

## **Parkshuttle in Rotterdam (NL)**

### **Topic**

Parkshuttle, Rotterdam

### **Summary**

Objective: to provide a Public Transport link between a metro station and car park with a local business park.

### **Case Study**

ParkShuttle is an automated system of driverless electric buses connecting the Kralingse Zoom metro station and car park with the Rivium business park. The current system replaces an earlier version with improved vehicles, more stops on an extended network, and with improved control and safety features.

#### *Basic facts*

Three buses in the new system were made available for a pre-launch demonstration at the NETMOBIL Final Conference and Workshop in June 2005. The system was fully operational in early 2006. Each bus has seats for 12 and a maximum capacity (including standing passengers) for 20. The buses run segregated from pedestrians and other traffic on a mostly 2-lane (1-lane each way) dedicated guideway about 2km in length with 5 stops (ie a round trip journey is 4km with 10 stops). A short section of guideway crossing a bridge is 1 lane only, and is shared by vehicles going in both directions

#### *Users and stakeholders*

The system was built by the '2getthere' company and is operated by the Netherlands PT operating company Connexxion.

#### *Implementation set-up*

The system operates rather like a horizontal lift: users call a bus by pressing the button at a stop, and press another on the bus to indicate which stop they wish to travel to. The bus will automatically take the most direct route, which means it can turn round at an intermediate point on the route to change direction unless another call is received that will prevent it. Passengers use regular public transport tickets, including chip cards, transfers and season tickets. Buses travel at up to 25km per hour, and are equipped with obstacle detectors to stop automatically in case pedestrians or other obstructions are found on the track. The system operation is managed from a control centre.

The system has 6 buses available at peak times, 3 at non-peak when the others are recharged. The system does not run during the night. The capacity is 480 passengers/hour in the peak and carries a total of about 2,200 passengers/day. The average waiting time is about 1.5 minutes at peak times, and 3 minutes off-peak. The travel time is typically 5 - 7 minutes. The system includes dynamic passenger information in the form of waiting times and is monitored for security using CCTV

cameras in the vehicles and along the guideway. Vehicle storage and recharging is organised to take place automatically in a garage overnight. The guideway crosses roads at 'level crossings' at two points. On the approach to these, the ParkShuttle buses activate lights and barriers to stop crossing traffic, and have priority.

### *Results*

The system costs of 2.1 M€ (excluding the civils infrastructure) are reckoned to be up to half that for an equivalent cable car or monorail system, while providing 2 or 3 times the frequency of service and corresponding increased capacity.

### *Future prospects and conclusions*

The civils infrastructure required is quite simple, and it is believed that there is capacity to achieve a modal share of 25% at reasonable cost.

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