



South African Airports (ACSA)

Case Study



Benefits

- Full geo redundant architecture offering the highest level of redundancy and resilience
- 99.999% uptime and availability
- Full inter-airport communications with a fully redundant IP/MPLS network



Client overview

Airports Company South Africa SOC Ltd (ACSA) is a South African airport management company headquartered in the Maples Office Park in Bedfordview, South Africa. Founded in 1993, ACSA owns and manages a network of nine airports in South Africa, including the three main international gateways: O.R. Tambo International, Cape Town International and King Shaka International Airports.

In 2017, the nine airports facilitated nearly 41 million passengers, translating into 33% growth over 6 years. Africa's biggest and busiest airport is O.R. Tambo International Airport (Johannesburg), facilitating over 21 million passengers a year. More than 50 percent of South Africa's air travelling passengers are facilitated through the airport. Cape Town International Airport, Africa's 3rd largest airport, processes over 10 million passengers annually.

The concept of the 'aerotropolis', whereby a range of manufacturing, logistics and commercial facilities are clustered around an airport is likely to further accelerate the core role of airports. This is particularly true for King Shaka International Airport and its associated Dube Trade Port and the drive for an aerotropolis surrounding O.R. Tambo International.

"The TETRA network has brought some positive changes to our daily operations and we have experienced minimal downtime in the past few months. The network is more stable, and this is critical to our daily operations as we are operating on live equipment. Areas where network was a challenge in the past have been extended for coverage. Beside this, the support has been outstanding."

- Ratau Moja, Operations Manager - Aviation

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Project challenge



Airports rely on communications as a crucial part of their business to ensure both passenger safety and handling processes. This resulted in a need for a TETRA system to allow secure communications between departments. However, with airports being some of the most challenging environments due to their 24/7 operation, rolling out and replacing an existing network demands impeccable planning.

During the migration to the TETRA network, gateways co-existed to prevent downtime of communications. The migration was completed without any negative impact on operations.



Solution

The TETRA radio infrastructure at the airports is based on TetraNode High End open industry standard and high availability server platforms. These are specifically designed for carrier-grade telecommunications with excellent system performance and >99.9% availability.

The largest airport, O.R. Tambo, experienced challenges with the tunnels, basements and baggage departments. Therefore, a Distributed Antenna System was implemented, directly integrated to the TETRA network, allowing communications to take place in areas with expected low signal.

The airports collectively use 34 carriers and twelve TetraNode Exchanges with 9000 users at present, but with the capacity to support many more. All airports are functioning off a fibre backbone, which allows for inter-site connectivity and allows all airports, airlines and staff to communicate via the TETRA network.

