



Orlando City Stadium Gets Soccer Fans Connected with Ventev Wi-Fi Antennas and Enclosures

Executive Summary

Client:

Orlando City Stadium, Orlando FL

Client Challenge:

Provide reliable, high-performance Wi-Fi to every seat in the stadium

Product Solution:

Handrail Wi-Fi Antennas

The tiny left or right facing Handrail Antenna attaches to most handrails in stadiums and arenas.

- Dual-band, 6 dBi directional antenna
- 60/90 degree bandwidth
- Watertight, NEMA 4X enclosures
- Four, low-loss cables connect to access point



Under-the-Seat NEMA Enclosure

Designed to safely contain and protect most access points in outdoor environments

- Features a screw cover with tamper-proof Torx style screws and no hinges, offering maximum protection for your access point.
- Includes a flange kit that allows for mounting onto a concrete or metal surface, while also raising the enclosure off the surface to allow for water runoff



In Spring 2017, Orlando City Stadium in Orlando, Florida became home to the Orlando City Soccer Club. The beautiful new stadium boasts 25,500 seats, and a high-performance Wi-Fi network that provides reliable coverage and capacity to every seat.

Challenge

Renato Reis, Chief Information Officer for the stadium, worked with Brighthouse Networks and Cisco Professional Services to design the Wi-Fi for the new stadium and ensure that the user experience was as enjoyable as the rest of the new venue. Reis' team began the network design by looking at how many users they would have using the network at once, and how much bandwidth would be available.

"I have 10 gigabits of bandwidth and I have 25,000 people. How do I distribute that?" Reis said. "Connectivity is nothing more than a pipe; I give you a pipe of water, and I have ten people to drink this water. They're going to be able to drink, at the same time, just a certain quantity of water."

Solution

The team knew that with high densities of Wi-Fi users, it was especially important to limit the number of users per access point to minimize interference, the chief cause of poor Wi-Fi user experience. Brighthouse chose Ventev Handrail Antennas to bring the Wi-Fi closer to the users and segment them into smaller cells to focus the RF for optimum user experience. The antennas even allowed them to take the Wi-Fi into the front sections of the stadium, closest to the field. Over 500 Handrail Antennas were installed on the handrails throughout the stadium.

The Handrail Antenna is a 6 dBi dual band, directional antenna that is secured within a compact, watertight 7"x5" NEMA 4 X enclosure. The antenna has a narrow, 60/90 degree beamwidth. The enclosure that houses the antenna attaches to the handrail with a pipe mount and stainless steel fasteners and includes four, low-loss cables to connect to the access point.

The access points were installed inside small form factor, waterproof 12 x 10 x 4 inch NEMA-rated enclosures to protect the valuable equipment from impact and harsh weather. The enclosures then fit under the seats, and also inside special recesses in the concrete that were poured for that purpose.

Outcome

The first two games served as a test to perfect the new network. "One terabyte of data (one trillion bytes!) came across our network, in terms of transactions up and down," Reis said. "The peak time was a few minutes before halftime, and we had about 7,500 logged into the network at the same time." Reis said. "We did a tune-up and [now we are] at the top of our game."

With an average of just 43 users per access point, the Orlando City Stadium is one of the most connected stadiums. Many large stadiums have an average of 75 users per access point. "Today we are able to give 100 megabytes up and 100 megabytes down per user," said Reis. "This is great, better than the connection most of us get in our homes."