

Wireless Internet Service Provider Association
of Australia Inc

**Response to : Planning of the 3700–4200 MHz
band - Discussion paper**



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Thank you for the opportunity to provide a response to Planning of the 3700–4200 MHz band - Discussion paper, the Association represents a wide variety of carriers in Metropolitan and Regional areas, typically smaller operators who have limited or no access to spectrum.

The Wireless Internet Service Provider Association of Australia (WISPAU) are strongly in favour of the implementation of a Dynamic Spectrum Licensing Management (DSLIM) system, the major issue with the ACMA's historical approach to licencing is they make categorical decisions in an incremental world.

The Government by nature is a centralised organisation and lacks the knowledge to make small incremental decisions on precisely how spectrum should be used by whom in what geographic areas to maximise the highest value use (HVVU), thus making decisions to appease the loudest interest group or the most powerful lobbyists then justify these decisions through “stakeholder engagement” which is based on the flawed assumption that all stakeholders are involved.

Spectrum is a national resource, the most important stakeholders are the public on whose behalf the spectrum is purported to be managed, the most efficient way to arrange this resource is through a licensing framework that allows maximum flexibility, allowing providers and consumers to decide through free market processes how the spectrum is used, in what areas and by whom.

Our industry believes that the Soviet era style of complete command and control, all or nothing, across the nation is flawed and internationally this style of one size fits all, win or lose licensing is being rejected. As the Department of Defence recently pointed out at the tuneup session, the major problem with spectrum availability is the licensing model, historically and ongoing.

The mobile network operators are continually anointed by the ACMA as the beneficiary of the sacrifice of other industries and operators.

The best way to achieve maximum flexibility and accommodation of both incumbent users and new access seekers is through the implementation of a DSLM System, WISPAU's responses to this discussion paper will be in line with this approach.

1. Are there any other international developments in the 3700-4200 MHz band that the ACMA should be aware of?

OFCOM recently called for input on a proposal ; 3.8 GHz to 4.2 GHz band: Opportunities for Innovation - It is important to note the responses, a majority are in favour of DSLM.

<https://www.ofcom.org.uk/consultations-and-statements/category-2/opportunities-for-spectrum-sharing-innovation?showall=1>

https://www.ofcom.org.uk/_data/assets/pdf_file/0033/157884/enabling-wireless-innovation-through-local-licensing.pdf

2. What are the future requirements of point-to-point links and FSS earth stations in the 3700–4200 MHz band? Does this differ by geographical area and/or segment of the band?

The pace of technological change in the communications industry is extremely rapid, we can safely assume that existing uses of point to point and FSS services will remain constant in the very near term, however attempting to preempt uses many years into the future may be futile, to best accommodate future uses the licencing framework must be able to adapt to change, current static models like 15 year spectrum licenses or 5 year apparatus licenses are inadequate to achieve this objective.

We strongly advocate the implementation of DSLM, across the entire 3700 - 4200 MHz band australia wide, this would allow incumbents to maintain existing services up until the point which they are required to compete for continued access, this would allow true market prices to allocate the finite spectrum resources to its highest value use through pricing mechanisms.

3. If licensed point-to-point links and FSS earth stations are affected by replanning activities in the 3700–4200 MHz band, what alternative deployment options could be considered?

WISPAU would suggest a more nuanced approach to incumbent point to point and FSS use within the band, in some regional and remote areas there may be no need to evict existing users from the band as no alternative requirements exist, in cases like this we would expect existing licenses to be permitted to operate indefinitely.

4. In the event arrangements are made for new services in the 3700–4200 MHz band, do stakeholders have any comments on the ACMA's proposal to maintain the existing arrangements for Radiodetermination and LIPD devices, and the existing policy around TVRO systems?

No, we would support continued access for LIPD and TVRO in this band providing they operate within a DSLM framework, and alternative uses for the same spectrum in the same geographic area arise a price based bidding mechanism would resolve any potential conflicts.

5. What are the future requirements for WBB services in the 3700–4200 MHz band and what arrangements should be considered? Does this differ by geographical area and/or segment of the band?

The current focus of wireless broadband equipment manufacturers is the lower end of the band, this is primarily driven by spectrum availability globally.

Should a dynamic spectrum licencing system be introduced across the entire band australia wide there would be no need for the ACMA to pick winners and losers, access seekers of all types can make decisions on which spectrum to license, in what geographic areas for what purpose.

Those with competitive interests can bid for the resources on the open market, allowing for the Highest Value Use to be determined by free market pricing mechanisms rather than government decree on limited knowledge or undue influence.

6. What WBB deployment scenarios should be considered for the 3700–4200 MHz band? Should use be limited to one scenario or should more flexible arrangements be implemented?

All forms of technology should be permitted across the entire band, there should be no categorical restrictions placed on the deployment type as this would favour one group of users over another, a prime example of this type of behaviour is where the ACMA issues a spectrum license to a Mobile Network Operator (MNO) across a large geographic area, typically the operator would deploy services only in areas that are likely to make a return on the capital investment, which leaves large amount of spectrum unused, it would be difficult to argue that this situation has put the spectrum resource to its highest value use.

7. What is the current and planned availability of fixed and mobile WBB equipment in the 3700–4200 MHz band?

The following bands have been classified by equipment manufacturers as mid-band and identified for use with both LTE (4G) and 5G NR equipment.

Band	Lower (MHz)	Upper (MHz)	Duplex Method	Bandwidth (MHz)
LTE Band (4G)				
52	3300	3400	TDD	5,10,15,20
42	3400	3600	TDD	5,10,15,20
43	3600	3800	TDD	5,10,15,20
5G NR frequency bands				
n77	3300	4200	TDD	10,20,40,50,60,80,90,100
n78	3300	3800	TDD	10,20,40,50,60,80,90,100
n79	4400	5000	TDD	40,50,60,80,100

It is evident that the global interest by carriers to deploy 5G networks in this band is already encouraging manufacturers to release equipment capable of operating within these bands.

<https://www.ericsson.com/en/networks/trending/hot-topics/5g-spectrum-strategies-to-maximize-all-bands>

There are already examples of handset manufacturers releasing hardware compatible with 5G NR n77 band ; <https://consumer.huawei.com/en/phones/mate-x/specs/>
Currently there is a concentration of equipment available in the 3700 - 3800 MHz band, and should restrictions be placed on the service type that area allowed to operate we would suggest this lower end be dedicated to fixed wireless access.

8. Is there interest in the use of other new service types in the 3700–4200 MHz band?
No Comment
9. What services/applications should be accommodated in the 3700–4200 MHz band?

WISPAU would advocate for a more inclusive model and we support : Figure 5: Spectrum scenario a2, shared used of the whole band by incumbent and new services. Providing that the allocation of licenses is accommodated through either area wide apparatus licenses OR preferably a Dynamic Spectrum Licensing Management (DSLIM) system.

10. Which frequencies ranges should be made available for these services/applications?

All frequencies within the 3700 - 4200 MHz band should be made available to all access seekers, how much spectrum and in what geographic areas should be determined through market forces.

This can be achieved through a dynamic spectrum licensing system, for example; Mobile Network Operators may find it advantageous to purchase large portions of spectrum in metropolitan areas for supply of Mobile Broadband Services, whereas smaller Wireless Internet Service Providers (WISPs) may deploy Fixed Wireless Access (FWA) services using the same frequency bands in more Rural Areas, and Satellite operators may deploy Fixed Satellite Services (FSS) in more Remote areas.

11. Which geographic areas should be made available for these services/applications?

All services should be made available Australia wide, allowing price mechanisms through supply and demand to determine allocations.

Mobile Network Operators (MNOs) may argue that unless spectrum is allocated on a long term basis this does not give enough certainty for large capital investments, they argue that 15 year license are required or there would be no investment.

By selling entire bands of spectrum for one purpose to a small handful of Tier 1 mobile network operators for prices that are out of reach to smaller enterprises all but ensures the monopolisation of the industry, with monopolies there are powerful incentives to slow the pace of technological change to ensure maximum return on investment, despite the costs paid by the general public with higher prices and loss of productivity through stifled innovation within the sector.

One example of this is the evolution of mobile phones services from primarily voice and text service delivery to overwhelmingly data driven, mobile network operators were initially extremely resistant to this technological change, primarily motivated by the need to continue making profits on earlier investments, it was the introduction of Apple's iPhone that forced a major shift in the industry.

The lesson here is that change can come from anywhere providing we have free markets and entrepreneurs are free to introduce new products and services into an open market, the current state of telecommunications is barely better than a cartel propped up by outdated regulations and special interests.

12. On what basis should access be provided? Should access be granted on an exclusive or shared basis, on a coordinated or uncoordinated basis, et cetera?

Access should be provided on a shared basis, pricing should be market driven and competitive, users should be granted access on a tiered and coordinated basis, protection should be given to the highest bidder within a specific and small regional areas, users should be required to bid and pay for geographic protection zones and guard bands if required.

13. What licensing mechanisms are appropriate (spectrum, apparatus or class licensing)?

A Dynamic Spectrum Licensing Management (DSL) system is most appropriate for accommodating incumbent users and new access seekers, allowing price based mechanisms to allocate limited spectrum resources to their highest value use. However if the ACMA is either unwilling or incapable of implementing this we would support the extension of apparatus or preferably apparatus area licensing within this band, across the entire band in all geographic areas.

14. If arrangements for WBB specifically are implemented in the 3700–4200 MHz band, are the proposed interference management techniques with services in the 3.6 GHz band suitable? Are any other techniques proposed? Are there any other compatibility issues with the 3.6 GHz band the ACMA should consider?

Within the framework of a dynamic spectrum license management, users would be tiered with only the top tier of access seeker being afforded any protection from lower tiered users.

All users should be required to register all devices once put in service, this would allow secondary or tertiary users to coordinate or vacate occupied spectrum.

For example, Appendix 3 : Synchronization Requirements - as detailed in this discussion paper is very prescriptive, dictating the exact technology type, Frame and Subframe structure.

This method allows no room for innovation or future change, coordination would be far better achieved through tiered access and mandatory publishing of technology type and configuration.

It is foreseeable that the current structure of communications may change in the near term, especially with the introduction of new and emerging technologies like 5G, without a flexible framework regulations will stifle innovation.

15. Should the ACMA consider extending existing apparatus and spectrum licence arrangements in the 3.6 GHz band into the 3700–3800 MHz band or another segment of the 3700–4200 MHz band?

We would advocate the implementation of DSL, however if the ACMA is either unwilling or incapable of implementing this we would support the extension of apparatus or preferably apparatus area licensing within this band, across the entire band in all geographic areas.

16. Is there any additional information available that would assist the ACMA in assessing compatibility of potential new WBB services in the 3700–4200 MHz band with WAIC and radio altimeter systems in the 4200–4400 MHz band? *No comment*

Regards,

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