



INFORM

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ENVIRONMENTALLY FRIENDLY PUBLIC TRANSPORT

TTK PROJECTS SPEED UP PUBLIC TRANSPORT

The TTK inform you hold in your hands nicely mirrors our portfolio and our key markets beyond Germany, namely France and Great Britain. The projects shown in Nottingham and Strasbourg as well as the overview over our Finnish activities each comprise complex tasks with a focus on overall transport planning or detailed operational planning.

When tackling these tasks it becomes evident that even neighbouring European countries have different mentalities and preferences in the field of public transport. These prove to be a particular challenge for our staff who work the projects cross-nationally. This way the various experiences gained are made use of also for projects in other countries – for the benefit of our clients and the further improvement of our results.

The last TTK inform edition was published quite a while ago. The financial crisis fortunately has not slowed down TTK's positive development. In fact, we had so many projects to deal with that this edition just could not be finalised for the printer. Sorry for that.

It still is our aim to inform about TTK's development in this format at least once a year. In sticking to the paper version we hope to reach our readers better than by publishing yet another digital paper.

As in our former edition we have compiled slightly differing topics fitted to the markets and developments in Germany and France. Feel free to ask us also for the German and/or French version. Enjoy your reading!

➤ NOTTINGHAM NET PHASE 2

Operational and infrastructural planning for tender

Detailed operational modelling to simulate influences of road traffic

●●●●● DYNAMIC OPERATIONAL MODELLING

By the end of 2007, Mott Mac Donald (MMD) was mandated to produce the tender documents for “NET Phase Two”.

This comprised all necessary documents for NET (Nottingham Express Transit) to make a tender of a 32 km – network of the tram system (16 km of which are new), opened in 2004. TTK is part of the MMD-Team and mainly responsible for operational issues.

For the whole project, it was TTK who worked out the operational concepts.

In a first step in the project a variety of operational concepts were built up using the “Fahrplanbearbeitungs-

system FBS”. Following internal consultations with the project partners the result was a feasible concept based upon 8 trams per hour per direction on both of the lines. With regard to the estimated demand this concept was regarded not only as feasible but also as optimal.

This – rather ambitious – concept in a second step was modelled with the operational modelling software OPEN TRACK (developed originally at ETH Zurich). This software tool is mainly used for the modelling of rail services; contrary to the static FBS-model it is, however, also capable of simulating impacts on regular operation. This feature is notably relevant for the modelling of tram systems, as the simulation of the influences of e.g. road traffic is possible. In this context extensive discussions with the road planners took place in parallel to the development of the dynamic model. The management of road crossing also played an important role as did on-street-sections of the tram. This last point is important insofar as on-street-running trams as well as parallel bus traffic are more common in Great Britain.

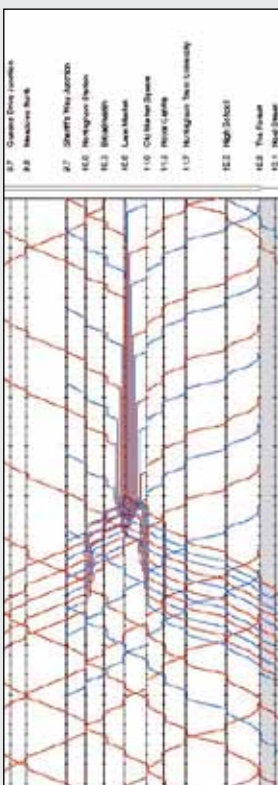
As one of the results of the modelling work it was possible to calculate the range in occurrence of travel times. Apart from that, those parts of the network could be identified where irregular operation is to be expected rather more frequently.

In a further step a variety of blockage scenarios were developed in order to foresee, if and which measures would be necessary to solve operational problems. It was successfully shown that blockages up to half an hour do not necessarily have to lead to emergency turnback scenarios: such problems can mostly be solved within the framework of regular operations.

The operational models are important for the whole project, because they will be part of the basic information for potential operators of the extended network of Nottingham Express Transit.

An operator also has to take into account the so-called “Performance Monitoring System”. The performance is measured in great detail and the monthly payments are related to the results.

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● Graphic timetable – perturbation scenario

All tender documents were completed for autumn 2009 and the EU wide tender was published early 2010. Up to mid 2011 the winning consortium should be selected.

➤ STRASBOURG TRAM EXTENSIONS

Detailed feasibility studies for the medium and longterm extensions among them the cross-border connection over the river Rhine to Kehl in Germany

The tram-network in Strasbourg has been developed continuously during the last years. Apart from the re-development in the inner-city with important new parts of infrastructure and a new configuration of lines in 2007, the Urban Community of Strasbourg now wants to have the possibilities of further line-extensions examined. Eight studies are envisaged for this investigation to be carried out by TTK until 2010.

The studies for each of the extensions contain an analysis of the urban environment and, following a pre-selection of a scenario with the means of a multi-criteria analysis, a detailed examination of possibilities on the level of pre-planning. In addition to that the costs are examined based upon both operational concepts and demand forecasts.

One of the feasibility studies, namely the one concerning the extension of tram-lines A and D to the western edge of the city, has already been finished. Beyond these there are two other studies looking at the city-parts of Cronembourg and Illkirch. Of particular interest is the study currently in progress concerning the extension of the tram or tram-

train to the east and crossing the river Rhine towards Kehl/Germany.

The extension of either line F as tram-train and/or line D as a tram apart from the better connection to Kehl with the tram-network provides the chance to support urban development and waterfront development in the port area. There the city is planning massive investment in workplaces and living space. It is interesting that the time scale for the realisation of the tram extension (start of construction work in 2011) foresees that the tram might be realised before the rest of the urban development. That means that it could serve as a backbone for further development.

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In contrast to this rather offensive style of tram planning towards the river Rhine, urban planning in the western part of the city went the other way. New developments in Hautepierre and Koenigshoffen were planned and built first, an after that concepts for the tram were worked out.

LATEST NEWS

The Lyon office has moved

TTK activities in France have been steadily increasing over the years. Hence it became necessary to move our 'Agence de Lyon' to larger and more functionally equipped premises. Two steps away from Lyons large TGV station Part Dieu our three-engineer team is working and ready for yet further additions to come. We share the premises with PTV France enabling the better exploitation of synergies between the TTK and PTV Lyon teams.

Our Lyon team is mainly involved in projects in the south-east area of France, in the Rhône-Alpes region but also in the Languedoc-Rousillon and the Provence-Alpes-Côte-Azur (PACA) regions. Among their current topics are a feasibility study for a separate PT-corridor in the greater Aix en Provence area, the bus planning for the Département Hérault with regard to the existing regional railway (TER) services, a study to determine the measures obligatory for the re-opening of the cross-border passenger rail service between Evian and St. Gingolph, an intermodal mobility concept for the Mont Blanc region as well as a long-term vision for the structure of public transport in the greater Annecy area.



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TTK SCANDINAVIAN ACTIVITIES

Since 2004 TTK has been active in LRT projects in Finland. For TTK's core expertise in LR planning the Scandinavian market offers a rather small but nevertheless select number of projects.

TTK worked in the following projects:

- > Study on the technical feasibility for the introduction of mixed operations between metro and light rail in the Espoo – Helsinki corridor (2004). The study looked in the technical feasibility of such a system. This included the discussion of the main technical criteria and the available options in the area of power supply, wheel profile, track gauge, vehicle width, vehicle buffer load, dynamic structure gauging including an economical evaluation and safety aspects.
- > Helsinki tram: Design of a 500 m long inner city tram track in critical vertical and horizontal alignment along Annankatu and Urho Kekkosen Katu (2005)
- > Helsinki tram network: Discussion of improvements to track forms, wheel-rail-interaction and track geometry (2007 - 2008)
- > Jokeri Line Helsinki: Technical assistance to upgrade the high quality ring bus line to LRT (2008 – 2009). TTK won as sub-consultant to WSP Finland OY the detailed feasibility study for an up-grade of the Jokeri high quality ring bus line to light rail. The Jokeri bus today in the peak hours runs at its capacity. Within the feasibility study TTK supported WSP in:
 - > Planning and design of the alignment; TTK defined LRT planning principles.
 - > Layout and technical characteristics of possible rolling stock.
 - > Cost aspects of the infrastructure and the related maintenance.
- > Definition of an operational concept including run times, number of vehicles.
- > Evaluation of operating cost and comparison with other European LRT schemes
- > General layout of and traffic control and ITCS (Intermodal Transport Control System).
- > Depot discussion.
- > Discussion of the track gauge: Metre gauge vs. normal gauge.
- > City of Turku: Optimisation of Urban Public Transport with emphasis on a rail-bound transport backbone (2008 – 2009). The city had a tram network until the late 70s. Since then there have been a lot of proposals and studies on the table how to re-introduce a tram system. The aim of the study (together with WSP Finland Oy) was to decide whether to alternatively aim for a bus or Light Rail system.
- > Helsinki ÖSTIS: Integrated city and transport planning to cover an urban extension in the area of Östersundom (2009 – 2010). Helsinki plans an extension of its urban area for about 40,000 residents. Together with WSP different scenarios were developed and evaluated. It was possible to show that integrated city and transport planning is able to provide optimal operational framework conditions.

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