



## Asset Management and 5G

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In this, the third of our thinkpieces, we look at how faster cellular internet speeds will disrupt the traditional government asset management systems and processes.

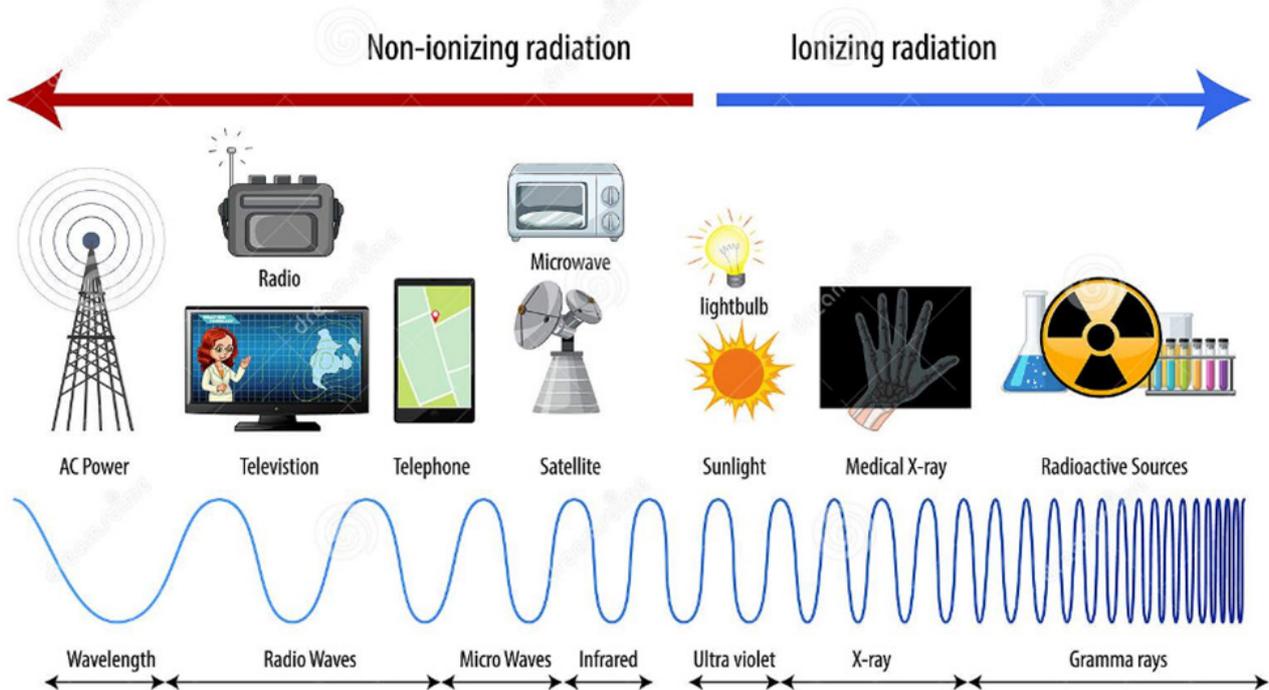
The consumption of cellular data in Australia doubles every two years on average, driven in recent years largely by the capture, transfer and consumption of video content over smartphones. This drives continued development of services that deliver higher bandwidth (more data), faster internet speeds (quicker movement of data) and lower latency (reduced delay from one end point to another).

The enhanced service offered by each new generation of cellular (the G) comes with a reduction in signal

range – this is a feature of the frequency of the electromagnetic spectrum. The image below shows where radio waves (20KHz to 300KHz) that carry cellular communications fit in the full electromagnetic spectrum (3Hz to 300KHz).

Within the radio frequency, 4G cellular towers (at the lower frequency end) will commonly have a range of many kms, whereas 5G cells have a range closer to 300-400m, as the radio waves are shorter and cannot travel as far without loss of performance (bandwidth, speed, latency). This means 5G antennas need to be closer to the end points (mobile phones) to deliver the performance benefits.

# THE ELECTROMAGNETIC SPECTRUM



The Telecommunications Act 1997 conveys wide-ranging powers for carriers to install low impact equipment on private and publicly owned infrastructure. Importantly, there are extremely few reasons to object to this occupation of assets.

The installation of 5G antennas (often referred to as small cells) coupled with the powers conveyed by the Telecommunications Act 1997 means that streetlights, bus shelters, toilet blocks and traffic lights – yes traffic lights! – will become common host infrastructure due to their providing the required height and electricity source for the placement of antennas. This poses a significant disruptive force to the traditional management of public assets.

## - a fresh look at the use of smart poles and smart assets could deliver better aesthetic outcomes -

For example, in a metro area with streetlights every 75 metres, small cells delivering 5G services would be installed on every fourth pole (300m range). The Australian telecommunications market has three major carriers (Optus, Telstra and Vodafone) – if each of them had a presence in our hypothetical metro area, the result would be small cell installations on nearly every pole in that location.

The deployment of 5G small cells poses some important considerations for councils, including:

- the protection of aesthetic amenity in public spaces
- generating new revenue streams from asset occupancy
- risk management associated with (inadvertently) breaching the Telecommunications Act 1997
- how attuned to the new 5G environment are asset management processes, policies and procedures
- contract management with telecommunications carriers

Small cells installed on public and private assets are protected from interference under the Telecommunications Act 1997. The penalties for interfering with live telecommunications equipment are severe and should be taken very seriously.

The saying goes ‘fail to prepare – prepare to fail’. Well prepared councils can derive financial, economic development and community benefits from 5G deployments. However, maintenance systems and processes will inevitably need to change to recognise carriers’ rights when managing public assets – early consideration of this change is essential. For example, something as routine as switching off power to streetlights for maintenance will require advance notification to carriers – failure to do so can result in substantial penalties. With multiple small cells on multiple poles, owned by multiple carriers, this represents a truly disruptive change for managers of public assets.

The value of clear and well-informed advice about the Telecommunications Act, effective asset management strategies and processes, and the balance of commercial vs aesthetic outcomes cannot be overstated.

Telecommunications carriers are prepared to enter into formal agreements that balance councils’ interests with their service delivery objectives. Again, well-informed advice is recommended to broker outcomes that are mutually beneficial.

Whilst 5G (and future G’s), will undoubtedly be a disruptive force for council asset managers, there are also some very interesting community benefits to be realised. For example, a fresh look at the use of smart poles and smart assets could deliver better aesthetic outcomes as well as supporting new commercial models for councils’ management of streetlights.

With disruption comes opportunity, and our view is that now is the time for councils to be seriously considering how they will work with the telecommunications industry to realise mutually beneficial outcomes.