



Market Segment:

Rolling stock

Country of installation:

Germany

Year of Installation:

2023

End Customer:

**Deutsche Bahn
Talgo**

System Integrator:

Colway

Solution:

**Emergency communication
Public Address System**

Key Products:

**ENA-2060
TKIS-2
TKIE-2**

Key Technology:

**Ultra-low latency
communication
HD Voice
Automatic Volume Control**

Crystal clear communication for Deutsche Bahn's new fleet

Zenitel collaborates with Colway Industrial to deliver cutting edge communication technology to enhance operational and emergency use.

The End Customer

Deutsche Bahn (DB) is the largest railway operator and infrastructure owner in the world. Recently, they chose Talgo to deliver a new fleet of long-distance trains for a project which will connect Germany with the Netherlands, Austria, and the Swiss border. These new trains offer more space and enhanced comfort for passengers, as well as being more adaptable to demand compared to the existing models.

The Requirement

From the inception of the project, DB made it clear that delivering a stellar auditory experience for their passengers was the top priority. The onboard audio system needed to serve a variety of critical functions, including emergency notifications, operational announcements, and entertainment offerings too, which made Zenitel the natural port of call.

All communication points needed to be resilient to dynamic noise levels generated by high-speed trains and large volumes of passengers during peak hours. Additionally, to guarantee an exceptional audio experience, DB made it a non-negotiable requirement that the end-to-end latency for live announcements must not exceed 50ms to avoid acoustic echoes.

The Solution

Zenitel worked in conjunction with Colway 08 Industrial, implementing a bottom-up approach to product design. The brief demanded bespoke hardware, mechanical and software solutions to fully meet DB's needs. Zenitel, together with Colway, delivered a sophisticated audio communication system that surpassed expectations.

The solution included a driver communication panel, passenger help points, accessible help points for those with reduced mobility, and a public address system throughout the train. All Zenitel products and technologies were integrated into Talgo's fleet platform with future expansion in mind:

all Zenitel's products are based on open protocols, making it easier to control and monitor from 3rd party systems without complex integrations.

Additionally, Zenitel offered a unique hardware and software solution that dynamically adjusts the output volume levels of passenger help points. Thanks to Zenitel's Automatic Volume Control (AVC) feature, operators and travelers alike can be heard and understood, all the time.

The Result

The emergency help points, driver communication panel, and public address system delivered by Zenitel and Colway provided a solid

foundation for DB and Talgo's overall communication solution inside the train. The exceptional audio performance of Zenitel's Emergency Call Points has elevated the experience of the drivers and passengers.

In addition, Zenitel was able to deliver ultra-low latency audio communication by deploying a hybrid solution that makes use of SIP signalling and analog line level output of the driver communication panels. Zenitel was able to achieve an end-to-end latency of 2ms, exceeding the customer's expectation by miles.



Why Zenitel?

Zenitel is well positioned to drive the future of intelligent critical-communication solutions. Through our portfolio of IP products & solutions, with built-in intelligence and a focus on cybersecurity, we provide organizations with superior, scalable security and flexibility. Zenitel is the proven, preferred choice for environments requiring crystal-clear audio to ensure the protection of human life, property, assets and the management of critical activities. With interoperability at all levels, we seamlessly integrate with access control, video management and security platforms.