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Politechnika Łódzka
Instytut Elektroniki

Public transport
passenger information system
for the blind and partially sighted

The blind user is equipped with a smartphone and a small bluetooth module for detecting radio markers. The user receives up-to-date information on his/her location and waiting time for the nearest bus or tram.

The traffic server delivers current timetables and routes of public transport vehicles in the city of Lodz, as well the real-time position of these vehicles.

The separate communication module, allows reading information from a distributed network of radio markers that identify bus and tram stops as well as individual vehicles.

System description

The prototype of the system is aimed at easing travel for blind and partially sighted persons. It is integrated with the server of the Lodz's city transport company (MPK) and a network of radio beacons placed on bus/tram stops and vehicles.

The system's user is equipped with an ergonomically designed hand-held module that additionally serves as a remote control for the user's phone. The module receives information from radio beacons placed on bus/tram stops and vehicles. The data is used to determine the waiting time for the next vehicle and for identifying vehicles that arrive at a given stop.

While traveling, the user is informed of subsequent stops and estimated time till arrival at his intended destination, as the system allows for route planning.
A unique property of the system is that it will inform the user in real-time of any delays caused by traffic.

For whom?

The system was designed for blind and visually impaired persons for use in an urban environment. However, the system can be used by any pedestrian traveler. To use the system a user has to acquire the communication module and a mobile phone with the Android operating system.

Uses

- travel planning using public transport
- access to current timetables and routes of buses/trams
- access to real-time information on the time to arrival of the next vehicle or arrival to destination

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