



Advancing Research in Radio
Wave Communications



The Long Range Wireless Link in Malawi

Challenges at Zomba Peak

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Introduction

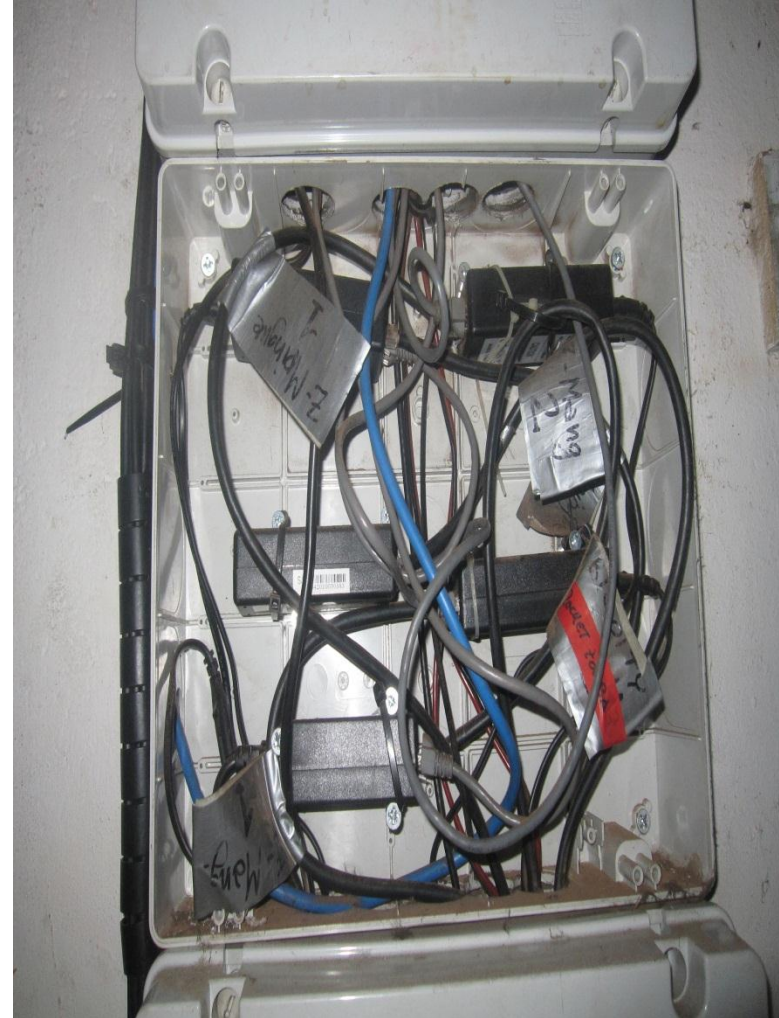


- To connect rural telemedicine centers using a long wireless link.
- This is a 162 km link from Blantyre to Mangochi
- Zomba peak serves as the central highest point
- To be used for monitoring



Equipment

- ❖ Mikrotik radios
 - V 4.10
 - V 3.6 x3
 - V unknown
- ❖ Ubiquiti NanoStations
- ❖ ALIX Board
- ❖ Rocket M5
- ❖ Power Supply
- ❖ Cables



Main Link Setup Network Advanced Services System

Base Station SSID:

Frequency:

Channel:

Antenna:

Security:

ACK Timeout:

QoS Status:

Uptime:

LAN Cable:

LAN MAC:

LAN IP Address:

WLAN MAC:

WLAN IP Address:

Extra info: ▼

Tools: ▼

LAN STATISTICS

	Bytes	Packets	Errors
Received	<input type="text" value="310382"/>	<input type="text" value="2489"/>	<input type="text" value="0"/>
Transmitted	<input type="text" value="259042"/>	<input type="text" value="974"/>	<input type="text" value="0"/>

WLAN STATISTICS

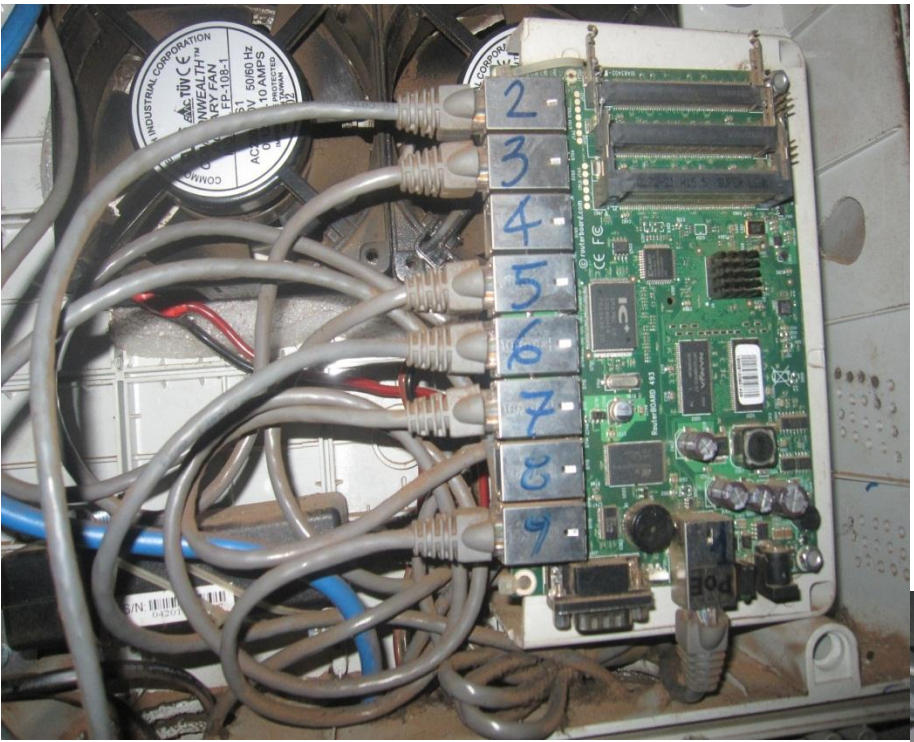
	Bytes	Packets	Errors
Received	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Transmitted	<input type="text" value="175263"/>	<input type="text" value="1586"/>	<input type="text" value="0"/>

Zomba Peak

- Approx. 15 km from Chancellor College







The Link

- RouterBoard 493 – 9 Ports.
- 1-PoE
- 4 & 8 Blank
- Others are working, when powered.
- Password Protected, did not access.

Challenges

- Transport
- Power
- Monitoring – Remote and Physical
- Commitment from current “owners”.

Possible Applications

- Telemedicine –The current application
 - More Hospitals and Clinics included
- GPS and Seismic Data
 - UNAVCO gets data through e-mails
 - Accessed and Analysed using IP
 - Several GPS Points but difficult to access data
 - There are plans to increase points

Possible Applications ...

- Sending Met Data from stations to Hqrts
- Information sharing in Research Centers
 - Makoka Agriculture Research Center
 - not connected to the others e.g Bvumbwe
- Information sharing between Teachers Development Centers (TDCs) and District Education Managers (DEMs)
 - Takes time to send and analyze data in hard copies.

Plan

- Expand the scope of the project
- Increase capacity-knowledge sharing
- Reach out to more marginalized people
- Reduce burden for people working in difficult situations.



Mangochi

Ulongwe

Zomba

Blantyre

Google

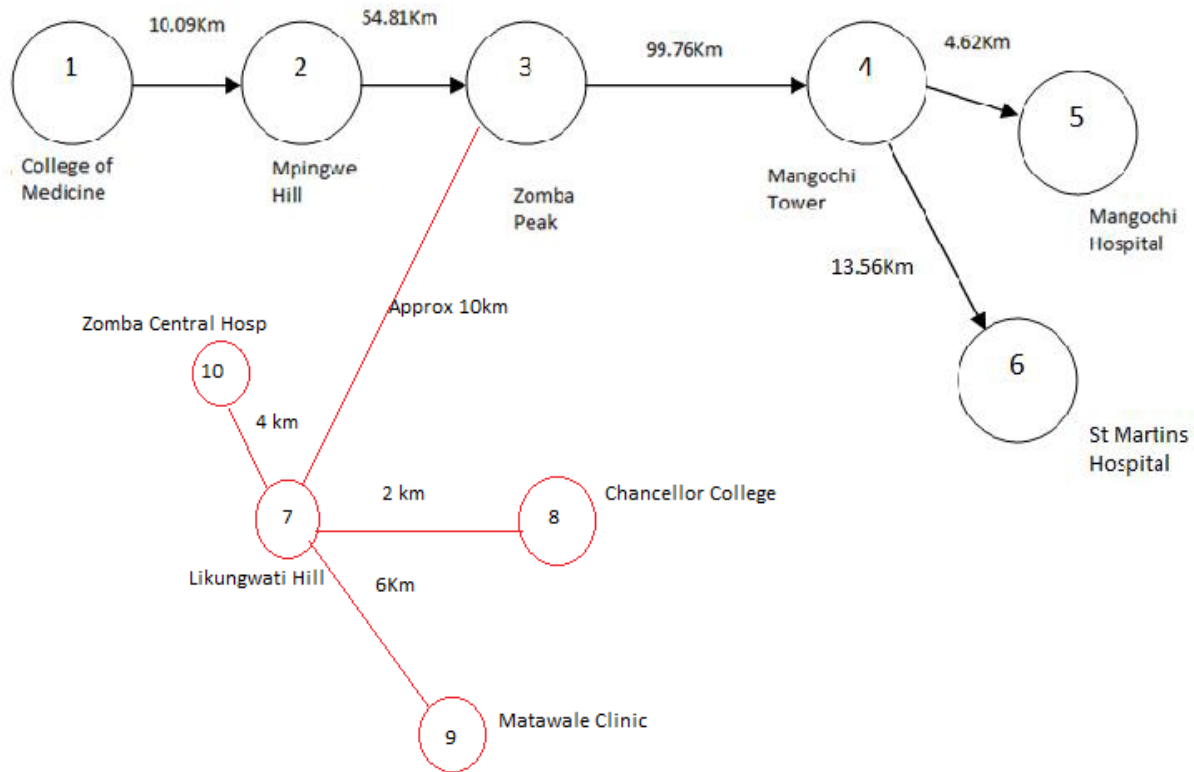
Image © 2007 TerraMetrics
Image © 2007 NASA

Streaming 100%

Eye alt: 175.61 km

Positer: 14° 48'09.16"S 74° 50'45.84"E elev: 715 m

Modified Link



What we require

- Equipment
 - More radios
 - Power Supplies
 - Cables
- Power
 - Alternative source of energy e.g Solar
- Transport
 - Probably a cruiser for the project

- Zikomo Kwambiri!!!
 - Thank You!!!



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- For feedback: email us on
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