CASE STUDY

Nelson Mandela Bay Metropolitan Municipality

BACKGROUND

As a city with a large population of under-serviced citizens, a need existed to provide efficient telecommunication services spanning a large geographical area. Local government functions such as health, security and sanitation services to name just a few, could not be provided at remote locations as a telecommunication infrastructure did not exist. As the provisioning of these Municipal services is of a dynamic nature rapid integration of new offices into the existing network was of utmost importance. Seeing that funds were limited, a telecommunication network that would meet the evolving requirements of the Metropolitan was envisaged.

CHIEF BENEFITS OF THE PROJECT

- Integrated traffic management
- Rapid integration of new and “nomadic” users into the network
- Multiple services like data, voice and video were integrated
- High bandwidth capacity
- Online saturation occupancy measurement

SUMMARY OF PRODUCTS

- Backbone: 18 GHz (100 Mbps) microwave links, Motorola PTP 600
- BSU High Sites: Proxim
- Meshing: Proxim Access Points
- Traffic Access Controller CPE’s: Proxim, Acconet

CONTACTS

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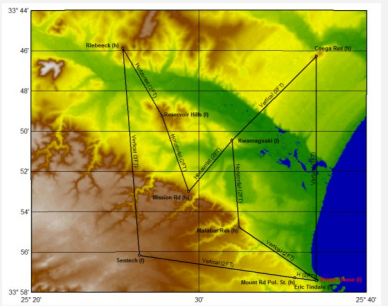
CRITICAL DATES

- Phase 1: 2008
- Phase 2: 2009
- Phase 3: 2009/2010

Access point mounted on streetlight

Traffic control



Topographical map showing the backbone

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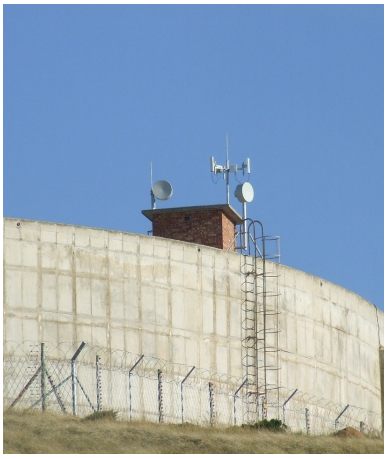
THE SOLUTION

Comsol, partnering with Dimension Data, designed a "broadband" access network using proprietary "free spectrum (5.4 GHz)" base stations and customer premise equipment supplied by Proxim. The base stations are connected by means of "backbone" links to the "core" network at the municipal headquarters. These connections offer 100 Megabits of Ethernet bandwidth in a "ring" topology between the base stations. Licensed 18 GHz microwave systems are used to provide these links. This growing network currently services 147 remote offices and 231 traffic signal controllers.



High Site with base station and backbone links

FUTURE GROWTH

With this network in place providing "blanket" access coverage, spanning all of the Metropolitan's area of responsibility, additional services like broadband data, video and voice can be provided. Access points, using IEEE 802.11(x) protocols, were installed on the outer edges of the network (connected to the Access networks CPE's) potentially providing controlled public access to the internet and other services that the Metropolitan could offer.

CHALLENGES

- Frequency interference
- Power surges
- Infrastructural changes
- Security
- Securing High Sites
- Selecting the right technology

CPE site

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