

REMOTE NETWORK INSTALLATION CONNECTS COMMUNITIES ACROSS SUB-SAHARAN AFRICA'S LARGEST COUNTRY

In the words of the World Bank, the Democratic Republic of the Congo (DRC) has faced “probably the most daunting infrastructure challenge on the African continent”. With a surface area equivalent to that of Western Europe, the DRC is the largest country in Sub-Saharan Africa and the third most populous in Africa. But conflict has seriously damaged most infrastructure networks and, alongside its vast geography, low population density and extensive forestland, makes the development of new networks a complicated task.

This is an issue, as there's a growing appetite for connectivity in the country. Of the 120 million people in Sub-Saharan Africa that will start using mobile between 2020 and 2025, 11 million are in the DRC.

The Challenge

The telecommunications industry in the DRC is yet to reach all of its potential consumers, with the internet penetration rate at approximately 3%. The DRC is still developing its 4G and 3G networks and still relies heavily on 2G in many areas.

The country's tropical climate – characterized by heavy precipitation and high temperatures and humidity – causes reliability issues with standard Very Small Aperture Terminals (VSAT). In addition, the nature of the country's landscape makes it increasingly difficult to perform upgrades to networks at remote sites.

Vodacom, the largest mobile network operator in the country, selected ST Engineering iDirect, with partner Gilat Telecom, to install and commission two Dialog® hubs to power cellular backhaul services across the DRC. Vodacom wanted to migrate its VSAT-based 2G network to 3G across 150 Base Transceiver Station (BTS) sites with the Base Station Controller located in Kinshasa, the DRC's capital.

The deployment, which commenced in April 2020, was impacted by the onset of the COVID-19 pandemic which has delayed the progress of satellite network installations across the world.



The Solution

To allow the project to progress, the teams, which were based in Belgium and the DRC, turned to remote installation of the hubs. An ST Engineering iDirect team in Belgium and Gilat Telecom in Kinshasa were in constant contact to expedite the project.

A camera was installed in the teleport in Kinshasa which enabled the team to see what was happening and share detailed images to ensure that every step was completed correctly. The close collaboration and constant access to each team member at all hours enabled completion of the first hub installation in two days and the second in just one day.

Dialog's Mx-DMA return technology was chosen to allow the network to adjust in real-time with daily fluctuations in bandwidth demand, saving both bandwidth cost and offering enhanced optimization of cellular traffic.

The network is used primarily for cellular backhaul services, for applications such as social media, video sharing and conferencing platforms, and data transfer applications. Access to these applications will have a profound impact on remote communities, enabling them to stay in touch with friends and family, and to market their businesses and connect to important sources of news and information.

The Result

The new hubs enabled Vodacom to quickly deploy a 3G network across the 150 BTS sites and the Base Station Controller located in Kinshasa. The new deployment replaces traditional SCPC links and increases efficiency in facilitating 3G data traffic.

In the past, an upgrade to 3G would have taken one or two weeks. The difference with Dialog, in comparison with traditional SCPC networks, is that it be achieved rapidly, in one or two hours, making a huge difference to a service providers' operations.

Vodacom are already enjoying the results of the deployment of the Dialog platform. Thanks to the Mx-DMA return technology, which is integrated into the platform, the reliability of the VSAT links have increased significantly, especially in heavy rain. In addition, in comparison with SCPC links, Dialog has enabled Vodacom to perform network changes much more easily and rapidly, with less human resources and no intervention on remote sites. This has enabled the company to operate more efficiently and make substantial cost savings.

Furthermore, the Dialog platform will also accommodate Vodacom's future growth, enabling increased satellite network coverage and to deliver a large amount of capacity when it is ready to expand.