



Success Story

Improving Network Infrastructure for Educational Institutions in Nigeria

Gigabit-speed Wireless Gets it Done

Introduction

The Delta State University, located in the city of Abraka and popularly known as DELSU, is a State government university which started with the main campus located at Abraka, and a campus at Anwai, Asaba. A third campus was added in Oleh after 1995. Therefore, the University runs a multi-campus system with three campuses and the student population currently stands at about 22,000 (in the 2019/2020 session). With this number of students and a growing catalog of course offerings and programs, including enhanced distance learning initiatives, DELSU needed to boost the amount of networking bandwidth available to its students, instructors and other staff.

Challenge

To enhance the learning environment and overall productivity, the Administration decided to implement 802.11ac Wi-Fi networks across all three campuses, featuring scores of access points in each location. Furthermore, each campus had to have backhaul links to the other two campuses in a topology connecting locations “A and B” 1.2 km apart and then B to C 2 km apart. Given all the access points and backhaul traffic, only Gigabit-level solutions would suffice. To complicate matters, in terms of the provision of bandwidth, none of the campus had a fiber PoP and the nearest one was 5 km away.

Like many parts of the world, Nigeria has an extensive history of wireless network development, particularly in the 5GHz band and the location of these campuses proved no exception. Siklu’s partner in Nigeria, Telcrot Technologies, did a survey of the area and determined the amount of interference and noise in the area would dramatically limit the capacity of another 5GHz network established for DELSU.



Siklu EH-1200FX Gigabit Radio

Solution

Based in Lagos, Telcroft Technologies provides a wide range of carrier-grade, high-capacity, low-latency and high-availability wireless transmission equipment, design assistance and customer service, including point-to-point and point-to-multipoint radios, network planning and optimization, managed services and value-added services. To address the 5GHz noise problem, Telcroft decided to up its game by moving up in the frequency spectrum to the practically wide-open E-band (70/80 GHz), where there is 10GHz of available bandwidth and virtually zero interference from competing radio or other electronic sources. In addition, E Band regulations in Nigeria have the benefit of being licensed, but at a much lower cost than traditional microwave – up to 90% less, while at the same time delivering 2x or more throughput.

Given their extensive history with Siklu, Telcroft decided on the Siklu 1200FX E-band radios, part of the award-winning “EtherHaul™” line of products. EtherHaul meets Telcroft’s demanding specifications for customer satisfaction by delivering carrier-grade, ultra-high capacity wireless point-to-point Ethernet. With up to 1000Mbps full-duplex over the uncongested 71-76/81-86GHz spectrum, the 1200FX provides carriers and businesses around the world an affordable, advanced wireless solution that is easy to install and maintain.

In a period of only three days, Telcroft established three Full Duplex links carrying a combined 1 Gbps Gigabit of traffic linking all three campuses. They now serve as the backbone for the enhanced network which integrates hundreds of access points and some point-to-multipoint radios deployed for intra-campus connectivity needs. The siklu radios were readily available and supplied by Spacedrums Ltd, the authorised distributor of Siklu in West Africa based out of Lagos, Nigeria.

“We felt in this case Siklu had better technology for this application and provided competitive pricing and world-class experience,” said Olayemi Abifarin, the Managing Director of Telcroft. “Siklu have proven to be a valuable and trusted partner of ours in working to bridge the digital divide in the education sector in Nigeria by providing multigigabit backhaul for institutions such as Delta State University.”

Result

The DELSU community now has an interference-free and “six 9s” of reliability Gigabit-speed network serving as the backbone of their network infrastructure. It is the foundation for each campus-wide WiFi network that is delivering the convenience of effectiveness of “bandwidth on the go” to students and other users. Given the initial success of the system and growth projections for the student body and multimedia content incorporated into more and more courses and programs, the Administration already is planning to double the backhaul capacity in the near future. Today this extensive network is a shining example of blending the right pieces of a highly technical solution and delivering robust, mission- critical performance.

