Submission by Free TV Australia

ACMA consultation paper:

- **Review of the 2 GHz spectrum licence technical framework - Consultation paper, and Technical Liaison Group paper**

December 2022

Introduction

Free TV Australia appreciates the opportunity to respond to the Australian Communications and Media Authority (ACMA) consultation on:

- Review of the 2 GHz spectrum licence technical framework

Free TV Australia is the peak industry body for Australia's commercial free-to-air television broadcasters. We advance the interests of our members in national policy debates, position the industry for the future in technology and innovation and highlight the important contribution commercial free-to-air television makes to Australia's culture and economy.

Free TV proudly represents all of Australia's commercial free-to-air television broadcasters in metropolitan, regional and remote licence areas.

Our members are dedicated to supporting and advancing the important contribution commercial free-to-air television makes to Australia's culture and economy. Australia's commercial free-to-air broadcasters create jobs, provide trusted local news, tell Australian stories, give Australians a voice and nurture Australian talent.

We note with approval that the review rightly identifies protection of adjacent band services including Television Outside Broadcasting (TOB) as a core objective.

Metric used for defining in-band and unwanted emission limits

We note a strong preference throughout the review to change from the use of EIRP to TRP as the emission limits metric, mainly for practical reasons where AAS are implemented. We recognise the dynamic nature of AAS means calculating interference from AAS deployments is statistical, and that unwanted emission limits using TRP consider the aggregated emissions. However, where assumptions (albeit sensible), such as antenna gain, must be made to calculate an interference scenario, we retain some reservations. If antenna designs (i.e., achievable gain) improve over time, considering the dynamic interference environment associated with AAS, we are concerned our collection sites could be subjected to higher levels of interference at times. It is conceivable such a situation could occur should an AAS target a subscriber either near, or in the same direction but beyond, a TOB collection site.

Proposed options for unwanted emissions below 2110 MHz

Spectrum for TOB is critical to live coverage of breaking news and major sports. It allows TV to create temporary communication channels over long distances, crucial for bringing real-time images of major breaking news stories to national audiences, however remote the location.

Seven Network, Nine Entertainment and Network TEN have Australia wide licences in the bands 2010-2110 and 2200-2300MHz, as does the ABC. All operate in accordance with the ACMA's RALI FX21. In cooperation with the ACMA, Australian TOB licensees have developed and maintain internationally recognised best practices for the implementation and licensing of electronic news gathering and television outside broadcast coverage. In more recent times they routinely coordinate spectrum access successfully via multiple concurrent agreements with space operators.

TOB stakeholders operate a network of 26 main collection sites around Australia. Typically located on elevated locations, these collection sites are highly sensitive, omni-directional, and able to receive signals from hundreds of kilometres away. Each is fitted with expensive filters at the band-edge. TOB operators often coordinate shared access, so if interference from adjacent bands adversely affects these collection sites, all broadcasters could be impacted to some extent. Interference issues, by the time they emerged, would be irreversible. The only mitigation available to TOB operators would be replacing the present band-edge filters, in essence creating a pseudo guard band within the industry's current TOB allocation. In addition to the loss of TOB spectrum utility, filter replacement costs alone would exceed US$1M.

As discussed during the TLG process, TOB operators routinely use the lower band for helicopter operations. These sometimes operate over long distances, resulting in very low receive signal levels. Any increase in the noise floor within the lower TOB allocation effectively reduces the range where helicopter links can be used. Therefore, our initial preference is no change, i.e., Option #1. However, the review indicates a strong preference for changing to the hybrid mask, presented as option #2. The impact of this change predominately impacts allocations held by the ABC, and we understand they will make their own submission. However, as TOB operators routinely coordinate and share the whole band, we accept the hybrid mask as a reasonable compromise - provided the ACMA obtains assurances from manufacturers than MNO equipment can operate within the new limits. In the absence of field trials, we also place trust in the ACMA for calculating integrated power changes and the potential noise floor increase of 2.8/3.5dB within the upmost 8/4MHz TOB channel. TOB operators have a large investment in equipment and systems that are used daily. As noted above, deployed TOB collection sites are highly sensitive and all TOB operators have an interest in preventing these systems becoming compromised by interference. If MNO equipment cannot perform within the proposed hybrid mask or the interference calculations prove to be conservative compared with reality, the impact to TOB would be very high as previously explained.

Proposed RALI FX 21 update

The review notes an update will be made to section 6.5 of RALI FX21. While not directly proposed during the TLG process, could we suggest the ACMA perhaps take this opportunity to also include the 'designated areas' resulting from the 2GHz TVOB frequency band plan review.