

The public transport company of the Pardubice city Inc.

Dopravní podnik města Pardubic a. s.



APPLICATION:

The proposal of a new transport links organisation

BRANCH:

Transport, public transport

SECTOR:

Public passenger transport

BENEFIT:

With the using the simulation model in Witness there were verified few proposals of organisation changes of transport links of the public transport in Pardubice and chosen the optimal variant.

About the company

The public transport company of the Pardubice city Inc. (PTCP) operates the public transport of passengers in the city and near surroundings more than 60 years.

Project targets

In the last form PTCP used trolleybuses and buses as regular transport links and as helping transport links to cover the rush hour. These transport lines rode on very confused tracks. One line had up to 18 different tracks with different start and final stations. There were delays very often or unload of some vehicles on some tracks.

The project target was to propose an arrangement of tracks to increase their clear arrangement and load and reduce a number of mileage. The next target was to propose a new schedule of transport links. The client requirement was also a possibility to remove the helping bus transport links.

Solution

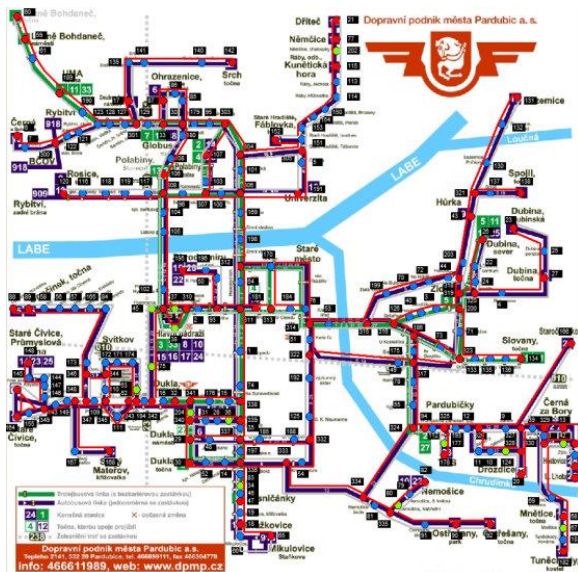
At first there was a data analysis with data from the PTCP. The input data was the information about stations - their number, a placement, a number of getting in and getting of passengers in different period during a day and a week. It was necessary to verify these information and therefore was performed the control measurement direct in public transports. This measurement was compared with data which were gained from the information system of the company PTCP.

Then the information about individual transport links, their tracks and schedules were received. All these information were used as the input data for the dynamic simulation model building.

The main focus was to the tracking and time positions of trolleybuses lines becues the trolley buses create the main type of public

transport in the city Pardubice. From the trolleybuses there were developed changes in tracking and time positions of bus links.

Picture č. 1 – The transport links arrangement design



Results

There were proposed two variants of the track links arrangement on the input analysis basis. Both of them were verified by the simulation model. The data analysis showed (and the model outputs confirmed this) that some of the transport links are mostly overlapping, so it is possible to remove one of these links and intensify the traffic of the duplicity transport link.

The part of the transport links from the less intensive period were moved to the more intensive transport period. Due to this action it was possible to completely remove the helping bus links.

Beside this there was verified by the model that the transport demand is enough to satisfy by less public transports and the PTCB can use these public transports at different areas for example it can provide its transport services in other regions .

In the case of using the optimal variant with including of all the changes it is possible to reach these benefits: the increase of trolleybuses mileage by 80 km per day (it is the increase but it is the ecological public transport), the decrease of bus mileage by ca. 700 km per day. These mileage changes correspond to the cost saving ca. 28 000 CZK/day (ca. 260 working days). The overall cost savings could be ca. over the 7 000 000 CZK per year.