

Market Segment:  
**Smart City/Hospitality**

Country of installation:  
**Dubai, United Arab Emirates**

Year of Exhibition:  
**2021-2022**

The customer:  
**EXPO 2020 Dubai  
Project Management  
Consultancy: MACE**

System Integrator  
**Zenitel & Mastermind  
Solutions FZE / SIBCA &  
SESC Group**

Solutions:  
**Public Address & Voice Alarm  
System. Background Music  
System.**

Key Products:  
**VIPEDIA-12 NET,  
VIPEDIA-12 PRO,  
V-2000(D500 & D150),  
MPS, ANS-04,  
VIPA-WS & EN54-24 Speakers**

Key Technology:  
**PAVA, BGM, Networked Audio  
(Dante), Large Multi Building Site,  
Central Control,  
EN 54-16**

## The World Expo 2020

Zenitel fortify EXPO 2020 Dubai with cutting edge audio solution

**Zenitel deliver an integrated, site-wide PAVA/BGM system for the world-renowned exhibition of innovation, technology and sustainability, streamlining communications and entertaining visitors, while keeping them safe.**

### The Customer/End User

The World Expo 2020, hosted in Dubai, showcases a rich collection of the latest technology and innovation from around the globe. Delayed due to the pandemic, the expo runs for 182 days and observes footfall in the tens of millions. In their own words, the experience seeks to entertain, whilst 'connecting minds and creating the future', with a heavy emphasis on promoting sustainability, mobility, and opportunity.

Zenitel's extensive list of references, both within the UAE and globally, provided the Expo's Project Management team, Mace, with the reassurance they needed to depend on them to implement a reliable system.

### The Requirement

The brief was to provide an integrated, site-wide PAVA and background music (BGM) system, to protect and entertain, that would be centrally controlled and monitored by the client's operation team during the event, which ran from 1st October 2021 – 31st March 2022. Zenitel delivered a solution combining PAVA cutting-edge hardware and software complete with on-going support for the entire event period.

The system needed to fulfil several functions to ensure that operations ran smoothly. A reliable PAVA system was essential; to deliver both live and pre-recorded broadcasts in the event of an emergency, and to support the day-to-day procedures with scheduled messages across the large site. Equally, the client required a zonal paging system that would also improve internal communications for the Expo 2020 team.



On the entertainment front, there was a need for high-quality BGM, streamed from a central source via a Dante network. Additionally, Zenitel provided loudspeakers which played out the audio associated with various digital signage screens across the site.

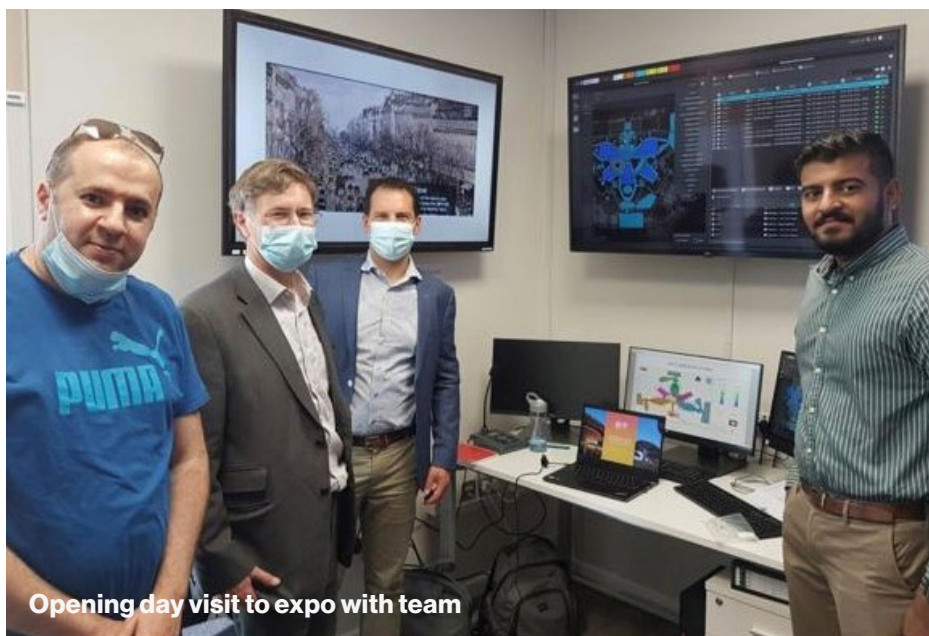
Finally, the multi-phase nature of the project meant that scalability was a key requirement, as the scope was constantly evolving, particularly in the early stages.

With a demonstrated history of delivering extensive projects, Zenitel were well placed to implement a scalable solution, complete with the relevant EN 54 certification and Dubai Civil Defence approval of their products.

## The Solution

Zenitel were involved in the project since its inception, collaborating with the client representative, Project Management team, and other contractors to realise the site-wide audio solution. Upon completion, the entire system covered 81 PAVA zones, 40 of which were also capable of BGM. The system was decentralised, meaning that all of these zones were covered by 146 nodes, interspersed throughout the Expo.

Zenitel delivered the project in phases. The initial specification was to deliver a paging and life safety system for three of the Expo's districts.



Opening day visit to expo with team

The client then increased the scope to encompass an integrated, site-wide system. To achieve this, Zenitel sat down with the client representative and Project Management Consultant team to sketch out the integration idea and methodology. Thanks to Zenitel's proven scalability and the equipment's Dante compatibility, all parties had complete confidence in the extension of the system. Thus, the original 3 clusters were scaled to 36.

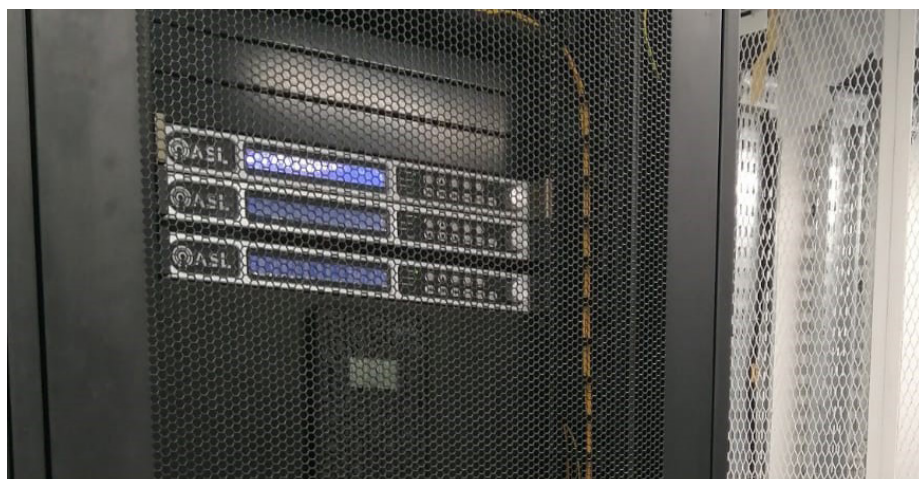
The system comprises several VIPEDIA-12-PROs, with the Dante-compatible version where required, which each provide 24 channels of high-quality digital signal processing. These are powered by a combination of V2000 and V400 power amplifiers. The system's Dante compatibility facilitated the seamless transmission of audio signals via the Expo's LAN, for playout

across the Expo's central BGM system, and various live stage performances. Zenitel also ensured that audio interfaced with CISCO DMP players, to feed the audio associated with the screens across the site.

30W column loudspeaker were utilised for the outdoor areas, including the Expo's numerous gardens, due to their IP66, weather resistant enclosures. Six 3" full-range loudspeakers drive the high-quality audio from within, offering excellent directivity as well as coverage.

Ceiling loudspeakers were selected to support the indoor PAVA/BGM system with their seamless, unobtrusive integration and uncompromising audio quality. Both models were already EN54 certified and approved by the Dubai Civil Defence for use in a life safety application, which dramatically expedited the installation process.

To ensure that communications were streamlined and could be accurately scheduled/targeted, Zenitel installed an extensive modular paging system. These integrate seamlessly with VIPA-WS touch-screen workstations to provide system control and monitoring.



Due to the prestigious nature of the event, intelligibility was a key requirement. To this end, Zenitel implemented ambient noise sensors, which ensure that the output gain is automatically adjusted to be above the ambient level. This guaranteed the clarity of announcements, particularly in an environment like the Expo which observes a staggering amount of footfall. Induction loops were provided for the comfort of the hard of hearing.

## The Challenges

One challenge faced during the deployment of the system was coordinating the various integrators who oversaw the installation of the PAVA equipment, ensuring that they

were programmed to compose a single system. Zenitel's involvement in the project from the ground up helped them to supervise the project and develop the best implementation strategy.

Due to the sheer size of the site (1,080 acres), as well as the system's distributed nature, there were both physical and temporal limitations when it came to the commissioning. The team had to travel to remote parts to ensure the seamless function of the system, demanding stringent planning and communication for efficient execution.

The client required that all PAVA announcements would override the BGM, and fade in and out seamlessly, for safety reasons as well as to

ensure continuity. This condition was requested in the later stages of the project – requiring a new software version, developed by Zenitel. It also meant that the team had to retroactively update commissioned devices with the latest firmware to support this. Similarly, as the system was populated onto the Expo's VLAN, each device's IP address needed to be changed again, which was an uphill battle, but one that was nevertheless managed successfully and completed in time.

Zenitel provided a comprehensive PAVA/BGM system for the Expo

## The Result

2020 Dubai to unify the disparate layout of the site. Although there is no way to completely avert manual commissioning, the VIPA-WS central monitoring function works to reduce the physical labour, streamlining operations by improving external and internal communication.

The project highlights the incredible potential of a hybrid ASL-Dante networked audio solution. Not only does the merging of the comfort and emergency system make for a more unified and streamlined solution, but it also offers substantial reductions in upfront delivery, installation, and ongoing whole life costs.

Furthermore, with a progressive need to cater for those with disabilities of all kinds, Zenitel demonstrates their ability to move with the times - the inclusion of sophisticated induction loop technology ensures that the hearing-impaired are not left out. Zenitel continue to conduct research and invest into development programs to ensure they deliver advanced solutions that are accessible to everyone for years to come.



Rack with Zenitel PAVA products



“It has really been a proud moment for us as a team to be part of making of the World’s Greatest show, Expo 2020. It has been a life-time experience meeting people across all spheres of life, to represent Zenitel and contribute my part to UAE’s success story with Expo 2020. The systems’ scalability and stability made it a good choice for this massive installation, and I can surely say we stood true to the wordings protect, engage, perform. We’re proud to say Zenitel systems protect and entertain Expo 2020.”

**- Rahul Ramachandran,  
Technical Solutions Manager**



Aerial view of Jubilee Park



Aerial view of Terra - The Sustainability Pavilion

## 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.