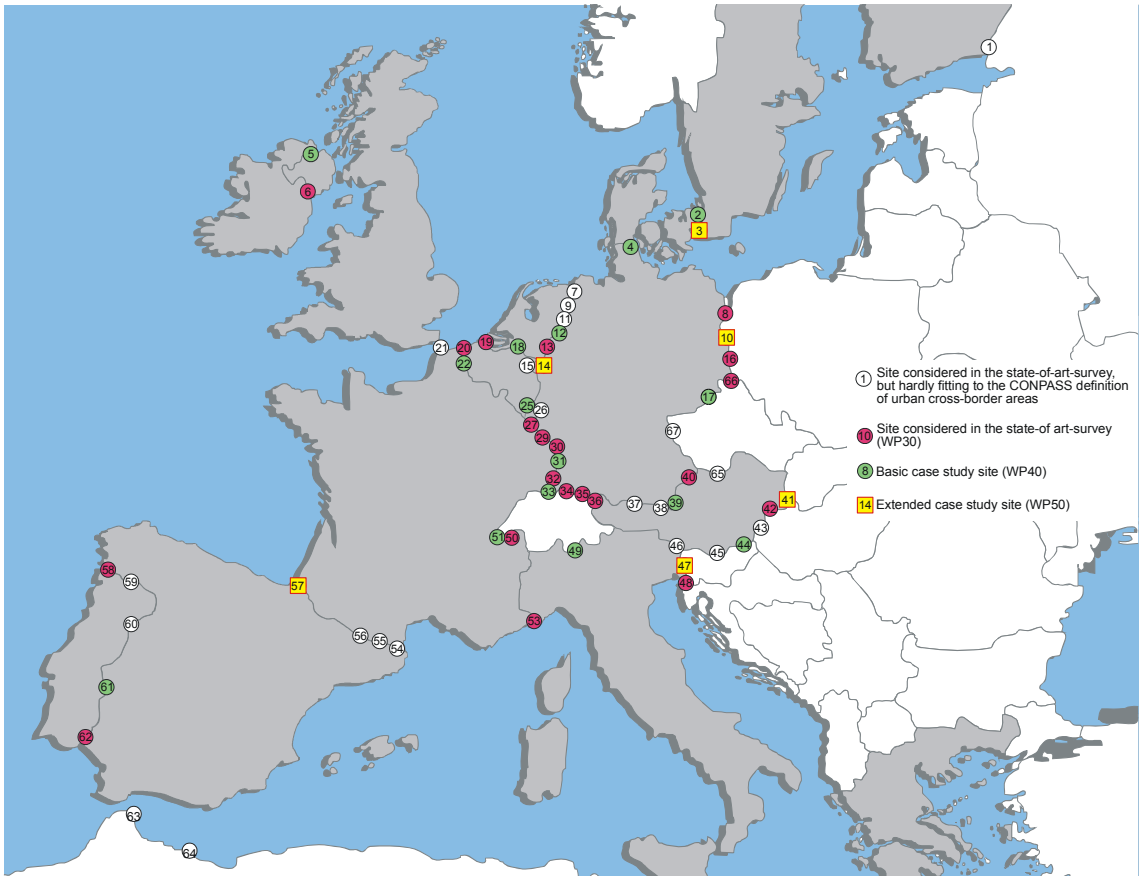
The **respective border regions with importance for the work progress** of the **CON***PASS* project are featured in Table 1 and Figure 2.

Table 1 Overview of border regions considered by CONPASS case studies

No.	Case study area	Countries			State-of-the-art survey	Basic case study	Extended case study
1	Vyborg - Imatra/Lappeenranta	RUS	FIN		❍		
2	Helsingborg - Helsingoer	S	DK		●	●	
3	Koebenhavn - Malmoe/Lund	DK	S		●	●	●
4	Flensburg - Soenderborg	D	DK		●	●	
5	Londonderry - Donegal	UK	IRL		●	●	
6	Newry - Dundalk	UK	IRL		●		
7	Groningen/Winschoten - Leer	NL	D		❍		
8	Szczecin - Pasewalk	PL	D		●		
9	Enschede/Hengelo - Gronau/Bad Bentheim/Nordhorn	NL	D		❍		
10	Frankfurt (O.) - Slubice	D	PL		●	●	●
11	Bocholt/Borken - Winterswijk	D	NL		❍		
12	Arnhem/Nijmegen - Emmerich/Kleve	NL	D		●	●	
13	Moenchengladbach - Venlo/Roermond	D	NL		●		
14	Aachen - Maastricht/Heerlen - Eupen	D	NL	B	●	●	●
15	Heerlen/Maastricht - Verviers	NL	B		●		
16	Goerlitz - Zgorzelec	D	PL		●		
17	Dresden - Usti n. L./Teplice	D	CZ		●	●	
18	Antwerpen - Breda/Roosendaal	B	NL		●	●	
19	Brugge - Vlissingen/Middelburg	B	NL		●		
20	Dunkerque - De Panne/Veurne	F	B		●		
21	Dover - Calais	UK	F		❍		
22-24	Lille - Mouscron/Kortrijk	F	B		●	●	
25	Luxembourg - Arlon/Athus	LUX	B		●	●	
26	Luxembourg - Trier	LUX	D		❍		
27-28	Luxembourg - Longwy - Thionville	LUX	F		●		
29	Saarbruecken - Forbach	D	F		●		
30	Karlsruhe - Wissembourg/Haguenau	D	F		●		
31	Strasbourg - Kehl/Offenburg	F	D		●	●	
32	Freiburg - Colmar/Mulhouse	D	F		●		
33	Basel - Loerrach - Mulhouse	CH	D	F	●	●	
34	Zuerich/Schaffhausen - Waldshut	CH	D		●		
35	Konstanz - Winterthur	D	CH		●		
36	St. Gallen - Bregenz - Lindau	CH	A	D	●		
37	Innsbruck/Reutte - Garmisch-Partenkirchen	A	D		❍		
38	Rosenheim - Kufstein/Woergl	D	A		❍		
39	Salzburg - Traunstein/Berchtesgaden	A	D		●	●	
40	Passau - Schaerding	D	A		●		
41	Wien - Bratislava	A	SK		●	●	●
42	Sopron - Wiener Neustadt/Eisenstadt	HU	A		●		
43	Szombathely - Oberpullendorf/Pinkafeld/Oberwart	HU	A		❍		
44	Graz - Maribor	A	SLO		●	●	
45	Klagenfurt - Kranj	A	SLO		❍		
46	Villach - Tarvisio	A	I		❍		
47	Gorizia - Nova Gorica	I	SLO		●	●	●
48	Trieste - Koper	I	SLO		●		
49	Como - Chiasso/Lugano	I	CH		●	●	
50	Lausanne - Evian/Thonon	CH	F		●		
51-52	Geneve - Annemasse/St. Julien en G./Ferney Voltaire	CH	F		●	●	
53	Nice - Ventimiglia/San Remo	F	I		●		
54	Perpignan - Figueras	F	E		●		
55	Puigcerda - Bourg Madame	E	F		❍		
56	Principat d`Andorra - Seu d`Urgell	AND	E		❍		
57	San Sebastian - Bayonne (Txingudi)	E	F		●	●	●
58	Vigo/Tui - Valenca	E	PT		●		
59	Verin - Chaves	E	PT		❍		
60	Guarda - Ciudad Rodrigo	PT	E		❍		
61	Badajoz - Elvas	E	PT		●	●	
62	Lepe - Tavira	E	PT		●		
63	Tangier/Tetouan - Ceuta	MA	E		❍		
64	Nador - Melilla	MA	E		❍		
65	Linz - Cesko Budejovice	A	CZ		❍		
66	Zittau - Bogatynia - Liberec	D	CZ		●		
67	Plauen/Hof/Marktredwitz - Cheb	D	CZ		❍		

❍ considered, but not regarded as fitting to the **CON***PASS* definition of urbanised cross-border areas

Figure 2 Geographical overview of CONPASS case study sites



3.2 STATE-OF-THE-ART IN CROSS-BORDER PUBLIC TRANSPORT

3.2.1 GENERAL BACKGROUND

Europe is often thought of as a Europe of regions instead of national states. In this context, a border region or rather a cross-border region is seen as **instrumental in creating real integration** across national borders. Public transport might be regarded as an essential part of integration since it provides the necessary mobility options for the exchange of people across borders. Conversely, if the local and regional public transport connections across a national border are poor or non-existent, this is a convincing indicator of non-integration within a border region.

Public transport across national borders implies some peculiarities which make its **operation more difficult and complex than domestic services**:

- **Travel motives**
  In general terms, people are travelling for work (home-to-work-trips, business trips), education (commuting to schools), provision of goods (shopping trips, visits at medical services or administrations, etc.) or leisure. **Travel motives with respect to cross-border trips** can be estimated as follows:

- For **work** (apart from needing a work permit as a foreigner), diplomas of national educational institutes, insurance and taxation cause difficulties in working across a national border. Consequently, labour markets tend to work at a national scale rather than at trans-national scale.
- For **education** the different national curricula are a constraint. Furthermore, basic school education is organised at municipal level in many European countries resulting in a clear assignment of pupils to a certain school. Therefore, crossing the border for school education remains rather exceptional.
- For **health** the different national bases of health service provision and the non-compatibility of services make it difficult to seek help across the border.
- For **public administration** (like getting a passport) the problem is evident.

Consequently, the potential market for cross-border trips is **limited to some distinct travel motives** like unskilled labour, business trips, university education, non-insured medical care, shopping (especially for primary goods), social visits, cultural events or sight-seeing. This phenomenon is met in private transport as well. The severity of the problem for cross-border public transport derives from the fact that most of the missing trip purposes (listed above) are closely related to public transport provision instead of private transport (e.g. transport of pupils to school). As a result, some of the major demand segments of public transport in general are absent or at least under-represented at national borders.

- **Efficiency**
  Public transport is determined by the collective conveyance of people with the same origin and destination patterns. Where people are concentrated together, there is a high potential for public transport. However, the market for cross-border public transport is limited by the likely absence of important travel motives which makes it commercially unattractive in many cases. Hence, there must be a rather high concentration of people in a distinct border area to generate enough passengers with other than the absent travel motives for a cross-border service in order to reach the **break-even point of efficient public transport services** (although 'efficient' does not necessarily mean 'self-financing').
- **National framework for public transport**
  National borders are the limits of societies ordered in accordance with different regulation systems. When crossing a national border, public transport has to comply with two **different national regulation systems**. Governmental regulations and policies are creating disparities between public transport systems on both sides of the border:
  - The **legal frameworks for public transport** which affect the organisation and the financing of the public transport services may be different.
  - The whole complex of government regulations with regard to public transport is developed for **application in national territory**.
  - Regional or municipal councils often support public transport, so **problems arise concerning organisation and funding** of cross-border connections.

Public transport may be nevertheless **present in some volume and quality**, especially where relations are stronger for the following reasons:

- Large conurbations with major centres are extending across the border.
- The area across the border has an attractive labour market.
- The area across the border offers cheaper products and services.
- The area across the border has an attractive housing market.
- The language (or the original dialect) is common.
- The area has original ethnic/linguistic minorities on one side of the border.
- The national border is relatively recent.
- Geography/infrastructure making private transport difficult (e.g. ferry connection).
- Modest car ownership or policy restricting car use.

The **CON***PASS* **state-of the-art survey** provided the opportunity to check these theoretical findings in concrete terms.

3.2.2 RESULTS OF THE STATE-OF-THE-ART SURVEY

CON*PASS* collected basic information about the current extent of urban cross-border public transport throughout the EU by an initial questionnaire survey. In a first step, 67 cross-border regions were identified all over the EU including the borders with Eastern Europe and Morocco. The regional distribution of these border regions (see Figure 2) shows a **concentration of cases in north-west Europe** (The Netherlands, Belgium, Luxembourg, Germany and France) which is caused by the high population density in this part of Europe. Furthermore, a high number of cases involve the two Alps countries Switzerland and Austria.

Figure 3 Population of border regions and distances between their centres

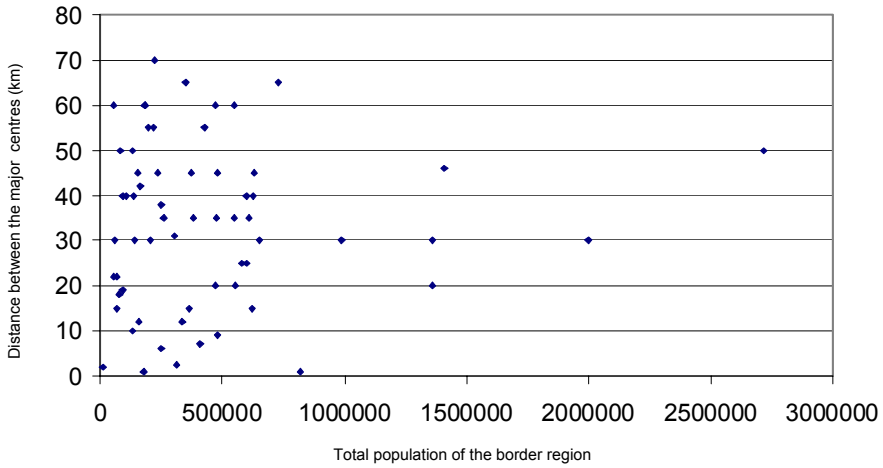
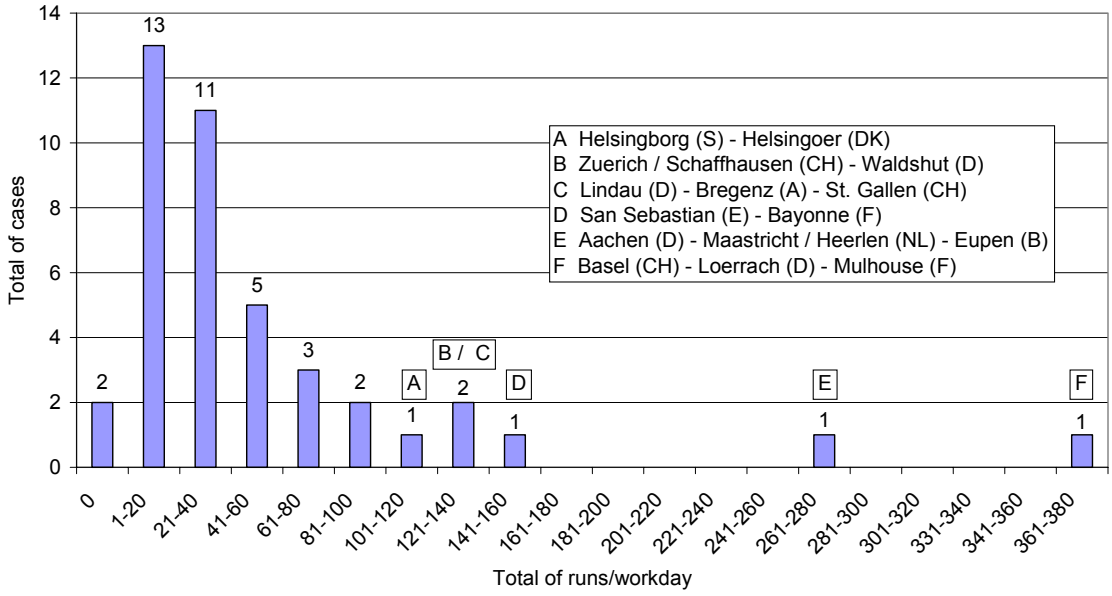


Figure 3 shows the relationship between population and mutual distance of the respective centres of the regions. It can be stated that **urbanised border regions with more than 750.000 inhabitants** are rare in Europe. Moreover, the central cities are lying pretty far apart. In a minority of the less populated areas the distances are shorter. A distance close to zero km does exist only where a relatively new border divides a town, e.g. Frankfurt/Oder (D) - Slubice (PL), Gorizia (I) - Nova Gorica (SLO).

95% of the cases analysed in a more detailed second step of the survey (comprising 42 cases without any doubt being urbanised border regions) have a direct cross-border public transport connection, i.e. there is no need to change vehicles at the border or to make a detour to reach a destination on the other side. But the intensity of cross-border services expressed by the number of runs per day largely varies. In a large number of regions (12) the cross-border link is represented by 10 runs or less per day and direction, insufficient for an hourly service on one single line. At the top end, **6 cases with more than 100 runs per day and direction** are covering a rather frequent transport supply (cf. Figure 4). All of these 6 cases accommodate a major international long-distance transport corridor, which might be a hint that interaction between local/regional public transport supply and long-distances services exist. Furthermore, the intensity of the service shows only a weak relationship with the population number.

Figure 4 Number of runs/workday on direct cross-border public transport lines



The **modal share of public transport in urban cross-border transport** (related to the total number of public transport and car trips across the border) is about 9% on the average (excluding the Oeresund ferry cases Helsingoer - Helsingborg and formerly Koebenhavn - Malmoe). There is no information about urban cross-border demand available in more than half of the cases studied which is stressing the need for harmonised data collection.

3.3 ANALYSIS OF A BORDER REGION

3.3.1 INTRODUCTION

The idea behind the analysis of a distinct border region is to get a clear view on its structure with regard to **all fields that affect cross-border public transport services**. For this, the objectives of such an analysis are to identify the following aspects:

- What is the present status of cross-border traffic (demand and supply)?
- Does a relevant potential for cross-border public transport exist (e.g. is there a high flow of private car traffic)?
- Are there any barriers in cross-border public transport, both for passengers or for operators? How relevant are they?
- Who is doing what in the border region? What is the role of each actor (authority, operator, …) and what is his detailed task and competence?
- Which efforts have already been undertaken to improve the situation within the cross-border region? Have they been successful, and if not, why?

The approach described below to perform such an analysis is based on the common methodology for data collection and analysis for the **CON***PASS*' basic case study analysis. It is a largely standardised and, as far as possible, universally applicable methodology, which can be easily applied elsewhere. However, a standardised methodology can not cope with all specific aspects of cross-border regions due to their different structure. The presented approach has therefore to be **adapted to the local situation**.

3.3.2 PREPARATORY WORK

The **preparatory work** provides a general 'feeling' about the site. The main activities to be undertaken during the preparatory work are:

- Review of existing studies,
- Collection of basic geographical and statistical information about the cross-border region and the state of public transport,
- Look at your site,
- Identification of the most important actors on both sides of the border.

The general view is often that there is no information available on a particular cross-border region, but proper **literature, statistics and Internet survey** will reveal much useful information. Studies on cross-border public transport concerning the particular case or another case at the common border line may exist, probably published on the other side of the border. This survey makes all available information accessible and provides sources for particular information necessary for the analysis (e.g. which organisation is responsible for statistics in both countries of the border region and from

where can I get the data?). Some hints on existing material might be collected by enquiries amongst the relevant actors in the region.

As already stated above various **statistical data** is necessary to get a clear view on the border region. The information to be collected concerns the following topics:

- Population distribution and density in the cross-border region,
- Existing road, rail and (ferry) ship infrastructure which is crossing the border,
- Public transport lines incl. systems operating on demand and special transport systems (for elderly or disabled persons) serving the area,
- Demand figures of the cross-border lines (public transport) and the road infrastructure (private transport) according to travel motives,
- Commuter figures,
- Market analyses concerning users, non users or potential users for cross-border public transport (modal-split surveys and figures).

The **checklist** shown in Table 2 provides some aid to tailor your own inventory concerning the required data within your cross-border region. The necessary data can be found at:

- Topographical maps of the area,
- public transport maps and schedules,
- Internet sites of transport operators or other actors,
- reports of existing studies,
- passenger figures of public transport operators,
- national or regional statistical offices/administrations,
- demand figures published by national or regional road authorities.

In a first step, the **demarcation of the cross-border region** is necessary to define the respective area with interrelationship across the border. The border region is defined by the catchment area of the centres close to the border, which is again defined by the origin and destination of the traffic flows of daily trips across the border. The maximum distance between the major border cities should not exceed 50 to 70 km (usual maximum distance of daily work commuting).

Furthermore, looking at the site also means to **visit various places of the region**. This will provide a clearer view of what is going on and what things look like. A timetable of a cross-border line in a timetable booklet might be well designed, but the real service can look different. The major aspects, which should be considered when visiting the border site are:

- Existing situation at the border (e.g. characteristics of the border controls),
- Quality of the vehicles and the stops/station,

- Information facilities (e.g. information boards, multilingual information),
- Availability of multilingual information by personnel (e.g. by drivers),
- Operating characteristics of the service provider (e.g. who is operating the service, by which vehicles, special features of the service).

The identification of the **players active in cross-border public transport** on both sides of the border serves two aspects:

- Finding the right people to approach for an in-depths discussion on existing barriers and their background story,
- Understanding what the organisational and financing model for public transport in the respective countries looks like, because differences between the models are an important source for barriers.

The relevant actors can be found in different roles like financing, regulating, organising or operating public transport. Selecting the relevant actors is necessary to see how their responsibilities are scattered. **Examples of relevant actors** are:

- Local authorities,
- Regional authorities,
- State authorities,
- Specific transport authorities,
- Public transport operators,
- Public transport associations,
- Cross-border institutions
- Consumer organisation.

Actors with other roles (e.g. consultancies with special experience in this field, local development agencies, tourism promotion agencies) can be of interest, too.

3.3.3 PERFORMING INTERVIEWS

Performing interviews is one approach to get the **necessary background information** in order to draw conclusions on how to overcome existing barriers. The main objectives of the interviews are to identify:

- Barriers towards cross-border public transport.
- The relative severity of these barriers.
- Solutions to overcome these barriers.

The following **suggestions** can be drawn up for organising interviews:

- The most appropriate interviewees should be selected among the relevant actors identified during the preparatory work.

- Face-to-face interviews should be performed with actors from various organisations involved in cross-border transport,
- Minutes should be made during the interview which could be transferred afterwards in a provided data base (for more detailed practical information refer to the 'Guidelines for the Interview' in the 'Toolbox'),
- A short report should be prepared to summarise the relevant findings about the region.

An example for an interview outline is included in part 5 of the **CON***PASS* toolbox.

3.3.4 PROCESSING AND EVALUATING OF DATA

To achieve a general overview of all answers of the interviewee and to compare the data gathered during the interviews it is recommended to insert all data in a specific table. This **master table** (for an example refer to part 5 of the **CON***PASS* toolbox). should enclose all relevant barriers and solutions mentioned during the interviews. Therefore, the master table has to correspond with the interview outline. The master tables are filled in based on the minutes of the interview.

The final step is to **evaluate the gathered information** which provides the intended clear view of the situation of cross-border public transport within the border region. The main findings should be:

- Current quantities and qualities of transport characteristics, especially the level of public transport, its status of development and the existing barriers for public transport,
- Investigation on existing and proposed solutions for overcoming the barriers within the cross-border region,
- Estimation of the public transport potential, in particular if there are important flows of private car traffic across the border.

It has to be stated that **patchy, outdated or even non existent data** is a common problem in border regions. Therefore, it is advisable to collect valuable data only and to assure the quality of the gathered data. Even during an interview the information of two interviewees can widely differ. Therefore the validation of the collected data by a cross-check can improve the data where necessary and correct some errors that may occur.

3.3.5 CHECKLIST OF MOST RELEVANT CRITERIA

The following Table 2 provide a basic checklist of the most relevant criteria indicators which should be considered during an analysis of a border region. This compendium contains all **indicators which usually affect cross-border public transport**. This helps to tailor a site-specific inventory of indicators based on the specific local situation.

Table 2 Checklist of most relevant criteria for analysing a border region

Area of interest	Indicator	Remarks
Features of the region		
Location of the region	Area inside EU / at EU outer borders / outside EU	Role of border controls. Cross-border procedures are time consuming especially for local cross-border transport compared with the overall travel time.
Demarcation of the region	Importance of the border	Identification of the structure of the border region.
	Existence of (at least one) major centre(s)	Identification of the core cities of the region.
	Distance from the border	Indication for the traffic segment (local or regional).
Structure of the region - general	Major centres and their location	Mono-centric or polycentric conglomeration (integration among various centres).
	Spatial axes	Identification of the main traffic routes within the cross-border region.
Structure of the region - socio-economic structure	Population of the municipalities	
	Population of the metropolitan area (catchment area of the municipality)	Catchment area in the neighbouring country.
	Number of jobs	Indicator provides an impression of the economic potential of the region especially concerning commuters.
Structure of the region - traffic generating objects	Residence of administration	Indication for the importance of the city.
	International / national airport	An airport is a major aspect for the region concerning trips-generation and jobs.
	Major shopping centres	Can be a reason to travel across.
	Theme parks	
	Major companies	
Cross-border public transport supply		
Operators	Names of all operators (differentiated by transport modes)	Useful in order to approach the people involved.
	Service area	Area covered by the operators.
	Type of operator (state / region / municipality-owned, private-owned)	Identification of the different line operators.
Line description - type of Service	Long-distance train / High-speed train / Euro-City train	
	Inter-City / Express train	
	Semi-Fast train	
	Local train	
	Light rail	
	Express bus	
	Regional bus	
	Ferry	
	Other (e.g. dial-a-ride)	
	Low floor vehicles (bus/rail)	
Line description - service characteristics	Length of line	
	Travel time	
	Average speed	Option for a check of competition between public transport and private car.
	Periodic intervals	Comparison with the domestic level.
	Runs per Mo-Fr, Sa, Su	
	1st run on workday on Mo-Fr, Sa, Su	
	Last run on Mo-Fr, Sa, Su	
	Waiting time due to border control	
	Border control performed during trip	
	Line operation (one operator / joint service / change of vehicles)	
Line description - tariff details	Method of payment (currencies, cashless)	
	Applied tariff system for cross-border trips	Common tariff system or added tariffs.

	Range of ticket	Full range of ticket types available/valid or selected ticket types only.
	Ticket fare level	In comparison to domestic trips.
	Ticket validation	Different practices between the operators.
Background statistics for rail	Gauge	
	Train traction (electrification system, diesel)	
	Function (passenger/freight traffic)	
	Unused / dismantled lines	
	Single-track / multi-track	
	Relevance of the line (local/long-distance services)	
	Missing links (gaps of the network, bottle-necks)	
Information system - general/stations/vehicles	Availability of timetables, information material, network maps at inquiry desks	Sometimes there are effective concepts of exchanging information material.
	Existence of a network map (incl. all cross-border services)	Network maps cover all cross-border lines.
	Multilingual dynamic passenger information visual/audio onboard the vehicle	
	All lines and timetables available in one booklet (multilingual)	Special cross-border booklet / inclusion of all cross-border lines in local timetables.
	CD-ROM (multilingual)	Availability of a timetable information system (journey planner)
	Internet site (multilingual)	General information about cross-border services, availability of a journey planner
	Telephone information (multilingual)	
Cross-border private transport		
Road infrastructure	Name/number of roads	
	Status of roads (motorway, major road, secondary road)	
	Distance / Travel time / Average speed between the centres	Option to make cross-reference to travel times in public transport.
	Border waiting time (average/peak)	
Cross-border demand figures		
Cross-border demand figures - public transport	Total per Mo-Fr, Sa, Su	
	Work commuter trips per Mo-Fr, Sa, Su	
	Educational trips per Mo-Fr, Sa, Su	
	Shopping / leisure trips per Mo-Fr, Sa, Su	
	Others	
Cross-border demand figures - private transport (cars, motorcycles)	Total per Mo-Fr, Sa, Su	
	Work commuter trips per Mo-Fr, Sa, Su	
	Educational trips per Mo-Fr, Sa, Su	
	Shopping / leisure trips per Mo-Fr, Sa, Su	
	Others	
Cross-border demand figures - private transport (cyclists, pedestrians)	Total per Mo-Fr, Sa, Su	Important for distinct border situations.
	Work commuter trips per Mo-Fr, Sa, Su	
	Educational trips per Mo-Fr, Sa, Su	
	Shopping / leisure trips per Mo-Fr, Sa, Su	
	Others	
Identification of relevant actors		
Type	Local authorities	Check of the responsible authority for public transport.
	Regional authorities	
	Transport authorities	
	Transport operators / associations	
	Transport associations	
	Cross-border institutions	
	Consumer organisations	
Relevance	Role	Role of the actor, duties and tasks.
	Radius of action	Distinction between local, regional and national relevance.

3.4 BARRIERS IN CROSS-BORDER PUBLIC TRANSPORT

3.4.1 INTRODUCTION

Distinct barriers and problems are obstructing public transport services across international borders. Some of them are derived from the existing border situation itself and are therefore difficult to tackle from a transport perspective. Others are **transport-inherent barriers**, and so to say, produced by the transport system itself. The scope of the basic case studies has been to identify these latter barriers and problems, which are affecting cross-border public transport.

For that reason, barriers that are likely to obstruct the development of cross-border public transport connections at many sites are described in Table 3 to Table 6. The barriers concern **cross-border issues only**, and consequently problems that are relevant to public transport in general are not considered. The overall goal is of course to remove those barriers at a distinct border site which might be elements of a vicious circle (e.g. decreasing passenger figures → lack of demand → supply reduction and so on). The aim is to start a virtuous circle: marketing studies → increase of the supply → increase of the demand → increase of the investments and so on.

The barriers are listed in accordance with the following **four fields**:

- Information (cf. Table 3)
- Level of service (cf. Table 4)
- Organisational, legal and institutional framework (cf. Table 5)
- Tariff (cf. Table 6)

Table 3 Barriers on information

Language problems. It is not possible to get information in both of the two languages spoken in the neighbouring countries. This causes major communication problems particularly for those persons with limited foreign language skills. It is one of the most decisive psychological barriers people are worried about. It is often a problem, but need not be (e.g. Como - Chiasso). If the national language differs between the neighbouring countries, multilingual information is necessary.
Availability of information. The information is not available, badly disseminated or not easily accessible (e.g. timetables, tariffs, types of tickets, where to get them and how to use them). For cross-border public transport in general it is more difficult to get to adequate information, because the overall framework is more complicated for the passengers (e.g. different language, different currency, other ticketing system abroad).
Hardly understandable information content. The information is so complex or badly presented (e.g. numerous footnotes), that the average customer will most probably not cope with it - especially if language problems make understanding already more complicated.
Insufficient co-ordination. An integrated approach in providing the information is missing (e.g. different printed formats instead of standardised layouts, missing links between internet sites, no reference made in the timetables to connecting cross-border lines because these lines were provided by a company from abroad).
Availability of maps. The provided maps do not cover cross-border lines or lines of operators from across the border are missing on the map.

Table 4 Barriers on level of service

Too few lines. Very often there exists only one through line across the border, while several lines, due to various reasons, end nearby or just close to the border. It is often not attractive or allowed for operators to provide cross-border public transport lines due to economic or concessionary reasons.
Low frequency. If the supply side of the service is poor, due to economic or concessionary reasons, it is hard to attract additional passengers, especially who have the alternative to use their private car for crossing the border.
Too long transfer time. Time losses occur due to a lack of adequate through lines. Therefore, passengers have to change the lines to get to their final destination. Bad co-ordination of arrivals and departures from different bus lines and rail lines will result in long transfer times.
Change of vehicles at the border. Additional efforts have to be undertaken by the passengers (change of vehicles) due to technical or organisational reasons (e.g. passport/customs procedure, changing of gauge of the rail tracks, missing through *lines). This is often due to historical reasons in the growth of different national rail systems.
Change at the next interchange station across the border. The existing direct public transport services do not meet the required needs of the passengers, because the cross-border lines are mainly feeder lines.
Time losses caused by the cross-border procedure. Time losses at EU outer borders are often caused by administrative aspects like the organisation of the whole cross-border procedure (e.g. the cross-border procedure is performed at the border station, not onboard the train, public transport buses have to queue with private cars and tourist coaches at the border).
Missing connections/missing links. Due to the fact that the traffic networks primarily follow the national demand, many lines will end nearby or close to the border. In some cases it could be very productive to connect both national networks with additional links to receive a higher benefit for passengers out of an enlarged network.
Missing co-ordination of the timetables. Mostly a main focus is done on specific national interests. Timetables of cross-border lines are badly co-ordinated. Co-ordination both within the mode (bus-bus-connections as well as between the modes (bus-rail-connections) are missing.
Unreliable public transport services. The departure/arrival times of the service is unreliable. The unreliability is most likely caused by time losses due to the border control (especially at EU outer borders) or technical co-ordination problems (change of locomotives).
Different minimum standards between the countries. Not every country (municipality) is setting a main focus on public transport due to various reasons. Therefore, different minimum standards may occur concerning the level of supply and the quality of the service.
Time losses due to technical aspects. Time losses can be caused by technical aspects like changing of locomotives at the border station (different voltage systems), or changing of passengers to different vehicles (different gauge of tracks).
Low commercial speed. Often traffic infrastructure needs have been neglected, especially for cross-border public transport, e.g. preferential treatment of line buses (preferential treatment at traffic lights; exclusive bus lanes) is missing, the permitted maximum speed on cross-border rail links is low due to poor track conditions, or express train/bus services for commuters are lacking.
Insufficient quality standard of vehicles. The quality of the vehicles used for cross-border services is sometimes worse than the quality of vehicles usually used in domestic services . This can be studied at various sites. Sometimes it has something to do with subsidising (e.g. subsidies are provided for investments in new vehicles for domestic services only) or strategic aspects of the operator (old vehicles are transferred to cross-border links since less passengers are affected by antiquated vehicles due to the lower demand).
Lack of demand. A lack of demand exists due to a low population density (structure of the settlements) within the cross-border region.

Table 5 Barriers on organisational / legal / institutional framework

Different responsibilities of administrations. The responsible administrational levels for public transport differ between countries due to a different administration system. Some countries may have an operator and authority as the same body, others have private or commercial operators and a public franchising authority. Sometimes administrations are responsible only for local transport and others are responsible for regional transport. These different structures can lead to uncertainties and problems in communication and negotiations between both sides.
Lack of subsidies. Subsidies are normally granted for domestic services or up to the border, but not for sections in the neighbouring country. This makes cross-border services more complicated with respect to the financial basis. Subsidies are normally provided by local or regional authorities for services within their region. Two authorities can often easily jointly finance a service between 2 regions in the same country as the regulations and rules are the same. However, such a joint financing agreement with an authority in another country is much more difficult, as the rules and subsidy levels may be different.
Different legal frameworks. The regulations affecting cross-border public transport are largely differing with respect to responsibilities for the service, tendered market versus exclusive rights, financing, fare-setting etc. This could impede smooth operation of cross-border services.
Problems with licence/concession. Extensions of specific public transport lines across the border are often not possible due to the fact that concessions are not available or very difficult to achieve for (foreign) operators. Most countries have area-wide licences for urban public transport services. Very few allow free competition between different operators on the same route.
Long decision-making procedure. This may be due to political aspects or a complex decision-making procedure within the administration. As a rule, two procedures (in both countries) for only one issue (e.g. a new cross-border bus line) are necessary resulting in a long decision-making procedure.
Different safety standards. Safety standards are usually set on a national basis, not a regional or local one, so the problems usually appear only at borders and not internally within countries. Every piece of national legislation claims specific, and therefore often different safety standards for the vehicles in use, both for rail and for bus. Cross-border services have to cope with it. In some cases vehicles of one operator may be not allowed to enter the neighbouring country.
Different labour conditions. Due to different labour conditions in each country, problems may arise when personnel is operating a service across the border (e.g. EU outer borders, agreements between the trade unions and the respective employers).
High investment costs. Improvements causing infrastructural investments are often unprofitable due to the high costs in relation to the low demand. Financing a cross-border measure could be cumbersome due to the need for agreements over the border.
Lack of cross-border co-operation structures. In general the co-operation structure is focused only on national issues. The aim is to strengthen the co-operation structure of the neighbouring countries both between the administration and the operator.
Restriction of the local planning sovereignty. Many issues concerning cross-border public transport are not within the immediate legal competence of local planning authorities, but the national bodies. The more authorities are involved within the planning process and within the supply process of public transport, the more efforts are necessary for negotiations. This aspect is especially valid if two neighbouring countries have to co-operate.
Insufficient information about regulations. Regulations are usually made for domestic operators only, which means that they are not published in foreign languages or disseminated to foreign organisations. This can result in insufficient information. It is often pointed out by operators that they do not fully understand the organisational structures and rules on the other side of the border, or what steps have to be taken in order to be able to operate a bus service across.
Little or no willingness to co-operate. One reason for a lack of co-operation may be a lack of knowing the competent partners (decision-makers) on the other side of the border.
Lack of co-operation between operators. The basis for co-operation for operators from neighbouring countries for cross-border public transport is more difficult. This may cause a lack of common initiatives to enhance the cross-border transport, a lack in service co-ordination or a lack in supplying information to passengers.
No authority with arbitrator functions. In the case of a cross-border conflict situation, occurring problems have to be solved within the different national administrations. For this, more time will be needed for

the decision making process and there is a risk of negotiations ending in a dead-lock situation.
Cost and profit distributions / split of revenues. The split of revenues is a common problem in public transport as soon as an integrated tariff scheme covering more than one operator is established. Especially in cross-border public transport a dissension on the distributions of costs and the split of the revenues between both responsible bodies/operators from both sides of the border are a serious problem. Methodologies to split the revenues across the border are often lacking.
Demands made by the border police. Demands made by the border police may result in higher travel times for cross-border trips by public transport, if time-saving procedures are rejected (e.g. to perform the border control during the trip onboard the train, preferential treatment of public transport busses at the border post, obligation to change the vehicle at the border).
Currency variations between the countries. The exchange rates between the currencies can strongly vary on a day-to-day basis. This makes it difficult to fix the fares for the service or to split the revenues etc. This is solved for borders between the 'Euro countries' but could be especially a problem at EU outer borders.
No usual reduction in taxation. It is impossible to obtain a tax reduction for cross-border services, which might be available for domestic public transport services.

Table 6 Barriers on tariff

High level of fares for cross-border trips. For many border connections, the fare level for cross-border trips is remarkably higher than the fare for a comparable national trip. This is due to various factors, e.g. the fare is calculated by adding the two domestic fares up to the border in each country, typical fare reduction formulas are not accepted for cross-border trips, cross-border passengers on a regional connection must pay a compulsory express train supplement (although alternative train connections by local or regional trains are lacking), in order to increase the cost coverage of the distinct cross-border line the fare is calculated at a higher fare level etc.
Availability of full range of tickets. Only selected types of tickets are available for the cross-border section, e.g. no multiple trip tickets, no weekly or monthly passes. The reason for this is in most cases that the operators want to limit the handling efforts e.g. for the bus driver who has to sell the tickets on the bus or for an easier split of revenues. As a consequence, fare reductions for cross-border public transport as usually existing for season tickets etc. are lacking.
Different level of fares between countries. When the level of fares is high compared to the average income level of people from the other country, it could be cheaper to use a private car than to use public transport to cross the border. This aspect especially concerns the current situation at the EU outer borders.
Problems with the distribution channels. A main focus for ticket sales should be to set an offer of tickets enclosing the entire trip-chain of each passenger. Especially in regional rail transport, passengers often have to use bus or tram to get from the rail station to the city centre. For this section they have to purchase an additional ticket which might be complicated if the passenger has got limited foreign language skills and purchasing of tickets works in another way than at home.
No concessionary fares. Usual fare reductions (e.g. elderly, disabled, students) do not exist for the cross-border section as it is usually provided for domestic tickets. A reason for it can be that the respective authority provides subsidies for domestic services only, but not for cross-border lines.
Restrictions in currency acceptance onboard. In some cases only one currency is accepted onboard the vehicle or other currencies are accepted at a higher fare only. This aspect will concern especially countries at the EU outer borders.
Complexity of the tariff system. Many additional special regulations are in force regarding the tariff regulations for cross-border lines (e.g. tickets have to be date-stamped before embarking at one side of the border, on the vehicle on the other side) that the average customer will most probably not cope with it.
No integration of the tariff systems. The tariff systems do not cover all public transport lines. The ticket fares have to be paid separately by the passengers for each operator. For this, one ticket for the entire trip chain is not available, and as a consequence the fare might be much higher as well.

3.4.2 CONCLUSIONS FROM CROSS-SITE EVALUATION OF CASE STUDIES

The list of barriers shown above may give the impression that there is a number of well-defined solitary problems in cross-border public transport that could be taken care of one by one. The reality is of course that many of these **problems and barriers are interrelated** and have to a great extent causal connections.

With regard to the estimation of the most decisive problem in cross-border public transport, a perceptible **difference between the passengers' and the operators' view** becomes visible. From the passenger's point of view, the supply side of cross-border public transport is often regarded as too low and the fares as too high, which means that taking the car is considered the best alternative. From the operators' perspective, the demand as a consequence is too low and without subsidies it is not profitable to increase the supply.

Another problem revealed from the case studies is the **lack of responsibility for cross-border public transport**. Local and regional authorities are often not prepared to take the responsibility for international public transport. It is normally not prescribed in their instructions, they have no special funding for it and sometimes they lack competence in the legal and organisational framework of the neighbouring country. The result is often lacking information, missing co-ordination of timetables and tariff systems and missing practical and financial support for operators trying to maintain or start cross-border transport.

As a result of a cluster analysis, it can be stated that the **barriers and problems seem to be very much the same at the different study sites** - nearly regardless of the size of the area or the distribution of population within the border area or the existing supply level. This means that the possibilities for transfer of different solutions ought to be good.

Only one cluster clearly differs from other study areas which is the **eastern border sites**. At these sites, the language problems are clearly more prominent, cross-border procedures are a serious and time-consuming obstacle for the passengers, the legal differences are bigger, the labour conditions in public transport operation differ and the economic disparities between the both sides of the border are relatively high. The "iron curtain" is down but the shadow of it is still there. Furthermore, working together over the border is still at the very beginning in many cases and the legal and organisational framework differ more than between the EU countries. Differences in the economic situation constitute a special problem at these borders as well as time-consuming cross-border procedures.

3.5 BEST PRACTICE

3.5.1 INTRODUCTION

Measures to improve the current situation in cross-border public transport have been adopted as best practice in various border regions, both in the EU and outside the EU and accession countries. Best practice measures provide several options for application and implementation elsewhere, too, and this chapter aims at an overview of available measures. The measures are sorted according to the same classification scheme as the barriers in the previous chapter, representing 4 specific fields or policies (information, level of service, organisational/legal/institutional framework, tariff).

This overview given below cannot provide a list of ready-to-go 'cooking recipes' for implementation because the **local specific features are very dominant**, but further information about each single measure is of course gathered in the **CON***PASS* toolbox. Consequently, it is necessary to consider that the reported measures have to be adapted to the local context.

3.5.2 STAGES OF DEVELOPMENT OF CROSS-BORDER PUBLIC TRANSPORT

The sorting of measures refers to the **concept of 'stage of development'** of a border region. This makes it easier to assign a distinct measure to a specific site, since the level of development is always decisive for the results of the measure.

Usually cross-border public transport is less developed, has more problems and has a lower level of service than the domestic public transport services. On this basis the final objective is that the **quality of cross-border public transport services and facilities** match standards relevant to neighbouring regional and national public transport services.

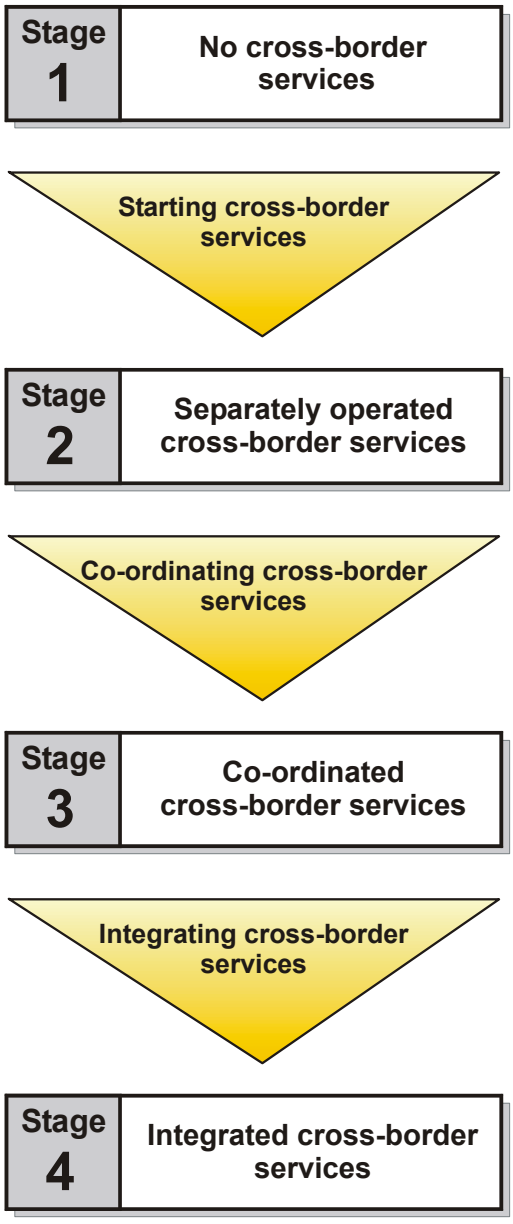
The **stages of development** start from the absence of any cross-border service and end with the complete integration of the cross-border services. The development process of proceeding from one stage to a higher one is called transitional phase. A scheme of the concept is provided in Figure 5.

3.5.3 MEASURES ON INFORMATION

Starting cross-border services (Stage 1 → 2)

Information policies (for details cf. Table 7) are highly efficient in the initial stages of development of cross-border connections since the potential users knowledge about cross-border connections is poor in most cases. The experience has shown that most measures are easily transferable to other cases, providing specific conditions of the measure are met.

Figure 5 Stages of development in cross-border public transport



No cross-border public transport services and facilities are provided. The only option to cross the border is by private means of transport or making larger detours in public transport.

Transitional phase

1 → 2

Separately (independent) operated public transport services at either side of the border (no or very limited co-ordination of these services) are available.

Transitional phase

2 → 3

Co-ordinated cross-border services Co-ordinated cross-border services are provided. Co-ordination can be established in various ways, e.g.: timetable, ticket price or tariff, information supply, collaboration between service providers, collaboration between customs at border crossings, acceptance of cross-border regulations, etc.

Transitional phase

3 → 4

Cross-border public transport services are integrated in relevant planning procedures (strategic, tactical and operational) at both sides of the border. All cross-border services provided are fully integrated in the total package of public transport services, being operated in that specific area. As a result information supply, services and tariff system of cross-border public transport are an integral part of the regional public transport system at both sides of the border. Also the organisational, legal and institutional framework for cross-border public transport is fully integrated in the relevant national and regional frameworks at both side of the border. However, harmonisation of the relevant organisational, legal and institutional framework at both sides of the border is not a prerequisite.

Multilingual personnel onboard a bus/train is regarded as an easy transferable measure. Training programmes to teach the necessary languages are necessary, but better overall qualification of the personnel will also contribute to enhance the service quality.

Mutual exchange of existing information material can be implemented at very low cost, but is only useful if language problems are few or not existing. Making Internet hyperlinks mutually available to both sides of the border could be another very simple solution.

A **cross-border network map** is regarded as a 'must' with an internal/external effect: (1) responsibles involved get an overview of existing cross-border supply (e.g. two lines are running up to the border with only a short gap in between), (2) potential customers need sources for information on how they can get to the other side of the border. A map is a valuable starting point, but other information tools like timetable booklets, information hotlines, Internet-based trip planners are needed - even if these tools work on a national basis only).

Co-ordinating cross-border services (Stage 2 → 3)

The production of a **cross-border timetable booklet** (for details cf. Table 7) is relatively expensive due to the necessary editing effort, but passengers need timetable information to perform cross-border trips. The lowest standard for cross-border timetable information is to include all cross-border lines (regardless of who is operating the service) into the respective domestic timetable booklets.

Information at bus stops and stations should provide **basic bilingual features** in cases where the language is a real barrier, otherwise people without knowledge of the foreign language will not use the services offered.

The idea of a **cross-border mobility centre** is regarded as complicated at relatively high costs with limited demand. Alternatively, making the local telephone inquiry desk or call-centre bilingual is a more suitable approach.

Integrating cross-border services (Stage 3 → 4)

An **Internet-based trip planning and information site** (for details cf. Table 7) is a very suitable approach to provide cross-border timetable information to passengers. However, database handling and management could be problematic. In general, it is easier to integrate cross-border information into existing and well known sites than to start a new site for cross-border issues.

Table 7 Measures on information

ENHANCED CROSS-BORDER NETWORK MAP	Stage 1 → 2
Short description:	A network map is published showing all cross-border public transport lines as well as the respective domestic networks on both sides of the border.
Problems targeted:	Information is a prerequisite for using public transport. Especially for cross-border connections information on connecting services on the other side of the border is difficult to obtain. Although infrequent public transport users might have an impression where the local routes operate, this knowledge is very limited where cross-border services are concerned.
SUPPLY OF MULTILINGUAL INFORMATION	Stage 1 → 2
Short description:	Multilingual information for passengers in cross-border public transport buses provided by the bus driver
Problems targeted:	Providing adequate information for passengers by the operator also within the vehicles goes without saying to fulfil quality standards for public transport of today. For this, the provision of multilingual information is essential in cross-border public transport in particular at the border between EU and non EU-countries. In the case that a specific route is used frequently by international passengers (e.g. connection to an airport), it is essential to provide information about specific organisational issues like cross-border procedures or the handling of their luggage (especially in case of bus-services).
MUTUAL EXCHANGE OF INFORMATION MATERIAL	Stage 1 → 2
Short description:	Existing information material is made available on the other side.
Problems targeted:	Lack of information is probably the most serious and most common problem for cross-border public transport. If passengers don't know how to reach their destination, they will not use public transport.
CROSS-BORDER TIMETABLE BOOKLET	Stage 2 → 3
Short description:	All (major) public transport services of a cross-border region are featured in one cross-border timetable booklet giving easy access to the entire network
Problems targeted:	Information is a prerequisite for using public transport. Especially for cross-border connections information on connecting services on the other side of the border is difficult to obtain.
CROSS-BORDER MOBILITY CENTRE	Stage 2 → 3
Short description:	Information centre for all questions related to mobility (all modes) in the whole cross-border region.
Problems targeted:	For cross-border travellers, it is usually very difficult to get the necessary information, especially when using public transport. Different ticket systems may apply at both sides of the border, maybe a different language is spoken, and most of the time, the 'domestic' information centre doesn't supply information about transport at the other side of the border. As information is the basis of mode choice, it is very important to target this problem in order to make people accept the public transport offer as a possible solution to their cross-border mobility.
INTERNET JOURNEY PLANNER AND INFORMATION SITE	Stage 3 → 4
Short description:	An Internet journey planner covers the whole cross-border region. It allows self-service information on cross-border connections from the WWW.
Problems targeted:	Information is a prerequisite for using public transport. Especially for cross-border connections information on connecting services on the other side of the border is difficult to obtain.

3.5.4 MEASURES ON LEVEL OF SERVICE

Starting cross-border services (Stage 1 → 2)

At this level of development, only measures concerning new services are dealt with, since there is no service so far. The implementation of new services and the type of service depends largely on the **level of demand in a border region**. There are regions with an inherent low demand level (even in private transport). In other areas demand in private transport is high and people could be attracted to use public transport if available (for details cf. Table 8).

Measures to establish **new cross-border supply** in public transport (e.g. prolongation of an existing domestic service across the border) are regarded as highly transferable, although funding remains the key question for getting started. On-demand services could play a role to provide efficient cross-border public transport connections if the demand is low. Even leisure-oriented cross-border services, such as a cross-border tourist bus line running at weekends could be a first attempt for a new regular service.

Co-ordinating cross-border services (Stage 2 → 3)

Co-ordination of services is reflected in complementary timetables, similar frequencies on both sides of the border, and a better integration of services at transfer nodes (stations and bus-stops).

A tighter **co-ordination of interchanges** (for details cf. Table 8) between cross-border bus lines with the domestic networks is regarded as fully transferable. The overall goal is to establish the most important transfer connections with only short time losses.

Under the heading of **shortening waiting times at the border due to the change of locomotives** (electric traction with different voltages) a sub-optimal solution is featured (passengers switch from one train to another, instead of having to change the locomotive). This measure can be accepted until multi-voltage vehicles are available. Alternatively, the use of diesel locomotives might be a low-cost solution to bridge the problems arising from conflicting electric voltages.

Integrating cross-border services (Stage 3 → 4)

Since cross-border lines tend to combine various demand requests (e.g. local, cross-border and regional trips), loops and detours might exist. As a consequence, travel times are high and unattractive. In many cases travel times can be cut down significantly by a straight **alignment of the cross-border line** (for details cf. Table 8) and a demand-responsive feeder service for detours and loops.

Table 8 Measures on level of service

PROLONGATION OF AN EXISTING DOMESTIC SERVICE ACROSS THE BORDER / COMBINATION OF TWO DOMESTIC SERVICES TO ONE CROSS-BORDER LINE	Stage 1 → 2
Short description:	A domestic service running up to the border is prolonged to a destination in the neighbouring country to offer additional cross-border services.
Problems targeted:	The cross-border public transport supply level is often lower than the respective domestic ones. Due to the typical trip purpose in domestic public transport (especially education, labour), many bus lines or rail services are running up to the border but don't offer cross-border connections.
NEW BUS ROUTE OR TRAIN SERVICE	Stage 1 → 2
Short description:	Implementation of a new cross-border line (as first cross-border connection in the region)
Problems targeted:	A low level of travel opportunities is a substantial barrier in cross-border public transport. Implementation of new lines develops the supply side.
CROSS-BORDER TOURIST BUS ROUTE	Stage 1 → 2
Short description:	To promote day tourism across the border, a special bus route is established for leisure trips on weekends (hiking, beaching, sight-seeing, etc.)
Problems targeted:	Often there is no public transport connection at all in a border region. Consequently, a starting point to build up a continuous cross-border supply is to start services for special trip purposes which only run within a limited period of time (e.g. only weekends, only during the summer). Since leisure trips are an important trip purpose in the cross-border transport market, a cross-border supply can target this trip potential.
INCREASE OF FREQUENCY/EXTENSION OF OPERATING HOURS	Stage 1 → 2
Short description:	When the supply is too low as compared to the demand, the operator(s) may decide to extend the number of cross-border runs, in order to improve frequency or the amplitude of operating hours.
Problems targeted:	The major problem targeted by this measure is the lack of supply. The improvement of the frequency may target capacity problems, whereas the extension of operating hours provides public transport to market segments (travel motives, e.g. work, education) which haven't been served so far. In an indirect way, the rise in frequency also makes the whole travel chain faster, by reducing time losses caused by waiting. A rise in frequency or extension of operating hours may also target the problem of bad connections to other public transport at both sides of the border.
CO-ORDINATED INTERCHANGE BETWEEN CROSS-BORDER BUS LINES	Stage 2 → 3
Short description:	In cases of less integrated cross-border lines, important connections are checked, improved as far as possible and outlined to the customers.
Problems targeted:	In many cases cross-border lines are less integrated to the public transport network on either one side of the border. Missing interchanges to other connecting services make the use of public transport for cross-border trips more unattractive and weakens the cross-border service at all.
SHORTENING THE WAITING TIME AT THE BORDER DUE TO THE CHANGE OF LOCOMOTIVES	Stage 2 → 3
Short description:	Conflicting electric voltages in passenger rail transport always causes time-losses at the border unless multi-voltage vehicles are available. To cut down these losses, passengers change trains instead or diesel units are used.
Problems targeted:	Reduction of the wait time at the border, overcoming the technical barrier due the different voltage systems, improvement of the attractiveness of cross-border regional rail connections

ACCELERATION OF A REGIONAL CROSS-BORDER LINE	Stage 3 → 4
Short description:	Loops and detours in regional cross-border bus lines are skipped in order to make the line a real direct and fast cross-border connection on a regional level.
Problems targeted:	Passengers in public transport want to get to their destination in the shortest time possible. Loops and detours of regional bus lines which aim to serve villages beside the main road contribute to long travel times, which do not attract potential public transport users.

3.5.5 MEASURES ON ORGANISATIONAL / LEGAL / INSTITUTIONAL FRAMEWORK

Starting cross-border services (Stage 1 → 2)

A **cross-border working group** (for details cf. Table 9) of public transport professionals is regarded as a fruitful tool to get things started. Working groups need promoters who support the idea of cross-border integration. Such promoters could be found everywhere, but most likely in cross-border institutions such as 'Euroregions' or 'Euregios', border commissions or local development agencies.

In some European countries, the legal framework promotes competition among the operators. However, for operating a cross-border line **mutual agreements** are necessary to cope with the specific situation across the border.

Co-ordinating cross-border services (Stage 2 → 3)

The **abolition of cabotage regulations** (for details cf. Table 9) is a low-cost solution with potential for improvements for cross-border passengers (e.g. by simplifying the supply). The success of this measure largely depends on the local situation.

The **customs inspections onboard** the train is limited to trains with long distances between stops before and after the border allowing enough time to perform border control. As bus services are concerned, the basic standard should be a joint inspection of both border authorities during one single procedure and a preferential treatment at the border post in order to reduce the time losses.

Integrating cross-border services (Stage 3 → 4)

Integrating the responsible bodies to a **common cross-border organisational structure or public transport association** (for details cf. Table 9), requires a long-standing co-operation and equal starting positions. Big differences in the legal framework for public transport, differences of the spatial structure of the border area (urban versus rural) etc. may impede further integration.

Table 9 Measures on organisational / legal / institutional framework

CROSS-BORDER WORKING GROUP OF PUBLIC TRANSPORT PROFESSIONALS	Stage 1 → 2
Short description:	A cross-border working group of public transport professionals is established as a nucleus to initiate improvements in the cross-border sector.
Problems targeted:	In many cases, a starting point for first improvements in cross-border public transport is missing. Due to the different frameworks of responsibilities in public transport between the countries, it is hard to find contact persons etc.
JOINT FINANCING/AGREEMENT	Stage 1 → 2
Short description:	An agreement between authorities to allow the joint operation of a service, to afford the 'foreign' operator of the service the same rights as the domestic one on the service concerned (overcoming cabotage problems), to agree a common fare structure and to agree the split of funding, operation and revenue distribution.
Problems targeted:	Can be used to set up a new service where there is currently nothing, or only split, uncoordinated services. It also provides a formal basis for subsidy and revenue split. Aimed at overcoming the problem of cabotage, where an urban or regional operator has an area wide contract and other operators are not permitted to carry passengers wholly within this area.
JOINT LINE OPERATION	Stage 1 → 2
Short description:	Two operators from both sides of the border are jointly operating the cross-border service.
Problems targeted:	The complexity of legal permission procedures to run a cross-border line, the split of revenues, the applications of national tariffs on cross-border lines are common barriers a public transport operator may have to face.
ABOLITION OF CABOTAGE REGULATION	Stage 2 → 3
Short description:	Based on a (voluntary) agreement, operators from across are allowed to set down and to pick up domestic passengers in the neighbouring country.
Problems targeted:	The availability of services as such is often a problem of border regions, since the border situation is a restraint for regional development in most cases. Due to licensing or concessionary reasons, operators are on some cross-border bus lines only allowed to carry passengers who cross the border. They are not allowed to carry passengers on the domestic section on the other side of the border. This affects: (1) the availability of services in a border region (an existing service cannot be used by domestic passengers, (2) the level of revenues of the operators (he has to run the services without revenues from domestic passengers abroad).
CUSTOMS INSPECTION ONBOARD THE TRAIN / JOINT CUSTOMS INSPECTIONS AT ONLY ONE BORDER POST	Stage 2 → 3
Short description:	Customs inspection and passport control is performed during the cross-border rail-trip or at one border post only (bus)
Problems targeted:	The aim is to reduce time losses at the border caused by the cross-border procedure. This measure offers for passengers a shorter travel time and for this a higher quality of service.
COMMON ORGANISATIONAL STRUCTURE	Stage 3 → 4
Short description:	The main barrier towards the development of an efficient cross-border public transport is the lack of organisations with a clear responsibility for this traffic. An important starting point for a working co-operation over the border is to create the necessary organisational structure.
Problems targeted:	In most cases local/regional cross-border public transport lacks a responsible organisation. The transport authorities on both sides have no authorisation to handle international traffic. At the same time the profitability in local and regional cross-border traffic is mostly weak, which means that no private operators will start cross-border lines.

CROSS-BORDER PUBLIC TRANSPORT ASSOCIATION	Stage 3 → 4
Short description:	A cross-border public transport association is implemented for an integrated ticket and tariff system in the catchment areas (for both currencies) and an integration of services (lines, runs, information supply etc.).
Problems targeted:	Two different public transport systems (timetables, currencies etc.), which makes the use of cross-border public transport systems uncomfortable.

3.5.6 MEASURES ON TARIFF

Starting cross-border services (Stage 1 → 2)

At this stage of development of cross-border public transport tariff related activities are optional and **not a first priority**, because there has to be first a service across the border. However, tariff related measures from higher stages of development can be adapted to this stage (for details cf. Table 10).

The **handling of currencies** will remain a problem at least for eastern European borders. As exchange rates of some currencies are changing rapidly, it could be complicated to fix the fare level in both currencies.

Co-ordinating cross-border services (Stage 2 → 3)

For various **tariff measures** like through ticketing, cross-border return tickets or lowering of cross-border ticket fare levels, best practice examples exist (for details cf. Table 10). A major problem concerning tariff measures is the splitting of revenues from ticket sales. However, some rather pragmatic solutions may help (e.g. every operator keeps his revenues).

A **cross-border day-pass** is a well-established tariff measure in many European border regions and therefore likely to be implementable at many border sites.

Combined cross-border public transport and event tickets are of certain interest if a major destination with permanent access exist (e.g. theme parks, trade fairs).

Integrating cross-border services (Stage 3 → 4)

Various **advanced tariff measures** such as cross-border season ticket, cross-border job ticket, common cross-border tariff system exist or are under way to improve cross-border public transport (for details cf. Table 10).

The **mutual acceptance of local tariffs** is difficult to implement in areas where tariff levels and tariff concepts (area-related systems versus time-related system) are highly different, but can be a solution which makes the tariffs easy to comprehend.

Electronic ticketing is at present in the stage of pilot demonstrations in many European countries and might result in various European standards. Especially urbanised border regions have to take care of being faced with two different standards.

Table 10 Measures on tariff

THROUGH TICKETING	Stage 2 → 3
Short description:	If there is no common tariff regulation for a cross-border line, one of the domestic tariff schemes is extended on the whole cross-border line.
Problems targeted:	On lines with a joint line operation two domestic ticket fares are often only added up for cross-border passengers. This results in (1) rather high ticket prices for cross-border passengers, (2) no through ticketing to either destination within one domestic tariff system. Unattractive tariff regulation may prevent (potential) passengers from using public transport for their cross-border trips.
LOWERING OF CROSS-BORDER TICKET FARE LEVEL	Stage 2 → 3
Short description:	If two domestic tickets have to be purchased by cross-border passenger, a slight reduction of the ticket prices can be agreed in order to reach a suitable fare level.
Problems targeted:	On lines with a joint line operation two domestic ticket fares are often only added up for cross-border passengers. This results in a rather high ticket price for cross-border passengers preventing them from using public transport to cross the border.
CROSS-BORDER DAY-PASS	Stage 2 → 3
Short description:	A day-pass as additional ticket type targeting leisure and shopping trips and covering the full public transport supply of a whole cross-border region
Problems targeted:	The application of ticketing systems is regarded as a substantial barrier for potential customers in cross-border public transport, especially if they are not familiar with the public transport system. Known and typical barriers are: (a) customers are wary of the tariff system abroad due to lack of experience (they are afraid of making a mistake), (b) currency problems, use of smart cards, (c) difficulties in buying a ticket due to language problems, (d) insufficient knowledge where to buy a ticket.
SPECIAL CROSS-BORDER TICKET (RETURN TICKET)	Stage 2 → 3
Short description:	Additional ticket type (e.g. return ticket) targeting commuters as well as leisure and shopping trips, covering single regional links between two cities on both sides of the border.
Problems targeted:	This measure targets predominantly the existing high international tariffs (TCV-tariff) in cross-border public transport.
TICKET OFFER FOR SPECIAL GROUPS (STUDENT SEASON TICKET)	Stage 2 → 3
Short description:	Student season ticket is only offered to a specific group (students). All students pay a special fare which allows them unlimited travel. The tickets are sold to all students whether they use the tickets or not.
Problems targeted:	Tariff and tariff information are the most decisive barriers to cross-border passengers. Offering tickets for special group (students) can attract more passengers from this group because of easy tariff access to the transport system. Buying a season ticket allows the students unlimited trips within a period (e.g. 6 months). There is no specific knowledge of the local tariff system necessary. The advantage of a special price is limited to a specific group. Public transport associations (or operators) get fixed revenues facilitating financial planning.
COMBINED CROSS-BORDER PUBLIC TRANSPORT AND EVENT TICKET	Stage 2 → 3
Short description:	An admission ticket to an attraction or event in the neighbouring country including cross-border public transport travel. The attraction would have to be large enough to attract significant visitor volumes, e.g. a theme park. Could also be implemented for a specific major international event (festival, sporting event, etc.)
Problems targeted:	Aims to increase public transport mode share for major trip generators. Increases accessibility of the attraction and public transport use. Avoids currency problems for the customer as the user pays the attraction admission fee in his own currency before crossing the border.

MUTUAL ACCEPTANCE OF LOCAL TARIFFS	Stage 3 → 4
Short description:	The tariff systems are extended over the border (kind of overlapping).
Problems targeted:	The inconvenience for the passengers to have to buy several tickets for a cross-border trip.
ADJUSTMENT OF TICKET POINTS IN RAIL TRANSPORT	Stage 3 → 4
Short description:	Virtual ticket points right at the border (created for ticket purposes only) are shifted to real stations where passengers can join or alight a train.
Problems targeted:	As a rule, international rail ticket fares are calculated by adding two (or more) national ticket fares covering the whole cross-border route. In most cases the respective national sections go historically to a virtual ticket point at the border where passengers cannot join or alight a train. This kind of tariffication does not imply any problem for long-distance passengers, but it impedes local and regional cross-border public transport since (1) two tickets for rather short sections are added up (resulting in a relatively high price), (2) international tickets are often only available from selected ticket counters and agents, not from ticket machines e.g. at local stations (limited availability), (3) national or regional special offers are not valid for through cross-border trips (although only a short section of one rail company is used). Example: the ticket point between the two major centres Saarbruecken (D) and Metz (F) is Forbach (border). The German section is about 6km with no stop in between of the 80 km distance, but passengers have to buy an international ticket for this trip. Cross-border commuters have to buy two monthly tickets which adds up to a rather high price.
CROSS-BORDER SEASON TICKET	Stage 3 → 4
Short description:	A season ticket valid for an unlimited number of journeys on one or more cross-border lines during a limited time period (e.g. one month).
Problems targeted:	Cross-border commuters often don't use public transport for home-work-home trips, because of the expensive tariffs that apply for regional cross-border trips. Cross-border tickets, especially when a special tariff system applies for cross-border tickets (e.g. TCV regulations), tend to be much more ex-pensive than tickets for domestic journeys. Moreover, season tickets are often not available for cross-border journeys, making public transport use by commuters very expensive. For this reason, an affordable season ticket can be created to meet commuters' needs.
CROSS-BORDER JOB TICKET	Stage 3 → 4
Short description:	A flat-rate ticket as a monthly pass for all employees of a company. Such a pass can be valid for cross-border connections as well
Problems targeted:	In general, cross-border tariff offers for commuters are largely missing.
CROSS-BORDER TARIFF SYSTEM	Stage 3 → 4
Short description:	A self-standing tariff system is implemented for local and regional cross-border trips only. For domestic trips the local tariffs still apply.
Problems targeted:	The tariff regulations for cross-border lines are often very complicated and may differ from line to line depending on the respective operator of the line. If local tariff schemes exist in the national parts of the border region, it is difficult to integrate them to one cross-border tariff scheme.
ELECTRONIC TICKETING	Stage 3 → 4
Short description:	Electronic ticketing means that the passenger pays with a 'smart card', that is a card with a data-chip. The fares are automatically drawn from the passengers account when he makes a trip. The technology also opens the possibilities to register origin, destination and route choice for each trip.
Problems targeted:	Simplification of the ticketing system (lowering the handling effort for the customers with different ticketing systems and different currencies)Splitting of revenues among the different operators

3.6 RECOMMENDATIONS ON STRATEGIC ASPECTS

3.6.1 INTRODUCTION

Some regions in Europe have long-standing traditions in providing cross-border public transport services, others are just under way to build up comprehensive and solid local and regional cross-border connections. That's of course an option to conclude what can be fruitful elsewhere. In this chapter, **recommendations for actors in border regions** are compiled. First, recommendations on some strategic aspects are targeted to those

- aiming for an in-depth analysis of a border region,
- looking for hints what to consider when searching for barriers,
- needing information on practical steps to get started.

3.6.2 PERFORMING AN ANALYSIS OF PUBLIC TRANSPORT ASPECTS IN A BORDER REGION

A proper analysis of the initial situation is a **prerequisite for a structured approach towards improvements** in cross-border public transport. It will help to discover weak points and existing barriers to overcome within the transport system. Coming from an experience-based background, recommendations to actors in a border region referring to the performance of an analysis are as follows:

- **Define your cross-border region.** The correct definition of the respective cross-border area is important since the catchment area is defined by the origin and destination of the traffic flows across the border and probably not by borders of regions or districts situated close to the border. Parts of a district might be far away from the border with no or limited inter-relationship across. Including cities far away from the border in the analysis will cause some major problems, e.g. if the population of the border region is over-estimated: a demand prognosis will end in a high demand volume which might never exist.
- **It is necessary to know the actors.** Frameworks for organising and financing public transport are differing throughout Europe. Accordingly, the actors, their role and their responsibilities are differing as well. In order to avoid misunderstanding or misinterpretation at this early stage (e.g. a transport company need not be a public transport operator with its own vehicles, but could be a public-owned agency which puts services out to tender on behalf of the respective authority), it is important to know the general strategies for organising and financing public transport in the countries concerned and to know the actors not only by name, but their role and responsibilities within the transport system as well.
- **Identify existing data properly.** Available data sources should be studied in order to get the necessary view on the actual situation. Even if the general view is that there is no information available on this particular cross-border region at all, it is often not the case. Proper literature, statistics and Internet research will reveal lots of interesting information.

- **Decide if all necessary data is already available.** If a lack of information is figured out, it might be necessary to perform additional surveys. Possible surveys can be for example:
  - interviews with passengers of cross-border services to study the origins and destinations as well as their travel behaviour,
  - telephone interviews in the region to check general demand figures in cross-border transport.
- **Define your stage of development.** Improvements of the local situation in cross-border public transport depend on the current stage of development of the border region (defined by the current status of cross-border supply and the level of co-operation existing so far). The stage of development will somehow define what kind of survey has to be conducted. If the region is actually at a low stage, the analysis has to be more comprehensive in order to get the necessary information base for further steps.
- **Start co-operation at the very beginning.** Even at an analytical stage you might be faced with typical problems of cross-border co-operation. Typical problems are the knowledge about the existence of data sources, language problems, etc. These problems can be often bridged by co-operation and mutual support of two players from both sides of the border.
- **Establish a joint or co-ordinated survey.** Performing two uncoordinated surveys with separate analyses on both sides of the border has to be avoided not only due to quality reasons, but due to budget reasons as well.
- **Proper market analysis is an important task.** Especially at a early stage of the development, a proper market analysis has to be taken into consideration if the knowledge about existing cross-border flows is limited or a bigger potential is expected which has not yet been met. A major need for a market analysis exists if the question of a pretty new service and the general demand potential for such a new service is concerned.

3.6.3 IDENTIFYING BARRIERS IN CROSS-BORDER PUBLIC TRANSPORT

When working on improvements of cross-border public transport connections, once the most important barriers have to be detected and outlined in order to see **which are the fields of action** to be tackled in the near future. Typical barriers are described in chapter 3.4 of this report. Concerning the identification of existing barriers, the recommendations are:

- **Do a proper analysis of the situation first.** Even if you are a player in cross-border public transport, you might not know the distinct reasons for a certain situation. A proper analysis could help to avoid missing important barriers (and the reasons behind them).
- **Use the cross-border connection yourself.** When using public transport to cross the border and thinking of being a customer without any knowledge about

service, even a professional will easily detect various barriers he has never known before. Therefore, such a self-test is a valuable approach to identify the most recent barriers for the passengers.

- **Be critical when fixing the distinct barriers of your region.** Poor supply is not in any case caused by transport-inherent barriers. Unfavourable preconditions might result in a low public transport demand and consequently a low supply. Complicated or unfavourable tariff regulations can contribute to a low ridership as well. Consequently, there can be always more than one reason behind a barrier and a closer look to find the most appropriate reasons is necessary in order to find the right solution to the problem.

3.6.4 PRACTICAL STEPS TO GET THINGS STARTED

For practitioners, the most important information is that on practical steps and therefore about **how to get things started** and what to consider when heading for a certain step of improvement. The recommendations are sorted with respect to the **stage of development** of a border region into 'starting cross-border services, 'co-ordinating cross-border services' and 'integrating cross-border services' (for details about the stages cf. chapter 3.5.2).

Starting cross-border services

When starting to work on improvements of cross-border services at an early stage, it is advisable to think first of possible measures to undertake. As outlined in chapter 3.5, various measures with best practice experiences from border regions already exist. This list of measures in chapter 3.5 provides concepts, hints and ideas for realistic improvements, but the respective stage of development of the border region should be taken into account (e.g. tariff measures are not helpful if there is no cross-border connection at all). Recommendations to get things started at an early stage are:

- **Focus on benefits for the passengers.** The passengers in public transport are the main focus of any effort which is undertaken. Therefore, those measures or activities are of a special interest which bring direct advantage to the passengers.
- **Establish good and trusting contacts.** Improvements in cross-border public transport depends on personal contacts with players across the border. Consequently, well-established contacts are a prerequisite for any co-operation. Common talks should be focussed on a clear vision of improvements in cross-border public transport.
- **Avoid new and comprehensive institutional frameworks.** On a low stage of development all involved parties co-operate on a voluntary basis. Existing cross-border institutions may help starting a closer co-operation of responsible bodies for cross-border public transport. New institutional frameworks bear the risk of failure since (1) they have to be financed, (2) take time to be set up instead of improving cross-border services and (3) might be in conflict with the national legal

framework conditions in public transport. Things are changing on a higher stage, if the project is a 'big deal' (e.g. infrastructural improvements).

- **Start with a 'loose' working group.** The working group should integrate all relevant parties from both sides of the border. Cross-border public transport improvements depend on individual initiatives and local commitment. Under these prerequisites, a working group could be a fruitful approach to channel this commitment to common projects. The group should be co-ordinated by a player with cross-border experiences (e.g. cross-border institution).
- **Start with low-cost solutions.** Financing of improvements in cross-border public transport is a decisive problem, that's why low-cost solutions bear a higher potential for implementation. Cross-border public transport is a 'weak' market and revenues are limited. Therefore, measures which can be self-funded by the operator or the responsible authorities are at the top of the agenda.
- **Keep cross-border measures as simple as possible.** Cross-border measures work well if the idea or solution is very simple, e.g. on a line with a joint service every operator runs 50% of all trips instead of a complicated measure to share the revenues. Consequently, no sharing of revenues is needed.
- **Keep the tariff simple.** At an early stage of cross-border connections, the focus is on the level of service, i.e. it is important that a cross-border connection with a reasonable supply (and demand) is established. Therefore, complicated tariff schemes should not be taken into account, because this requires a longstanding co-operation of the involved actors. Level of service measures should of course coincide with information measures since a new or improved connection has to be made well-known to the potential customers.
- **Think about additional demand to improve revenues.** In case of a weak demand level on existing cross-border services, new market potentials could be exploited. Customers often do not know a lot about destinations abroad and, therefore, see no need to cross the border. Especially in the field of leisure trips, additional demand can be generated by providing detailed information on trip destinations (e.g. sites with a tourism potential like castles or museums, city centres for shopping, theme parks) to potential customers by flyers/Internet, etc.

Co-ordinating cross-border services

If the basic framework for better cross-border connections has once been set-up, further efforts for a better co-ordination of transport supply and its organisational background are necessary. At this stage, the following recommendations can be drawn up:

- **Concentrate on the necessary aspects of your cross-border project.** Generally, working on improvements in cross-border transport calls for higher efforts than in domestic transport. Therefore, measures or activities which really bring the biggest advantages to the passengers should be pushed first.
- **Continue and maintain good and trusting contacts.** Improvements in cross-border public transport depend on personal contacts with players across the bor-

der. Maintaining personal contacts will help to strengthen any form of co-operation in the border region. For that, communication aspects have to be stressed in order to reach this goal. Common talks should not be burdened by questions of day-to-day business, but focussed on a clear vision of improvements in cross-border public transport.

- **Consolidate your institutional co-operation.** Strict and tight institutional frameworks are still not necessary at the stage of co-ordinating cross-border services, but it is important to bring liability into the co-operation, e.g. fix a responsible deputy for cross-border issues from each party involved. On a higher stage, institutional frameworks or agreements on governmental levels might be necessary, if the project is a 'big deal' (e.g. infrastructure improvements).
- **Give a binding character to your 'loose' working group.** In order to get things started, a working group with participants of all relevant parties from both sides of the border should have been established in the past. The working group has to be made stable to ensure proper work progress and to get a liable structure. For example, meetings are held in regular intervals.
- **Think of a self-binding master plan.** Measures to improve cross-border public transport are being sometimes mutually conditional which asks for a kind of plan to implement future improvements in a co-ordinated way. This can lower the risk of uncoordinated activities and therefore the risk of wasting time and money. Such a plan will allow border regions to lay down their ideas, perspectives, and intentions for the cross-border public transport developments in their area. It should be of course rather strictly limited to cross-border aspects. Accordingly, a document could be set-up outlining the
  - analysis of the current situation,
  - objectives for improved cross-border services,
  - feasible concepts for improvements (measures),
  - financial plans,
  - responsibilities of parties involved.
- **Stick to low-cost solutions.** Since financing of improvements in cross-border public transport is a decisive problem, low-cost solutions bear a higher potential for implementation. If a low cost measure has achieved 'miracles' in cross-border services (which is not unlikely!), think of a proper marketing of the success in public.
- **Work on tariff measures.** Once a well established cross-border link exists, tariff aspects become more and more important. However, the customer will hardly accept special and complicated regulations concerning cross-border tariffs over years. The removal of barriers in the tariff sector is therefore regarded as a highly effective strategy to attract additional cross-border trips at this stage.

Integrating cross-border services

In border region where much efforts have been spent in the past to improve the cross-border public transport situation, the major issue is to create the necessary basis for further integration. Several recommendations to the actors can be forwarded:

- **Find a nucleus for closer formal co-operation.** A working group of public transport professionals could be a fruitful approach to get things started and to co-ordinate common projects on a 'voluntary' level. Especially, if advanced measures are targeted (e.g. complicated tariff measures, infrastructural improvements), a tighter institutional framework is regarded as necessary. Consider your 'loose' working group as such a nucleus. For example, a general contractual agreement on co-operation among all partners can provide the necessary power for fast and unbureaucratic common decisions.
- **Set-up an integrated cross-border master plan.** If a certain level of integration is reached, a plan will be necessary to co-ordinate future activities and will help to lay down ideas, perspectives, and intentions for the cross-border public transport developments in the region. It will be especially the core for tariff integration. This plan should be of course rather strictly limited to cross-border aspects and consider the following aspects:
  - analysis of the current situation,
  - objectives for improved cross-border services,
  - feasible concepts for improvements,
  - financial plans,
  - evaluation of success and quality control,
  - marketing,
  - responsibilities of parties involved.
- **Don't try to integrate everything.** Each national state has an outer border causing some peculiarities for border regions and borderlines will not disappear in the near future. Consequently, integration does not mean to level the structures for organising public transport on both sides of the border but to find ways and solutions to work together across a national border which results in an integrated transport supply. In this sense, working on measures which facilitate the use of public transport is on top of the agenda, but working on measures that integrate organisational structures across borders carries high risks for failure.
- **Use standardised exchange formats.** Even in domestic public transport problems occur in various countries if a technical standard is the prerequisite for a joint action. One example concerns the data formats for electronic timetable information software or other software applications which might differ from operator to operator or from region to region. The check of options for strict organisational procedures for the exchange of data and printed information material is therefore compulsory.

General hints

Despite different stages of development, there are several hints which are regarded as valid for cross-border public transport in general:

- **Reach common sense.** If co-operation with neighbouring responsible bodies (operators and/or authorities) is impossible, measures normally fail. Consequently, there must be a common interest of all parties from both sides for a certain measure. Improvements are likely to be implemented, if co-operation is possible and each player cares for 'his' national contribution to the project.
- **Don't wait for a change in legal conditions.** At national borders, different national legislation and regulation frameworks (and even cultures) meet which might cause barriers or unpleasant framework conditions for operating public transport services across the border. Since national legislation will always remain a local (or in this case: national) flavour, it is unlikely that barriers will totally disappear in the near future, e.g. by the ongoing European integration and harmonisation process. Therefore, working on solutions that 'infiltrate' the different frameworks and bridging existing gaps and differences is highly advisable out of a local perspective instead of waiting for overall better framework conditions for cross-border public transport.
- **Test small-scale improvements in-situ.** Measures implemented in cross-border public transport are in general small-scaled measures and their success can be hardly forecasted. Therefore, using the trial-and-error principle is the best way to see what works and what doesn't work. Results are not always a 'big deal'. Even if a measure has limited success only, it can be advisable to keep it alive: as long as it is not costly, it may facilitate cross-border public transport in the long-term.
- **Domestic solutions may not work on an international basis.** The differences between the countries in organising public transport are very relevant. Consequently, a concept which has been successful in one country needn't be feasible on an international level because it could be in conflict with one of the national framework for organising public transport. It seems that all measures are feasible as long as they do not act on (1) the respective national strategies in organising public transport, (2) each player's independence.
- **Avoid a fixation on your domestic public transport system.** If there is a considerable cross-border traffic flow the responsible bodies for public transport must accept their joint responsibility for attractive public transport supply across the border. Otherwise, the border will lead to de-integration and barriers will even increase by a wrong understanding of regionalisation.
- **Communicate your experiences with other actors.** Cross-border public transport is a rather rare aspect in the transport business involving only a limited number of professionals. Since it is always helpful to learn from other experiences, it is advisable to make contacts with players in other border regions. For practitioners, it can be therefore a fruitful option to contribute to a loose networking of people who work on cross-border public transport solutions.

3.7 RECOMMENDATIONS ON SUCCESS FACTORS

3.7.1 INTRODUCTION

Cross-border public transport needs a certain framework to develop success. The most **decisive success factors for practitioners** as well as those concerning funding, organisational and legal issues are described in this chapter.

3.7.2 OVERALL SUCCESS FACTORS

A good knowledge of the measure is reached.

A clear public transport user information strategy has a definite importance for success. Generally, the **user's knowledge about the cross-border services** is lower than in domestic transport and often complementary information is necessary to use the service across the border at all (e.g. tickets purchased on the other side of the border have to be date-stamped before embarking).

Consequently, the success of an improvement is linked to the level of the user's knowledge about it. **Several information measures** are therefore necessary to provide this information, and the information given must be accurate, complete, and up-to-date in order to add value to the customer.

In case of a **new service**, a way to communicate its existence has to be found. For that, promotion actions and campaigns are necessary which match the respective measure in terms of costs and success.

The supply conditions are improved.

Improved general supply conditions of cross-border services are another factor for success. Some measures like employing or training multilingual staff or assigning efforts to improve the organisational details are not expected to show immediate results on the demand level but are focussing on a **general improvement of the service quality** in the long run.

It is recommended to **consider the service as a whole** including all aspects as one unit, i.e. the service including information and tariff solutions. A limited number of lines with acceptable frequencies and accompanied by simple but user-friendly tariff solutions and information measures are a practical goal instead of pushing only the supply and neglecting other aspects.

Furthermore, the **travel times** have to be considered as a decisive element of perceptible quality since they have to reflect passenger needs. Actors have to make sure that all time losses related to the border situation (detours, waiting times) are reduced to a minimum.

The measure is well adapted to a demand niche.

Most cross-border public transport users belong to a specific demand segment such as daily work commuters, students and pupils travelling to educational institutions, leisure travellers and so on. Each measure needs to be attractive for at least one **segment of potential users** (and even better for more than one segment!) in order to generate demand. Most measures, mainly concerning information activities and tariff measures, need to be clearly defined and focussed on specific groups if they should succeed.

The tariff reflects the customer needs.

In general, a tariff measure must be easily understandable and the related **tariff regulations have to be user-friendly**. In cross-border public transport, language barriers make it more difficult for the passengers to inform themselves about the tariff and nobody wants to become a fare dodger unintentionally. For that reason, flat-rate formulas (e.g. day passes) are of a high importance for special trip purposes instead of a highly differentiated pricing system. Another advantage is that the potential customer can then easily check the price of a cross-border trip in advance.

The fare calculation by adding two single domestic ticket fares or the necessity to use long-distance or high-speed train with a supplement to cross the border contributes to high **ticket fare levels** which are often exceeding the respective domestic fare levels by far. Depending on the severity of this problem, it has to be seen that such a 'punishment' of customers is not very advisable in order to keep them using cross-border public transport regularly in the future.

The costs should be adapted to the revenues and funding.

A measure can be regarded as successful, if an **equilibrium between costs and revenues** is given. Revenues might not only be generated by self-financing but funding or subsidising as well. A preliminary analysis of the costs and revenues can avoid bad surprises concerning cost coverage. In case of a measure which causes unforeseen high deficits it should not be taboo to cancel the measure since highly inefficient ideas will not lead to progress in cross-border public transport.

Efforts which lower the revenues should be reduced. This could be for example a complicated procedure to share the revenues between two partners involving additional costs for a passenger survey, etc., although the market segment is anyway a weak one compared to important domestic lines.

3.7.3 OPTIONS FOR FUNDING

Funding of improvements in cross-border public transport is likely to be the most **decisive problem** impeding success. As it is unlikely that revenues from domestic ticket sales cover all expenses, it is unrealistic as well to expect this from cross-border ticket sales revenues. Consequently, a financing mix is necessary involving self-financing (generated from sales), public subsidies and private funds (e.g. sponsoring).

Self-financing

The implementation of many measures will therefore require self-financing due to a lack of alternatives. Self-financing can be provided by different sources, although the major source will be **revenues from ticket sales**. This applies especially for special ticket offers like a new cross-border season ticket or a cross-border day-pass ticket. It may apply as well for information related measures, if the information tool is sold at a price which covers their actual costs for production such as network maps, timetable booklets, electronic journey planners on CD-ROMs or disks etc.

The application of information measures that require multilingual-trained personnel, or the implementation of most organisational, legal or institutional related measures require operator's or other player's own resources because these measures involve additional **labour efforts and related expenses**. However, it is important to mention that all measures in this field are usually low-cost measures, which do not require larger investment.

Public funding

Another important way of funding is based on public funding via subsidies or development funds. Public funding can be obtained via **EU initiatives** like INTERREG or PHARE.

The **INTERREG initiative** was introduced in 1990 to develop cross-border co-operation and to support areas on the internal and external borders of the European Union to overcome the problems arising from their location. The guiding principle behind INTERREG III (2000-2006) is that national borders should not be a barrier to the balanced and harmonious development of Europe. Strand A of the initiative is aiming at the development of cross-border economic and social centres and joint spatial development approaches in contiguous border regions. Strand B is aiming at the interregional co-operation in larger European Areas e. g. the North West European Area. Projects in the field of interregional connection might be placed here. Since INTERREG requires national and regional co-financing, the decision on funded projects is taken locally by the regions involved. In many regions, the authorities founded cross-border institutions (partly known as ‘Euroregions’ or ‘Euregios’) which are in charge of the funding procedure. Further information about INTERREG is available via the Commission’s web site at http://europa.eu.int/comm/regional_policy/interreg3. Various cross-border public transport measures have been financed by the INTERREG programme, especially those related to the cross-border co-operation, development of transport infrastructure, improvements of information tools. This type of public financing mainly applies, therefore, to information, service and tariff related measures.

The **PHARE programme** is a pre-accession instrument financed by the EU to assist the applicant countries of central Europe in their preparations for joining the European Union. One pillar of PHARE is the cross-border co-operation programme promoting co-operation between the border regions of central and Eastern Europe. The cross-border

assistance is performed on the basis of integrated regional programmes. In addition to the border regions adjacent to the EU, those between the candidate countries themselves are also subject to the programme. Further information about PHARE is available via the Commission's web site at:
http://europa.eu.int/comm/enlargement/pas/phare/index.htm.

When it refers to the implementation of service related measures (prolongation or combination of existing lines or the creation of new lines, etc.), **subsidies from the respective administration level** in charge of public transport services in the respective country (municipality, district, region) may be obtainable. The provision of subsidies is most likely, if the measure provides substantial improvements for domestic services as well as for cross-border trips. Generally speaking, subsidising of cross-border services is a difficult issue, since national legislation will in most cases prohibit spending subsidies for services outside their own territory. Public subsidies may also be more likely if the measure significantly supports a general transport policy goal such as the reduction of the number of car trips to the city centre. Such a constellation often brings as well movements into the discussion on cross-border public transport in the field tariffs (e.g. a monthly pass is implemented) or the supply side, if the city is located at the border with major traffic flows across.

Lastly, **European, national or regional research & development activities** might be a source for additional funding if an outstanding concept is developed at a border site.

Private funding

Sponsoring of public transport services has been under discussion in some European countries. **Options for sponsoring** can be seen in the field of tourism. Contributions directly from tourist sites or from tourism promotion agencies might be available for measures that support tourism in certain areas. Possible measures are a special tourism bus route to promote day tourism across the border or a combined cross-border public transport and event ticket.

Depending on the nature of the measure, the availability of other private funds should be checked as well. Especially in case of editing **new information tools like maps** of the border region including public transport information, publishing companies or public transport user associations might be interested in closer co-operation. This might lower the efforts of the responsible actor in public transport (operator, authority, etc.).

Contributions of involved companies are one pillar of the financing concept of job tickets which is a monthly ticket issued to all employees of a company at a fixed fare. It seems that this measure is limited to selected border regions only with a high extent of cross-border commuting.

3.7.4 ORGANISATIONAL ISSUES

Internal organisation

One important organisational task is to **bring the right people together** when decisions and preparatory work is performed. These people should preferably be practitioners with the ability to make decisions. The selection of deputies for the co-operation across the border has to be therefore handled sensitive by every organisation involved.

Once a measure is agreed among partners, it has to be managed and maintained. For that reason, each measure should be integrated as far as possible into the **existing organisational frameworks** at both sides of the border in order to avoid additional management costs.

Options for improvements may depend on internal organisational aspects of the operator or the respective authority itself. This refers to measures which require **certain language skills**. For that, either a training programme of the personnel or recruitment staff with these skills, contributes to better information on schedules, tariff, routes, etc. provided to the customers.

Co-operation

It is necessary that operators are willing to work together, to exchange information, to negotiate and agree on schedules, timetables, ticket types, split of revenues, etc. If such a **willingness** is not available, a failure of a measure is most likely.

Co-operation among operators is essential, however, it is critical for the development of a measure that all - operators, user associations, authorities and other stake holders - are involved in the organisation of the measure. This will ensure that all points of view are presented and general agreements meet **all partner's needs**.

3.7.5 LEGAL ISSUES

A specific feature of cross-border public transport is that it has to deal with at least **two different legal frameworks** on both sides of the border which might cause some barriers or unpleasant framework conditions for operating public transport services across the border. Cross-border public transport is of course only one aspect in the field of transport, and therefore, it seems to be unlikely that the legal framework conditions of two countries will be changed for cross-border reasons only.

The recommendations on legal aspects are therefore only **outlining what can be a gap or a risk for cross-border public transport**. Definite solutions to bridge gaps and to cope with the problem have to be found based on the local peculiarities, a comprehensive knowledge of the legal framework conditions and negotiations with the respective authorities.

Major legal restrictions

Cabotage restrictions are still a current legislation in many countries. It limits concurrence and puts all initiative on one operator.

Licensing regulations may allow operators only to carry passengers who cross the border resulting in a prohibition of carrying passengers on the domestic section on the other side of the border.

Such restrictions must be taken into consideration at an early stage, when **preliminary concepts and plans** are drawn up.

Authorisation of authorities

With respect to the legal framework, the responsibility of **authorities for public transport issues** within the national administration structure may largely vary from country to country. In some countries, this aspect is placed at the local level, in another country it may be a state competence. Furthermore, the responsibility may vary from one aspect to another, e.g. the use of a certain cross-border point for a public transport connection is decided at another administrative level than the general license to operate it.

The **detailed knowledge of the administrative responsibilities on both sides of the border** and the course of the licensing procedure can be therefore regarded as an important success factor. As a rule, it seems to be easier if a local or regional authority is responsible in contrast to a state authority since local commitment might speed up and facilitate the administration process.

3.8 THE CONPASS TOOLBOX

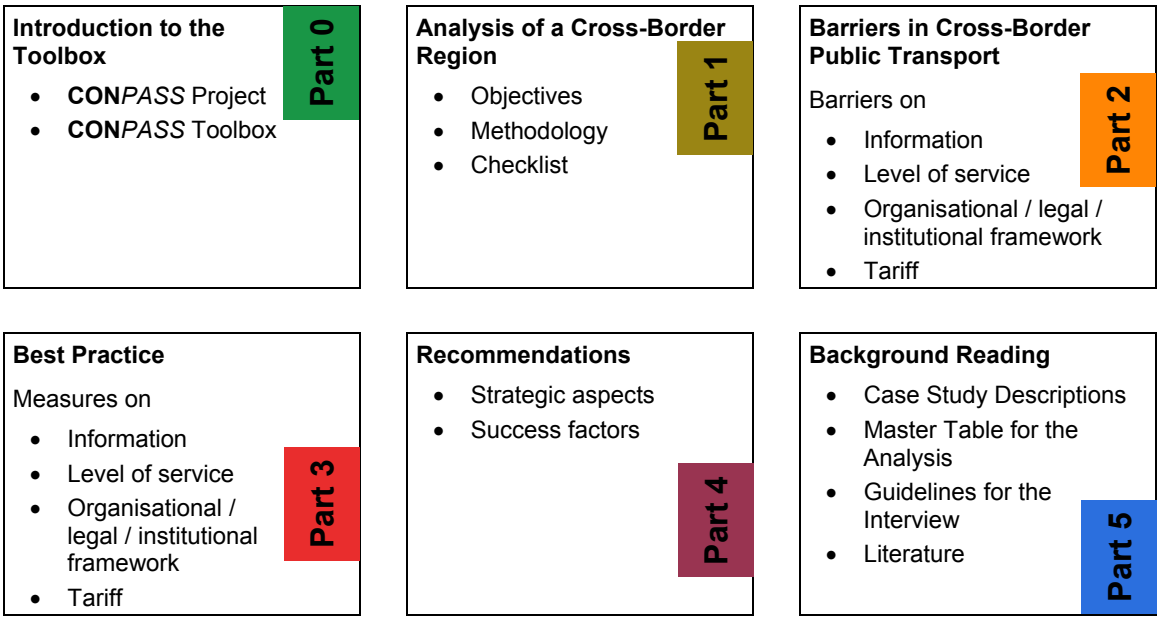
3.8.1 INTRODUCTION

The ‘Toolbox’ is the **handbook-style collection of all main findings** of the **CON***PASS* project. It presents in a user-oriented way for daily use in border regions by people involved in cross border public transport planning issues (public transport operators, local/regional transport administrations, public transport associations, cross-border institutions; consulting companies, etc.). The toolbox’ objectives are:

- to provide easy access to the knowledge base gained by **CON***PASS*,
- to provide support on "how to bridge border barriers?",
- to suggest measures to overcome transport-inherent border barriers,
- to give recommendations for further development of cross-border connections.

The toolbox consists of **6 separate parts**, of which each part features one step of the overall procedure which is necessary to improve cross-border public transport connections, ranging from the analysis up to recommendations. The contents of the each part is outlined in Figure 6.

Figure 6 Parts of the toolbox and their content



3.8.2 TARGET GROUPS

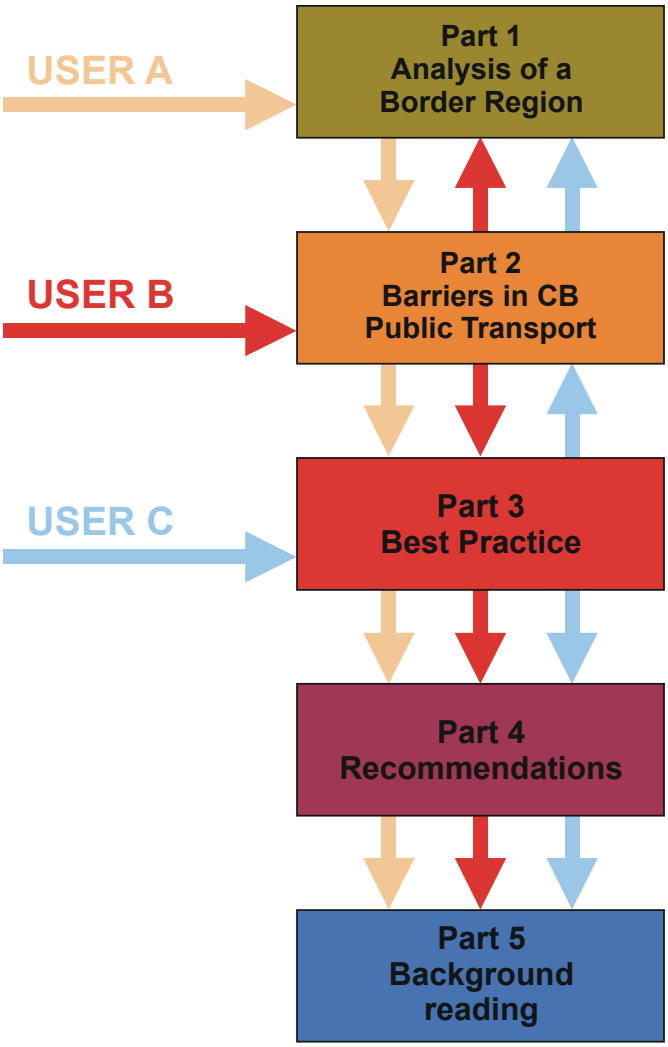
The users are recommended to follow the logical paths of the document as given by the sequence of the parts going from part 0 to 5 ('vertical approach'). The adopted structure of the toolbox guarantees a link between the various parts of the document, making it easy for the user to move from one section to another. But as the toolbox is designed for a **wide range of users**, the structure of the toolbox allows for a dedicated approach in accordance with the user's knowledge of the respective cross-border situation.

Hence, the toolbox structure allows even a **'horizontal' reading** depending on the specific knowledge of the user:

- **User A** lacks in-depth knowledge regarding the cross-border area. As an analysis of the site is a necessary prerequisite, it is suggested to user A to start reading the toolbox in part 1.
- **User B** is already familiar with the specific characteristics of the cross-border region, but he/she doesn't have an exhaustive overview of existing barriers. As it is necessary to know which barriers to the development of cross-border public transport exist, the advice to user B is to skip part 1 and start reading from part 2.
- **User C** typically has a good knowledge of his cross-border region and knows which barriers to the development of cross-border public transport services exist. This user can pass immediately to part 3.

This **access to the toolbox with regard to the user knowledge** is shown in Figure 7.

Figure 7 User options regarding the toolbox structure



3.8.3 ACCESS TO THE TOOLBOX AND RESOURCES

The **CON***PASS* toolbox is **freely accessible on the Internet**, either as

- **Internet presentation**
  Web-based electronic version of the handbook-style 'Toolbox on cross-border public transport' at http://www.conpass.org/toolbox, or
- **Handbook**
  Printed paper version of the handbook-style 'Toolbox on cross-border public transport', available as PDF-files for download at http://www.conpass.org/toolbox or the respective download area of the web site.

4 LIST OF DELIVERABLES

The **CON***PASS* consortium submitted 5 Deliverables which were all in the **form of scientific reports**. Deliverable 1 to 4 are featuring the results of the four technical work packages of the project (WP30 to WP60), while Deliverable 5 represents this final report. Table 11 provides an overview of all **CON***PASS* deliverables.

Table 11 Overview of CONPASS deliverables

Deliverable No.	Output from WP	Title of Deliverable	Contents
1	WP30	State-of-the-art Overview, Methodology for Case Study Analysis and Manual for the Case Study Analysis	Results of State-of-the-art survey, methodology for data collection in case studies, manual for case study analysis and related documents, methodology for cross-site evaluation
2	WP40	Basic Case Study Reports and Cross-Findings of Basic Case Studies	Results of the cross-site evaluation of case study analyses including a summary of all basic case study reports, outline of major barriers in cross-border public transport
3	WP50	Best Practice in Cross-Border Public Transport and its Transferability	Overview of measures / policies (best practice examples) to overcome barriers, check of transferability of detected measures to other sites, deduction of first recommendations
4	WP60	Toolbox on Cross-border Public Transport: Concepts, Ideas and Support for Improvements	Compilation of the main findings of **CON***PASS* in a user friendly way in 6 parts: general introduction, analysis of a border region, barriers, best practice, recommendations, background reading
5	all WP	Final Report	Technical description of the research work and its achievements compiling the major research results as well as project management issues

All **CON***PASS* Deliverables are public and freely accessible via **download from the CON***PASS* **web site** at http://www.conpass.org/. The site will stay available till May 2008 at least.

Further documents are accessible via download from the project's web site as well:

- The **web-based electronic version of the toolbox** (cf. Deliverable 4) is available at http://www.conpass.org/toolbox. It contains the same information as the printed version, however, it provides additional features (e.g. search engine).
- **Case study reports** have been made available on the web for all basic case studies performed in WP40. These reports contain information on the case study area, public transport supply and demand and implemented or future measures to improve cross-border public transport.

5 RESULTS AND CONCLUSIONS

5.1 INTRODUCTION

CON*PASS* experienced various obstacles under which cross-border public transport is generally operating. These obstacles can be subdivided into three categories with respect to the **likely ways of solving the problem**:

1. Some barriers are **produced by the public transport supply itself**. This clearly asks for commitment and actions undertaken by the respective actors at the site to overcome them (e.g. there is no co-ordinated interchange between two domestic lines which are running up to the border, but do not cross). The **CON***PASS* 'Toolbox on cross-border public transport' - a handbook for daily use in border regions by people involved in cross border public transport planning issues - aims to support efforts to overcome these barriers. As such, the document presents a decisive result of this project. For further details concerning the access to the toolbox please refer to chapter 3.8.3.
2. Some obstacles cannot be tackled at all from a transport-related point of view, since they derive from **socio-economic border barriers**, i.e. the absence of certain travel motives in cross-border traffic.
3. Furthermore, there are obviously some obstacles that are deriving from the **overall policy framework**. These can only be changed if the policy framework is adapted or new tools and options are available to overcome them.

This chapter mainly refers to the last item and outlines **recommendations for revised European transport policies** directed towards policy makers at European and national level as well as future research needs which have been identified by **CON***PASS*.

5.2 RECOMMENDATIONS FOR REVISED TRANSPORT POLICIES

5.2.1 PRELIMINARY REMARK

Due to the fact that local/regional cross-border public transport has been a poorly studied and neglected subject in the past, it is not surprising that particular **European or national transport policies had negative side-effects** on this kind of transport connections. Based on interviews with practitioners at border sites and professional expertise of project members, **CON***PASS* could clearly identify these problems.

Since cross-border public transport plays a key role for the integration of border regions, policy actions to overcome these obstacles will contribute to further European integration. The most **important policy recommendations derived from the project's analysis work** are forwarded below. They are based on 10 theses, each of which pointing to a specific obstacle at the policy level. These recommendations present a further result of **CON***PASS*, although further considerations of each thesis might be necessary to develop in-depth solutions to the respective problem.

5.2.2 INTERACTIONS BETWEEN LOCAL/REGIONAL AND LONG-DISTANCE TRANSPORT

Thesis 1:	There is little focus on international short distance transport.

In public discussions, cross-border public transport is often thought of as long-distance services by rail, although the majority of cross-border travellers make local and regional trips. The EU is supporting the concept of a trans-European network (TEN), which is significantly **improving international passenger and freight rail connections** between European agglomerations.

On the other hand **TEN causes negative side effects in border regions**, because improvements in long-distance rail (i.e. new international high-speed train projects) deteriorate accessibility of border regions: long-distance high-speed trains are mostly replacing the ordinary train service with stops in the border regions, but high-speed trains do not stop there anymore. This way to handle improvements can be studied at many European border rail stations (e.g. Emmerich/D, Verviers/B).

Actions similar to TEN are missing on improve the local and regional level of cross-border public transport. Aspects to be considered by these actions would be how to avoid such negative side effects and how to increase cohesion between the border regions at local/regional level as TEN does on trans-national level.

5.2.3 REGIONALISATION OF RESPONSIBILITIES AND FUNDS

Thesis 2:	Regionalisation of responsibilities and funds is regarded as a positive policy for organising public transport in border regions.

Regionalisation of responsibilities and funds is regarded as a positive policy for organising public transport in border regions, because it **brings back the responsibility to decide on local/regional services** to the border area concerned. Among other goals, justified or unjustified reproaches of neglecting border regions - e.g. with provision of rail services which were planned at the headquarters of the respective state railways but not within the border region - can be remedied.

Regionalisation, however, tends to favour the improvement of domestic services within the catchment area of the responsible body but not cross-border services. For local decision makers their responsibility for the own region counts first, and consequently, there is a risk that cross-border services are neglected (unless there is an extremely urgent call for action e.g. due to enormous cross-border commuter figures which affects the “own” regions as well). Countries with a longer experience in regionalisation of public transport responsibilities and funds even experienced this development between neighbouring regions within the country. Consequently, policy makers at European and national level should make sure that a **commitment for cross-border services still remains at the local decision makers**, since cross-border public transport plays an important role for cross-border integration.

Furthermore, it can be observed that the respective national regionalisation models do not fully integrate. At practical level, many differences between the models are experiences leading to a slow progress in improving the overall situation. Although many border regions are very creative in coming up with very clever and well-working approaches to bridge obvious gaps, special tools are needed to support local players to cope with the border situation. One major element of it will be a **cross-border public transport master plan** (cf. chapter 5.2.5). It helps practitioners at site level

- to understand the framework situation of public transport organisation and funding on the other side of the border (which is a prerequisite for working together),
- to set down their definite plans for improvements,
- to forward the discussion and negotiation process to the respective level of decision makers which are responsible within the national regionalisation framework.

5.2.4 MARKET ACCESS REGULATION

Thesis 3:	The transformation process of the market access in public transport by tendering of services carries the risk of weakening cross-border public transport.

Most experts are regarding the current approach on new EU public transport laws (i.e. regulation concerning public service requirements and the award of public service contracts in passenger transport) as a feasible way to organise market access in public transport, but nevertheless, the **ongoing discussion is affecting cross-border projects** with public-owned operators involved.

Public-owned operators are operating cross-border public transport services in many border regions on a self-financing basis. Facing the situation of new EU public transport laws, they are currently trying to **become competitive with private-owned operators** in order to be prepared for a tendered market. For that, they cut the most inefficient services to lower their deficits. Generally, cross-border public transport is a weak market with marginal revenues in many cases, cross-border lines are therefore often subject for service cuts at present.

Furthermore, the respective companies are **hesitating to spend efforts on work for cross-border improvements** with partners from across the border because

- personnel costs to carry out the work on improvements does usually not contribute to a reduction of the overall company's costs and a pay-off is unlikely in the case of improved cross-border services,
- follow-up costs of agreed improvements are shunned, since they will most probably not contribute to reduction of the company's deficit,
- it remains unclear if planning agreements concerning cross-border lines are still a task of the operators in future (unclear basis for long-term agreements),
- operators from across can get easily competitors if the market access changes.

The transformation of the market access in public transport by tendering of services is again a clear field on which a policy aims to contribute to improvements of domestic services but carries a risk for cross-border public transport. It is therefore necessary to monitor in detail the **impact of the expected transformation process** of the public transport market on local/regional cross-border connections.

5.2.5 NECESSITY OF AN INTEGRATED PLANNING APPROACH

Thesis 4:	A cross-border public transport master plan is a necessary planning tool.

Without any doubt, an integrated or at least an agreed planning approach is a prerequisite for improvements in cross-border public transport. For that, a specific tool is necessary to facilitate cross-border planning. Such a tool can be seen in a **cross-border public transport master plan** updated every 3 to 5 years.

It will allow border regions to present their **ideas, perspectives, and intentions for the cross-border public transport developments** in their area. The plan should take European transport policy objectives into account. It should also be based on voluntary commitment (self-binding) of the region, but funded by EU programmes as long as EU standards are met. The plan should include statements on

- analysis of the current situation,
- objectives for improved cross-border services,
- feasible concepts for improvements,
- financial plans,
- evaluation of success and quality control,
- marketing,
- responsibilities of parties involved.

Such a plan involves **low financial commitment** but can provide a high outcome by mobilising synergy effects, since it points separated activities to one common goal. Furthermore, it helps to bridge barriers and gaps which derive from the different organisational frameworks for public transport between the countries and speeds up the developments by bringing (voluntary) binding forces to the discussion on cross-border public transport. The plan should be restricted to cross-border aspects taking into account all national plans in each part of the border region. Any interference with national planning procedures should be avoided.

5.2.6 FUNDING PRACTICES IN CROSS-BORDER PUBLIC TRANSPORT

Thesis 5: Cross-border public transport needs continuity.

A long-standing continuity of cross-border service supply and related measures (e.g. information) is important in order to attain high levels of success. Existing funding practices (e.g. Interreg programme) are providing **subsidies for a limited period as knock-on financing** in most cases. Furthermore, the voluntary commitment of public transport operators in this field will decrease due to the fact that they are facing tendered services (cf. chapter 5.2.4).

In order to allow a continuation of integration processes in border regions (which is regarded a goal of European policy), strategies are needed to **support cross-border services on a more permanent basis**. One concept could be to provide special funds to cross-border services as long as services are based on an integrated public transport master plan (cf. 5.2.5).

5.2.7 ROLE OF SITE-BASED CROSS-BORDER INSTITUTIONS

Thesis 6: Marketing for cross-border public transport issues needs support.

It can be easily noticed that **a lobby and promoters for cross-border public transport issues** is missing. If these services are recognised as important tools to create integration and cohesion between the two parts of a region which are divided by an international border, there is a clear need to nominate a body in charge of lobbying and promoting cross-border public transport issues.

In many border regions, **cross-border organisations like Euroregions or Euregios** are already existing. These organisations as spin-offs of the local and regional administrative bodies have a clear mission to work on cross-border integration and hold an comprehensive knowledge on general cross-border planning issues within that specific border region, but are normally not involved in public transport. Their neutrality and their ability to “think across the border” provides the excellent basis to promote cross-border public transport issues and to encourage public transport responsibles and operators of the regions to commit themselves in the field of cross-border public transport improvements.

Furthermore, Euroregions could serve as **channels to distribute funds for specific planning tools** (e.g. to set-up a cross-border master plan, cf. chapter 5.2.5).

5.2.8 NEW TECHNICAL DEVELOPMENTS IN PUBLIC TRANSPORT

Thesis 7: Technical standards have to be fixed.

Many technical developments are under way at present, e.g. electronic ticketing or real-time on-trip information in the vehicle, at stops or on mobile devices. Many of them are currently in the stage of pilot demonstrations in many European countries and

might result in various European standards. Especially urbanised border regions will **suffer from different technical standards**. In order to avoid incompatibility (as it is recently the rule in heavy rail transport!), efforts should be made to harmonise technical standards in border regions. Otherwise, expensive solutions are necessary to bridge the gap between the national standards later on.

5.2.9 NETWORKING AMONG PRACTITIONERS

Thesis 8:	Networking among practitioners is a key-issue.

Cross-border issues are only of interest for border regions with a limited number of professionals involved. But these professionals are all facing the same or at least similar problems and are all carrying a **high responsibility for European integration** in their respective border regions. Consequently, it can be regarded as highly efficient to support these practitioners by loose networking or platform activities. For example, it could be established in co-operation with the UITP. Internet-based communication structures can make the approach affordable.

5.2.10 ACCESSION COUNTRIES

Thesis 9:	Special support for accession countries is necessary to speed up integration.

Cross-border co-operation has a long-standing history along some border lines in western Europe with experiences over 40 to 50 years. In contrast, co-operation is right at the beginning in some east European border regions or only lasting for some years now. Consequently, the necessity to provide **support to get things started in cross-border co-operation and public transport** and to speed up integration are likely more essential at east European borders. This fact is substantiated by (1) results of the cross-findings of the **CON***PASS* case study analysis which showed clearly different results for border sites in western Europe than those at the eastern edge of the EU, (2) participants of the **CON***PASS* dissemination workshops from east European countries who emphasised this problem.

This asks for putting more emphasis on borders between EU countries and accession countries as well as between east European countries in policy making and in dissemination of research & development outcomes in this field. Although EU programmes like PHARE are under way, the interest in this subject - for example proofed by the large audience of the **CON***PASS* workshop held in Bratislava in June 2002 - showed that cross-border public transport is a less exploited field. **Practical aids** like translation of information tools into major east European languages (since English language skills are regarded as even a higher barrier for practitioners in accession countries than in western Europe) or local information workshop events to spread the results in border regions even between accession countries and other east European countries could contribute to improvements in this field in future.

5.2.11 INCENTIVES

Thesis 10: Incentives could speed-up cross-border planning.

There has not been a focus on cross-border public transport planning issues so far. Incentives might speed up this process. E.g. a European-wide **award for outstanding ideas on improvement** in cross-border public transport could be established.

5.3 FURTHER RESEARCH & DEVELOPMENT NEEDS

5.3.1 INTRODUCTION

Cross-border public transport is on one hand a “ungrateful business”, because steps towards improvements are difficult. On the other hand, it is an extremely important business since it really integrates cross-border regions. Seeing the **weak state of cross-border public transport** even in some urbanised European border regions, there is a clear need to reinforce activities in research & development in this field resulting in further consolidation of the related scientific knowledge base.

From the **CON***PASS* project, the following **tasks asking for follow-up activities** or further research & development needs can be derived.

5.3.2 APPLICATION OF A CROSS-BORDER PUBLIC TRANSPORT MASTER PLAN

Based on theoretical reflections from **CON***PASS*, a cross-border public transport master plan for a specific region is regarded as a fruitful tool to improve the local situation in cross-border public transport. However, a **demonstration application** proving the obvious success of this measure does not exist so far. The application has to be therefore subject to further research & development activities.

The **set-up procedure** of such a plan can be clearly structured into

1. preparatory phase: identification and integration of relevant actors, stock-taking of existing concepts and ideas for improvements
2. set-up phase: compilation of the master plan document (analysis of the current situation, objectives for improved services, feasible concepts for improvements, financial plans, marketing, fixing of responsibilities of parties involved)
3. discussion and agreement phase
4. implementation phase and success control
5. parallel: scientific support

Suitable **demonstration areas** should have a perceptible cross-border traffic flow in order to ensure that there is a demand in cross-border public transport at all. Cross-border co-operation should furthermore not start from scratch since then the contribution of the plan towards improvements of the actual situation apart from activities to get

first things started cannot be checked anymore. By performing these activities in parallel in a couple of border regions throughout Europe in a co-ordinated way, cross-site evaluations will be possible enabling additional findings on the subject.

5.3.3 DEMONSTRATION OF MEASURES IN A MODEL REGION

CON*PASS* has contributed to innovation in the field of cross-border public transport by a compilation of best practice examples from various European border sites enabling practitioners to "copy" and adapt those measures which seem to work properly and being transferable. Until now, proofed results are missing about the **contribution of each measure with respect to improvements** of cross-border public transport.

Consequently, there is a **distinct need to apply measures described in the toolbox** in one border region in order to perform a proper success control at scientific level and to check interactions among the measures. The practical implementation of these research activities could go in-line with establishing a number of European border regions as model regions for improved cross-border public transport supply. These should differ in terms of size and location in Europe ensuring that all types of European border regions are represented among the model regions. These research activities could be combined with the application of a cross-border public transport master plan.

5.3.4 BEFORE-AFTER STUDIES "ACCESSION COUNTRIES"

Within the next years, **further countries will join the European Union** which contributes to major changes on the European map and the structures applied between the actual member states. Changes will also affect the transport system.

This situation provides the opportunity to check the contribution of cross-border public transport towards cohesion in a border region and to see how cross-border public transport develops if the overall framework conditions are changing (e.g. removal of strict border controls). By **ex-ante and ex-post analysis the current and future traffic flows** (public transport and private transport) should be studied in a sample of urbanised border regions involving actual EU member states and accession countries. The central question to be answered by this test is whether cross-border public transport contributes to growth in a border region and if so, to which extent.

5.3.5 NETWORKING AMONG ACTORS AND DEPLOYMENT OF THE TOOLBOX

Future actions have to be undertaken to improve networking among practitioners involved in cross-border public transport issues. **Advantages of such a network** are quite obvious since it can contribute to a direct exchange among practitioners concerning

- best practice examples,
- mutual support on how to bridge existing gaps between the different legal frameworks of two countries,
- pointing policy makers at national or European level on existing or upcoming difficulties for local and regional cross-border public transport issues.

The handbook-style 'Toolbox' is the major outcome of the **CON***PASS* project for practical use in border regions. As pointed out previously, such aids have been missing so far, so that **CON***PASS* could close a gap. But as a result of a research project with a limited lifetime, the toolbox is a static document which asks for **ongoing maintenance, update and extension of the toolbox' contents** to become a dynamic and always up-to-date instrument. A network of practitioners brings along own interest and commitment to perform this task, since every participant will benefit from his own contribution to maintenance, update and extension of the toolbox.

Future co-operation of practitioners involved in cross-border public transport planning and operation becomes more and more important for European cohesion in border regions. **CON***PASS* has kicked-off first activities in this field, e.g. by carrying out 2 dissemination workshops. Nevertheless, the idea of future networking among practitioners needs to be elaborated in more detail with respect to **organisational and financing concepts** (bodies to supervise the activities, funding, communication channels, etc.).

Future tasks are therefore

- to support the establishment of a network of professionals
- to hand over the toolbox for future maintenance, update and extension to the network.

CON*PASS* consortium members stand ready to support these tasks.

6 ACKNOWLEDGEMENTS

As in many other projects that are case study based, the project could not perform its work programme without **inputs from outside the consortium**. Therefore, the project likes to thank all representatives of companies, authorities and other institutions who took the time to take part in

- the telephone interviews as part of the **state-of-the-art analysis** (114 experts at 42 sites),
- the **basic case study interviews** which presented the background for each single case study (108 professionals at 21 sites).

In the second phase of the project, the performance of the consortium largely depended on **inputs from local partners in extended case studies**. These project partners - all being practitioners involved in cross-border public transport issues themselves either as operators, public transport authorities or cross-border institutions - ensured by their contributions to the workshops that the outcome of the project really fits to the needs of operators and planners locally faced with a border situation.

Furthermore, the consortium likes to thank **Drs. Enne de Boer from Technische Universiteit Delft** (The Netherlands). Drs. de Boer provided his outstanding knowledge about cross-border public transport issues and served the project as an external expert by

- commenting on deliverables,
- enriching scientific discussions,
- submitting papers together with **CON***PASS* partners at scientific conferences.

The exploitation and dissemination work has been assisted by the **International Union of Public Transport (UITP)**. Besides various talks and exchange of views, UITP granted an option to spread the announcement of the **CON***PASS* dissemination workshops free of charge to all UITP members. A further co-operation failed due to the rigid time schedule of the **CON***PASS* project which did not allow any flexibility to place dissemination events after the project's termination.

Without the **outstanding support of all the before mentioned individuals and organisations** top level findings and products of **CON***PASS* would not be possible.

7 REFERENCES

7.1 PUBLICATIONS ISSUED BY THE CONSORTIUM

Author	Title	Source	Lan-guage	Abstract
Bezak, Bystrik	Strategy of Sustainable Transport Infrastructure (Strategia udrzatelnej dopravnej infrastruktury).	In: Proceedings of the 7th Scientific International Conference at TU Kosice on 22-24/05/2002, Section 4, Kosice: 2002	EN/SK	This conference paper - published in the conference proceedings of the 7th Scientific International Conference at TU Kosice outlines various approaches of sustainability in transport infrastructure. Among others, it emphasises the necessity to provide appropriate cross-border connections in public transport to avoid that this field is exclusively exploited by private car traffic.
Bezak, Bystrik	CONPASS - Medzinarodny workshop o cez-hranicnej osobnej hromadnej doprave (CON-PASS - dissemination workshop on crossborder passenger transport).	In: Transport-dopravne noviny Vol. 4, No. 10/2002 (ISSN 1335-7433), p13	SK/EN	The article in the Slovakian transport journal "Transport-dopravne noviny" explains the background of the CON-PASS subject and announces the CONPASS dissemination workshop held in Bratislava on 14/06/02.
CONPASS Consortium	Deliverable 1: State-of-the-art Overview and Methodology for Case Study Analysis.	Project deliverable of the European research project CONPASS. Aachen: 2001. Available on Internet: http://www.conpass.org	EN	The deliverable presents an overview of 42 urbanised cross-border regions in EU, of which 10 comprise border regions with accession countries in Eastern Europe. Furthermore, the document contains a methodology and a manual for the analysis of border regions from a public transport perspective.
Conpass Consortium	Deliverable 2: Basic Case Study Reports and Cross Findings of Basic Case Studies.	Project deliverable of the European research project CONPASS. Aachen: 2002. Available on Internet: http://www.conpass.org	EN	The deliverable describes the main barriers and solutions regarding 21 cross-border regions within EU as well as at the borders to neighbour countries in Eastern Europe. A cross-site analysis shows the most common barriers in order to find transferable solutions to cross-border public transport problems.
Conpass Consortium	Deliverable 3: Best Practice in Cross-border Public Transport and its Transferability.	Project deliverable of the European research project CONPASS. Aachen: 2002. Available on Internet: http://www.conpass.org	EN	The deliverable describes the main options for improving cross-border connections by outlining measures which have been implemented at border sites throughout Europe.
Conpass Consortium	Deliverable 4: Toolbox on Cross-border Public Transport. Concepts, Ideas, Strategies for Improvements.	Project deliverable of the European research project CONPASS. Aachen: 2002. Available on Internet: http://www.conpass.org	EN	The deliverable comprises the handbook-style 'toolbox document on cross-border public transport' offering the main findings of the CONPASS project. It aims at supporting practitioners in border regions.

Author	Title	Source	Lan-guage	Abstract
Herry, Max / Schuster, Markus / Schoebel, Herwig	The current status in the Vienna-Bratislava Corri-dor.	In: Bezak, B., STU Stavvebna (Ed.): Pro-ceedings, 8th Internat. Scientific Confe-rence "Mobilita '01", Sept. 6-7, Bratislava. Bratislava: 2001	EN	This conference paper - published in the conference proceedings of “MOBILITA ‘01” - presents the results of a case study performed in the Vienna-Bratislava corridor as part of the CONPASS project.
Krug Stephan / Meinhard, Dirk	CONPASS - A contribution to improve Cross-border Local and Regional Passenger Transport in urbanised areas.	In: Bezak, B., STU Stavvebna (Ed.): Pro-ceedings, 8th Internat. Scientific Confe-rence "Mobilita '01", Sept. 6-7, Bratislava. Bratislava: 2001	EN	This conference paper - published in the conference proceedings of “MOBILITA ‘01” - provides an overview of the state-of-the-art of cross-border public transport in Europe and describes the research activities of the CONPASS project.
Oestlund, Bo	Barriers in local and regional public transport across national borders.	In: Bezak, B., STU Stavvebna (Ed.): Pro-ceedings, 8th Internat. Scientific Confe-rence "Mobilita '01", Sept. 6-7, Bratislava. Bratislava: 2001	EN	This conference paper - published in the conference proceedings of “MOBILITA ‘01” - presents the main barriers which affect cross-border public transport and allows a results of a case study performed in the Vienna-Bratislava corridor as part of the CONPASS project.
Sammer, Gerd / Roeschel, Gerald / Gruber, Christian	Kriterien fuer Erfolg im grenzueberschreitenden oeffentlichen Verkehr beschrieben an den Faellen Maribor - Graz und Salzburg - Berchtesgaden - Traunstein (Success factors for cross-border public transport based on findings from the case studies Maribor - Graz und Salzburg - Berchtes-gaden - Traunstein).	In: Bezak, B., STU Stavvebna (Ed.): Pro-ceedings, 8th Internat. Scientific Confe-rence "Mobilita '01", Sept. 6-7, Bratislava. Bratislava: 2001	DE	This conference paper - published in the conference proceedings of “MOBILITA ‘01” - presents the results of a case study performed in the Graz-Maribor corridor as part of the CONPASS project.
Winder, Andrew / Krug, Ste-phan / Meinhard, Dirk	Cross-border Public Transport in Europe: Over-coming the Barriers.	In: Proceedings of the European Transport Conference in Cambridge/Great Britain (10-13/09/01), Seminar Planning and Management of Public Transport Systems 06ii. CD-ROM. London: PTRC, 2001	EN	This paper looks at the principal barriers to passengers, planners and operators in terms of local and regional cross-border public transport. The paper then provides examples of good practice taken from a number of case studies conducted in urbanised areas across Europe, as part of the CONPASS project. These include common ticketing, jointly operated services and improved inter-change and information.

Most of these documents are available for download from the **CON***PASS* web site at www.conpass.org.

7.2 OTHER RELATED PUBLICATIONS

Author	Title	Source	Lan-guage	Abstract
Ahlberg, Goesta	The Oeresund fee and ticket system.	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Brussels: UITP, 2001	EN	The paper focuses on the tariff system established for the train service across the Oeresund fixed link between Denmark and Sweden. It gives further insights into its background, the idea, the unique situation between the two countries, the results and future improvements to perform.
Barteld, Hans-Juergen	Mit der Euregio-Bahn vom Voigtland nach Tschechien (= By Euregio-Rail from Voigtland to the Czech Republic).	In: Bus & Bahn 10/99 (pp12-13)	DE	The article describes the idea and measures to prolong a domestic regional rail service in Saxony (D) across the border to destinations in Czech republic and finally to Bavaria (D).
Bezak, Bystrik	Cross-border Mobility Management in the Trilateral Region WIBAG.	4th European Conference on Mobility Management (Bregenz 17-19 May 2000). Conference Proceedings. Schwarzach: Medienhaus Vorarlberg, 2000	EN	The paper describes the actual planning situation in the Vienna, Bratislava, Gyoer region. Since the main cross-border transport mean is private car usage, ideas to improve the public transport system are revealed.
Blanchereau, Corinne	Allemagne-France: les différences de conception en matière d'aménagement du territoire et de transport (= Germany-France: differences in regional planning and transport planning strategies).	Direction Régionale de l'Equipement Alsace, August 1993	FR	This document begins with a description of the transport links in the region, town planning and passenger transport in France and Germany. The comparison of the two systems enables certain solutions to be found to difficulties encountered in the existing system.
Bockel, Jean-Marie	Le triangle Bale-Mulhouse-Fribourg. (= The triangle Basle-Mulhouse-Freiburg).	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Brussels: UITP, 2001	FR	The paper deals with the specific situation of cross-border public transport in the triangle between Basle, Mulhouse and Freiburg. It outlines the organisational approach of the region and the implemented projects.
Bourion, Alain	Genève: une agglomération transfrontalière - Un défi pour l'organisation des transports publics (= Geneva: a cross-border conglomeration - A challenge for organising public transport).	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Brussels: UITP, 2001	FR	The paper gives a general outline of the Geneva cross-border region. Further, it focuses on the specific problems and solutions which have been undertaken as well as the aims to build a real cross-border transport network.
Breuer, Helmut W.; Juchelka, Rudolf; Voellings, Andreas	Die MHAL-Region und ihr oeffentlicher Personennahverkehr. Der grenzueberschreitende Bahn- und Busverkehr: aktuelle Situation und Entwicklungsansaetze (= The Maastricht-Heerlen-Aachen-Liege region and its public transport network. Cross-border bus and rail links: current situation and approaches for further development.)	Study of RWTH Aachen, Geographisches Institut, Lehrstuhl fuer Angewandte Geographie. Aachen: RWTH Aachen, 1993	DE	The study describes the current situation in the Euregio Maas-Rhine (including a stock-taking of existing lines and tariff details) and outlines some general proposals for improvements.

Author	Title	Source	Lan-guage	Abstract
Bustinduy, Javier	Le livre blanc de l'Eurocite San Sabastien-Bayonne (= The White Paper of the Euregion San Sabastian - Bayonne).	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Brux-elles: UITP, 2001	FR	The Eurocité San Sebastian-Bayonne is a cross-border corridor of about fifty km extension between France and Spain, with a population of 600.000 inhabitants. The paper deals with a synthesis of transport aspects of the White paper that has been set-up.
CERTU	Les lignes régulières de transport public transfron-talières (= The regular cross-border public transport connections).	Lyon: CERTU, June 1996, 75 pages	FR	This study focused mainly on road public transport and the cross-border public transport system. It does not deal with international rail or waterborne links. It principally considers cross-border co-operation at a traffic control level and judicial developments by using examples from international conventions. (European Framework Convention, Madrid Convention, Bilateral treaties etc). The study enables the demand for cross-border transport to be measured and the effects which it precipitates at both the border and the modal level. The theme concerning the availability of cross-border transport is also considered in this article which gives reflection to financial and logistical problems when dealing with such infrastructure. The study ends with a reflection on the future and the possible developments in the field.
Christ, Eberhard	Der Euroschnellbus - grenzueberschreitender Nahverkehr im deutsch-niederlaendischen Ver-kehrsraum (= The Euro-Express-bus - cross-border public transport in the German-Dutch transport connections).	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Brux-elles: UITP, 2001	DE	The paper describes the 1998 introduced express bus service from Muenster (D) via Vreden (D) to Winterwijk (NL). The cross-border bus route serves a rural environ-ment with exception of the city of Muenster. The vehicles are well equipped (radio, coach seating, air-condition. Chances and problems are featured.
Comité Régional Franco-Genevois	Le livre blanc Franco-Genevois de l'aménagement du territoire (= France-Geneva White Paper on regional planning).	Genève: Service des affaires régionales, July 1993 (pp7-10)	FR	This document addresses the state of the regional and interurban transport in the region of Geneva and Anne-masse. The public transport networks are also analysed in order to reply in the short term to the demand for cross-border passenger transport. The existing transport is illus-trated by means of a comprehensive map.
Comité Régional Franco-Genevois	Deuxième conférence régionale Franco-Genevoise: Vers un aménagement concerté. Les études de la plate-forme concerteée d'aménagement du terri-toire (2nd France-Geneva regional conference: Towards a common planning procedure. Studies on a common regional planning platform.)	Document préparatoire de la deuxième Conférence régionale franco-genevoise, 8.12.1995 au CERN: études de la plate-forme concerteée d'aménagement du terri-toire. Genève: Service des affaires régiona-les et européennes, 1995 (p25)	FR	This article deals with six projects, with the light rail/tramway network between the canton of Geneva and Annemasse (France) being the focus. The document highlights the potential developments of the projects, extending the network to the French towns of Ferney-Voltaire and St Julien-en-Genevois.

Author	Title	Source	Lan-guage	Abstract
De Boer, Enne	Planning and Decision Making of International Railway Lines. Cooperation and Conflict between The Netherlands and its Neighbours.	In: European Transport Conference - Cambrigde 27-29 September 1999. Proceedings of Seminar A: Operating Railways for Traffic Growth and Profit. London: PTRC, 1999 (ISBN 0-86050-320-8)	EN	The paper deals with the different national interests, planning goals and administrative regulations which influence international railway projects (e.g. Brussels-Amsterdam, Betuwe lijn). It focuses on the Groningen-Leer link as an example for a regional international rail link.
De Boer, Enne	The development of cross-border networks between technical interoperability and cultural adaptation - Conference of Copenhagen.	In: Public Transport International 2/01 (pp32-35)	EN	The article describes the outcome of the UITP conference 'Public transport in the new European regions held in Copenhagen and Malmoe on 4-6/12/00 dealing with cross-border public transport issues.
De Boer, Enne	The national barrier: a barrier forever? An analysis of public transport across the Dutch-German border.	Study of the TU Delft, Faculteit der Civile Techniek. Delft: TU Delft, 1999	EN	The study presents an analysis of cross-border public transport connections with special regard to the Ems-Dollart-Region. One feature of the study concerns the background of production and demand characteristics in public transport in both countries.
De Boer, Enne; Brelie, Kurt von der	Grenzueberschreitender oeffentlicher Personennahverkehr. Entwicklung eines Konzeptes fuer die Ems-Dollart Regio (= Cross-border public transport. A planning concept for the Ems-Dollart Regio).	Study of the TU Delft, Faculteit der Civile Techniek, and Planungsbuero Seele Aurich. Delft: TU Delft, 1991	DE	The study financed by the EUREGION Ems-Dollart recommends measures to improve the cross-border public transport supply in the rural region between Groningen (NL) and Leer (D) near the German-Dutch North-Sea coast. Most measures can be implemented at short term.
Degand, Jean-Claude	Les projets transfrontaliers menes en partenariat par la SNCF (= The main cross-border projects with participation of SNCF).	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Bruxelles: UITP, 2001	FR	The paper presents an overview of projects aiming at improving regional railway connections between France and its neighbouring countries.
Deyris, J.L.	Cerbère-Portbou ou l'homme oublié (= Cerbere-Portbou or: the forgotten people).	Collection Terres et Sociétés N°20, 1994	FR	This article illustrates with precision the technical aspects of the Spanish and French rail system. The political influences on the French-Spanish rail link are also highlighted as are the international socio-economic effects.
Djian, E.	Choix du système de transport genevois à l'horizon 2005: Un exemple d'application de l'analyse multicritères (= System choice for Geneva with the time horizon 2005. An example for establishing multi-criteria analysis).	Mémoire de DESS Université Lyon II, 1994, 113 pages	FR	The Meyrin-Annemasse project is used as an example to illustrate the cross-border passenger transport project. The choice of the investments and the variety of technical solutions proposed (light rail, automatic metro or tramway) is the focus of this study which also discusses the operating costs and the evaluation method with a view to drawing up a cost-benefit study.
Dlaska Hubert C.	Multimode tram-train connects down-town & country and overcomes several borders.	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Bruxelles: UITP, 2001	EN	The paper gives an insight on barriers from a technical point of view (electrification system, technical regulations, tracks, train control system). It outlines the technical conclusions to overcome these barriers by multi-mode vehicles.

Author	Title	Source	Lan-guage	Abstract
Fischer, C.; Torricelli, G.-P.	Les transports transfrontaliers dans la région insubrienne (= Transport in border areas: Case study for the Swiss-Italian border region 'Insubrica').	Report M13, NRP 41. No: 801.646.f. Bern: BBL/EDMZ, date unknown	FR	The report describes the case study results of the Swiss research project on transport planning in border regions. See also the Synthesis Report of the whole project (Author: Mettan et al.).
Geuckler, Michael; Krueger, Elke	Das Projekt EuroSchnellBus. Komfortabler OePNV zwischen den Niederlanden und Deutschland (= The 'EuroSchnellBus' Projekt. Public transport with high comfort between Germany and The Netherlands).	In: Der Nahverkehr 1-2/96 (pp62-65)	DE	The article describes the planning phase for the prolongation of an existing express bus service between Vreden and Muenster across the border to the regional centre of Winterswijk. It outlines that data on traffic flows across the border is very limited.
Goeverden, C.D. van	The Benefits of International Railway Links.	TU Delft, Faculty of Civil Engineering and Geoscience, Transportation and Traffic Section (bibliographic details of the paper not available)	EN	The study shows that cross-border regional rail links are mainly used by long-distance travellers instead for local journeys. By that, the revenues from the link itself are a bad indicator for its efficiency. Additionally, it is preferable to operate a cross-border link by one company only.
Gwiazdzinski, L.	Une première approche de l'organisation interurbaine d'un espace transfrontalier: le fossé rhénan (= A first approach on regional organisation in border regions: The Upper Rhine area).	Mémoire de maîtrise. Université Louis Pasteur Strasbourg, 1989, 230 pages	FR	This dissertation written in 1989 puts forward the question of the organisation of the cross-border areas and the rigid shields of the local towns on both sides of the French/German border. It also deals with the accessibility to the cities in the surrounding area. The possibilities of cross-border transport offered by the rail network are dealt with in the form of a large map.
Heimerl, Gerhard	Strukturelle Hemmnisse im grenzueberschreitenden Schienenverkehr (= Negative factors which influence international rail transport).	In: Internationales Verkehrswesen 12/1998 (pp594-598)	DE	The railway infrastructure, rolling stock and operations generally, coupled with the administrative / organisational set-up of rail companies, have become negative factors for rail companies in the European transport market which are subject to a critical analysis in this report.
Hertel, Guenter	Verkehr ueber Grenzen. 2. Verkehrswissenschaftliches EIPOS-Kolloquium. (=Traffic across-borders. 2nd EIPOS Workshop in transportation sciences).	In: Der Eisenbahningenieur 10/95 (pp700-703)	DE	The University of Szczecin organised a workshop for participants of the postgraduate college 'European Traffic and System Technology' (offered by the University of Dresden). The article concentrates on transport development in border regions.
Hoeven, Marjan van der	Grensoverschrijdend Internationaal Openbaar Vervoer. De Euregio Maas-Rijn in 2010 (= Cross-border International public transport. The Euregio Maas-Rhine in the year 2010).	Dissertation submitted for diploma. TU Delft, Faculteit der Civile Techniek, Vakgroep Verkeer, 1992 (non-published report)	NL	The study analyses the current status of public transport in the Maastricht-Aachen region, outlines the effects of border barriers on public transport, and sets up a framework for the future cross-border public transport development in the region with respect to an increase of cross-border trips.

Author	Title	Source	Lan-guage	Abstract
iC interdisziplinaere Consulenten	Eisenbahn-Anbindung des Flughafens Wien an den Grossraum Gyoer/Westungarn, Bratislava. Technisch-wirtschaftliche Machbarkeitsstudie (= Rail connection of Vienna airport to the conurbations Gyoer/Western Hungary and Bratislava. Feasibility study on technical-economical aspects).	Endbericht (Zusammenfassung). Wien, 1998	DE	This is a brief summary of a technical-economic feasibility study concerning the railway connection of the Vienna International Airport to the region Gyoer-Budapest-Wien. On the short run the study dealt with 5 variations of connecting the airport on existing railway lines by improving the supply with trains, on the long run the construction of a new railway line was investigated.
Jakobsen, Ole E.	Transport in the Oeresund region - Implications on the business sector.	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Bruxelles: UITP, 2001	EN	The paper presents the new opportunities for the Oeresund region resulting from the Oeresund fixed link. At first, the necessity of an effective long-distance freight transport corridor was on the agenda, now the opportunities to develop a new financially strong business and science region in Northern Europe comes into the focus.
Jansen, Paul-Guenter; Malchus, Viktor Frhr. von; Meyer, Ralf	Grenzueberschreitendes Entwicklungs- und Handlungskonzept der Regio Rhein-Waal (= Cross-border development and action plan of the Regio Rhein-Waal).	ILS-Schriften 47. Dortmund: ILS, 1989 (ISBN 3-8176-6047-1)	DE	The Regio Rhein-Waal covers the Arnhem-Nijmegen-Kleve-Emmerich area which is situated between the conurbations of Rhine-Ruhr and Randstad. The study sets up a cross-border development and action plan for various aspects of infrastructure planning.
Jansen, Paul-Guenter; Meyer, Ralf	Raeumliche Probleme im Grenzgebiet der deutsch-niederlaendischen Raumordnungskommissionen. Unterkommission Sued (= Spatial problems in border areas of the German-Dutch spatial planning commission. Sub-commission south).	ILS-Schriften 73. Duisburg: ILS, 1993 (ISBN 3-8176-6073-1)	DE	The study highlights existing problems and tasks for cross-border spatial planning activities in border areas between Northrhine-Westphalia and The Netherlands (incl. transport aspects).
Kahn, R.	Le rôle des infrastructures de transport dans la formation de l'espace frontalier rhénan (= The Role of transport infrastructure in establishing a river Rhine border region).	March 1989 (pp13-20)	FR	This report studies the local implications of national transport policies. It describes the existing regional transport infrastructure in the Rhine area while at the same time, analysing the possible increase in traffic, current capacity on different cross-border networks and emphasising their importance on economic expansion.
Kaufmann, V.	Evian-Annemasse-Genève en train: mobilité transfrontralière à problèmes (= Evian-Annemasse-Genèva by train: cross-border mobility with difficulties).	In: Transports urbains, 1994 (pp23-29)	FR	These three towns in the region of Lake Geneva (Lac Léman) are test sites for public transport. The article describes the rail network, analysing the current choices available and the competition of other forms of transport. The socio-economic aspect is also discussed by highlighting the location of housing, employment and parking facilities.
Koenigs, Hans et al.	Zukunftsperspektiven Transport und Verkehr in der euregio rhein-maas-nord im europaeischen Binnenmarkt (= Future perspectives on transport and traffic in the Euregio Rhein-Maas-Nord within the European internal market).	Study carried out by IVV-Aachen and TNO-INRO. Venlo: Euregio Rhein-Maas-Nord, 1993	DE	The Euregio covers the Krefeld-Moenchengladbach-Venlo-Roermond area. The study analyses the current traffic situation, gives a prognosis on the expected future traffic volumes, and finally suggests improvements of the transport infrastructure.

Author	Title	Source	Lan-guage	Abstract
Laureys, Philippe J.	Die deutsch-belgischen Omnibusverbindungen (= The German-Belgian bus links).	In: Stadtverkehr 1/83 (p24)	DE	The short article features the story of the 2 bus links between Aachen and neighbouring cities in Belgium (Eupen and Kelmis).
Linck, Hannes	Mulhouse - Neuenburg - Muellheim. Une ligne avec un avenir (= Mulhouse - Neuenburg - Muellheim. A line with future).	Strasbourg: FNAUT Alsace/VCD, 1999	FR/ DE	The brochure is published by the regional environmental transport associations FNAUT (F) and VCD (D). It gives a brief insight into the history of the rail link between Mulhouse and Freiburg and outlines the chances for a future re-opening of cross-border passenger rail service.
Linnenbrink, Werner; Klueppels, Michael	Grenzenlos gut: Der EuroSchnellBus. Grenzueberschreitender OePNV Winterswijk-Vreden-Muenster (= Best without limits: EuroSchnellBus. Cross-border public transport Winterswijk-Vreden-Muenster).	In: Der Nahverkehr 10/98 (pp54-59)	DE	The article describes the measures which have been implemented to prolong an existing express bus service between Vreden and Muenster across the border to the regional centre of Winterswijk.
Mayer, Gerhard; Saeger, Stefan	Improvements in Cross-border Rail Transport in The Lake Constance Region.	4th European Conference on Mobility Management (Bregenz 17-19 May 2000). Conference Proceedings. Schwarzach: Medienhaus Vorarlberg, 2000	EN/ DE	The paper provides planning strategies of the Austrian Railways to improve their cross-border connections in the Lake Constance region.
Meschede, Winfried	Einzugsgebiete ausgewaehlter Geschaeftsszentren in Grenznaehe zwischen Nordhorn und Venlo (= Catchment areas of selected economic centres close to the border line between Nordhorn and Venlo).	In: Westmuensterlande - Ostniederlande, Entwicklung und Stellung eines Grenzraumes. Spieker 30. Muenster: Selbstverlag der Geographischen Kommission fuer Westfalen, 1984	DE	<no abstract available>
Messerschmidt, Wolfgang	Bahnstromsysteme & Systemwechsel (= Rail electrification systems & change of lokomotives at border stations).	In: Modelleisenbahner 2/94 (pp6-10)	DE	The article describes the current situation of European railway electrification systems and the needs to change the locomotives at the various border stations. It outlines some rather unknown details of incompatibility of electrification systems using the same current.
Mett; Dau	Etude comparée des processus de planification dans six pays européens: étude de cas portant sur les espaces transfrontaliers de Lille et de Mulhouse: rapport de synthèse (= Comparing study of the planning process in six European countries: case studies carried out in cross-border regions of Lille and Mulhouse: summary report).	Agences d'urbanisme de Lille et de Mulhouse, October 94, 64 pages	FR	This study, which is based on a comparison, enables the major advantages for cross-border exchanges to be evaluated concerning the regions of Lille and Mulhouse. International co-operation is also a major subject in this article.
Mettan, Nicolas; Erlanger, Jacques	Les transports transfrontaliers dans la région du Chablais (= Transport in border areas: Case study for the Chablais region).	Report M15, NRP 41. No: 801.648.f. Bern: BBL/EDMZ, date unknown	FR	The report describes the case study results of the Swiss research project on transport planning in border regions. See also the Synthesis Report of the whole project (Author: Mettan et al.).

Author	Title	Source	Lan-guage	Abstract
Mettan, Nicolas; Erlanger, Jacques	Politique des transports et régions frontalières. Rapport de synthèse (= Traffic management in border regions. Synthesis report).	Report D7, NRP 41. No: 801.649.f. Bern: BBL/EDMZ, date unknown	FR	The study (based on 5 case studies in border regions in CH) demonstrates that there is significant potential for customer growth by innovative cross-border transport facilities. Liberalisation and regionalisation in rail transport open up new opportunities to deal with these issues.
Meyer, Ralf-P.; Jansen, Paul-G.; Kriener, Wolfram; Hendrikx, Frans-M.A.	Grenzuebergreifendes raumordnerisches Leitbild fuer den nordrhein-westfaelisch/niederlaendischen Grenzraum (= Cross-border spatial development plan for the border region between Northrhine-Westphalia and The Netherlands).	ILS-Schriften 86. Dortmund: ILS, 1995 (ISBN 3-8176-6086-1)	DE	The study sets up a cross-border development and action plan for various aspects of infrastructure planning (including transport aspects) for the border areas of Northrhine-Westphalia and The Netherlands.
Milz, Klaus	Interoperability and the new trains for the Oeresund.	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Brussels: UITP, 2001	EN	The paper describes the new dual voltage vehicle concept for the Oeresund fixed link.
Ministry of Transport, Posts and Telecommunication of The Slovak Republic	Transport Strategy for the Region Bratislava.	EU-Phare Project SR-Final Report, Bratislava: November 1997	EN	<no abstract available>
Niklas, Claes	Building up the Oeresund link - The regional approach.	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Brussels: UITP, 2001	EN	The paper describes the organisational structure of responsibilities for the Oeresund fixed link train service with respect to transport as well as spatial development of the new cross-border region.
No Author	Grenz-Lagen - Der deutsch-franzoesisch-luxemburgische Grenzraum zwischen Eifel und Rhein. (= Border locations. The German-French-Luxembourg border region between Eifel and River Rhine).	Arbeitsmaterial 249. Hannover: Akademie fuer Raumforschung und Landesplanung, 1999 (ISBN 3-88838-649-7)	DE	This book summarises the results obtained from six regional studies covering the area along the German / French / Luxembourg borders, which produced suggestions on the areas, subjects, and specific items that future co-operation should cover.
No Author	L'habitat en territoires transfrontaliers (= Housing markets in cross-border regions).	In: Actualités internationales du logement 1996, N°18	FR	The housing market is the main focus of this article which concentrates on the cross-border employment regions. The main example is that of Wissembourg and Bergzabern (near Kalrlsruhe), the co-operation between the housing organisations in Saar, Lorraine, Luxembourg and the Walloon region while at the same time identifying other interested parties, politicians, public transport authorities and local authorities. The area of Menton - Ventimiglia is the subject of a comparison with Italy.
No Author	Quand l'Alsace s'empare du ferroviaire (= How Alsace seizes the railways).	In: Bus et car Magazine 1987 (pp14-18)	FR	This article describes the current state of the public transport in the region of Alsace. It describes in particular the role of the local and regional transport and the cross-border transport in the region. The ticketing system is also highlighted.

Author	Title	Source	Lan-guage	Abstract
No Author	Une charte Franco-Suisse autour de Genève (= A France-Switzerland charter for Geneva).	In: Moniteur des travaux publics et du bâtiment / March 2000 (pp62-65)	FR	This article describes future town planning projects which will transform the city of Geneva and the surrounding area. The passenger transport network is due to be extended to cross-border links together with an extension to Geneva Airport.
No Author	Figures on the Oeresund Bridge.	Oeresundskonsortiet	EN	The report is an actual update of figures and facts, that is the basis for the traffic analysis from Oeresundskonsortiet. Information is given on the toll fees, the future traffic, travel patterns, ferry traffic, population etc.
No Author	The Strategic Impacts of the Oeresund Bridge.	Oeresundskonsortiet	EN	Oeresund is a time and economic barrier between Denmark and Sweden and together with the Baltic Sea it is a barrier between Sweden and the Continent. With the inauguration of the Oeresund Fixed Link these barriers will change, the effects of which are described in the report. The fact is that the future Oeresund Fixed Link will not only have a local impact on the traffic in the Oeresund region, it will also affect traffic on a national and international level.
No Author	Traffic Forecast Modell - The Fixed Link across Oeresund.	Oeresundskonsortiet	EN	The report has been designed to forecast the traffic on the Fixed Link across Oeresund and on around 25 competing ferry routes in the area. The aim of the model is to establish a comprehensive strategic planning tool.
Nonn, H.	Villes et aménagement en Alsace (= Towns and regional planning in Alsace).	June 1999, 246 pages	FR	This article discusses recent developments either completed or in progress, in the local and regional organisation and the flows between towns and cities in Alsace. These flows increase the public transport network with the region of Alsace and surrounding cities such as Freiburg, Basle or Karlsruhe. The author also evokes inter-regional connections.
Nørgaard, Henrik	The regional traffic system in the Oeresund region.	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Bruxelles: UITP, 2001	EN	The paper describes the operating concept of the regional train service across the Oeresund from the operator's perspective. It gives insights into demand figures as well operating problems faced with.
Novy, Manfred	Ausweitung des Verkehrsverbundes Ost-Region nach Ungarn und in die Slowakei (= Extension of the public transport association Eastern region to Hungary and Slovakia).	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Bruxelles: UITP, 2001	EN	The paper gives an outline on the fairly new necessity to extend the existing public transport system of Greater Vienna region across the border to Eastern Europe, since traffic flows have dramatically changed and border barriers caused e.g. by the tariff are still high in public transport.
Onnen, Marc	Improving cross-border public transport by working together.	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Bruxelles: UITP, 2001	EN	The paper introduces the cross-border region Euregio Maas-Rhine (Aachen, Maastricht, Liege) as well as its approach to improvements in cross-border public transport.

Author	Title	Source	Lan-guage	Abstract
Poetsch, Peter	Grenzueberschreitende Zusammenarbeit im OePNV in der suedlichen Oberrheinregion. Mit Fallstudie Regio-S-Bahn (= Cross-border public transport Integration in the Southern Upper-Rhine region. Incl. Case Study Suburban Rail network Basle).	EURES discussion paper 35. Freiburg/Br.: EURES-Institut, 1994	DE	The paper is an outcome of the EU research project on 'Factors for success and failure of cross-border environmental policies'. It includes a case study on public transport highlighting the suburban-Rail service of Basle (Regio-S-Bahn Basel).
Poulsen, Ebsen	INTERREG III 2000-2006.	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Bruxelles: UITP, 2001	EN	As a representative from EU, the author outlines the structure of EU initiative Interreg III, a programme to support cross-border co-operation in border regions.
Prem, Josef; Puchinger, Kurt; Rosinak, Werner; Snizek, Sepp	Enwicklungszone Wien - Bratislava, Struktur- und Verkehrsanalyse (= Development zone Vienna - Bratislava, analysis of the structural and transport situation).	Endbericht (Langfassung). Wien, 1993	DE	This report studies the possible future activities of OMV (Austrian Mineral Oil Administration) in the area between Vienna and Bratislava. Based on a traffic and spatial analysis the range of tasks and measures, where public-private-partnerships can be developed, is drawn up. Special emphasis is put on economic activities of the OMV in the field of traffic.
Provincia di Gorizia	Riorganisatione del trasporto pubblico nell'area transfrontaliera italo-slovena (= Reorganisation of public transport in the italian-slovenian cross-border area).	Gorizia: 2001	IT	This study is focussing on concepts to improve the cross-border public transport supply between Gorizia (I) and Nova Gorica (SLO). Co-financing has been provided by the Intereg-Programme.
Rat, Hans	Official opening.	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Bruxelles: UITP, 2001	EN	The paper by the general secretary of UITP gives an overview about the problems and solutions in cross-border regional and local public transport.
République du canton de Genève	Rapport sur l'étude du réseau des transports publics à l'horizon 2000-2005 (= Report on the analysis of the public transport network for the period 2000-2005).	Transports collectifs 2000, 1992, 51 pages	FR	This document is a plan spanning five years which enables prospective local and regional passenger transport needs in the region of Geneva to be drawn up. The different projects are proposed depending on the traffic forecast and precise statistics. The number of passengers opting for a particular mode and the modal splits are analysed and are the subject of numerous scenarios. The costs are integrated into the town-planning project.
Schnell, Klaus-Dieter	Traffic Management in Border Regions: Reviewing Success and Failure.	4th European Conference on Mobility Management (Bregenz 17-19 May 2000). Conference Proceedings. Schwarzach: Medienhaus Vorarlberg, 2000	EN/ DE	The paper describes the results of a Swiss research project on transport planning in border regions. 8 recommendations for facilitating future cross-border transport planning are given.
Schnell, Klaus-Dieter; Thierstein, A.	Grenzueberschreitender Verkehr in der Region Konstanz-Kreuzlingen (= Transport in border areas: Case Study for the region of Konstanz- Kreuzlingen).	Report M12, NRP 41. No: 801.645.d. Bern: BBL/EDMZ, 1999	DE	The report describes the case study results of the Swiss research project on transport planning in border regions. See also the Synthesis Report of the whole project (Author: Mettan et al.).

Author	Title	Source	Lan-guage	Abstract
Sistenich, Hans Joachim; Jacobs, Peter; Franzen, Joerg	Nahverkehr ueberwindet Grenzen - Bus- und Bahnkooperation in der Euregio Maas-Rhein (= Public transport overcomes the border - bus and rail co-operation in the Euregion Maas-Rhine).	In: Der Nahverkehr 7-8/99 (pp44-48)	DE	The article describes the measures taken in the Aachen - Maastricht - Liege triangle (border region D/NL/B) to improve the cross-border public transport supply (common timetable, Internet-based journey planner, cross-border day pass).
Snizek, Sepp; Stocker, Gunter	Interreg IIa, VOR-Erweiterung Bratislava (= Interreg IIa, VOR-Extension Bratislava).	Arbeitsexemplar, rc137(579), Regional consulting Vienna; Vienna, 1997	DE	In order to improve the public transport between the metropolitan areas Vienna and Bratislava the extension of the existing public transport union of East Austria (VOR) to the region Bratislava was investigated. This report contains an analysis of the existing traffic volume between Vienna and Bratislava and prognosis for the future passenger traffic volume. Additionally scenarios have been developed that contain varying supply qualities. On that basis possibilities of the VOR-extension and the tariff implementation have been studied.
Sutter, A.	Interconnexion physique entre métro léger et réseau ferré national à Karlsruhe...et ailleurs (= Physical interconection between the light and heavy rail network at Karlsruhe ... and elsewhere).	In: Transports urbains 1994 (pp19-22)	FR	This article describes numerous examples of passenger transport and cross-border transport such as the Saarbruecken-Sarreguemines link and the Geneva-Annemasse link. Light rail/LRT and suburban rail services now operate on some of these routes and the article highlights the interconnections made possible on the different networks of these regions.
Tavasszy, Lorant A.	Modelling European Freight Transport Flows.	Dissertation, The Netherlands Research School for Transport, Infrastructure and Logistics. Delft: TRAIL, 1996 (ISBN 90-9009780-5)	EN	One section of the study presents a simplified traffic forecast model to calculate cross-border traffic flows.
Temlitz, Klaus	Von der Territorrialgrenze zur Staatsgrenze. Die Entstehung der westfaelisch-niederlaendischen Grenze. (= From territorial boundary to national border. The development of the Westphalian-Dutch border line).	In: Westmuensterlande - Ostniederlande. Entwicklung und Stellung eines Grenzraumes. Spieker 30. Muenster: Selbstverlag der Geographischen Kommission fuer Westfalen, 1984	DE	<no abstract available>
Thinieres, Andre	Interoperability of conventional networks.	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Brussels: UITP, 2001	EN	The paper presents European concepts and initiative to improve technical interoperability in rail transport across national borders.
Walter, Norbert	Ausbau der Strassenbahn von Saarbruecken (D) nach Sarreguemines (F) (= Extension of the tramway from Saarbruecken/D to Saarguemines/F).	UITP Conference 'Public Transport in New European Regions' (Copenhagen/Malmoe, 4-6/12/00). Conference proceedings. Brussels: UITP, 2001	DE	A new LRT system has been recently introduced in Saarbruecken. The outstanding facts of the service are: (i) it crosses the border to Sarreguemines (F); (ii) it runs on heavy rail tracks as well as on new-built light rail tracks. The article reflects the first operation results.

Author	Title	Source	Lan-guage	Abstract
Walter, Norbert; Strohm, Erwin; Kraemer, Thomas	Die Saarbahn - Ein europaeisches Projekt (= The Saarbahn - A European project).	In: Der Nahverkehr 3/98 (pp22-30)	DE	The paper describes the new LRT system that has been recently introduced in Saarbruecken (D). The outstanding facts of the service are: (i) it crosses the border to Sarreguemines (F); (ii) it runs on heavy rail tracks as well as on new-built light rail tracks. The paper outlines the experience gained in the first 3 years.
Weigand, Karl	Drei Jahrzehnte Einkauftourismus ueber die deutsch-daenische Grenze. (= Three decades of shopping tourism across the German-Danish Border).	In: Geographische Rundschau 5/90 (pp286-290)	DE	<no abstract available>
Weigand, Werner	Angebotskonzepte der europaeischen Bahnen (= What European railways are doing to attract customers).	In: Eisenbahntechnische Rundschau 4/93 (pp229-235)	DE	Europe's railways find themselves in severe competition in respect of rail passenger transport. Although the article targets mainly long-distance travel, the author presents important fact about the international rail passenger transport market.
Widmer, G.; Pini, G.	Les transports transfrontaliers dans la région de Genève (= Transport in border areas: Case study for the Geneva area).	Report M14, NRP 41. No: 801.647.f. Bern: BBL/EDMZ, date unknown	FR	The report describes the case study results of the Swiss research project on transport planning in border regions. See also the Synthesis Report of the whole project (Author: Mettan et al.).
Wuermli, P.; Plattner, R.	Grenzueberschreitender Verkehr in der Region Oberrhein (= Transport in border areas: Case study for Oberrhein region).	Report M11, NRP 41. No: 801.644.d. Bern: BBL/EDMZ, 1999	DE	The report describes the case study results of the Swiss research project on transport planning in border regions. See also the Synthesis Report of the whole project (Author: Mettan et al.).