



11 September 2019

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

RE: Invitation to comment on Planning of the 3700-4200 MHz band Discussion paper.

The Australian Broadcasting Corporation (the ABC) welcomes the opportunity to comment on the Australian Communications and Media Authority (the ACMA) discussion paper titled Planning of the 3700-4200 MHz band.

The ABC understands the global movement of adopting new wireless broadband (WBB) infrastructure and appreciates there are varying formats being utilised in different regions of the world. Finding the ideal format which works for the Australian market is critical to ensure minimal impact to existing services as WBB services are allocated spectrum.

Issues for comment:

Issue 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 ABC is in the business of gathering and producing content and distributing that content across Australia and internationally. The ABC utilises and is currently heavily dependent on C-band satellite systems to achieve its charter obligations in this regard. It is therefore no surprise, that the ability to effectively utilise satellite services is of primary concern for the ABC and its audience when considering 3700-4200 MHz band.

Issue 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?

If the C-band FSS resources become unserviceable due to the ACMA's planning activities, alternative delivery methods may be available for some of the content currently sourced on C-band satellite frequencies. However, in the case of using IP and or point to point fibre services, this would come at a much greater expense to the ABC. Receiving HD and in the future 4K content from providers into all the ABC studios, would significantly add to the burden of IP expansion which the ABC and other broadcasters are already facing. The single point of failure risk to IP services is also a serious concern for Australia's national broadcaster. Ku-band may

be an option from some content providers, but the reliability of those services would have to be managed due to the inferior rain fade performance of Ku-band frequencies.

The ABC also utilises C-band for the international distribution of its services to The Pacific and Asian regions. C-band is uniquely applicable to ensure consistent reliability and minimal rain fade, particularly into tropical areas with high rainfalls. Several regions in The Pacific and Asia where the ABC distributes its international content, IP delivery is not a viable option due to the poor quality and high cost of internet service currently available.

Issue 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?

It is noted that the ACMA is aware of both licenced and un-licenced fixed-satellite services (FSS). Television Receive Only (TVRO) services are described by the ACMA as operating on an “opportunistic basis” and therefore not afforded any protections by the ACMA. It should be noted that a number of these services, although unlicensed, are still critical to the news and content gathering functions of the ABC, which are an essential part of its charter obligations. The ABC is not alone in this news gathering function as this would also be applicable to most of the Australian commercial broadcasters. The ABC is of the opinion, a more proactive approach would be essential to protect these existing critical services if any part of the C-band satellite spectrum is going to be preserved as useful.

Issue 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?

Geographic licence management would be unlikely to effectively protect existing FSS services, especially those under the existing TVRO policies. A study undertaken by the International Telecommunications Union (ITU), outlines significant separation distances of tens or even hundreds of kilometre distances, may be required to ensure C-band services are unaffected¹. The ABC has already encountered difficulties at some of its metropolitan studios, in filtering out adjacent band WBB signals from TVRO downlinks. Due to the extreme sensitivity of earth station antennas, finding an appropriate filter to completely isolate adjacent signal from the desired frequency is quite problematic. The ABC is of the opinion, if new WBB services were licenced to operate in the same band as C-band FSS services, effective management of interference would not be possible. Despite any effort of the ACMA to isolate a WBB base station operation from a vulnerable FSS earth station, it would not be possible to control the operation of any user’s mobile device. The ACMA cannot allow operation of mobile WBB services across the same frequencies as used by sensitive FSS services without causing

¹ ITU-R S.2368, “Sharing studies between IMT-Advanced systems and geostationary satellite networks in the fixed-satellite service in the 3400-4200 and 4500-4800 MHz frequency bands,” available at: https://www.itu.int/dms_pub/itu-r/opb/rep/R-REP-S.2368-2015-PDF-E.pdf

widespread harmful interference making the C-band satellite infrastructure essentially useless. WBB licencing should be exclusive and separate from any C-band frequencies.

Conclusion

C-band satellite services are heavily utilised by the ABC and other broadcasters in Australia to provide reliable and economical distribution and receipt of content to Australian media consumers. There are no simple and economically comparable alternatives to this platform currently available. The ABC is of the opinion, that having existing C-band services share bandwidth with WBB services will result in extensive interference issues for FSS users that will be unmanageable. Therefore, WBB and satellite services should be kept in separate bands to allow effective protection and interference management. Any expansion of WBB services into the existing C-band frequencies must prioritize the protection of existing services.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'G. Bowman', is positioned above the printed name.

Gavin Bowman

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