Project Automation
Ingegneria dei sistemi

Florence L.R.T. System

The topic of tramcars compatibility with the constraints set by Italian art towns, has certainly found a synthesis in the project of the Florence metrotramway.
A long process of design, started with Line 1, whose realization is in progress, was the cause of several reflections and refinements of technical aspects concerning the tramcars, superstructure, electrical traction and centralization which were then fed back into the design of the next Lines 2 and 3.
Taken together, the three lines will represent an example of tramway network: for the operation of the Line 1 (Firenze - Scandicci) it will be used a parking lot of 17 bi-directional low-floor tramcars, 2 of which as spare, while for the Line 2 there will be 20, and 9 for Line 3.
The route of Line 1 lies within a town environment almost entirely at ground level, with the exception of a viaduct over the Greve river, a viaduct to pass over the street in Via Talenti and a bridge across the Arno river. The line is served by a depot-workshop near the terminal of Villa Costanza, in the territory of Scandicci, and is provided with centralized command, monitoring and control systems. The route has an overall length of about 7.5 Km with frequency, at peak time, of 3 minutes.

In this context, Project Automation was commissioned to install and start up the technological systems for Signalling, Supervision and Operation Services.
For the centralized management of the aspects concerning the operation, the tested client-server platform SMARTRAMS® was used, integrating the main functions of the tramway control in one IT environment.
The Localization and Interblock functions are performed by dual-processor static equipment installed along the line for the protection of the tram progress, and in the depot for car parking, also providing the Control Centers with the location and movement data needed for the coordination of the traffic, information to passengers on board and at the stops, and finally for the management of traffic lights priority at the intersections with the street traffic.

In case of Control Centre failure the cars are able to independently make up for the lack of localization and coordination functions, which are temporarily carried out on the basis of the standard timetable and the processing resources of the onboard SMARTRAMS® modules.

The traffic light priority is managed on the basis of the early or delay status of the car, so as not to penalize private traffic unless necessary

The infrastructures of the traction network are remotely monitored and controlled by a special module of the SMARTRAMS® system. Moreover, Video surveillance system arranged at the stops integrates with the Emergency SOS calls, providing for the safety of the passengers.

Project Automation SpA - Viale Elvezia, 42 - 20900 Monza (MB) - Italy
Tel. +39 039 2806.542 Fax: +39 039 2806.432 www.p-a.it