Extricom

Case Study

Serving Up a Winner: The Georgia Bulldogs Go Wi-Fi

Excellence in any sport means speed, simplicity, and consistency of execution. At the University of Georgia, these hallmarks of excellence have resulted in 29 NCAA championships across many sports. Technology is playing an ever-increasing role in sports operations, and as facilities managers seek new and innovative ways to bring athletic events to a growing audience, the technologies themselves must meet the same criteria for excellence.

Wireless LAN (WLAN), which can support a wide range of applications, is well-established in the professional sports world, but is just beginning to make its presence felt in college athletics. When the University of Georgia Athletic Association (UGAAA) decided to leverage WLAN to provide connectivity in their marquee sports venues, they looked for a solution that could be quickly deployed, was simple to manage, and would offer high-performance coverage and capacity throughout the deployment area. The Extricom WLAN was just the ticket.

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> Jeff Daniel
> Director of IT - Operations and Infrastructure
> University of Georgia Athletic Association

Wireless LAN Gets Into the Game

U.S. Division I college athletics and pervasive enterprise WLAN might seem an odd match at first. After all, most people at college sporting events are there to watch the game, not to work on their laptops or surf the net. But modern sports arenas and stadiums, like any other large business, are increasingly technology-driven facilities with complex networking and application requirements.

In this setting, WLAN has become a key component in the IT strategy surrounding large sporting events. Sports arenas and gymnasiums are, in a way, the ideal environment for Wi-Fi, combining large, open spaces that are conducive to wireless signal propagation, and transient user populations, such as sports reporters, that have very specific requirements that cannot be easily met by wired networks. WLAN also appeals to IT departments, because it promises low operational overhead in terms of the moves, adds, or changes to the campus network.

In addition, there are a growing number of applications that leverage WLAN flexibility to enhance sports facility operations and customer experience. These include applications as diverse as wireless camera systems that allow security officers to spot crowd-control problems in real time; food-service applications that track on-hand inventory and permit customers to order meals from their seats; wireless scanners that can read the barcode on each ticket and give the location of the ticket holder's seat; and real-time access to customized backend data systems such as sports statistics archives.

Making It Work

Designing a WLAN in a sports facility, however, is not necessarily as straightforward as it might look. Balancing wireless coverage and capacity so that multiple mobile users can connect and stay connected with a steady and high-throughput link is critical. But conventional WLAN systems, based on RF cell-planning, cannot accomplish this without some sort of performance trade-off, which means increasing capacity and at the expense of coverage, or vice-versa. In addition, the complexity of traditional systems leads to countless hours of fine-tuning, or even the need to "babysit" the WLAN during events to make sure nothing goes wrong.

High Goals

The spirit of competition certainly influenced UGAAA's WLAN goal, as Jeff Daniel, UGAAA's Director of IT - Operations and Infrastructure, explained, "All the other schools had one, we wanted it, and we wanted to do it better than them." The WLAN that Daniel was looking for would have to be a top performer in its field, able to support mission-critical applications such as press network access during live events and electronic ticket scanning.

Project Scope

Implement pervasive WLAN network at UGAAA's Dan Magill Tennis Complex, Rankin-Smith Student-Athlete Academic Center, and Spec Towns Track facility. Highly visible system would provide network connectivity to journalists covering events, as well as enabling variety of administrative and operational applications.

Solution

- Extricom WLAN System, consisting of multiple EXSW-800 WLAN switches, connecting multiple dual-radio 802.11a/b/g UltraThin™ Access Points.
- Build-in the capacity and flexibility for future roll-out of Voice-over-WLAN and mobile VPNs.

Results

- Swift deployment enabled press coverage for 2007 NCAA Tennis Championship.
- System to be extended to other major UGAAA facilities, including football and baseball stadiums, and state-of-the-art Coliseum Annex and Practice Facility.

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Wireless On the Move™

In this pressurized environment, one hundred percent uptime was a non-negotiable requirement, and the WLAN would need to ensure journalists could leverage the online resources they needed. A game-time system outage would be a highly public and expensive embarrassment for UGAAA.

Beyond robustness and performance, the WLAN had to be easy to install and operate, and could not require in-depth RF expertise to maintain on a day-to-day basis. Daniel summarized his challenge this way: "Our solution couldn't be marginal or so-so. It had to meet our criteria to the letter."

The Need for Performance

While considering his options, Daniel was introduced to the Extricom solution by Venture Netcomm, a system integrator with extensive WLAN installation experience. Venture Netcomm immediately grabbed his attention when they showed him that the Extricom system did not require the costly, time-consuming, and performance-limiting RF cell planning that Daniel had assumed as a given.

But beyond its simplicity of deployment, what interested Daniel even more about the Extricom WLAN was its ability to meet his stringent operational criteria. Universities are "noisy". environments from an RF standpoint, and sport stadiums can be user-dense environments, particularly the press boxes where over 100 journalists might be accessing the system in a confined area. Consistency of performance was absolutely essential, and the Extricom system could guarantee this.

Guaranteed capacity and bandwidth is possible thanks to Extricom's "channel blanket" architecture, in which Access Points (APs) can be distributed in any density, without the co-channel interference and channelization issues that impact cell-planned solutions.

Fast and Easy

UGAAA IT staff first tested the system at the Rankin-Smith Student-Athlete Academic Center, and its flawless performance with a variety of applications exceeded the team's expectations. "I liked what I saw and we just ran from there," Daniel stated, and he quickly gave the go-ahead to deploy the system to the Tennis Complex, Spec Towns Track facility, and UGAAA's administration building.

The deployment team then experienced first hand the simplicity of the Extricom system. In fact, the most complex aspect of the implementation was running power to control the temperature of the NEMA enclosures in which some of the outdoor APs were placed; otherwise, the team just put APs wherever needed to achieve the desired connection rates, and the deployment was finished in under two days.

Daniel summed up the strengths of the WLAN in stating, "That's the beauty of the system: it's technologically a very sophisticated product, but it couldn't be easier to put in."

Living Up to Its Billing

At the Dan Magill Tennis Complex, the Extricom WLAN was used the same day it went into production to provide network access to the press covering a match between UGA and the University of Southern California.

The big test, however, came with the NCAA Tennis Championship, and once again the Extricom system lived up to its billing. Throughout the tournament, the system supported hundreds of users, especially the attending journalists, with both data connectivity and live streaming video feeds of the matches transmitted over the wireless.

Since then, Daniel continues to be impressed by the system's day-to-day operational simplicity. "You can configure it to be as complicated as you want to, but I like the fact I don't have to be an Extricom 'brainiac' to run it."

Looking for More

With the first phase completed, the Extricom system is next slated for expansion to cover the University's most prestigious sports facilities, including the Sanford Stadium (football), Foley Field (baseball), Stegeman Coliseum (basketball), and the new state-of-the-art Coliseum Annex and Practice Facility. And the value of the system will grow even more, with such applications as ticket scanning for admission; voice over WLAN to enhance events management communication systems; guest access portals to separate public and non-public networks; and use of mobile VPNs to enhance network security. Whatever the scale of the deployment, UGAAA is confident that their consistently performing WLAN will be up to any challenge that's thrown at it.