

**A tool for remote health service delivery  
NBN™ Sky Muster™ Plus: Helping remote  
communities access health services during the  
COVID-19 Pandemic**

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AIDI Summit 2020

Dundee Beach, NT



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# Acknowledgement of Country



Photo thanks to  
Broadband for the Bush  
and Ali Mills



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## In collaboration with:

- Emerge IT Solutions
- Laynhapuy Homelands Health Service
- SkyMesh (Retail Service Provider)
- JMAC Comms (Installer)
- Senator Sam McMahon (Senator for the Northern Territory)
- NT Chief Minister's Office

In-kind support from NBN Co



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An aerial photograph of a tropical coastline. The water is a vibrant turquoise color, transitioning to a deeper blue further out. A small, dark, forested island with a sandy beach is visible in the lower center. In the background, a long, thin peninsula or island stretches across the horizon under a cloudy sky.

### **NT Context:**

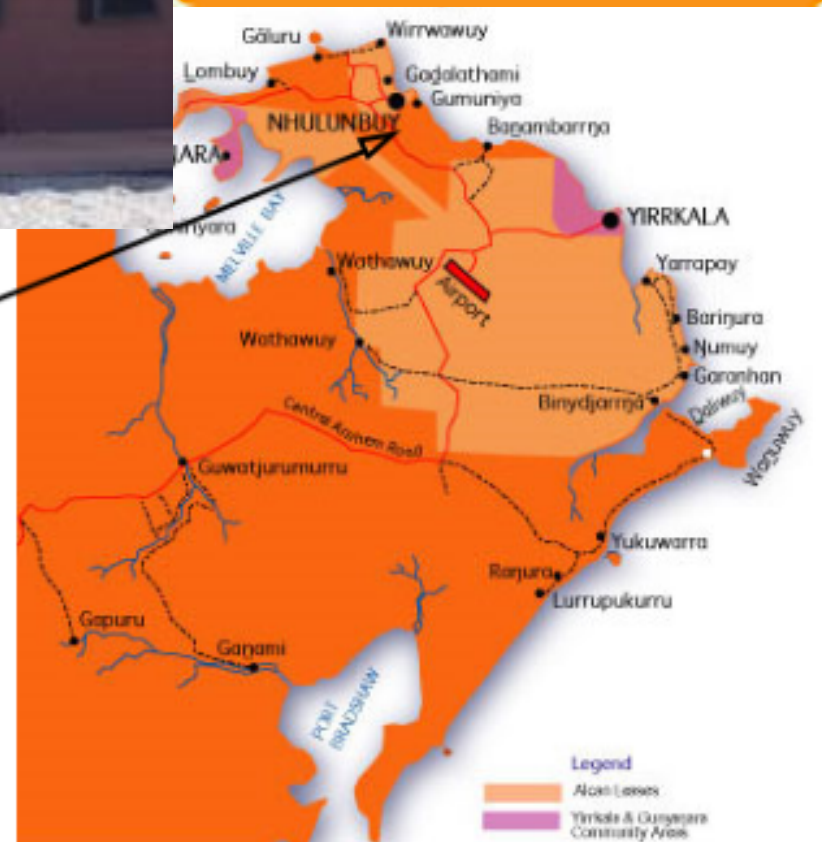
- 32% population Indigenous
- 79% live in remote communities
  - 40k – very remote
  - 17k – remote

### **Challenges:**

- Remoteness
- Unreliable telecommunications and power (typically local generators)
- Poor roads – isolated for months
- Dust, high temperatures and humidity.
- Severe weather events.
- Health – often need to diagnose/triage by phone.

*Many remote communities still have issues with access to reliable, adequate and affordable internet.*







Telehealth via high  
(mining) grade satellite  
internet =>  
Gamechanger for LHS



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- Saves lives
- Family, patient, clinician meetings
- Patients see familiar faces
- More accurate assessments
- Staff training & support
- Wider range of services
- Educate patients and families
- Increase patient safety
- Reduces travel
- Reduces travel costs

## Clinic in Laynhapuy Homelands.



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**Use both Telehealth VC system and Facetime in tandem**  
**John Kelly using video conferencing equipment to share images and videos with patients and staff in the Laynhapuy Homelands to address diagnostic and treatment issues (simulated). Often Facetime is used to get close-ups of wounds, rashes, sore eyes and other issues.**



Expensive

- 40k install
- 100k pa connection




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**Expectation that service delivery to remote areas should improve...**

**Despite the evidence...still limited uptake in the NT!**

***=> Need a simpler, cheaper, more robust telehealth video system***

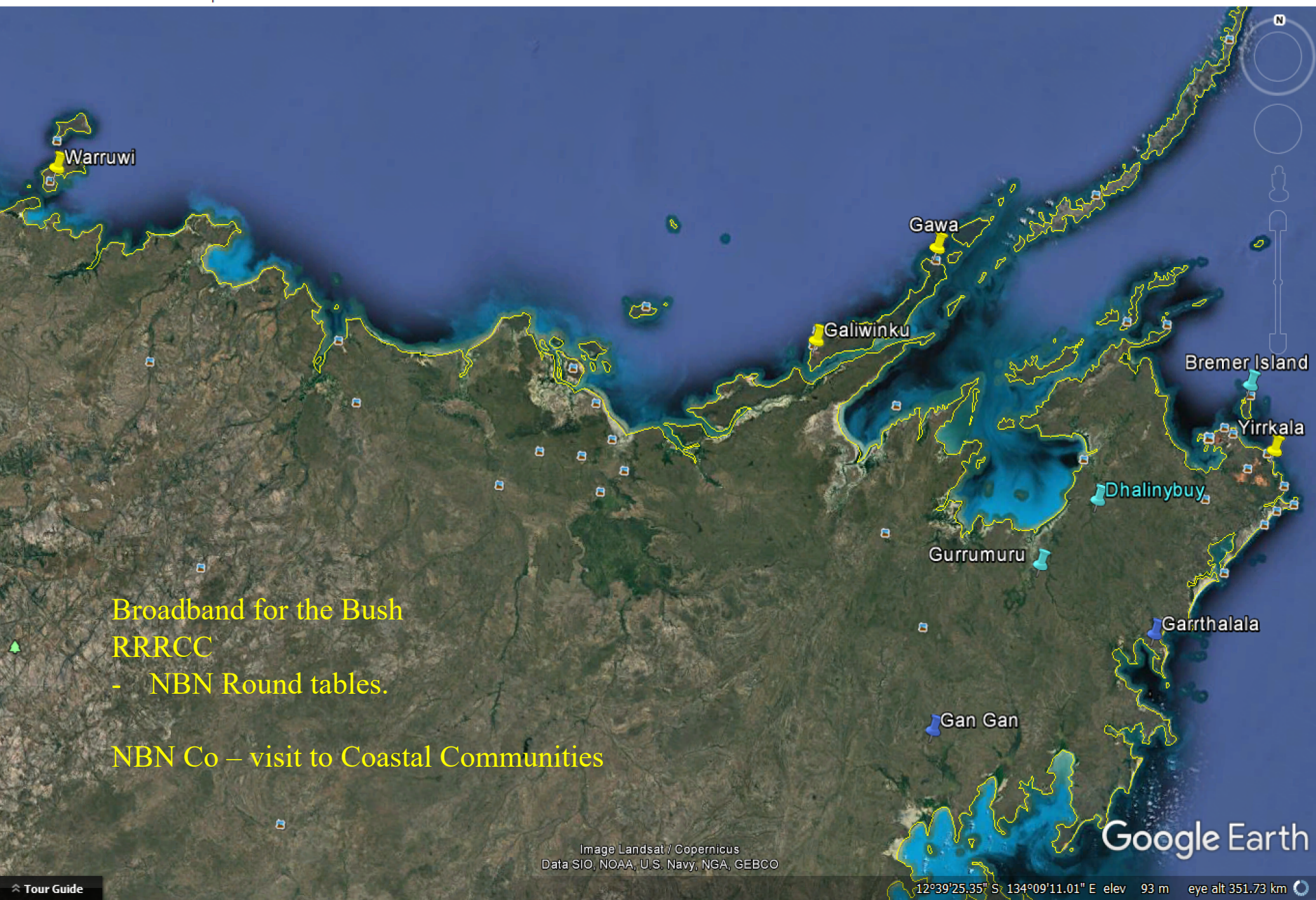


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Broadband for the Bush  
RRRCC  
- NBN Round tables.

NBN Co – visit to Coastal Communities

Image Landsat / Copernicus  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Google Earth

12°39'25.35" S 134°09'11.01" E elev 93 m eye alt 351.73 km



## Rocco & Tim testing NBN at Gan Gan



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# Can we make telehealth work with NBN SkyMuster?



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CRCNA – Committed \$500k over 3 years to continue this research.

Project partners:

- Emerge IT Solutions
- Laynhapuy Homelands Health Service
- Puntukurnu Aboriginal Medical Service
- SkyMesh (RSP)
- Synapse Medical Services.
- BIZ365
- VisionFlex
- Asia Pacific College of Business & Law

(with support (including technical) from NBN Co)

Incl partner contributions >\$1.6 mill project – 7/20 – 6/23

**Remote Aboriginal  
Homeland Community.**



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## 128 Darwin (Berrimah) Radar Loop

[View the current warnings for the Northern Territory](#)

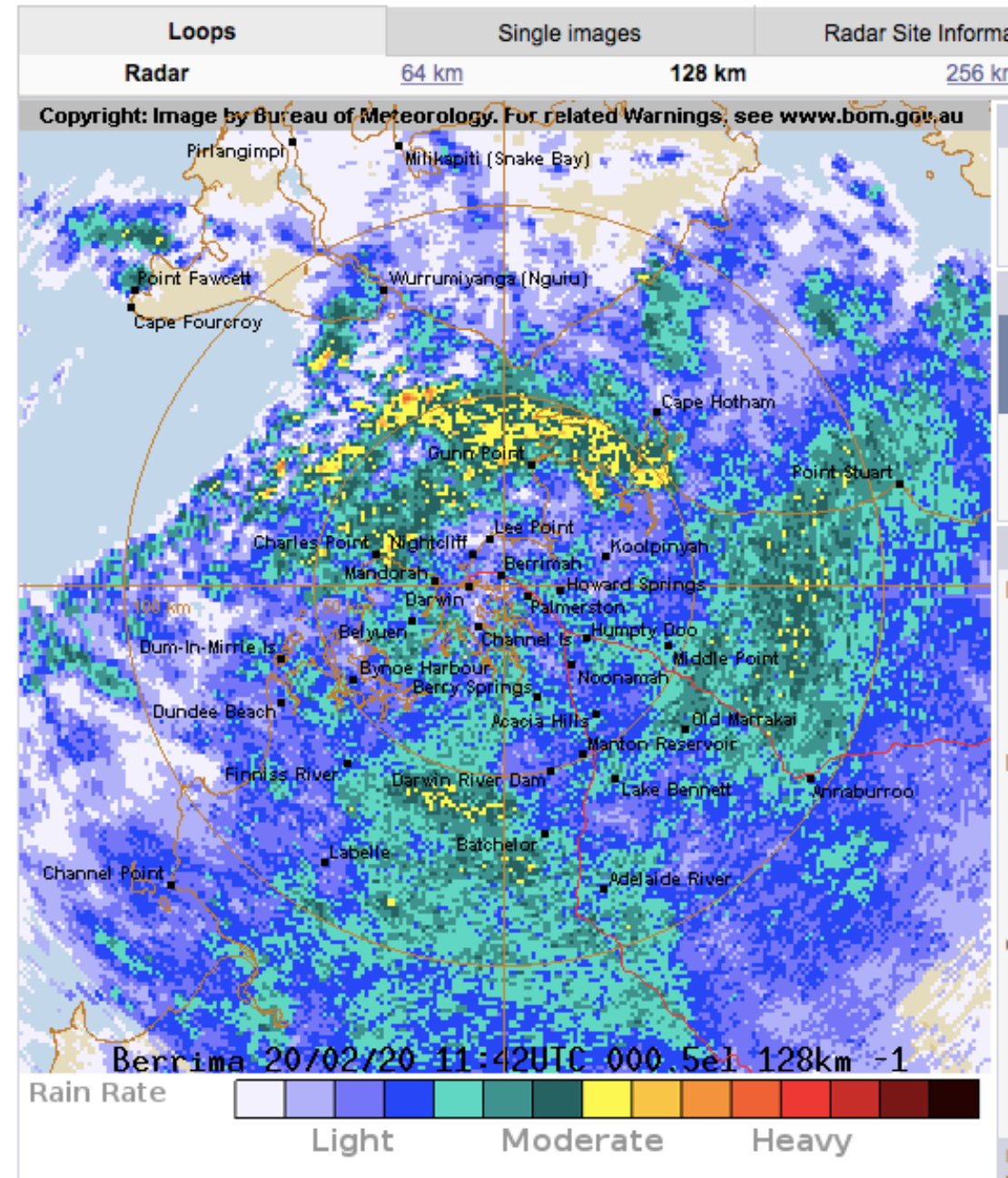
### SkyMesh:

2 Sky Muster™ Plus services  
35 kms from Darwin  
Dec & Jan.

Tested performance 2019/20  
Wet season

Ookla speed test

How did it function in  
Monsoon?





## Weather Index:

Testing done between 16/12/19 – 24/1/20.

Further testing 3/3/20 – 16/7/20

Score	Rain	Cloud Cover	Wind
0	Nil	Nil, sunny	Not noticeable or light breeze
1	Very light drizzle	Light/patchy, some sun	Breeze
2	Drizzle	Mixed light & moderate	Moderate
3	Light rain	Moderate	Strong
4	Moderate rain	Dark	Very strong
5	Heavy rain	Very heavy cloud	Cyclone strong



Light monsoonal rain...





*Assured rate 25 Mbps ↓ 5 Mbps ↑*

**Clear to light weather typically**

- 29 ↓ (varied 28-45↓)
- 9 ↑ (typically 9.8 ↑)

Ping fairly consistent 556 - 570 ms

SHARE



Result ID **8956159592**

✓ RESULTS

⚙️ SETTINGS

⌵ PING ms

557

⬇️ DOWNLOAD Mbps

48.46

⬆️ UPLOAD Mbps

9.84

GO



Connections

Multi



'Yes' Optus

Sydney

[Change Server](#)



IPSTAR

122.129.138.90

RATE YOUR PROVIDER

IPSTAR



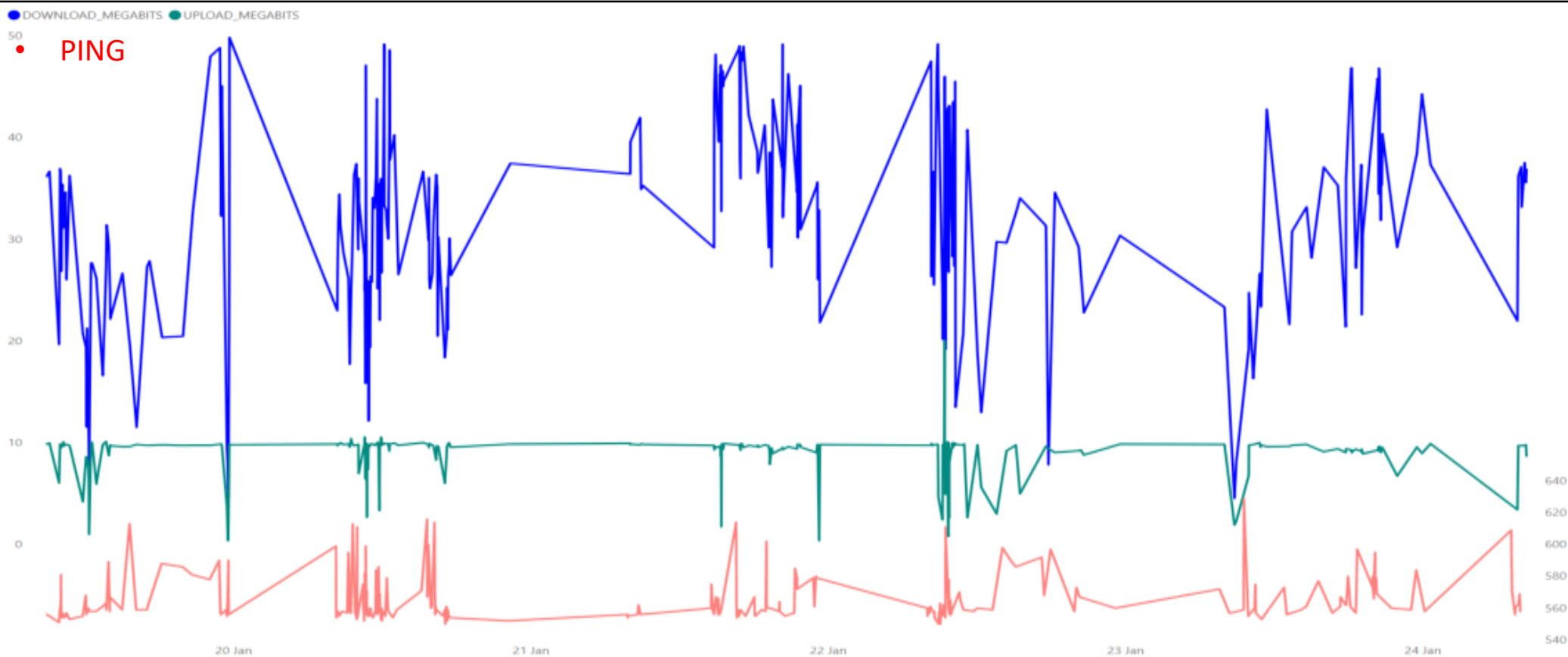


## Monitoring during monsoonal conditions Jan 19-24

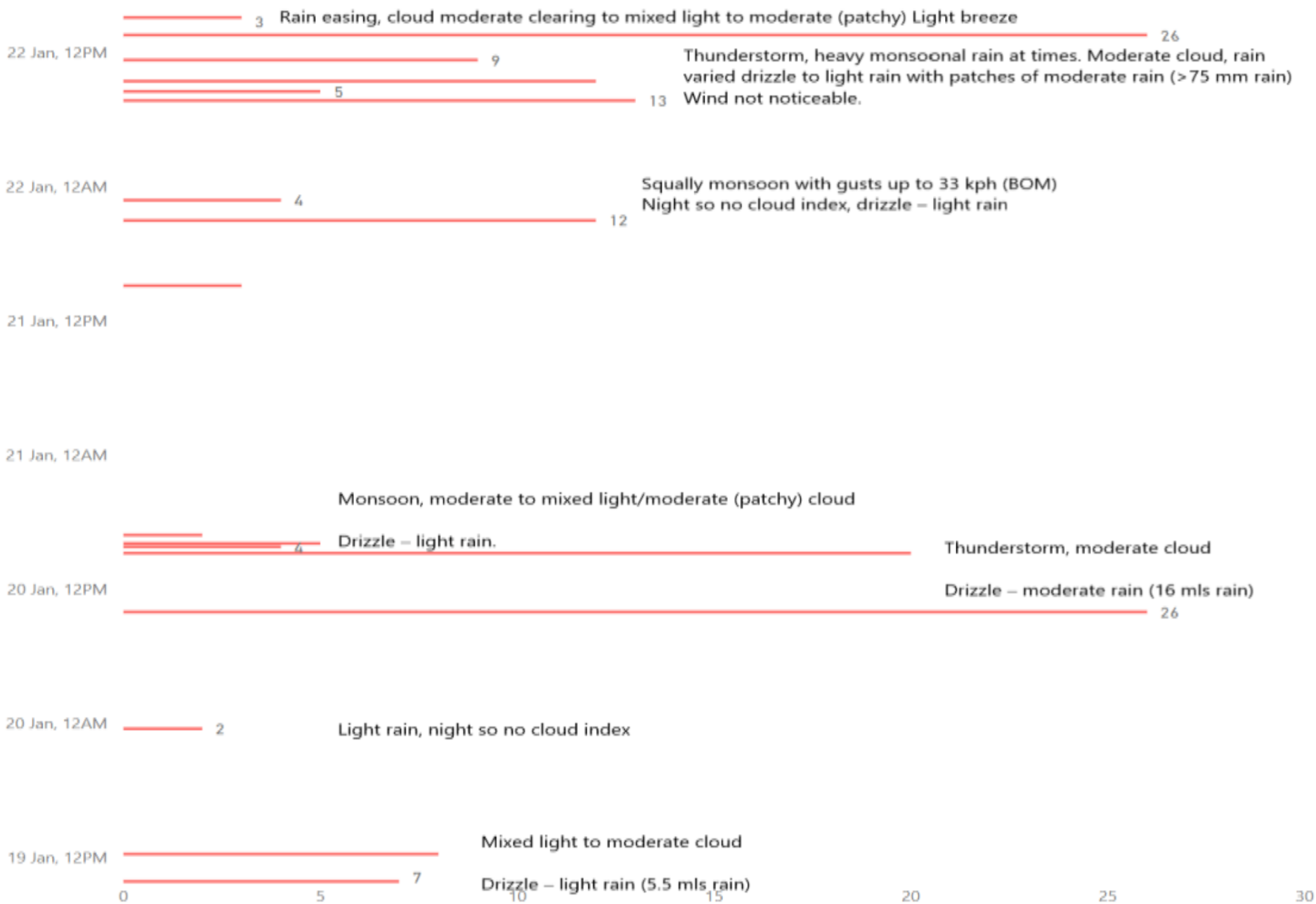
Nearest BOM weather station – 425 mm

Specifically targeted adverse weather

Outages – 2-26 mins









## ....COVID-19!

Laynhapuy **Urgently** needed internet for telehealth – 7 installs  
Communities, state and territory borders closed

- Contacted SkyMesh & NBN – fast track processes
- Contacted Senator Sam McMahon – assistance with permits
- Collaboration between Sen McMahon and NT Chief Minister's Office
- Permits obtained within 2 weeks!
- JMAC Comms secured equipment
- Emerge configured 7 routers
- JMAC Comms installed 7 satellite services + routers
- Ensured all Sky Muster Plus services were working.

*So delighted – requested 4 more for stores and community wifi!*



## Conclusions:

- Sky Muster Plus – works for telehealth (up to 3 concurrent VCs)
- Delay – minor, easy to work with
- Outages: Power failures, upgrades, weather events (2-26 mins)
- Noticeable delay satellite/satellite VC – but workable.



# Where to next???

Monitoring 20/21 wet season – weather monitor

Test Business grade NBN satellite

CRCNA Project – develop a simple, robust, affordable telehealth system.

Survey – see our website.

can do telehealth via high grade satellite (eg Laynhapuy Homelands)

....

Elizabeth River, NT  
Photo – Jennie Wilton



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Questions?

Comments?

*Please email or  
phone*



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**Thank You!**

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