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SATELLITE SERVICES WORKING GROUP (SSWG)

SUBMISSION

to the

Australian Communications and Media Authority (ACMA)

Replanning of the 3700–4200 MHz band

16 September 2020

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EXECUTIVE SUMMARY

The Communications Alliance Satellite Services Working Group (SSWG) welcomes the opportunity to comment on the ACMA's *Replanning of the 3700-4200 MHz band* Options paper.[1]

Consistent with the past submissions of the satellite industry, the ACMA correctly recognises that the 3700-4200 MHz 'remains valuable for FSS [Fixed Satellite Service] purposes.'[2] Indeed, the concentrated use of the band in West Coast and East Coast metropolitan areas for the Fixed Satellite Service (FSS) reflects the continuing importance of the band, especially for international distribution of video programming such as live news and sporting events.[3] Moreover, satellite operators are continuing to launch new C-band satellites to meet growing demand. Unfortunately, the ACMA's new embargo on FSS earth stations in 3700-4000 MHz will likely preclude new demand from manifesting in Australia, to the detriment of the national economy.

The SSWG notes the ACMA's preference for *Option 3* among the three planning options that it considered and analysed.[4] *Option 3* involves clearing the 3700-3800 MHz band in metropolitan and regional areas for *exclusive* Wide Area (WA) Wireless Broadband (WBB) services, while introducing *shared* Local Area (LA) WBB in 3700-3800 MHz in remote areas, and in 3800-3900 MHz (or possibly up to 4000 MHz) across all of Australia.[5] The remainder of the C-band downlink, up to 4200 MHz, would continue to be shared on a first-in-time basis under current arrangements. While *Option 3* preserves more spectrum for the FSS than *Option 1*, and is purportedly more workable than *Option 2*, the SSWG would question portions of the ACMA's analysis behind its preference or even need for *Option 3*.

For the reasons set out in this submission, the SSWG seriously questions whether an additional 100 MHz of spectrum under its preferred *Option 3* is required for *exclusive* WA WBB in metropolitan and regional areas in C-band proper. In addition, the SSWG questions whether any additional spectrum is required for shared LA WBB in remote areas, and whether yet another 100 to 200 MHz of spectrum is required for shared LA WBB Australia-wide. Instead, the SSWG submits that – under any reasonable demand analysis - no additional WA WBB spectrum is required, and that a much smaller amount of shared LA WBB spectrum is warranted.

Communications Alliance acknowledges that some of its members, including Telstra and Optus, do not agree with some aspects of this submission, and that these members will be making their positions clear in separate submissions.

[1] ACMA *Replanning of the 3700-4200 MHz band – Options Paper* (July 2020) (the 'Options Paper').
[2] Ibid p16.
[3] Ibid p61 ('Access to enough spectrum in this band is an important component to meet the ongoing capacity requirements of numerous broadcast, broadband and other satellite systems')
[4] Ibid p2 ('The ACMA preliminary view is that *Option 3* is the preferred option for replanning the 3700-4200 MHz band').
[5] Ibid pp26-27.

About Communications Alliance

Communications Alliance is the primary telecommunications industry body in Australia. Its membership is drawn from a wide cross-section of the communications industry, including carriers, carriage and internet service providers, content providers, equipment vendors, IT companies, consultants and business groups.

Its vision is to provide a unified voice for the telecommunications industry and to lead it into the next generation of converging networks, technologies and services. The prime mission of Communications Alliance is to promote the growth of the Australian communications industry and the protection of consumer interests by fostering the highest standards of business ethics and behaviour through industry self-governance. For more details about Communications Alliance, see http://www.commsalliance.com.au.

1. No additional spectrum required for WA WBB in metropolitan and regional areas

The ACMA's *Option 3* proposes to make available an additional 100 MHz of spectrum in 3700-3800 MHz *exclusively* for WA WBB services in metropolitan and regional areas,[6] in addition to the 300 MHz already available in the 3400-3700 MHz band.[7] This proposal is based on the unlikely estimate that four mobile network operators (MNOs) would require about 100 MHz each (i.e. 400 MHz).[8] The SSWG doubts that this is a correct estimate of demand for WA WBB spectrum in metropolitan and regional areas, both in terms of the amount of spectrum required per operator and the number of operators likely to deploy mobile 5G services.

Regarding the spectrum required per operator, the SSWG notes the U.K. Ofcom's recent conclusion that mobile operators did not require 80 to 100 MHz of mid-band spectrum each to deliver mobile 5G. Specifically, after detailed studies and multiple rounds of public consultation, Ofcom found that it was 'technically feasible for MNOs to support a wide range of 5G services with channel bandwidths in their current holdings smaller than 80 MHz, including 40 MHz.'[9] There is every reason to believe that Ofcom's analysis and conclusion for the much more densely populated United Kingdom is fully translatable to Australia, particularly given the much lower population density in Australia's metropolitan and regional areas.

Regarding the number of operators, the recent merger of Vodafone and TPG[10] has reduced the number of nationwide mobile operators in Australia from four to three – Telstra, Optus and now TPG Telecom. Only these three MNOs are likely to require mid-band WA WBB spectrum for mobile 5G in metropolitan and regional areas.

While NBN Co is also a user of the mid-band spectrum today, its use of the band for fixed wireless Public Telecommunications Service (PTS) is very different from the mobile operators' proposed use of the band for mobile 5G. NBN Co is not using the band for mobile 5G, and it is unlikely that NBN Co's use of the band for fixed wireless will create the same presumed benefits as mobile 5G. Moreover, the spectrum requirements of wholesale providers (such as NBN Co) cannot be simply be added to the spectrum requirements of retail WA WBB providers, as that may be 'double-counting' the spectrum required to competitively serve a given population of end users.

All of this suggests that the ACMA can and should accommodate all WA WBB mid-band spectrum requirements within the 300 MHz of spectrum in the 3400-3700 MHz band. For instance, this 300 MHz could easily accommodate the three MNOs plus NBN Co in the aggregate, while avoiding the need to relocate or retune any incumbent FSS or point-to-point (PTP) services above 3700 MHz. This would result in a cost saving of at least A$74 million and A$182 million in avoided FSS relocation and re-tuning costs, and a much-improved cost-benefit outcome.[11]

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[6] Ibid p26.
[7] Ibid pp26, 58.
[8] Ibid p57 (assuming four different WA WBB operators requiring 100 MHz and 80 MHz in metro and regional areas, respectively).
[9] Ofcom, *Award of the 700 MHz and 3.6-3.8 GHz spectrum bands – Conclusions to further consultation on modelling and technical matters*, at ¶ 1.4 (3 Aug. 2020), https://www.ofcom.org.uk/__data/assets/pdf_file/0034/199717/statement-sut-modelling-700mhz-3.6-3.8ghz-spectrum.pdf.
[10] *See* https://www.smh.com.au/business/companies/tpg-vodafone-merger-gets-the-green-light-from-shareholders-20200624-p555rn.html (Jun. 24, 2020).
[11] Options Paper. p104.

Even if, contrary to the SSWG's submission and Ofcom's analysis, the ACMA were to conclude that each MNO required 80 to 100 MHz, it does not necessarily mean that the FSS should be required to vacate any spectrum above 3700 MHz. Given the high costs of FSS re-tuning and/or relocation, it might be cheaper to migrate NBN Co's fixed wireless PTS to a different fixed wireless band than it would be to clear FSS use of spectrum above 3700 MHz. By converting NBN Co's existing spectrum holdings in the 3400-3575 MHz range into spectrum licenses, the ACMA is already facilitating secondary market transactions that would result in NBN Co's PTS being migrated to another band. There is therefore no need to force FSS and PTP services to clear the 3700-3800 MHz band (or more) to make enough mid-band spectrum available for mobile 5G.

2. Less shared spectrum for LA WBB

The ACMA's preferred *Option 3* also proposes to make available for shared LA WBB use: (1) 100 MHz of spectrum in 3700-3800 MHz available in remote areas, and (2) another 100 to 200 MHz of spectrum in 3800-3900/4000 MHz throughout Australia.[12] LA WBB licenses would be issued on a shared, first-in-time, apparatus-licensed basis with the FSS and PTP services in the band. By the ACMA's own analysis, however, this makes available too much spectrum for shared LA WBB use.

In remote areas, the ACMA found that 'Nil' spectrum was desired for LA WBB in the 3700-4200 MHz band, because 300 MHz had already been made available for such purposes.[13] In the SSWG's view, the 300 MHz already allocated should be more than enough to meet any conceivable LA WBB demand in remote areas. Yet, the ACMA is proposing to make available an additional 100 MHz in the 3700-3800 MHz band, and another 100 to 200 MHz in the 3800-3900/4000 MHz band, that could be used for shared LA WBB in remote areas. This would bring the total spectrum available that could be used for LA WBB in remote areas to 500 to 600 MHz. Such a large allocation for LA WBB is clearly unnecessary in sparsely populated remote areas, and far exceeds the ACMA's own estimates of mid-band spectrum requirements in such areas.

In the metropolitan and regional areas, it is not clear that an additional 100 to 200 MHz of spectrum in the 3800-3900/4000 MHz band is required for LA WBB purposes. First, in metropolitan and regional areas, 'local area' WBB requirements can be served by the WA WBB licensees using techniques such as 5G 'network slicing.' Second, the ACMA itself notes that, in the LA WBB market today, 'on average there is around one to two operators in an area'[14] providing such services. Therefore, it makes no sense for the ACMA to budget enough spectrum for up to three LA WBB operators in all parts of Australia.[15] Finally, the 'local area' nature of LA WBB on campuses, factories, etc. implies lower power levels and/or indoor operations, and therefore much greater scope for spatial frequency re-use. Thus, even a small amount of spectrum in a metropolitan or regional area can be used and re-used many times to provide LA WBB at multiple sites throughout the area.

All of this suggests that much less spectrum is required for shared LA WBB use in the 3700-4200 MHz band than the ACMA has proposed. The SSWG would argue that only 40 MHz[16] is required for shared LA WBB use in the 3700-4200 MHz band, and then only in metropolitan and regional areas (i.e. not in remote areas where there is already plenty of

[12] Ibid p26.
[13] Ibid pp59-60.
[14] Ibid p59.
[15] Ibid p60 (assuming three different operator LA WBB operators in each area with requiring 40 to 100 MHz each).
[16] Ibid p59 (identifying 40 MHz as the minimum spectrum requirement for a single LA WBB operator).

spectrum available for such purpose). This amount of spectrum is consistent with Ofcom's conclusion that spectrum holdings as small as 40 MHz would be able to support a wide range of 5G applications and with the evidence submitted to ACMA that 40 MHz would be the minimum viable block size for LA WBB. This should provide more than enough to accommodate demand for LA WBB services, given the opportunities for spatial spectrum re-use and the anticipated presence of WA WBB licensees in metropolitan and regional areas.

3. Auction proceeds and incumbent relocation/re-tuning costs

For the reasons set out above, the SSWG believes that there is no need for any costly relocation or re-tuning by FSS or PTP incumbents in the 3700-4200 MHz band. However, if the ACMA were to pursue a solution that does involve such relocation and re-tuning, then the SSWG would urge the ACMA to consider compensating incumbents for at least the associated costs and losses.

The SSWG and its members have previously suggested that the ACMA compensate incumbents, especially when the proceeds of the subsequent auction re-allocating the spectrum to a new, 'higher value' use exceeds the incumbents' costs and losses.[17] If the ACMA's reallocation decision creates surplus benefit (as reflected in the auction proceeds) that exceeds the losses, then it is only fair that that those harmed by the ACMA's decision are compensated, e.g., by using the auction proceeds. Such a result would be closer to the theoretical *Pareto efficient* outcome where at least one person is better off, and no one is worse off, because the 'winners' have compensated the 'losers.'

While the ACMA has previously rejected such a contention as part of the 3.6 GHz re-planning process, it may want to revisit that question as a matter of basic fairness. At the very least, the ACMA should consider requesting such authority as part of the amendments to the Radiocommunications Act currently being considered by Parliament. The new legislation contemplates that spectrum licensees would be compensated for the market value of their licences in the event of a resumption of their licenses, as well as for losses, injury, damage and expenses reasonably incurred.[18] Apparatus licensees suffer the same losses if their licences are resumed, and it is only fair then that they be shown the same consideration.

[17] Communications Alliance *CA SSWG response to Five Year Spectrum Outlook 2017-21*. pp 20-21. https://www.commsalliance.com.au/__data/assets/pdf_file/0009/59598/CA-SSWG-response-to-Five-Year-Spectrum-Outlook-2017-21.pdf

[18] DITRDC *Outcomes of consultation on the Radiocommunications Legislation Amendment (Reform and Modernisation) Bill*, at Page 14. *https://www.communications.gov.au/have-your-say/consultation-exposure-draft-radiocommunications-legislation-amendment-reform-and-modernisation-bill*

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