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Task 1: Accessibility of public transport systems for people with disabilities

Title of Report:

D.2.1
**Report on good Practice Examples of
accessible Public Transport**

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1 Preface

1.1 Introduction and analysis

The objective of the first report within work package 2 of the PTaccess project is to present comprehensive information about good practice regarding accessibility in European public transport. It is crucial to get a comprehensive overview of current good practice examples in public transport accessibility because this information forms the basis for the development and implementation of more precise, goal-oriented, and generally appropriate measures and regulations in the future.

This report on good practice examples of accessible public transport aims to show examples of public transport that are being successfully made accessible. Thus, it will encourage stakeholders to apply similar measures. In order to fulfil this task all “successful approaches” first had to be defined. Within PTaccess this includes approaches that:

- support the usage of regular public transport by people with reduced mobility;
- are economically feasible (in the long run); and
- are accepted (meaning people use it).

“Exclusive services” (such as door-to-door transport) which are not open to use by everybody are not considered public transport within this research. Furthermore, these services may serve as an excuse not to make improvements to public transport systems. However, this paper does include examples of exclusive services in an extra chapter, which also explains why such services cannot be classified as good practice examples of public transport.

This paper is essentially based on two different groups of contributions. The first is the collection of good practice examples and innovative approaches (regarding the accessibility of public transport for people with disabilities) from different European countries as identified by national experts and interviewees during the interviews within Work Package 1. The second contribution is made of good practice examples obtained through a more extensive Internet search.

In WorkPackage 1, interviews with the following three experts were carried out at the national level took place in 25 of the 27 EU Member States (due to the timing of the accession process for Bulgaria and Romania):

- an individual of an national organisation representing disabled people;
- A representative of a public transport operator; and
- A representative of the national government.

The national experts within each country were carefully selected and chosen for their public transport accessibility, disability and policy knowledge and experience. Each interviewee was asked to recommend some good practice examples. This approach meant that the different points of view of all relevant stakeholder groups were included, since good practice examples named by public transport operators were often different to those named by disability organisations. All three interviewees in each country were asked to provide good practice examples at the beginning and end of the interview. Combined with the contribution from the interviewer (the national contact), this approach provided at least four examples for each country.

In addition to the expert interviews, a comprehensive Internet search and analysis of past and ongoing projects was undertaken. This research was carried out mainly by TU Dresden with input from other partners as well.

All aspects of good practice solutions and problems within EU public transport accessibility were covered in order to paint a thorough and complete picture. It was expected that the most experienced experts would be aware of the problems and solutions within this important transport field. Although we made sure that the interviewees were skilled experts, and that all efforts were made to receive answers representing a complete picture, it must be noted that the results of the interviews proved — at least within the desired time frame — not to be as broad and successful as expected. The number of completed interviews received by the consortium by the initial mid September 2007 deadline, 33 out of 100, illustrates this fact. This deadline was then extended by three weeks and a further 18 responses were received, bringing the overall total to 51. A third of the countries (n=8) were not able to carry out any interviews with their national experts and some experts could not recommend examples because “good practices are not known”(Belgium/Cyprus).

From these observations, we draw the following three conclusions:

1. To receive an appropriate and useable picture of all good practice efforts within the EU in this field, we had to rely much more than expected on the additional Internet research. Consequently, we widened the scope of this work to identify more good practice examples discussed and implemented in the surveyed countries.
2. The poor response rate shows that the importance of the topic is not fully recognized in some countries of the EU. This conclusion is supported by several comments from interviewers and interviewees. In some countries the importance of the problem itself may need some more recognition. This observation demonstrates a need for EU institutions to provide much more guidance in this field, through initiating more research and support for Member States to fully understand the problem and possible solutions.
3. The results of the interviews with the national experts illustrate the lack of awareness and/or availability of examples of good practice within some countries. Some experts were not aware of, which were easily available in scientific reports, publications or documentation in their country. Again, this can be seen as a proof of knowledge gaps. There seems to be a basic need for EU institutions to provide support and information and guidance in this field to Member States.

The quality of the interviews themselves varied significantly. In some cases, only broad information or rudimentary catchwords were provided. The short summaries of good practice projects (which were desired by the PTaccess consortium) were available only in very few cases. This made it very difficult to identify the most promising approaches. Again, the impression of lack of awareness was clear from several interviews. In one case, a representative of people with reduced mobility (PRM) answered that only special transport services were a good solution (meaning that traditional public transport should not care for PRM at all). In another case we were simply referred to public transport operators without any mention of details or even the topic of the probable good practice. In a third example it was suggested that the problem should be addressed by efforts of private car hire companies to get hands free operation kits for their cars. In our opinion, these answers again do not cover the scope of the problems adequately.

Within the project we want to stress this point: there seems to be a very long way to go before the problems of people with reduced mobility in public transport will be fully or appropriately perceived. Even when asking representatives of people with reduced mobility how really accessible public transport might look like, we did not always get an answer. Our most important conclusion at this stage of the project is, therefore, the following:

The problems associated with inaccessible public transport services are present in all of the countries interviewed. However, the extent to which countries are aiming to address these problems at the policy level varies between those who have these issues high on their political agenda and those who consider these issues to be peripheral. This can be seen as a confirmation of the European Commission view, which points out the importance of this specific topic in Priority Area 2.4 (Quality of Life Issues Relating to Handicapped/Disabled People) of the Sixth Framework Programme. We concluded from the results of the interviews that research and action in this field is necessary and needs to be intensified in the future.

The second methodological step was a desktop analysis of approaches for PRM in public transport. This approach was intensified after the results of the questionnaires were analysed and resulted in many good examples being identified. This comprehensive search of published, recognized or documented good practice, in all 27 EU Member States, resulted in a comprehensive and satisfactory list of examples and experiences drawn from all members of the European Union.

The aim of this report is not to list all possible measures that could be introduced to make public transport more accessible for persons with reduced mobility (because a long list without any prioritisation is not a very useful guidance tool). Instead the aim is to identify those approaches which could be applied to other European cities and regions to improve the current situation. Therefore, a simple list of good practice examples was developed and classified according to defined criteria that makes it easy to search according to the type of disability (e.g. people with motor, visual, hearing and cognitive/learning impairments), the mode use (e.g. bus, tram, underground or train) or the type of intervention (e.g. infrastructure, design, financial, organisational, information, training and awareness raising). Good practice examples presented in this report (and which could be implemented by others) also include examples that give recommendations for improving the accessibility of various aspects of the journey other than boarding and alighting vehicles (e.g. access to/from the mode, access to information, access to training etc.).

1.2 Conclusions

The analysis showed that accessible public transport services are not equally spread across Europe. As already mentioned in the former PTaccess report “State of the art of information and data regarding the accessibility of public transport” there is a focus on Central, Northern and Western European Member States and on urban transport rather than on rural transport. The results of the interviews have shown that the availability of accessible public transport services is lower in the new Member States in east and southeast Europe. Nevertheless, this paper also presents some interesting approaches coming from these countries.

Since the differences in the level of implemented measures between countries were obvious from the beginning of the search, we decided not to concentrate on good practice examples that are increasingly becoming standard engineering or technical solutions (e.g. low-floor vehicles in urban public transport systems in Central Europe). Nevertheless it is important to note that despite the wide introduction of, for example, low-floor vehicles, there is often still a lack of improved accessibility at bus stops (i.e. through elevated platforms, ramps, etc.). The results of the interviews demonstrate the need for additional research to be carried out into the general accessibility issues (i.e. accessibility of stations, bus stops and tram stops, availability of information in different formats (i.e. audio-visual information, large print, Braille, easy read), design and infrastructure of vehicles, ease of boarding and alighting, signage and wayfinding etc).

The results of the interviews showed that the key experts had different attitudes towards the examples of good practice. Some representatives from the disability organisations accepted the current inaccessible transport services as “normal.” For these individuals, fully accessible public transport services are not seen as a viable option for disabled people in the future and they are therefore not campaigning for improvements to be introduced. In these cases, the use of “exclusive services” was named as good practice examples. These organisations are willing to be satisfied with any special service provided to them, even if it results in their members being excluded from mainstream public transport. This result does not comply with the social model of disability on which the project PTaccess is based, which examines the improvements that will need to be made to the built environment and the actual services.

The results of the interviews also showed that interventions designed to improve accessibility for people with motor-impairments were mentioned most often, followed by those measures aimed at visually impaired people. The fewest examples were found for passengers with cognitive/learning impairments, but the interventions that have been introduced are very interesting. One of our conclusions is that more research is required to better understand the accessibility needs of people with cognitive and learning impairments.

The results of this initial analysis highlight the differences in level of accessible public transport in Europe and underline the importance of the PTaccess project to offer guidance as to how accessible public transport services can be improved in the future.

1.3 How to read this report

Chapter 2 contains an overview list of the good practice examples and these are described according to the following criteria:

- kind of disability affected
- kind of vehicle affected
- kind of approach/measure

Each example may be included in more than one criterion. All listed examples are linked directly to the chapter in the paper in which it is explained in more detail - the city or region is also identified.

Chapter 3 provides further information about each good practice example and these are listed alphabetically. Many of the good practice examples mentioned are also in use in other European cities or regions. Thus, in a few cases, cities or regions with similar projects are named on the description page and in the final index. The implementation phase of the example is clarified by means of three symbols. The measure or the project can be :



planning phase



ongoing



implemented

Chapter 4 describes some exclusive transport services that are only used by people with disabilities. As these specific services are not considered good practice examples from the point of view of the PTaccess project, they are not listed in Chapters 2 and 3. The introduction of this chapter explains how they differ from PTaccess good practices.

At the end of the report there is an index listing all the examples alphabetically, including the cities/countries where similar services have been introduced and the exclusive services.

2 Selected good practice examples and policy guidance

2.1 Overview table

City / Region / Country	Country	Project	Type of Disability				Vehicles						Engineering / Technology / Design / Infrastructure			Financial Support / Funding			Organisational / Operational Support					Awareness Building		
			Motor Impairments	Visual Impairments	Hearing Impairments	Cognitive / learning impairments	City Bus	Regional Bus	Tram	Underground	Local Train	Long Distance Train	Other	Accessible vehicles (buses, trains, trams etc)	Signage	Accessibility of the local area	Subsidised tickets	Funding (Capital)	Financial Support (Revenue)	Information	Mapping	Rural Transport	New policy / legislation	Management	Disability Awareness Training	Travel Training
Achterhoek	The Netherlands	Accessible Demand-Responsive Service as Regular Rural Public Transport	✓	✓	✓		✓					✓				✓	✓			✓		✓				
Athens	Greece	Conversion of an Historic into an Accessible Metro System	✓	✓	✓	✓			✓			✓	✓	✓		✓	✓									
Austria	Austria	New Accessible Barrier-Free Overland Buses in Use	✓	✓			✓					✓														
Austria	Austria	New Railjet Trains with Innovative Equipment for Mobility-Reduced People	✓	✓						✓		✓	✓					✓								
Barcelona	Spain	CityBee Localisation and Rescue of Lost Persons		✓		✓	✓	✓	✓					✓		✓	✓									
Berlin	Germany	Introduction of the Label "Barrier-Free" to State Accessible Facilities	✓	✓	✓		✓	✓	✓					✓				✓							✓	
Berlin	Germany	Mobility Training Especially for People with Motor Impairment	✓	✓			✓	✓	✓	✓								✓						✓		
Berlin	Germany	Navigation System for Impaired People at the New Berlin Main Railway Station	✓	✓	✓		✓	✓	✓	✓			✓	✓				✓								
Berlin	Germany	Newly Innovated Mechanically Retractable Ramps for trams	✓					✓				✓														
Berlin	Germany	People Mover – Combination of Elevator and Bridge to Access Platforms	✓	✓						✓				✓		✓	✓									
Bucharest	Romania	Transformation into an Accessible Public Transport System	✓				✓	✓				✓				✓	✓									
Budapest	Hungary	Introduction of Low-Floor Buses in New EU Member Countries	✓	✓			✓					✓														
Burgos	Spain	Transport Action Plan to Support Accessibility in Public Transport	✓	✓	✓		✓							✓		✓		✓	✓							✓
Cologne	Germany	Construction of Barrier-Free Low-Floor and High-Floor Tram System	✓	✓				✓				✓		✓									✓			
Copenhagen	Denmark	Underground with Special Features for Mobility-Reduced People	✓	✓	✓				✓				✓	✓		✓		✓	✓							
Dresden	Germany	Travel Assistance in Public Transport for PRM	✓	✓	✓	✓	✓	✓									✓						✓			
Dublin	Ireland	Accessible Light Rail Transit System	✓	✓	✓			✓	✓			✓	✓	✓	✓			✓	✓							

City / Region / Country	Country	Project	Type of Disability				Vehicles						Engineering / Technology / Design / Infrastructure			Financial Support / Funding			Organisational / Operational Support					Awareness Building		
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Dublin	Ireland	Transport for All Programme – Accessible Bus Fleet and Awareness Campaigns	✓	✓	✓		✓							✓											✓	
Dundee	UK	Driver Disability Awareness Training	✓	✓	✓	✓																		✓		
Dusseldorf	Germany	Waiting Room for People with Impaired Hearing			✓					✓	✓						✓									
Edinburgh	UK	Mobility Training Programme for Blind Pupils		✓			✓																✓		✓	
Espoo	Finland	Accessible Bus Terminal with Accessible Lighting and Colour Contrasts	✓	✓			✓	✓						✓		✓		✓					✓			
Espoo	Finland	User Tests of Accessible Bus Stops and Driver Training	✓	✓	✓		✓	✓						✓		✓										✓
Finland	Finland	Booklet about Accessible Customer Service in Public Transport	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓					✓			✓
Finland	Finland	Guide for Improving the User-Friendliness of Information Services in Public Transport	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓								
Finland	Finland	Information Services about the Accessibility of Railway Transport Services	✓	✓	✓					✓	✓							✓	✓							
Finland	Finland	NOPPA - Navigation and Guidance System for the Blind		✓			✓	✓	✓	✓	✓							✓								
Finland	Finland	Research and Development Programme for Accessibility ELSA	✓	✓	✓	✓	✓	✓	✓	✓	✓							✓				✓				✓
Germany	Germany	Barrier-Free Information for People with Reduced Mobility	✓	✓	✓		✓		✓				✓					✓								
Germany	Germany	Engagement of Public Transport Providers for the Barrier-Free Design of Public Transport Stops	✓	✓			✓		✓				✓					✓	✓							
Germany	Germany	Mobile Internet Service Especially for Blind People	✓				✓	✓	✓	✓			✓					✓	✓							
Germany	Germany	National List of Disabled-Accessible Overland Buses	✓	✓				✓										✓								
Grenoble	France	Accessible Bus Service through New Design Standards	✓	✓			✓						✓													
Hamburg	Germany	Accessible Emergency and Information Pillars at Regional Railway Stations	✓	✓	✓					✓			✓			✓		✓								

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Helsinki	Finland	Toy Accessible Buses and Toy Wheelchairs with Dolls for Raising Awareness	✓	✓	✓		✓	✓						✓												✓
Hessen	Germany	Manual for Planning and Building Barrier-Free Transport Infrastructure	✓	✓			✓		✓										✓				✓			✓
Italy	Italy	Disabled Assistance Centre by Trenitalia to Serve Travel Needs of Impaired Customers	✓	✓	✓					✓	✓							✓	✓			✓				
Jyväskylä	Finland	Heated Pedestrian Surfaces to Ensure Safe Traffic	✓	✓			✓									✓	✓									
Karlsruhe	Germany	Pilot Project LaneLights to Signal Public Transport Crossings	✓	✓					✓																	
Leeds	UK	Bus Buddying – Mobility Training to Become Independent Travellers	✓	✓	✓	✓	✓	✓								✓	✓					✓				✓
Linz	Austria	Integrated Barrier Free Public Transport	✓	✓	✓		✓		✓			✓		✓				✓						✓		
Ljubljana	Slovenia	Awarded Efforts for Improving the Accessibility of Public Transport	✓	✓	✓	✓	✓	✓						✓		✓	✓	✓						✓		✓
London	UK	Making Public Transport in Metropolitan Areas Accessible for All	✓	✓	✓	✓	✓		✓	✓				✓	✓	✓	✓	✓	✓						✓	
London	UK	The Taxicard – Subsidised Barrier-Free Taxi Use	✓	✓							✓			✓								✓	✓			
Luxemburg	Luxemburg	Accessible Double Deck Trains Improve Local Transport	✓	✓	✓					✓				✓				✓								
Manchester	UK	Access Panel and Disability Advisory Group – Consulting Disabled People	✓	✓	✓	✓	✓	✓	✓	✓	✓					✓		✓								✓
Montrose	UK	Visual Mapping Scheme for People with Learning disabilities				✓	✓												✓							✓
Munich	Germany	Accessible Local Transport with a Guidance System for Visually Impaired People	✓	✓	✓		✓		✓					✓	✓	✓		✓	✓							
Munster	Germany	Speaking Bus Stop – Accessible Information for People with Visual Impairment		✓			✓							✓				✓								
Navarra	Spain	Mobility Management for People with Motor and Learning Impairments	✓			✓	✓					✓						✓				✓	✓	✓	✓	✓
Nuremberg	Germany	Excellent Long-Term Commitment to People with Reduced Mobility	✓	✓			✓		✓					✓	✓	✓	✓	✓	✓							✓

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Paris	France	"Infomobi" - Internet Information Service for Mobility-Reduced Persons	✓	✓	✓	✓	✓	✓	✓	✓								✓	✓						✓	
Paris	France	Personal Electronic Navigation in the Metropolitan Underground System		✓					✓				✓					✓	✓							
Paris	France	Tactile Relief Models and the Touch and Sound Atlas		✓			✓	✓	✓				✓					✓	✓							
Portsmouth	UK	Talking Sign System RNIB React to Move More Savelly and Easily		✓			✓	✓	✓	✓			✓			✓										
Prague	Czech Republic	Midibus-Service to Guarantee Accessibility to Medical Facilities	✓	✓			✓						✓										✓			
Prague	Czech Republic	Information System for People with Visual and Hearing Impairments		✓			✓	✓					✓			✓								✓		
Saragossa	Spain	Local Public Transport Accessibility Plan Provides Barrier-Freedom	✓	✓	✓		✓						✓		✓							✓		✓		
Siiilinjärvi	Finland	Public Transport for Everyone in a Sparsely Populated Rural Area	✓	✓	✓		✓						✓			✓	✓	✓		✓						
Sofia	Bulgaria	Real Time Electronic Passenger Information Boards				✓	✓	✓					✓					✓								
Stockholm	Sweden	Accessible Airport Link Arlanda Express	✓	✓					✓				✓			✓	✓	✓	✓				✓		✓	
Stuttgart	Germany	Information Brochure on Barrier-Free Public Transport Mobility	✓	✓	✓		✓	✓	✓		✓		✓					✓							✓	
Tampere	Finland	Developing an Accessible Bus Pilot Line by Surveying	✓	✓	✓		✓									✓	✓						✓		✓	
UK	UK	References to Contrast in Bus and Rail Vehicles		✓			✓	✓	✓	✓	✓							✓					✓			
Venice	Italy	Introduction of Accessible Waterbuses	✓								✓		✓			✓	✓									
Vienna	Austria	Barrier Free Access for Motor and Visually Impaired	✓	✓			✓	✓	✓	✓		✓	✓	✓				✓								
Vienna	Austria	Introduction of an Ultra Low Floor Tram	✓	✓				✓					✓			✓	✓									
Vienna	Austria	Acoustic Underground Orientation System POPTIS		✓					✓				✓	✓				✓	✓							

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Vilnius	Lithuania	Development of Accessible Public Transport in a New EU Member State	✓	✓	✓		✓			✓	✓		✓	✓	✓		✓	✓	✓	✓	✓					
Warrington	UK	Independent Travel Training Package	✓	✓		✓							✓				✓	✓	✓				✓	✓		
West-Brabant	The Netherlands	Accessible Regular Public Transport Replaces Exclusive Services	✓	✓			✓						✓				✓	✓		✓						
Wetter	Germany	FLIRT Train and Train Station Wetter are Barrier-Free	✓	✓	✓					✓			✓	✓	✓				✓		✓					
Zillertal	Austria	Accessible Trains on the Narrow Gauge Zillertalbahn	✓	✓	✓					✓			✓				✓									

2.2 Good practice assorted to kind of disability

2.2.1 People with motor impairment

Achterhoek (The Netherlands): Accessible Demand-Responsive Service as Regular Rural Public Transport	36
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3 Good practice examples

Example 1 **Accessible Demand-Responsive Service as Regular Rural Public Transport**
 Region (country) **Achterhoek (The Netherlands)**



good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	regional bus (minibus)	engineering/technology approach financial support measure organisational/operational support

Project description

MobiMax is a demand-responsive service with flexible routes, stops and timetables that enables public transport for all in a rural area. It therefore differs from the specific transport services offered as an additional service for disabled people in cities. The vehicles used are twelve eight-seat minibuses that are accessible for wheelchair users and run every day for 17.5 hours.

A ride can be booked by phone in the Travel Dispatch Centre organised by regional taxi companies. In the centre computer software is used to organize the bookings into clusters and distributes them to the specific minibuses or books known regular trips in advance. In addition, Plan Vision software is used to help with the scheduling process and the calculation of fares. It automatically communicates with the vehicles, which are equipped with onboard computers and navigation systems able to calculate the shortest or the fastest route to a destination given by Plan Vision. This system is very flexible, but to guarantee a trip it must be booked at least two hours in advance. The service operates under the taxi license so that the maximum number of passengers is seven, but the vehicles must only meet normal safety conditions.

The service is open to the public but in practice it is almost exclusively (93%) used by people with motor impairments, who use it mostly to visit family and friends (48%) and medical facilities (16%). The fares only cover nine percent of the cost. To avoid social exclusion, there are special efforts to connect the service to the general public. A leaflet describing how to make a booking has already been distributed to every home in the area. For pre-trip information the MobiMax service is included in a nationwide phone information system.

Source:

VIRGIL: Rural Transport guide: MobiMax, Achterhoek, Netherlands,
<http://www.eltis.org/docs/studies/VIRGIL%20Rural%20Transport%20Guide.pdf>, p. 13 (26/10/2007)



Example 2 **Conversion of an Historic into an Accessible Metro System**

City (country) **Athens (Greece)**

Similar service in Brussels (Belgium)

good practice for people with ...	kind of vehicle	kind of measure/approach
<ul style="list-style-type: none"> ... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment 	underground	<ul style="list-style-type: none"> engineering/technology approach financial support measure

Project description

Athens is a symbol for the transformation of an initially non-accessible underground system into one that could become a prototype of accessibility for other historic underground systems.

The construction of the metro in Athens was one of the biggest and most complicated infrastructure projects in Greece. The system started out carrying 300,000 passengers daily, but it was not initially designed to integrate facilities for mobility-reduced persons. As the metro project unfolded, disability organisations were involved meaning that the final version of the metro system includes services and facilities for mobility-reduced people. This makes the metro a landmark for accessible public transport systems.

Athens’ metro consists of three lines. Line 1, the oldest, has renovated stations and is fully accessible to disabled people. In all stations one can find elevators, escalators, ramps, tactile floor guide lines for visually impaired people, visual and acoustic announcement systems, accessible toilets, easily readable signs and accessible connections between opposite platforms. The infrastructure and the underground trains of the new parts of the metro (lines 2 and 3) are also fully accessible for mobility-reduced persons.

A wheelchair user visiting Athens on holiday says: “... [we] navigated ourselves to the Athens Metro, which I have to say is wonderful and very accessible ...” This confirms the statement of Vasilis Galis, a researcher from the Linköping University, who said that the underground system in Athen symbolizes a landmark for accessible systems.

Sources:

Linköping University: From Shrieks to Technical Reports: technology, disability and political processes in building Athens metro www.ep.liu.se/abstract.xsql?dbid=7851 (07/11/2007)

ECMT: Developments in Greece, <http://www.cemt.org/topics/handicaps/develop/GRdev06.pdf> (07/11/2007)

Muffy Davis: Newsletter #1 - Sacramento, CA to Athens, Greece <http://muffydavis.com/index.asp?pgid=16> (07/11/2007)



Example 3 **New Accessible Barrier-Free Overland Buses in Use**

Country **Austria**

Similar service in Spain

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	regional bus	engineering/technology approach

Project description

In August 2007 the ÖBB-Postbus GmbH ordered 260 new buses which will come into operation in the scheduled regional bus transport for all of Austria. The costs of this project amount to more than 50 million Euros. The delivery of the buses started in September 2007 and will be finished by the end of 2007.

MAN, Mercedes and Temsa produce the new buses. All vehicles are equipped with state-of-the-art techniques, high safety levels and air conditioning. Each bus has a capacity of 50 to 130 passengers. All buses are accessible and barrier-free. Low-floor buses have a collapsible ramp. Overland buses are specially adapted and have an integrated lift at the rear door that enables wheelchair-users to board the bus. Inside the bus there is a suspension lift to carry motor impaired passengers, and there is an even floor in the whole bus. Distribution of seats varies between 38 regular seats and eleven wheelchair places. The restroom is also adapted for the disabled.

Never before have so many buses with such equipment been available in Austria. The new bus fleet is a milestone for people with reduced mobility. The company’s vehicle fleet consists of 2,100 buses and twelve old-buses with an overall average distance of 137 million kilometres being driven per year.

Source:

ÖBB POSTBUS: Postbus kauft 260 neue Busse (de), http://www.postbus.at/de/Pressecorner/Presseinformationen/260_neue_Busse/index.jsp (22/10/2007)



Example 4 **New Railjet Trains with Innovative Equipment for Mobility-Reduced People**

Country **Austria**

Similar service in Spain (AVE train)

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	long-distance train	engineering/technology approach organisational/operational support

Project description

Austrian national railway ÖBB (Österreichische Bundesbahn) points out the importance of providing a service to satisfy the travel demands of all potential users. Creating barrier-free access is also a measure that enables more users to make a real choice between their own car and the train.

In developing the new Railjet train generation, ÖBB therefore took the needs of the PRM under special consideration. In these new trains there are special vehicle-bound lifting platforms for mobility-restricted people, which means it is no longer necessary to reserve the ride in advance (but ÖBB additionally introduced a call centre for mobility-reduced people). Within the train three spaces are reserved for wheelchair passengers and the adapted restroom is nearby. A special service inside the cars is the newly available power outlets for wheelchair batteries.

For visually impaired persons all buttons onboard are additionally equipped with tactile elements and a special place for guide dogs is provided. Via a service button passengers can call a person attendant, and the integrated passenger information system provides information through audio and visual communication.

Source:
 ÖBB Railjet webpage: <http://www.railjet.at> (19/10/2007)



Example 5 **CityBee – Localisation and Rescue of Lost Persons**

City (country) **Barcelona (Spain)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... visual impairment ... cognitive/learning impairment	city bus tram underground	engineering/technology approach financial support measure

Project description

A public institution for the disabled in the city of Barcelona will be the first to test the new technology approach of CityBee, funded by the EU's Sixth Framework Programme. This new low-cost wireless metropolitan network could be used for the localisation and rescue of vulnerable persons in urban areas. The network of CityBee will be designed with clusters, so that it is flexible and manageable. It will consist of a control centre, fixed and mobile devices and is specially designed for different groups of vulnerable users such as children, older people and people with physically and mentally impairments.

The most essential effect on the mobility of those with visual and cognitive impairment is that this new technology can help them reduce their inhibitions toward using public transport. Alzheimer's sufferers, for example, are often restricted in their mobility range because of fear of getting lost. With the new location system affected persons can feel confident about going out and using public transportation services without any fear. Small and smart devices offer users the chance to continue with their lifestyle.

The project will run for two years and began in October 2006. In the future other applications of CityBee are imaginable, for example the offer of information services like waiting times at bus and tram stops.

Source:

Cordis: City Bee to the rescue of those at risk in busy cities,

http://cordis.europa.eu/fetch?CALLER=EN_NEWS&OZ_WEBSRCH=citybee (23/10/07)



Example 6 **Introduction of the Label “Barrier-Free” to State Accessible Facilities**

City (country) **Berlin (Germany)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	city bus tram underground	engineering/technology approach organisational/operational support awareness building

Project description

In July 2007 the “Berlin-Pankow” station was the first German underground station to be labelled “barrier-free.” The new label “barrier-free” was developed through close cooperation by several institutions from the economic sector, trade, tourism, culture and science. It was introduced to make clear the state of the city’s transport accessibility.

The label contains a white arrow on a light yellow background and signals a quality standard to people with disabilities. It is only awarded when certain quality standards are met. In the case of public transport that means stations must be accessible stair-free by elevators or ramps. It also means the elevators need to have a voice system, a tactile operating system approximately 85 cm high and a navigation system with contrasting optimised and tactile guidance for visually impaired people at all platforms, at the exits and at the elevators.

In late summer 2007 200 labels had already been awarded. These indicate not only that people with diverse disabilities are welcome, but that the establishment provides benefits for all. In addition to public transport stations, restaurants, hotels, supermarkets, museums, etc. can be labelled. The “barrier-free” label is not a certificate for barrier-free construction but supports that.

Source:
 Berlin webpage (de): www.berlin-barrierefrei.de (21/10/2007)



Example 7 **Mobility Training Especially for People with Motor Impairment**

City (country) **Berlin (Germany)**

Similar service in Barcelona (Spain), Frankfurt (Germany), Hanover (Germany), Salzburg (Austria)

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	city bus tram underground local train	organisational/operational support awareness building

Project description

In Berlin both local transport operators BVG (Berliner Verkehrsbetriebe - bus, tram, underground) and Deutsche Bahn AG (local trains) offer mobility training for PRM. Through this training people in need can learn easily and in a quiet atmosphere without any stress how to use the facilities that make the modern transport system accessible.

Both an underground and an S-Bahn train are parked at the platform where, during the training period, there is no regular public transport service. People who don't feel confident moving in public transport get the chance to practice how to access the train, explore platforms, and see how doors and ramps work. Furthermore they have the chance to talk to each other about their experiences and discuss their interests with drivers as well as with representatives of disability organisations and of transport operators.

The same is done with buses and trams. On previously announced dates there are mobility-training events in the maintenance and storage facilities. Necessary information, along with the chance to try out trams and buses and to ask questions should lower inhibition thresholds and encourage the use of accessible public transport in Berlin.

On the webpage of the BVG there are also pictures and movies from the mobility training events as well as small instructional movies that show how to enter the vehicles sitting in wheelchairs. In addition, real-time information concerning the status of lifts at stations is shown, as well as station area maps with comprehensive facility information. Lifts that are out of order are also shown directly in the interactive net scheme online and – as a new feature – announced twice daily in a radio programme. All these services are also valid for the Berlin S-Bahn, which is provided by Deutsche Bahn.

Similar mobility training programmes exist in many other cities. Sometimes more theoretical aspects are provided such as “How to read timetables and maps?” and “How to deal with the ticket vending machine and find the most suitable fare?”

Sources:
 BVG: Für Fahrgäste mit Handicap: Schnupperkurse für Bus und Bahn (de), www.bvg.de - Pressestelle - Pressemitteilungen - 15.10.2007 (18/10/2007)
 S-Bahn Berlin: Mobilitätstraining für S-Bahn-Fahrgäste im Rollstuhl (de), http://www.s-bahn-berlin.de/presse/presse_anzeige.php?ID=400 (18/10/2007)



Example 8 **Navigation System for Impaired People at the New Berlin Main Railway Station**
 City (country) **Berlin (Germany)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	city bus tram underground local train long-distance train	engineering/technology approach organisational/operational support

Project description

In May 2006 the new main Berlin station and five more new stations were put into operation. The barrier-free design of these stations was an important goal that was realised with the cooperation of different stakeholders. Together the Berlin association of blind and visually impaired people (Allgemeiner Blinden- und Sehbehindertenverein Berlin, ABSV, <http://www.absv.de/>), the main architect of the station, Deutsche Bahn AG, the Berlin city administration, and the regional representative for handicapped people, designed a station that meets the needs of people with reduced mobility.

The navigation system connects all levels and facilitates for people with reduced mobility. It is composed of guidance stripes that are integrated into the floor and can be sensed with the white cane. Special attention blocks made of blistered tiles in the station and of corrugated tiles on the platforms indicate stairs, elevators, intersections and changings of direction. The system includes six panorama-elevators, two more elevators to reach the two outer platforms and 15 special staircases. 770 metres of guidance stripes were laid at the station and another 5.5 kilometres on the platforms. Information pillars are located in front of each panorama elevator and give spoken information about the elevator and its position. Additionally, the spoken announcements include information on the platforms that are served by the elevator and on services that can be reached. Handrails are available on each of the stairs that are included in the system. They have information in Braille and thus further ease the orientation of blind people.

The new main station in Berlin was planned to be autonomously usable for people with reduced mobility. The ABSV offers training to be better able to make use of the system. Additionally, the mobility service of the Deutsche Bahn AG and the local station mission is prepared to support people with reduced mobility.

Comparable systems were also installed at other newly built stations in Berlin: Südkreuz, Gesundbrunnen, Potsdamer Platz, Lichterfelde-Süd and Jungfernheide. The navigation systems at the new stations are not perfect by far, but they provide basic conditions to enable people with reduced mobility to move on their own in the stations.

Source:
 ABSV Berlin: Berlin Hauptbahnhof Orientierungshilfen für Blinde und Sehbehinderte (de), <http://www.absv.de/hauptbahnhof/download.htm> (22/10/2007)



Example 9 **Newly Innovated Mechanically Retractable Ramps for trams**

City (country) **Berlin (Germany)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment	tram	engineering/technology approach

Project description

The local public transport provider BVG (Berliner Verkehrsgesellschaft) and the company “Schließ- und Sicherungssysteme” from Mühlhausen have developed a mechanically retractable ramp made of several sliding sections that, in total, covers quite a long gap or height difference. It is an affordable alternative to the lift that has until now been used in the low-floor trams. To test the new solution, instalment of the retractable ramps is planned in four FLEXITY trams in Berlin. The ramp is a worldwide novelty that enables people with reduced mobility to bridge the level difference between the tram and the stop on their own. The ramp is in a hinged position and completely integrated into the vehicle while the tram is moving.

To date, the 150 low-floor trams of the BVG have 195 lifts that are operated electronically by the driving personnel. The lifts are characterised by a relatively high probability of operational failure as well as by high costs for investment, maintenance and repair. For this reason, the BVG looked for better solutions and found them in the mechanical retractable ramps. These are characterised by the following advantages compared to the electric lifts:

- The investment costs of the ramp amount to one third of the costs for a lift.
- The repair and maintenance costs are only half as high as for the lifts.
- The ramps weigh less.
- The personnel are directly available for assisting ramp users when necessary.

The new FLEXITY tram will be put into operation in Berlin in the coming years and will slowly replace the old Tatra trams. The FLEXITY tram is a 100% low-floor tram produced by Bombardier Transportation. The first four pilot vehicles will be in use from 2008 on. The order includes the option for 206 more trams. The intention is to order those trams starting in 2011 after the test phase with the first four trams has been successfully completed.

Source:

Newstix: Neue Wege in die Straßenbahn: Neue Lösung als Einstiegshilfe für mobilitätsbehinderte Fahrgäste zum Patent angemeldet (de), www.newstix.de - Suche - Einstiegshilfe BVG (21/10/2007)



Example 10 **People Mover – Combination of Elevator and Bridge to Access Platforms**

City (country) **Berlin (Germany)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	local train	engineering/technology approach financial support measure

Project description

For the first time in Berlin, a people mover has been installed as a combination of elevator and bridge. This innovation can be seen at the S-Bahn station ‘Betriebsbahnhof Rummelsburg.’ The elevator goes both vertically and horizontally, and thus allows passengers barrier-free access to the S-Bahn platform by crossing over the tracks.

It took six months and about 890,000 Euros to build the people mover that can now be used by the 5,400 passengers daily who use this S-Bahn station. The cabin of the people mover brings the passengers safely up and down two towers and over the connecting bridge between the towers in 35 seconds. The barrier-free cabin has inside dimensions of 1.90 by 1.40 metres. It enables wheelchair-users and passengers with heavy luggage or baby carriages comfortable access to the platform. The towers are 9.80 metres high (platform height) and 11.19 metres high (forecourt in front of the station) and are connected by a bridge of 10.25 metres in length.

Maintenance, repair and technical inspection are done by the ThyssenKrupp company on behalf of Deutsche Bahn AG. The German government and the Deutsche Bahn AG financed the project.

Other applications of this system can be found near Reutlingen where a people mover crosses a multi-lane federal highway. Since 2006 another people mover crosses the railway tracks near Altbach in the German federal state of Baden-Wuerttemberg. Both systems are used intensively and work very reliably.

Source:

Deutsche Bahn AG: Erster People Mover in Berlin in Betrieb genommen / Kombination aus Aufzug und Brücke (de), www.db.de - Das Unternehmen – Presse – Presseinformationen – 15.06.2007 (22/10/2007)



Example 11 **Transformation into an Accessible Public Transport System**

City (country) **Bucharest (Romania)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment	city bus tram	engineering/technology approach financial support measure

Project description

RATB (Regia Autonoma de Transport Bucuresti), the largest transport operator of buses, trolleybuses and trams in Romania, have made it their task to improve the accessibility of public transport in Bucharest, the sixth largest city in the European Union. One example of the backlog in this field is, that by 2004 only two percent of the bus fleets in Bucharest were accessible for people with reduced mobility which contributes to the social exclusion of disabled people. RATB worked together with the Municipality of Bucharest, which financed the purchase of 500 low-floor buses and 100 low-floor trolley buses with special facilities to provide a better access for people with reduced mobility. In addition, RATB modernised two Ikarus buses. Because of the positive user response the Municipality decided to purchase 500 more of these buses. By 2008 the whole bus fleet is expected to be accessible.

Concerning trams, the infrastructure has been improved; at the moment 30% of the tram stops are accessible. The Municipality will purchase 100 low-floor trams in the future. The interchange between different transport modes is also accessible, because street infrastructure is being modernised by the Bucharest Municipality, too. In addition, the Municipality plans to modernise and improve trams and trolleybuses, to purchase elevators for people with motor impairments, to install mobile platforms for the underground train, and to improve the infrastructure of public transport in Bucharest.

Source:

Eclipse: Law inspires Design for All Solution, http://www.eclipse-eu.net/Images/Deliverables/European_Practice_Review.pdf, p. 47 (20/10/2007)



Example 12 **Introduction of Low-Floor Buses in New EU Member Countries**

City (country) **Budapest (Hungary)**

Similar service in: Bratislava (Slovakia), Nicosia (Cyprus), Riga (Latvia), Tallinn (Estonia), Valletta (Malta), Vilnius (Lithuania), Warsaw (Poland)

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	city bus	engineering/technology approach

Project description

The low-floor bus is an engineering achievement that can be found almost everywhere in Europe. In Central and Western Europe in particular there are many cities that nowadays have a bus fleet of entirely low-floor buses. In many cities, as in Budapest, low-floor buses are the first step to an accessible public transport system.

In general the passenger compartment has a floor that is considerably lower than that of conventional models. The vehicles have a stepless entry and often an area without seating next to at least one of the doors where wheelchairs and baby carriages can be parked. Low floors in buses can be complemented by a hydraulic or pneumatic “kneeling device,” which can be used when the bus is at a stop. The bus can then tilt to the side where passengers get on and off. This technology creates a gapless transition between vehicle and adapted stop. Without such a kneeling device, wheelchair users use either an automatic or a mechanical ramp, which is operated by the bus driver. These technologies also make it much easier to get in and off the bus for people with difficulty walking (like the elderly) and those with baby carriages.

The Budapest Transport Company (BKV) introduced the first 50 low-floor buses in 2001. There are currently already 115 low-floor buses operating on 16 lines with more than 200 accessible bus stops. Furthermore 15 new low-floor trolley buses have been introduced.

In short, conventional buses with step entries make it impossible for wheelchair users to board the bus by themselves. This is why low-floor buses are an important development for motor-impaired persons in particular, because in combination with adapted kerbs disabled passengers can easily get on and off the vehicle.

Source:
ECMT: Hungary, <http://www.cemt.org/topics/handicaps/develop/Hdev02.pdf> (07/11/2007)



Example 13 **Transport Action Plan to Support Accessibility in Public Transport**

City (country) **Burgos (Spain)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	city bus	engineering/technology approach financial support measure organisational/operational support awareness building

Project description

In the field of public transport, the conditions for mobility-reduced persons in the city of Burgos do not meet the minimum demands at all. Around 75% of the bus stops, for example, are insufficiently accessible. To change this situation, the main actions of the transport plan will focus on improving bus stops and the access to buses and other public transport vehicles by installing bus-boarding platforms. Connections between bus and other modes of transport will also be considered. In addition, information on transport accessibility will be provided through the use of electronic panel displays and a special map will be worked out to indicate accessible places and mobility possibilities. To make the public aware of equal mobility for all individuals, a promotional campaign will be started.

So far audio information points and passenger information display panels have been tested and installed on urban buses, as provided for in the transport action plan. Preparations are under way for a study of urban bus stop accessibility, and proposals for criteria to evaluate the bus stops with regard to accessibility for “all” have been made. It is expected that eight percent of insufficient accesses will have been upgraded for mobility-reduced people as a result of the project.

Source:

CIVITAS: Access for mobility impaired people in Burgos, http://www.civitas-initiative.org/measure_sheet.phtml?lan=en&id=306 (23/10/2007)



Example 14 **Construction of Barrier-Free Low-Floor and High-Floor Tram System**

City (country) **Cologne (Germany)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	tram	engineering/technology approach organisational/operational support

Project description

In 1991 the local public transport provider in Cologne, Germany, decided to develop a low-floor east-west oriented tram network. The process of establishing the low-floor system encompassed many different steps: New vehicles were ordered, mainly in the 1990s. Several stations and stops were reconstructed with Hermeskiller Platz as a particularly positive example. The tracks were rebuilt at this station, tactile paving was installed at the platform edge to give visually impaired people necessary information, and covered bike racks were built.

In December 2003 an expert inspection of the public transport network advised that the mixed use of low-floor and high-floor vehicles on the same line should be avoided. Low-floor vehicles should be concentrated on special lines whereas high-floor vehicles should be used on others. The platforms in the high-floor network should have a standard height of 90 centimetres. This advice was implemented in the following years and several stations were rebuilt. Additionally, new low-floor trams were ordered in 2004.

Upgrading an existing public transport system to barrier-free public transport is a long and expensive task. The local public transport provider in Cologne has already reached a high standard and will continue to improve the situation.

Source:
 DER NAHVERKEHR 11/2005: Auf dem Weg zur Barrierefreiheit (de), pp. 26-33



Example 15 **Underground with Special Features for Mobility-Reduced People**

City (country) **Copenhagen (Denmark)**

Similar service in Bilbao (Spain)

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	underground	engineering/technology approach financial support measure organisational/operational support

Project description

The metro in Copenhagen is specially designed to be used by disabled people with as little assistance as possible. To achieve this aim planners use dialogue with disability organisations and a 1:1 model of a metro car to clarify boarding and alighting conditions and determine movement patterns and handrail positions.

The results of these arrangements for visually impaired and blind persons are: lifts from street level to platform, platform doors at tunnel stations, uniform floor surfacing with “guideways”, delays announced on the loudspeaker system, emergency call points, CCTV (Closed Circuit Television) surveillance and island platforms at all stations. Measures on the train are: level-floor train boarding, increasing tone before doors close, appropriate handrail placement, shielded sitting areas, anti-trapping device on door edges and no “chair legs” with space for guide dogs.

For deaf and hearing-impaired persons the special arrangements are: information pole display at entrance, static information at concourse level, information displays on platforms, inductive loops at call points, light signals that indicates door closing, information signs and displays on-board trains.

For wheelchair users special bays were built on the forecourts, and ticket dispensers and validation machines were mounted at a maximum height of 1,200 mm. The lifts and level-floor train boarding make it easy for wheelchair users to enter the train. Inside the train there are priority areas with enough space for wheelchair users, folding seats for companions, call points at a maximum height of 1,200mm, anti-trapping device on door edges and appropriate handrail placement. In addition to that there are train stewards on board to help anybody who needs assistance.

Source:
 Metro Copenhagen: Travel Information for Disabled, www.m.dk/en/disabled (19/10/2007)



Example 16 **Travel Assistance in Public Transport for PRM**

City (country) **Dresden (Germany)**

Similar service in Dublin (Ireland), Essen (Germany)

specific service for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment	city bus tram	financial support measure organisational/operational support

Project description

Dresden, the capital of the free state of Saxony in Germany, relaunched a travel assistance service for socially excluded customers of public transport (the project is called MOSE). It can be used for any kind of undertaking such as errands, administrative aspects, excursions or leisure activities.

The service personnel consist of 15 employees and are especially trained to meet the needs of disabled. Their main task is to accompany the people who are reliant on help so that they can arrive at their destinations safely. In this way travelling by tram or bus should be as comfortable as possible. The service leads to more independence and provides easier access to public transport. The escort service must be ordered in advance via telephone within a certain time frame and also only runs Monday through Friday from 7am to 6 pm. The personnel pick up the clients from the tram/bus stop or even from their homes.

There is no extra fee charged, users only need their regular public transport ticket. As this service is not an additional transport service, people who want to use it should also be able to use regular public transport. The travel assistance service is handled by the local public transport operator (Dresdner Verkehrsbetriebe AG).

Sources:

DVB AG: DVB-Begleitsdienst, <http://www.dvbag.de/aktuel/ausgabe.asp?url=398> (de) (18/10/2007), <http://www.dvbag.de/service/mose.asp> (de) (18/10/2007)



Example 17 **Accessible Light Rail Transit System**

City (country) **Dublin (Ireland)**

Similar service in Alicante (Spain), Bilbao (Spain), Porto (Portugal), Stockholm (Sweden),
Valencia (Spain)

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	tram local train	engineering/technology approach financial support measure organisational/operational support

Project description

LUAS (Irish for speed) is the name of the light rail transit system in Dublin that aims to provide an accessible and attractive mode of public transport unique for Dublin. It is compliant with current accessibility standards and offers accessibility for all. The system is especially focused on people with mobility and sensory impairments and offers full wheelchair access as well as adapted surfacing, furniture, stop facilities, large visible signage, audio announcements and destination displays. It was designed in consultation with disability groups.

With entry to the cars at the same height as the platform and long ramps for easy access to the platform, the system is especially accessible to people with motor impairments. In addition there are two specially designed areas in the tram for wheelchair users. Four priority seats for those with special requirements are also reserved.

For the visually impaired changes in level inside the tram are highlighted with a yellow stripe, and an audio signal sounds when the wide doors are closing and will not open again until the tram is positioned correctly at the next stop. There are numerous bright yellow handrails for optimum visibility. For guide dogs there are spaces under the designated seats. Through displays in upper and lower case lettering and automatic audio announcements passengers are provided with information such as the next station name.

The platforms are paved with tactile bricks and there are emergency help points from which anybody can set up a connection to the Central Control Room and be watched by the staff via CCTV (Closed Circuit Television) system.

Implementing staff training and awareness initiatives further enhances the accessibility of the system. On LUAS’s web page there is a downloadable newsletter which serves as a one-stop guide to facilities for people with impaired mobility. Information in accessible formats is available from the Veolia Transport system and includes a tactile map of a tram as well as audio and Braille information. Passengers with a Department of Social Family Affairs (DSFA) pass and pensioners travel free on LUAS.

Source:
 LUAS, Dublin's Light Rail Tram System: Accessibility Newsletters: www.luas.ie/accessibility.php (19/10/2007)

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Example 18 **Transport for All Programme – Accessible Bus Fleet and Awareness Campaigns**

City (country) **Dublin (Ireland)**



good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	city bus	engineering/technology approach awareness building

Project description

In addition to the newly implemented light rail transit system (LUAS, see example 17), there has also been a change towards more accessible public bus transport in Dublin. In January 2000, the local public transport provider in Dublin, “Dublin Bus,” decided to buy only low-floor wheelchair-accessible buses in the future. As of now, low-floor buses make up over 50% of the fleet and operate on one third of the routes. The low-floor network will increase as the company replaces 100 buses per year with the goal of having all of their services fully accessible by 2012.

The new buses have, among others, the following features:

- low-floor single-step entry
- kneeling suspension to further reduce entry step height
- retractable ramp at entrance door
- a priority space for a wheelchair user (but only for one!) which may also be used for a buggy
- wider aisles for customer comfort
- increased headroom
- improved interior lighting and heating
- improved grip bars
- palm activated bell pushes
- high visibility electronic destination displays on the front of buses

In addition, Dublin Bus has introduced a programme to raise awareness about accessible services among the disabled community. This programme shows how the “Transport for All” project has developed and new accessible services are presented. Upon request a low-floor bus can be supplied so that people can experience the new features of the bus without any time pressure. A disability consultant also takes part in this event.

Sources:

Dublin Bus: Travel Assistance, http://www.dublinbus.ie/your_journey/pdf/travell_assistant_brochure.pdf (21/10/2007)

Dublin Bus: Accessibility, http://www.dublinbus.ie/your_journey/accessibility.asp (21/10/2007)



Example 19 **Driver Disability Awareness Training**
 City (country) **Dundee (UK)**
 Similar service in London (UK), Sevilla (Spain), Wuppertal (Germany)

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment	city bus	awareness building

Project description

Travel Dundee is a member of the UK Bus Division of National Express Group and operates a comprehensive network of high frequency local bus services within the city of Dundee. The disability awareness training for the drivers of Travel Dundee started in 2004 and 263 of 270 drivers are now trained. The training is part of a ten-unit programme, in which module five, Helping Passengers with Special Needs, is the one that relates to disability awareness training. Around 98% of the drivers have completed the module on disability awareness, as it is compulsory for Travel Dundee drivers. The training takes around one hour and consists of a video using real disabled people (not actors) about the needs of mobility-reduced people and how the driver can help them.

A wide range of disabilities is featured within the training: hearing, learning, sight, deafness and mobility are made familiar to the participants. The video concludes with a summary of eleven "helpful hints." Additionally, the driver gets a booklet that explains the benefits of awareness towards mobility-reduced persons for all passengers and the company. Basic sign language and definitions of different types of disability are included in the booklet.

In the final part of the project, which takes part in Travel Dundee’s low-floor buses, drivers are shown, and practice, the usage of different types of ramps and how to kneel the bus correctly. They also practice assisting each other as they play the roles of people with different disabilities. Equipment for clean ramp operating is also given to the driver.

In addition to the driver disability awareness training it is worth mentioning that 100% of the bus fleet of Travel Dundee is low-floored.

Sources:
 The Scottish Government: Driver Disability Awareness Training: Travel Dundee,
<http://www.scottishexecutive.gov.uk/Publications/2006/05/16145515/11> (20/10/2007)
 Travel Dundee: www.traveldundee.co.uk (20/10/2007)



Example 20 **Waiting Room for People with Impaired Hearing**

City (country) **Dusseldorf (Germany)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... hearing impairment	local train long-distance train	organisational/operational support financial support measure

Project description

People with hearing impairments often have long distances to cover in order to see their friends. Dusseldorf main station is a hub that many young people with hearing impairments cross on their way to school or to work. Thus, it has always been a convenient meeting place and there have always been young people who extend their wait times at the station in order to see friends.

On the first of September 2007, a special waiting room was opened to host these young people and to give them a comfortable place to communicate. A Dusseldorf-based institution runs the room for disabled people, which is called Educon GmbH. The project is co-financed by the German railway company Deutsche Bahn AG, which declined to charge monthly rent, by “Aktion Mensch” and by the Wohlfahrtspflege and Kämpgen-Stiftung foundations.

Two social workers, each working part time, are stationed in the room as contact people for users of the waiting room. The social workers are also hearing impaired. There are currently plans to include a third employee in the team in due course. The room is open weekdays from 1:30 pm to 7:30 pm and Saturdays from 2 pm to 6 pm and is closed on Sundays. It has been well-used from the beginning, there are always between 15 and 30 young people using the room, and that number is rising. Since all of the young people using the room have hearing impairments, communication there is mainly done by sign language.

The patron of the project is the Prime Minister of the federal state of North Rhine-Westphalia, Dr. Rüttgers.

Sources:

WDR: Warteraum für Gehörlose (de),

http://www.wdr.de/themen/nachrichten/nrw_kompakt/2006/05/060530_warteraum_gehoerlose.jhtml (05/11/2007) and personal information by the station manager and the person responsible for the project (email from 30/10/2007)



Example 21 **Mobility Training Programme for Blind Pupils**

City (country) **Edinburgh (UK)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... visual impairment	city bus	organisational/operational support awareness building

Project description

At the Royal Blind School (RBS) in Edinburgh an individual programme to assist independent travel for pupils was launched. All pupils attending RBS enter the training scheme, which consists of six stages. Each stage signifies a specific level of “skill” and denotes “boundaries” for which pupils are allowed to travel unassisted.

The scheme is graded and colour-coded passes indicate each pupil’s current level of mobility independence. All RBS staff are aware of the mobility-training scheme and are familiar with the coloured passes. The aim of this programme is to develop mobility skills and techniques to enable the pupils to travel in variety of outdoor environments, both on foot and using public transport.

In the first level of training (white pass), “basic” skills are practiced to allow pupils to move safely and confidently within the school building itself. In further stages, pupils progress to mobility skills required for external environments and to the use of canes. In advanced stages the mobility training key skills are include moving in relevant bus stop locations. Part of the final stage (black pass) is using of buses and trains by oneself.

Source:
The Scottish Government: Mobility training for pupils of the Royal Blind School,
<http://www.scotland.gov.uk/Publications/2006/05/16145515/12> (19/10/2007)



Example 22 **Accessible Bus Terminal with Accessible Lighting and Colour Contrasts**

City (country) **Espoo (Finland)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	city bus regional bus	engineering/technology approach financial support measure organisational/operational support

Project description

The Tapiola Action Plan (Tapiola is a district in the city of Espoo) for a new accessible bus terminal was carried out in 2006. The aims were to examine the suitability of accessible solutions produced in the ELSA programme (see example 28) and to estimate ways to utilize the solutions in the planning phase.

In the first phase material was collected from previous ELSA projects dealing with accessible public transport environments, from the SuRaKu project (Guidelines for the planning, construction and maintenance of public outdoor facilities), the Finnish Public Transport Association infracards and external as well as Internet sources. After experts had evaluated the feasibility of the assembled ideas and measures, they selected proposals for their own measures in Espoo. Before application began, certain areas were selected for special examination. Finally the results were implemented according to the planning phase.

The planning of Tapiola bus terminal demonstrates possible improvements of accessibility through small measures. Reconstruction of the bus terminal’s entire lighting system was used to enhance accessibility by implementing a clear lighting hierarchy to highlight different routes. Embedded LED lights indicate the bus stops themselves.

The planners of Tapiola bus terminal point out that all measures proposed in the project can also be applied to the planning phase of other similar targets.

Within the ELSA programme there was another project dealing with accessible lighting and colour contrasts in public transport terminals and related environments. The target groups of this project were ageing and visually impaired people, a growing population in Finland whose interests need to be more fully considered in future independent mobility planning.

User tests were conducted in public transport stops in Espoo and other Finish cities. Entrance and platform areas, underpasses and stairs were selected for special examination. Working methods within the project were very widely and included among other field investigations, user and lighting surveys, accessibility surveys for plans, modelling and laboratory user tests of contrast markings. The outcome of the project was the establishment of new guidelines for the outdoor lighting of public transport facilities. These guidelines are now recommended for use in the planning and maintenance of public transport stops, terminals and related environs.

Sources:

ELSA: Tapiola Action Plan for an Accessible Bus Terminal,
http://www.elsa.fi/English/hankeyhteenvedot/08_ELSA_hankeyhteenveto_ESTEETTA_en.pdf (06/11/2007)
 ELSA: Accessible Lighting and Colour Contrasts in Public Transport Terminals and Related Environments,
http://www.elsa.fi/English/hankeyhteenvedot/07_ELSA_hankeyhteenveto_VALOIS_en.pdf (06/11/2007)

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Example 23 **User Tests of Accessible Bus Stops and Driver Training**

City (country) **Espoo (Finland)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	city bus regional bus	engineering/technology approach financial support measure awareness building

Project description

New guidelines for the dimensioning and planning of accessible bus stops were tested by drivers and passengers along the route of Espoo public transport line 19 in Puolarmetsä, as planned by the ELSA (see example 28) project "Accessible public transport line 19 in Espoo." Tests were undertaken which involved driving to the stops and testing the functionality of equipment used to make sure the guidelines were working and meeting the requirements of drivers and different passenger groups.

Three separate test rounds were organised to test the functionality of the stop for drivers and passengers. Firstly the driver drove an empty bus on the stop, secondly a test group travelled on the bus and lastly the same test group used the stop.

As a result of the tests the new model for accessible stops is suitable for passengers in need of high-level accessibility and is well designed in terms of approachability by bus. In the contract plan more detailed requirements for construction should be recorded and in particular planning for the surroundings of the stops needs to be extended. More attention should also be paid to the planning of accessible stop shelters.

To guarantee the enhanced accessibility supported by the new bus transport facilities, appropriate driving behaviour and knowledge of how the technical fittings work are crucial. Driver training and refresher courses are therefore important and can also teach the drivers the necessary patience. It is recommended that driver training is included as a quality requirement at competitive tendering processes and that accessibility requirements are considered when schedules are to be planned. In addition, maintenance, especially in winter, is crucial for guaranteeing an accessible public transport system.

Once the new accessible bus stop is accepted, the plan is to implement it on a wider scale in Espoo as well as in other parts of Finland.

Source:

ELSA: User Tests of Accessible Bus Stops and Education Plan for the Drivers of Accessible Bus Routes,
http://www.elsa.fi/English/hankeyhteenveto/11_ELSA_hankeyhteenveto_TESTELI_en.pdf (06/11/2007)



Example 24 **Booklet about Accessible Customer Service in Public Transport**

Country **Finland**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment	city bus regional bus tram underground local train long-distance train	organisational/operational support awareness building

Project description

This booklet offers excellent guidance for practitioners like bus drivers or service personnel at stations about how to deal with disabled passengers. In an interesting and clearly laid out manner, and without any sense of criticism, various obstacles during travel are presented. The booklet lays out important principles for making travelling not only possible but also reliable, safe and pleasant for everyone.

The following four types of obstacles to mobility are stated:

- physical obstacles, such as changes in level when accessing a vehicle
- lack of information, such as insufficient or complex information on public transport services
- lack of trust, such as uncertainty as to whether the transport chain is functional or whether help is available when needed
- costs, such as the price of a journey or vehicle

The first chapters introduce the topic and the purpose of the booklet. Then, in each of the following chapters, the problems facing different groups of people are discussed and recommendations are made on how to ease travelling for these groups. The groups include passengers with impaired vision, deaf passengers, passengers who are hard of hearing and passengers with comprehension and speech difficulties. An entire chapter is dedicated any sudden bouts of illness that may appear.

There are boxes in every chapter with headlines like “To consider” or “Practise.” The former box includes questions like: “Have you or has somebody close to you been disabled in one way or another? Was it possible to use public transport then? If it wasn’t, what was the main reason?” The “Practise” box includes the following contents: “When you have a chance, try using a wheelchair yourself. Practise with others how to handle the wheelchair: push it over a step, fasten it within a vehicle, dismantle and assemble it”.

A comprehensive list of contacts completes the booklet. The following quote represents the spirit of the booklet: “Doing to others what you would like others to do to you is good guidance in professional life as well. Individual actions may be small, and they often require more attention than skill. In the end, these small actions help us make the world a little better.”

Source:

ELSA: Accessible customer service in public transport, www.elsa.fi/English/training/accessible_customer_service_web.pdf (03/11/2007)

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Example 25 **Guide for Improving the User-Friendliness of Information Services in Public Transport**

Country **Finland**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment	city bus regional bus tram underground local train long-distance train	organisational/operational support

Project description

The “Guide for Improving the User-Friendliness of Information Services in Public Transport” is designated as a good practice guide by the Finish Ministry on Transport and Communication. The Ministry has the long-term objective of providing intelligent and sustainable transport considering the individual rights of everyone, including mobility-reduced persons, and of providing the chance for free movement including access to basic services and information. The report is a summary of good practice instructions for public transport information that is suitable for everyone. “Suitable” means here that users can choose the information source or device they prefer to get necessary information for the whole travel system and alternative modes of transport. To guarantee accessibility for all users, information should also be provided in visible, audible and tactile forms.

The following criteria should be fulfilled by the information provided:

- *clarity* (information must be easy to read and also understandable)
- *conciseness* (information during the journey/when changing from one service to another should be short and clear, because there is little time for the user to read and understand)
- *reliability* (information needs to be valid at the moment it is presented)
- *timeliness* (the time of the presentation of information should be considered and given early enough)
- *repetition* (passengers cannot absorb all information at the beginning of the journey)
- *consistency* (information should be in agreement with other information)
- *priority* (information should be presented in order from most to least essential)

There are several information chains that could be provided. These include: electronic displays on stops, personal service, information signs and kiosks, on-board displays and fixed information in public transport vehicles, park&ride, phone services, acoustic and tactile information, real-time information and websites. A lack of the aforementioned criteria and of information on timetables, routes and instructions, may create challenges for passengers, especially for those with reduced mobility, because travelling is more difficult for them in the first place. The aim is for each passenger to easily find the best route, which means providing special kinds of information for people with motor, hearing, visual and learning impairments.

Source:

HEILI: Guide for Improving the User-friendliness of Information Services of Public Transport, www.heili.info/English%20Guide%20User.htm (26/10/2007)

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Example 26 **Information Services about the Accessibility of Railway Transport Services**

Country **Finland**

Similar service in Northern Ireland (UK)

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	local trains long-distance trains	organisational/operational support

Project description

The VR Group is a broad-based Finnish transport company that serves freight service customers and public transport customers with rail and road transport services. VR wants to ensure all of its customers a pleasant rail journey by offering targeted services to different passenger groups.

To better adapt the information services to the needs of different groups, VR offers an information package on VR's supply of on-station and on-train services for different categories of passengers. The following information is available on the Internet:

- On-train services: The company provides information in pdf-files for every train type (Pendolino trains, InterCity trains, express trains, regional trains and night trains) with a special focus on services for disabled people. The publications include pictures that illustrate which services the respective train type has and where these services are located.
- Station services: Station pages list the opening hours of stations selling train tickets and more information on services and connections at major railway stations.
- Timetables: The numerous trains with services for the disabled are indicated in the timetable by the relevant pictogram indicating the relevant supply of on-board services.

In the new passenger-car fleet, services for mobility-reduced people have already been taken into account during the design and planning phases. Services for the disabled in InterCity and InterCity2 trains are designed to enable experienced travellers to travel on their own. The new sleeping cars have been designed in cooperation with associations for the disabled.

Source:

VR: Services for different passenger categories, <http://www.vr.fi/heo/eng/palvelut/palvelut.htm> (22/10/2007)



Example 27 **NOPPA - Navigation and Guidance System for the Blind**

Country **Finland**

Similar service in The Netherlands (SONIS)

good practice for people with ...	kind of vehicle	kind of measure/approach
... visual impairment	city bus regional bus tram underground local train long-distance train	engineering/technology approach organisational/operational support

Project description

NOPPA personal navigation system is a three-year pilot project that is part of Finland's Passenger Information Programme (HEILI). It was funded by the Ministry of Transport and Communications Finland (VTT) along with several other partners and lasted from 2002 to 2004. The system was designed to offer public transport passenger information and pedestrian guidance for people with visual impairments. NOPPA is based on available personal navigation components and services and uses public service databases over Internet. The main features of NOPPA personal navigation system are:

- public transport information (timetables, route planning, real time passenger information)
- navigation (outdoor and indoor positioning, personalised route planning, route guidance, heading information, roadwork warnings)
- communication (PDA or 3G phone, speech user interface, GPRS server connection, SMS, news services)
- local information (short range radio, communication (Bluetooth), areas and points of interest)
- optional accessories (collision warning device, video camera)

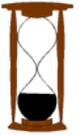
The information server is an interpreter between the user and Internet information systems. It collects, filters and integrates information from different sources and delivers the results to the user. The server handles speech recognition (e.g. from 13,200 street and destination names) and functions requiring either complex calculations or large data transfer from the Internet. The data transfer between the server and the client is kept to a minimum. The client terminal holds speech synthesis, user interface, positioning and most of the route guidance. The user interface is menu-based and selections are made with hardware buttons and speech input.

NOPPA is currently able to offer basic route planning and navigation services in Finland. In practice, the limits are that map data can have outdated information or inaccuracies, positioning can be unavailable or inaccurate, and that wireless data transmission is not always available.

Sources:

VTT (Ed.) (2004) Noppa - Navigation and Guidance for the Blind,
http://www.heili.info/raportti/loppuraportti/sivut/kirj/Noppa_eng_short.pdf (22/10/2007)
 Virtanen, A.; Koskinen, S. (2004) NOPPA - Navigation and Guidance System for the Visually Impaired,
<http://www.cemt.org/topics/handicaps/FIN-Noppa.pdf> (22/10/2007)

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Example 28 **Research and Development Programme for Accessibility ELSA**

Country **Finland**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment	city bus regional bus tram underground local train long-distance train	organisational/operational support awareness building

Project description

Though the outcome of this programme is already shown in some good practice examples presented in this report, it is worth mentioning the Finish ELSA programme (Research and Development Programme for Accessibility). ELSA is, in and of itself, a good practice example that helps enhance the accessibility of public transport and is worth repeating in other countries as well.

The Ministry of Transport and Communication’s Research and Development Programme for Accessibility, known as ELSA, was a three-year (2003-2006) programme involving several government ministries and non-governmental organisations. It was launched to support the implementation of the Ministry of Transport and Communication’s accessibility strategy. Within the programme good practice information is produced and focuses on public transport and pedestrian environments in particular. Partners in the ELSA programme were the Ministry of Transport and Communications, the Ministry of Social Affairs and Health, the Association of Finnish Local and Regional Authorities as well as public organisations and organisations for the disabled and aged.

The first goal was to increase awareness of accessibility and its importance in the municipal sector and among transport service providers, authorities and the public. The second goal was to trigger research in general, to launch and monitor R&D projects, to organise seminars and educational events, and to report project results.

The ELSA programme has funded 30 R&D projects, three academic Master's theses and educational material for public transport personnel and planners. The programme also included the coordination of a network of accessible municipalities as well as the organisation of several educational events and seminars. As a result of the programme, new guidelines, planning methods and services as well as products for practical planning, construction and customer service are now available

The ELSA working group concludes that enhancing accessibility is an important focus area for increasing equality. Altering existing working methods is important when enhancing accessibility, and should be influenced through education and information as well as through financial incentives.

Sources:

Ministry of Transport and Communication (2007) Ministry of Transport and Communication’s Research and Development Programme for Accessibility “ELSA” Final report of the working group, Helsinki, http://www.mintc.fi/oliver/upl812-LVM19_2007.pdf (26/10/2007); see also http://www.elsa.fi/English/index_english.htm (26/10/2007)



Example 29 **Barrier-Free Information for People with Reduced Mobility**

Country **Germany**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	city bus tram underground	engineering/technology approach organisational/operational support

Project description

The goal of the project “BAIM” (Barrierefreie Information für mobilitätseingeschränkte Personen, barrier-free information for people with reduced mobility, see <http://www.baim-info.de/>) is to support the active and independent participation of people with reduced mobility in public transport. This goal should be reached by continuous barrier-free information at all stages of a journey. All kinds of impairments were included in the project.

The project was initiated by a German local public transport and tariff association, Rhein-Main-Verkehrsverbund GmbH (RMV), who cooperated with five partners with know-how in the field of timetable information, data integration, automatic speech information. The partners also supported the RMV in realising the usability tests and the evaluation of the project. The project started in 2005 and will end in 2008.

First an expert survey was carried out with the goal of defining user groups of people with reduced mobility. The following main groups were identified: people who are not able to walk, people with visual impairments and people with hearing impairments. For each of those groups special information needs were identified as well as devices that are especially useful for the respective groups. Building on these findings, the second phase developed information about barrier-free public transport with a special focus on the so-called new technologies: Internet information, WAP-services and PDA information. Potential users of the information services were included intensively during all steps of the project in order to optimally adapt the new services to their special needs.

In the last stage, several information services for people with reduced mobility were realised with positive evaluation results. Examples are the exemplary implementation of regional and interregional information services, the implementation of an automatic speech information service, the inclusion of real-time information in the services and the pilot implementation of an information and travel assistance service designed especially for people with reduced mobility.

Source:
 DER NAHVERKEHR 9/2006: Fahrgastinformationen für mobilitätseingeschränkte Menschen (de), pp. 49-54



Example 30 **Engagement of Public Transport Providers for the Barrier-Free Design of Public Transport Stops**

Country **Germany**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	city bus tram	engineering/technology approach organisational/operational support

Project description

There is a broad consensus that low-floor vehicles are necessary but not sufficient for providing barrier-free public transport. However, there is no consensus to answering the question of which additional infrastructure, techniques and equipment is necessary for “real” barrier-free public transport.

This contribution presents the results of a standardised survey among 300 German public transport providers, which was carried out from the end of 2003 to the middle of 2004. The high response rate of 40 % shows that the companies are aware of and interested in the problem of barrier-free public transport. Most of the companies have a special person who is responsible for all issues related to the needs of people with reduced mobility but often this person does not really have a voice in planning decisions. The most frequent topics of joint decisions with the person responsible for the needs of reduced-mobility riders are the design of stops (50%), the development of the local public transport plans (32%) and the ordering of new vehicles (32%). In 21% of the companies, the person responsible for the needs of reduced-mobility passengers has no voice at all in planning decisions.

The number of low-floor buses amounts on average to 74% of all buses, and 40 companies have only low-floor buses. The number of low-floor trams amounts on average to 63%. Six companies have only low-floor trams. Many current activities were reported that aim at better adapting the stop design to the needs of reduced-mobility passengers. Adapting the level of the platform to the low-floor vehicles was stated as the most pressing problem, along with providing better information (acoustic, tactile, visual) at the stop.

Source:
DER NAHVERKEHR 12/2004: Haltestellen barrierefrei gestalten (de), pp. 20-22



Example 31 **National List of Disabled-Accessible Overland Buses**

Country **Germany**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	regional bus	organisational/operational support

Project description

This document gives a comprehensive and up-to-date overview of the fleet of handicapped-accessible overland buses run by German transport service companies. Listed companies operate nationwide tourist buses but also operate regional public transport. Overall, the list contains about 70 companies and 130 buses. All contact information and the number of handicapped-accessible overland buses are listed for each company. Memorable symbols help to quickly get an overview of the services of the respective companies.

The following information is listed for each handicapped-accessible overland bus by company:

- number of seats in general
- number of seats for wheelchair users
- number of lifting devices (lift, ramp, etc.)
- availability of the option to use ones own wheelchair
- availability of the option to transport handicapped people in the bus seats
- availability of the option to transport electric wheelchairs
- number of restrooms in general
- number of handicapped accessible restrooms
- number of seat belts
- number of floating seats
- number of seats on tracks
- availability of air conditioning
- availability of bus kitchens
- availability of refrigerators

The list can be ordered for free from the Bundesverband Deutscher Omnibusunternehmer (bdo) and can be downloaded from www.bdo-online.de.

Source:

Bundesverband Deutscher Omnibusunternehmer: Verzeichnis barrierefreier Reisebusse in Deutschland (de), Berlin, 2007, http://www.bdo-online.de/cms/upload/bilder/broschueren/bdo_Behindertenbusverzeichnis_Web.pdf (18/10/2007)

More information can be found at <http://www.bsk-ev.org/>



Example 32 **Mobile Internet Service Especially for Blind People**
 Country **Germany**
 Similar service in Austria, Switzerland

good practice for people with ...	kind of vehicle	kind of measure/approach
... visual impairment	city bus regional bus tram underground local train	engineering/technology approach organisational/operational support

Project description

Comprehensive additional functions of mobile phones are gaining increasing importance for their users. Nobody wants to be without SMS, phone book, diary or email. Interactive user displays further increase the comfort of mobile phones. Now there are certain devices with special large-sized fonts that might be used by people with partial visual impairment. The problem is that completely blind people cannot use such phones.

The programme “TALKS”, from the company ScanSoft, offers a potential solution for this problem. It uses an integrated loudspeaker to offer the display information in understandable language. Blind people are able to use almost the entire scope of services that modern mobile phones with Symbian-Software offer (series 60 and 80). Beginning with the current TALKS-Version 2.0, blind people have access to GPS-based navigation systems and can call up information with the WAP-browser of the mobile phone from the Internet even when they are on the go. The Wireless Application Protocol (WAP) allows the transfer of Internet information to mobile phones. Additionally, options to operate the mobile phone using Braille input and output (Talks&Braille) have been developed and are now sold in Germany, Austria and Switzerland.

The latest news is the inclusion of information about public transport into the WAP-services. The following services are offered (see <http://wap.mobilitaetsportal.info>):

Station query: After keying in a station name, all lines that service this station and can be used by handicapped persons for free are displayed. More details are displayed when clicking on a certain line.

Station descriptions: Here one can find information about station accessibility and special features that ease navigation through the station. The footway from the main entrance to the platforms is described and includes all information that is especially useful for blind people.

For both services either the name of a city, a complete station name (e.g. Heidelberg HBF), a part of the name or the licence number must be entered. Additional information about travelling for people with visual impairments who intend to use public transport can be found on the Internet.

Source:
 Seh-Netz: Visor-Info „W@P - Erstes Angebot in Deutschland speziell für Blinde“ (de),
<http://www.seh-netz.info/visor/info/01/index.php> (18/10/2007)

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Example 33 **Accessible Bus Service through New Design Standards**

City (country) **Grenoble (France)**

Similar service in Merseyside (UK)

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	city bus	engineering/technology approach financial support measure

Project description

The aim of the project is to make the bus service in Grenoble as accessible as a comparable modern tram service. This is an even more challenging task because of the lack of track guidance for buses, as opposed to trams, which makes it difficult for bus drivers to minimize the horizontal gap between the entry area of the vehicle and the bus stop.

The municipal transportation service has undertaken research for almost 20 years in order to set design standards for making bus stops accessible to motor-impaired people that are most effective. These standards are, among others, a breadth of the boarding platform of at least 2.1m, a height of the kerb of 21cm and a gradient of the access ramps at the end of the platform of at most three percent. The 21cm measure is a compromise between reducing the gap between bus and stop surface on the one hand, and minimizing the risk of damaging anything when approaching the stop (e.g. when a bus stop is in a bus bay) on the other. If the bus driver then activates the kneeling mechanism, passengers have almost no vertical step to take.

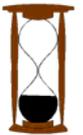
When a new kerbside stop is built, which means a boarding area that extends into the roadway, a height of 24 cm can be used because the bus approaches parallel to the platform so that there is no risk of collision between the vehicle and kerb. Another advantage of this type of bus stop is that it is easier for the driver to minimize the horizontal gap.

But even these infrastructure arrangements fail to make the bus service fully accessible for people with motor impairments. To address this issue the transportation service has installed powered ramps, which are 65cm long with a maximum gradient of 15% in the extended situation, that allow wheelchair users to easily enter the bus. In many other towns manual ramps are installed, but the powered one has the advantage of fast deployment and the driver not having to leave his cabin, which means that he does not have to apply the handbrake, turn the engine off and close the cash box and the cabin door. All of these activities obviously take a lot of time, meaning that manual ramps have a negative effect on timekeeping.

For people with visual impairments there is a safety line in a high contrast colour (to the surroundings) 60cm back from the front edge of the boarding area.

Source:
International Association of Public Transport (UITP) / European Conference of Ministers of Transport (ECMT): Improving Access to Public Transport, Paris (2004), pp. 17-18

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Example 34 **Accessible Emergency and Information Pillars at Regional Railway Stations**

City (country) **Hamburg (Germany)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	local train	engineering/technology approach financial support measure organisational/operational support

Project description

In August 2007 the first of 44 emergency and information pillars was put into operation for AKN (Eisenbahn Altona-Kaltenkirchen-Neumünster), one of the regional railway operators in and around Hamburg. By 2009 AKN will have equipped all their stations on the line between Hamburg and Neumünster and between Henstedt-Ulzburg and Elmshorn with this new technology. The costs of this project will amount to about 500,000 Euros.

In case of an emergency, the passengers can press the emergency button at any time to contact the control centre in Kaltenkirchen. The “Info”-button, on the other hand, offers for up-to-date information about the train service. All pillars have video cameras so that the employees in the control centre can see the passengers.

AKN intends to reach several goals with this strategy of safety and service. The company wants to improve the service of all announcements by enabling the passengers to directly contact the control centre. This measure concerns not only timetable information but also questions about tariffs, for instance. Doing so, they improve the objective safety at the stations but also the subjective feeling of safety. The locations of the 44 pillars were chosen according to the following criteria: they should be visible and easily accessible. The eye-catching buttons are accessible to three of the senses: sight, hearing, and touch.

Another activity of the AKN to improve safety at their stations is video surveillance. Almost all AKN-stations have video cameras and there are cameras in the 39 AKN-trains as well. Damage due to vandalism has been reduced by 50% since 2004 when video cameras were installed in all AKN-trains.

Source:
 Newstix: AKN führt Notruf- und Infosäulen an ihren Haltestellen ein (de), www.newstix.de - Suchen - AKN (22/10/2007)



Example 35 **Toy Accessible Buses and Toy Wheelchairs with Dolls for Raising Awareness**
 City (country) **Helsinki (Finland)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	city bus regional bus	engineering/technology approach awareness building

Project description

In the future, all public transport in Helsinki must be totally accessible to people with disabilities. Therefore, all future buses and trams must have a low floor, with wide doors and ramps to enable people in wheelchairs to board these vehicles easily. The platforms of the bus stops will also be raised.

Educating the general public plays an important role in guaranteeing acceptance of the daily challenges that face mobility-reduced people. To achieve maximum success it is necessary to begin educating children at a very young age. Good places to provide such education are children’s institutions like kindergarten.

Mrs Maija Konkola, who has partial vision in the corners of her eyes, is still able to design with the use of a computer and has written a storybook about an accessible bus. The story is used to promote accessible buses in Finland. It is published by the public transport company in Helsinki, reflecting the positive attitude of the bus companies towards accessible public transport.

In collaboration with a public transport provider and a manufacturer of low-floored buses, the National Association of the Disabled launched an awareness project in Helsinki that teaches children the challenges facing people with impaired mobility. To do so they have designed a toy accessible bus and two toy bus stops. There is also a toy wheelchair with a doll designed by Maija Konkola. These toys are circulated among kindergartens in Helsinki, together with abovementioned storybook. Children in kindergartens play with these toys, adding their own "passengers" like teddy bears, dolls and others, and drive the bus from one stop to the other.

The idea is to let them learn from a very young age first that people should use public transport, and second, that all kinds of people, including those with disabilities, should use the same public transport. In essence children learn that providing accessible transport systems all over the world should be self-evident. In kindergartens, for example, these toy wheelchairs can go a long way towards instilling a more positive attitude towards disability in children, towards showing them that disability is not something to be feared.

Maija Konkola says that accessibility is a must. A transportation system that is accessible to people with disabilities would serve everybody better, she says.

Source:
 DPA: Interview with Mrs Eeva Maija Konkola (1995), Accessibility in Helsinki, Finland, Integrator, Vol. 6. No s. 2 & 3 - 1996
 MITA(P)No: 039/07/95, <http://www.dpa.org.sg/publication/dpafall96/contents.htm> (24/10/2007)

Example 36 **Manual for Planning and Building Barrier-Free Transport Infrastructure**

Region (country) **Hessen (Germany)**



good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	city bus tram	organisational/operational measure awareness building

Project description

Making the transport system accessible for all has been an important goal in many countries for years. One problem is that the solutions are often isolated instead of being connected to each other. Furthermore the solutions are not consistent, and there is no generally valid framework regulating planning activities for improving the accessibility of the transport system.

The road administration of the German federal state of Hessen responds to those problems and initiated the development of a manual for planning and building barrier-free transport infrastructure. The first step of this project was to analyse existing solutions and to identify their potentials and problems.

It turned out that crossings are a critical issue for people with reduced mobility and that many problems can be seen in the way crossings are implemented to date. In many cases the kerbstone is lowered to three centimetres, which is a compromise between the needs of people with visual impairment and those with motor impairments. The manual suggests another solution by separating the different groups: the kerbstone is lowered to zero for wheelchair-users and to four centimetres for the visually impaired. Tactile paving guides the latter to their crossing section. Special warning panels are placed near the completely lowered curbstone in order to avoid blind people crossing the street there by accident.

The manual contains 24 exemplary plans ranging from simple crossings to bus terminals. People with visual and motor impairment have tested all these plans. The tests were documented and are now available on DVD along with some pilot projects. Representatives of the visually and motor impaired were included in the whole development process with the result that the evaluation of the suggested solutions was very positive.

Source:
DER NAHVERKEHR 6/2007: Unbehinderte Mobilität in Hessen (de), pp. 24-27



Example 37 **Disabled Assistance Centre by Trenitalia to Serve Travel Needs of Impaired Customers**

Country **Italy**

good practice for people with ...	kind of vehicle	kind of measure/approach
<ul style="list-style-type: none"> ... motor impairment ... visual impairment ... hearing impairment 	<ul style="list-style-type: none"> local train long-distance train 	organisational/operational support

Project description

Trenitalia is the transport company of the Gruppo Ferrovie dello Stato — Italy's state railways group. The company has established disabled assistance centres as reference points for all travel needs of disabled customers. The centres organise assistance around a circuit of 225 stations upon customers' requests. They are located in the 15 main stations and provide the following services:

- information
- seat bookings
- wheelchairs
- guides at the station and escorts to the train
- guides until the train leaves the station or to a connecting train
- lift-van for wheelchair customers
- possible hand baggage service, free upon request (one item)
- distribution of informational material

The centres are open every day from 7 am to 9 pm. The services can be requested by phone or by email. The minimum prior notification time for a service depends on the kind of service requested:

- one hour before departure between 8 am and 10 pm for connections between main stations requested by telephone or from the Disabled Assistance Centres
- twelve hours before departure for other connections between the stations on the assistance circuit
- 24 hours before departure for connections requested by email at the applicable area Assistance Centre and for international journeys

This assistance centre may lower the obstacles to using regular public transport for mobility-reduced people. In the long run, a railway system completely adapted to the needs of mobility-reduced people where no assistance is needed would be the better solution and would make the public transport even more accessible.

Source:

Trenitalia: Disabled passengers, http://www.trenitalia.com/en/servizi_per/disabili/index.html (21/10/2007)



Example 38 **Heated Pedestrian Surfaces to Ensure Safe Traffic**

City (country) **Jyväskylä (Finland)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	city bus	engineering/technology approach financial support measure

Project description

It is very important to reduce the danger of accidents, especially for people with reduced mobility who normally feel less confident than others when moving around. This becomes even more important during the winter. To ensure safe traffic the municipalities have organised a winter service that keeps the streets and pavements free from ice and snow. But it is not possible for this service to keep all streets free from this slippery source of danger.

The city of Jyväskylä has equipped some pavements with a heating system which improves the critical situation of snow and ice covered surfaces. This system melts snow and ice and makes it easier and safer for pedestrians to walk and for wheelchair users to move. But this system also benefits the visually impaired. Snow covered areas are not only difficult to walk on but also show poor contrast. With the heating system the important contrasts of the surroundings reappear and help the visually impaired orientate themselves on the pavements.

Because the city could not equip all pedestrian areas with the heating system, the municipality organised a winter maintenance programme that includes the clearance of the snow as soon as possible after a snowfall. The entire programme also helps maintain and facilitate access to the public transport infrastructure for the general public and especially for mobility-reduced people.

Source:

European Conference of Ministers of Transport (ECMT): Improving Transport Accessibility for All – GUIDE TO GOOD PRACTICE, Paris (2006), p.30



Example 39 **Pilot Project LaneLights to Signal Public Transport Crossings**

City (country) **Karlsruhe (Germany)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	tram	engineering/technology approach

Project description

Many people are familiar with this situation: during a short SMS conversation or a simple chat with the friend next to you the tram suddenly sounds its warning ring tone. Especially at highly frequented stations or blind intersections, one can easily overlook the traffic lights. The so-called lane light should help improve this kind of situation.

Originally, lane lights in the form of LED-lights that are integrated directly in the road surface were used for sign posting. Other uses of lane lights include the blocking of certain road lanes or the creation of safer pedestrian crossings.

The local public transport provider in Karlsruhe has now integrated five LED-lights perpendicular to the pedestrian walking direction at the station ZMK (Zentrum für Kunst und Medientechnologie) crossing. As soon as a tram approaches and activates the red traffic light, the LED-lights in the road surface begin to blink yellow with a frequency of two hertz. Even someone who is looking directly down at the road is warned before crossing the tracks.

The integration of these lane lights is so far a pilot project. Its costs amount to roughly 7,000 Euros. A simultaneous scientific investigation will analyse to what degree the lane lights positively influence the behaviour of the pedestrians. The method used for this analysis is ex-ante with ex-post video filming which provides the basis for the evaluation of the project. In case of a positive evaluation, more lane lights will be installed, the manager of the local public transport provider has announced.

Source:

Newstix: Verkehrsbetriebe Karlsruhe (VBK): Pilotprojekt "LaneLights" an der Haltestelle ZKM (de), <http://www.newstix.de/index.php?site=&entmsg=true&ref=RNL&mid=4871> (22/20/2007)



Example 40 **Bus Buddying – Mobility Training to Become Independent Travellers**

City (country) **Leeds (UK)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment	city bus regional bus	financial support measure organisational/operational support awareness building

Project description

Bus Buddying was established to help people with physical and sensory impairments, learning disabilities and all others who lack confidence in using public transport services. It provides one-to-one support by Bus Buddy volunteers who travel around with clients in the public transport network. Bus Buddying is considered a groundbreaking new concept and an initial step toward lowering the barriers of using accessible public transport in Leeds. When clients begin to feel more confident, the support is gradually reduced. The project results in newly independent public transport travellers within the fully accessible public transport system.

Bus Buddying is arranged in partnership with local operators, local authorities and the community (Leeds Alternative Travel, Leeds Social Services and the Transport Action Group) and is funded by the Department for Transport’s Urban Bus Challenge.

The service is designed around users’ needs with continuous development due to permanent feedback from the clients. It has been shown that Bus Buddying leads to more frequent use of the fully accessible transport service in Leeds. Thus public transport operators can increase their demand while former non-users with special needs get more flexibility and widen their mobility and travel horizons.

Here are some lessons that can be learnt from Bus Buddying for those who plan similar projects in future:

- It is crucial to train the trainers thoroughly. Here travel assistants undergo a month long induction and training. This includes disability and mental health awareness, sighted guide training, communication skills, moving and handling and monitoring by other Bus Buddies.
- The existing infrastructure must be fully accessible through the support of driver training and awareness campaigns.
- Permanent feedback from clients (e.g. through an evaluation sheet) is important in order to adapt the service continuously to meet the requirements of future clients.
- Also highly important are a multi-agency training and the use of experience and good practice provided by other agencies.

Source:

pteg: Bus Buddying, www.pteg.net – Publications – Reports – Social Inclusion and Transport, p. 50 (07/11/2007)



Example 41 **Integrated Barrier - Free Public Transport**

City (country) **Linz (Austria)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	city bus tram mountain railway taxi	engineering/technology approach financial support measure organisational/operational support awareness building

Project description

The local public transportation service has implemented or would like to implement a variety of arrangements to make their services easier for disabled people to use. To approach the goal of a barrier-free public transport in Linz, the current situation is discussed in periodic meetings with different organisations for people with impairments.

For people with visual impairments there are tactile guiding systems, including tactile paving and labels on the handrails, and tactile route maps at the stops. There is also a service called DISA (Digitale Sprachausgabe – Digital Voice Output) which makes the stop display information accessible for people who cannot read it. The service works with voice output whose volume is automatically adapted to surrounding noise. DISA can be activated by a pushing a button on the information pillar or with a special device. The timetable data on the Internet, which includes route planning, is designed so that it can be broadcast by voice with corresponding software. This helps users gather pre-trip information.

For people with motor impairments, all buses are low-floor and have a kneeling mechanism, which allows them to lower the entrance area to the same level as the stop surface. The “Cityrunner” trams are built with 100% low-floor technology, ample space, buttons that are easy for wheelchair users to reach and special comfort seats with handholds for elderly people. If the stops are not already designed for the accessibility of disabled people, there are ramps in the tram that make them step-free to enter. To give motor impaired people the option of using a taxi, one cab is equipped with special features like a kneeling mechanism, a ramp and enough space for non-foldable wheelchairs. This cab is used in the normal taxi service but also as a collective on-call taxi with regular fares. It is important to note that in this system the taxi must be called well in advance of the desired trip, because the single equipped taxi requires a longer trip to the boarding point. For people with hearing impairments it is important that the collective on-call taxi can be called by e-mail or fax as well as by phone.

The Linz AG Linien intends further activities to make their services more accessible to all. Their plans include staff training and awareness initiatives which would provide more barrier-free taxis and the modernisation of the historic “Pöstlingbergbahn” (mountain railway) to the same standard as the “Cityrunner” trams.

Source:

Albert Waldhör, Linz AG Linien: Barrierefrei unterwegs mit den Linz AG Linien (de), www.ibft.at/upload/tagung/Salzburg/de/07.Vortrag_Waldhoer.pdf (22/10/2007)



Example 42 **Awarded Efforts for Improving the Accessibility of Public Transport**

City (country) **Ljubljana (Slovenia)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment	city bus regional bus tram	engineering/technology approach financial support measure organisational/operational support awareness building

Project description

The city of Ljubljana has made a great effort to improve the accessibility of its public transport. These efforts were awarded in 2004 when Ljubljana was named the official winner of the European Mobility Week award. The award recognises local action to promote sustainable transport in European cities and towns. Special focus was given to permanent measures taken in favour of the accessibility of disabled people, which was the theme of last year’s European Mobility Week.

Ljubljana's local authorities have launched several permanent measures in line with the European Mobility Week Charter, including:

- installing ramps for wheelchair users in the passenger centre of the local public transport operator
- increasing the number of parking places for people with disabilities
- organising a round table, in close cooperation with the Slovenian National Council of Disabled People, about bus and bus stop accessibility and the attitude of drivers towards disabled users

Ljubljana Public Transport (LPP) has also confirmed its commitment to continue its efforts in favour of disability-friendly local buses, taking into account the specific needs of disabled users (access for wheelchair users, information in alternative formats for visually impaired people and awareness training for the drivers).

Source:

Disability World: Ljubljana's commitment to accessibility, recognised by the European Mobility Award 2004, http://www.disabilityworld.org/04-05_04/access/ljubljana.shtml (03/11/2007)



Example 43 **Making Public Transport in Metropolitan Areas Accessible for All**

City (country) **London (UK)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment	city bus tram underground local train	engineering/technology approach financial support measure organisational/operational approach awareness building

Project description

The local public transport providers in London go to great lengths to increase accessibility for people with reduced mobility. In the summer of 2007, Transport for London (TfL) announced that nine out of ten buses were accessible. At the same time, the London Underground (LU) announced that it would invest more than ever before to make the Tube better accessible for people with reduced mobility. It intends to make 25% of Tube stations stair-free by 2010 with the aim of increasing this number by 50% by 2015. Currently, 44 of 275 stations are stair-free. Full details about these stations can be found in the Tube access guide (see <http://www.tfl.gov.uk/assets/downloads/tube-access-guide1-october2006.pdf>, 21/10/2007).

Stair-free accessibility is marked on the Tube map. Further information is available from the Customer Service Centre, which can also provide audio versions of the Tube map. At the stations the staff are ready to assist people in need, and there is no need to pre-book this service. All front-line staff is trained in how to assist blind and partially sighted passengers as part of their disability equality training. Priority seats are being introduced on platforms and in the trains, identified by signage. Tactile warning surfaces are being installed on every platform.

There are still roughly 300mm steps into the train and gaps at many stations. Some innovative ways being piloted to decrease the step-gap between the platform and the train, including platform humps (at London Bridge, Wembley Park and on the Waterloo and City line), and changes to track height (on the Central and Jubilee lines). There are further activities to make public transport in London accessible for all in the field of bus transport, railways, trams, taxis and river travel.

The Docklands Light Railway (DLR) was the first fully accessible railway in the UK. All DLR stations have a lift or ramp access to the platforms, with level access onto the trains. The gap between the platform edge and the train is approximately 7.5 cm wide and the step up or down from the platform to the train is approximately 5 cm high. All buses are low-floor vehicles (excluding Heritage buses), which means that the bus floor is lowered to street level when the bus stops and the doors open. All access to trams is step-free. There is no need to use ramps or any other special features to board the trams. To assist blind passengers and people with visual impairments, each stop has a tactile stripe along its entire length at safe distance from the platform edge. All licensed taxis are accessible to people using wheelchairs, and most have a variety of other features to make access easier (see example 44). A special guide for people with learning and reading disabilities was developed and can be downloaded from the Internet.

Sources:

Transport for London: <http://www.tfl.gov.uk/>, <http://www.tfl.gov.uk/gettingaround/transportaccessibility/1167.aspx> (21/10/2007)
 KITE: http://129.13.189.198/kite/wiki/index.php/Making_the_Tube_accessible_for_all (21/10/2007)

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Example 44 **The Taxicard – Subsidised Barrier-Free Taxi Use**

City (country) **London (UK)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	taxi	engineering/technology approach financial support measure organisational/operational support awareness building

Project description

A measure to enhance the accessibility of public transport in London was the introduction of “the most accessible taxicab” as the standard taxicab. The National Disability Discrimination Act forced that action in 1995. The taxi can be used at any time by a wide range of customers: non-disabled, wheelchair users, walking impaired people, parents with kids, etc. The new cabs are higher and wider than the previous ones and are equipped among other things with access for power chairs, swing out seats with strategically placed handles, an integrated child seat, an induction loop for communication with the driver and a pull-out under-floor ramp. The taxis can be hired directly on the street but also pre-booked by telephone.

As a method of subsidised door-to-door transport, “Taxicard” was introduced to increase the independence and the mobility of disabled people who have serious impairments. It provides user subsidies directly for each taxi trip so that in most cases there is only a flat fare to pay (up to a certain maximum – depending on the daytime – boroughs pay the rest of the regular fare). As a result, Taxicard holders get an average discount of 80% on their taxi ride costs.

The introduction of accessible cabs accompanied the launch of a “Disability Equality and Customer Care Training for London’s Taxi Drivers.” It is developed by experienced Disability Equality Trainers who are disabled people from diverse backgrounds. The programme takes place as a consultation with a focus group of disabled taxi-users and licensed taxi drivers (disabled or non-disabled). The main aim is to help drivers deliver professional service and meet legal duties. The training course is divided into the following sessions: What is Customer Care?, Understanding Disability Discrimination, The Law, Assisting Disabled People, Questions and Evaluation.

Sources:

- European Institute for Design and Disability: Law inspires Design for All Solutions, <http://www.design-for-all.org> (19/10/2007)
- Transport for London: Taxicard, <http://www.tfl.gov.uk/gettingaround/1197.aspx> (19/10/2007)
- TEC Taxicard: <http://www.taxicard.org.uk> (19/10/2007)
- EMTA: Detailed presentation of some door-to-door services, http://www.emta.com/IMG/pdf/Fiche_London.pdf (19/10/2007)
- EMTA: Workshop on Door-to-Door services (proceedings), http://www.emta.com/article.php3?id_article=271 (19/10/2007)



Example 45 **Accessible Double Deck Trains Improve Local Transport**
 Country **Luxemburg**
 Similar service in Poland

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	local train	engineering/technology approach organisational/operational support

Project description

To provide a comfortable ride in the local train system for mobility-reduced persons in particular, the national train operator in Luxemburg CFL (Chemins de Fer Luxembourgeois) has introduced a new generation of accessible double-decker trains with low-floored ground floors.

This development, combined with adapted platform heights at stations that match the vehicle floor heights, allows stairfree entry, making it easy for visually and motor-impaired people to enter the train. Wide doors complement the comfortable entrance. The lower levels of the trains have spacious multifunctional compartments, which offer plenty of space for multiple wheelchairs. Accessible restrooms are located next to these compartments.

The information systems inside the trains benefit visually and hearing-impaired people in particular. On both levels there are large displays showing upcoming stations and connections in real-time. Electronic loudspeaker announcements in the train provide journey information.

In addition to that new train fleet, CFL offers a service that provides information about facilities in accessible stations. The scheme can be downloaded from the webpage.

Sources:

- CFL: Personnes à Mobilité Réduite, www.cfl.lu - Les profils clients - Personnes à Mobilité Réduite (fr) (08/11/2007)
- News-Ticker: Bombardier erhält Auftrag über 55 Millionen Euro für Doppelstockwagen der neuesten Generation in Polen (de), http://www.news-ticker.org/pmt.php?news_id=4360903 (08/11/2007)



Example 46 **Access Panel and Disability Advisory Group – Consulting Disabled People**

City (country) **Manchester (UK)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment	city bus regional bus tram underground local train long-distance train	financial support measure organisational/operational support awareness building

Project description

When planning an accessible transport system it is often difficult for transport planners to put themselves in the shoes of mobility-reduced people. To guarantee regard of this target group and to ensure their representation, GMPE (Public Transport for Greater Manchester) has started an access panel.

The 200 members of the panel, who represent people with a broad range of impairments, meet up to four times a year. All consultations take place in accessible venues and the given information is available in several languages and formats. The methods of contact differ and depend on the preferences of the attended members, e.g. self-completed questionnaires, telephone surveys and focus groups.

A smaller working group of this panel, the Disability Advisory Group, meets every month to discuss access and issues of mobility-reduced people in detail. Therefore GMPE provides training and background information to get sound advice on transport services and facilities.

The outcome has already been used to improve transport services. The aim of the access panel is to recruit about 200 additional members to expand the well-founded continuation of the project.

Projects like the access panel of GMPE are essential to providing a public transport system that uses the input of mobility-reduced people to guarantee optimal meeting of the needs of PRM.

Source:

pteg: Access panel and disability advisory group – consulting disabled people, www.pteg.net – Publications – Reports – Social Inclusion and Transport (01/11/2007)



Example 47 **Visual Mapping Scheme for People with Learning disabilities**

City (country) **Montrose (UK)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... cognitive/learning impairment	city bus	organisational/operational support awareness building

Project description

This case study is based in Montrose, a town of 15,000 people on Scotland's east coast, approximately mid-way between Aberdeen and Dundee. Here an innovative programme was established to assist independent bus travel for clients with learning disabilities who attend an Adult Resource Centre in Montrose.

A visual mapping scheme was developed in order to make sure that people with learning disabilities could use public services wherever possible. The scheme consists of a set of photographs of relevant landmarks that are part of any given journey. Members of the Angus Transport Working Group (a voluntary body) take photos of en route landmarks (e.g. buildings, street signs, bus stops). To take the photos, the volunteers initially accompany clients on the journeys they intend to make. Captions are then added in consultation with clients (e.g. "This is where I catch my bus," "I get off at the stop after this public house," etc.). The photos are then put into photo wallets. Clients carry these when making their journeys and are initially accompanied on these journeys, until both carer-givers and clients are confident that the journey can be made safely. For more seasoned travellers the photo wallets provide an invaluable backup. Important bus stops are marked with large yellow triangles to further facilitate independent travel.

By mid 2002, four individuals had travelled independently to the resource centre. By April 2005, this figure had grown to 43. Although the scheme was introduced primarily to facilitate independent travel to/from the resource centre, many clients (as they become more confident and independent) are now making other journeys using the visual mapping system (e.g., trips to local cafes and swimming pools). The same principles described above are utilised to develop visual maps for these journeys. The growth in individuals' confidence achieved by the visual mapping scheme has allowed many to travel more widely while giving them more independence and making public transport more accessible.

The visual mapping system is based on individual journeys. As such, the principles of the system can be applied to any journey and are thus transferable to other towns and cities.

Source:
The Scottish Government: Visual mapping scheme: Angus Council, <http://www.scotland.gov.uk/Publications/2006/05/16145515/9> (21/10/2007)

Example 48 **Accessible Local Transport with a Guidance System for Visually Impaired People**
 City (country) **Munich (Germany)**



good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	city bus tram underground	engineering/technology approach organisational/operational support

Project description

For 20 years the local public transport provider MVG (Münchener Verkehrsgesellschaft) has been consistently extending their accessible public transport system on both road and track. The MVG’s work offers numerous good practice measures, some of which are presented below.

96% of the trams are low-floored and accessible for motor-impaired people. In 2008 the entire fleet will be low-floored. In addition, ramps, escalators and lifts are standard equipment in Munich public transport. Almost every tram has a visual and acoustic service providing information about the various stops and lines. So far 80% of the tram stops are accessible and offer expanded stop areas and lowered kerbs. New lines are designed to be totally accessible and have tactile surfaces. In Munich only low-floor buses, which first went into service here, are used. Since 2004 many of the bus stops have been accessible and have offered more comfort for visually impaired people. An orientation stripe on the surface leads the visually impaired transport user directly from the pavement to the front door of the bus. In addition many measures for better accessibility have been put into place in the underground system, a vital part of Munich’s public transport system. New underground trains are equipped with wider doors, chamfered door sills and considerably more space for wheelchairs. Furthermore, there are grip bars on the doors and an interphone system for communicating with the driver, which is also accessible to wheelchair users, has been installed. 92 out of 93 underground stations are equipped with wheelchair-accessible entry. Tactile stripes on the platform surface with a width of 20 cm are standard. Much attention had been paid to the choice of colours and contrasts of fonts, signs and safety devices.

A new visual orientation system was developed in cooperation with the local advisory board of mobility-impaired people, mobility experts and experts in the field of design and cognition. Basically there are three objectives to be achieved: better orientation, easier ascertainability of information and optimised readability. For better cognition the essential information is concentrated on a few central points in the stations. Quick ascertainability is ensured with the differentiated illustration of different information, a consistent adjustment of the information on the signs and different information carriers for different types of information. Uniform typefaces, optimised type sizes and harmonious colours guarantee good readability of the information.

This package of measures is supplemented by a communication concept to ensure that the right individuals receive important information. An electronic announcement indicates the line number and direction if there are two underground trains at the same departure place. Special maps and the electronic timetable give information about accessible underground trains and stations. In the future, using continuing cooperation, the MVG plans to enhance their system and upgrade their offers for mobility-reduced people.

Source:
 Regionalverkehr 7/8 - 2007: Barrierefrei unterwegs (de), pp. 40-41



Example 49 **Speaking Bus Stop – Accessible Information for People with Visual Impairment**

City (country) **Münster (Germany)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... visual impairment	city bus	engineering/technology approach organisational/operational support

Project description

People with visual impairments now get timetable information by a spoken announcement at five bus stops in Münster, Germany. The first bus stop with such a service was the bus stop Picasso-Museum and was implemented in July 2007. This service is the first of this kind in the German federal state of North Rhine-Westphalia. Overall five test installations were put into operation in the whole area of Münster in 2007. Special stickers label all stops with such a speaking unit.

To date public transport users get real-time information on the departure of buses via LED-displays at central bus stops. The plan is to equip all these stops additionally with speaking units especially for people with visual impairment. The contents of the dynamic display are converted into acoustic information. A key press can activate the speaking unit and the contents of the electronic LED-display with information about the bus departure are spoken. The following information is read aloud: the bus line number, the destination and the departure time. The display contents are converted by speech module into spoken language, and the synthetic voice is hardly distinguishable from a personal announcement. So far additional information, like line changes due to accidents, is not spoken, but this information will be added in due course.

The implementation of the speaking units and the test phase is realised in close cooperation with visually impaired representatives. They take care of integrating the speaking units into a comprehensive system of barrier-free bus stops. The visually impaired people are guided to the speaking unit by a line of special natural stones of about 90 centimetres in width so that they are easily able to find the information pillar and the button to start the speaking unit. The button must be held down for several seconds in order to avoid activating the speaking unit by accident.

After the test-phase, all of the 48 real-time information units in Münster will be equipped with speaking units.

Source:

Newstix: Münsters sprechende Bushaltestelle - barrierefreie Informationen für Blinde und Sehbehinderte: Stadtwerke Vorreiter in NRW (de), <http://www.newstix.de/index.php?site=&entmsg=true&ref=RNL&mid=5441> (22/10/2007)



Example 50 **Mobility Management for People with Motor and Learning Impairments**

City (country) **Navarra (Spain)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... cognitive/learning impairment	city bus taxi	organisational/operational support awareness building

Project description

This project focuses those who have mobility and learning difficulties and need to go to hospitals, health centres or day care centres on a daily basis.

The project has four stages. The first involves the creation of an “Inventory” of the existing assistance services and programmes available. The inventory is used to identify and define the mobility needs of the users as a way of understanding the travel demand for these groups. The second stage analyzes the current supply of modes of transportation and supportive mobility management measures. Building on the results of stages one and two, the third stage undertakes a comparative assessment between supply and demand with the goal of finding out the gaps and requirements. Finally, the fourth stage identifies conclusions and plans for implementing mobility management measures (including accompanying measures such as the regulation of transport) and any required adjustments to the legal framework. The following mobility management services were successfully developed and implemented by the government of Navarra:

- Refurbishment of local buses and taxis: 35.2% of buses and 15 taxis have been refurbished and are now accessible for wheelchair users.
- Information & Advice: Information on mobility management is provided to key policy makers who are planning to open a new day care centre.
- Socio-Sanitarium Plan: The development of a mobility plan is compulsory for all day care centres.
- Establishing Partnerships: An Interdepartmental Committee (local authority: health, transport & communications, social welfare and culture) was created.
- A Manual of Good Practice (containing recommendations) for users, operators of transport and personnel in the day care centres was developed

Source:
FGM-AMOR (2003): Mobility management strategies for the next decades (MOST) – final report, D 9, Annex 1, <http://mo.st/21/10/2007>



Example 51 **Excellent Long-Term Commitment to People with Reduced Mobility**

City (country) **Nuremberg (Germany)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	city bus tram underground	engineering/technology approach financial support measure organisational/operational support awareness building

Project description

The striving for barrier-free public transport has a long history in the city of Nuremberg. As a result of local public transport provider VAG (Verkehrs-Aktiengesellschaft Nürnberg) Nürnberg’s commitment, the European Conference of Transport Ministers (ECMT) rewarded VAG Nürnberg for its serious and long-term commitment to barrier-free public transport in 2003.

In the 1970s, the VAG had already built elevators in every underground station. In 1980, information about the special needs of people with reduced mobility was collected in a comprehensive survey. Based on this survey the “Nürnberger Modell” was developed. It is composed of the following measures: In every metro station there are lifts designed to meet the special needs of people with reduced mobility; there is control equipment for people with visual impairment; and there are almost no differences in level when boarding the trains. All buses and trams are low-floor vehicles and the station design considers the special needs of people with reduced mobility. Also the vehicles’ interior equipment was adapted to suit the special needs of people with reduced mobility. Information is another important pillar of the “Nürnberger Modell.”

Additionally, the VAG is in permanent dialogue with those with reduced mobility and their respective organisations in order to discuss projects in the early planning stages and to be able to design measures that optimally meet the needs of the mobility-reduced.

Source:

DER NAHVERKEHR 10/2003: Ausgezeichnetes Engagement für mobilitätseingeschränkte Menschen (de), pp. 30-34



Example 52 **“Infomobi” - Internet Information Service for Mobility-Reduced Persons**

City (country) **Paris (France)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment	city bus regional bus tram underground local train	organisational/operational support awareness building

Project description

Besides other restrictions, lack of information is also an important barrier for mobility-reduced people when using or electing not to use public transport services. If they cannot easily inform themselves about the local and regional supply of the mobility infrastructure for barrier-free and equal travelling, they are not attracted to use these services.

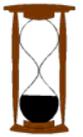
Infomobi is an information service for all people with reduced mobility living in the Ile de France region in and around Paris and is accessible by telephone, e-mail or website. It provides real-time information about the accessibility of public transport services with special concern for mobility-reduced people. The website (www.infomobi.com) is divided into four information categories according to different user groups: passengers with motor, visual, hearing and cognitive impairment.

The service gathers information from RATP (Régie autonome des transports Parisiens – Paris Transport Association providing bus, tram, metro and heavy rail services), SNCF (Société nationale des chemins de fer français – French national railway providing suburban rail services) and OPTILE (L'Organisation Professionnelle des Transports d'Île-de-France - a federation of 80 private bus operators around Paris), and includes a lot of information about stations equipment, e.g. the number of lifts and other facilities. The call agents are able to give detailed information about walking distances, lift locations and where people can seek assistance during their journey. If for a specific request no mainstream transport service is accessible, the user of the information portal can contact the door-to-door transport reservation centre.

Sources:

EMTA: Detailed presentation of some door-to-door services, http://www.emta.com/IMG/pdf/Fiche_Paris.pdf (31/10/2007)

Eclipse: Paris Accompagnement Mobilité, France, http://www.eclipse-eu.net/Images/Deliverables/European_Practice_Review.pdf, (31/10/2007)



Example 53 **Personal Electronic Navigation in the Metropolitan Underground System**
 City (country) **Paris (France)**
 Similar service in London (UK)

good practice for people with ...	kind of vehicle	kind of measure/approach
... visual impairment	underground	engineering/technology approach organisational/operational support

Project description

In big cities like Paris and London the metropolitan underground plays an important role in public transportation. The metropolitan railway systems of London and Paris have an interest and a duty to provide improved facilities for visually impaired persons.

The TIDE project (technology initiative for disabled and elderly people) aims at raising the level of information available to blind or partially sighted users on the underground systems of London and Paris and therefore to help blind or partially sighted people find their way. The navigation system, developed by a consortium involving organisations representing blind and partially sighted people, industries and universities, will make it easier for users to find specific features of the underground system such as ticket areas, barriers, stairs, escalators, platforms and other obstacles and will provide information to aid orientation.

The visually impaired user of the system wears a receiver and can access information only on personal demand at key points in each station where several beacons are mounted. The blind or partially sighted user will receive messages or information from the beacon, using modulated infrared beams, in an appropriate European language. Simple messages such as the user's location within the station and how to proceed to another part of the station are fixed in time, but information like the destination and time of the next arriving train vary with time. The user can decide whether to access the information available.

Source:

CORDIS: Orientation by Personal Electronic Navigation, <http://cordis.europa.eu/en/home.html> - Information Services - 10. Projects - Orientation by Personal Electronic Navigation (24/10/2007)



Example 54 **Tactile Relief Models and the Touch and Sound Atlas**
 City (country) **Paris (France)**
 Similar service in Mannheim (Germany)

good practice for people with ...	kind of vehicle	kind of measure/approach
... visual impairment	city bus regional bus tram underground	engineering/technology approach organisational/operational support

Project description

The public transport network of Paris consisting of metro lines, buses and trams is one of the largest systems in the world. With the new relief models and the touch and sound atlas the city made a big step forward to an accessible public transport system for visually impaired. After a design and production process of two years IVM (Institut pour la Ville en Mouvement) puts public transport into relief and large print.

The first result was a touch and sound atlas of the Ile-de-France Region’s public transport networks. It includes relief and large-print maps of the regional metro, railway and tram lines; the main bus lines in Paris; and bus services to the forty regional centres around Paris. Recorded information, which describes the routes and provides tourist information on the areas around the main stations, are available on CD.

As a second result touch-based orientation relief models were installed in three metro stations. With both projects, Paris was the first big city worldwide to provide a system that enabled visually impaired persons to enjoy the mobility and access that everyone else takes for granted to Paris’s great cultural sites. These systems, including hundreds of lines, thousands of stations, and relief and large-print maps, make route planning easier and help people visualise the areas they are intending to visit.

Source:
 IVM: Mobility in the city for blind or partially sighted people – from intention to action,
<http://www.ville-en-mouvement.com/uk/actionpamuk.htm> (20/10/2007)



Example 55 **Talking Sign System RNIB React to Move More Savely and Easily**

City (country) **Portsmouth (UK)**

Similar service in Birmingham (UK), Brighton (UK), Trieste (Italy), Vilnius (Lithuania)

good practice for people with ...	kind of vehicle	kind of measure/approach
... visual impairment	city bus regional bus tram underground local train long-distance train	engineering/technology approach financial support measure

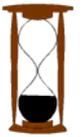
Project description

RNIB (Royal National Institute for the Blind) React is a high technology solution offering a talking sign system to help people with visual impairments move more safely and easily in society. It can be used in train and bus stations but is not limited to any specific public transport system.

As in other talking sign systems the disabled person carries a small device from which it is possible to activate an audio message. The message can contain information about their current position and how to orientate in the surroundings and may also provide real-time information like delays in public transport vehicles. The system supports people with visual impairments in different languages. The administrator of the system can change the settings on the device via a Bluetooth connection from his PDA so that it is not necessary to hand in the device for updates.

RNIB is a charity organisation that works solely with visually impaired people, so it can be assumed that its members have a good idea of the problems these people face and develop their products in such a way as to tackle these problems.

Source:
 RNIB Training and Consultancy, RNIB React:
www.mib.org.uk/xpedio/groups/public/documents/PublicWebsite/public_B2B_React.hcsp (31/10/2007)



Example 56 **Midibus-Service to Guarantee Accessibility to Medical Facilities**

City (country) **Prague (Czech Republic)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	city bus	engineering/technology approach organisational/operational support

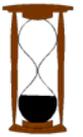
Project description

In the Czech capital a regular bus within a narrow street city district (Karlovy area) has been introduced. The aim of the measure is to satisfy in particular the transport demands of people with reduced mobility. Within the Karlov area there are many medical centres and a hospital but the local street network made it inaccessible for standard public transport vehicles. Therefore, before the new service was launched, patients, visitors and employees of medical centres had to walk from far away underground stations or tram stops.

At first several routing options were tested and finally the current option was chosen because it met the requirements of specifically designed transport services but also served as a regular bus line for everybody. Because of the measure’s objectives and the narrow street network it was necessary to use easily accessible, small-sized vehicles – midibuses. Consequently there was a public tendering process on delivery of suitable vehicles.

The implementation of the new midibus line was preceded by local surveys and other discussions in order to specify the location of stops, traffic signs etc. The information campaign was launched in daily press and in magazines published by the Municipal District Authority.

Source:
CIVITAS: Accessibility of Medical Facilities, http://www.civitas-initiative.org/measure_sheet.phtml?lan=en&id=320 (19/10/2007)



Example 57 **Information System for People with Visual and Hearing Impairments**

City (country) **Prague (Czech Republic)**

Similar service in Dresden (Germany)

good practice for people with ...	kind of vehicle	kind of measure/approach
... visual impairment ... hearing impairment	city bus tram	engineering/technology approach financial support measure awareness building

Project description

The APEX company in cooperation with the Czech association for the blind has developed a command set for people with visual impairments. The first city that successfully implemented this system was Prague in the Czech Republic. Dresden is the first German city to apply this system.

The basic components of the system are a pocket transmitter and receiver that communicate with equivalent devices in the tram or bus and can thus inform the user about the route number and the direction of travel of buses or trams. It is also possible to activate a voice system giving the same information as shown in the real-time information display at a station like service number, final destination and departure time. A further function of the command set is the possibility to activate an acoustic orientation signal to locate a specific place thereby helping the user navigate through railway stations.

When a bus or a tram approaches the station, the line number and the final destination are announced via loudspeaker when pressing a key on the pocket device. This facilitates better navigation, especially at stations where several different lines run. When the user of the pocket device presses the key for a second time, the driver of the vehicle is informed that a person with a visual or hearing impairment is going to board the vehicle and that he needs to pay special attention. Pressing the key for a third time activates the announcement of the next station.

A transmitter and receiver cost about 300 Euros, but in Prague users get this cost reimbursed by the Czech Department of Social Affairs. For the fitted control unit in bus, tram or train, and for the sound beacon with voice announcement attached to the real-time information display, approximately 1,350 Euros are needed.

In Dresden all modern low-floor trams have the system integrated so that by 2010 all trams will be equipped with this system. About 40 of the 150 Dresden city buses already have the system and new buses will all have it installed, too. The system costs around 600,000 Euros. 90% of this sum is funded by federal money. The costs of the hand-held transmitter in Dresden are about 90 Euros but so far have to be paid by the user itself.

The drivers of the vehicles get special training to better prepare them to use the system.

Sources:

International Association of Public Transport (UITP) / European Conference of Ministers of Transport (ECMT): Improving Access to Public Transport, Paris (2004), pp. 32-33

Newstix: Praxistest bestanden: Sehbehinderte vom neuen Informationssystem der Dresdner Verkehrsbetriebe (DVB) AG begeistert (de), <http://www.newstix.de/index.php?entmsg=true&ref=RNL&mid=1820> (22/10/2007)

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Example 58 **Local Public Transport Accessibility Plan Provides Barrier-Freedom**

City (country) **Saragossa (Spain)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	city bus	engineering/technology approach organisational/operational support awareness building

Project description

The City Council of Saragossa initiated a public transport accessibility plan which started in 1999 and lasted three years. One of the three main objectives of the project was to enhance total accessibility for mobility-impaired people in the field of public transport. In addition to that, the whole city had to be improved to guarantee a high quality of life for all citizens and to promote public transport.

To achieve this aim several measures were taken. In the field of infrastructure a high demand route with 45 new stops was adjusted to allow total accessibility. The bus stations are equipped with adapted platforms that guarantee access to buses without a gap between vehicle and bus stop as well as with additional bus ramps to complete. Furthermore 73 bus stops on other bus lines were adapted.

In addition, the vehicle fleet has been improved. Since 1999 all new buses belonging to Saragossa’s public transport provider are low-floored and have easy-access ramps. A special door-to-door service is provided to complement the public transport system. The latest specific transport management takes advantage of a newly developed computer programme and offers special training for mobility-reduced.

In future a programme of actions will help continue with the adjustment of the public transport system. Illuminated panels will give information about bus line directions and stops, and a study of the use of loudspeakers in the current system is already underway. 400 bus shelters with tactile paving, height indicators and information in Braille will be installed at bus stops.

With these measures and future plans, Saragossa is taking a big step in the direction of becoming a city with accessible transport for all.

Source:
 ManagEnergy: Public transport accessibility plan, www.managenergy.net/products/R1411.htm (30/10/2007)



Example 59 **Public Transport for Everyone in a Sparsely Populated Rural Area**

City (country) **Siilinjärvi (Finland)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	regional bus	engineering/technology approach financial support measures organisational/operational support

Project description

Demographic development has led to many rural areas experiencing a worsening in access to facilities and services. Traditionally, transport services for disabled people in rural areas were provided separately, if at all. Following the goal of a fully integrated society including rural areas, public transport services must be made fully accessible to people with various disabilities. Therefore unconventional forms must be developed to reflect the realities of operation in their any given locality. The municipality of Siilinjärvi in eastern Finland, an area of over 500 km², with a population density of 38 per km², has found an innovative solution for accessible public transport: A single accessible minibus is reserved for day-centre use for four hours per day, and then used as a dial-a-ride service for public users. The dial-a-ride serves different areas on different days of the week.

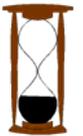
A key feature is the provision of transport for two-day centres: A work centre for disabled people and a day centre for elderly people. The only fixed stop during the dial-a-ride operation is the bus station that is served once an hour. Booking can be done by telephoning the Travel Dispatch Centre (TDC), operated by the city of Kuopio. TDC staff enters telephone bookings into a special Finnish software program that schedules the trips, organises routes, and informs the vehicle’s driver via a vehicle data terminal. The bus is owned by a private bus company which provides the drivers. The vehicle has sixteen seats plus accommodation for two wheelchair users. There is also one extra wheelchair in the bus, e.g. for moving elderly or physically disabled people who have difficulty walking on icy ground, for example. The taxis used have four to eight seats. The scheme has been advertised in local newspapers, and in leaflets distributed to households. Agencies working with disabled people have sent letters to their clients.

Any licensed operator may bid for work, with contracts awarded for one year. The greatest users of the scheme are elderly people and disabled people: 75% are over 70 years and 22% use some kind of mobility aid. Research shows the following reasons for using the service: shopping (57%); banks, pharmacy and offices (29%); medical (seven percent); recreation (four percent) and day care centres (three percent). All normal bus tickets are valid, with some additional concessions (e.g. a special price for passengers over 65 years, wheelchair users free, etc.) The normal national smart card system and regional card systems are valid.

The total gross operating cost is 77,366 Euros per year. Fare revenue covers about 30% of costs. Central government contributes to the TDC's costs. The remaining costs are met in equal shares by the municipality and the provincial government. About half of the passengers say that their mobility has increased since the scheme’s introduction. The bus is often full and an extension of the scheme is planned.

Source:
 VIRGIL: Rural Transport guide: SIILINJÄRVI Service Line, Finland,
<http://www.eltis.org/docs/studies/VIRGIL%20Rural%20Transport%20Guide.pdf>, p. 14 (26/10/2007)

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Example 60 **Real-Time Electronic Passenger Information Boards**

City (country) **Sofia (Bulgaria)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... cognitive/learning impairment	city bus tram	engineering/technology approach organisational/operational support

Project description

Providing accessible information on public transport systems to make them more attractive to mobility-impaired people has become more and more important during the last years.

In 2003 the City Public Transport Company of Sofia installed 92 special electronic scoreboards that show real-time information about the arrival times of city buses and trams in the main public transport stops in the centre of the city. The Dispatch Centre sends information from the location of the vehicle to each scoreboard enabling the estimated time until the next vehicle arrives to be shown. This service was introduced to make it more comfortable for the citizens of Sofia to receive information about the public transport offer.

This measure is a very useful improvement for people with cognitive impairments in particular, since it is easier for them to obtain information from a scoreboard where only the number of the next line and the remaining minutes till arrival are shown rather than reading and comprehending more complex timetables. In addition to that, these people are well prepared when the bus or tram arrives, because they already know the number of the line arriving. Therefore uncomplicated access is enabled with no hectic search for the number of the arriving line.

In summary, the real-time electronic passenger information boards are good features allowing people with cognitive impairments to get information on arrival times more easily. Thus the measure enhances the accessibility of the public transport system for these people.

Source:
ELTIS: Sofia City Public Transport - Real-Time Electronic Passenger Information Boards,
http://www.eltis.org/study_sheet.phtml?study_id=1558&lang1=en (07/11/2007)



Example 61 **Accessible Airport Link Arlanda Express**

City (country) **Stockholm (Sweden)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	local train	engineering/technology approach financial support measure organisational/operational support awareness building

Project description

The Arlanda Express train service connects downtown Stockholm with the Arlanda airport and is operated by a private company. Although it is used for a regional train distance, it has more characteristics of a long-distance train with high speed and few stops. The train cars and the surface of the platform are on the same level so that it is easy for motor-impaired people to enter. The staff can bridge the remaining horizontal gap upon request with portal ramps. The central train car of the Arlanda Express is specially designed for wheelchair users with enough space for them and a lavatory equipped for disabled people. Assistants of disabled people can travel free of charge, as can guide dogs for people with visual impairments.

As a special service for impaired people the Arlanda Express offers a personal assistant who brings you directly from the platform to the desired terminal at the airport, if the service is ordered at the beginning of the journey. This can be done by contacting the train staff in the Arlanda Express or, if the passenger is arriving by plane, by contacting the airline staff. The “Special Transport Services Card” from Stockholm County Council is also valid for this train service, meaning that there are no extra costs for local people with impairments.

Sources:

Interview done by Adolf Ratzka (Stiftelsen Institute for Independent Living, national contact person within PTaccess) with Ken Gammalgård (HANDISAM, national authority for coordination of national disability policy) (September 2007)

Arlanda Express: Simplicity and comfort for everyone, <http://www.arlandaexpress.com/> (31/10/2007)



Example 62 **Information Brochure on Barrier-Free Public Transport Mobility**
 City (country) **Stuttgart (Germany)**
 Similar service in Dresden (Germany), London (UK)

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	city bus tram local train mountain railway	engineering/technology approach organisational/operational support awareness building

Project description

The German city of Stuttgart puts a lot of effort into supporting people with reduced mobility. One important part of those activities is providing information, as it is not enough to provide a service alone. Rather, people have to know and accept a service before using it. This brochure is a good example of how to inform people with reduced mobility about public transport services.

The document of about 40 pages gives a comprehensive overview of barrier-free public transport in Stuttgart. The first two chapters deal with the way to the stop and with special features of the vehicle that allow easier use for people with reduced mobility.

The next three chapters each focus on a special group of people: those with motor impairment, those with visual impairment and those with hearing impairment. Each of these three chapters is divided into similar sections: before you start, crossings, stops, elevators, trams, light railways, buses, rack railways. The last two chapters deal with training services and give an overview of sources for further information.

The whole document is clearly and attractively designed and contains many illustrations and pictures. Every page deals with one special topic like elevators, for instance. There is some short text explaining which buttons they have, how they can be used, etc. Pictures further illustrate the text and show all relevant features. This combination of text and pictures makes reading convenient and facilitates easy understanding.

Almost all over ground platforms are accessible by ramps. There are very few exceptions and there are plans to rebuild these in due course. There is real-time information about the waiting times and about the length of the approaching trains. Many stops and stations have emergency pillars that are often combined with a camera so that the service centre can see the person calling. The interior of the vehicles is described on several pages with information on how to open the doors, etc.

A plan of the whole network of public transport in Stuttgart shows that people with reduced mobility can board buses, trams and light railways at almost all stations.

Source:
 SSB AG: Ungehindert mobil - Gewusst wie . . . - im Umgang mit Bus und Bahn (de),
http://www.ssb-ag.de/de/die_ssb/publikationen/broschuere_ungehindert_mobil/br_brosch_behind.pdf (22/10/2007)



Example 63 **Developing an Accessible Bus Pilot Line by Surveying**

City (country) **Tampere (Finland)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	city bus	engineering/technology approach financial support measure awareness building

Project description

The Tampere city transport line number 25 is a pilot project developed by the Tampere Department of City Planning and Infrastructure Management, Tampere city transport and organisations for disabled people. It is also part of the ELSA programme (see example 282828). All parts of the door-to-door principle of accessibility were surveyed, from the customer information needed before the journey to the customer service provided by drivers.

The results show that there are several ways to promote accessibility including implementation of barrier-free bus stops, driver training, informing of passengers and amendments to the purchase criteria for buses. Some of the proposed measures for the stops of line 25 were immediately implementable, whereas others must be done in connection with other road maintenance work.

As this example shows, it is crucial to have as many parties in the planner consortium as possible. In Tampere, for instance, the infrastructure management of Tampere is responsible for the development and maintenance of bus stops, routes to stops, fitting levels of stops, traffic lights and signs; advertising companies are responsible for the fitting level of stop shelters and plot owners are responsible for the maintenance of the sidewalks.

To evaluate the project, a user team consisting of various passenger groups was formed. This user team examined the stops along line 25, as well as local transport terminal areas, buses, the Tampere city transport service point and various passenger information products. While travelling on the route the characteristics of the line, passenger behaviour and driver performance were all examined. Procedures and methods were charted by observing the service provided by drivers and the personnel of the service point.

In addition 300 respondents filled out an Internet survey. With this passenger-centred approach, the survey increased understanding about the needs of various passenger groups and about the limitations of its own operations. Future co-operation between all parties involved will be sought.

Source:

ELSA: Accessible Pilot Line: Tampere City Transport Line 25,
http://www.elsa.fi/English/hankeyhteenvedot/02_ELSA_hankeyhteenvedo_TKL25_en.pdf (07/11/2007)



Example 64 **References to Contrast in Bus and Rail Vehicles**

Country **UK**

good practice for people with ...	kind of vehicle	kind of measure/approach
... visual impairment	city bus regional bus local train long-distance train	organisational/operational support

Project description

In addition to tactile information, audio warning systems and audio and visual travel information, colour contrasts play an important role for visually impaired people in distinguishing between surfaces and finding their way.

In the report “Implementation of research-based UK regulations for public transport vehicles with particular reference to contrast in bus and rail vehicles,” Chris Fielding analyses the importance of colour usage in the field of public transport, especially in rail vehicles, buses and coaches. Partially sighted people should be able to identify individual features of the mentioned means of transport easily. However, the references are also adaptive for other types of vehicles, e.g. trams and underground trains. The report refers to “Project Rainbow,” funded by the Engineering and Physical Sciences Research Council and the Department of the Environment, which made it their business to end the lack of knowledge about colour contrast in the field of public transport.

Some highlights of report are as follows: in rail and bus vehicles the colour contrast of external doors should be provided, so that people can easily identify them against the rest of the train when standing on the platform. Door controls should also have a different colour to guarantee an easy use, especially in emergency situations. The highlighting of steps with the help of contrasting stripes is very useful to avoid stumbling. Due to movement, the inside of trains and buses is often an unstable environment making contrasted handrails important for safety. In trains especially, a constant colour scheme helps identify the different sections, like vestibules or dining cars. Boarding ramps should also be made visible through special colour marking. Particularly in buses, external information displays should be indicated clearly and with high-contrast. UK regulations state that a difference of at least 30 points should be considered to provide a proper level of colour contrast.

In addition to the content of the guidelines described here, other factors could be included as well. For example the designers of public transport vehicles should also be made aware that visibility (from far, for people with limited vision ability) of the vehicles is an important issue too.

These are just a few examples of how to improve the situation for visually impaired people. In combination with tactile information, audio warning systems and audio and visual travel information, they offer concerned persons better quality of life.

Source:
Implementation of research-based UK regulations for public transport vehicles with particular reference to contrast in bus and rail vehicles, International Congress Series, Volume 1282, September 2005, Pages 1007-1010, Vision 2005 - Proceedings of the International Congress held from 4 to 7 2005 in London, UK - Science Direct: Project Rainbow, <http://www.sciencedirect.com> – Quick Search (Title, abstract, keywords): contrast in bus and rail vehicles (20/10/2007)

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Example 65 **Introduction of Accessible Waterbuses**
 City (country) **Venice (Italy)**
 Similar service in Amsterdam (The Netherlands)

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment	waterbus	engineering/technology approach financial support measure

Project description

Waterbuses are an important part of the public transport system in Venice. In the past the accessibility of motor impaired people was not provided for. The new boats combine the best techniques available and offer disabled inhabitants of Murano Island the chance to arrive at the bus terminal and reach the Mainland without changing boats. The project for the construction of 20 new accessible waterbuses was approved in 2004. By the end of 2006 the public transport provider ACTV (Azienda Consorziale Transporti Venezia) was already operating 15 waterbuses.

To reduce the impact on the physical environment, hulls were adapted in order to reduce superficial wave action. The shipyards and RINA (Registro Italiano Navale), a society for the classification of merchant ships, supervised the construction of the waterbuses and official tests have been made to guarantee a high standard for mobility-reduced users of the waterbuses. In the future it is expected that motor impaired people’s overall travel time between Murano and the Mainland will be reduced by half.

Source:

EST: Introduction of low impact, access for all waterbuses in Venice,
http://esteast.unep.ch/default.asp?community=est-east&page_id=A3B523E5-1778-4B4D-AFD5-67BAF872276D (20/10/2007)



Example 66 **Barrier-Free Access for Motor- and Visually Impaired**

City (country) **Vienna (Austria)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	city bus tram underground local train	engineering/technology approach organisational/operational support

Project description

About ten percent of the Austrian population is handicapped. The Vienna local public transport provider has implemented measures to integrate these people and to enable them to participate in public transport. These activities are based on the federal constitution that claims that nobody should be discriminated because of his handicap. The local public transport provider in Vienna is committed to this goal.

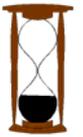
All underground stations have comprehensive navigation systems for people with visual impairments. Every station has elevators to guarantee barrier-free access to the platforms. Ramps have been integrated into all metro trains and city buses. The entrance height of the new low-floor trams can be further reduced by so-called “kneeling-devices” by up to ten centimetres if necessary. The first door always has a collapsible ramp that is ideal for wheelchair users and baby carriages. There are only small gaps between the tram and the stop, and these are reduced to zero when the ramp is in use. Kerbside stops help to reduce the level difference between the platform and the vehicle and allow for barrier-free boarding.

The end goal is to enable all people to participate in public transport and thus in societal life without external help. All measures for developing and improving an accessible public transport system are designed and implemented in close cooperation with the public transport provider and representatives of people with reduced mobility.

Source:

Wiener Linien: Mobilität für alle – Barrierefreier Zugang für Fahrgäste im Rollstuhl (de), http://www.wienerlinien.at/WienerStadtWerke/DOWNLOAD/WL_Mobilitaet_Broschre.pdf (31/10/2007)

More information can be found at www.wl-barrierefrei.at



Example 67 **Introduction of an Ultra Low-Floor Tram**

City (country) **Vienna (Austria)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	tram	engineering/technology approach financial support measure

Project description

The ULF (Ultra Low-Floor) tram is a vehicle with a floor height of only 190 mm at the entrance area. This is just the height of a normal sidewalk, so that it is easily accessible for motor-impaired people. Even at its highest point the floor is never more than 205 mm above the ground, which is 100 mm less than in other low-floor trams. This becomes possible with a new technological approach that uses complex electronical steering of the traction motors instead of axels. In addition the ULF tram has a kneeling mechanism that allows levelling the entrance height individually to the specific situation at the stop with a maximum lowering of the floor to only 100 mm above the ground.

The areas at the front and at the end of the tram are for multi-purpose use and also have enough space for wheelchair users. For entrance to these areas, the first and the last doors are equipped with ramps. These are either automatically or manually extendable. On the infrastructure side, kerbside stops are built so as to allow impaired people to enter and leave the tram safely.

The interior is specially designed to the needs of visually impaired people. Because this group of passengers initially had trouble identifying the doors, they are now marked from the outside with a stripe in a high-contrast colour. 300 trams of this type will come into use in the Vienna public transport service “Wiener Linien” by the year 2014 and more than the half of them are already in regular daily service.

Source:

Wiener Linien: Mobilität für alle – Barrierefreier Zugang für Fahrgäste im Rollstuhl (de), http://www.wienerlinien.at/WienerStadtWerke/DOWNLOAD/WL_Mobilitaet_Broschre.pdf (31/10/2007)



Example 68 **Acoustic Underground Orientation System POPTIS**

City (country) **Vienna (Austria)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... visual impairment	underground	engineering/technology approach organisational/operational support

Project description

POPTIS (Pre–On–Post–Trip–Information–System) is an acoustic orientation system offered by the transport operator “Wiener Linien” in the underground network of Vienna.

On a CD-ROM all possible footpaths in stations of the U3 underground line are explained to visually impaired people. The user gets the information from the computer or on the go from a pocket CD player. The CD-ROM is divided in tracks and each station matches one track. Every track is subdivided in trips that respectively match one footpath. The CD fully explains the following: boarding, disembarking, changing platforms, transferring from the underground to a tram, transferring from bus lines to the underground, as well as all recommended footpaths and alternatives routes in the case of interruptions.

POPTIS is used:

- to support trip preparations
- as a guide and aided recall for visually impaired people
- as assistance for private study
- as road safety education for teenagers at schools for the blind
- for the education of persons, losing their site
- as a guide for managers of mobility trainings

The test phase for the pre-trip function began in November 2004. As of now the description for the underground lines U1, U3 and U4 are available on the “Wiener Linien” homepage. Additionally, an automatic, selective text transmission is planned, provided that the positioning via mobile phone is enhanced.

On their webpage, the “Wiener Linien” provides a lot of information and explanations about the system: how it works, how to use it, important definitions and behaviour recommendations in unexpected situations.

Source:

Wiener Linien: POPTIS (de), <http://www.wl-barrierefrei.at/index.php?id=8034> (20/10/2007)



Example 69 **Development of Accessible Public Transport in a New EU Member State**

Region (country) **Vilnius (Lithuania)**

Similar service in Kaunas (Lithuania)

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	city bus local train long-distance train	engineering/technology approach financial support measure organisational/operational support

Project description

In Lithuania, especially in the regions of Vilnius and Kaunas, several measures have been taken with the aim of filling the accessibility gap in public transport for mobility-reduced persons.

The municipality and the Council of Blind and Visually Handicapped People of Vilnius and Alytus Counties have introduced a program on public transport adaptability for people with visual impairments. Acoustic information systems are now installed in 312 of 321 trolleybuses. Furthermore, visually impaired people are equipped with special devices that help them hear information out of speakers installed close to the front doors.

The visual information system on scoreboards available en route for people with hearing impairments and people with orientation difficulties is implemented in Vilnius and Kaunas. For social support, motor-impaired people can book a transport service from the city municipality centre. Information on timetables and routes of specially designed low-floor vehicles for mobility-reduced people are available on the Internet and marked in yellow.

In smaller towns and suburbs new bicycle paths, which are also wheelchair-accessible, were constructed. In 2005 passenger platforms in train stations were improved, and comfortable entrances, new lighting, slip-proved pavement, new pavilions and seating-accommodation were built. Two special ticket offices accessible for people with visual and hearing impairments and new escalators were built in the Vilnius city train station. The surroundings of train stations were improved for the safer movement of mobility-reduced people, and, in addition to this, new video and audio information systems were installed.

In the near future accessible low-floor trains and new low-floor buses are going to be bought and will complement the fleet of 110 low-floor buses and 45 low-floor trolleybuses. In addition, the bus stops and train stations are going to be adapted to the special needs of mobility-reduced persons and an electronic ticketing system will be introduced.

With the mentioned measures the regions of Vilnius and Kaunas provide a basis for better access in the field of public transport for mobility-reduced persons. Despite the steps already taken, additional actions must be initiated to create an integrated public transport system accessible for all users.

Sources:
Interviews done by Daiva Griškevičienė (national contact person within PTaccess) with Auksė Andriūnienė (Lithuanian society of people with mental disabilities “Giedra”), Jurgis Šarmavičius (JS Lithuanian Railways) and Petras Mikalonis (LR Ministry of Transportation and Communications, Road and Road Transport Department) (September 2007)



Example 70 **Independent Travel Training Package**

City (country) **Warrington (UK)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... cognitive/learning impairment	city bus	engineering/technology approach financial support organisational/operational support awareness building

Project description

Independent travel training schemes are very common nowadays and are crucial steps to a more accessible public transport system since it is not just the surroundings of the people in need which must be adapted. For PRM it is also important to know how to use e.g. accessible vehicles so that the barriers to using public transport become lower.

Warrington Borough Council in the Northeast of England, for example, has produced an “Independent Travel Training Package.” The aim is to assist in particular people with learning disabilities and visual impairments but also people who cannot read and those from ethnic minorities.

The package basically consists of five measures. Besides a training manual, a travel game, and videos and DVDs, there a travel wallet was implemented to help the driver and user communicate on the details of a desired trip. This wallet contains emergency contact details, the number of the local travel information service as well as photographs of the user’s home/start point and of normally visited key destinations/finish points along with the bus number. Furthermore it identifies the user as entitled to extra assistance. The fifth element of the package is the real-time information key fob given out to disabled people that can be used to activate real time audio announcements at stops.

The Independent Travel Training is accompanied by other measures to make public transport more accessible. These include the implementation of low-floor buses and accessible taxis as well as compulsory awareness training for drivers of taxis and private hire vehicles.

Source:
 ECLIPSE: European Good Practice Review, http://www.eclipse-eu.net/Images/Deliverables/European_Practice_Review.pdf
 (19/10/2007)



Example 71 **Accessible Regular Public Transport Replaces Exclusive Services**

Region (country) **West-Brabant (The Netherlands)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment	city bus	engineering/technology approach financial support measure organisational/operational support

Project description

The public transport system in the region of West-Brabant consists of railway, bus and an on-demand system known as CVV (Collectief Vraagafhankelijk Vervoer). The CVV system is a special service for mobility-reduced persons and is operated around-the-clock. It is now recognized that a special on-demand service working in tandem with a “normal” public transport system is not a durable and economically reasonable solution for an accessible public transport system.

That is why the West-Brabant Initiative, consisting of 18 partners, will invest seven million Euros over the next few years to improve the accessibility of mainstream public transport, especially for elderly and mobility-impaired people. As a starting point, the infrastructure for better regular public transport accessibility will be renewed: for example, there should be more bus stops to guarantee a short distance from the user’s home to the stop. In addition the West-Brabant Initiative has the aim of making all bus stops and the entire bus fleet totally accessible. Furthermore information services about public transport will also be improved.

Some positive results have already been achieved: a number of municipalities have adapted bus stops according to the guidelines, for example.

Source:
ECLIPSE: European good practice review, http://www.eclipse-eu.net/Images/Deliverables/European_Practice_Review.pdf
(07/11/2007)



Example 72 **FLIRT Train and Train Station Wetter are Barrier-Free**

City (country) **Wetter (Germany)**

Similar service in Basel (Switzerland), Dublin (Ireland)

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	local train	engineering/technology approach organisational/operational support

Project description

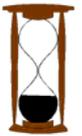
Public transport should be accessible for all people. This goal is often missed in rail transport due to level differences between the vehicle and the platform which prevent people with reduced mobility from boarding the trains on their own.

The goal of the company ABELLIO Rail NRW is to reduce these barriers. This goal was reached with the new FLIRT-trains that run on the line RB 40 from Essen to Hagen. The trains can be boarded at ground level without differences in height. A bridge over the gap between the vehicle and the platform eases boarding further. The gap bridging begins to extend when the doors are still closed and the open door button is pressed. When the doors have opened, the gap between the vehicle and the platform is already bridged so that the train can be disembarked and boarded very safely.

In Wetter (Ruhr) the platform level is above the boarding level of the train. This problem was solved in the ABELLIO-FLIRT-trains by collapsible ramps that are extended by the driver or the service personnel. Thanks to this additional equipment, the barrier-free use of the trains by wheelchair users is possible at all stations on the line Essen-Hagen. The association “Barrier-free Wetter” in cooperation with the advisory council of handicapped people in the city of Wetter awarded the company ABELLIO Rail NRW for its consideration of the interests of reduced mobility passengers. In September 2007 ABELLIO Rail NRW was presented with a certificate awarding its achievements in barrier-free public transport.

There are further features of the ABELLIO-FLIRT-trains that ease their use by reduced mobility passengers. The door has a special request button which, when pressed, informs the driver that a person with reduced mobility intends to board the train and which simultaneously deactivates the automatic closing of the door until the passenger has finished boarding. The interior provides enough space for wheelchair users, baby carriages and bicycles. The handicapped-accessible lavatory with many useful features was tested and evaluated positively by wheelchair users. The stations are announced by display and by voice. Information about which side of the train the platform will be arriving on is additionally planned.

Source:
 Newstix: Bahnhof Wetter barrierefrei – ABELLIO Rail NRW erhält Auszeichnung (de),
<http://www.newstix.de/index.php?site=&entmsg=true&ref=RNL&mid=5694> (22/10/2007)



Example 73 **Accessible Trains on the Narrow Gauge Zillertalbahn**

Region (country) **Zillertal (Austria)**

good practice for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment	local trains	engineering/technology approach financial support measure organisational/operational support

Project description

The Zillertalbahn is a narrow gauge railway in the Tyrol region in Austria. This privately operated railway is about 32 km long and runs from Jenbach to Mayrhofen along the Zillertal. Every year many tourists and locals alike use the railway because of its attractive route and nice surroundings.

In 2002 the Zillertaler Verkehrsbetriebe AG took a step forward in making their trains more accessible. They bought an old baggage car and reconstructed it with, among other things, a pivoting lift to carry wheelchairs. This was especially important for tourists in wheelchairs because they were consequently now able to use any steam train. Within the car there is space for four wheelchairs.

In order to satisfy the demand for more accessibility to the regular diesel trains, Zillertalbahn decided to publicly invite tenders for five new carriages. These carriages are equipped with low-floor access in the middle of the vehicle and with wide double sliding plug doors. To make entry and exit barrier-free, the doors are equipped with electrical ramps for wheelchair users. There is a great deal of space for wheelchairs and baby carriages in the area around the doors. For visually and hearing impaired people the car is also equipped with elements for orientation inside the train and for feeling more comfortable during the journey.

The first new low-floor carriage went into service in 2006 and the new cars can be used in regular diesel trains as well as in steam trains. Zillertalbahn now claims that it is the first Austrian railway able to carry wheelchairs on any train.

Source:
 Zillertalbahn: Neue Fahrzeuge (de), http://www.zillertalbahn.at/news/f_main_n.htm (19/10/2007)

4 Exclusive transport services for people with disabilities

4.1 Introduction

Chapter 3 of this report shows that there have been many improvements in public transport accessibility in recent years. However, for some disabled people these improvements have not gone far enough to address the inadequacy of public transport services and there is still a role for ‘specialist’ transport services. The evaluation of their success is quite difficult as some providers consider them to be the perfect solution for reducing the accessibility gap that disabled people experience. Disability organisations, such as the European Disability Forum (EDF), have both positive and negative views of these services.

Even though the focus of PTaccess is accessible mainstream public transport, “Exclusive transport services for people with disabilities” is inserted as an extra chapter of this report. This is to show other types of transport services have been implemented in Europe to meet the needs of people with reduced mobility. It must be noted that these services are not included in this project’s definition of accessible public transport services as they are not widely available to the general public. Therefore they will not be included as potential examples of interventions during the later stages of this project.

The main characteristics of these exclusive services are as follows:

- Not widely available to the general public;
- The service is not provided on a scheduled basis (i.e. more than one service during the day);
- The service is usually organised and operated in cooperation with, but not within, the mainstream public transport;
- The overall responsibility for the provision of the services falls mainly under the City’s/Region’s tasks;
- The criteria for defining entitled passengers vary greatly from people with long term disabilities to people having difficulties using public transport (potential customers of these services between one percent to ten percent of population);
- In general, trips must be booked in advance;
- These services require a high number of employees and are therefore very costly (the ratio of revenue fares to yearly costs is in most cases under ten percent); and
- The prices for using these services vary significantly (sometimes they are offered for free, sometimes for regular public transport fare and sometimes an extra price is charged – depending on the amount of funding).

From the PTaccess point of view, better integration within the public transport network is desirable. For example, in some countries, most disabled people can use public transport services and only a small percentage need to use specialist services for specific journeys from their home to an accessible station or to a particular destination.

Improvements to the accessibility of public transport services are beneficial to all groups within society, and will have an even greater role in the future due to ageing populations. PTaccess points out that in the future the aim in the field of accessible public transport has to be the transfer from specific to mainstream services, even if there remains a demand for specialised services for some disabled individuals. Specialised services should be considered as a compliment to, but not a substitute for, accessible public transport.

The overall aim is to guarantee PRM the same service as non-disabled people. This requires equivalence of experience with non-disabled people, including availability, frequency, cost, ease of use, predictability, comfort and safety.

The underlying social model of disability in PTaccess aims to be an inclusive society where everyone can access and benefit from the full range of opportunities available to all members of society. Public transport is a public service; meaning it should be available to all. In this chapter, exclusive transport services are only offered to a small percentage of the population and are therefore seen as a “specialist service”. On-demand services should never replace regular public transport (though they do so occasionally, especially in rural areas). A fully accessible public transport network would remove the need for specialist services.

Specialist services are often easy to implement as short-term measures and they can be used to fill gaps in scheduled services, but this should not be seen as an excuse for not providing an accessible public transport system. As practice shows, specialist services are often subsidised from public funds and are more vulnerable to budget cuts, which can lead to disabled people becoming more isolated. This will not happen if the accessibility is guaranteed by a scheduled accessible public transport service, which is less likely to be directly influenced by public budget cuts.

Finally, from an environmental point of view, the use of fully accessible public transport services can reduce the impacts associated with needing to operate two vehicles (public transport plus specialist service) along the same route. The overall quality of life (i.e. less congestion, safety and environmental pollution) within a local environment can be enhanced through integrated and fully accessible public transport services.

see also EMTA: Workshop on Door-to-Door services (proceedings), http://www.emta.com/article.php?id_article=271 (18/10/2007)

4.2 Examples of exclusive transport services

Specific service	Dial a Ride
City (country)	London (UK)
Similar service in	Bristol (UK), Dunkerque (France), Grenoble (France), Leeds (UK), Lille (France), Merseyside (UK), Newcastle (rural district) (UK), Paris (France), Pötsching (Austria), Prague (Czech Republic), Province of Limburg (The Netherlands), Strathclyde (UK), West Midlands (UK), Wythenshawe (UK)

specific service for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment	taxi/minibus	engineering/technology approach financial support measure organisational/operational support

Project description

In addition to the “Taxicard” as a measure to make regular public transport more accessible (see example 44) there is the “Dial a Ride” service. This is a kind of demand-responsive service (shared transport) for people who are unable to use public transport services and can be used for all kinds of journeys. It is generally used for shorter distance travel (requests for journeys of less than five miles are supposed to be satisfied, longer journeys cannot be guaranteed).

Since the demand for the service in London was not sufficient some changes were made in order to make the service more attractive. Besides new vehicles, a new booking system was launched and now advanced booking is also possible for tickets (e.g. cinema, theatre) or restaurant reservations.

To let the users participate in the shape of Dial-a-Ride’s future, regular meetings (Local Area Panels) are held to give passengers, carers and representatives of local disability organisations the chance to discuss how well the service is provided in their areas and to make suggestions for improvements. The performance indicators of the system can be seen at www.tfl.gov.uk/dialaride.

Recently the Mayor of London announced that all existing fares for the Dial-a-Ride door-to-door service will be abolished by the 1 January 2008 and the service will be free from then on. This has to be understood as a further step toward providing equal access to public transport for all Londoners.

Sources:

- Transport for London: Dial a Ride, <http://www.tfl.gov.uk/assets/downloads/Dial-a-ride-customer-charter.pdf> (18/10/2007)
 EMTA: Detailed presentation of some door-to-door services, http://www.emta.com/IMG/pdf/Fiche_London.pdf (18/10/2007)
 EMTA: Workshop on Door-to-Door services (proceedings), http://www.emta.com/article.php?id_article=271 (18/10/2007)

Specific services **Special Transport Service (STS) by Taxicabs or Specially Adapted Vehicles
Service Line with Specially Equipped Minibuses/Vans
Flexlines with Specially Equipped Minibuses/Vans**

City (country) **Gothenburg (Sweden)**

specific service for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment	city bus taxi	engineering/technology approach financial support measure organisational/operational support awareness building

Project description

There are three main services provided for the target group of disabled passengers in Gothenburg. The “**special transport service (STS)**” was started in 1962 by a private company and was taken over in 1967 by the local Gothenburg transport operator. The vehicles (taxis or adapted minibuses) can lift wheelchairs. The system actually got too successful so that it was just too costly to maintain and one started looking for something cheaper than minibuses or taxicabs so that money could be saved and transferred to other projects. Even though they found new ways (see below) it proved impossible to cut the budget for STS due to protests. In 1989 a “**service line**” was introduced which operates in a hilly area with many old and disabled persons. The vehicles are low-floor buses with low harmful exhaust levels and a number of wheelchair places. The stops are close to homes for the elderly, hospitals, service centres and social functions and the timetable allows waiting for passengers to sit down. An important distinction between this service and STS is that here regular fares apply. In the following years this line became very popular as PRM could satisfy their needs for social functions and nearby shops. Despite this, it was impossible to find money for a new line as it is still very costly to operate.

As another alternative to STS, in 1996 a so-called “**Flexline**” went into service. It is an intermediate form of flexible transportation (between a taxi (STS) and scheduled PT (service line)). Another aim was to increase mobility for those who are not eligible for STS but still have difficulty using public transport. The vehicles used are specially equipped low-floor minibuses with space for wheelchairs and walkers. There is a fully flexible route between two fixed end-points with scheduled departures. Many of the possibly stops are close to where many disabled live (assured walking distance of less than 150 m). An automated trip notification (call-back) gives a pre-warning 15 min before the bus will be at the meeting point. Here there is also enough time scheduled to let people sit down before start of bus. The unit costs are at about half of a comparable exclusive taxi ride, but user pay only the regular public transport fare. In the meantime new flexlines went into service.

In 2004 the “Kolla” project (www.kolla.goteborg.se) started as a package of measures aimed at implementing accessible public transport that is less costly but that reaches more people. This aim means an adaptation of the general public transport so that 98% of citizens are able to use it with less use of the exclusive services mentioned above.

Sources:

International Association of Public Transport (UITP) / European Conference of Ministers of Transport (ECMT): Improving Access to Public Transport, Paris (2004), pp. 18-19

EMTA: Detailed presentation of some door-to-door services, http://www.emta.com/IMG/pdf/Fiche_Goteborg.pdf (18/10/2007)

EMTA: Workshop on Door-to-Door services (proceedings), http://www.emta.com/article.php?id_article=271 (18/10/2007)

Specific service **“Routine” and “Sporadic” Door-to-Door Services**

City (country) **Barcelona (Spain)**

Similar service in Leon-Region (Spain)

specific service for people with ...	kind of vehicle	kind of measure/approach
... motor impairment ... visual impairment ... hearing impairment ... cognitive/learning impairment	city bus regional bus taxi	engineering/technology approach financial support measure organisational/operational support awareness building

Project description

In Barcelona (city and region) there are two different door-to-door services provided: “routine” services and “sporadic” (irregular) services. Both are special services complementary to the adapted regular public transport of Barcelona. The service contract is awarded through a public tendering process.

“Routine” services are permanent services that always follow the same timetable and the same route. They therefore serve day centres, occupational services, employment and training. Adapted minibuses carry out the services. They can load wheelchairs that can sit in half of the cabin via the lift in its rear. The other space is equipped with regular seats.

“Sporadic” (irregular) services are established for unforeseen or changing services and change their route every day. As opposed to the “routine” services they have to be ordered at least 24 hours in advance. There are adapted minibuses or taxis in service and the operator decides according to the demand which kind of vehicle will pick up the customer.

The demand for both services have quickly increased and now the lack of funding has become a problem (customers pay only the regular public transport price for the ride). Every municipality pays only for use within its own territory so that the demand for intermunicipal journeys cannot be fully satisfied.

Minibus drivers as well as drivers of the adapted taxis get personnel training. Contents include:

- how to attend to people with disabilities
- communication with users with special needs
- technical aspects: how to help get wheelchair users in and out of vehicles
- how to deal with emergency cases

The adapted taxis also run in the regular taxi fleet as part of public transport in Barcelona and can be used from anybody without booking in advance (e.g. for riding from the airport to town). In that capacity they contribute to making the regular public transport in Barcelona accessible.

Sources:

EMTA: Detailed presentation of some door-to-door services, http://www.emta.com/IMG/pdf/Fiche_Barcelona.pdf (18/10/2007)

EMTA: Workshop on Door-to-Door services (proceedings), http://www.emta.com/article.php?id_article=271 (18/10/2007)

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