

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

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Dundee Beach, NT



Acknowledgement of Country



Photo thanks to
Broadband for the Bush
and Ali Mills



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In collaboration with:

- CRCNA
- Emerge IT Solutions
- Laynhapuy Homelands Health Service
- Puntukurnu Aboriginal Medical Service
- SkyMesh (Retail Service Provider)
- Synapse Medical
- VisionFlex
- Biz365
- Asia Pacific College of Business & Law

In-kind support from NBN Co, Australian College of Rural and Remote Medicine & JMAC Comms (NBN Satellite Installer)



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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.

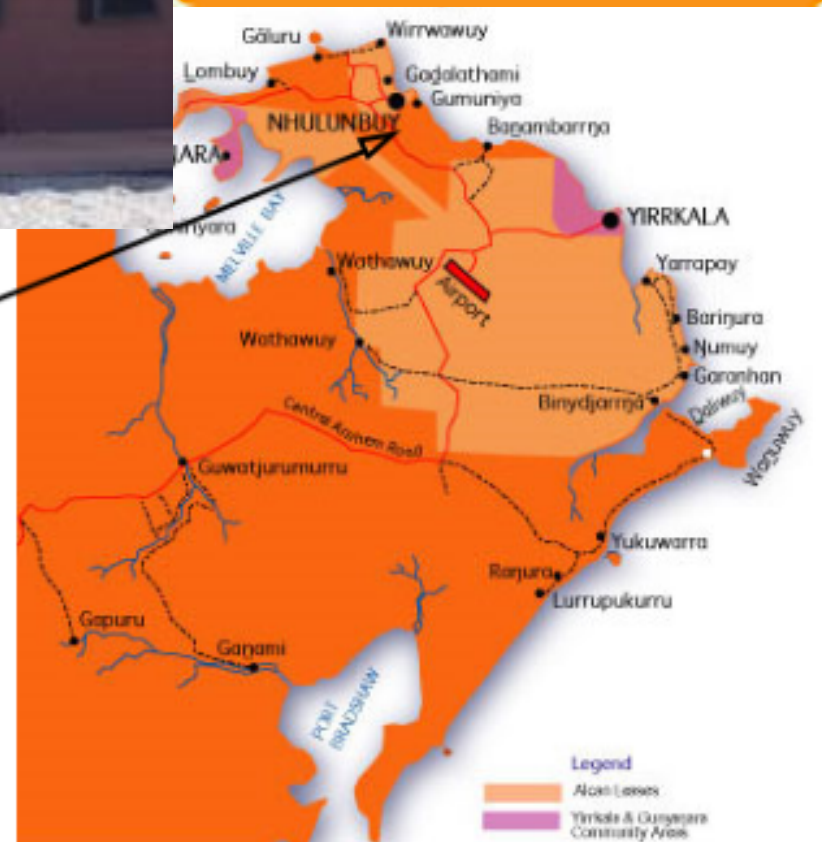
NT Context:

- 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 people 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!

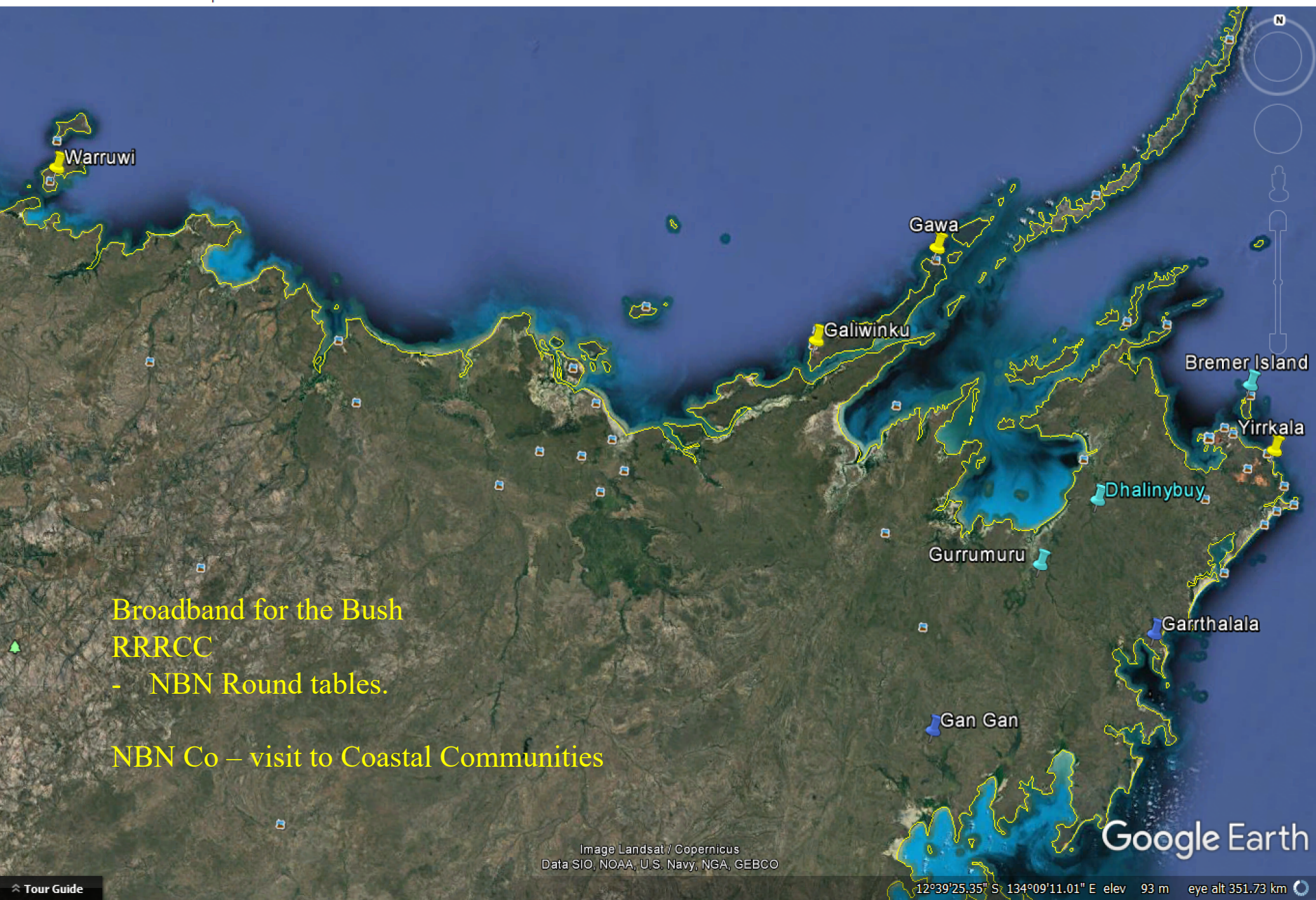
=> Need a simpler, cheaper, more robust telehealth video system



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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](#)

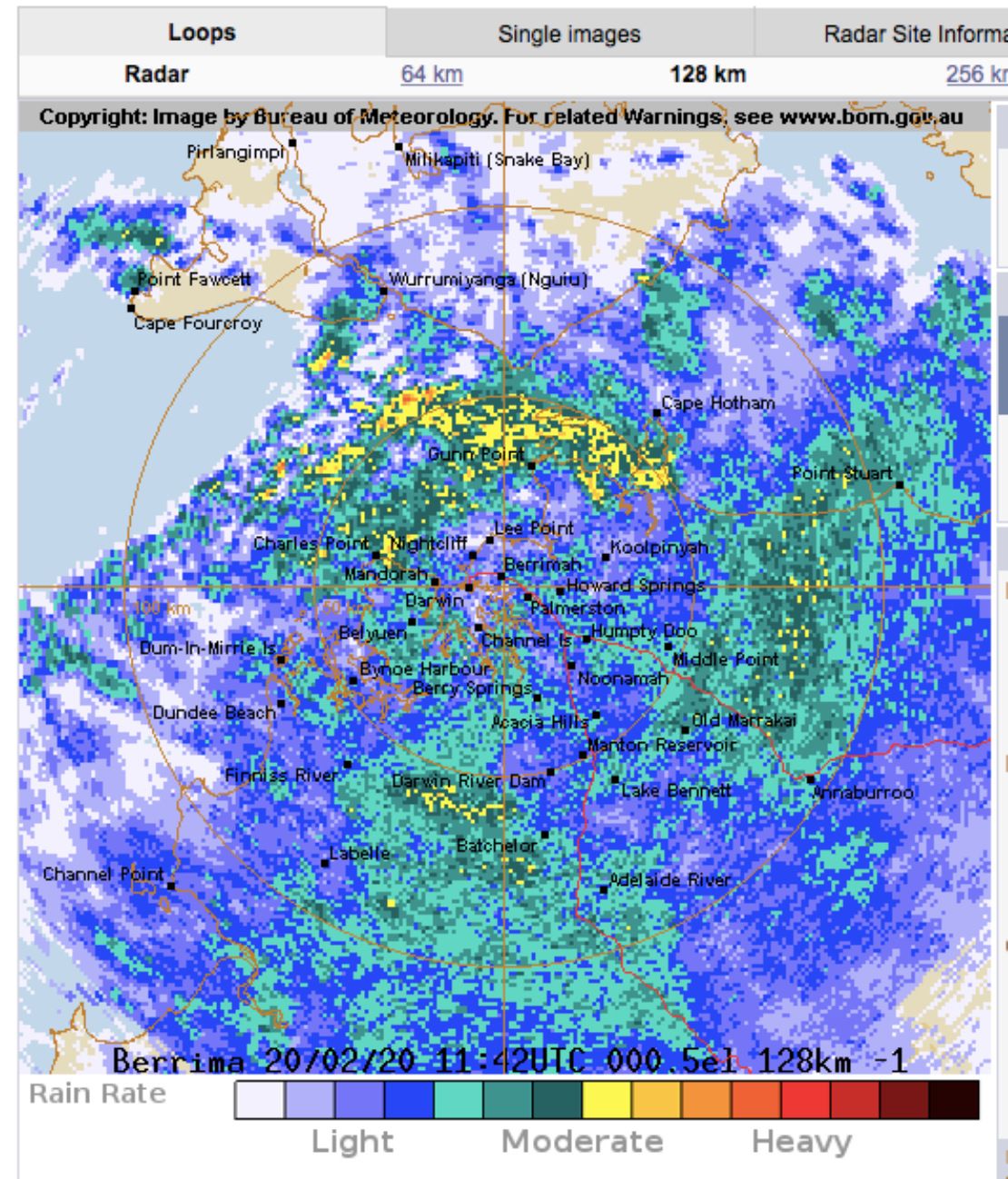
SkyMesh:

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



 **Connections**
Multi

 **'Yes' Optus**
Sydney
[Change Server](#)

 **IPSTAR**
122.129.138.90

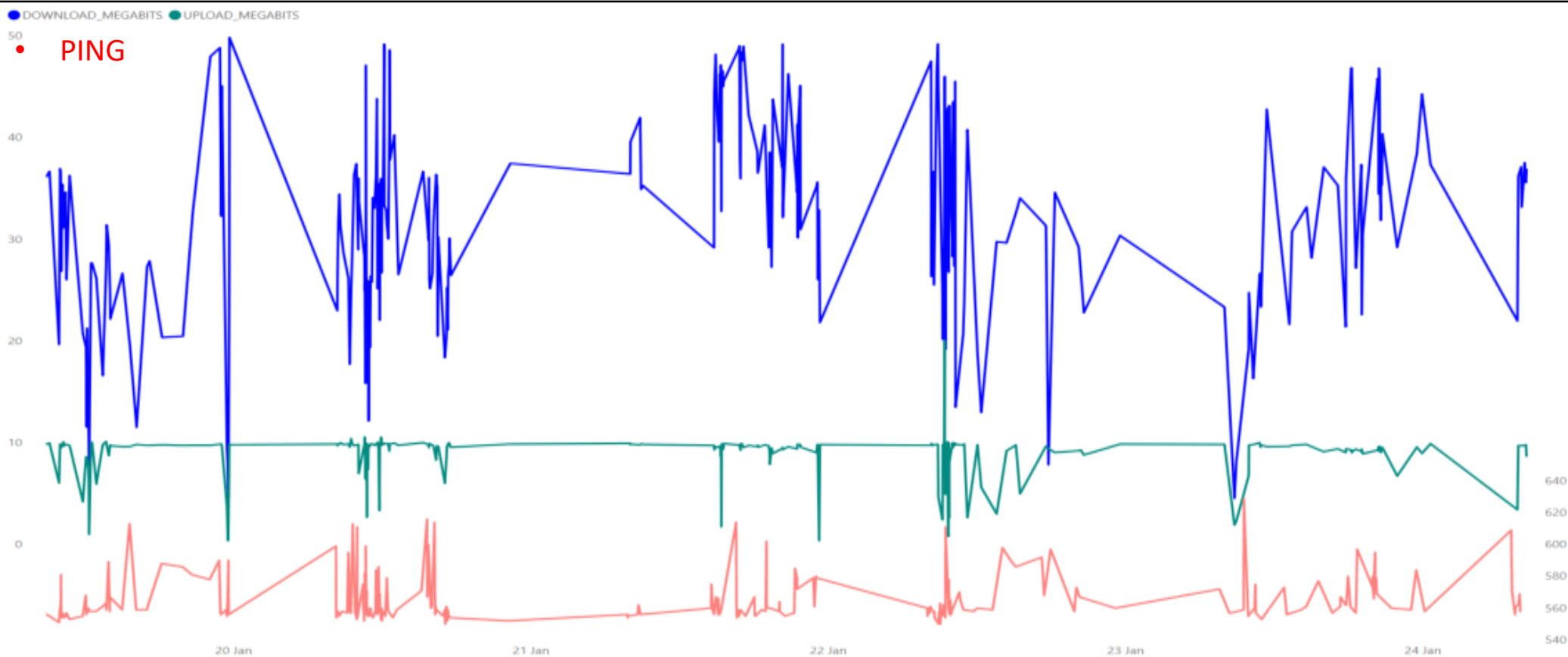
RATE YOUR PROVIDER
IPSTAR


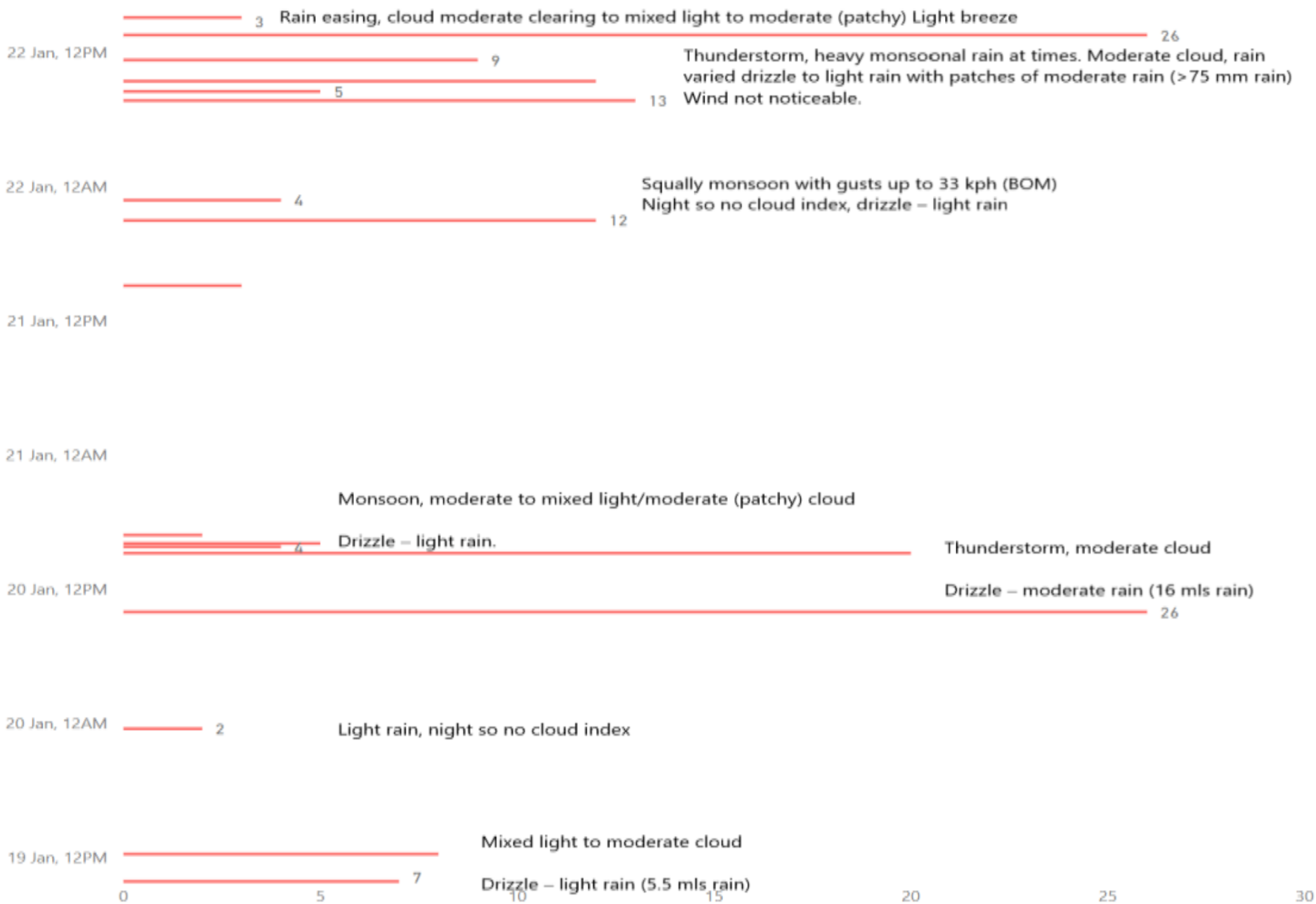
Monitoring during monsoonal conditions Jan 19-24

Nearest BOM weather station – 425 mm

Specifically targeted adverse weather

Outages – 2-26 mins





....COVID-19!

Based on the testing 19/20 wet season...

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 2 concurrent VCs)
- Delay – minor, easy to work with
- Outages: Power failures, upgrades, weather events (2-26 mins)
- Noticeable delay satellite/satellite VC – but workable.

Current TVS and connectivity Costs:

#	Item	Indicative cost (\$)		Estimated life	Expected
		pa	Establishment	Expectancy	cost pa
1	Zoom Video Conferencing Software	130			
2	Computer – either Mac or PC with integrated camera*		1000	2 years	500
3	Camera – Logitech PTZ Pro		1200	2 years	600
4	Jabra 710 integrated conference microphone and speaker		300	2 years	150
5	NBN Sky Muster™ Plus Plus service (including Satellite Dish and NTD)**	2,400			
6	NighthawkWiFi Access Point		100	1 year	100
7	2 x Router Ubiquiti Unifi Security Gateway @ approximately \$500 each		1000	2 years	500
8	Netgear Prosafe Switch		500	1 year	500
9	Uninterruptible Power Supply (UPS) – eg Power Shield Defender 1600		300	2 years	150
10	Remote access to patient's clinical record (highly recommended) ****	0	0		0
	Totals	2530	4400		2500

Elizabeth River, NT
Photo – Jennie Wilton



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Where to next???

- Get access to telehealth for remote Territorians
- Test Business grade NBN satellite (Dundee/PAMS)
- CRCNA Project – develop a simple, robust, affordable telehealth system
 - Camera - about \$1200
 - Speaker - \$300
 - Zoom – about \$130 pa
 - SkyMuster Plus – about \$200 per month
- Survey – see our website.
- Case studies – please contact us if you would like to participate.
- Broadband for the Bush Forum – later 2021
 - Include Digital Health for the Bush &
 - Digital Education for the Bush (in collaboration with ICPA)

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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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