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challenging limits

Urban Traffic Solutions for the city of Castellón

Maintenance Services of the Traffic Light Installations, Public Transport Operation Support System and Urban Mobility Control Center.

The City of Castellón is an example that demonstrates how EcoTrafiX™ can be adapted to control equipment from other manufacturers.

The city decided to switch to Kapsch (then Telvent) in 2012. It was one of the first cities where the EcoTrafiX™ central system was installed. The installation was done over the existing traffic light system, information panels and cameras, and a solution was developed that can be used in other cities.

Subsequently, the city demonstrated its confidence in Kapsch in 2019 once again, by awarding it the new contract for the maintenance of the city's mobility facilities until 2025.

EcoTrafiX™ solution as an integrated platform for traffic control.

The project has a budget of more than five million euros and will be executed over five years. Also included are permanent and portable gauging units that measure the speed of each vehicle and the intensity and occupation of lanes, with eleven access points to the city. Additionally, gauging units for bicycles and people continuously transmit their analysis to a data center. The contract also foresees a maintenance plan and technical support for the management, maintenance and operation of traffic control.

Project Scope:

The scope of the project contracted in December 2019 includes:

- Maintenance and Operation of Urban Traffic Control Systems, Urban Traffic Light Control and renovation, repair and periodic adjustment of the current installations that include 220 IP controllers, over 1,500 traffic lights, 8 traffic information panels, 12 parking information panels and around 200 inductive detectors.

- Supply and maintenance of a new AVL system for urban buses, for 35 units and 24 panels.

- Supply, management, operation and maintenance of a new access control system based on 24 OCR cameras and dismantling of the current bollard system.

- Supply and maintenance of a new CCTV system, installing DOMO IP cameras, new VideoWall and adaptation and improvement of the communications system.

- Installation of 11 data collection stations (DTS) for vehicle counting.

- Supply of 8 bicycle/pedestrian gauges.

- Supply of a new system for calculating travel times based on 50 sensors.

- Installation of protection equipment against storms with high electrical apparatus.

- New web and mobile application.

- New Traffic Light Installations.

The Challenges:

- Maintenance of old equipment is becoming increasingly complicated, as it is difficult to find components.

- The technology of pedestrian and bicycle counting systems is very recent and not yet mature.

- The numerous new system installations, in addition to management and maintenance work as well as expansion and collision work, represent a heavy workload for the project's human resources.

- Seeking to upgrade and integrate new systems into EcoTrafiX™ with minimum cost and maximum efficiency.

- Optimizing the system performance.

- Maximizing customer satisfaction, providing the highest quality of service, meeting the KPIs required in the contract.

The Solution:

- The EcoTrafiX™ version 3.1 central system has been installed integrating all systems. Kapsch's DLVP bicycle and people gauging system will also be installed.

- The new access control system based on Kapsch OCR cameras is installed (agreement with SIMEC).

- GMV's new AVL system was installed, as required by the contract, replacing the previous MyBus system.

- To minimize the cost of the new AVL system, the information panel (PMV) has been developed, more economical than GMV's and tailored to the client's requirements. The customer contracts 41 additional PMVs from Kapsch in 2021, clear evidence of its satisfaction.

- For the control of ETRA regulators and panels, a device was developed (Zone Central) with a converter from the ETRA protocol - V protocol to UNE 135401 protocol.

- To adapt and improve the quality of communications, the communication cables with analog fiber optic cameras are reused, changing only the analog video to fiber converters for IP transceivers to communicate with new DOMO IP cameras. In this way, there is an IP node in each camera foot, allowing other nearby devices (zone control panels, ETDs, Sensors...) to be incorporated.

- TrafficNow Wifi/BT sensors are installed, since we have already worked successfully with them in other projects and we have developed the integration in EcoTrafiX™. A mobile connection via APN (Telefonica) is installed for communication with BT sensors, where there is no cable.

- Zone Central is virtualized in Server in Control Center to control non-centralized controllers, using a mobile connection (see previous point).

- ETRA equipment is replaced with Kapsch equipment in case it breaks down and cannot be repaired.