



## Dallas Cowboys Stadium Enhancements

- Fans attending events at Cowboys Stadium want to be able to share the experience, as it's happening, with those back home, whether it's through a voice call, text message, e-mail or picture and video messaging.
- Our network team has been working diligently to deliver the best possible wireless experience at Cowboys Stadium since it opened in 2009.
- AT&T has broken its own record for data usage at Cowboys Stadium for each game that has been played.
- AT&T has made enhancements at Cowboys Stadium and other key areas in anticipation of increased voice and data traffic on its wireless network.
  - AT&T has invested millions of dollars in network enhancements serving Cowboys Stadium (includes everything from 2G, 3G, DAS, fiber, etc.).
  - Cowboys Stadium has one of the largest DAS system in the nation. A distributed antenna system (DAS) is a network of antenna nodes that provide and enhance wireless service within a geographic area or building, and improve coverage and capacity indoors and outdoors.
  - The Cowboys DAS is AT&T's largest DAS stadium project and has been a model for others across the country.
    - Hundreds of antennas provide coverage throughout the venue.
    - Dozens of cell sites located in the stadium, doubled the number last season
    - We have dramatically expanded AT&T's network capacity and coverage on the DAS system by more than 150%.
    - Since these improvements have been made, we've seen a substantial increase in voice and data traffic.
  - To better serve the areas in and around Cowboys Stadium, we've also added:
    - Equipment installation to a temporary Outdoor DAS that consists of five additional network zones that will provide added coverage in the stadium parking lot.



- DAS, Cells on Wheels (also known as COWs) and enhanced coverage at teams practice fields and Cowboys HQ (Valley Ranch, SMU and TCU).
- This will provide additional capacity to cell sites in the vicinity of the stadium and serving the facilities where the teams will be practicing.
- Enhancing the wireless experience doesn't just stop with the stadium. We've taken steps to better manage the large amount of wireless traffic we expect to see during this week across Dallas-Fort Worth.
  - Installed Distributed Antennae Systems (DAS) throughout major hotels and venues hosting football teams and fans throughout the Dallas-Fort Worth metroplex.
  - COWs, CARTS and temporary rooftop antennas will also be supporting events at the city convention centers, popular downtown locations in Dallas-Fort Worth and for public safety officials.
  - Capacity added to cell sites serving popular large venues, hotels, and sports facilities where game activities will be hosted (i.e., Downtown Fort Worth, Fair Park, North Arlington, Wyly and Winspear theatres, and more.)
  - Enhanced wireless capacity and performance of AT&T's mobile broadband network throughout the North Texas area. Cities include: Arlington, Carrollton, Coppell, Dallas, downtown Dallas, Euless, Frisco, Fort Worth, Garland, Grapevine, Hurst, Irving, Plano and more.
- In addition, a team of AT&T network engineers will monitor our network 24/7 throughout the duration of the week to help ensure the network's performance is meeting our customers' needs.
- With today's advanced networks and the proliferation of smartphones, it's easy to understand how traffic has increased at major venues just as it has everywhere else, and why AT&T has seen a 2,300% increase in mobile data on its network over just the past three years (3Q07 to 3Q10). Through venue enhancements, such as Cowboys Stadium, AT&T continues to provide a great customer experience whether you're making calls, checking e-mail, downloading the latest scores, or surfing the Internet on your AT&T device.
  - The investment, time and work put into these high traffic locations provide enhanced wireless coverage to customers where crowd density might otherwise prevent an optimal wireless experience.
  - However, it is important to note that even with all of these enhancements in place, all networks often experience congestion at peak times when you're dealing with tens of thousands of active voice and data customers all trying to make calls, send texts, photos and videos all at the same time.