

The Manager
Spectrum Planning Section
Australian Communications and Media Authority
PO Box 78
Belconnen ACT 2616

Dear Sir / Madam,

Re: Submission in response to discussion paper on RLAN use in the 5GHz and 6GHz bands

N1 Wholesale Pty Ltd (trading as NodeOne) is a licensed carrier that has been operating using fixed wireless in class licensed bands to deliver data access to residents and businesses across much of Western Australia.

Whilst the mobile wireless access technologies have gained the majority of the media attention (and customers) internationally, fixed wireless both using licensed and class licensed frequencies has also experienced huge improvements in capability. This was achieved initially through leveraging WiFi technology and more recently has been achieved using custom silicon specifically designed for the application. The price / performance ratio of this hardware is highly compelling, and with good network design end-users can obtain experiences similar to that of fibre – but without the high infrastructure deployment costs.

It is NodeOne's view that this has a critical role to play in the Australian telecommunications landscape by keeping competitive pressure on fibre infrastructure owners, providing access into "difficult" locations as well as supporting network diversity.

The amount of spectrum available in Australia to support this critical network infrastructure is low and heavily utilised. These bands are fundamental: there is a strong ecosystem of hardware vendors based on large international markets and in contrast to the much higher mm-wave frequencies, link lengths are large enough to be practical.

NodeOne believes it is important to open up the 6GHz band in a manner that allows the effective co-use of this important resource. The current usage is very light, particularly in comparison with many other bands. With effective mechanisms for protecting those existing users (such as through the use of AFC), much benefit for Australian consumers can be brought about.

NodeOne can provide the following responses to the questions laid out in ACMA's discussion papers:

1. What is the demand for spectrum for RLAN use in the 6 GHz band (5925–7125 MHz)?

NodeOne believes that the demand for this spectrum is high, for users both inside and outside of buildings as well as in the wide area. As noted in ACMA's discussion paper, there is insufficient

contiguous spectrum in the bands currently available in 5GHz to support the higher bandwidths that will increasingly be important for communication in Australia.

2. *Should the ACMA proceed, as proposed, to consult on a formal variation to the LIPD class licence that adds the frequency range 5925–6425 MHz for RLAN use, bounded by the parameters described in the ACMA’s preliminary view section of this paper?*

Yes, the ACMA should proceed to consult on a formal variation to the LIPD class license broadly bound by the parameters described in ACMA’s preliminary view section of its paper, but including the use of “standard” power in conjunction with an AFC system.

3. *If class licensing arrangements are to be made in the lower 6 GHz band (by variation to the LIPD class licence), should alternative/additional power limits and/or other conditions be considered?*

NodeOne believes that standard power should be permitted as discussed in the response to item 5, and with the use of high gain antennas to support the use of the spectrum to deliver data services over larger distances.

4. *Is it appropriate to consider inclusion of the upper 6 GHz band (6425–7125 MHz) in the LIPD class licence or should this be deferred to monitor future developments (for example, in the wide-area International Mobile Telecommunications (IMT) space) as outlined in the ACMA’s preliminary view? We invite comments from submitters on the utility of the band for IMT use.*

NodeOne is of the view that a staged approach is sensible noting that the upper band may be able to be added at a later time. This would allow future developments in the IMT space to be considered as well as allowing the dynamics of use in the lower band to be better understood.

5. *Should standard power (that is, higher power devices, including for outdoor use) operating under a dynamic spectrum access system such as the automatic frequency coordination (AFC) system adopted in the USA, be adopted in Australia for some or all of the 6 GHz band? Is there an appetite and capability for industry to provide the necessary systems to enable such use? We welcome views and evidence on the commercial and technical feasibility of introducing AFC systems in the band.*

NodeOne believes that an AFC system should be adopted in Australia supporting powers of up to 36dBm – or potentially higher for point-to-point links, but that the AFC not be required for outdoor use at significantly lower powers. Due to its adoption in the USA, such a system will be supported by equipment vendors and is likely to become increasingly widespread internationally. It is unlikely to be practical to have vendors develop a new system specifically for the Australian market.

NodeOne notes additionally that in its view, an industry-funded model for the AFC system is practical.

6. *Should the higher power regulatory arrangements and associated interference mitigation measures added to the International Telecommunication Union (ITU) Radio Regulations at WRC-19 (see [Resolution 229 \(Rev WRC-19\)](#)) in the 5 GHz band be included in any amendment to the LIPD class licence?*

NodeOne has no view on this matter at present.

Yours sincerely

A handwritten signature in black ink, appearing to be 'Nick van Namen', with a stylized, flowing script.

Nick van Namen
Chief Technology Officer