



Watch the Video



Dallas Cowboys
Arlington, Texas
www.dallascowboys.com

Stadium fast facts:

- 76 total IDFs
- 950 miles of cabling
- 600-ton IPTV (world's largest)
- 3,000 monitors
- \$1.33 billion build cost
- Capacity: 100,000 seats
- Spearheaded by AT&T®
- 5,000-sq.-ft. data center controls 20 stadiums functions plus Jones' 50 extra businesses
- 8 terabytes of single-event total processed data (2015 NCAA Football Championship)

CommScope enables AT&T Stadium to continue delivering THE definitive fan experience

In late 2008, following an ambitious nine-month deployment schedule culminating in the 2010 Super Bowl, [AT&T®](#) and [CommScope](#) (NASDAQ: COMM) shouldered the massive challenge of establishing the wireless and enterprise network infrastructure for [AT&T Stadium](#). [Dallas Cowboys](#) owner Jerry Jones envisioned a stadium of unprecedented elegance and luxury; one that showcased world-class technology and exemplified greatness. Above all, he wanted to deliver a thrilling entertainment experience for concert lovers and sports fans alike.

At a construction cost of \$1.33 billion, the gigantic 100,000-seat stadium houses the world's largest IPTV—a four-sided, 600-ton suspended LED scoreboard—and nearly 950 miles of CommScope cabling, roughly the equivalent of a one-way road trip from Arlington to Chicago.

"In 2009, AT&T and CommScope helped us build a world-class communications network for one of the world's most iconic stadiums," said Jerry Jones, owner of the Dallas Cowboys. "Over the past six years, smart upgrades from both of these partners have allowed us to keep our promise of delivering an unforgettable game-day experience."



CommScope enables AT&T Stadium to continue delivering THE definitive fan experience

In late 2008, following an ambitious nine-month deployment schedule culminating in the 2010 Super Bowl, AT&T® and CommScope (NASDAQ: COMM) shouldered the massive challenge of establishing the wireless and enterprise network infrastructure for AT&T Stadium. Dallas Cowboys owner Jerry Jones envisioned a stadium of unprecedented elegance and luxury; one that showcased world-class technology and exemplified greatness. Above all, he wanted to deliver a thrilling entertainment experience for concert lovers and sports fans alike.

Challenges overcome:

- Host internationally televised events on a massive scale
- Integrate all systems via a converged infrastructure
- Support wireless capacity equal to an entire city
- Build scalability and redundancy into all systems

Solutions deployed:

- SYSTIMAX® GigaSPEED X10D® copper cabling
- SYSTIMAX LazrSPEED® 550 multimode fiber cabling
- 40,000 copper and fiber ports
- VisiPatch 360® and InstaPATCH® Plus
- 414 Seven-band Andrew® ION®-B remote units
- 6 Zones supported by Andrew ION-M
- 24 Andrew ION-U antennas
- DAS upgrades grew from 29 to 64 zones served
- From 1080 to 1367 antennas
- 100% increase in Wi-Fi 802.11: 750 to 1,500 access points
- Virtualized data saves 66% space in DC, driving used servers down from 300 to 100

At a construction cost of \$1.33 billion, the gigantic 100,000-seat stadium houses the world's largest IPTV—a four-sided, 600-ton suspended LED scoreboard—and nearly 950 miles of CommScope cabling, roughly the equivalent of a one-way road trip from Arlington to Chicago.

"In 2009, AT&T and CommScope helped us build a world-class communications network for one of the world's most iconic stadiums," said Jerry Jones, owner of the Dallas Cowboys. "Over the past six years, smart upgrades from both of these partners have allowed us to keep our promise of delivering an unforgettable game-day experience."

AT&T and CommScope build on a truly ambitious achievement

The original goal was to build a flexible neutral host infrastructure that enabled every fan to quickly and easily tweet, text, share photos and stream videos from a wide variety of smart devices—with the stadium at maximum capacity. Wireless services were originally delivered by AT&T® and several other national carriers.

A 5,000-sq.-ft. remote data center manages 20 stadium operations and the Cowboys' Valley Ranch facilities:

- Wireless and wired equipment hidden throughout the premises
- Touchscreen technology offering convenient purchases
- Automatic control of the retractable roof and end-zone doors
- On-the-fly advertising for targeted fan messaging
- Integrated lighting, HVAC, VoIP and data systems
- Instant communication between federal and local agencies

Nowadays, LESS is more and MORE is more

Now more than ever, AT&T Stadium is a flagship success for CommScope. Dozens of curious potential clients tour the facility every year to investigate the engineering feats required to pull off such an audacious vision. Like the company that supplied it, the original technology was designed to be flexible and forward-thinking. Over the past six years, that technology has evolved to support the expanding needs of stadium operators.

"We surmounted a challenge of unprecedented complexity in the 2009 AT&T Stadium project. Since then, I'm proud to say that our professionals have partnered with AT&T to deliver a series of wired and wireless upgrades that continue to exceed the Cowboys' standards for public safety, fan experience and revenue potential."

Eddie Edwards, Chief Executive Officer
CommScope



"CommScope is our technology backbone. They left nothing to chance. Every detail of our continually evolving infrastructure enhances our fans' ability to safely enjoy their time here."

John Winborn, IT Director,
Dallas Cowboys

On the wireless side, more led to more—more subscribers consuming more data meant that AT&T needed more antennas and sectors to provide more capacity within the stadium. Five major upgrades were implemented to the state-of-the-art distributed antenna system (DAS), including:

- A dedicated antenna within every stadium suite
- Expanding ION[®]-U throughout the parking lot area to give tailgaters swift, 24/7 wireless access along with MIMO coverage inside via dedicated secondary antennas in support of Super Bowl 45
- Adding 24 intelligent point-of-interface (i-POI[®]) modules to the ION-U platform to support six zones of parking lot coverage for AT&T
- Expanding the core DAS headend area from two to three rooms
- Adding 24 ION-B remotes and 40 antennas to the lower concourse via a lockable façade that optimizes capacity closer to the fans without compromising any aesthetics
- Adding 100 ION-B remotes to the upper concourse

The state-of-the-art DAS manages more than 20 stadium functions, including ticketing, halftime staging, maintenance and team communications. Between 2009 and the beginning of 2016, the total antenna count rose nearly 30 percent, from 1080 to 1367. Guided by the principle that signal strength should be "used, not seen", every single antenna in the building is hidden from the naked eye.

Virtualized data enables exponentially greater productivity

On the enterprise side, a 180° upgrade philosophy was followed, resulting in less evolving into more. CommScope originally deployed 68 intermediate distribution frames (IDFs) and more than five million feet of SYSTIMAX[®] copper and multimode fiber cabling. These cables connect the scoreboard and 3,000 monitors in luxury suites, pro shops, clubs and concession stands scattered across the stadium.

Since that time, the Cowboys IT staff partnered with AT&T and CommScope to complete three important upgrades. First, they virtualized increasingly greater amounts of data, enabling the team to reduce the total number of servers required for dedicated game-day operations from 300 to 100. Jones runs his 50+ businesses from the remaining two-thirds of available rack space in the 5,000-sq.-ft. data center, allowing it to support a wide variety of innovative revenue streams.

Second, to leverage the greatest possible data transfer speeds, the Cowboys also upgraded from 10 GB to 40 GB connections by installing SYSTIMAX OM4 fiber trunk cables. These cables accelerate a variety of stadium functions, including point-of-purchase (POS) displays, concessions and on-the-fly advertising—all while shrinking necessary space, power and cooling requirements. This further extends the useful life of the data center and makes equipment maintenance that much easier.

Third, the team doubled the total number of Wi-Fi 802.11 access points—from 750 to 1,500. This 100 percent increase represents a trend that will continue as Jones and his IT team explore and experiment with even more creative ways to leverage the technology provided by AT&T and CommScope. A prominently placed video board dedicated to sharing real-time in-game fan photos is a perfect example of this ingenuity.

"Every decision we make is guided by an attempt to improve the fan experience," said John Winborn, the Cowboys' IT Director. "Our enhanced Wi-Fi network directly supports our DAS by allowing fans to download and upload data faster than ever before."



A record-breaking eight terabytes of total processed game-day data

Together, these upgrades culminated in a resounding success during the 2015 NCAA College Football National Championship held at the stadium. More than eight terabytes of total data were processed during the game—a figure that still edges out the 2016 championship game between Alabama and Clemson, hosted by the University of Phoenix Stadium in Glendale, AZ.

The Cowboys refer to AT&T Stadium as “the ultimate intelligent entertainment venue” that delivers “THE definitive fan experience.” It keeps fans safer, accelerates vital operations, maximizes revenue opportunities—and now does all of this transparently, allowing fans to do what they do best: enjoy the show and cheer on their favorite musicians and athletes.

“Every single decision we make is guided by an attempt to improve the fan experience. Our enhanced Wi-Fi network directly supports our DAS by allowing fans to download and upload data faster than ever before.”

*John Winborn, IT Director,
Dallas Cowboys*

CommScope (NASDAQ: COMM) helps companies around the world design, build and manage their wired and wireless networks. Our network infrastructure solutions help customers increase bandwidth; maximize existing capacity; improve network performance and availability; increase energy efficiency; and simplify technology migration. You will find our solutions in the largest buildings, venues and outdoor spaces; in data centers and buildings of all shapes, sizes and complexity; at wireless cell sites and in cable headends; and in airports, trains, and tunnels. Vital networks around the world run on CommScope solutions.

COMMScope®

www.commscope.com

Visit our website or contact your local CommScope representative for more information.

© 2016 CommScope, Inc. All rights reserved.

All trademarks identified by ® or ™ are registered trademarks or trademarks, respectively, of CommScope, Inc.

This document is for planning purposes only and is not intended to modify or supplement any specifications or warranties relating to CommScope products or services. CommScope is certified according to ISO 9001, TL 9000, and ISO 14001.

CU-109589-EN (04/16)