



Market Segment:  
**Rail Wayside**

Country of Installation:  
**London, UK**

Year of Installation:  
**2018**

End customer:  
**Network Rail**

Solutions:  
**Public Address and  
Voice Alarm (PAVA)**

Key Products:

- **VIPEDIA**
- **V400**
- **EMS20**
- **MPS20**
- **SAP02**
- **MPS01**
- **EOLZ01**

Key Technology:  
**VIPEDIA back compatibility**

Client / Installer:  
**Fourway Communication Ltd.**

## London Bridge Station upgrades its ASL PAVA system with Zenitel

Ensuring safety and efficiency at one of the world's oldest railway stations with innovative communication technology from Zenitel.

### The Customer/End User

London Bridge mainline railway station managed by Network Rail, is one of the world's oldest railway stations. Established in 1836 by the London and Greenwich Railway (LGR) southeast of the iconic London Bridge on the River Thames, it swiftly became a pivotal hub in London's railway network due to its strategic location and partnerships with various railway companies. Over the years, the station has undergone numerous transformations. Originally featuring a simple design with basic facilities, it expanded significantly as more railways connected to it. This growth necessitated a flexible and upgradable Public Address and Voice Alarm (PAVA) system to meet its evolving needs.

### The Requirement

Between 2013 and 2018, London Bridge Station underwent a major redevelopment as part of the Thameslink Programme, involving a £1 billion investment aimed at doubling the station's capacity and enhancing the passenger experience.

The redevelopment included adding three new platforms, new entrances, and improved facilities involving restrooms, retail areas, restaurants, concourses, and pedestrian walkways.

Consequently, a major overhaul of the station's existing VAR-based PAVA system, supplied by ASL in 1995, was required. In addition to providing key functionalities such as live and automatic emergency broadcasts, live paging from platforms and information desks, and scheduled and spot pre-recorded messages

from third-party control systems, the new PAVA system needed to:

- Support the newly-created zones associated with the station expansion
- Integrate with the ATOS Worldline and MICA messaging systems via IP
- Include expansion capability and a minimum operational life of 10-15 years
- Connect seamlessly with the existing site-wide peripherals such as loudspeakers and microphones
- Fit into communication rooms with limited available space
- Be EN 54 and PADS certified to meet Network Rail and UK national Fire Alarm System standards
- Support for complex phased alert and evac implementation

In view of the station's operational status and importance, minimising PAVA system downtime during the works was crucial and therefore it was essential that a clearly defined over-and-back methodology was implemented to ensure minimum disruption to the station's operations during the upgrade works.

## The Solution

To meet these challenging requirements cost-effectively, the decision was made by Network Rail - with guidance and risk mitigation from Zenitel - to enhance the existing PAVA system by replacing the legacy analogue VAR audio controller with next-generation IP-enabled VIPEDIA product. The new audio controllers were installed in the existing cabinets and connected to both new and existing Zenitel V400 amplifiers using custom-made 'umbilical' leads

and interface panels. These custom accessories simplified on-site installation activities and ensured quick and easy over-and-back testing.

The implementation and design processes were carefully devised by Fourway Communication with Zenitel providing guidance and support (e.g. updated battery calculations, site surveys, and attending planning sessions) to all parties, including the end-customer. Meticulous preparation in the factory including the design, build, configuration and Factory Acceptance testing of the new hardware and 'umbilical' leads in conjunction with a phased installation program, minimised the risks associated with the upgrade and ensured minimal downtime thus maximising the station's ability remain fully operational throughout the works.

The adoption of an over-and-back test routine also ensured a simple rollback option, further avoiding disruption to daytime operations.

The upgraded system serves forty-five separate PAVA zones and is installed in two locations linked via a fully supervised network loop topology. Comms Room #1 houses seven cabinets, while Comms Room #2 houses three new cabinets and within these ten cabinets eight VIPEDIA and associated accessories were installed on-site by Fourways Communication supported by engineers from Zenitel. The IP-enabled integration using Zenitel's VIPA-API was also proven offsite with both telent's MICA and ATOS Worldline. All new aspects of the system including rack build were in compliance with the relevant EN 54 Fire Alarm standards.

## The Result

The successful upgrade of the Public Address and Voice Alarm system at London Bridge Station exemplifies the collaboration between Network Rail, Fourway Communication, and Zenitel. The project not only modernised the station's PAVA system but also achieved this in the most cost-effective way.

The new Zenitel PAVA system guarantees long-term reliability and performance, thereby securing the station's communication infrastructure for the future.



*"As the CRE and Project Manager, I take immense pride in our achievements delivering a comprehensive suite of Safety and Security System solutions at London Bridge Station. Successfully migrating a PAVA system within such a large & operational station whilst also delivering new complex system interfaces, has been a significant accomplishment for both companies. The engineering expertise of our UK-based supplier was crucial to our success."*

**- Paul Kemp,  
Head Of Technical Services,  
Fourway Communication Ltd.**

## Why Zenitel?

Zenitel is well positioned to drive the future of intelligent critical communication solutions. Through our portfolio of IP products and solutions, with built-in intelligence and a focus on cybersecurity, we provide organisations 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-