INTELLIGENT TRANSPORTATION SYSTEMS

Intelligent system for public transport in the city of Szczecin (Poland)

The project

- On-board equipment for FMS, ticketing and CCTV with integrated control center for 290 buses and 150 trams:
  - igh performance OBU for management of FMS, ticketing and CCTV
  - 1,686 validators for transport smartcard
  - 300 on board TVM
  - 1,125 on-board video surveillance cameras
- Passengers information system:
  - On-board multimedia information system
  - 99 information displays on stops
  - Web and Apps
- 36 TVM at stops
- Passengers counting system
- On demand transport

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«Since the implementation of the system we have practically eliminated up to 95% of the delays and advances»

Krzysztof Miler, Director of ZDiTM Szczecin

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Initial situation and objectives

Szczecin is the sixth largest city in Poland, with more than 400,000 inhabitants. It is located in the northwest of the country, near the border with Germany and is the capital of the Zachodnio Pomorskie region. It therefore has an extensive and complex public transport network, made up of 4 bus and tram operators, whose authority (ZDiTM Szczecin) also manages winter road vehicles and transport on demand in the area. This complex network did not have an automated and integrated fleet management and ticketing system, so the main objective was to achieve an increase in efficiency, punctuality and passenger comfort thanks to the ITS system.

Implementation of a complete and integrated ITS for the management of public transport in the city of Szczecin

The Szczecin public transportation authority (ZDITM) has entrusted GMV with the implementation of the intelligent system for public transportation in the city, in one of the most important ITS contracts in Europe due to its extension and technological innovation.

«From the beginning of the first phase we have always been in permanent contact with GMV and the cooperation is very effective, extending during the maintenance of the system»

Krzysztof Miler, Director of ZDiTM Szczecin

Solution

ZDiTM Szczecin planned a project in two phases. In a first phase, the objective was to implement a multi-fleet and multi-operator FMS tool and introduce the public transport smartcard to the citizens. Thus, in phase 1, all the vehicles in the 4 operators were equipped with a basic OBU equipment for location and communications that allowed the implementation of a multi-fleet FMS control center with monitoring, adherence to service parameters and regulation, as well as data exploitation tools. Regarding the transport smartcard, the project began with the deployment of the electronic pass card and the personalization and top-up stations. This phase was completed with two pilot projects: CCTV and passengers counting on board and 15 information displays at stop.

After the great success in the implementation of phase 1, ZDiTM Szczecin together with GMV approached the implementation of the second phase, where all the vehicles were equipped with an advanced OBU consisting of an equipment rack with communications, FMS and CCTV, together with a touch-screen interface for the driver. The on-board equipment is completed with the installation of contactless validators for the transport smartcard, in which new types of ticket are already being introduced, such as the electronic purse, the temporary pass, etc. Also installed, as a great innovation in bus ticketing systems, on-board TVM that allow the purchase of tickets with cash and with a bank card, avoiding the handling of cash by the driver.

At stations and stops, passenger information displays inform of the estimated time of arrival of the next vehicle, including voice information for the visually impaired. passengers information is completed with multimedia displays on board the vehicles and web tools and App.

Lastly, the CCTV and counting system is extended to the entire fleet, and winter road vehicles are equipped with a specific FMS. For the vehicles that serve the connections with other population centers, an on demand transport system is deployed.

Results

ZDiTM Szczecin improves the management and service to the users by incorporating a complete and integrated ITS system.

The replacement of manual payment by electronic ticketing, including EMV payments on board, increases the possibilities of pricing and intermodality.

Users have seen increased their options for real-time information, highlighting the multimedia information systems on board and at stops.

With the implementation of the FMS, punctuality has been improved by up to 95%.

Passenger safety has been increased thanks to the CCTV system