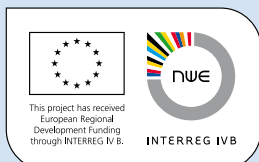




BAPTS

High-quality public transport
services for Europe



NANTES
6TH BAPTS PARTNERSHIP MEETING/WORKSHOP/SITE VISIT

www.bapts.eu

17 – 19 May **2010**



6th BAPTS Partnership Meeting/Workshop/Site Visit in Nantes

Between 17 and 18 May 2010, the BAPTS partners met in Nantes (France) for their 6th full partnership meeting and a thematic workshop. The event culminated in a joint INTERREG – CIVITAS conference on 19 May. Being the first of its kind, the conference successfully gathered more than 50 participants representing different EU programmes coming from cities across eight different countries (Austria, France, Germany, Ireland, the Netherlands, Sweden and the UK) around the topic of Collective Passenger Transport.

17

May 2010

The 6th BAPTS partnership meeting took place in the French city of Nantes. The city is home to 283,000 inhabitants (some 590,000 live in the wider region Nantes Métropole), it is the capital of the Pays de la Loire region and well known for its splendid public transport system.

Directly after their arrival in the late afternoon, the BAPTS partners used the opportunity to take a first look at the different public transport systems available in Nantes. In particular, “Bicloo” – a public bicycle scheme with 80 stations in the city centre and 800 bicycles available – appeared to be a central element in the Nantes public transport system.



Regional train
The Bicloo public bicycle system
The Nantes tram
Busway
BAPTS partners during their site visit

18

May 2010

The second meeting day began with a comprehensive Lead Partner update and a review of the reporting procedures (i.e. Progress Report and Payment Claim). This included an update on activities related to the participation of the BAPTS project in the Open Days 2010 and the preparation of the Strategic Cluster of the INTERREG programme. During a parallel financial workshop, in particular the financial officers of all project partners exchanged experiences concerning the project administration, assessed project risks and discussed various ways for the successful implementation of the project activities.

The afternoon part was dedicated to a thematic work-



Olaf Lewald (City of Bielefeld, left) during the Lead Partner update

shop. The workshop specifically focused on mobility psychology as an essential precondition for understanding and delivering public transport. Key element of the workshop were four presentations from external experts and public transport professionals.

Background information:

Mobility psychology (which sometimes is also referred to as transportation psychology) focuses on mobility issues, individual and social factors in the movement of people and goods and travel demand management (TDM). Mobility psychology takes an interdisciplinary approach and shares common topics with other research fields, in particular medicine, engineering (e.g. ergonomics of cars, busses, urban space), spatial and transport planning and economics (e.g. travel demand management). However, in the literature and relevant studies a strong focus is still being put on car drivers (e.g. road design and motor vehicles) and accidents. Less prominent are aspects related to understanding processes concerning non-motorised transport modes. These issues have only recently gained increased public awareness.

Introduction: The Nantes movie

After a short thematic introduction provided by Georg Werdermann from Rupprecht Consult, the workshop started with the presentation of a movie from Nantes Métropole. In this film, the recently finished citizen consultation process was showcased. Organised by Nantes Métropole and the local public transport operator SEMITAN, the consultation process aimed at understanding people's perception of the existing transport system and their future needs. The movie provided valuable insight into the consultation pro-

cess and its results. Amélie Ranty from Nantes Métropole underlined that it is important for citizen consultation to have clear tasks for the citizens, to develop only a few clear messages and that politicians must not promise what they cannot deliver. Overall, the movie showed the efforts of Nantes to further coin its image as a "public transport city" and allowed the partners to understand consultation processes from different view points, e.g. cities, public transport operators and those of external experts.

moBiel study

Following the Nantes introduction, Sven Giebel of Schmuckerhering Company (Cologne/Germany) und Andreas Weißbach from Probst und Consorten (Dresden/Germany) presented their findings concerning a study which was commissioned by moBiel – the local transport operator in Bielefeld. The aim of the study was to analyse and understand the barriers to use public transport for non-users in particular in relation to special events. For the first time, psychologists and transport analysts joined forces in order to draw a comprehensive picture of the users' needs in Bielefeld. Through a combination of qualitative and quantitative research approaches, that is, in-depth interviews with only a relatively small number of participants as well as large surveys with many interviewees, the study delivered a detailed picture of the perception non-, infrequent- and heavy users have about public transport, what cultural psychology has to do with public transport and

which unconscious conflicts (barriers) affect passengers' contact with public transport.



Amélie Ranty (Nantes Métropole), Sven Giebel (Schmuckerhering), Andreas Weißbach and Susanne Illichmann (Probst and Consorten) during their presentation

From the psychological and qualitative point of view, the following three so-called conflict constellations were outlined by Sven Giebel:

1. A conflict between “compulsory submission” vs. the individual wish for “freedom” in form of a “replacement-activity”.

Public transport forces the user to submit to a rigid system and to follow strict rules. At the same time, the users are commonly forced to physical standstill/immobility during travel, which in turn causes an increased “mental activity”. As a result of this, users typically have a strong desire to develop so-called “replacement-activities” (e.g. reading, looking out of the window, chatting etc.) in order not to enter into passiveness. Due to these processes, advertisements on tram or bus windows are for example usually not well received by public transport users. Moreover, the development of such replacement activities is often disturbed by the start-stop interval or other passengers, while the individual has only little or no influence on such situations.

2. A conflict between physical closeness to other users vs. the individual wish to establish personal distance.

Public transport users reported during the in-depth interviews that the social and spatial circumstances in public transport are often characterised by shame and disgust (e.g. “Do I smell or sweat?”; the smell of other people). A regulation of these circumstances requires a physiological effort of the individual (e.g. changing the seat) or is even beyond the influence of the individual.

3. A conflict between an unfulfilled need for experience vs. the demonstration of rationality.

The individual desire to develop own replacement activities is often increased by the disappointment about missing activity offers by the public transport system and its operators which commonly leads to the development a rational reasoning as regards the general use of public transport (e.g. “It is good for the environment!”).

Four psychological types of moods

Sven Giebel furthermore stressed that it is necessary to develop a psychological classification of users and non-users, that is, to classify the types of moods that a user/non-user develops, when he or she gets in contact with public transport. In this

respect, four psychological types of moods of users (“Up-Swing”, “Critical Speaker”, “Rebell Yell” and “Primus”) and non-users (“Total-Denier”, “Status-Symbolizer”, “Adventurer” and “Openly Anxious”) have been presented in the study.

Key findings

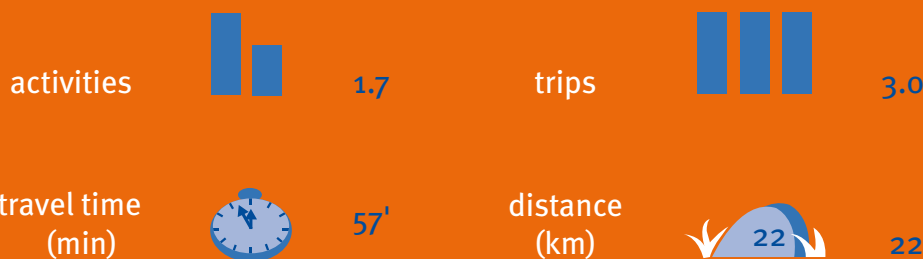
Concerning the qualitative analysis in the study, Andreas Weißbach highlighted the following key findings:

- ⊕ Constraining and counterproductive mode choice habits exist. However, these habits can be changed if public-transport-friendly travel options are offered which stimulate the need for transportation. Thus, support of co-operation partners such as pubs, theatres or event promoters is important.
- ⊕ Communication and promotion campaigns help to enhance the understanding of public transport benefits (e.g. flexibility, refunding of taxi costs if service breaks down, no car parking hassles, no “drink and drive” issues, special night-service features, etc.).
- ⊕ Continuous improvements of the transport network and services offered and their communication increase positive perception and acceptance of non-users.
- ⊕ In order to translate the “need for transportation” into “a first use”, the services offered must meet the requirements of first time users (e.g. presentation of tariff and fares, access to distribution channels, passenger information).
- ⊕ In order to turn first time users into frequent users, positive experiences are necessary (e.g. customer-orientated staff, on-board security, positive perception of cost-benefit ratio).

Darlington study

Travel Characteristics

– Darlington: per person/day –



Slide example on Darlington travel characteristics

Next on the agenda, Knud Kehnscherper from the Munich (Germany) based public transport research company Socialdata outlined the results of a study which was done at the UK BAPTS partner Darlington. Knud Kehnscherper started his presentation with an overview of eye-opening data material which was gained during field research in Darlington, e.g.:

- ☉ On average, each person in Darlington has 1.7 travel-relevant activities per day;
- ☉ the average travel time in Darlington is 57 minutes per day;
- ☉ only 20% of all travel in Darlington is genuine work travel – the rest is related to leisure, education, shopping, etc.;
- ☉ 75% of all trips in Darlington are shorter than 5 km (3 miles).

Using overhead slides, the presentation showed these key figures, which formed the basis for the subsequent analysis, in a very simplistic but effective way.

Knud Kehnscherper also emphasised that car drivers have a different perception of travel time compared with public transport users, i.e. 10min actual travel time are felt as 17min in public transport whereas in the car this is only 7min. He also highlighted that the view point of public transport customers is shaped by both expectations and experiences, which commonly differ.

Summarising the results of the analysis of the data material gained in Darlington, according to Sociadata 56% of all car trips are replaceable by public transport, walking or cycling. By taking an integrated approach, combining the four elements “motivation and empowerment”, “partnership and dialogue”, “personalised and customised approaches” as well as putting the focus on “possible trips and small changes”, when it comes to modal shift a real change can be achieved. Knud Kehnscherper furthermore stressed that by taking this approach, a change in perception can be achieved even without a change of the actual public transport system. However, marketing a poor public system does not work either. Closing his presentation, he stressed that the potential of walking and cycling must not be underestimated since a “public transport city” is always also a “walking and cycling city”.



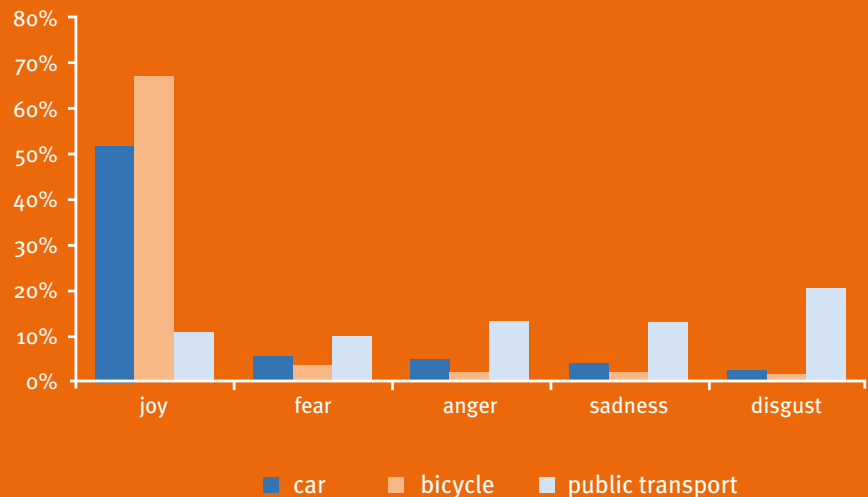
Knud Kehnscherper explaining the results of the Darlington study

Eindhoven study

Under the heading “Who am I and where am I going?”, Manfred Moret from the Dutch transport consultancy “XTNT” (The Netherlands/Utrecht) outlined his findings of a study, which was commissioned by the BAPTS partner Eindhoven. Aim of the study was to identify opportunities for involving and reintegrating specific target groups such as school-children with mental or physical disabilities or elderly people in(to) public transport.

Departing from the general awareness that the Dutch population will become older, more diverse (e.g. lifestyles and cultural backgrounds) and

shrink, Manfred Moret started his presentation by connecting five different key emotions such as joy, fear, anger, sadness and disgust with different transport modes. Whereas, according to data material gained during field work in Eindhoven, joy was strongly related to cycling and car driving, disgust was significantly connected with public transport.



Transport modes in relation to the key emotions

Five values

Manfred Moret argued that different concepts may be used in order to explain and understand the way people choose a specific transport mode. According to the “Customer Value Model”, five values are decisive for choosing a specific modality:

1. Products – supply and system characteristics are important values;
2. Process – services provided are key;
3. Costs – pricing of the services provided is the relevant element;
4. Emotion – image and experience shape this value;
5. Effort – “Don’t make me think!”

With a specific view at the expected demographic developments in the Netherlands, but also the whole of Northwest-Europe, Manfred Moret introduced the fol-

lowing public transport focused planning paradigms:

- ⊕ Focus planning towards the wishes and the requirements of the elderly;
- ⊕ aim at the wishes and requirements of the young generation;
- ⊕ anticipate population shrinkage;
- ⊕ develop robust networks in regions with a still growing population;
- ⊕ promote the use of bicycles.

In his conclusion, Manfred Moret stressed the importance to offer fair mobility choices (e.g. to provide a mobility card for the local/national public transport system instead of a company car), to further promote the convenience of clean mobility and to involve citizens in the development of new solutions to make sure that public transport remains socially inclusive.

Discussion

During the subsequent discussion, all workshop attendees were given the opportunity to reflect upon the four presentations. Particular attention was paid to the question when people may be considered “the elderly” and whether or not this target group should

be seen as requiring “special” services. In this respect it was argued that technical facilities and sound public transport systems such as low floor trams offer “quality for all” and must not be perceived as being a specific advantage for just one single target group.

In this respect, many attendees were in doubt how useful broad categorisations, e.g. “elderly”, are.

Most attendees agreed that future lifestyles are likely to become more diverse and thus more complex and difficult to anticipate. It was stressed that the demand for mobility will increase and result in more complex mobility chains.

Paul Mathieson from Southend stressed that it is important to spend money not just on physical investments but to also allocate funding to so-called soft measures. In this context, he stressed that in particular investments in cycling infrastructure provide a fair return, since they are relatively cheap, effective and in the long run provide good health benefits (and thereby again reduce costs). In Southend, it was underpinned, out of all investments 30% go into “soft” measures.

A further important point during the discussion was the question how (regional) transport operators and cities can better cooperate. In this context it was acknowledged that sometimes they have contradicting interests concerning the economic viability of services. Furthermore, “customers” are not necessarily congruent with “citizens”. All participants agreed that the

cooperation between transport operators and city administrations should be maintained, if not enhanced.

One participant stressed that transport policy commonly differs from mobility policy as it is mostly infrastructure related and neglects the role of non-motorised transport.

Concerning the analysis of existing transport systems, it was emphasised that for user analysis, one must be as specific as possible. Against this background it was argued by Manfred Moret again, that young users will show different habits and behaviour when they become old than the older people today. Different lifecycles also show specific needs.

Lamia Rouleau Tiraoui pointed out that Nantes Métropole is committed to planning ahead even until 2030. She argued that, following from experience, traffic models usually only help to predict the next 10-15 years.

Owen Wilson from Darlington maintained that public transport should rather replace longer distance travel. For shorter distances, cycling and walking are much more appropriate modes. This model also works more effectively with respect to carbon reduction.

Final statements

Concluding the discussion, the external experts were asked to summarise the discussion with a final statement.

Andreas Weißbach from Probst and Consorten emphasised that it is important to remain open to the demands of existing customers and potential new customers and to offer them “several different windows of opportunity” to get in contact with public transport.

Sven Giebel from Schmuckerhering maintained that it is important to take three perspectives into consideration before concrete actions in any sector of public transport can be taken (e.g. changing prices): First of all, it is crucial to understand the cultural psychological embedding, as well as the specific regional and personal motives of the people using public transport. Next, it is important to understand the motivational background (the psychological category insights) concerning the use of public transport as a whole. The third element that needs to be under-

stood, are the infrastructural circumstances of the users in the relevant area, in order to look at the fixation of prices and tariffs from that perspective. Before these three elements are not fully understood, one cannot say which price, in which region, for which route is the most attractive one for the customer, as well as the most economically efficient for the transport operator.

Knud Kehnscherper from Socialdata argued that a “public transport city is always also a cycling and walking city” as public transport users also walk a lot. Therefore cities must keep investing in walking and cycling infrastructures. It is important to think and plan well ahead and to make strategic decisions now.

Manfred Moret from XTNT closed this round off by stressing that “the psychology of mobility needs to consider the emotions and desires, fears and feelings of public transport users” in order to develop practical new solutions.

Site visit

The late afternoon of the Tuesday was dedicated to a comprehensive site visit involving a ride on the Busway and the tram. During the bus trip, all participants had the chance to take a close look at technical details such as ramps and on-board and off-board information displays. After a short bus



Busway: Damian Garrigue (Nantes Métropole) explains the functionality of the docking procedure of the Busway to the BAPTS partners



ride, the group changed onto the tram, using one of the major interchanges, and went back to the city centre. Various BAPTS partners took the chance and went for a ride on the Navibus – a public transport ferry service on the river Loire.

Background information:

Bus rapid transit (BRT) is a term applied to a variety of public transportation systems that use buses to provide a service that is of a higher speed than an ordinary bus line. Often this is achieved by making improvements to existing infrastructure, vehicles and scheduling. The goal of these systems is to approach the service quality of rail transit while still enjoying the cost savings of bus transit. The expression BRT is mainly used in North and South America whereas in Europe and Australia, it is often called a busway. BRT systems are particularly popular in North and South America, increasingly also in Europe and Asia.

Bus rapid transit takes part of its name from rapid transit which describes a high-capacity transport system with its own right-of-way, its alignment often being elevated or running in tunnels, and typically running long trains at short headways of a few minutes. BRT encompasses a broad variety of modes, including those known or formerly known as express buses, limited busways, rapid busways, and BHNS in France (Bus à Haut Niveau de Service). Popular and successful examples are the systems in Nantes/France, Brisbane/Australia, Bogota/Columbia, Curitiba/Brazil, Quito/Ecuador (Trolleybus), Nagoya/Japan or Beijing/China.



During the bus ride
 The Busway corridors
 Off-board passenger information
 The Navibus
 Major tram interchange in the centre of Nantes

The following day featured a workshop on the topic of “Collective Passenger Transport in Europe”. Co-organised by the INTERREG NWE IV B project BAPTS and the CIVITAS CATALIST project, the aim of the conference was to spark exchanges of experiences between European cities.



A joint CIVITAS-INTERREG workshop

Under the heading “European Coordination of Sustainable Urban Mobility – an Introduction to CIVITAS, INTERREG and their projects CATALIST and BAPTS”, both project managers outlined key elements of the two projects and highlighted how cities across Europe seek to improve their public transport systems through different strategies, measures and actions.

Debates moderated by thematic coordinators of the CATALIST project were organised around the following roundtables:

- ⊕ Which clean technology can be used for public transport networks?
- ⊕ What to expect from ticketing and intelligent transport systems?
- ⊕ Which public transport system on dedicated lanes?

After a welcome note and a general introduction delivered by Jean-Francois Retier from Nantes Métropole, Olaf Lewald (City of Bielefeld/Lead Partner BAPTS) and Mario Gualdi (Institute of Studies for the Integration of Systems/ISIS) introduced the projects BAPTS and CATALIST to the audience.



Jean-Francois Retier (Nantes Métropole)



During the conference
 Olaf Lewald (City of Bielefeld, left)
 Mario Gualdi (ISIS)

Reports from three CIVITAS cities

Graz (Austria)

These general introductions were followed by detailed reports on collective passenger transport experiences from three CIVITAS cities. Gerhard Ablasser from Graz (Austria) led off with a presentation on the Graz system which comprises a cycling network of 116 km and a public transport network of 392km (6 tram lines = 49km and 37 bus lines = 343km). Besides the introduction of the various transport modes in use, Gerhard Ablasser presented the Graz concept of “Gentle Mobility”. The idea is characterised by the following planning principles:

- ⊕ Promotion of environmentally friendly modes (walking, cycling, public transport);
- ⊕ reduction of car use to a minimum level;
- ⊕ speed reduction (30km/h) on all secondary roads (which are 90% of all roads in Graz);
- ⊕ on-road parking management.

As regards the cost of the Graz public transport system, Gerhard Ablasser pointed out that the revenue-to-cost ratio is currently at some 69%. Concerning detailed measures supporting public transport, Gerhard Ablasser pointed out that “Speed reduction was a huge success in Graz. People want to live on roads with speed reduction.” As regards alternative fuels, Gerhard Ablasser stressed that centralised and decentralised biogas production is a central element in the wider Graz region. He closed his presentation by emphasising that the “usage of European funding has really led to a change in the modal split” in Graz.



Gerhard Ablasser (City of Graz)

Bremen (Germany)

Michael Frömming from the German City of Bremen presented the Bremen experiences with respect to sustainable urban mobility under the motto “Creating better life quality in cities“. He started his presentation by outlining the role of clean vehicles for clean public transport. In this context, he pointed out that the introduction of trams on previous bus lines led to an increase of passenger figures by 25– 40%. By putting the focus on busses with EuroV/ EEV standard, Bremen managed to reduce the particle and NOx emissions by 50% between 2006 and 2007.

A second key area of intervention for Bremen is the integration of different (public) transport modes. Concrete measures in this respect are the provision of easy interchanges, integrated ticketing, reliable

real-time travel information, bus lanes and cross-road priority for public transport as well as the co-operation and integration with car-sharing and taxi services. Moreover, in Bremen cycling and walking are considered serious transport modes which receive the highest political attention. This includes the following measures:

- ⊕ Installation of speed reduced zones;
- ⊕ opening one way streets;
- ⊕ putting in place of decentralised on-street bike racks (~ 2,500 racks inner city);
- ⊕ bike-Station at the Central Station (bike-storage, bike-repair, bike-rental);

- ☉ interchange/ Bike-Storage at all regional train stops.

Concluding his presentation, Michael Frömming underpinned the need to exchange experiences with other cities and to participate in European networks.



Michael Frömming during his presentation

Nantes (France)

Being the third to share his experiences with the audience, Eric Chevalier from Nantes (France) presented the Nantes experiences. The wider metropolitan area of Nantes comprises some 850,000 inhabitants. Nantes Métropole itself integrates 24 cities with some 590,000 inhabitants. Concerning transport for this area, Nantes Métropole seeks to achieve a 50/50 equilibrium between individual car traffic and other modes. According to the strategic aim of providing “mobility for all”, a key element is the integration of the citizens and stakeholders in this process.



Eric Chevalier (Nantes Métropole)

As regards the infrastructure system, the region relies upon a wide range of different services. Key element are three tram lines with 42 km infrastructure which were reintroduced in 1985. The three lines cover 20% of all kilometres and 60% of all trips made in the city. Altogether some 265,000 passengers use the tram every day. Besides the tram, Nantes also operates a BRT scheme – the Busway, which rests upon 7km dedicated bus lanes. The services are comparable with the tram – one bus every 3½ minutes during rush hours on seven days a week from 5a.m. to 0.30a.m. This backbone system is complemented by 60 bus lines and three Chronobus lines which have no dedicated lanes. Instead, sophisticated ICT technologies and other simple measures lead to an average speed of 18km/hour. Four local train lines (TER) serve 11 railway stations in the region, two Navibus lines (ferries) transporting some 1,000 users per day on the river Loire and the river Erdre are complementing the system. In addition, 205 company travel plans are being developed, covering 64,000 employees. On top, 38 Park&Ride facilities with in total 5,800 car parking spaces are available. The parking spaces are free of charge for those with a valid public transport ticket. Each P&R site is less than 20min away by public transport from Nantes city centre. Eric Chevalier emphasised that only by taking such an integrated approach, the strategic aim of a 50% share for public transport can be achieved.

Three roundtable discussions

After the presentations from the CIVITAS and BAPTS cities, the workshop was split into three roundtable discussion groups along the following topics:

- ⊗ Roundtable A: Public Transport Networks on Dedicated Lanes
- ⊗ Roundtable B: Clean Vehicles
- ⊗ Roundtable C: Intelligent Transport Systems

Roundtable A was moderated by a genuine expert in this field, Damien Garrigue.



Damien Garrigue (Nantes Métropole)

Report from roundtable A

Before the actual discussion started, two short presentations showcasing real-life BRT examples were received. First, René Schepers, project manager HOV2 at the city of Eindhoven, presented the experiences with the Phileas system. According to René Schepers, the integration of three elements is essential:

1. Urban planning
2. Quality of Public Transport
3. Adaptive Mobility measures

Background information:

Phileas was developed as a new concept for comfortable passenger transport on high frequency dedicated bus lanes. Running on a free bus lane which is fitted with magnetic markers for electronic lane assistance and precision docking, Phileas aims to offer all the advantages of rail transport. The Phileas has a hybrid electric propulsion, a large transport capacity and precision docking, which makes it possible for passengers to quickly enter and exit the vehicle, thus limiting stop times and keeping the average speed as high as possible. In comparison with tram or metro systems the investment and maintenance costs for the infrastructure are low, because overhead wires and rails are not needed.

Two bus lines in Eindhoven operate Phileas vehicles. Line 401 from Eindhoven central station to Eindhoven Airport is 9km long, consists largely of concrete free bus lanes and has about 30 Phileas stop platforms. Line 402 from Eindhoven central station to Veldhoven branches off from line 401 and adds another 6km of free bus lanes and about 13 stops.



Phileas bus

As regards the quality of public transport, he pointed out that high frequency, fast and competitive operation, punctuality and reliability, accessibility and safety, comfort and easy use, dynamic travel information, sustainability and a unique identity are success factors. Concerning the further implementation of the Phileas scheme in Eindhoven, René Schepers identified four main risks:

1. Financial risk – cost may rise and budgets decrease (financial crisis);
2. Planning risk – realisation is planned for 2015, whereas the scheme is now already in the preliminary design phase;

3. Technical risks – traffic junctions North and South with the Eindhoven Ring require special solutions;
4. Communication risks – citizens may be critical towards building works or may dislike the scheme overall.

Addressing in particular the latter, in his presentation René Schepers highlighted a new planning and communication tool, which allows potential users to walk through the new BRT corridor in virtual reality. Through this tool, the future users and citizens in Eindhoven can (by means of a special computer game-like software) already walk through the future roads of Eindhoven today and see what the urban space will look like in 2015.



René Schepers (City of Eindhoven)



The Nantes Busway system

Damien Garrigue presented further details of the Nantes Busway system. Along the 7km of dedicated bus lanes, 15 stops serve the users. The system is equipped with four Park & Ride spaces offering 1,100 car parking spaces. Besides, users can get onto the system by using one main transfer station (tram and bus) or one of the eight main transfer stations (interchanges) with other regular bus lines. The system currently operates 20 dedicated vehicles. He pointed out that the costs for the scheme amount to 50 million € (excl. VAT) for infrastructure and 9,3 million € (excl. VAT) for the vehicles. Despite these high sums, Damien Garrigue argued that this is only “1/3 of the cost for a comparable tram line”.



During the roundtable discussion

Discussion

During the subsequent discussion, the roundtable attendees reflected upon the presentations. Against the background of the various different transport systems which are in use in Nantes, questions concerning the integration of BRT systems with other existing transport modes were of particular interest. With respect to the high cost of tram schemes and the benefits of BRT systems, further discussions were centred on the question what role trolley busses could play for urban transport. All attendees agreed that trolley busses combine the best



Trolleybus studies

elements of both worlds – relatively low investment costs, a high service quality which is comparable to the tram and the opportunity to operate public transport with electricity which is produced by renewable energy sources (as in the Austrian city of Salzburg).

The day was rounded off with a second technical visit involving the Busway, an interchange station and P+R, the tram, a shuttle Boat and a visit to the CNG Refuelling Station.

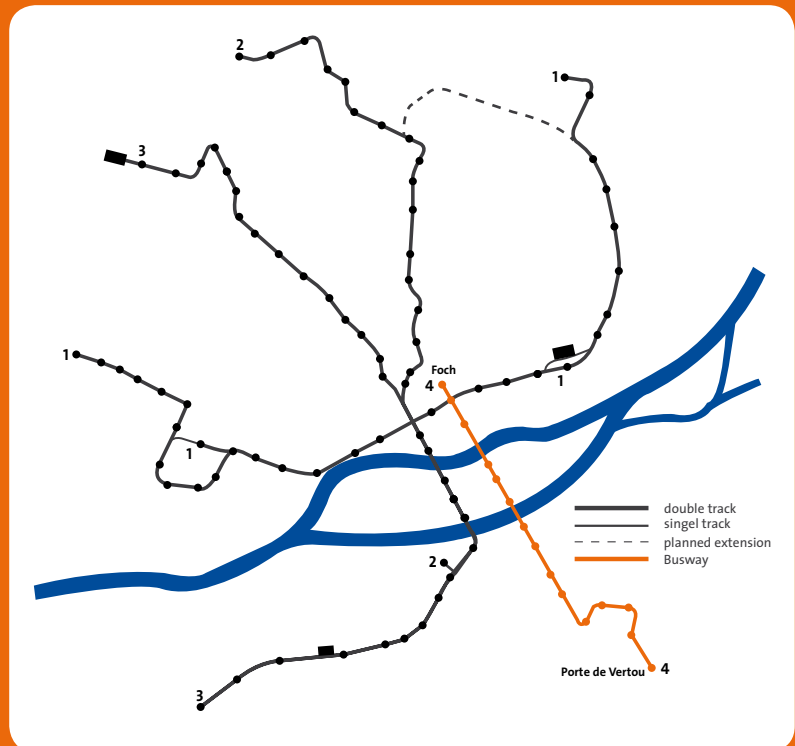
Background information:

The BRT System in Nantes (BusWay)

The BusWay is a bus rapid transit line and was inaugurated on 6 November, 2006. The line runs from Place Foch to Porte de Vertou, and interconnects with line 1 of the Tramway. BusWay (Line 4/ orange) was initially planned as a tram line but due to financial and other operational constraints it was decided to complement the three existing tram lines with a BRT system.

The 7 km route has 15 stations. It connects the ring road to the centre of Nantes, a trip that takes 20 minutes, with vehicles departing every four minutes at peak hours. Though it is a bus route, Line 4 incorporates the best elements of tramways: dedicated lanes, well-designed and equipped stations, priority at intersections, high frequency and extended hours and four park-and-ride facilities. The operator Semitan and the urban authority Nantes Métropole are the main stakeholders.

Line 4 had some 17.000 customers/day at the time of its inauguration. Only four months later the number went up to 21.000/day. At the beginning of 2008 some 27.000 customer/day were countered. Nantes Métropole assumes that some 30% of the customers previously have used the car.





**Nantes
Métropole**
COMMUNAUTÉ URBAINE

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