KONNECT AFRICA CASE STUDY

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INDIO NETWORKS

OVERVIEW

Sub-Saharan Africa countries has one of the lowest Internet penetration in the World. The geography and geo-political situations have made it difficult to install nationwide fiber infrastructure. Moreover because of low population density, the fiber and cable infrastructure is not economical for semi-urban and rural markets in these countries. So, Satellite-based Internet connectivity offers the best alternative to bring connectivity in the far regions of Africa.

Eutelsat is one of the leading companies in the world to offer VSAT based connectivity over both Ku and Ka bands. It has a constellation of 40 satellites that provide satellite coverage over remote regions of the world including Sub-Saharan Africa. Eutelsat is based in Paris but has offices in most African countries.

REQUIREMENT

Since the project had to implemented in remote areas and by technicians with little networking and WiFi technology expertise, Wifisoft had to design the system which was easy to install, operate and maintain. Eutelsat want to package the satellite modem and WiFi access point in a single, weather-proof enclosure to make the equipment compact and easy to mount in remote places.

The integrated kit was supposed to house satellite modem, WiFi router and POE circuit so the unit could be powered remotely through CAT-5 cable. The kit provided options to connect satellite dish and external WiFi antennas. Each unit was required to provide WiFi coverage to 100 meter radius area and support 40-45 concurrent devices.

Since the units were installed in harsh African environments, the housing needed to be IP67 compliant and rugged to handle different weather conditions. Additionally, the unit needed to be powered remotely from 15-20 feet over CAT-5 cable.

The whole setup needed to be plug-n-play and the field staff had to perform minimal configuration. All the remote units had to be managed and monitored remotely from a central OSS/BSS server.

HOW WE HELPED

Owing to Wifisoft's extensive experience in WiFi hotspot market and its technical expertise, Eutelsat selected Wifisoft as their technology partner. Wifisoft was responsible for building both the hardware as well as OSS/BSS and NMS software for this project. The hardware kit consisted of satellite modem from Hughes Networks, WiFi Access Point and POE circuit. All these components were assembled in a rugged, weather-proof and compact enclosure. The unit was powered via a Ethernet cable through a POE injector. The satellite kit was connected to WiFi antennas and satellite dish through coaxial cables.

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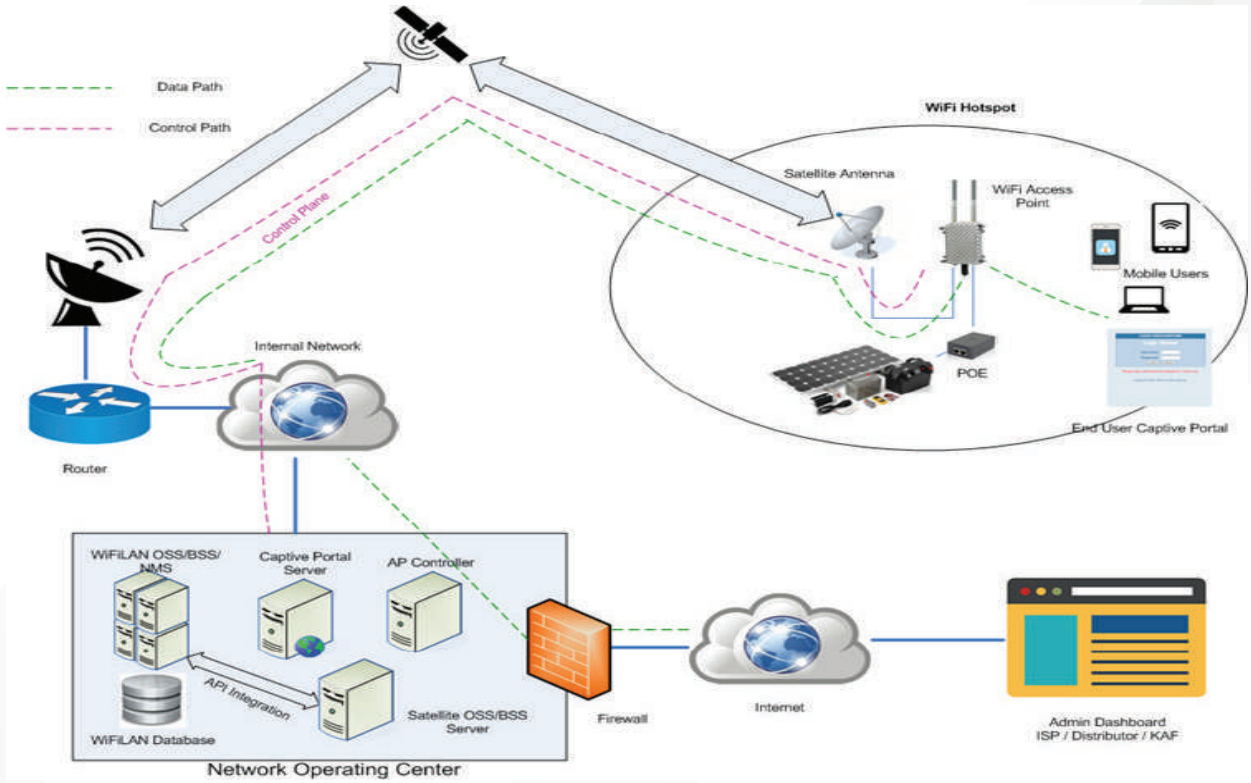
The diagram below shows how Wifisoft implemented the complete setup



WiFi hotspot kit was installed in remote places where WiFi service was needed. Each kit consists of following items –

1. WiFi Access Point with external antenna
2. Satellite Kit (modem, ODU, mounting kit, satellite dish, etc)
3. Point-to-point Radios
4. Solar Kit (Solar panel, charger, batteries, power circuit)
5. Data switch
6. Mounting kit and enclosure

The network operating center had the OSS/BSS and NMS servers that were responsible for wide range of functions ranging from AAA services, captive portal, online billing, vouchers, bandwidth and policy management, URL logging, Subscriber management, Accounting, analytics and reporting and more. In addition, it also hosted the access controllers that were responsible for handling the traffic and management of remote access points. The Internet traffic was routed from the access point through the local Internet breakout or central core switch depending on the network design of the ISP. The management traffic is handled by various Indio Networks servers. The data traffic flows through the core switch and Internet gateway to the Internet.

WiFiLAN OSS/BSS was responsible for maintaining all the user sessions, login history, browsing history and subscriber information. In addition, it will provide various billing and policy functions for the hotspot network.

The core system also regulated the usage of bandwidth, access policies and enforce the user restrictions. The complete setup was managed

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through an admin console accessed from a web browser.

Results

Eutelsat completed several successful trials of the WiFi hotspot kit in various countries using different satellite beams. Since Internet connectivity was in great demand, several operators had expressed interest in trying the solution. The trials were conducted in Nigeria, Democratic Republic of Congo, Ivory Coast, South Africa, Senegal and other countries. Eutelsat bagged many orders to implement community WiFi hotspots in these countries.

The roll out started in mid 2019 and over hundred hotspots were operational by the end of the year. Indio Networks implemented the complete voucher management and payment system thus making it easy for Eutelsat to charge the end users in respective countries.

The whole project was profitable from day one since the demand for Internet was huge. In several places, Eutelsat had to installed multiple WiFi hotspots to cater to the demands from the customers.

Wifisoft also implemented a customized partner management system thus making it really easy for Eutelsat to engage new partners and track their payments and revenue shares.

The satellite kit was extremely easy to handle and install. Since the whole setup was packaged in single box and minimal configuration was needed, Eutelsat's was able to train its partners for install the whole setup within few hours.

The goal of the project was to implement thousands of hotspots across Africa over next two years. Given the current success of project, Eutelsat is confident that the project will be rolled out and profitable in the given time period.

"Modern, well organized immigration & customs. Everything flows very nicely. Facilities exceed expectations. This is an airport for tourists and they do exceed in all ways. Comfortable, easy to navigate. Well done again! The WiFi made my life easy. Its easy to operate and didn't disconnect even once (like many other Airport networks do!)

- LREMker
United States
Traveller Review on 12th November 2016