CATCH-MR (Cooperative approaches to transport challenges in Metropolitan Regions) is an INTERREG IVC project running from January 2010 until December 2012 with a total budget of approximately Euro 2 million.

Workshop from 22 to 24 November 2010 in Budapest. Encouraging more use of public transport – Intermodality and Park & Ride

Towards a more competitive public transport – the third workshop in Budapest, Hungary

The third workshop of the CATCH-MR project was held at the end of November 2010. The event co-hosted by the City of Budapest and Budapest Transport Association (BKSZ) provided possibility for the partners to exchange good practices concerning Encouraging more use of public transport – Intermodality and Park & Ride. Discussions about transport associations and the role of railways in urban and suburban transport also gave an added value to the project.

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What is CATCH-MR?

Catch-MR (Cooperative approaches to transport challenges in Metropolitan Regions) is an INTERREG IVC project running from January 2010 until December 2012 with a total budget of Euro 2 million. The participants in CATCH-MR explore and adapt sustainable transport solutions for metropolises and their surrounding regions.

12 partners take part in the project, representing 7 Metropolitan Regions (MR):

- Oslo/Akershus (NO),
- The Göteborg Region Association of Local Authorities (SE),
- Capital Region Berlin-Brandenburg (DE),
- Metropolitan Region Vienna (AT),
- Ljubljana Urban Region (SI),
- Central Hungary (HU) and
- Provincia di Roma (IT).

(For more information visit: http://www.catch-mr.eu)
The Budapest workshop

Organisation of the workshop

The workshop in Budapest was the third of 7 CATCH-MR workshops, which form the core of the project. The three days from the 22nd to the 24th of November gave an opportunity to partners from all participating MRs to exchange their ideas and experiences concerning ‘Encouraging more use of public transport – Intermodality and Park & Ride’. The host organisations were the City of Budapest and Budapest Transport Association (BKSZ), supported by Metropolitan Research Institute (MRI) as an external expert. Mr. Iván Tosics from MRI was the moderator of the workshop.

The title of the workshop – Encouraging more use of public transport – Intermodality and Park & Ride – covered four concrete topics, which were selected according to the interests and experiences of the participating MRs:

- Intermodality;
- Park & Ride;
- Transport Associations;
- Railways as a part of urban mobility.

In each topic one or more MRs presented their experiences, and the partners discussed the presented good and bad practices and their relevance for their own MRs. To make the workshop more diverse, the organisers created two ‘interactive actions’, where each MR had five minutes to present the situation concerning a previously given topic: good and bad examples of intermodality, and public transport service levels in different areas.

Park & Ride

On behalf of the host organisations, Mr. András Ekés gave a short introduction to the concept of intermodality and presented the situation of intermodality and park & ride in the Budapest region. Since the 1970s intermodal nodes were often created connected to the building of metro lines and to the fragmentation of the tram network, and they meant an additional change compared to the previous situation. In the last years the trend has changed and favours again good network connections. Concerning P+R the problem is that too many different models of building and operation exist parallelly.

The good practice presentation on the topic was held by Mr. Njål Nore from Akershus county, Department of regional planning. He covered the development of the Oslo-Akershus park & ride system, the plans and dilemmas concerning capacity increase and a debate on the philosophy and aims of park & ride. There are two main philosophies in park & ride: either offering many places to make change from cars to public transport massive, or trying to give the flexibility of car for public transport users for occasional use.

Intermodality

The section on intermodality was based on an interactive action (where all partner MRs were presenting
a good and a bad example of intermodality) and the presentation of Mr. Manne Wahlberg, project manager at Västtrafik about good practices from Göteborg.

In the Göteborg Region a new attitude is gaining ground: a new partnership to change the society of cars to a society of sustainable modes. This is the main aim of the K2020 strategy: to double the current public transport usage by 2020. The development of intermodal nodes is an important part of the strategy, and to reduce the “penalty” of the necessary changes a guidebook has been prepared by the Danish Gehl Architects office, famous for pedestrian-friendly urban planning: ‘The ideal changing point from the passengers’ perspective’. It summarises the characteristics of a good intermodal node in 9 points.

Transport Associations

The topic of transport associations deserved special attention, as BKSZ, one of the Budapest partners is a transport association itself. This topic was discussed based on three presentations from different metropolitan regions.

Verkehrsverbund Ost-Region (VOR) was presented by Mr. Andreas Rauter. It is the first and biggest transport association in Austria, founded in 1984 and covering a region of 2.6 million inhabitants. The reason for setting up the transport association was that the routes, timetables and tariff systems were not harmonised among the otherwise successful operators.

The Berlin-Brandenburg model (VBB) was presented by Mr. Eckhard Karwiese and Mr. Kai Dahme (VBB planning department). VBB has the same tasks as VOR, and the structure is also similar. The tasks of VBB include ticketing and revenue sharing; passen-

ger information; planning, tendering and contracting of railways; co-ordination of bus services between different authorities and overall marketing for public transport.

On behalf of the partner organisation BKSZ, Dr. Zsolt Denke, economic director, presented the company. He gave an introduction to BKSZ and the public transport market as a whole, and also presented the status of integration on the service, tariff and information levels.

Railways as a part of urban mobility

Railways are not only a means of long-distance passenger transport, but also play an important role in the suburban and even in the urban public transport system in many MRs. These topics were discussed based on two presentations from Budapest and Rome-Province of Rome.

Mr. Balázs Fejes, transportation engineer at BKSZ, compared the MÁV (state railways) and the HEV (local railways) networks. HÉV is better adapted to
the urban-suburban transport, but it also struggles with many problems. There are some small improvements, but in people’s minds railways are still for long-distance travel; BKSZ is working on measures to change this stereotype.

The second presentation of the topic arrived from Emmanuela Bea from the Province of Rome. The good practice presented is the capacity improvement project of FR4. There was no place to build a second track, so the block sections have been shortened, which allows much more trains to pass at the same time period. It also means a new timetable, and needed new signalling and track layouts. With the additional measure to lengthen the platforms the capacity of the line has been increased by 50%.

**Status of intermodality and P+R in the Metropolitan Regions**

**P+R capacities and philosophies**

Based on the data delivered by the seven CATCH-MR partners, the number and average capacity of P+R sites in the MRs shows that generally in the metropolises there are fewer sites with higher average capacity; the biggest ones can be found in Vienna. In the regions there are more sites (the most in Brandenburg and Lower Austria) but with a lower average capacity.

![Number (Y) and average capacity (X) of P+R sites (blue: metropolises, green: regions)](image)

Total P+R capacity per 1000 inhabitants

These results are logical considering that metropolises have a smaller territory and higher (traffic) density than their respective regions.

Regarding the total P+R capacity, Vienna-Lower Austria stands out with more than 40 000 places, followed by Rome-Province of Rome (about 20 000) and Berlin-Brandenburg (about 15 000). Plans for the future are harder to grasp and less accurate, but according to the available data the most ambitious MRs are Rome-Province of Rome (with 9600 new places planned for 2015) and Ljubljana.

Behind the numbers there are two main philosophies in park and ride:

- Offering many places to make numbers of commuters change from cars to public transport every day. This is often regarded as not economic, as huge amounts of P+R places are needed, but even if tens of thousands of places exist, they only can accommodate a small percentage of travellers. On the other hand P+Rs can attract more well-off people to public transport, which increases its status and lobby position. In Lower Austria already 4% of the total population can find a P+R place every day (or even more if we consider that the average car occupancy is more than 1 person).

- Giving an additional flexibility for public transport users, if they occasionally need their car for special reasons. In
this case the daily use of public transport is encouraged (instead of daily P+R use), but every public transport user should have the possibility to use the car in special cases if they really need it. This means places should be available at almost all public transport stop (even if only one or two for less frequented ones), but it can be a paying system, as the public sector does not have enough funds to increase the capacity of free P+R places.

One of the partners summarised the dilemma as ‘a good public transport system plus some additional car flexibility vs. a good car system with some additional public transport’. P+R is often a popular choice for decision-makers, even if the same resources could be used more effectively in other areas of public transport.

In most regions bike & ride (B+R) bicycle racks are usually an integral part of the P+R sites, or at least they exist as a separate system. In some MRs (Budapest, Ljubljana, Rome-Province of Rome) most of the existing sites don’t include B+R, but the newer and planned ones do also in these MRs.

**P+R operation models**

The ownership structure is similar in almost all MRs: the municipalities and in some cases the railway companies/authorities own the sites. In Vienna-Lower Austria there are also privately owned sites and also some of them built under a PPP contract. Operation and maintenance are done either directly by the owners, their public companies or occasionally by private contractors. Integrated operation (same terms for all P+Rs in the MR) is quite rare.

There are different models in the pricing of P+R services. In some MRs most sites are for free, while in others the sites in the metropolis are priced. This might be due to the fact that these metropolises feature by far the biggest P+R facilities on average, which need more investment and have higher maintenance costs, and probably the market demand is also higher. The prices of the P+R service are usually connected to the public transport ticketing; either offering a discount on the P+R price for public transport (PT) users or the opposite way, offering a discount on the PT ticket prices for P+R users.

In most MRs the average utilisation rates reach a level of 75-90%, however these numbers vary strongly depending on the location of the specific sites.

**Success factors of intermodality**

In the first, open question of the questionnaire on intermodality the MRs could mention any mobility and non-mobility functions important for a good intermodal node. The results show a broad need for integrated intermodal nodes with shopping and services (most MRs mentioned shops or kiosks in some way, and also ca-
A second group was that of good connections between modes – passenger information, ticket machine or counter, short and comfortable walking connections. The general conditions of the node (safety/security, maintenance, cleanliness) are also important.

The MRs could also list the five most important factors for a good intermodal node. Here the good connections between modes (including short and barrier free walking connections, passenger information), the public transport services themselves (high frequencies, direct connections, coordinated timetables, but also congestion on roads), accessibility (by car, by bike, on foot, barrier free) and the general conditions of the node (safety/security, maintenance/cleanliness) are the most important categories.

The results are in line with the handbook of Gehl Architects presented by the partners from Göteborg, which summarises the success factors in 9 points:

1. The safe and secure intermodal node
2. The modern and vivid intermodal node
3. The concentrated intermodal node
4. The accessible intermodal node
5. The intermodal node as the place to join together
6. The pleasant intermodal node
7. The intelligent intermodal node
8. The sustainable intermodal node
9. The charismatic intermodal node

The ideal intermodal node achieves as many of these goals as possible, even if it is not possible to achieve all of these at the same time.

**Transport associations as a way of organising public transport**

Except for Ljubljana, all partner MRs have a transport association, however, the roles and responsibilities are different. VBB (Berlin-Brandenburg) has a broad range of competences including the tendering of railway services. Ruter (Oslo-Akershus) is responsible for the planning and purchasing of all public transport services except the local train service. BKSZ (Budapest) has coordination roles but it is not a contracting authority for the public transport service, while Federmobilità (Rome-Province of Rome) is a mobility management company with ‘soft’ competences such as analyses, trainings, events etc. The motivation to form transport associations is in many cases the separation of operation and organisation in the public transport system. The owners of the transport associations are in all cases the public bodies responsible for the local and regional public transport service.

On the service operator level, there is generally a limited number of rail operators (mostly public, but sometimes there are also private ones). In the bus service there are at least 3, but usually even more operators in each MR, and private participation is the most relevant in this case, even though generally not dominant. In Oslo-Akershus and Göteborg Region (actually all Västra Götaland) all the bus services are tendered. Metro, tram and trolleybus services are in every case operated by municipal companies.

Concerning the territorial limits of transport associations, the commuting or catchment areas are important, however the commuting distances are increasing, which means also transport associations should become larger. From the practical point of view, it is probably easier to start at a smaller area and expand later. It is also important to involve all relevant authorities.
The number of radial railway lines in the MR shows a correlation with the size of the metropolis: Berlin-Brandenburg has 16 regional and 10 S-Bahn lines, Budapest 10+3 respectively, Rome-Province of Rome 12, Vienna-Lower Austria 10, Oslo-Akershus 6, Göteborg Region and Ljubljana 5-5 lines. Regarding the network lengths and stop numbers, the biggest regions (Berlin-Brandenburg, Budapest and Rome-Province of Rome) lead the way. Rome stands out with an exceptionally high number of stops within the metropolis.

The population-proportional values show a more balanced picture. Relative network length values are much higher in the regions than in the metropolises (due to lower population density and longer distances). The results are similar for the relative number of stops.

In the stop distances on the regional railway network there are no strong variations: in most regions the average is around 4 km, while in the metropolises 2-3 km. In Rome the high number of stops is the main reason for the low average stop distances. Berlin-Brandenburg is an exception, with considerably higher average stop distances, especially in the metropolis – while in other cities the regional network also serves the urban traffic, here the extensive S-Bahn network makes this unnecessary.

Typical frequencies in suburban service depend on the type of service (regional / dedicated suburban network) and also differ according to the role of the specific lines. Suburban networks (S-Bahn in Berlin-Brandenburg and Vienna-Lower Austria, HÉV in Budapest) offer higher frequencies, from 20 up to even 3 minutes intervals. On regional networks the typical frequencies are 15, 20, 30 or 60 minutes, usually at regular intervals (but not in every case in Budapest). Oslo-Akershus has ambitious plans to increase frequencies on every line to 10 or 15 minutes by 2013.

In late 2010, we established Budapesti Közlekedési Központ (BKK) as the new integrated transport-organising authority of Budapest within the framework of the new city management model created twenty years after the political change of regime in Hungary. This new integrated body for transport management was created to find a solution for the problems inherited from the previous municipal government. BKK integrates public transport (PT), cycling, road infrastructure management, city parking, taxi services and the management of transport-related EU projects under one big umbrella – modelled primarily on Transport for London. Moreover, we plan to create a single transport budget through the integration of PT services.
management: all transport-related income would flow into BKK and expenditures would be redistributed by BKK ensuring balanced and diversified financing in line with the set priorities.

Currently, transport-related tasks are carried out by companies owned by the municipality with a lack of coordination and a systematic approach. Public transport operators have no supervision by a real authority at the moment.

To ensure an integrated transport management approach, BKK will be responsible for:

**Integrated Transport Management**
- Professional, responsible and accountable management of the entire transport system of Budapest
- Development of transport strategy, management of implementation
- Design, implementation and coordination of major transport development projects
- Public Transport
- Network and service planning, ordering public services, contracting and monitoring service level agreement (SLA)
- Management of fares and ticketing system in public transport, ticket control (revenue management)
- Central traffic management
- Central passenger information system
- Customer services
- Cooperation with regional stakeholders
- Supervision of taxi and boat services
- Development of a public bicycle rental system

**Road management and maintenance**
- Coordination and ordering of maintenance and construction works
- Management of roads operated by the Municipality of Budapest including all of the traffic lights and signs
- Development of cycling roads and routes network

**Parking**
- Development of parking strategy
- Ordering of parking services on the roads operated by the Municipality of Budapest
- Operation of parking system and future congestion charging system

**Central transport information system**
- Development and operation of real-time traffic model, surveys
- Developing and operating a single mobility website

**BKK is a precondition for future success:**

**Integrated system approach** covering all issues in Budapest’s transportation, infrastructure and service development, and urban and suburban transport system

**Efficient and accountable institutional framework** with clear competences

**Real supervision and monitoring system** on service level, cost of operation and cost of development

**Centralized transport information system**, traffic model, real-time data, single transport web portal

Carefully planned, prepared and managed EU projects based on long-term strategy

Professional management of implementation

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**The Institutional Structure of the Budapest Transport System**

![Diagram showing the institutional structure of the Budapest transport system.](Image)
P+R developments in and around Budapest

The lack of sufficient park and ride capacity is for a long time seen as a problem in the transport system of Budapest. In the last couple of years the EU co-financed Central Hungary Operational Programme provided funding to make a step forward in the outer districts and the agglomeration.

In the first round (2007) two big and a couple of small projects were selected for support.

One of the consortia was initiated by BKSZ (Budapest Transport Association), and the partnership included MÁV (Hungarian State Railways) and 13 municipalities from the agglomeration. They built P+R sites at 13 railway stations along 3 selected railway lines, with a total capacity of 834 cars and 530 bicycles. One of the sites also included a bus stop connected to the railway station.

The other consortium - led by Parking Ltd. (the parking company of the City of Budapest), including MÁV and the municipalities of districts 17 and 22 of Budapest - realised 6 P+R sites at railway stations in these outer districts of the city, with a total capacity of 570 cars and 120 bikes. Two of the sites are also integrated with bus stops, and BKV (Budapest Transport Company) introduced a new feeder bus service (line 197) to one of these railway stations, harmonised to the train timetables.

Some municipalities - such as Kerepes - also realised successful projects on their own or with local partnerships.

The second round of the EU-financing also contributed to a number of P+R sites, all of them in the agglomeration. Some of these are already completed, while others are nearing completion.

BKSZ and Parking Ltd. took the lead with organising consortia and transferring knowledge and know-how to local municipalities. The developments in Süllysáp and Tápiószecső were second phases of the successful and popular sites completed during the first round.

All sites are supervised by security cameras and free to use.
Intermodality: the challenge and lessons learnt

In the situation of intermodality in Budapest results are fewer than the challenges lying ahead. Even if its history started less favourably, intermodality has an important role in the transport of the MR, and a great development potential for the future - not substituting, but complementing other concepts like interoperability.

Until the 1970’s the tram system of Budapest formed a whole network. With the construction of the metro lines important links of the tram system were closed down, and intermodal nodes were built for the passengers to change to metro. Some of these centres were of good quality that time, but they meant an additional change compared to the previous situation.

The need for intermodality also exists at the railway stations, as the three main stations of Budapest are all termini and not through stations, and most people have to change to other modes to reach their destinations.

During the last years, transport policy recognised the failures of this first era of „artificial intermodality”, and tries to overcome them by different means. The metro 4 project (which is under construction between Kelenföld and Keleti railway stations) was also planned as a separate heavy metro line creating a new need to change modes, but the originally planned cuts and changes in surface public transport were significantly reduced, as the loss of direct connections would cause an important drop in service quality.

A group of projects under preparation aim at rebuilding former network links in the tram system of the Buda side (right bank of the Danube) but later also in the inner city of Pest (left bank).

The concept of interoperability is also gaining more and more attention. As a temporary measure during construction works the DMUs (diesel multiple units) of MÁV entered the tracks of the separate, BKV-operated HÉV network. There are also plans to integrate Metro line 2 with the HÉV line towards Gödöllő, as the termini of these are facing each other on both sides of Órs vezér tere, showing the most prominent example of unnecessary changes.

On the other hand, there will be always a need for intermodality, as it is impossible to provide direct services for every passenger. The most important changing points are between the suburban railways (MÁV and HÉV), the metro lines, and the most important tram, regional and local bus lines.

However, when change of mode is necessary, the loss in time and comfort should be minimised with effective and high-quality intermodal nodes. These have to be multifunctional, and offer a range of services to make change comfortable and offer possibilities to spend waiting time in a useful way.
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