INTELLIGENT TRANSPORTATION SYSTEMS

Video surveillance and user information system for TMB Transports Metropolitans de Barcelona

The project

- Onboard video surveillance (CCTV) and PIS equipment for 1,140 buses:
    - Multipurpose onboard systems for management of CCTV and PIS systems
    - Ultra-wide passengers information displays for 1,119 buses
    - 4,700 video surveillance cameras
    - 42 cameras for license plate recognition in bus lanes
- Backoffice systems
    - PIS content management interface based on *ITS Suite*
    - Integration of onboard CCTV with the TMB video surveillance center

marketing.transport@gmv.com
gmv.com

«It is a very complex project and GMV helped us make an approach to the different parts to be addressed in the project with an agile methodology»
Diego Domínguez, Head of Bus Operation Systems

GOBIERNO DE ESPAÑA MINISTERIO DE TRANSPORTES, MOVILIDAD Y AGENDA URBANA

Plan de Recuperación, Transformación y Resiliencia

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TMB

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INNOVATING SOLUTIONS

Initial situation and objectives

TMB, in its 2025 strategic plan, had set the objective of developing advanced on-board video surveillance and user information systems. This objective was promoted by the Recovery, Transformation and Resilience Plan of the EU Next Generation funds. The project represents a significant challenge, since it involves installing the systems in the entire fleet with a large amount of equipment and very tight deadlines.

«The user information system is highly valued in our customer satisfaction surveys»
Diego Domínguez, Head of Bus Operation Systems

Implementation of a video surveillance and user information system based on a multipurpose onboard architecture for TMB

TMB Barcelona, one of the most important public transport operators in europe, trusts again in GMV to carry out a project of great importance at the technological level, in its fleet of more than 1,100 buses with an award amount greater than 10 millions of euros. GMV will implement a multi-purpose on-board architecture to support the new on-board video surveillance and user information systems, improving security and providing friendly and accurate information.

Solution

The project was tendered in 3 lots, all of them awarded to GMV. Lot 1 includes the supply of the onboard systems that compose the architecture in the bus that serves lots 2 and 3. GMV supplies, for 1,140 buses, a multipurpose onboard CPU on which the user information and video surveillance systems of lots 2 and 3 respectively run. In addition, it includes the necessary network architecture and a new energy management system that governs the switching on and off of on-board equipment.

Lot 2 is related to the user information system. GMV supplies 29" and 21" ultra-wide displays with integrated CPU for 1,119 buses that allow precise, real-time information on the service to be provided with a very flexible visual interface so that TMB can configure the information shown to the passengers, linking through various configurable areas all the elements related to the service (line, destination, times, links, etc.) with audiovisual content. Remotes for the visual impaired people are also included, which allow audio information to be activated when the bus approach the stops.

As for lot 3, CCTV, the onboard system records the images from all the cameras, as well as the alarms and events that occur during the service. Some advanced intelligent video analysis functionalities are incorporated that will allow in the future to count passengers on board, detect lost objects, warn of passenger falls or build origin/destination matrices.

Results

The video surveillance system represents a great benefit for TMB workers, as it enhances their security and serves as a deterrent while also providing evidence in the face of alleged illicit acts.

The user information system offers a very useful tool to the driver by facilitating communication with passengers. For users, it provides accurate and comprehensive real-time information, eliminating situations of uncertainty in the use of the service.