AVLC system implementation
Würzburger Strassenbahn

Overview

164 buses

40 Trams

23 million passengers annually

Industry
Bus and tram,
Würzburg, Germany

Challenge
Implement AVLC system

Solution
Trapeze Intelligent Transport System (ITS)

Results

- AVLC system
- SmartInfo passenger information
- Traffic light preemption

Background

Trams form the backbone of Würzburg's local public transport system. The route network covering around 20 kilometres has five routes with a total length of 42 kilometres. Würzburger Strassenbahn carries about 23 million passengers every year.

The Solution

Contrary to the general trend, the network operated by Würzburger Strassenbahn with 19 kilometres in length is larger than before the second world war, and is being expanded even further. Würzburg has Germany's steepest tram route with a gradient of 9.1%. In 2002, Würzburger Strassenbahn GmbH decided to implement an automatic vehicle location & control system (AVLC) with digital trunk radio based on TETRA. The system was projected and supplied in four phases.

The functionalities

- Automatic vehicle location & control system type LIO
- TETRA digital radio
- Modern on-board computers IBISplus
- Logical positioning and infrared beacons combined with GPS positioning
- Passenger information (SmartInfo)
- Data supply LIO-Data with link to DIVA
- Traffic light preemption
- Software and data loaded to the vehicles using wireless LAN (WLAN)
- Passenger counting system linked to and with an interface to VISUM

The system at a glance

Control centre
3 dispatcher workplaces, 3 info workplaces,
1 statistics workplace

Radio system
Digital trunk radio, 5 stationary base stations
2 simplex voice channels, 1 duplex data channel

Vehicles
164 buses, 40 trams, 6 service vehicles with IBISplus and digital trunk radio

Depots
3 depots (depot data management) with WLAN

Dynamic passenger information
More than 50 SmartInfo, controlled by digital trunk radio; successive upgrading of the signs with text-to-speed reading device since 2011

Third-party components
DIVA planning system, ATRON ticket printer, IRMA passenger counting system, Planfahrt, big-screen projection in the control centre, TETRA radio system by Rohde & Schwarz

Results:

- AVLC system
- SmartInfo passenger information
- Traffic light preemption

“The last phase in the automatic vehicle location & control system for Würzburg consisted in commissioning the DPI signs. These keep our customers constantly aware of the benefits of the AVLC. The broad acceptance of the DPI signs as a modern information medium is confirmed anew every day.”

Bernd Karl, Head of Traffic Planning, Würzburger Strassenbahn GmbH

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Trapeze Group works with public transport agencies and their communities to develop and deliver smarter, more effective public transport solutions. For more than 25 years we have been Here for the Journey, evolving with our customers around the world to helping them move people from point A to Z, and everywhere in between.

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