

Ubiquitous High Capacity Wireless Connectivity at Airports

Airport Travelers Flying High with Comba Telecom DAS Solutions!



Buenos Aires, Argentina

Airport Wireless Coverage

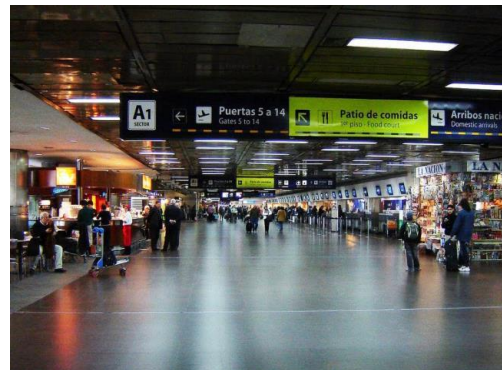
With the increasing proliferation of mobile devices and the need to stay connected on the go, it has become imperative to deploy reliable indoor mobile coverage networks at airports. However, airport design can pose several challenges given the large coverage area and high capacity requirements. An active DAS deployment helps to provide coverage over large areas while an optimal sectorization plan helps relieve the huge capacity load. The SINR performance of the network must be taken into consideration to ensure a high data throughput.

Furthermore, restrictions on equipment installation are faced during airport design, which might lead to additional losses and therefore it needs to be incorporated into the design.

The airport DAS network must be designed for operating efficiently under such constrained conditions.

Project Background

Argentina's busiest international airport recorded an annual traffic of 10.8M passengers in 2015. Given the exponential growth in mobile penetration, the high capacity demand at this airport needed to be satiated through a robust mobile network deployment.



Comba Telecom along with its partner, Globo Group S.A., proposed a cost-effective multi-frequency (1900/AWS) network to provide seamless GSM, WCDMA and LTE coverage. Comprising of 2 large floors housing 55 check-in counters, the airport covers a total floor space of 30,000 square meters.

Solution

An active DAS solution was deployed at the airport with Comba's **ComFlex system** at the core. In contrast, a passive DAS would be unable to provide sufficient coverage due to high coaxial cable losses. In this solution, the 1900/AWS signals from the operator BTS are fed into the POI, where GSM and WCDMA signals are combined at POI output port 1 and LTE signal is sent to POI output port 2. Subsequently, these output signals are combined at the ComFlex MU and converted to optical signals before being transmitted over optical fiber to the RU for regeneration and amplification. Finally, they are distributed to the antennas through a network of splitters, couplers and coaxial cables.

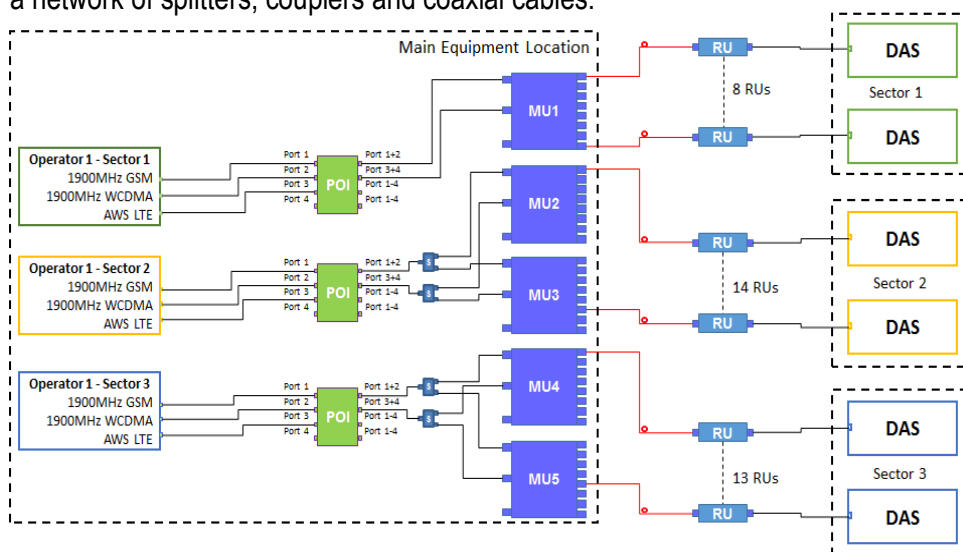


Figure 1: System Diagram

At the airport, each floor was divided into 3 sectors and Comba's ComFlex 5W DAS was used to deliver mobile coverage. A total of 5 ComFlex MUs and 35 ComFlex RUs were deployed for distributing signals to 62 wideband indoor antennas throughout the airport. Consequently, the signal levels measured at the site met the requisite KPI and the network satiated the high capacity demand. Furthermore, uplink interference was monitored and controlled by ensuring a good RTWP performance. Additionally, the ComFlex DAS is futureproof with fast and easy upgrades functionality due to its compact and modular structure.

Site Photos and Coverage Results



Customized POI Rack



ComFlex Master Unit Rack



ComFlex Remote Unit 5W

Product Features

-- Full operation bandwidth system supports multi-network (GSM, WCDMA and LTE) applications; ComFlex DAS can be configured for the required frequency bands – 1900MHz and AWS.

-- Industry's most efficient and compact RU; Modular MU supports flexible field upgrade and maintenance. DAS System with superior PIM performance MINI-DIN RF Connectors.

-- Web based GUI for intelligent monitoring and control, enabling the customer to check network health after installation and ensure customer satisfaction.

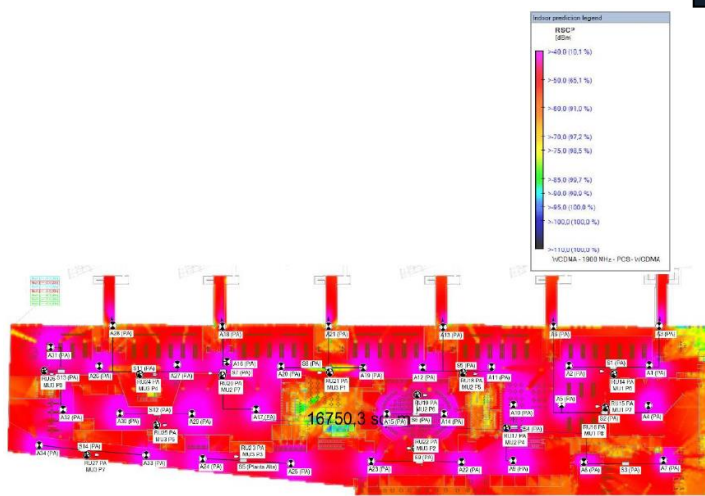


Figure 2: Sample WCDMA 1900MHz RSCP Simulation Plot

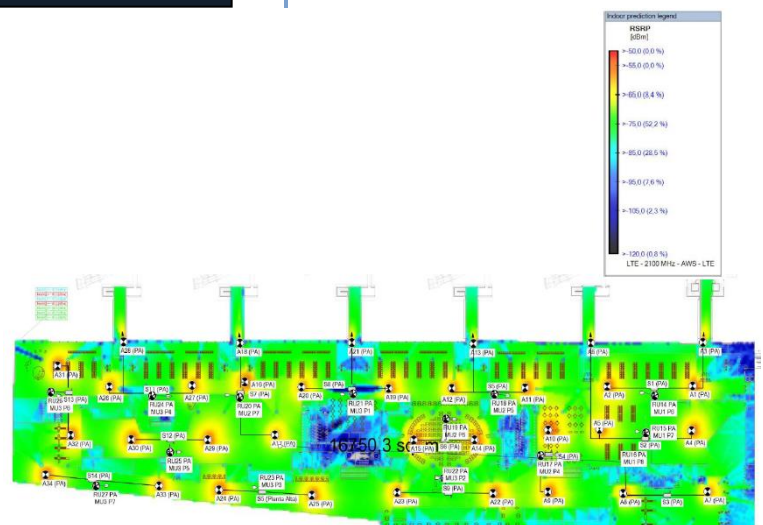


Figure 3: Sample LTE AWS RSRP Simulation Plot

