

AirMagnet Helps Smart City Assure Wireless Coverage at a Convention Near You

Nation's premier provider of tradeshow technology relies on AirMagnet to manage wireless set up & tear down for more than 5,000 shows per year

Founded in 1984, Smart City is the nation's largest provider of event technology in the convention industry. With corporate headquarters in Lake Buena Vista, Fla., Smart City provides clients with design, installation and maintenance of data, voice, electrical and utility platforms, coupled with voice, video and data network engineering, security and monitoring across the United States. Smart City also provides services to more than 5,000 trade shows at 50 convention centers located throughout the U.S., including such venues as the Las Vegas Convention Center, the Orange County Convention Center in Orlando, Fla., and the Los Angeles Convention Center.

To increase the flexibility and simplicity of deploying data networks, Smart City started providing wireless connectivity about five years ago. Since then the use of wireless has exploded, with the company now managing more than 1,800 wireless access points (APs) in 50 facilities across the nation.

Highlights

Industry

Service Provider

Challenge

- Meet strict performance, reliability and security expectations
- Interference caused by the dynamic environment and competing devices
- Unauthorized rogue devices

Solution



AirMagnet Enterprise



AirMagnet WiFi Analyzer



AirMagnet Survey



AirMagnet Handheld Analyzer



AirMagnet Spectrum Analyzer

"AirMagnet Enterprise gives us the ability to understand what's going on in the network so we can tune all of the settings in real time for the best possible performance."

Ronald Shaul

Director of Technology for Smart City

The Challenge

Conventions by nature are a whirlwind of activity. Over the course of a week, vendors converge on a facility, set up hundreds of booths using truckloads of temporary equipment, run the event for a few days and then tear it all down and move on. During the event thousands of attendees look at products on the show floor and attend meetings while also typically staying "connected" to what's going on back in the office. A first step in that process is to open up a laptop and try to get a wireless connection to the Internet. Enter Smart City's wireless services.

Smart City has a robust Cisco wireless network installed in each of its 50 facilities covering not just the exhibit halls, but all warehouse facilities, back rooms, corridors and more. Attendees, exhibitors and facilities personnel rely on this network for connectivity throughout the show, making it so prominent that companies often pay to sponsor the show's WiFi service. Smart City thus has to ensure that the network meets strict performance, reliability and security expectations despite the frantic tradeshow

setting, and relies on a set of sophisticated tools to constantly monitor and adapt the network to handle an ever-changing wireless environment.

"It's really amazing when you sit back and think about the complexity around wireless networks at these venues," commented Ronald Shaul, Director of Technology for Smart City. "We've got new walls and structures that weren't there yesterday, interference from a tremendous amount of new exhibitor and attendee equipment, hundreds of rogue access points, incredible and constantly fluctuating density with thousands of people trying to hit the network all at once. And with all of this happening in real time, it's a potential nightmare to manage."

Among the challenges Shaul and his Smart City team have tackled:

- Highest AP density: Orange County Convention Center in Orlando, with 450 APs covering all public areas, back rooms, meeting facilities, loading docks, tunnels, corridors and more
- Highest connection density: at a recent conference at the LVCC, 4,500 attendees tried to hit 80 APs simultaneously when a keynote ended
- Highest rogue density: there were more than 300 unauthorized APs at a recent Consumer Electronics Show (CES)
- Bad connections: vendors sometimes will bring prototype equipment, which can inadvertently knock out the entire wireless network
- Biggest challenge: providing reliable wireless Internet during a recent mining convention saw the show floor covered in hulking three-story-tall steel equipment.

But even with all of this, one of the toughest challenges for Smart City is the interference caused not just by unauthorized APs, but by the thousands of Bluetooth devices, cordless phones, cordless cameras and other pieces of equipment that are all competing for spectrum. To ensure the performance, reliability and security of its wireless network in the face of all of these challenges, Smart City has turned to AirMagnet's broad suite of wireless management solutions.

The Solution: The Suite of AirMagnet Products

SmartCity begins the process with AirMagnet's Survey, which allows them to test and troubleshoot the assumptions they've made about the placement of access points throughout the convention center facilities.

This is especially critical given the constantly changing facility configurations, with walls always going up and down depending on show requirements.

"Concrete and rebar rooms can actually be a blessing for us, because they do a nice job of predictably containing the signal for minimal interference," Shaul said. "The steel beam and sheetrock walls or temporary barriers let signals just go and go, making it really tough to predict propagation. AirMagnet's tools are an absolute requirement."

As vendors begin the show set up, Smart City technicians walk the exhibit floor with AirMagnet's WiFi Analyzer or Handheld Analyzer, identifying uncongested channels for exhibitor use, tuning equipment power settings to minimize interference, having connection troubleshooters determine whether an authentication issue is a problem with security or the WEP key. "Our technicians rely on AirMagnet's tools on the floor to work directly with customers for the best possible wireless performance," Shaul explained.

The night before the show opens, Smart City technicians again walk the floor with AirMagnet tools, identifying new dead spots, tweaking AP settings and placement, analyzing noise levels and more.

Smart City relies on AirMagnet Enterprise in its network operations centers to monitor the entire show floor once the convention is underway. "We need to identify rogue APs, monitor the noise level, identify which halls have heavy interference, track shifting user densities, etc." explains Shaul. "AirMagnet Enterprise gives us the ability to understand what's going on in the network so we can tune all of the settings in real time for the best possible performance."

AirMagnet Enterprise is also critical for helping Smart City ensure the security of its network. According to Shaul, "Rogue APs are certainly a performance problem due to interference, and AirMagnet helps us compensate accordingly. But these rogues aren't really a security concern – a much larger problem for us are the people that show up and attack the network." Smart City uses AirMagnet Enterprise to identify the threat and triangulate the point of attack so that technicians can act accordingly.

Smart City depends on AirMagnet's Spectrum Analyzer to monitor the flood of signals throughout the show, allowing it to identify crowded parts of the spectrum that would lead to dropped connections and adjust its network as necessary. "The 2.4 GHz 802.11b/g spectrum in particular is troublesome for us," Shaul said. "It is not only the most crowded WiFi spectrum, but it suffers interference from attendee Bluetooth devices, vendor cordless phones, cordless cameras and all sorts of other equipment. We try to encourage people to use 802.11a (at 5 GHz) for just that reason, but we still have to work with the spectrum at 2.4GHz." With AirMagnet, Smart City can identify these issues to better manage the performance of its wireless network.

"We've worked with AirMagnet for years, and I must say that I really like the company and its products," Shaul said. "They've grown their product set and features to meet our requirements, and the products just work fabulously."

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