

Constant Connectivity: Delivering Data Seamlessly, Even at the Edge

A Vertiv Case Study



Case Summary

Company

Wireless Service Provider

Location

North America

Situation

Carrier needed to rapidly deploy an iDAS network in time for Super Bowl XLVII.

Vertiv Equipment

- Vertiv™ NetSure™ DC Power
- Vertiv™ Liebert® UPS
- Vertiv™ XTE Enclosures

Supplemental Deployments

- SunTrust/Braves Park
- Raymond James/Buccaneers Stadium
- Hard Rock/Dolphins Stadium
- NASCAR Atlanta Super Speedway
- NASCAR Daytona Super Speedway
- Ohio State Stadium
- Cleveland Browns Stadium
- Levis Stadium
- Homestead Super Speedway
- Downtown Savannah, Georgia oDAS Upgrades

Situation

About a decade ago, as the smartphone craze took off, distributed antenna systems (DAS) became a necessary tool for wireless carriers who needed to extend coverage reach or increase capacity in a particular area of their network. The Superdome in New Orleans is a prime example. In preparation for Super Bowl XLVII back in 2013, local wireless service providers (WSPs) realized they needed to upgrade their network in order to handle the volume of data attendees were sure to generate. An in-building DAS (iDAS) solution was the perfect answer and the WSPs turned to Vertiv for support. DAS is still a great solution for hard to reach spaces, and is relevant today in a wide variety of industries including healthcare, manufacturing and retail.

Critical Needs

The wireless network in the Superdome needed to be upgraded in order to provide ample cellular coverage to a stadium packed full of thousands of mobile phone users in time for Super Bowl XLVII. The need for the upgrade was only realized weeks before the big event.

Results

In order to get a reliable network up and running in time, one WSP converted a small room within the stadium into a headend. Three Vertiv™ NetSure™ 721 DC power systems with two strings of batteries each and two battery racks with five more strings of batteries each were installed in the headend to power the iDAS network.

Another WSP created a caged area in the parking garage and housed their power supply in a series of Vertiv™ XTE enclosures.

Both deployments were up and running in time for the big day. Since the Superdome, Vertiv has gone to deploy infrastructure to support many indoor and outdoor DAS networks around the country.



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DAS Overview

DAS is a network of antennas that distribute cellular signals to mobile phone users in a defined space, like a building, amphitheater, or even a city street. In a stadium or indoor DAS (iDAS) network, where capacity needs to be boosted to handle large crowds, the signal is typically fed from an onsite headend. In between the antenna and headend the signal is carried over fiber cables to the DAS remote units. Remote units are strategically placed throughout the venue and connected to discretely located antennas that are placed on ceilings, walls, pillars, behind signs, etc. When deploying DAS outdoors (oDAS), the remote units and antennas typically reside on a streetlight or utility pole. oDAS networks may be needed to extend the reach of a cellular network in a remote area, to eliminate dead zones in the network where the radio frequency is obstructed, or to increase capacity in densely populated urban locations.



Another provider set up shop in a caged area of the parking garage and housed their power in a series of Vertiv™ XTE enclosures.

Back in 2013, DAS networks delivered throughput speeds under 10 Mbps. Technology has advanced greatly since then. The radios in the Superdome have been upgraded 3 times since the first DAS network was installed.

The great thing about the NetSure™ DC power infrastructure that Vertiv deployed is the modularity. To accommodate the higher power radios over the years, the WSPs only needed to add breakers and rectifiers to their existing network. Networks today are now realizing throughput rates of 100 - 1000 Mbps. To deliver speeds of 100 Mbps, the Levi's Stadium in San Francisco deployed radios under the seats, on the light poles and in the luxury suites. For Superbowl 2020, the Hard Rock stadium in Miami will achieve throughput levels of 1 Gbps.



Solution

Vertiv has decades of expertise in DC power, UPS and outdoor enclosure infrastructure, and well-established relationships with WSPs around the globe. These relationships, our reputation, and the breadth of our industry knowledge made us the vendor of choice to provide the power and enclosure solutions the WSPs needed to power their DAS networks.



In the case of the Superdome, one provider leveraged a small room within the stadium as their headend. Three NetSure™ 721 DC power systems with two strings of batteries each and two battery racks with five more strings of batteries each were deployed to power the DAS network.

NetSure™ DC power systems have become much more intelligent over the last decade. Network infrastructure can now be controlled remotely from your phone. This enables the WSP to anticipate weather events and activate site generators to avoid a power outage.

Society's dependence on connectivity is greater today than ever. Data consumers are no longer as tolerant as they used to be when the network is unavailable. This increasing demand for constant connectivity — even in hard to reach spaces — continues to make DAS a critical component of the wireless network.

Look to Vertiv to satisfy the requirements of your next DAS deployment. Many of our products are already approved by the major operators and we bring a wealth of knowledge and experience from our ongoing involvement in DAS deployments and upgrades.

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