DETROIT'S FORD FIELD UPGRADES WI-FI PERFORMANCE & AESTHETICS WITH HANDRAIL ENCLOSURE

EXECUTIVE SUMMARY

CLIENT

Ford Field in Detroit, MI

CLIENT CHALLENGE

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

PRODUCT SOLUTION

Handrail Enclosures

Ventev's Handrail Wi-Fi Enclosure fits on any size handrail in stadiums, arenas, and other Large Public Venues (LPVs).

The Handrail Enclosure houses two Cisco 3802e Access Points and two antennas flat against the center with each antenna pair facing in opposite directions. It provides an optimum solution to balance coverage and capacity at stadiums' lower levels.

- Aesthetic design blends into environment
- Enhanced durability with corrugated design providing additional impact protection
- Back-to-back antennas reduce radio frequency interference

DETROIT'S FORD FIELD NEEDED TO IMPROVE THE WI-FI NETWORK PERFORMANCE IN THEIR 65,000 SEAT, DOMED STADIUM.

Detroit's Ford Field owners contacted KLA Laboratories, a leading solutions provider for wireless networks, to improve the performance of the Wi-Fi network in the 65,000 seat, domed stadium. The first phase of the upgrade would be the lower bowl area. The lower bowl lacked the infrastructure needed to provide seamless coverage and capacity to all users, and the aesthetics were not up to the standards of the stadium owners.

CHALLENGE

As with any stadium, the lower bowl is the most challenging area to ensure high-performance, reliable Wi-Fi. Limiting the number of users per access point is essential to minimizing interference and increasing bandwidth to users. Typically, access points (APs) are mounted on stadium walls or ceilings, but that requires too many APs. And, while the radio frequency (RF) may reach the front seats from the back walls or ceiling, the articulation range will inhibit coverage of seats closer to, and below the antenna. High densities of users require smaller cells to reduce interference and maximize bandwidth to users.

During Ford Field's initial Wi-Fi implementation in 2012, APs were mounted on the wall surrounding the field, and the RF was beamed into the first 10-15 rows of seats to cover the lower bowl. That solution was satisfactory when there were fewer people sitting in the seats, but when the seats were full of mobile device using fans, the network wasn't reliable.

The KLA team knew that bringing Wi-Fi closer to the fans in the lower bowl was the solution. They quickly began to research the best ways to accomplish that. Deploying under the seat Wi-Fi was an option but getting the pathways out to the seats in an existing stadium was not going to be possible within their deployment timeline. Installing Wi-Fi on the handrails throughout the lower sections was another option that seemed more promising.

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The first handrail enclosure the KLA team considered was not NEMA 4-rated, so reliability was a big concern. The enclosure would need to house valuable equipment in the middle of a stadium full of rowdy fans, and withstand repeated, high-powered wash downs. It would need to be rugged and watertight. At the same time, it was essential that the enclosure blend inconspicuously into the stadium seating area, without obstructing fan traffic or views in any way.

SOLUTION

KLA contacted Ventev, an engineering manufacturer of products and solutions for deploying Wi-Fi in stadiums, arenas, and other large public venues. Ventev recommended that the team consider Ventev's Handrail Enclosure for Cisco 3700 APs. This unique enclosure houses two access points, and two antennas positioned back-to-back, so that they beam in opposite directions to allow coverage and capacity to the users in the sections on both sides of the handrail. The rugged NEMA 4-rated enclosure protects the equipment from impact, tampering, and washdowns. It also has a slim, aesthetically pleasing form factor.

After the presentation, the KLA team was confident they had found their solution. There was one caveat; however, they needed the handrail enclosures to house the Cisco 3800 series access points, not the 3700, and they needed them installed in two weeks.

Ventev's engineering team worked with KLA to modify the handrail enclosure quickly to accommodate the newer 3800 series APs. Meanwhile, the KLA team worked around the clock to retrofit the stadium for the upgraded network. To lay the required cable, they brought boring machines onto the middle of Ford's Field and drilled through the dirt and up through the steps. In total they ran over 15 miles of CAT 6 cable.

Ventev's handrail enclosures were installed in 200 locations throughout the stadium. After the challenges of retrofitting the stadium for the upgraded network, the KLA team was pleased that the installation of the handrail enclosure was simple and straightforward.

In the weeks following the deployment, the KLA team attended several events at the stadium to monitor Wi-Fi coverage and capacity throughout the lower bowl. The team confirmed that the network was performing optimally, with no interference or dead spots.