

A new NEXEDGE NXDN 32-channel trunked back-up system provides added resilience and redundancy at the busiest airport in Europe.



Istanbul Airport 



**SINCE OPENING IN 2018,
THE STATE-OF-THE-ART
IGA ISTANBUL AIRPORT IS
ALREADY THE BUSIEST IN
EUROPE AND IS FAST
BECOMING ONE OF THE
LARGEST IN THE WORLD.**

BACKGROUND

Operational from October 2018, IGA Istanbul Airport features the world's largest airport terminal building under one roof a 1,440,000 m² main terminal supported by 150 ancillary buildings all housed within an area of 76.5 million m² just north of Istanbul city centre. It is a vast, state-of-the-art complex employing the latest equipment and technology.

The existing KENWOOD NEXEDGE NXDN, 64-channel, single site, Gen2 trunked radio communication system, is installed in a dedicated comms room in the terminal building with the antennas mounted on the roof.



It is at the heart of the airport's operations communication and serves public institutions and stakeholders including Turkish Airlines, TGS, HAVAS, CELEBI and most especially the IGA security, safety, and other critical airport services teams.

THE CHALLENGE

Given its location some 20km north of the city of Istanbul, its scale, infrastructure, resources and connectivity, Istanbul Airport is included in the Turkey's Disaster Response Plan (TAMP) which defines the roles and responsibilities of institutions and organisations that will take part in delivering a coordinated response in the event of a disaster or emergency with the aim of minimising loss of life and ensuring critical infrastructure is protected.

In the event of a disaster, the airport and its ancillary buildings could be called to provide essential services and resources including:

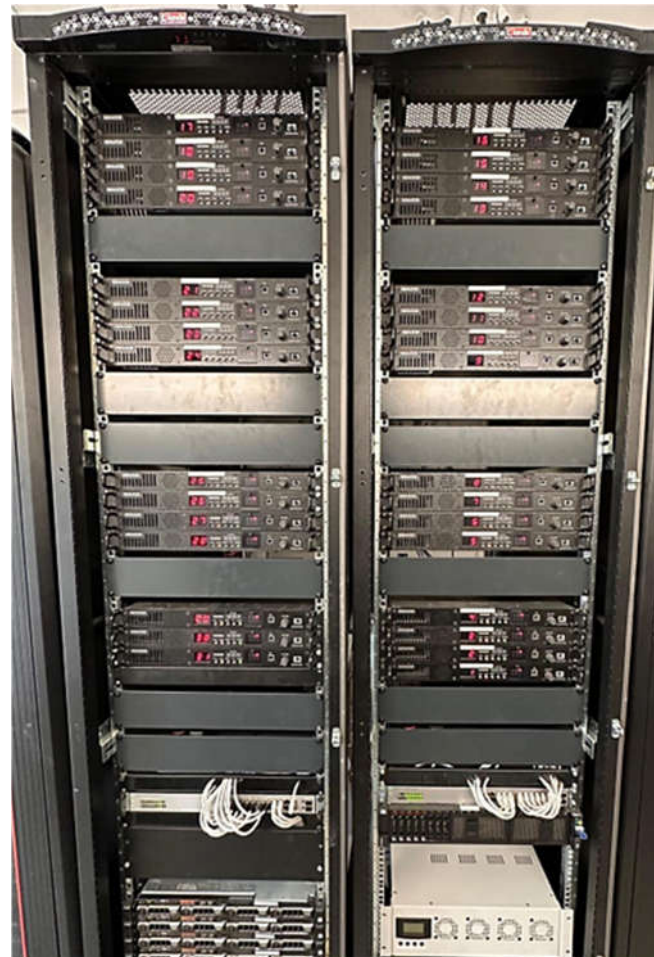
- Evacuation shelter
- Airbourne surveillance
- Medical facility
- Rescue and relief command and coordination centre
- Food distribution point
- Radiocommunication capabilities
- Logistics hub
- Rescue and relief transportation
- Base for airlift operations
- Evacuation transport operations

Within the scope of TAMP planning, the existing 64 channel trunked radio system was identified as vulnerable, highlighting a requirement for a back-up system to be installed away from the terminal building to ensure system resilience and continuity of uninterrupted radiocommunication services.

The main system employs an optical master unit (OMU) to carry signals to remote parts of the airport via single mode fibre optic cables. There are a total of 24 remote radio units (RRU) in the system. The fibre optic to RF conversion is made at each RRU site and radio coverage is provided by antenna, splitter, directional coupler and coaxial cable. This solution allows RF signals to transfer without cable loss and noise.

SOLUTION

Like everything else at the airport, the new 32-channel trunked NEXEDGE NXDN back-up radio system was designed to be uncompromising in terms of flexibility and performance to ensure the provision of an uninterrupted radiocommunication service throughout key areas of the airport site between more than 17 operating entities across Terminal, Air Side and Technical services, with 4500 users and daily traffic of around 100,000 calls.



The new system is housed in a secure, dedicated radio room located away from the main terminal building and is served by its own 50m antenna tower.



While already fully operational, the back-up system will be upgraded in the future to mirror the main system's use of optical master units and fibre optic cables, connecting it to the 24 remote radio units and extending coverage throughout the airport.



FINAL WORDS

Bilal Yildiz, Electronic Systems Manager at the airport concludes:

“We are very happy with the reliability and performance of the main NEXEDGE NXDN system, and I'm delighted that working with the teams from KENWOOD, we were able to transfer our experience quickly and efficiently to fast-track the development and commissioning of the new back-up system”.

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