



Types of Telecommunication infrastructure in Australia



Telecommunications in Australia

Telecommunications infrastructure is vital to powering our world and allowing us to stay connected. It carries data and voice services between users across the country and globally.

It provides the connectivity that enables networks to deliver quality and reliable communications to and from our devices, and when located near the communities it is intended to serve, it can help meet increased consumer demand and improve coverage.

To meet these connectivity needs, it is often necessary for carriers to install new equipment. These installations can either form part of a small cell site or a macro cell tower, depending on the type of infrastructure the equipment is attached to, and their location.

For a new telecommunications facility to provide connectivity to a residential area, the facility needs to be situated near the relevant local area. Facilities installed at a substantial distance from the area intended to be serviced may not be able to provide suitable coverage.

Small Cells

Small cells are low-powered base stations that enable mobile coverage in highly populated areas in inner cities and outer urban areas. Small cells can deliver 4G and 5G connectivity.

These are often installed on existing public infrastructure such as power, light, smart light and tram poles, as well as bus stops, railway stations and advertising panels.



Macro cells

Macro cells are used to deliver mobile and internet services across Australia, including mobile networks and NBN Co's fixed wireless service. They are often installed as single cylindrical mast or poles usually from

25 metres to 50 metres in height, or lattice towers. Antennas are mounted on the exterior of poles and towers. These installations can provide coverage up to several kilometers in inner city, outer urban and regional areas.



3 Guyed or lattice tower

Lattice towers are used for several services such as radio and television broadcasting and wireless communication, including internet, or mobile networking. These towers are used to support specific equipment at a certain height, such as antennas for signal transmission.

Lattice towers are installed in a range of settings in outer urban, regional and remote Australia.



Satellite Connection

Satellite communications provide another type of telecommunications network using orbital communications stations located in the low-earth (LEO), middle-earth (MEO), or geostationary (GEO) orbits.

This connection is facilitated by ground stations across Australia, sometimes with multiple large antennas that connect the satellite in space to the internet. Users communicate with the satellite via smaller satellite dishes often installed on rooftops. This connection is being used across a range of locations in Australia including metro, regional and rural settings.



Image Source: NBN Co

In Australia, all telecommunications equipment and devices are required by law to operate under strict safety limits so electromagnetic energy (EME) emissions from these services are well below levels at which adverse effects may occur.

Because of this, there is no particular advantage in requiring telecommunications infrastructure to be located any particular distance from residential areas.

That's the science of safe connection.

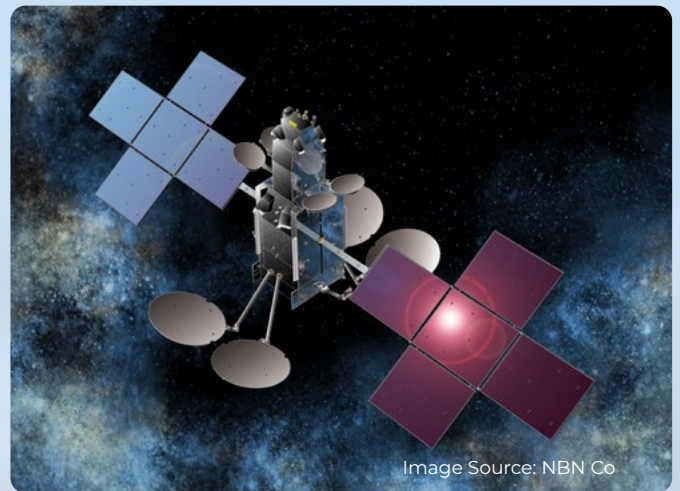


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THE SCIENCE OF
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