Addressing Public Concerns around Telecommunications Facilities

Telstra's EMF Communications

ITU Workshop – Uganda Communications Commission
18th May 2023

Presented by Mike Wood

Introduction

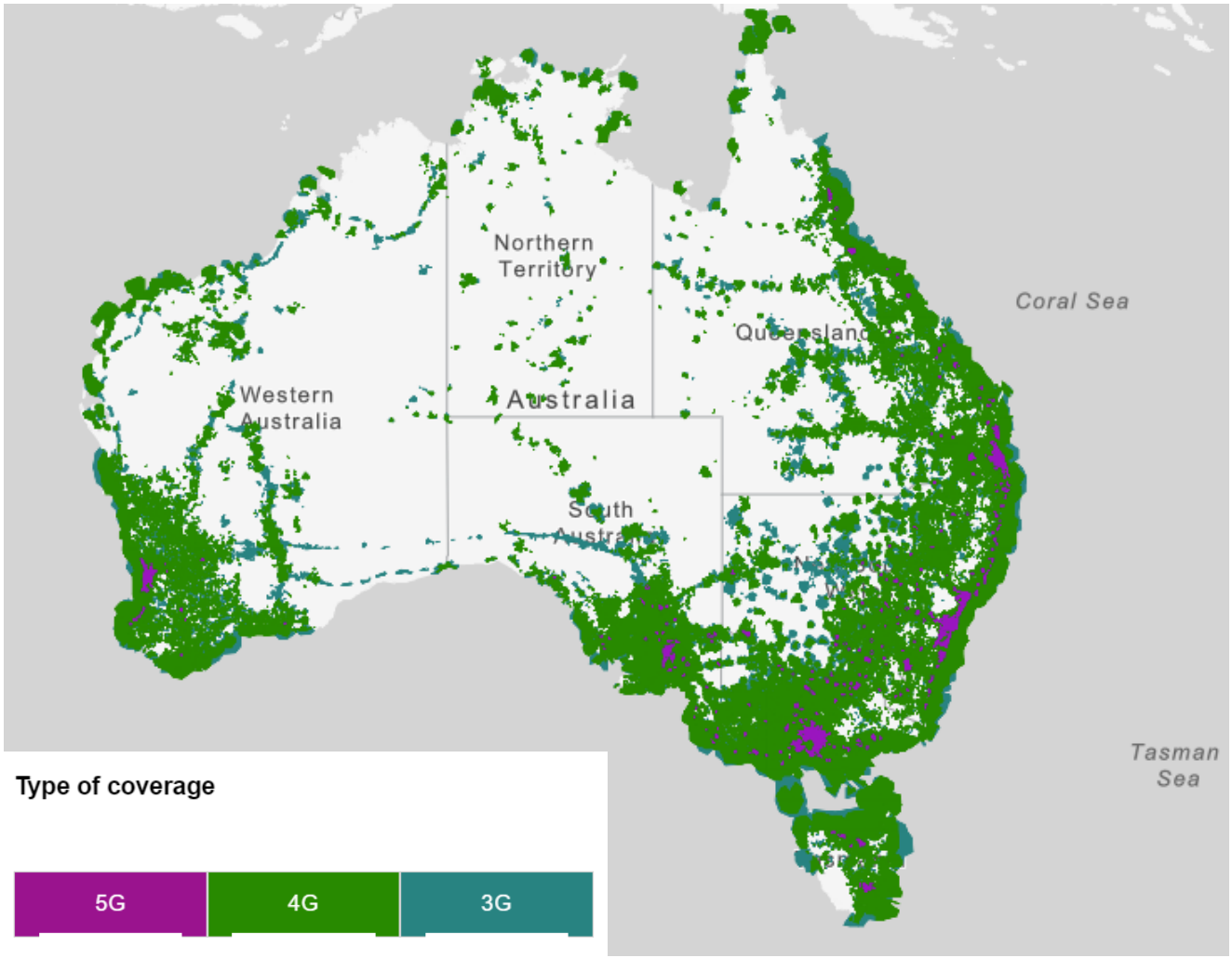
Radio waves are not visible – what we do to make them transparent

This presentation provides an overview of Telstra's EMF communications in Australia and our public engagement.

- Telstra's Mobile Networks
- EMF Communications & Busting Myths
- 5 years of 5G EMF Surveys

Telstra's Mobile Networks

- 3G, 4G, 5G technologies
- 99.6% population coverage
- Greater than 2,7 Million km^2

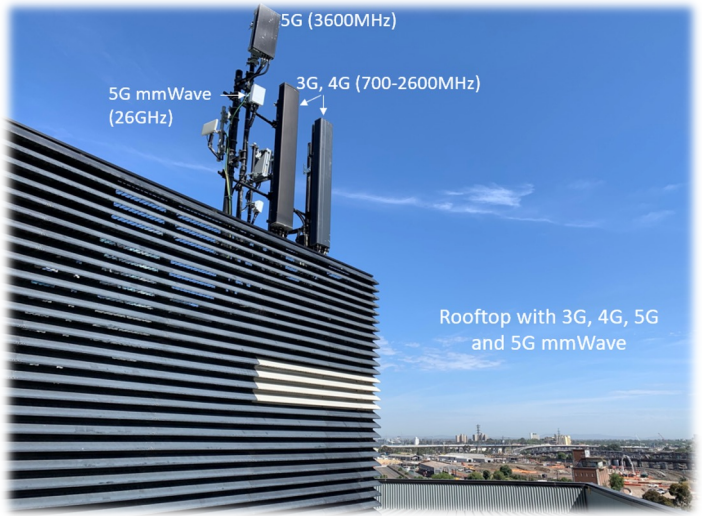


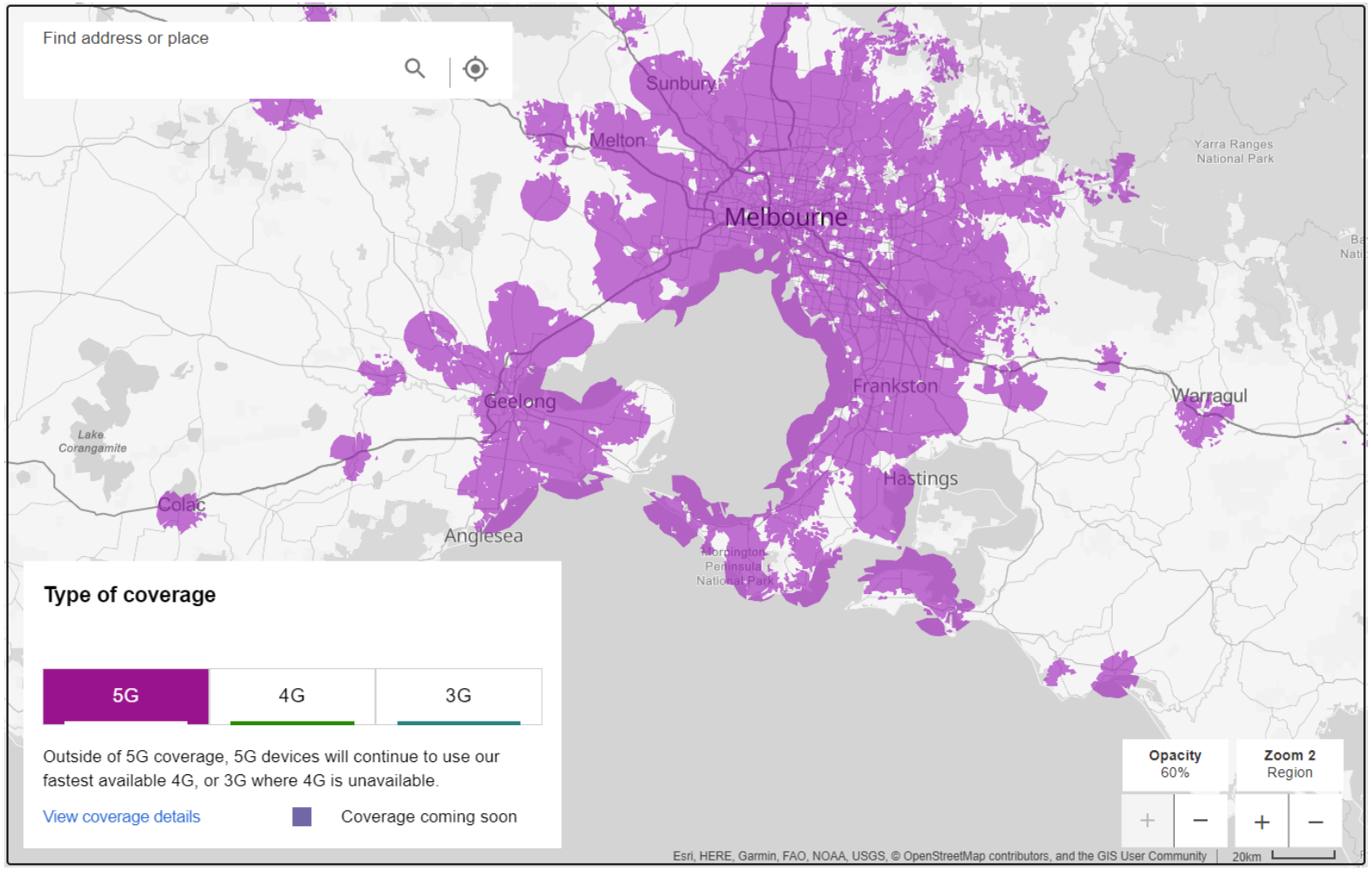
Note - 3G is being turned off in 2024
Spectrum reused for 5G

Source https://www.telstra.com.au/coverage-networks/our-coverage

Telstra's Mobile Networks – 5G

- Capital cities
- Metropolitan
- Regional



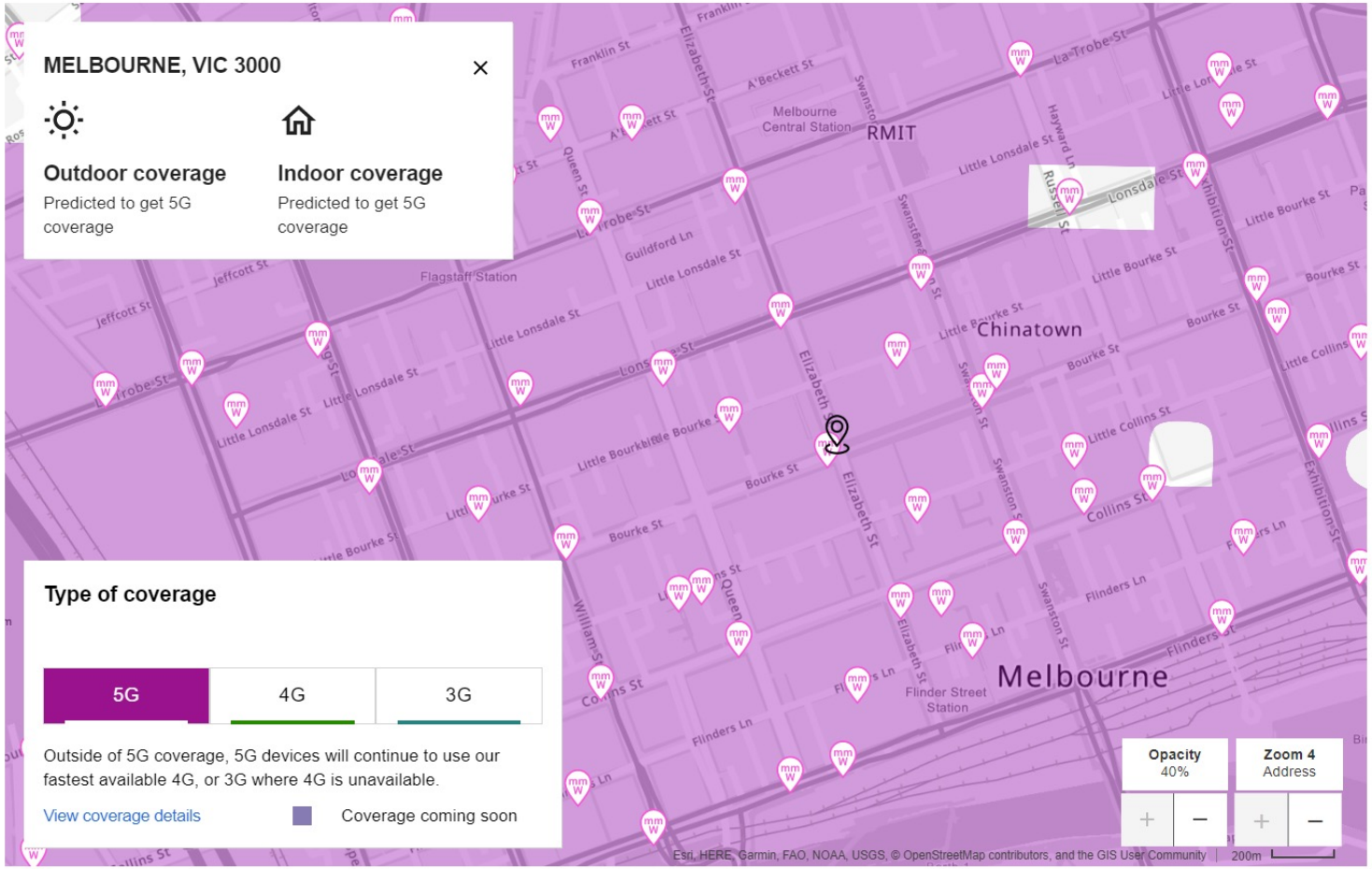


Source https://www.telstra.com.au/coverage-networks/our-coverage

Telstra's Mobile Networks – 5G mmWave

- Capital cities
- Sporting stadiums
- High traffic areas

Enter your address to check coverage in your area



5G mmWave locations

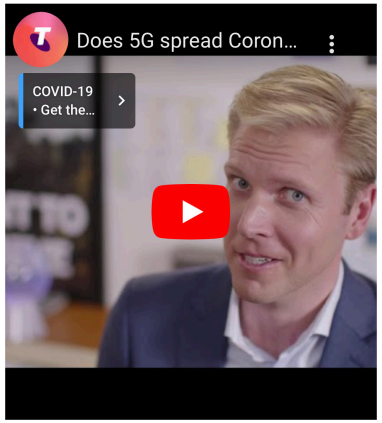
Source https://www.telstra.com.au/coverage-networks/our-coverage

Telstra's Public EMF communications

Telstra has a proactive public and community engagement program on EMF

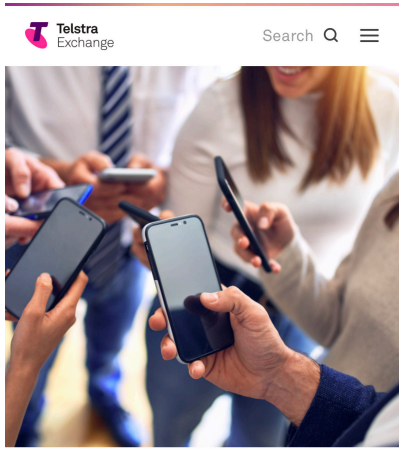
- EMF Website
- Public Information Blogs
- EMF Site Surveys
- Social Media
- Customer SMS

5G Q&A and 5G Myth Busters



To answer the many questions on 5G, we have a detailed 5G Q&A page on our EME internet site. We also got our "5G Chief Investigator" to take a look into the myths around the new technology.

Link 5G Chief Investigator



5G | NETWORK

Five years of 5G EME testing – what have we found?

By Mike Wood
October 19, 2022

Mobile Base Station Deployment Code

- All base stations must follow the Deployment Code – regulated by Government
- Community consultation and information
- Compliance with EME safety standards

C564:2020 MOBILE PHONE BASE STATION DEPLOYMENT

C564:2020 (pdf 1,063kb)

Explanatory Statement (pdf 115kb)

The Mobile Phone Base Station Deployment Code is designed to:

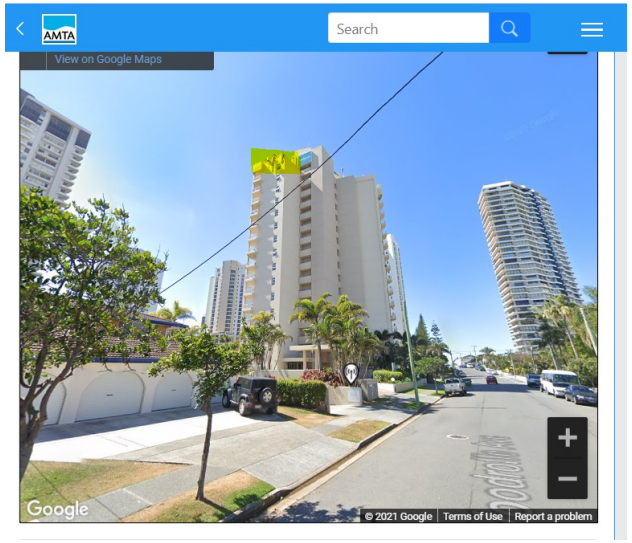
- provide greater transparency to local community and councils when a Carrier is planning, selecting sites for, installing and operating mobile phone radiocommunications infrastructure; and
- allow the community and councils to have greater participation in the decision-making process of Carriers when deploying mobile phone base stations.

Australian Government | acma Australian Communications and Media Authority

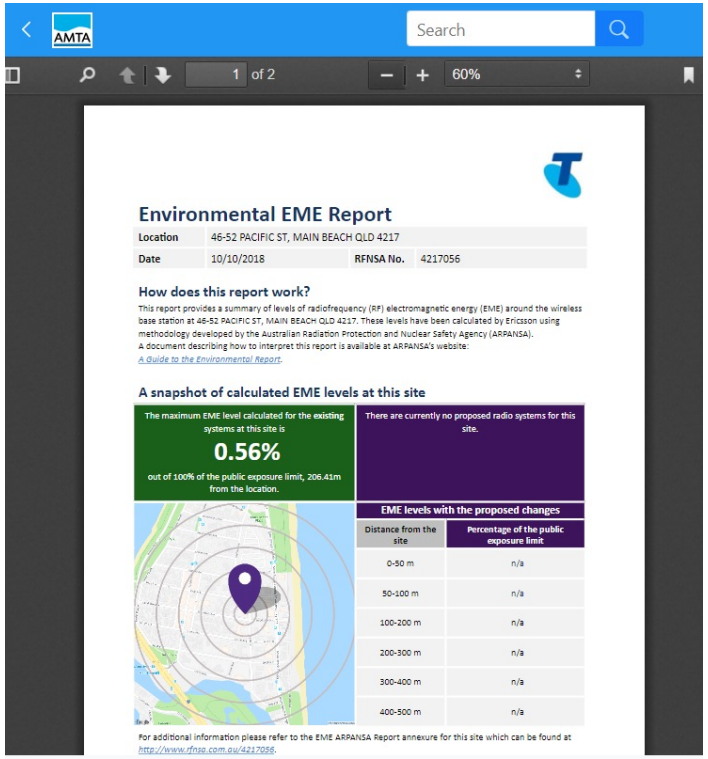
COMMUNICATIONS ALLIANCE LTD

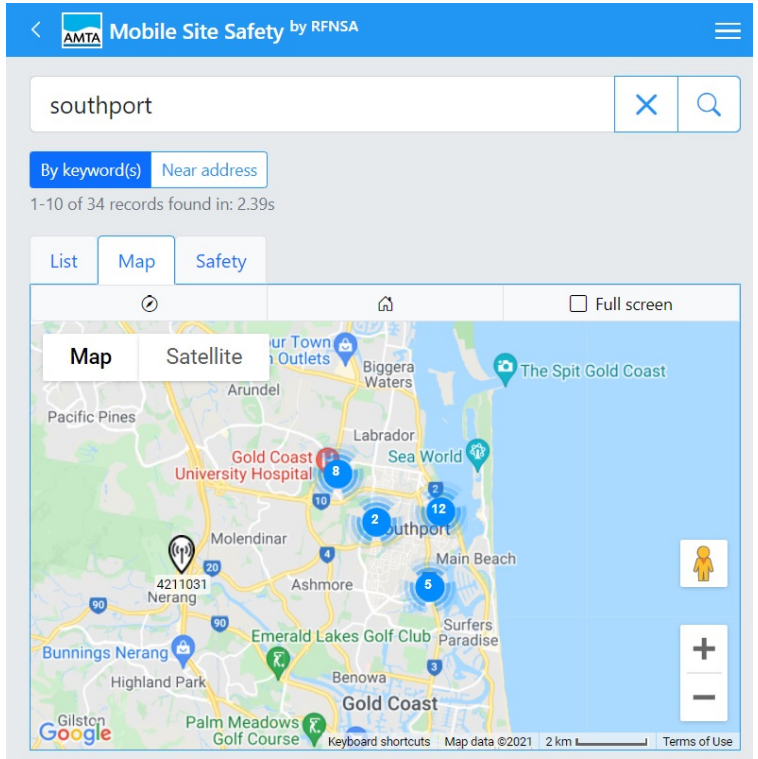
Public Site information & EMF Reports

- All base stations have an Environmental EMF Report
- Publicly available on internet database
- Includes site details, location, and safety information



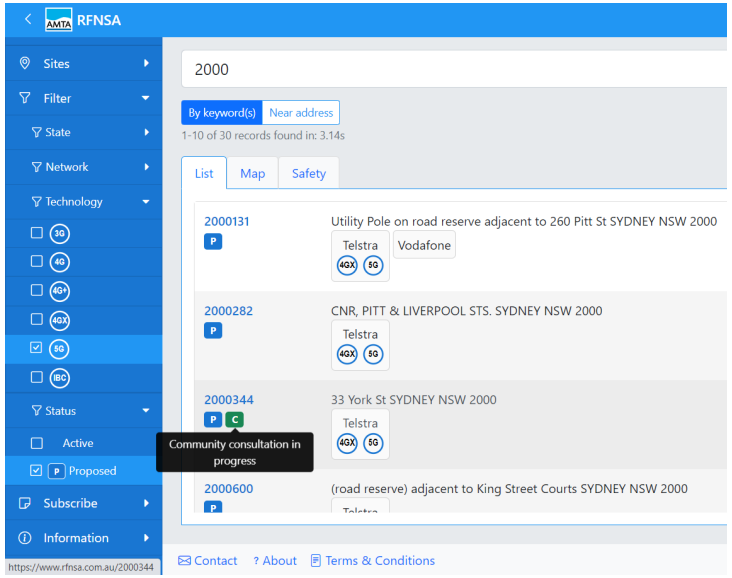
https://www.rfnsa.com.au/4217056

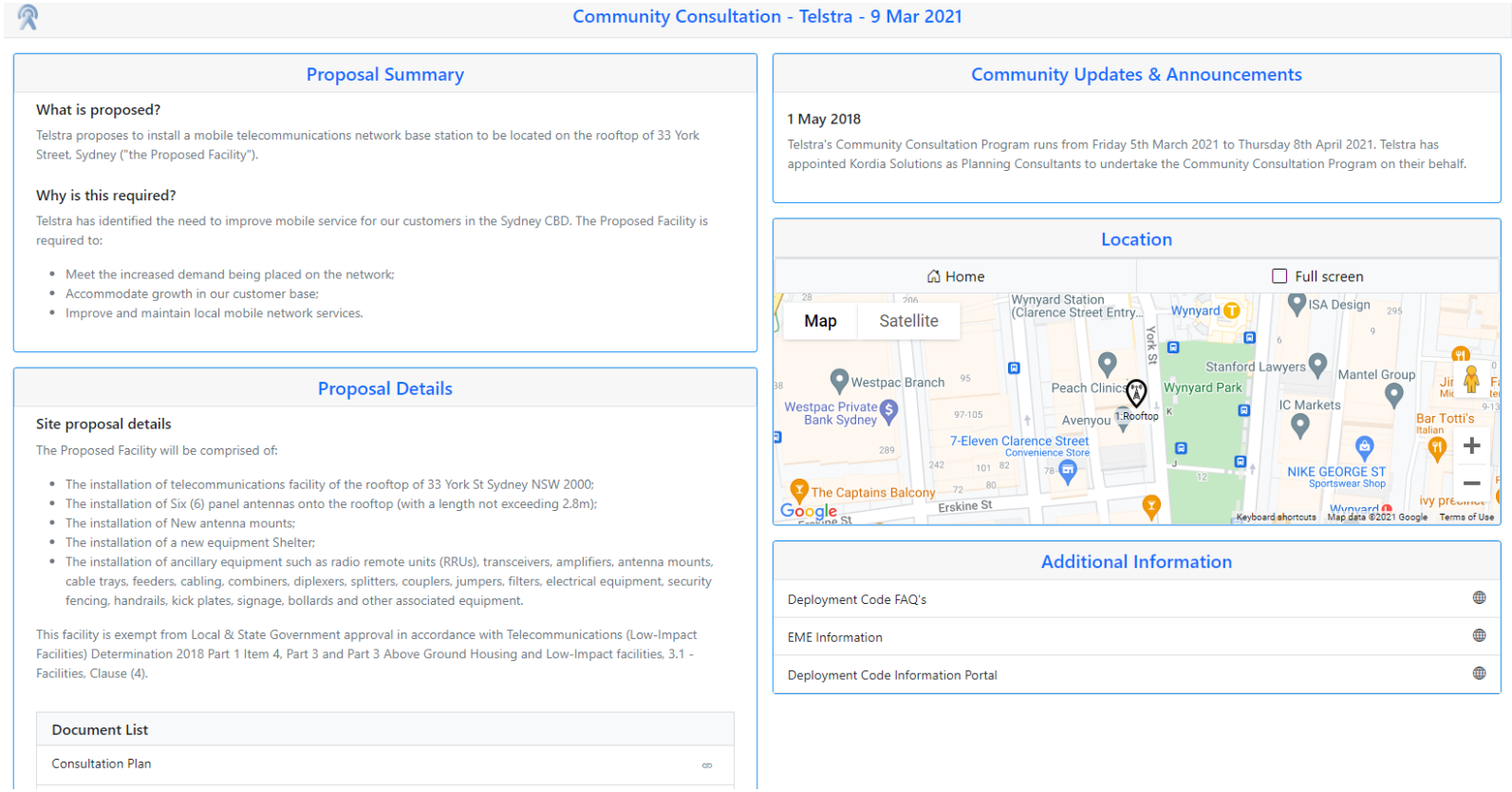




Public Site information – Consultation new sites

- All proposed base stations have online information
- Community Consultation & resources
- Important transparency and trust

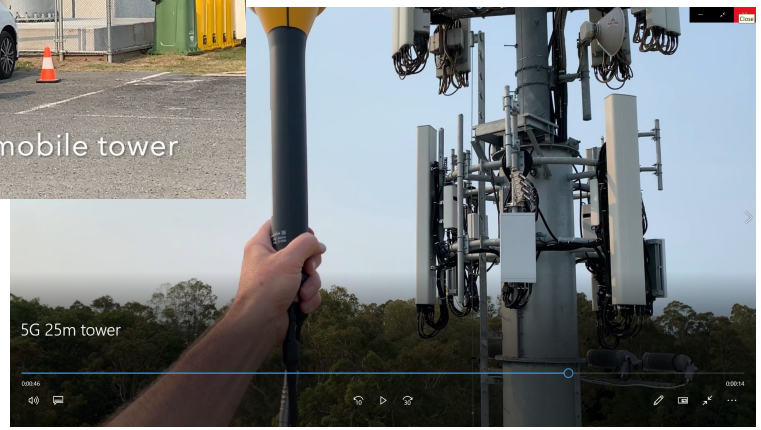




https://www.rfnsa.com.au/2000344/consultation

EME Surveys – Live testing

- EMF Surveys – demonstrate actual EMF levels
- Provides live information
- Community engagement answers community questions

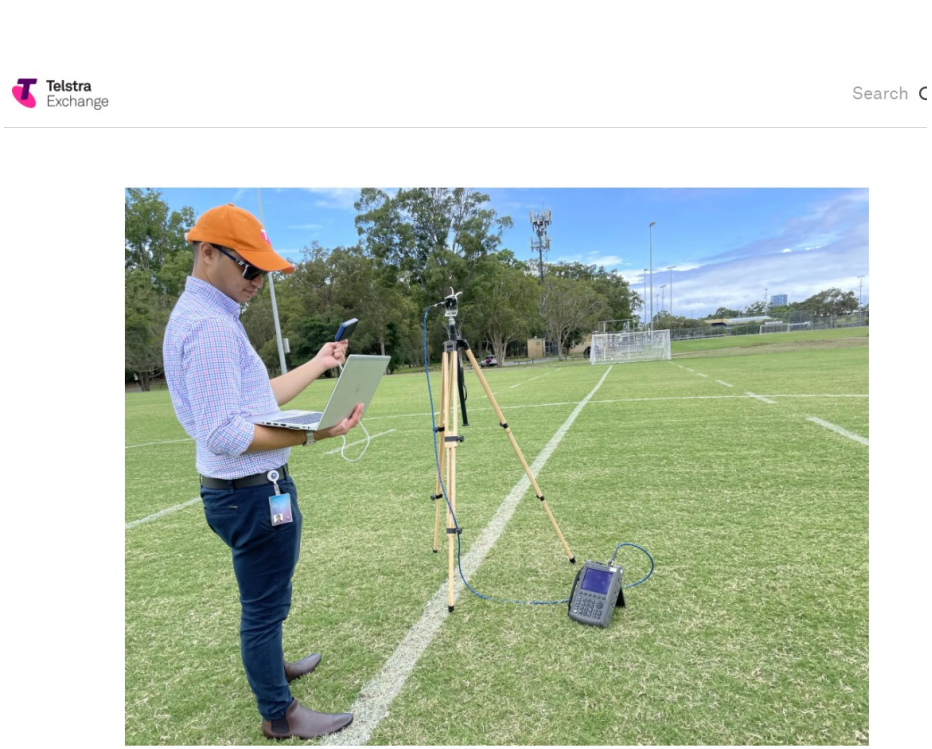


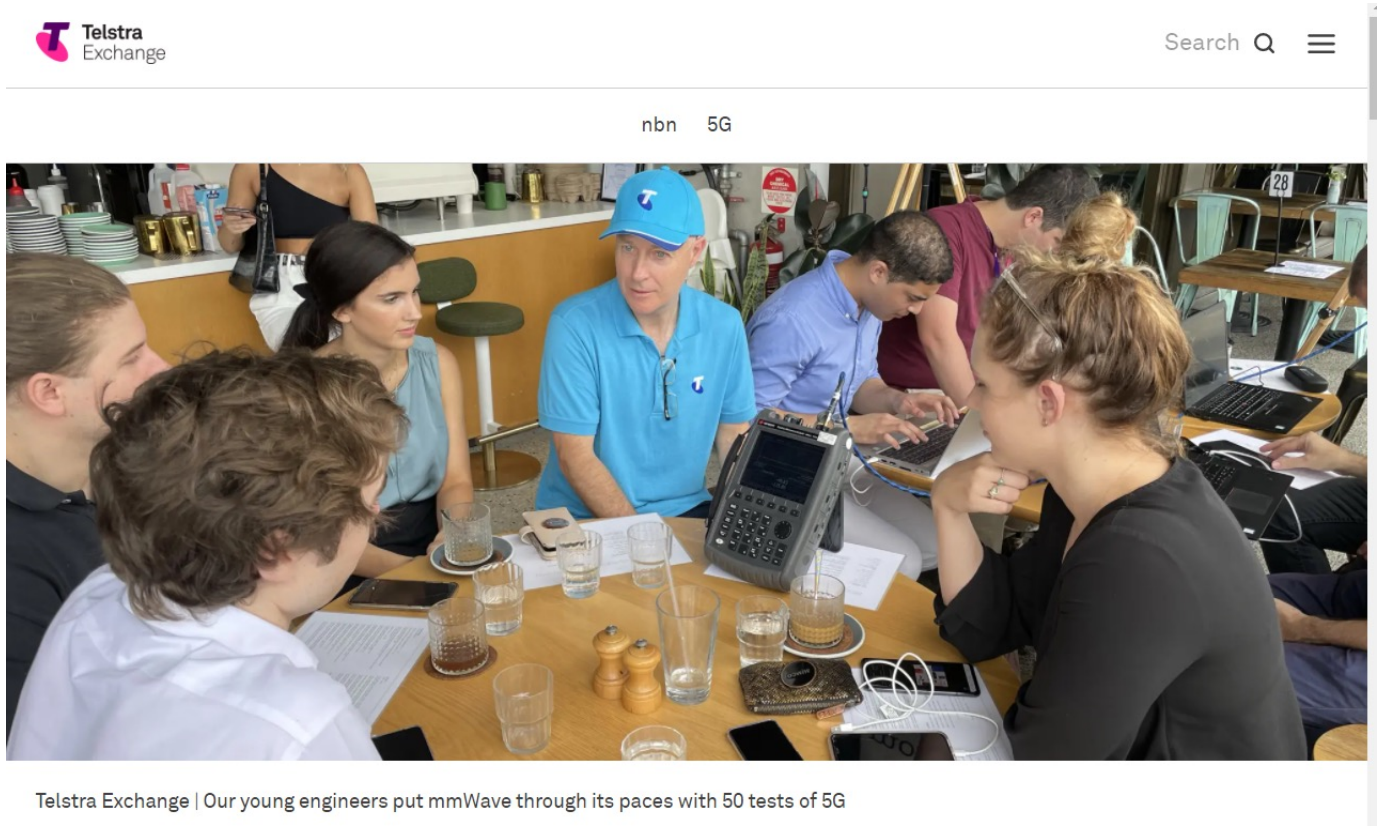
5G EME – Public Q&A

- We often get asked questions when out surveying
- Great opportunity to engage, show what we are doing and answer questions

EME Surveys – encouraging our graduates

- Graduates and Young Engineers are our future
- We provide field practical experience and encourage them to engage on EMF testing





https://exchange.telstra.com.au/our-young-engineers-put-mmwave-through-its-paces-with-50-tests-of-5g/

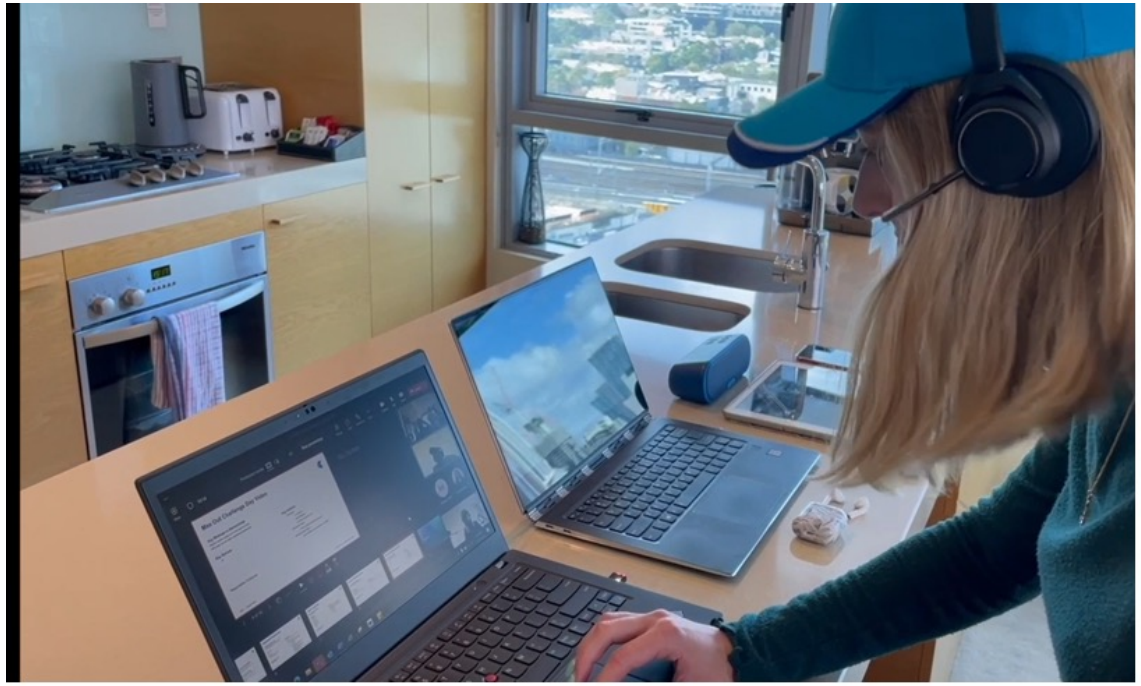
5G Smart Apartment – Putting 5G to the ultimate test

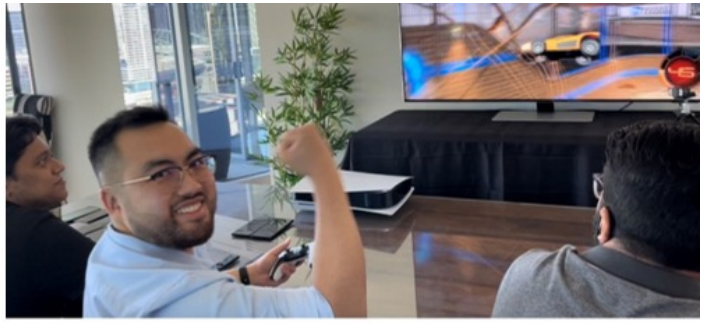
We set up three different use case scenarios in the smart apartment to test the EME levels

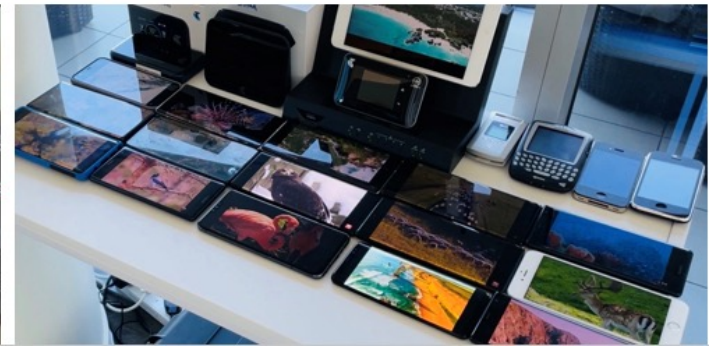
1. Tourist – using a mobile, laptop and apartment Wi-Fi (casual use)
2. Family & teenagers – multiple devices, 5G powered Wi-Fi (gaming, movies, multiple devices)
3. Tech savvy Graduates – 100+ devices, 5G mobiles, 5G Wi-Fi (Max out challenge, multiple devices, gaming, streaming, working, live streams, social media, google smart home)

Apartment Wi-Fi connected by 5G midband and 5G mmWave

5G Smart Apartment – Tech Savvy Graduates

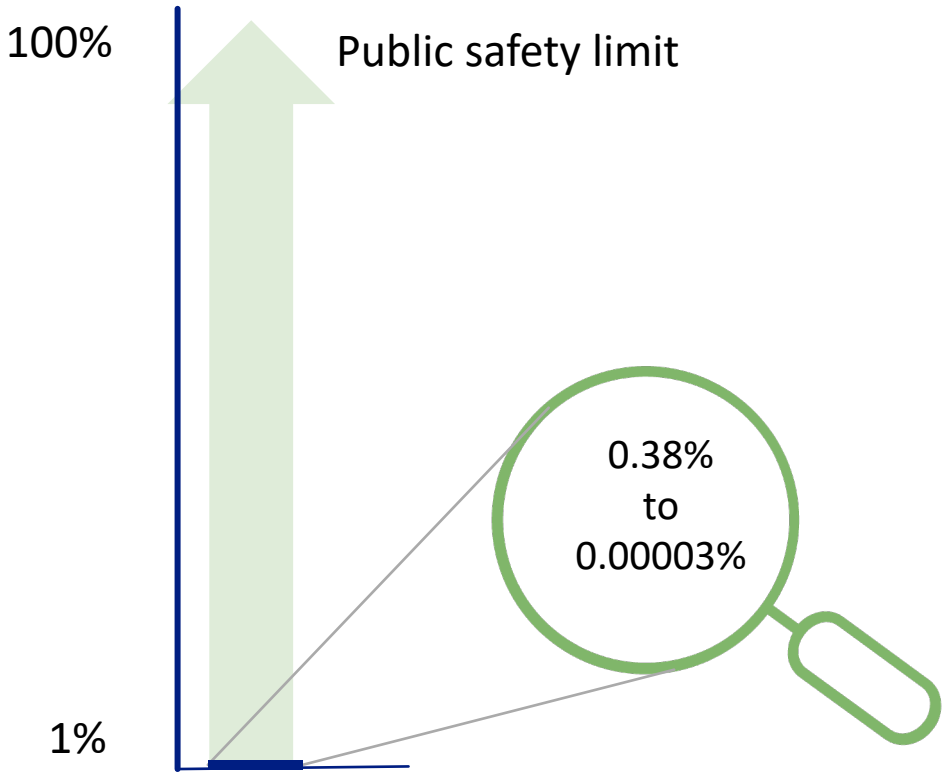






- 5G Wi-Fi
- 100 devices
- Google smart home
- Multiple Gaming
- Movies
- Streaming
- Social Media
- Working
- Network & EME testing
- Online meetings
- Livestreams
- Presentations

5G Smart Apartment – test scenario results



EME levels - % public safety limit

	Wi-Fi	5G	5G mmWave
Tourist	0.011	0.007	0.00003
Family	0.15	0.009	0.0012
Tech Savvy Graduates	0.38	0.06	0.0015

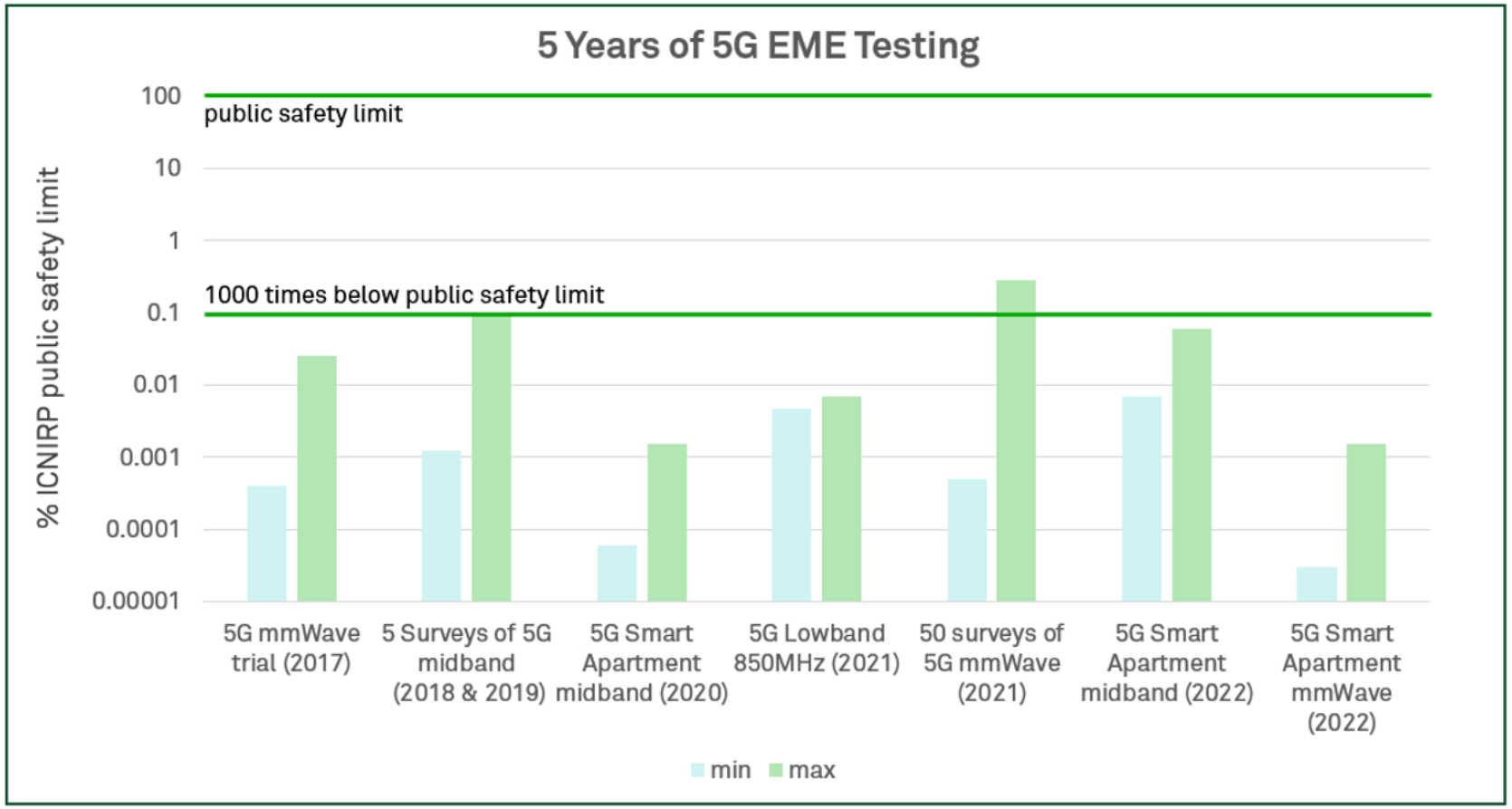
30 min time average exposure

EME measured from Wi-Fi and 5G is less than 1% of the public safety limit

Source https://exchange.telstra.com.au/5g-smart-apartment/

5 years of 5G EME Surveys – What have we found?

- **5G tested in real world settings** – cafes, homes, apartments, CBD's sports facilities, residential streets, schools
- 5G EMF levels are typically more than 1000 times below the public safety limits
- 5G EME levels under **high capacity** are similar to 3G and 4G
- 5G EME levels under **normal use** are lower than 3G and 4G, as 5G is more efficient.



Source https://exchange.telstra.com.au/five-years-of-5g-eme-testing/

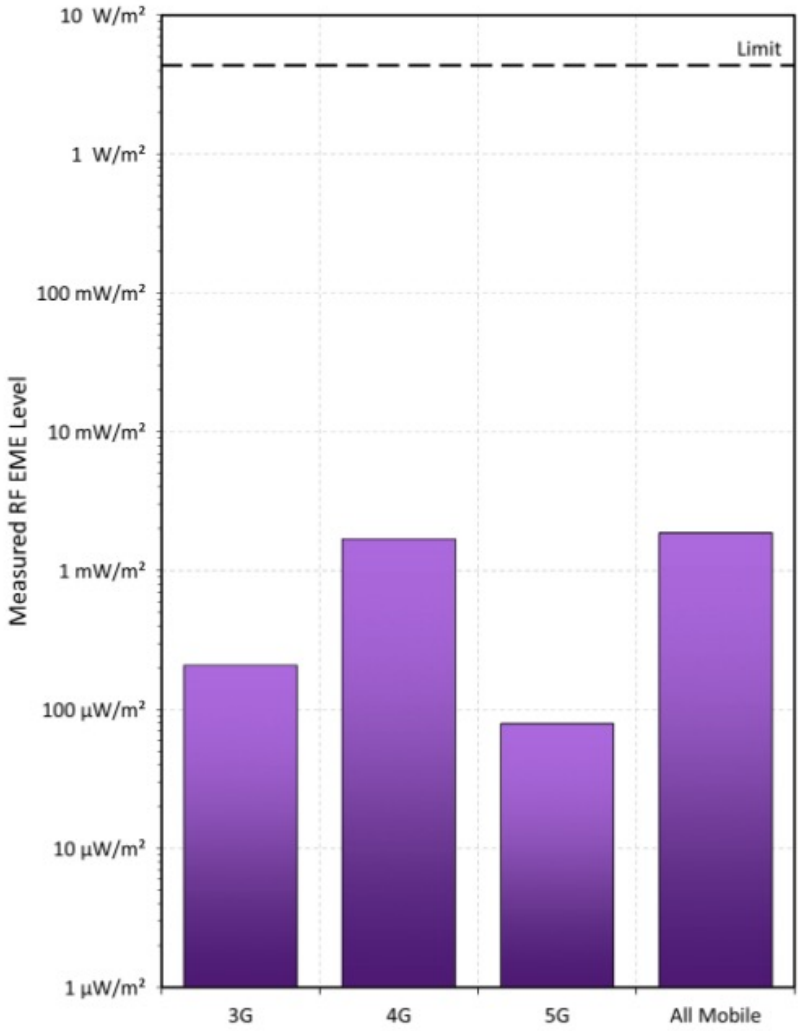
ARPANSA Survey of Residential Radio Waves (2022)

comparison of 3G, 4G and 5G

Summary

- Data from mobile phone towers were also presented according to the technology being used (3G, 4G, 5G). Overall, the environmental exposure to radio waves from 5G was found to be lower than 4G at the places measured. ARPANSA expects this to change over time as more people start using 5G-enabled devices.

- The graph shows the largest measured values from each of the three current mobile phone technologies as well as the largest combined value from all mobile phone towers and the permitted exposure limit.



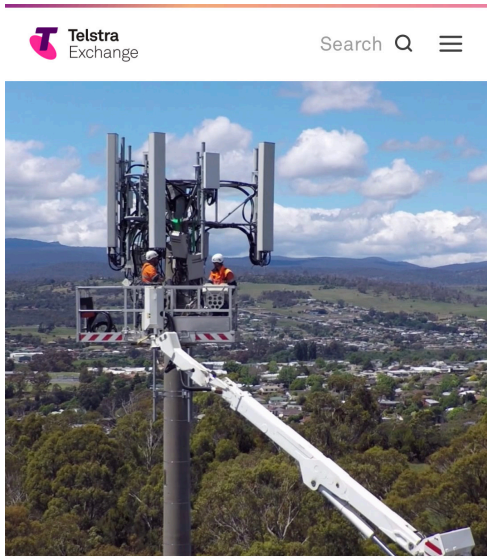
Australian Government
Australian Radiation Protection and Nuclear Safety Agency

arpansa

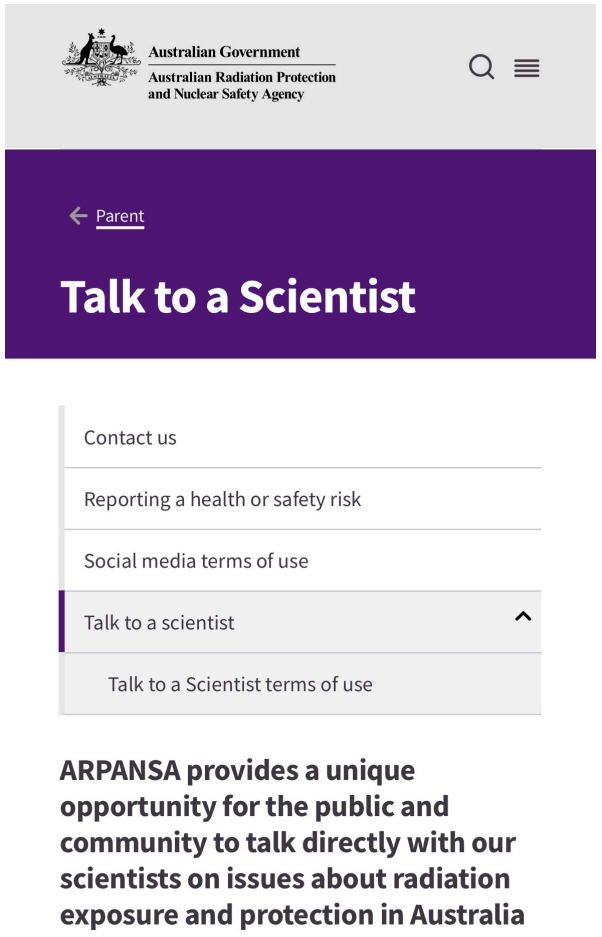
Source https://www.arpansa.gov.au/research-and-expertise/surveys-and-studies/survey-residential-radio-wave-exposure-2022

EME Information Resources

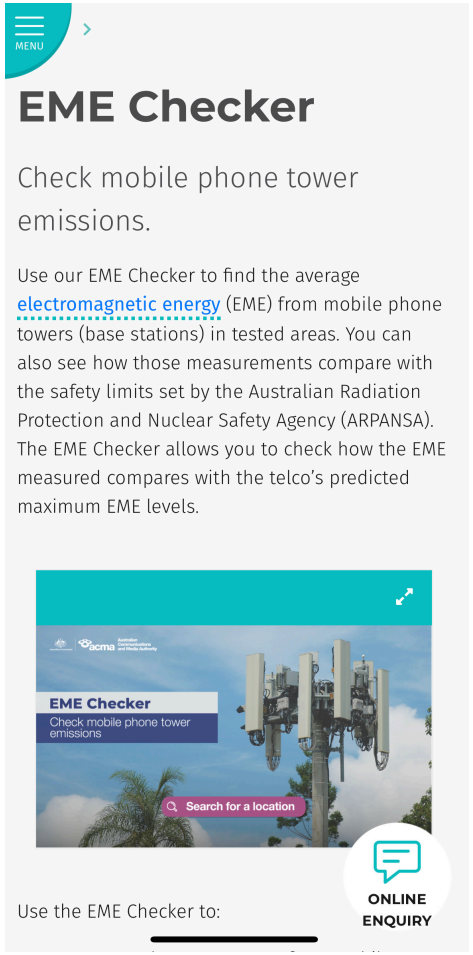
Australia has an extensive range of EMF information resources



Telstra EMF Information



Government Laboratories



Government Regulator

Thank you – Questions?

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