



CASE STUDY: JMA WIRELESS DOME

A new state-of-the-art 5G network is reimagining the fan experience in the JMA Wireless Dome at Syracuse University.

OVERVIEW

Most connected collegiate stadium

The JMA Dome, also known as the infamous “Loud House,” is a 45,000-seat sports stadium on the Syracuse University campus in Syracuse, NY. It is the only domed stadium in the U.S. Northeast and is one of the most iconic structures on any college campus.

Every year, the JMA Dome brings upwards of 935,000 visitors and more than \$240 million in economic activity to the Central New York region. The JMA Dome hosts numerous rounds of NCAA basketball championships and state competitions for football, lacrosse, and track and field. It also hosts regional soccer, field hockey, and NBA pre-season games. In addition to sporting

events, the Dome stages graduation convocations, Olympic ice-skating shows, monster truck races, and notable music concerts by legendary performers like Paul McCartney, Elton John, The Rolling Stones, and more.

SITUATION

The Syracuse Dome was outfitted with a 4G network deployed over ten years ago and although the capacity was upgraded from 12 to 21 cell sectors it had room for improvement in cellular coverage. With the evolution of the fan experience and growing device usage, the demand for data in the Dome had far surpassed the network capacity.

Congested wireless networks are often a critical problem in large venues. This issue is caused by the high volume of

JMA WIRELESS DOME

The most connected collegiate stadium

Enhanced cellular
4G/5G
connectivity

45K users
can share
real-time
experiences
and stream
simultaneously

Delivering
2.5X more
network
capacity



Increase
guest satisfaction



Seamless
Mobile connectivity



Streamlined
business operations

The cellular connectivity across this 525,000-square-foot arena was enhanced by introducing 102 new 4G/5G capable software defined radio units (SDRU) and 372 custom designed antennas. The cellular capacity for the 4G/5G distributed antenna system (DAS) was increased from 21 to 54 cell sectors, enhancing the coverage model and cellular connectivity inside and around the entrance and exit gates of the Dome.

users concentrated across a limited area, all expecting wireless connectivity from the moment they arrive until their eventual departure. In addition, to better serve fans, venues are increasingly going paperless, and the smartphone has become the personal gateway for gaining entrance, finding seats, ordering, and paying for concessions, sharing event experiences, and even requesting transportation services. Providing reliable and seamless cellular coverage for 45,000 users in a single location is never a routine exercise. At virtually all venues, this challenge is further compounded by the tons of steel and concrete used in their construction. These materials naturally impede or reflect cellular signals from the existing macro towers outside. The in-building dedicated network eliminates the need to rely on the outdoor network for indoor connectivity.

SOLUTION

To overcome these connectivity challenges at the Dome, Syracuse University partnered with JMA Wireless to install the most advanced connectivity solution. The JMA Wireless DAS platform is a multi-band, multi-operator architecture that provides a wide range of flexible and reliable solutions for cellular coverage and capacity distribution. The DAS

platform saves time and money by delivering multiple operators, bands, and technologies to the remote units - all on a single strand of fiber optic cable.

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Adding such a large number of cell sectors in an arena to meet the need for the high volume of users concentrated in a limited area, is not trivial. The RF energy from many antennas can cause significant interference due to their proximity to one another. Controlling this energy is essential to improving the signal-to-noise ratio (SNR), thereby reducing interference. JMA's RF engineering and R&D team designed and deployed a patented narrow-beam antenna solution to overcome this challenge. This allowed JMA to deliver a high-performing, high-capacity cellular network surpassing the connectivity of most professional sports stadiums in the country.

JMA DAS technology has also become the only 5G-ready platform in the industry whose software defined radio units considered the needs for low latency requirements to drive applications that enhance the fan experience with built-in band support for new spectrum as needed. The JMA Dome is a symbol of this forward thinking as it adds the new C-Bands to the current system and powers future upgrades without a hardware change-out. The JMA Dome will deliver 5G capabilities to a stadium that sees over one million guests every year.

RESULT

As a result of the enhanced cellular connectivity, users can now enjoy an immersive fan experience. That means they can download and upload video in real-time, text friends, post photos of their visit on social media, check out-of-town scores or video chat from their seats — all while some 45,000 of their fellow guests are doing the exact same thing at the exact same time.

Fans don't have to wait in line to connect to the network to get through gate admissions. Buffering video or being unable to upload event experiences in real-time is a thing of the past. Add to this the new 5G DAS capacity, and the JMA Dome now offers the best-in-class connectivity solution among all collegiate venues surpassing that of some professional sports stadiums that host the big game.

"This is a truly transformative milestone in the life of the JMA Wireless Dome – both for the facility and for every individual who attends an athletic event, concert or other activity at the Dome," says Jeff Rubin, special advisor to Chancellor Kent Syverud on esports and digital transformation. "Now, the 45,000 JMA Dome fans can share in a technological experience that is truly state-of-the-art, providing them with connectivity on par with having a cell tower all to themselves. It's an experience few will have at any other venue in the country."



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SYRACUSE UNIVERSITY



About JMA Wireless

Wireless technology now impacts nearly every aspect of daily life around the world. As the fastest-growing global tech company, JMA designs and delivers cutting-edge wireless technology solutions that modernize how people learn, work, live and play, like never imagined.

We power today's leading industries through next-generation software-based 5G, private wireless networks, 5G-ready antennas and connectors, and advanced indoor 5G capabilities — all manufactured in the U.S. Our headquarters, along with the first-of-its-kind 5G campus are located in Syracuse, NY, with innovative tech hubs around the world.

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