



Passenger Information Upgrade

AVLC, traffic light preemption and transfer protection

Overview



28 bus lines



4 light rail routes

Industry

Bus and Light Rail,
Freiburg, Germany

Challenge

Upgrade communications
system to provide punctual,
reliable services

Solution

Trapeze Intelligent
Transport System (ITS)

Results

- ✓ Automatic Vehicle Location and Control (AVLC) capabilities
- ✓ Upgraded Real Time Passenger Information signs (RTPI)
- ✓ Traffic Light Preemption
- ✓ Transfer protection

Background

The buses and light rail vehicles of Freiburger Verkehrs AG (VAG) travel a distance equal to more than 18 times the distance between Earth and the moon each year. With 4 light rail and 28 bus lines, VAG enjoys a huge level of acceptance with customers. About 75 million passengers are carried by this transportation company each year.

The Challenge

Freiburg Verkehrs AG turned to Trapeze to upgrade their communications systems using fully automatic vehicle location and control system (AVLC), traffic light preemption, transfer protection and passenger information displays to provide punctual, reliable services.

The Solution

Over 100 SmartInfo passenger information displays have been in use at the bus and light rail stops of Freiburg im Breisgau - and thus throughout the city's entire light rail system - since summer 2000. These displays form part of the LIO automatic vehicle location and control system (AVLC). Communication between the vehicles and displays takes place using an analogue quasi-synchronous radio system. The vehicle equipment boasts IBISplus G2 on-board computers and supports the system by means of logical location. Thanks to traffic light preemption and transfer protection, public transport is thus extremely attractive, punctual, and reliable. Passengers of Freiburger Verkehrs AG can receive timetable information by SMS and receive a reply on their mobile phones in real time.

The functionalities

- LIO automatic vehicle location and control system
- Quasi-synchronous radio system
- IBISplus G2 on-board computers
- Logical location and infrared beacons
- SmartInfo passenger information with acoustics
- LIO-Data data supply
- Loading and downloading of software and data to/from vehicles via WLAN
- Transfer protection
- DIVA/LIO-Data data coupling
- Schedule information via SMS





The system at a glance



Control centre

3 dispatcher workplaces, 1 stationary info station, 1 remote info station, control computer client G2



Radio system

Analogue quasi-synchronous radio system, 1 duplex data channel, 3 simplex voice channels, 3 base stations



Vehicles

67 buses, 65 light rail vehicles

Dynamic passenger information

Over 100 SmartInfo displays with acoustics, controlled by radio communication



Depots

1 central depot



Software Interfaces

DIVA planning program by MDV, IRMA passenger count system on some routes, evaluation of passenger numbers with planfahrt and ISAS2, AEG antenna system, PERDIS personnel planning (ID systems), EFA timetable information system

Results:

- Automatic Vehicle Location and Control (AVLC) capabilities
- Upgraded Real Time Passenger Information signs (RTPI)
- Traffic Light Preemption
- Transfer protection

“We are constantly expanding our programme to offer our passengers the best service possible. Needless to say that our operations control system is constantly upgraded to the latest state of the art. One central focus of attention in this respect consists in improving quality by expanding real-time passenger information.”

Oliver Benz, Quotation and Operations Business Unit Manager,
Freiburger Verkehrs AG

TRAPEZE GROUP

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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