Extra Long Range
High Speed

Overview

THE NGORONGORO CONSERVATION AREA IN TANZANIA IS A PRISTINE NATURE RESERVE that covers 8,000 square kilometers in the Arusha Region in northern Tanzania. Managed by the government, the area hosts more than 500,000 visitors from around the world to experience the natural beauty.

Local businesses and government agencies wanted broadband connectivity. As is the case with all tourist attractions, visitors expect to have connectivity at their lodgings. In addition, the Ngorongoro Conservation Authority wanted to install video surveillance systems to protect the natural resources from poaching.

"With a single PTP 650 link we are connecting at 299 Mbps over 150 km. This changes our customer's lives without touching the world's premier Wildlife Preserve."

- AATISH SACHDEV, DIRECTOR, CYBERNET INTERNET SERVICES

Challenge

ESTABLISHING CONNECTIVITY HAS ALWAYS BEEN DIFFICULT IN THE REGION. Wired connectivity would spoil the natural beauty, and the cost of trenching cable or fiber would be prohibitive. Satellite communications had been used in the past, but the signals were frequently weak and would be inoperable in dense cloud cover. Wireless broadband provides the high throughput required while minimizing impact to the natural ecology of the area.

Solution

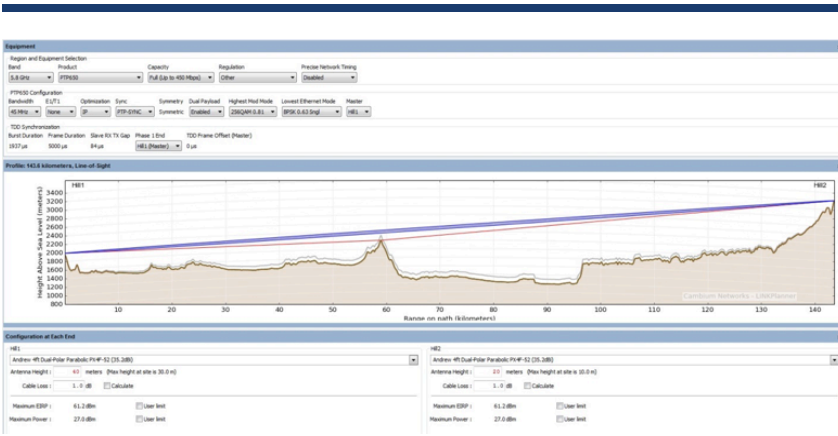**CYBERNET TOOK ON THE CHALLENGE TO PROVIDE RELIABLE CONNECTIVITY IN THE AREA.** A single point-to-point wireless backhaul extends the network providing 299 Mbps to the area where a point-to-multipoint access network connects multiple buildings and video surveillance cameras nearby. The longest backhaul link needed to cover 143 km (88 miles).

The network was designed using Cambium Networks LINKPlanner software to model the connectivity and predict performance. The network design included a profile of the path so that CYBERNET could account for any obstructions.

The LINKPlanner software designed a configuration with a connectorized PTP 650 radio equipped with 4 foot antennas. This link would provide 300 Mbps aggregate throughput in a 40 MHz channel in the Sub-6 GHz spectrum.
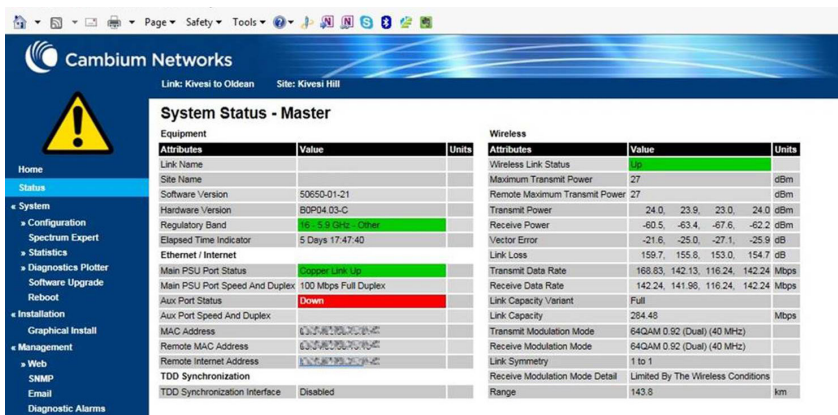
LINKPlanner deisgn Path Profile

The Ngorongoro Conservation Area

Results

ONCE INSTALLED, THE LINK PERFORMED EXACTLY AS PREDICTED.

"We managed to extend the network in an area that was previously impossible to cover," says Aatish Sachdev, Director, CYBERNET Internet Services. "Thanks to Cambium Networks, we are the first ISP who can offer high speed connectivity to the area."

Actual Link Performance Chart

Since installation, the link has performed with no down time. The Conservation Authority is pleased with the reliability of the connections that they have for their business offices and video surveillance systems, and the lodges are able to provide Wi-Fi connectivity for their guests. As demand for connectivity grows, CYBERNET is providing wireless access network solutions with PMP 450 in the 5.4 GHz frequency, and adding PMP 450 access in the licensed 3.5 GHz spectrum. With this proven solution, the network is growing to supply connectivity for additional voice, video and data services to wildlife preserves in the area.

About CYBERNET Internet Services

http://www.cybernet.co.tz

Arusha, Tanzania

Designing and deploying point-to-point backhaul and point-to-multipoint access wireless broadband technology, CYBERNET provides E-mail and web hosting, high speed Internet access, and security solutions for business and residential customers – even in hard-to-reach areas.

Why CYBERNET Internet Services chose Cambium Networks

• **Reliable Performance** – the link consistently performs as designed

• **Rapid deployment** – wireless broadband minimizes environmental impact while eliminating trenching costs