We make everyday life safer

CASE STUDY

Intelligent sound control for modern railway stations.

The Swedish Transport Administration (TRVT) partnered with Ambient System in 2024 to modernize their analog sound systems in railway stations across Sweden.

CLIENT'S GOALS

TRVT aimed to implement advanced, remotely managed and monitored PAVA solutions, incorporating automatic sound level control and integration with their existing control platform via SNMP. The primary objective was to improve passenger safety and communication while minimizing noise pollution for surrounding communities.

SCOPE OF THE PROJECT

Ambient System provides comprehensive PAVA solutions, encompassing Voice Alarm Systems and loudspeakers, under a long-term framework agreement with TRVT. This includes specialized, climate-resistant loudspeakers and intelligent amplifier modules designed for platform displays.

Ambient System solutions:

» **EN54 certified loudspeakers, tested for the harsh Swedish climate** (low temperatures, humidity, corrosion) and demanding platform environment (vibration and shock resistance), customized in specific colors.

» Loudspeaker models: **ABT-W6, ABT-S206B, ABT-P20, ABT-T2015, ABT-LA20B, ABT-LA30B, ABT-LA60B**

» **smartVES** intelligent PAVA solution

» **ICO MAM amplifier module** for platform displays and clocks

DELIVERED SOLUTION

A key feature of the delivered solution is the intelligent sound level control, which minimizes noise pollution for residents while optimizing message clarity for passengers. The system also includes self-testing SPL/STI using smartVES sensors, enabling remote diagnostics of system components, interfaces and speaker circuits. The ICO MAM amplifier module powers platform displays and clocks, supporting up to two loudspeakers and featuring automatic message tracking (ANS) and acoustic loop testing.

PROJECT MILESTONES

- **2023:** Technical proposal development, including a sample station project and acoustic simulations, first article inspection, factory audit and laboratory tests (including EMC electromagnetic tests).
- **2024**: Development of additional functions, factory acceptance test and initial orders.
- **2025:** Successful client's factory acceptance test.

EQUIPMENT DELIVERED

Example object - **Railway Station in Linköping.**

- 11 × adaptive noise sensing microphones SMART-ANSM-01
- 1 × control unit SMART-CU-8LCD
- 1 × adaptive audio processor SMART-DU1604
- 129 × loudspeakers
- 24 speaker lines
- System power: 2.4 kW

SYSTEM OPERATION

- Calibration
- STL/SPI reporting
- Noise pollution minimization for surrounding communities

SUMMARY

Ambient System partnered with the Swedish Transport Administration (TRVT) to upgrade PAVA systems in railway stations. The project focused on enhancing passenger safety and communication while minimizing noise pollution. The delivered solution features intelligent sound control, remote diagnostic, and climate-resistant loudspeakers. Key milestones included technical proposal development, factory acceptance testing and factory acceptance test. The Linköping railway station - example installation: the system includes adaptive noise sensing microphones, control unit, audio processor and numerous loudspeakers. System operation includes calibration and reporting, with a focus on minimizing noise for nearby residents.

From left: ABT-S206B, SMART-DU-1604, ABT-T2015, ABT-LA20B/30B/60B, ICO-MAM