

WiFi Solution for 2016 Brazil Summer Games

High Capacity and Seamless Coverage

This case study shows how Comba leverages its radio expertise to provide WiFi network planning services for 2016 Brazil Summer Games in order to cover the tremendous amount of coverage and capacity requirement.



Radio Design Expertise

The biggest challenge on developing Wi-Fi system for large sport venue is to avoid interference between access points and achieve optimal user performance when hundreds of access points are installed to serve thousands of users in an open area.

This requires sophisticated Wi-Fi radio network design capability and experience that Comba accumulates through its world market leading cellular wireless enhancement solutions over years. The radio signal of each access point must focus on the target area only and sharply reduce out of this area. This requires sophisticated radio network planning tool and rich experience in radio network planning.

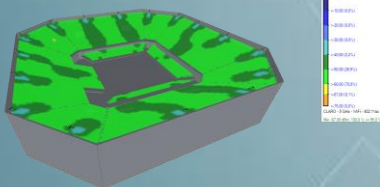


Rio Centro Pavilion 6

2016 Brazil Summer Games WiFi Planning

Comba provides professional WiFi planning service for the football stadiums and venues for 2016 Brazil Summer Games. The project includes 6 venues: Rio Centro Pavilion 6, Olympic Park, Rio Olympic Arena, Future Olympic Arena, Maracanazinho and Olympic Stadium. Total 268 APs were installed to provide WiFi service for 182,935 audiences.

From the 20 venues in total, the 6 listed above were the most important projects. The design of each project included frequent presentation and evaluation from operators committee in Rio, and the 6 projects were all finally implemented for the event based on our design and planning. The planning included the coverage to meet RSSI and SNR targets, AP densification and interference reduction CCI, for 802.11n and ac. It was required to provide $RSSI \geq -67\text{dBm}$ for 95% of coverage area and $SNR \geq 20\text{dB}$ for 90% of coverage area. It was assumed that more than 10,000 audiences would be online at the same time. We need to estimate the network performance on 50%, 80% and 100% of traffic loading and provide the best and cost effective WiFi network planning under such high traffic loading.



WiFi Planning Simulation Result

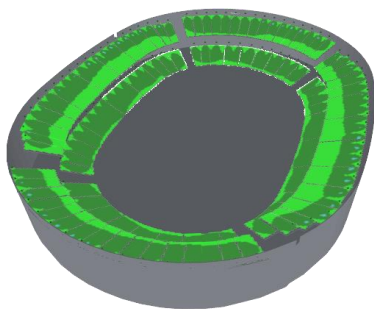
Software Design Planning Tool for WiFi

The planning is based on a software design tool that Comba has been used it extensively in many cellular coverage enhancement project including shopping mall, hotel, office building and metro station. Now, Comba extends its expertise in cellular wireless planning to WiFi network.

Comba provides sophisticated signal strength simulation to ensure good WiFi network coverage. It has considered the positioning of APs, jumper cables and antennas in strategic areas to avoid the interference between APs. In addition, Comba provides user throughput simulation under different kind of user traffic loading to ensure good user experience. All results are shown in a user friendly visual format. Comba network planning services provides a good balance among coverage, capacity, interference and cost.

Comba Professional Service

As the world's leading wireless coverage equipment vendor and end-to-end turnkey solution provider, Comba provides products ranging from antenna, passive RF devices to RF repeaters and DAS system, as well as design, installation, operation and maintenance for railway / metro and large venue cellular network solution, etc. We also provide professional services to support our customer in different stages of their wireless network deployment and operation which include network planning, site survey, project management, installation and commissioning, radio network testing and optimization, operation and maintenance.



Tremendous amount of smart phone users and growing popular of image and video sharing put a lot of pressure in large venue owner for their WiFi networks.

Comba provides professional WiFi planning services for 6 sports venues of 2016 Brazil Summer Games with more than 180,000 audiences. It requires sophisticated network planning tools and technology know-how to have a good balance of coverage, capacity, interference and cost.

