

State Fair of Texas

Animals, Football, Rides, A Firetide™ Wireless Mesh Network.
All Essential Elements for a Safe and Successful State Fair.

Organization

State Fair of Texas

Industry

Nonprofit organization

More Information

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Challenge

Provide real-time outdoor video surveillance.

Solution

Firetide 3203 HotPort™ Outdoor Wireless Mesh Nodes

Visitor security is of paramount importance for the Texas State Fair and each year it gears up to assure that 2.5 million people have a safe, good time. Underlying the security efforts is a Firetide HotPort™ wireless mesh network carrying real-time video surveillance traffic. Unaffected by electrical interference from midway rides and neon signs, the network quietly does its job—helping police and security staff keep an eye on everything.

Each September, the United States' largest state fair opens its gates at historic Fair Park in Dallas, Texas. For the next 24 days, approximately two and a half million people will come to wager on their favorite porcine competitor in the pig races, attend a star-studded concert lineup, sample gourmet food and wine, view garden exhibits, check out the latest trucks and luxury cars, tour the livestock barns, scream down a racing coaster on the midway, or sample the myriad of sights, tastes, and sounds that represent Texas with its boots shined and hat on straight.

Fair Park covers 277 acres and features 370,000 square feet of exhibit space. During the Fair alone, the venue generates \$350 million for the city of Dallas and awards more than \$1.5 million in college grants to eligible students. While the Fair is the annual highlight, Fair Park also hosts football games at the venerable Cotton Bowl, arts events, concerts, and museum exhibits throughout the year. Fair Park is a National Historic Landmark, boasting the largest collection of art deco-era exposition buildings in the United States.

Securing Fair-goers and Exhibitors

Keeping 2.5 million Fair attendees reined in is not as difficult as one would imagine. However, maintaining security for fair-going families, exhibitors, valuable livestock, and merchandise is a top priority. Each year, the Dallas Police Department establishes a command center on the Fair grounds and hundreds of off-duty police officers work during the Fair. In past years, the Police Department has deployed video security cameras and a microwave wireless network for security monitoring purposes. However, the network was limited in its reliability and usefulness—as a point-to-point microwave system, video quality was often compromised by electrical interference generated by the midway rides, concession stands, and neon signs.

In August, 2004, the Police Department asked AgileMesh, Inc. to recommend a temporary wireless network solution that could reliably deliver broadband video to its central monitoring station. The Department had recently worked with AgileMesh on several video surveillance projects and knew that they could provide a robust, portable video monitoring solution for police work. Now, could they help with the State Fair?

“The Police Department wanted a portable video monitoring solution because the Fair is a temporary venue and they cannot dig trenches, pull cable, or alter the historic buildings to deploy a solution,” explains Bill Dickerson, president of AgileMesh Inc. “Wired solutions were also less flexible. The Fair





Case Study: State Fair of Texas



layout changes from year to year, which would require having to constantly adjust or relocate equipment.” While the Department had evaluated other wireless solutions, they were prohibitively expensive and still vulnerable to electrical interference.

A Flexible Firetide Solution

AgileMesh proposed its AgileMesh Video solution, based on its own video servers and software, the Fair’s video cameras, and a HotPort™ wireless mesh network from Firetide™. Four video cameras were installed along the Midway and two cameras with full pan, tilt, and zoom control were placed on top of the Cotton Bowl facility. The cameras connect by short Ethernet cables to nearby Firetide HotPort 3203 outdoor mesh nodes which provide wireless network connectivity for the cameras, video servers, and monitoring stations. Cameras can also receive power via these Ethernet ports eliminating the need for an additional power supply and power cabling.

Four HotPort 3203 nodes were used for the initial HotPort network and were placed at the various camera locations. Upon startup, the nodes automatically connected to each other via radio forming a wireless mesh network. Mesh networks eliminate the need for costly and difficult network cable installation for remote cameras and their automatic configuration accelerates deployment time and eliminates the need for an army of technicians to deploy the network. The network is also self-healing assuring high reliability. If a node goes down, the other nodes automatically re-route traffic around the failure maximizing application availability.

“We like the HotPort’s ability to deliver plenty of bandwidth for carrying live video, deploying more cameras, and supporting higher frame rates,” said Mark Cromwell, vice president of engineering for AgileMesh. “Its self-configuring feature also enables us to deploy the network quickly because we don’t have to configure or assign IP addresses to each node. We can plug an Ethernet cable into one of the nodes and take traffic off of any of the interconnected nodes and not have to worry about traffic in between.” The Firetide HotPort network also provides three service levels, enabling AgileMesh to prioritize traffic traversing the mesh and assure stable video quality.

A Permanent Temporary Network

The network and cameras were installed and ready within a week—well in time for the Fair’s opening day. Originally deployed as a back-up solution and an experiment, the Firetide HotPort

network quickly proved its value. While the AgileMesh Video solution was reliably delivering surveillance video to the Police command center, the microwave network was still suffering from interference problems.

“Halfway through the Fair, one of the police chiefs in charge told us that we may as well disconnect the microwave system,” said Rusty Fitzgerald, director of operations for the State Fair. “The Firetide HotPort network and the AgileMesh Video solution were performing beautifully. We decided to purchase the equipment for our ‘permanent’ temporary network.”

The successful AgileMesh Video solution has become a permanent fixture at Fair Park. The State Fair organization now uses

the cameras and network year-round to provide video surveillance of park property. During the next Fair, the Dallas Police Department will again take control of the video network, install additional temporary cameras, and monitor all areas. Meanwhile, the wireless network and security cameras augment the reach of the smaller security force in place during non-Fair times. Already, the surveillance network has helped police apprehend vandals and a thief who was stealing thousands of dollars worth of valuable landscaping plants.

As Fair time rolls around again, the Firetide wireless mesh network offers additional opportunities for enhancing the Fair visitor’s

experience. For example, it is possible to provide Internet access services for Fair volunteers, staff, and visitors. With reliable, robust broadband networking capabilities, new features can be easily added as needed.

As robust security measures become a standard requirement for large public gatherings, the State Fair of Texas has made its AgileMesh Video solution and Firetide HotPort wireless mesh network a Fair staple. Just like the tallest Ferris wheel in North America, blue-ribbon pecan pie, and the Budweiser Clydesdales.

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