AIRPORT SOLUTIONS

Safety, Public Address and Enhanced Passenger Experience

AVIAVOX®
ARTIFICIAL VOICE SYSTEMS

TOA

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SALE

Increased Air Travel and crowded noisy terminals: how to find your way through?

As the number of flying travellers is growing exponentially, the density of traffic, the complexity of flows with multiple types of passengers, the safety and security requirements, the lack of clarity to ensure easy wayfinding for passengers processing through, are increasing in dizzying heights.

At the same time passenger's expectations are rising rapidly, so airports concentrate in their development on rethinking processes completely to put the passengers back into focus and draw all services around them.

Studies have shown that air travel is a source of stress, especially amidst today's heightened inspection and security procedures which impede the flow of passengers in airports.

Passengers must walk long distances within the very crowded and noisy airports and often have difficulty finding their way on time.

Announcements made with fuzzy sound, difficult to understand and in a foreign language everywhere in the airport and at all times, create a noise pollution that can irritate passengers instead of helping them to orient and find their way on time.

2,34 billion passengers at European Airports in 2018.
Several Mega-Airports have more than 50 million passengers a year. The Air Travel grew 36 % over the last 5 years.

(Source: ACI Europe Airport Traffic Report full year 2018)

SAFE, INFORMED AND RELAXED AT AIRPORTS

Public Address, Voice Alarm Systems, Commercial Audio and Intercom distributed in excellent sound quality

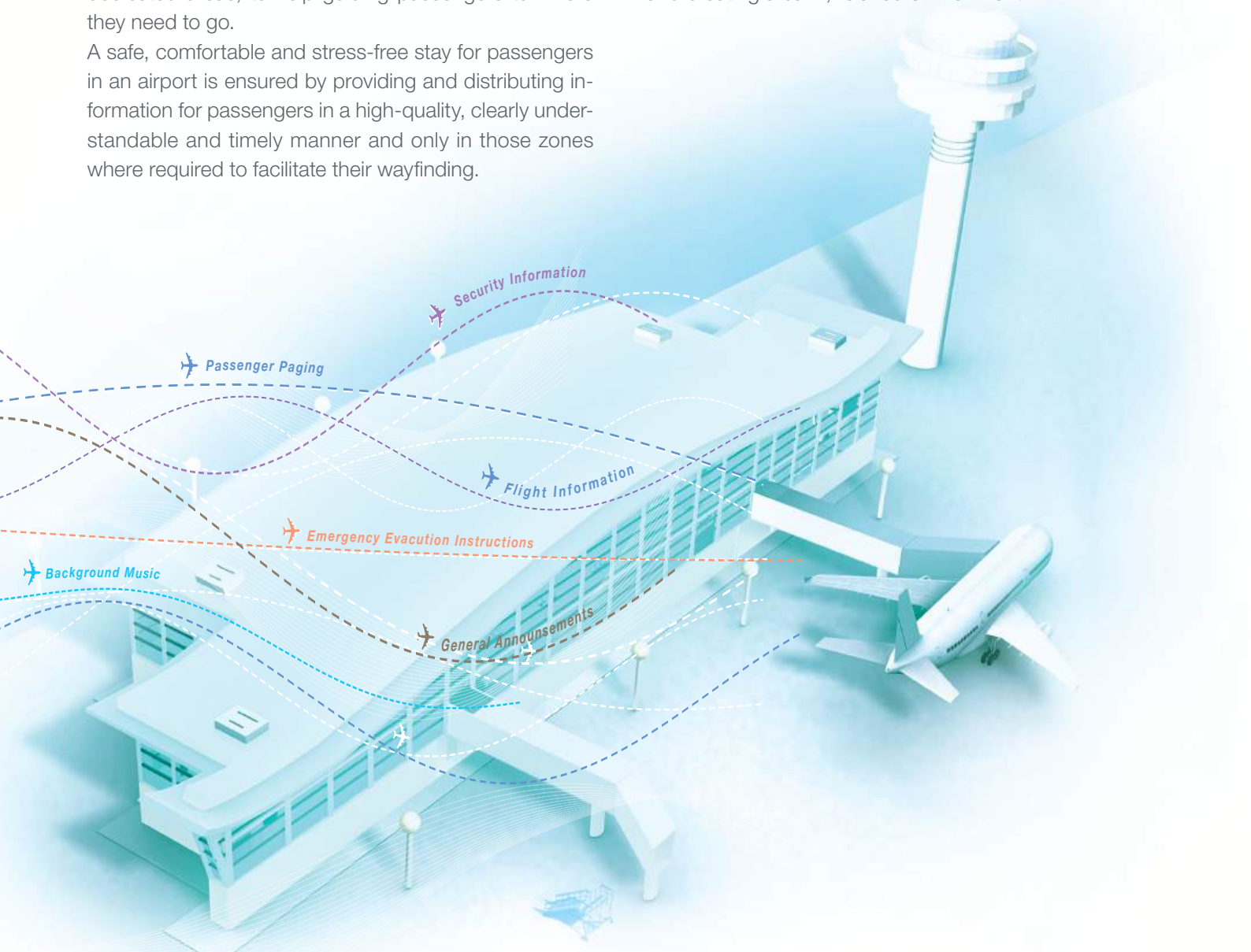
Solution for Airports

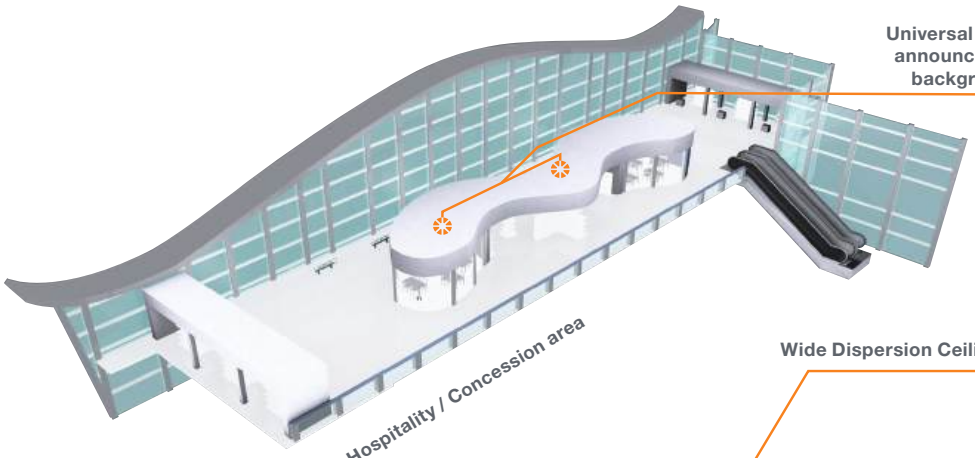
Airports need to make the transportation sites safe and user-friendly for all groups involved. An easy-to-orient environment with an agreeable, appealing and secure atmosphere.
How to facilitate wayfinding for passengers to make their stay stressless and pleasant?
Airports require specific announcements to be made in dedicated areas, to help guiding passengers to where they need to go.
A safe, comfortable and stress-free stay for passengers in an airport is ensured by providing and distributing information for passengers in a high-quality, clearly understandable and timely manner and only in those zones where required to facilitate their wayfinding.

TOA integrated Solution for excellent sound

Offering the sound systems and engineering capabilities required for safe, reliable passenger transit, we facilitate the accurate transmission of information to passengers and smooth communication between airport staffs.

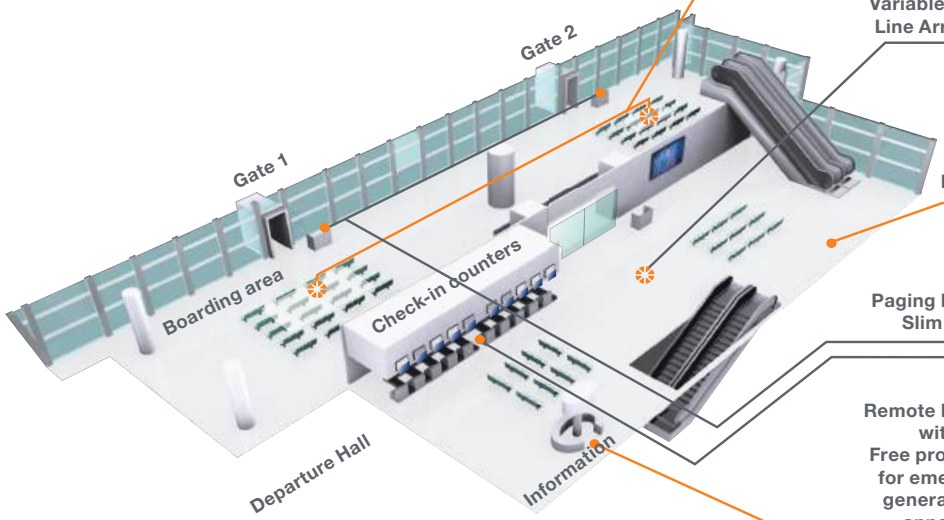
Our solutions strive to support enhancement of passengers' experience by enabling targeted announcements and creating a calm, relaxed environment.





Universal speaker for announcements and background music

Wide Dispersion Ceiling Speaker



Variable Dispersion Line Array Speaker

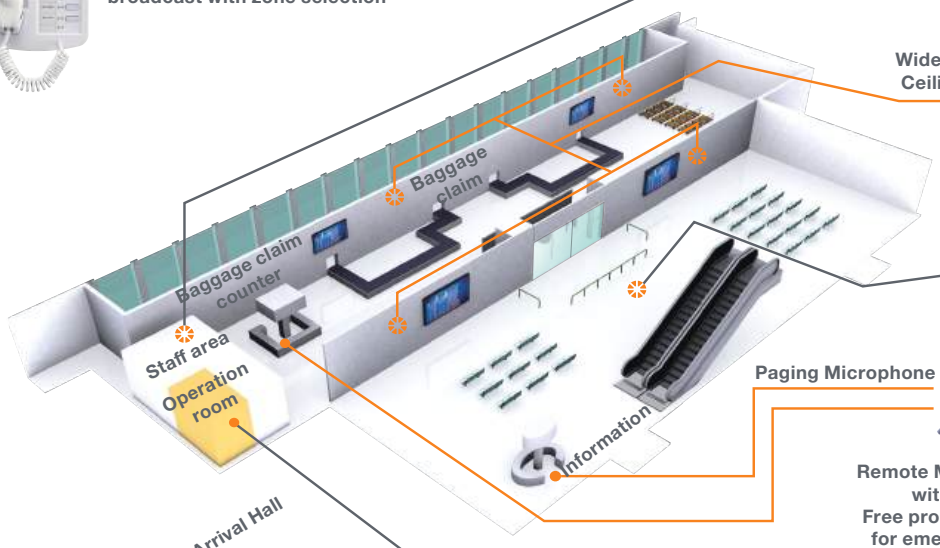
Ambient Noise Sensor Microphone

Paging Microphone Slim Gooseneck

Remote Microphone with Extention Free programmable for emergency and general broadcast announcements

Voice Alarm System Public Address, BGM and Voice Evacuation EN54 certified

Emergency Remote Microphone Fireman's Mic for emergency broadcast with zone selection



Ceiling Mount Speaker High-quality announcements and background music

Wide Dispersion Ceiling Speaker

Two-way Line Array Speaker

Paging Microphone

Remote Microphone with Extention Free programmable for emergency and general broadcast announcements

Intelligent Artificial Systems for Airports and Airlines

AviaVox has developed a technology with which a remarkably high level of guaranteed natural speech can be generated in over 30 languages.

The quality is unique in the world, and cannot be distinguished from a human voice.

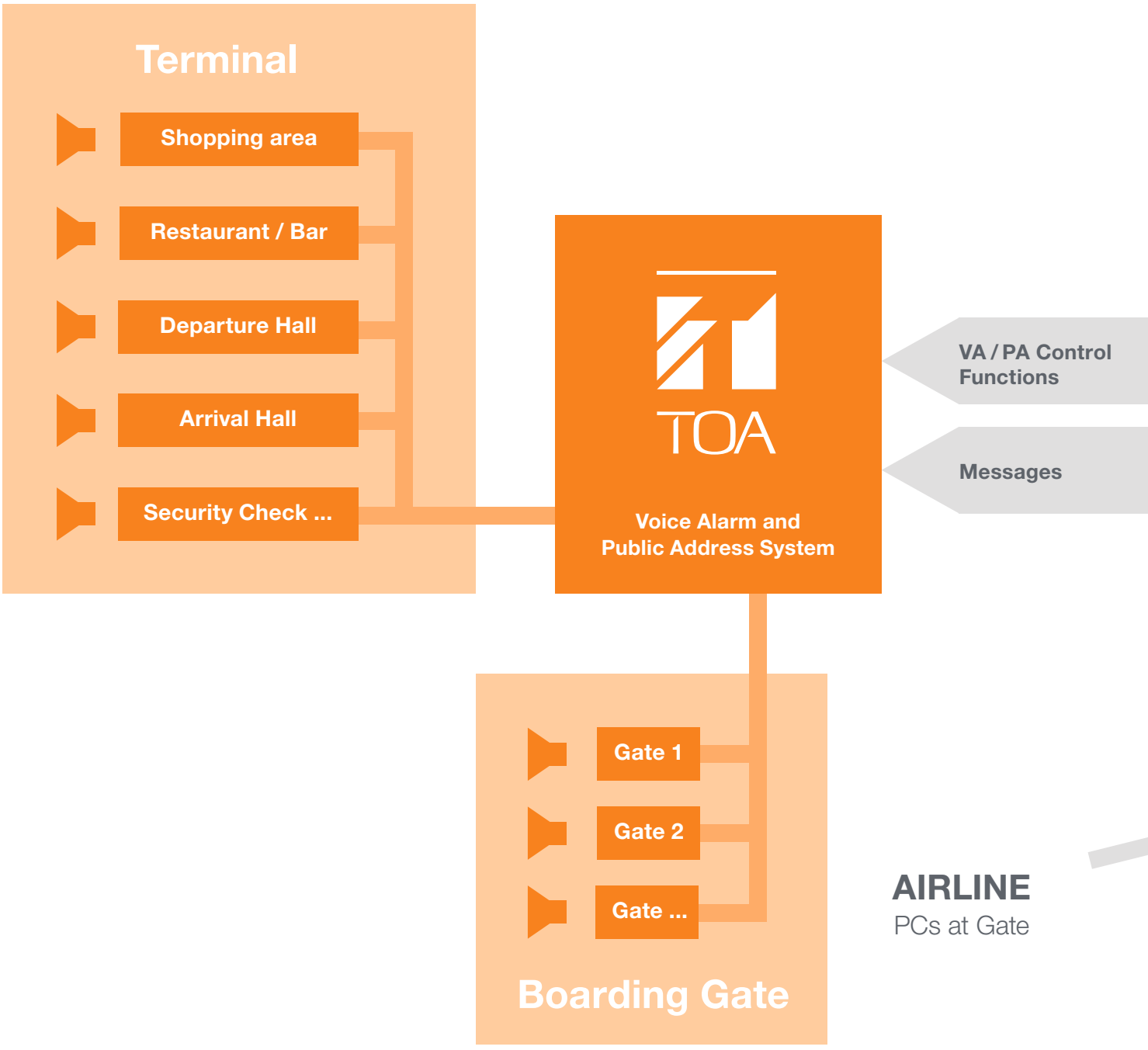
Ever since the company started in 1995 it has worked closely with airports of all sizes, which resulted in being a global expert and market leader in the field. Over the years, AviaVox has carefully studied the operations of both airports and airlines and has embedded all sorts of useful tools and functionalities, thus implementing best practice of all these environments. Today, with information flows becoming ever more diverse, AviaVox uses its expertise to act more and more as an information integrator who brings all disciplines together to provide multilevel information to the passengers.

The AviaVox phoneme technology delivers a speech quality that is far superior to systems that are based on pre-recordings or Text-To-Speech (TTS) technology. Phonemes are very small digital speech fragments that together form a word. One single word can consist of multiple phonemes, that play a crucial role in the intonation, articulation, speed and bridging between words.

The AviaVox Systems contain artificial intelligence that controls the construction of words and grammar. In its turn, this software uses a huge voice-base with independent phonemes in order to ultimately generate multilingual announcements. The result… AviaVox makes a computer speak in many languages as if it was a living human being!

ENHANCE PASSENGER EXPERIENCE

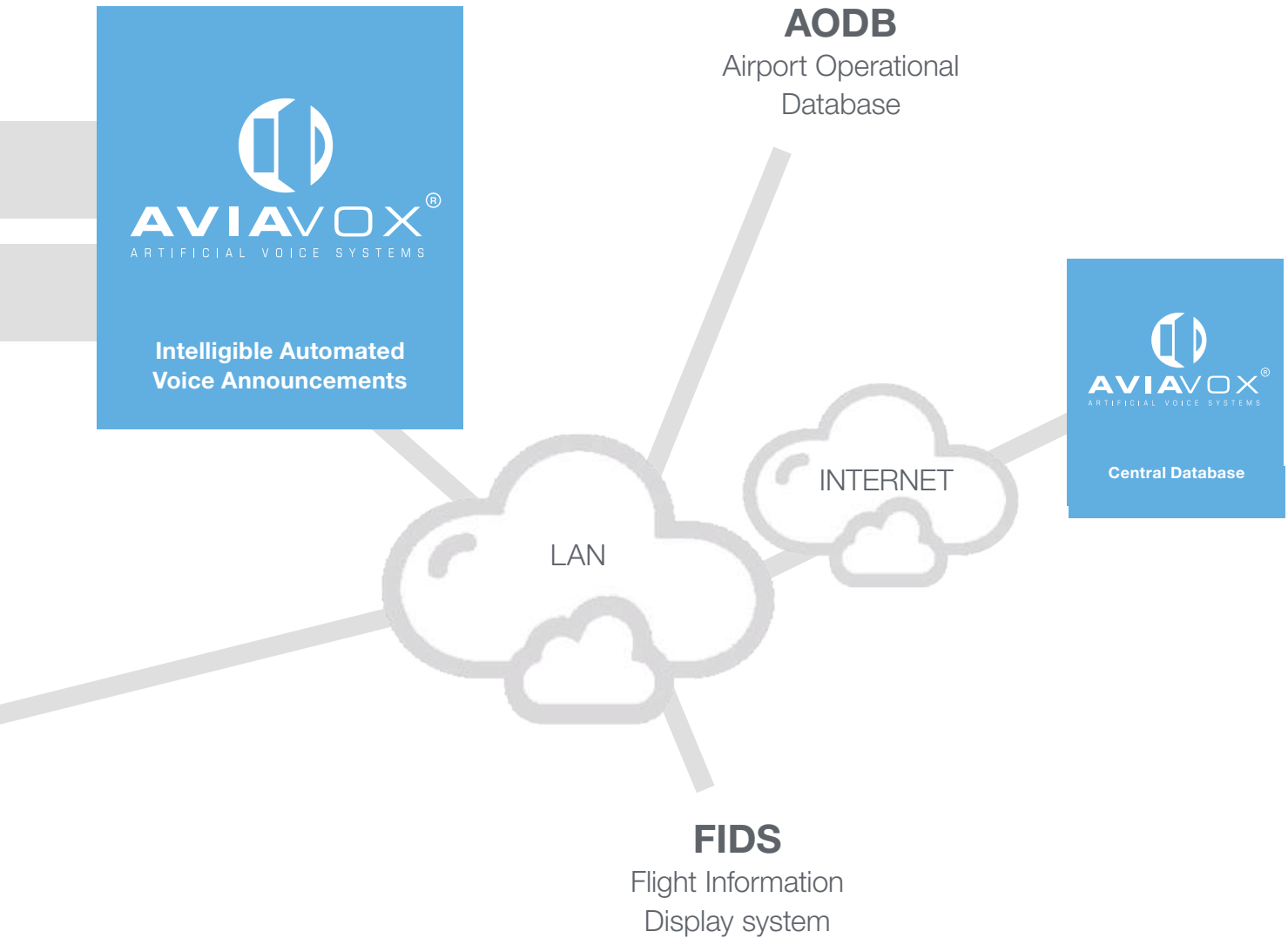
Safety, Public Address and Intelligible Automated Voice Announcements at Airports



AviaVox entirely focuses on developing intelligent automatic announcement systems and services for Airports and Airlines. These systems and services can be used either separately or combined, as the topology is modularly designed. Whatever combination is used, the announcement policy of the customer is leading in how the system is being used. The software-platform enables AviaVox to tweak and tune the parameters in such a way that it entirely meets the expectations and requirements of the customer. Throughout the years, AviaVox has developed specialized knowledge of the airport- and airline operations and has tailor-made its systems and services towards the capability to integrate with the existing airport systems and operations.

That way the AviaVox systems are far more than just an intelligent automatic announcement system. Because it integrates with the Airport Operational Database (AODB), the Flight Information Display Systems (FIDS) and the TOA Voice Alarm and Public Address Systems (VA/PA). Also other structural components of the infrastructure like the Wireless Networks (Wi-Fi), the Local Area Networks (LAN), telephony switches and the Internet are being used to fully support Airport and Airline Systems as part of the daily operations, and help to maximize efficiency.

By combining TOA high-quality VA/PA systems with AviaVox human-like sounding Automated Passenger Announcement System (APAS), airports and airlines have the possibility to improve communication with their passengers on all levels. Delivering the right message at the right time in the right language and only in the PA-zones where it is needed.



INTEGRATED TOA / AVIAVOX SOLUTION FOR AIRPORTS:

In **1998**, Luton Airport had only two small departure halls with a total of eight gates.
The research for a suitable paging system brought Lorn Money (at ADC & Company) to TOA UK.
The TOA paging solution SX-1000 system was installed and is still in use today.
That's 21 years of continuous use with only one upgrade in 2015.

Then in **2000**, the airport needed for the 3-years-old 'new' terminal a new Public Address / Voice Alarm System that had to be able to make multiple different emergency announcements. The installed system was a VX-2000 VA / PA System.

In **2005** a new departure pier with 8 additional gates, a large retail hall plus a new immigration hall and other areas were built. The VX-2000 was expanded. For the paging side of things a new SX-1000 master unit was installed to handle the additional 8 microphones. This unit mixed the paging mics and fed them into the VX-2000 system.

In **2006** new buildings were constructed and the paging system was expanded: again a TOA VX-2000 system – decentralized in a new rack room.

In **2008** the airport had a new automated announcement system by AviaVox. This is connected to the airports FIDS (Flight Information Display System) and automatically plays out flight information and boarding calls to specific halls and boarding gates as required.

In **2011** the 2 parts of the airport were integrated together as far as paging and AviaVox was concerned.
A SX-2000 system was installed which is still in use handling all gates and the AviaVox System for the new terminal. This SX-2000 was never seen as replacement for the PA / VA System, but as expandable audio matrix. The old terminal has in 2016 still its AviaVox System connected to the original SX-1000 System.

In **2017** the airport got a new pier, a new terminal extension building and a new tram line. Further buildings were planned at that time.

In **2018** as a new international arrival hall was built, TOA's brand new VX-3000 system was installed in the old terminal. It directly networks with the AviaVox System.

"I have been using TOA audio equipment for twenty years, dealing directly with the UK office. I have found their technical backup excellent and the reliability of the hardware outstanding. A very friendly company to do business with", says Lorn Money, Director and owner of Audiovisual & Data Communications Limited

SX-1000 System

SX-2000 System

VX-2000 System

VX-3000 System

LONDON LUTON AIRPORT SUCCESS STORY

MORE REFERENCES: SOUTHEND AIRPORT, ESSEX, UK

Southend airport was the third busiest Airport in the UK between the 60's & 70's, initially a base for fighter squadrons during World War II, Southend Airport has now developed into a modern airport operating approximately 70 flights per week.

The new look Southend Airport required an expandable PA/ VA system which allows flexible simultaneous messaging to different zones within the airport.

TOA initially installed the VX-2000 system but since the new renovations, the system has been upgraded to the SX-2000 connected to TOA's own network protocol.

TOA's SR-H2L and SR-H3L Line array speakers are used throughout the airport ensuring that the sound quality is focused and direct - making sure that all messages are heard loud and clear.

TOA products installed:
TOA SX-2000 audio management system, TOA SR-H2L & SR-H3L Line Array Speaker, TOA PC-1867FC Ceiling Speaker.

KANSAI INTERNATIONAL AIRPORT, JAPAN

The airport opened in September 1994 and is located in Osaka Bay, 35km south of the centre of Osaka in Japan. Over 15 million passengers used the airport in 2008. Aircraft movements in the same year were 129,263.

TOA's technology plays a vital role at Osaka's busy Kansai International Airport, the main gateway to Western Japan.
Public Address and other TOA systems were installed: Tree-type speakers in close proximity to passengers and an automatic volume/tone control system instantly detects changes in noise levels to maintain broadcasts at an easily heard volume throughout the facility.

The renovated north wing of Kansai Airport's original Passenger Terminal 1 and a new extension to its central building were recently opened with more spacious and colorful service facilities and shopping areas. TOA supplied the airport's advanced, high-tech information system, which features nearly 5,000 speakers discreetly integrated into the surrounding décor. An automatic control system assures swift and accurate broadcast of boarding announcements and other information to optimize airport efficiency and ensure safer, more comfortable and more convenient travel.

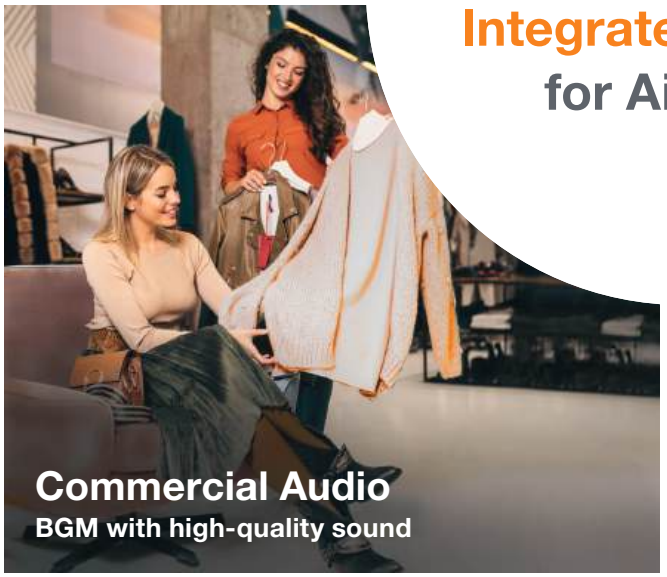
Public Address, Voice Alarm Systems, Commercial Audio and Intercom in one integrated system

Since being founded in 1934 as a manufacturer of commercial and professional audio equipment TOA has grown to be one of the world largest suppliers of commercial Public Address equipment that has become synonymous with quality within the industry. We are constantly improving our technological capabilities in areas such as acoustics, designing and networking, developing innovative products in order to provide our customers with the ultimate sound performance and peace of mind.

Thanks to 29 branches and a strong network of local certified partners TOA can give its customers the best support in more than 120 countries around the world.

TOA

One IP-based Integrated System for Airports



SAFETY AND EXCELLENT SOUND

Public Safety: With our products, we keep people safe, so they can enjoy their everyday life with peace of mind.

Public Communication: Our products and solutions provide a more convenient and more comfortable communication in various applications.

Public Space Design: from everyday enjoyment to extraordinary events. We provide acoustic solutions that create exceptional sound experiences.

Core products for airports:

- **Integrated Voice Alarm Systems / Public Address**
  Security through flexible systems with excellent speech intelligibility since 1969
- **Intercom Systems**
  Simple, decentralized, reliable and convenient communication in everyday life - Safety in the event of danger
- **Commercial Audio**
  High-quality sound for Restaurants and Retail Outlets since 1934

Voice Alarm

Voice Alarm System VX-3000

Emergency Remote Mic RM-200SF

Remote Mic RM-300X

EN 54 Speakers: Line Array, Ceiling, Wall, Column, Horn and Design Speakers

Intercom

SIP Video Door Station N-SP80VS1

SIP Server

SIP Gateway N-8000SG

Sub-station Interface Unit N-8400RS

SIP Multimedia Station N-SP80MS1

IP Multifunctional Masterstation N-8600MS

Emergency Station RS-410ECR

TOA

One IP-based Integrated System for Airports

Compact satellite speaker system BS-301W

Network Audio Adapter over IP NX-100

Digital Mixer Amplifier A-2120D

Ceiling Speaker PC-1860BS

Commercial Audio

IP Box Speaker IP-11BS-1030W

IP Horn Speaker IP-A1SC615

IP Remote Mic IP-100RM

IP Ceiling Speaker IP-11PC1860

IP Compact Amplifier AX-0120

IP-based Public Address

Getting the message across

How can airports and airlines ensure that their passengers receive the right message at the right time and place?

The efficiency and speed of a passenger's movement through the airport is of vital importance for the performance of both the airport operator as well as the airlines. Passenger flow therefore is a key responsibility for airport operators and can be a headache without the right assistance. Airport developers try their utmost to create a natural flow to guide passengers smoothly from check in to boarding, providing commercial and entertainment facilities for their comfort underway. But still, without the right message at the right time, all this effort could go to waste and unexpected inconveniences like long waiting times, gate changes or delays may cause passengers to board the aircraft with an uncomfortable experience.

An audible announcement in a passenger's preferred, or expected, language is a powerful tool to inform and to seduce travellers to act. If they know when to go to the gate or to cue for boarding and when to stay seated for example, they also know if there is time for shopping, dining or leisure. Research shows that passengers who are comfortably and satisfied at an airport tend to spend on average up to 45% more in retail outlets. In this respect, AviaVox's intelligent artificial voice systems have been developed since 1995 and in operation at airports all over the world, ranging from 160.000 to 80.000.000 million passengers per year. The developed phoneme technology has a remarkably high level of guaranteed natural speech in over 30 languages. The quality is unique in the world and cannot be distinguished from a human voice. The system fully supports airport operations and can be deployed on both terminal and gate level.

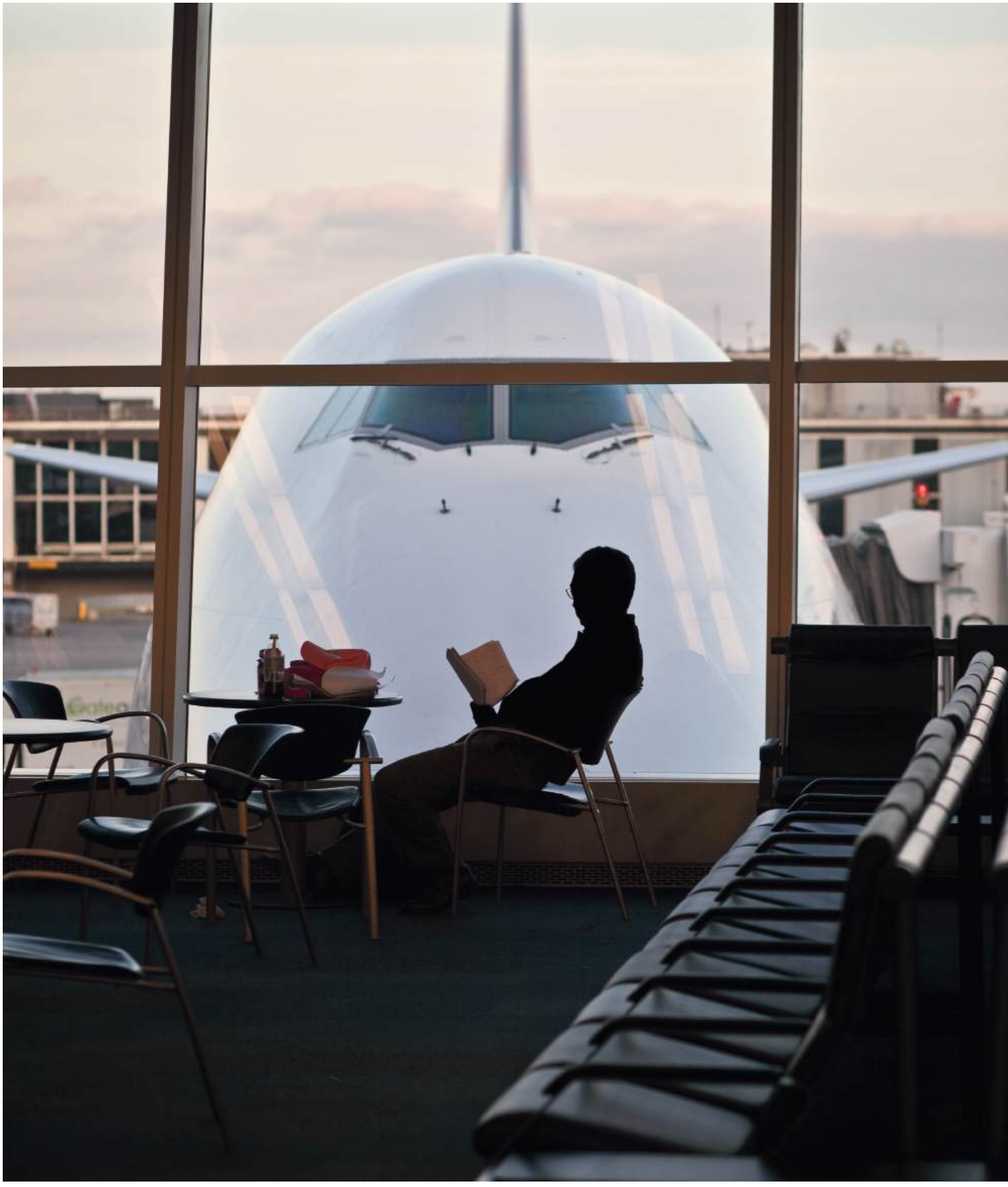
Terminal announcements

The Airport-Terminal-Client system (ATeC) is designed for use throughout an airport, and generates flight related announcements such as boarding calls, delays, gate changes as well as non-flight information such as safety and security calls. Once a passenger has set foot in the airport terminal, these announcements all have the purpose to swiftly and safely guide him or her through the airport to the gate. With over 8.500 possible announcements in every language the ATeC more than covers the daily requirements of most airports. The creation of an individual announcement book during the implementation phase supports airports in capturing their brand in an announcement policy.

Gate calls

Guiding the passengers in their journey, the AviaVox system even supports local announcements in the restricted area of the boarding gate. The Airline-Gate-Client system (AGC) is used by Airlines and handling agencies during boarding procedures. It is a powerful software tool that can be fully tailor-made for the individual airlines which operate at the airport. The system is set-up for a step-by-step approach to guide the passenger (supporting passenger types / frequent flyer programs) through the gate to board the aircraft and has a proven boarding efficiency improvement rate of up to 14%. When an airline agent opens the application, the software will automatically detect all the essential information of the departing aircraft at that specific gate. In other words: it will recognize the airline, the destination, the aircraft type and the specific boarding procedures belonging to that flight. The graphical Interface is easy to use for the agent, and adaptions according to the specifics of the flight can be carried out by a simple mouse click. The AviaVox Airline-Gate-Client system uses existing PA-systems or PABX-systems and is CUPPS compliant. It is used by over 130 airlines worldwide. (Source: AviaVox)

AN INFORMED PASSENGER IS A RELAXED PASSENGER



Clearly understandable and timely announcements in excellent sound quality and in multiple languages

Endless possibilities

In addition to terminal infrastructure and connected gates, an airport might also use apron buses or an Automated People Mover (APM) to get passengers to the aircraft or to allow movements between different terminal buildings. For a really optimized passenger flow, passenger information is also crucial in these locations that are not directly connected to the public address system of the airport. FlexiVox by AviaVox enables airports and airlines to deliver dynamic audio files in real time in these situations. Given the worldwide movement for example towards check-in procedures moving away from the airport and becoming more and more a part of the surrounding infrastructure, one can only imagine the possibilities when an airport can make announcements at any in-town check-in location.

Make it integrated

Providing passengers with audible information is one thing, but what if they are also served with mobile and visual information at the same time? It is possible to provide airports with an integrated passenger information platform, which allows a more personal approach and supports the way people consume information nowadays. In this integrated information flow up-to-date flight information is only one of many services the passenger can access. By partnering with leading digital agencies and FIDS suppliers, AviaVox is able to provide all needed information, from personalized audio announcements, via an integrated app that combines flight information with positioning and wayfinding, to on-screen real-time personal information and advertising. With indoor wayfinding and positioning, the airport can reach passengers on a personal level. By responding to a visitor's location, the app can assist passengers in finding the fastest route to their favorite shops and restaurants. And when using available data such as current waiting times at security checkpoint and other locations, passengers can be informed on how to use their time most effectively.

This all results in greater customer experience **as an informed passenger is a relaxed passenger** with time to visit shops and restaurants; more satisfied airlines as automatic announcements at the gate increase the efficiency of their operational processes; and better airport performance because of increased gate capacity, higher passenger spending and support of silent airport policies.

TO ENHANCE PASSENGER EXPERIENCE

Photo: AvaVox

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