



INTELLIGENT TRANSPORTATION SYSTEMS

Intelligent system for urban transportation in the region of Pamplona

The project

- On-board **SAE** and ticketing equipment with integrated control center for 150 buses:
 - OBU for FMS and on board communications center
 - Driver's desk for ticketing and FMS interface + 2 EMV validators
- Passenger information system:
 - Integration with information panels on bus and at bus stop
 - Bluetooth beacons for helping visually impaired people
 - Integration with Web and App
- Passengers counting system
- Security systems: CCTV integration
- Eco-driving

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«It was mandatory to implement different payment methods such as EMV (...) and we were looking for a reliable FMS system with powerful user information»

Antonio Fernández Tafalla, Technical Director of TCC



Initial situation and objectives

The Pamplona District Administration has the responsibility of the public transport in the region of Pamplona, through the concession to TCC, a company of the Moventia group. This transport service had already **FMS** technological equipment, ticketing and communications, but close to the obsolescence. It was necessary to respond to the demand of the citizens of the Region in terms of precise real-time information on the service, as well as the possibility of using different means of payment: mobile, contactless card, bank card, interoperability with other services of the Region and the Regional Government, interoperability with the means of transport of other neighboring provinces, etc.



Solution

GMV has deployed the new **FMS**, communications and ticketing systems, and will provide technical assistance for them during the 4-year warranty and subsequent 5-year maintenance. The supply of the new ITS includes a new On-Board Equipment and Control Center for 150 buses.

Specifically, new IP voice and data communications equipment for the driver are incorporated on board. Regarding information for passengers, the new system provides connection with the interior and exterior signage of the bus, driver notices to passengers, automatic announcements of arrival at the stop for visually impaired

Results

TCC improves the service management by incorporating a modern FMS tool and a reliable passenger counting system.

Users have seen increased their options for real-time information on the service, highlighting the tools provided to the disabled, in terms of validation adapted on board and beacons of arrival of the bus at stop.

The EMV payment standard will allow any user who has a bank card, physical or virtual, to access the bus directly, without the need for registration or prior purchase of any ticket and with the possibility of benefiting from account-based ticketing in a future.

Technological modernization of public transport in the Pamplona region with a complete solution for comprehensive transport management

Transports Ciutat Comtal (TCC) trust GMV with the deployment of the new ITS systems for Pamplona and 17 municipalities in its region. GMV solutions, fully integrated and at the cutting edge of technology for capacity and interoperability, make this project a reference in the technology sector for public transport in Spain.

«Both in ticketing and in FMS GMV meets our requirements and provided some interesting solutions, such as the beacon system for the visually impaired people»

Antonio Fernández Tafalla, Technical Director of TCC

people and a new solution consisting of bluetooth beacons on-board to alert visually impaired people who wait at the bus stop on arrival of the bus. An on-board passenger counting system and an efficient driving solution (eco-driving) are also equipped.

The communications solution includes new on-board IP communications gateway that allow managing at the information exchanges with the Control Center, as well as providing Internet access to the passengers via WiFi on the bus.

The new Sales and Validation System provides a solution in the central and on-board equipment, mainly composed by console for the driver, validators and inspection terminals. The incorporation of the EMV payment standard allows any user who has a bank card, physical or virtual on their smartphone, to use it directly on the bus and in the future through the system called "account based ticketing" to benefit from the best possible fare. All this makes it possible to accommodate the current TUC card and increase capabilities with the integration of EMV contactless bank cards and QR code reading. In addition, the new system is prepared to be compatible with the future Navarra Transport Single Card (TUTN) and the future Contactless Spanish Card (TESC) in the next phase.

