2013 Technology Innovation Showcase

# Georgia Dome Wi-Fi
# Georgia World Congress Center Authority

The Georgia Dome completed the installation of a high-density wireless network to extend its technology infrastructure and provide Wi-Fi access to 1.5 million annual visitors. The new network consolidated several disparate networks into a single, centrally managed system that's used for portable point-of-sales terminals, ticket scanning, and media and public access. The Georgia Dome is home to the Atlanta Falcons, the Southeastern Conference Football Championship and other high-profile events.

## About the Situation

When the Georgia Dome upgraded its point-of-sales system, which includes about 150 portable concession stands, stadium officials needed to ensure the wireless network could reliably process credit card transactions at those locations. In addition, they wanted to provide wireless technology that would enable the stadium to compete more effectively with the growing popularity of home theaters, NFL RedZone and other viewing options, including the Atlanta Falcons' mobile app for iOS, Android and BlackBerry devices. The app allows fans to stream live video to their smartphones using the stadium's Wi-Fi network. With the prevalence of smartphones, the Wi-Fi system is also used to offload 3G and 4G data services from the in-building cellular system, thereby providing better voice and SMS services for fans.

## Innovative Solution

The Georgia Dome engaged CDWG to perform an in-depth site survey and spectrum analysis, and then design a Wi-Fi solution that could accommodate a maximum of 14,000 concurrent users, which equals 20 percent of the stadium's total capacity. The high-density design creates micro-cells of Wi-Fi coverage by utilizing directional antenna and scaling back the transmission power of each access point throughout the stadium's seating area. A 10 percent geographic overlap between cells ensures each attendee has sufficient signal strength to connect to the network, which consists of five Cisco 5500 series wireless controllers and 500 Cisco 3500 and 3600 series access points with various internal and external antennas. Cisco's Prime Network Control System enables network engineers to manage all of the network's various elements from a single web-based interface. The new Wi-Fi system requires no increase in staff and support. In addition, it is expected to pay for itself within two to three years as a result of sales increases at the mobile concession stands.

During the 2012 NFL season, the Georgia Dome averaged 7,200 concurrent wireless network users and 11,000 unique users per game. In a fan survey of Wi-Fi-enabled stadiums in 2012, the Georgia Dome received the highest rating of those surveyed for wireless access. With W-Fi connectivity a requirement for high-profile national events, the new wireless network allows the Georgia Dome to compete for such events as the NCAA's Bowl Championship Series, among others.