

Case Study: Upgrading an NFL Stadium's In-Building DAS to 5G for Three Major Carriers



The Challenge

An iconic NFL stadium with a seating capacity of over 70,000 faced increasing demand for high-speed and reliable mobile connectivity. With millions of fans attending games, concerts, and other events annually, the existing 4G LTE Distributed Antenna System (DAS) struggled to meet:

- **Bandwidth Requirements:** High data usage during events led to network congestion and reduced performance.
- **User Experience Expectations:** Fans expected seamless connectivity for streaming, social media, and other mobile activities.
- **Carrier Support:** The system needed to accommodate the three major U.S. carriers with equal performance across their networks.

The stadium management sought to upgrade the in-building DAS to support 5G technology, ensuring a cutting-edge experience for fans and event attendees while future-proofing the facility for evolving connectivity demands.

The AMEC Wireless Solution

The stadium partnered with AMEC Wireless to design and implement a state-of-the-art 5G-ready DAS, ensuring enhanced coverage and capacity for all three major carriers.

Comprehensive Site Assessment

The AMEC Wireless team conducted an in-depth evaluation of the existing 4G LTE DAS infrastructure and the stadium's unique requirements:

1. **Usage Analysis:** Identified peak data usage areas such as seating zones, concourses, luxury suites, and concession stands.
2. **Coverage Gaps:** Mapped weak signal areas to ensure uniform 5G coverage.
3. **Carrier Collaboration:** Coordinated with the three major carriers to understand their specific requirements and spectrum allocations.

Custom 5G DAS Design

AMEC Wireless developed a tailored DAS design to address the stadium's needs:

1. **High-Capacity Nodes:** Installed advanced 5G-capable nodes to handle high data traffic during peak events.
2. **Multi-Carrier Support:** Designed the system to deliver equal performance for all three carriers, avoiding signal prioritization.
3. **Enhanced Coverage:** Strategically placed antennas to ensure seamless 5G connectivity across the stadium, including challenging areas like underground parking and utility zones.
4. **Low Latency Features:** Integrated technologies to support ultra-low latency for real-time applications like AR/VR experiences and live streaming.
5. **Scalability:** Built the system to accommodate future upgrades, such as network slicing and private 5G networks.

Implementation and Testing

The project was executed in phases to minimize disruptions to the stadium's events schedule:

1. **Infrastructure Upgrades:** Replaced outdated 4G LTE equipment with 5G-ready components, including antennas, cabling, and headend units.
2. **Rigorous Testing:** Conducted extensive testing to validate signal strength, data speeds, and reliability for all carriers.
3. **Carrier Integration:** Collaborated with carrier engineers to ensure seamless integration and compliance with their network standards.

Results

The upgraded DAS delivered transformative results for the stadium:

1. **5G Connectivity:** Fans now enjoy ultra-fast 5G speeds, enabling smooth video streaming, social media uploads, and real-time app usage.
2. **Increased Capacity:** The system supports tens of thousands of simultaneous users without performance degradation.
3. **Multi-Carrier Performance:** Equal service quality for all three carriers ensures satisfaction across diverse user bases.
4. **Future-Ready Infrastructure:** The scalable design prepares the stadium for next-generation technologies and increasing user demands.
5. **Enhanced Fan Experience:** The upgraded connectivity contributes to a modern, engaging, and immersive stadium experience.

Client Testimonial

“The upgrade to 5G has completely transformed connectivity within our stadium. AMEC Wireless delivered a solution that not only meets today’s demands but also positions us for the future. Our fans have never been happier with their mobile experience.” – Stadium Operations Manager

Conclusion

AMEC Wireless’s expertise in designing and deploying 5G DAS solutions enabled this NFL stadium to set a new standard for in-building connectivity. By upgrading from 4G LTE to 5G, the stadium now offers unparalleled mobile performance, enhancing the fan experience and solidifying its position as a premier event venue.