

A Private Wireless Network for K-12 Student Access

The CBRS mobile core, provided by Athonet, a Hewlett Packard Enterprise acquisition, delivers fast, consistent and secure internet connectivity.



The Fort Worth Independent School District, the fifth largest school district in Texas. The need was to build a connectivity solution that would reliably deliver reliable, high-speed cellular service for the district's students working from home.



EDUCATION

the challenge

In the wake of the Covid pandemic, many school districts adopted hybrid learning models in which students split their time between in-person classes and virtual learning at home. While most students have returned to the classroom now and aren't remote schooling anymore, many are still assigned online homework that requires a strong internet connection to access. In fact, the Fort Worth ISD plans to extend its instruction with after-hours programming featuring virtual learning and tutoring and small group tutoring in the afternoon evenings and weekends.

the solution



PRIVATE CBRS NETWORK



ATHONET NEXT-GENERATION CONNECTIVITY PLATFORM



TOWER-MOUNTED CBRS RADIO HEADS



PRIVATE SIM CARDS FOR USER DEVICES

the result

- **High performance** – the network delivers all the bandwidth students need to connect and do their work from home.
- **High security** – Each student receives a laptop or tablet with SIM cards that can only connect to the private network, eliminating the potential for many attacks that plague public wireless networks.
- **High availability** – the network is consistently available whenever students need it.
- **Low operating costs** – by owning and housing its own infrastructure, the district saves on lease costs and colocation fees.

INTRODUCTION

With a mission to deliver a hybrid learning model, the Fort Worth Independent School District (Fort Worth ISD) deployed a private, Athonet-based wireless network for at-home student access. Fort Worth ISD serves 75,000 students across most of the city of Fort Worth. The district also serves the cities of Benbrooke, Westover Hills and Westworth Village, and also covers parts of Forest Hill and Haltom City and the unincorporated parts of Tarrant County.

PROBLEM

Many students, particularly in underserved communities, lack internet connectivity from home. Public cellular wireless providers have supplied hotspots to students to connect them to the internet via 4G mobile technology from their homes, but these portable devices haven't delivered the consistent, secure and high-performance access students need. Instead, students are left frustrated with dropped connections and slow service.

Leveraging funding from a bond and the federal government's Emergency Connectivity Fund, Fort Worth ISD planned to build a new, secure network that would meet student needs. Citizens Broadband Radio Service (CBRS) technology would deliver the security and performance students needed.

SOLUTION

Fort Worth ISD CIO Marlon Shears came to Fort Worth from a nearby Dallas district which had also built a CBRS network. Shears was determined to create a sustainable network, according to BearCom, the integrator that oversaw the project. The network was designed to favor capital investment rather than ongoing operating expenses, since a windfall of funding was available from a bond and from the FCC's government's Emergency Connectivity Fund.

The district would own all the network infrastructure, including the monopole towers BearCom built on school properties, and the district would host the network core in its data center. The end result would be a high network that would provide protection for sensitive data, and customizability to meet each school's needs.



SOLUTION DESCRIPTION

BearCom has integrated hundreds of wireless networks across North America, including large school district networks in Dallas, Texas and Patterson, California. Its success is founded on a growing body of experience plus a collaborative ecosystem of trusted technology partners who provide portions of the network. Vendors on this project included CommScope, Athonet, Airspan and Cradlepoint.

BearCom collaborated with Athonet to supply the network's Evolved Packet Core (EPC). "Athonet has been delivering mobile core platforms for more than fifteen years," said Simon O'Donnell, president of Athonet USA. "Thanks to its software base, our EPC scales easily to support large deployments like the one at Fort Worth ISD as well as smaller enterprise applications, and it delivers the same, carrier-grade reliability in every instance."

BearCom teamed with other partners to deliver the Spectrum Access System (SAS) management, home routers, CBRS eNodeBs (CBSDs), and management software.

Athonet provided a high-capacity redundant mobile core, which BearCom deployed at the district's data center. The district wanted the core onsite instead of in the cloud because a cloud-based core would require a subscription, and the district wanted a sustainable network that minimizes ongoing opex. "Athonet has been an invaluable resource for the development and success of these networks," proclaimed Mike Owen, chief technology officer at BearCom.

All the vendors worked together seamlessly to bring a core network and four radio sites online within 60 days, meeting their goal of serving an initial 4,000 students.

CONCLUSION

Bearcom's wireless integration expertise combined with Athonet's core network and IMS platform provided a reliable and scalable solution for the Fort Worth ISD's private network. The district is now well on its way to a strong and secure private network serving all its students.

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Athonet is a leader in private cellular network technology delivering a mobile core to enterprises and communication service providers to connect applications, devices and radios.

With more than 18 years of experience in delivering 4G/5G mobile core solutions to customers and partners in every region of the world, Athonet supports key industries where network control, mobility, security, performance, and cost are important for business outcomes.

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