



CASE STUDY

Ambient System Solutions for Airport Applications

PA/VA System / SIP Intercom / Management & Control Software



We make everyday life safer

Table of Contents

Challenges	3
The solution	3
The benefits	3
Challenges	4
Public Address Voice Alarm	4
SIP Intercom	5
Building Management and Control Software	5
Key features	6
SIP based intercom paging station	6
Store and Forward	6
Ambient Noise Control	6
Future expansion and flexibility	6
System security	7
System integration	7
Typical airport configuration	8
Recommended hardware	10
Chosen references	11
Contact information	11

Challenges

Large scale mass public transport facilities, especially airports, require a modern integrated approach into their security systems. This allows to greatly increase both passenger safety and comfort, but also enables the airports administrators to effectively manage the sites operation. Fitting such an object with a sound system creates **many security, installation, operational and also acoustical challenges**. The **Ambient System Security Platform** helps You manage these whilst meeting strict EN 54 criteria.

The solution

Ambient System offers a solution that combines EN 54 compliant Voice Alarm Systems together with a fully digital SIP-based intercom system, as well as a platform for system control, management and visualisation. This shall increase overall safety by allowing airport staff to take more efficient actions and better react to any potential threats.

The benefits



Flexibility and scalability



Increasing passenger safety



Increasing staff work comfort and facilitating better reactions



Effective flight and general information broadcasting



Seamless integration with Flight Information and Physical Security Information Management Systems



Suitable intelligibility even in difficult acoustic spaces

Challenges

Public Address Voice Alarm

The **MULTIVES** is Ambient Systems fully digital, modular and IP based PA/VA solution. MULTIVES provides live emergency messaging, background music playback and gate announcements functionality combined with many additional features such as seamless integration with building management, flight information and fire alarm systems.

Being fully EN 54 compliant **MULTIVES** offers a large scope of safety features. The system is fitted with advanced self-testing algorithms, network and speaker line surveillance as well as internal equipment and module redundancies.

MULTIVES is a TCP/IP based system. System rack cabinets, remote paging stations and interfaces can connect via copper or fibre optic cable, to provide audio routing and paging to more than 2000 zones.



full compliance **EN 54-16** **EN 54-4**



SIP Intercom

Ambient System offers the **ABT Communication Server** which allows to integrate any type of Ambient VES System with a SIP network through the means of a SIP Gateway interface. The communication server will also allow to use Ambient **ICDG-1 type desktop stations** in a combined role of intercom and remote paging station.

Gate operators equipped with the ICDG-1 shall be able to communicate with key airport staff, perform paging to chosen zones and trigger advanced system features.



Building Management and Control Software

Ambient System introduces **YELLOW** – a platform for control, visualisation and system integration for security and information systems. YELLOW allows simultaneous monitoring and control of multiple system such as: PA/VA, Intercom, FIS, and many others.

All managed system elements can be presented in one combined Graphical User Interface. This allows for faster response to emergency situation and greater overall management efficiency.



Key YELLOW features:

- Launching stored messages and pre-programmed action scenarios
- Routing audio signals
- Controlling sound level in zones and audio inputs
- Monitoring and visualisation of device status
- Presenting system status information in graphical form
- Conducting a system log
- Built in SIP client for communication and paging



Key features



SIP based intercom paging station

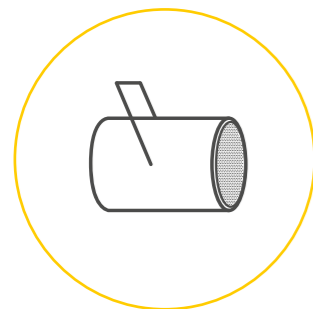
The ICDG-1 is a robust desktop intercom equipped with a **directional gooseneck microphone** for high quality hands-free message paging. It has 32 programmable quick dial buttons allowing to perform various actions with a single click. ICDG-1 has a 4,3" color display making operation easy and intuitive. The intercom is powered via Power over Ethernet using a CAT6e cable.

Store and Forward

The system allows to make announcements to a zone or group of busy zones. In this case the user is presented an automated message informing him the chosen zone is not available for paging. If he chooses to proceed he can issue the message, which shall be stored in the system buffer and played back in chosen zones when they shall become free.



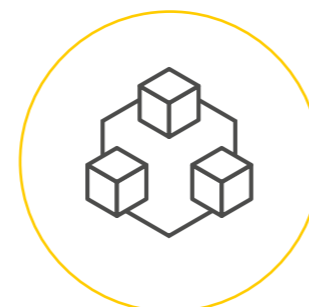
Ambient Noise Control



Large areas such as departures, entrance and retail zones, where background noise can change significantly during the day can be fitted with **ABT-NSM type noise sensors**. If using the Noise Sensor feature the MULTIVES can then **automatically attenuate sound level in a zone, so that a healthy headroom is kept at all times and broadcast messages remain audible.**

Future expansion and flexibility

Using **Audio over IP architecture and a modular design system** simplifies the installation and allows to grow it in future, whenever requirements arise.



System security

Ambient system offers a solution fully compliant with the EU standard EN 54. Each system component – from microphone capsule, to speaker line **is monitored**. Fault is indicated within 100 seconds for microphones, system controllers, amplifiers, loudspeakers and additional interfaces.

Ambient offers increased protection by the use of additional redundancies, such as:

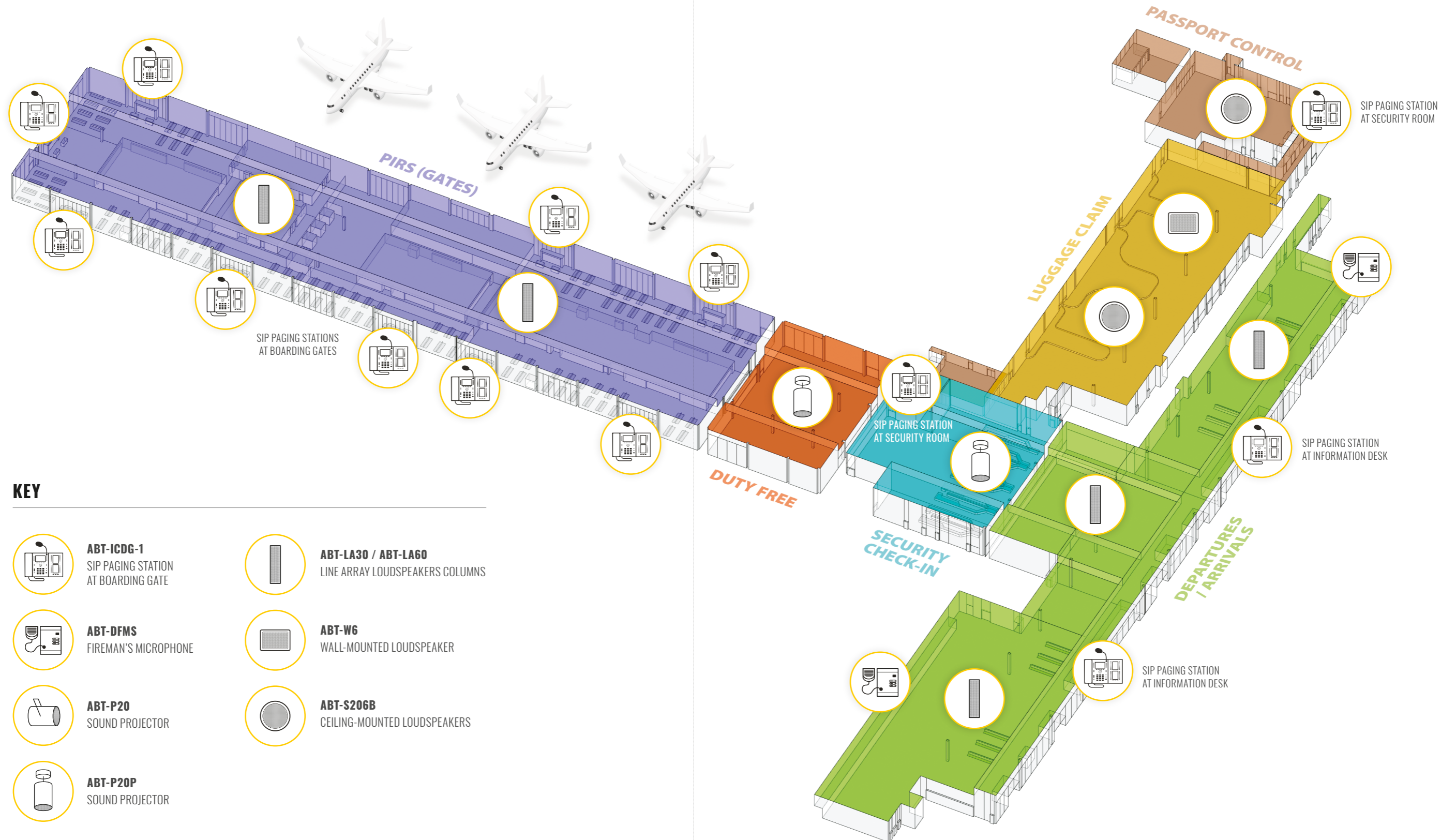
- Each amplifier output is fitted with a 2-line (AB-type) or 4-line (ABCD-type) module providing speaker line separation, so that no individual speaker line fault shall result in total loss of zone coverage.
- Each system controller shall allow to connect a standby amplifier with automatic switch-over in case of main amplifier failure.
- Each system controller can operate independently in case of network loss. The system has a true master-less networked architecture.
- The system is equipped with own EN54 compliant power source and backup power source. The main power source section is modular allowing N+1 PSU units to be employed.
- The ABT-CU8 system controller is available in No-Single-Point-Of-Failure configuration. In this situation it shall be fitted with dual power circuit, dual DSP, dual system bus and redundant network interfaces.

System integration

Ambient System PA/VA devices allow for seamless integration with any BMS, PSIM, FIS and/or FAS systems. Ambient offers integration not only through hardware (audio inputs / outputs and GPIO), but also through SMS protocol and built-in audio streaming.

In addition **YELLOW SI SERVER** provides the means to integrate the solution with any third party system via SMNP or OPC.

Typical airport configuration



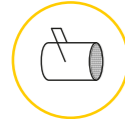
KEY



ABT-ICDG-1
SIP PAGING STATION
AT BOARDING GATE



ABT-DFMS
FIREMAN'S MICROPHONE



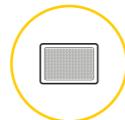
ABT-P20
SOUND PROJECTOR



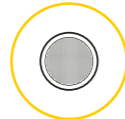
ABT-P20P
SOUND PROJECTOR



ABT-LA30 / ABT-LA60
LINE ARRAY LOUSPEAKERS COLUMNS



ABT-W6
WALL-MOUNTED LOUSPEAKER



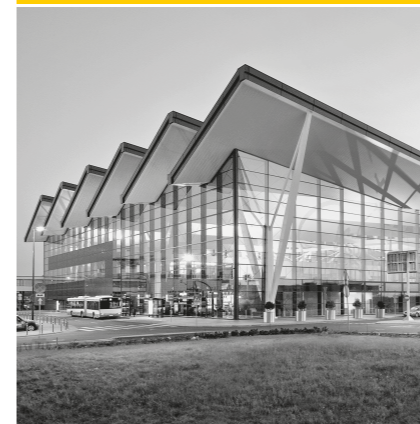
ABT-S206B
CEILING-MOUNTED LOUSPEAKERS

Recommended hardware

Description	Recommended equipment
Terminals	
Networked PAVA system racks	<p>MULTIVES:</p> <ul style="list-style-type: none"> • control units • amplifiers • noise sensors • power supply • SIP Gateway • control and visualisation server
Zones	Based on building layout
Audio channels	Based on the number of ABT-CU11-LCD control units
Gate intercoms	ABT-ICDG-1
Emergency microphones	ABT-DMFS

Chosen references

LECH WAŁĘSA AIRPORT in Gdańsk



WARSZAW-MODLIN Airport



LUBLIN Airport



Contact information

HEADQUARTERS

AMBIENT SYSTEM Sp. z o.o.

ul. Bysewska 27

80-298 Gdańsk | Poland

T: + 48 58 345 51 95

ambient@ambientsystem.pl

SALES

NEIL VOCE

n.voce@ambientsystem.pl

T: (+44) 743 733 95 57





We make everyday life safer

Ambient System products are continually improved. All specifications are therefore subject to change without prior notice.

EN / 07.2021