

**NEXEDGE NXDN provides operations critical communications for the largest airport in the world.**



The Istanbul New Airport has taken just 42 months to build and when fully completed by 2028, will be the world's largest airport, with an annual capacity of 200 million passengers.



In October 2018, on completion of the first of three construction phases, a new airport will be opening in Istanbul. It's taken just 42 months and the efforts of up to 40,000 people to realise this massive feat of engineering and construction.

When the first phase of the Istanbul New Airport<sup>th</sup> October 2018, it will feature the world's largest single terminal, measuring 1.3 million m<sup>2</sup> (14 million ft<sup>2</sup>) and a capacity of 90 million passengers per year.

It is planned to become the largest airport in the world with a 150 million annual passenger capacity and the flexibility to be upgraded to handle 200 million passengers.

Covering an area of 76.5 million m<sup>2</sup> just north of Istanbul city centre, the project is on an epic scale even on completion of its first phase of development.

#### Phase One, October 2018:

- Control tower
- Main terminal with a passenger capacity of 90 million and an area of 1.3 million m<sup>2</sup> (14 million ft<sup>2</sup>) and a second terminal building with an area of 170,000 m<sup>2</sup> (1.8 million ft<sup>2</sup>)
- 88 aircraft jet bridges
- Covered car-park with a capacity of 12,000 vehicles
- 2 independent runways
- 8 parallel taxiways
- TIER 3 certified Data Centre
- 4 million m<sup>2</sup> (43 million ft<sup>2</sup>) of apron space
- Lounges, shops, restaurants, medical facilities, prayer rooms, convention centre and hotel





### On completion of Phase Four by 2028:

- 6 runways
- 16 taxiways
- 150 million annual passenger capacity (expandable to 200 million)
- 1.5 million m<sup>2</sup> (16 million ft<sup>2</sup>) under cover
- 165 aircraft jet bridges
- 2 terminal buildings connected by rail links
- 8 ramp control towers
- 6.5 million m<sup>2</sup> (70 million ft<sup>2</sup>) apron
- 500 aircraft parking capacity
- Covered and outdoor parking capacity for 70,000 vehicles
- Hotels and convention centres
- Power plants
- Water treatment and waste facilities



iGA, a consortium formed of Cengiz, Mapa, Limak, Kolin and Kalyon Group companies was founded on October 7, 2013 with the purpose of constructing and operating the new airport

for 25 years and between them, have raised over 1.6 billion EURO to fund the enterprise, ranking it 4th in the Fortune 500 list in terms of equity capital.

The new Airport will serve more than 100 airlines and 300 destinations and be one of the most important hubs in the world.

It has been designed to accommodate all aircraft types including A380s and incorporates leading edge architecture and state-of-the-art airport facilities, systems and operations, so when it came to the specification for the radio communication system to be employed across the airport, no stone was left unturned to ensure the right technology was selected with the flexibility and scalability to meet operational needs today and into the future.

### Delivering a seamless passenger experience

To ensure passengers receive the best possible experience from the moment they arrive at the airport to the moment their aircraft takes off, staff will be supported by the latest technology which includes a KENWOOD NEXEDGE® 2<sup>nd</sup> Generation trunked radio system, designed and implemented by Avrasya Haberlesme Group, a leading KENWOOD distributor in Turkey.

In line with the Airport Operations Control Centre (AOCC) management concept adopted at the airport, the new NEXEDGE system will enable Terminal, Air Side, and Technical Services departments to be fully integrated.



The ITC-U Recognised, frequency-efficient, 6.25 kHz FDMA technology on which the NEXEDGE NXDN digital voice and data communications system is based, provides high levels of information throughput with increased levels of security, flexibility, reliability and automation. It has been designed to not only be capable of supporting current operations, but also emerging operational efficiency and safety concepts as the airport transitions through its various development phases.

### The selection processes

The NEXEDGE system was selected to meet the requirement for radio communication coverage and capacity following an evaluation process which included several key criteria, including:

- Capability of the technology
- Flexibility of configuration
- Reliability of infrastructure and devices
- Ease of system expansion
- Reputation of supplying company
- Proven experience of the airport environment
- Cost

While NEXEDGE systems have already been successfully implemented at 32 airports in Turkey and numerous others worldwide, it nevertheless had to pass a thorough technical evaluation, comparison and test process before the decision to select it was approved by the İGA Executive Board.

## The NEXEDGE system at Istanbul New Airport

As with everything that relates to Istanbul New Airport, the sheer numbers are large while the attention to detail is microscopic.

The single site, trunked 64-channel voice and data enabled system will serve 250 user groups within a coverage area in excess of 3.5 million m<sup>2</sup>.

The key user groups include:

- Airport management
- Airline agents
- Ground services
- Flight and cabin crew
- Engineering
- Construction
- Maintenance
- In-flight catering
- In-terminal retail and catering
- Hotels
- Car Parks
- Transfer services
- Baggage handling
- Cleaning services
- Freight handling
- Border control
- Security teams
- Safety teams

To ensure continuity of service availability to the 4,500 users connected to the system, it features redundancy at core switch-server, control-channel and site levels and is controlled by the KENWOOD KAS-20 AVL and Dispatch software suite along with TASSTA and DEKBERA applications.

In addition, Avrasya will provide the airport's Electronic Systems team with 24/7 support from its technical office and 3 dedicated engineers.

## System Details

**System:** KENWOOD NEXEDGE 2<sup>nd</sup> Generation

**Type:** Trunked

**Technology:** Digital

**Channel Access:** 6.25 kHz FDMA

**Air Interface Protocol:** NXDN

**Antennas:** 350 indoor and 20 outdoor

**Repeaters:** 64 pieces NXR-5000 Series



**Mobile Radios:** 1000 pieces NX-5800E, NX-3820GE and NX-800E



**Hand-Portable Radios:** 4000 pieces NX-5300E, NX-3300E and NX-300GE



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