Adolfo Suárez Airport, Madrid-Barajas

Benefits

- MPLS enabled full IP based backbone
- Full geo-redundant network design
- Geo-redundant integration of analogue channels

Client overview

aena aeropuertos

Madrid-Barajas Airport is the busiest airport in Spain. The airport is located on the northeast of Madrid, Barajas district, which is near Madrid city centre. The airport changed its name from Madrid-Barajas to Adolfo Suárez Madrid-Barajas in 2014 in honour of first democratically elected Prime Minister Adolfo Suárez.

The airport is part of AENA, a Spanish state-owned organisation that operates 46 airports and 2 heliports. It has five passenger terminals to support 45+ million passengers, 380 tons of cargo and 366 thousand flights per year. With nearly 80 different airlines Madrid-Barajas handles to about 165 destinations. With 3050 ha of airport area, it is a large airport.

To handle all the flight traffic, the airport has two parallel runways of 3600 and 4400 meters in length.

It is estimated that Barajas airport induces an economic impact of more than 40.000 direct jobs, more than 90.000 in the region of Madrid and more than 135.000 at a national level.

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Project challenge

The TetraNode TETRA trunking network is the central system for communication and controlling of all operational handling processes on the airport keeping passengers, luggage and airlines moving to schedule, while ensuring safety and security.

The TETRA system will allow secure communications with all ground staff and vehicles circulating within the airport's perimeter. This increases the efficiency of the airport's daily operations and enable better coordination of emergency situations when they arise.

Solution

Created around a redundant MPLS enabled IP fibre back backbone, the airport's TetraNode TETRA communications network consists of dual local and geo-redundant TetraNode High End TETRA switches at two different switching locations, with nine TETRA Base Stations with 41 TETRA carriers. Analogue VHF airport - and regular UHF channels are integrated using two times 36 geo-redundant gateway interfaces and telephony is integrated with two times ISDN30 geo-redundant interfaces. Five Chameleon dispatch stations and a redundant voice-data recorder completes the network.

One of the nine sites is a mobile emergency site that can work stand alone and can be interconnected with the main network. Three sites are used to feed the different sections of the indoor coverage systems.