

SBS RESPONSE TO AUSTRALIAN COMMUNICATIONS AND MEDIA AUTHORITY 'PLANNING OF THE 3700–4200 MHz BAND' DISCUSSION PAPER SEPTEMBER 2019

Introduction

The Special Broadcasting Service Corporation (**SBS**) appreciates the opportunity to comment on the Australian Communications and Media Authority (**ACMA**) *Planning of the 3700–4200 MHz Band* Discussion Paper (the **Discussion Paper**).

SBS is unique in the Australian media environment, providing multilingual, multicultural and Indigenous radio, television and digital media services that inform, educate and entertain all Australians and, in doing so, reflect Australia's multicultural society.

SBS reaches almost 100 per cent of the population through its six free-to-air TV channels (SBS SD, SBS HD, SBS VICELAND HD, SBS World Movies, SBS Food and National Indigenous Television (**NITV**)) and seven radio stations (SBS Radio 1, 2 and 3, SBS Arabic24, SBS PopDesi, SBS Chill and SBS PopAsia). Servicing 68 languages including SBS Arabic24, SBS Radio is dedicated to the nearly five million Australians who speak a language other than English at home, while the three music channels (SBS PopAsia, SBS PopDesi and SBS Chill) engage all Australians through music and pop culture from around the world.

SBS's reach is being significantly extended through SBS's digital services, including SBS On Demand, the SBS Radio App and portals which make online audio programming and information available to audiences at a time and place of their choosing.

The merits of 3700–4200 MHz band (C-band)

The C-band has been used for several decades to facilitate fixed-satellite service (**FSS**) downlink services used for long-distance content exchange between media outlets and broadcaster hubs. The use of C-Band spectrum affords materially less susceptibility to rain-fade impacts in tropical and sub-tropical regions (i.e. areas of intense rainfall) than is the case for higher frequency blocks such as Ku Band. Furthermore, the cost per unit bandwidth at C-Band is also less expensive than its Ku band alternative.

While there is a gradual trend towards the use of fibre for international content exchange, there is a need to continue the use of this spectrum block for receipt of overseas content well into the future (both in the range of 3700–4200 MHz and in the spectrum immediately below this block, at 3600–3700 MHz).

Fibre-based contribution is currently less cost-effective for long-distance (international/inter-continental) delivery to multiple ingest points compared with C-band FSS.

SBS utilisation of C-band FSS

The 3700–4200 MHz band (together with the immediately adjacent lower-frequency block 3600–3700 MHz), is vitally important to SBS for the delivery of programs from overseas media outlets. This particularly affects SBS WorldWatch, which provides international news programs in more than 30 languages, as well as a range of other international content received by SBS.

Interference management

There is a significant risk that the introduction of wireless broadband (**WBB**) and 5G services into the 3700–4200 MHz band would impinge on the delivery of international content to SBS. Interference in this band could delay or prevent the delivery of core SBS content that delivers on the organisation's Charter. This content is highly valued by SBS audiences of non-English speaking backgrounds as it provides in-language television news services; as well as providing English language international perspectives on daily news.

Relocation of existing FSS earth stations to prospective Earth Station Protection Zones (**ESPZ**) well away from population centres would prove costly and take significant time (many years) to implement. Although these relocation costs would need to be funded—presumably by the successful WBB/5G applicants (for example, as a condition of access to the spectrum)—the additional year-on-year backhaul costs to bring the downlinked content back to the respective broadcaster ingest hubs would be incurred by SBS and other users of these relocated facilities.

SBS is currently reliant on a range of C-band FSS facilities positioned in orbital slots over the arc 100–169 degrees East. Each satellite has multiple transponders which collectively operate in the range 3636–4185 MHz and are utilised by multiple parties across the Asia-Pacific region. In aggregate, these satellites are comprised of over 150 C-band transponders, and provide very extensive uplink/downlink footprints.¹ Given the spread of satellite operators, each with a large client base, it would not be practical to attempt to coordinate a restack of the transponder service feeds to Australia into one or more segments of the 3700–4200 MHz band in defined areas as suggested by ACMA as a potential planning option.²

The ACMA notes that Television Receive Only (**TVRO**) systems operate on an 'opportunistic basis' and are therefore not afforded any protection from interference without an associated apparatus licence.³ In a number of cases, TVRO systems may gain the benefit of 'umbrella' protection due to their proximity to licenced TVRO/teleport facilities. A more rigorous approach to interference protection is essential in future (i.e. to include incumbent unlicensed TVRO facilities) should any part of the 3700–4200 MHz block, and adjacent spectrum, be allocated to WBB and 5G services.

¹ East Africa, Middle East, Asia and Asia-Pacific, and West coast North America; <https://www.satbeams.com/satellites?status=active>.

² Discussion Paper, page 21.

³ Discussion Paper, page 22.

Interference protection may include the specification of separation distances between Earth Stations/TVROs (used to receive international broadcast feeds) and mobile base stations—such as those recommended in relevant International Telecommunication Union (ITU) studies. Significantly greater interference risk would arise from nomadic/itinerant users operating in the vicinity of the FSS receive facilities.

If greater spectrum utilisation could be achieved through spectrum sharing with WBB and 5G services, SBS recommends that the ACMA outline its plans for the creation and verification of a safe, useable distance between the services as part of further industry consultation.

Conclusion

Utilisation of the 3700–4200 MHz band is vitally important to SBS to source international news programs in more than 30 languages, as well as a range of other international content received by SBS, underpinning SBS's Charter obligations. Furthermore, C-band facilities are materially more cost effective than current alternative technologies (e.g. ESPZ backhaul, Ku-band, fibre/IP).

For the foreseeable future, shared spectrum arrangements in the 3700–4200 MHz band between FSS and WBB and/or 5G services will not be feasible from an interference management perspective without rigorous geographic protection zones/protection distances. These have yet to be determined in the Australian environment.

Furthermore, material segmentation of the 3700–4200 MHz band utilisation at earth stations/TVROs would appear impractical to coordinate given the number of parties involved. This may, however, prove more feasible over time as alternative contribution/distribution technologies take hold and as new contracts with satellite operators are negotiated.

The protection of existing FSS services is paramount and will need to form a key component of any plan to introduce WBB and 5G services into, or adjacent to, spectrum utilised for FSS (receive) services.