

ACMA Consultation 3.4GHz and 3.6GHz Technical Framework

Ericsson Australia Response



1. **The ACMA seeks comment from interested stakeholders on the draft spectrum licences for the 3.4 GHz band at Attachment A (for Option 1) and Attachment B (for Option 2).**

Ericsson notes the amendments shown in Attachment A and B but has no specific comments relating to the wording or intention of these documents.

2. **The ACMA seeks comment on the proposed sub-options 1a and 1b, including wording for the temporary synchronisation configuration. If sub-option 1b is adopted, what would be an appropriate time frame for the temporary synchronisation configuration to apply? What would be an appropriate time frame for the transition period (when both the temporary and Attachment A configuration would apply)?**

Ericsson notes that the NR (5G) standard contains a high degree of flexibility in regard to numerology, frame structures and guard periods for the operation of TDD networks. Within the standard there is the possibility to construct frame structures which will closely match the existing LTE (4G) frame structures used in Australia.

It is noted that the TLG responses indicated that a 3:1 downlink-to-uplink ratio is a popular long-term preference for 5G. This appears to be the global industry consensus at this time. Indeed, the initial releases of BTS and terminal equipment (software and hardware) will support a 3:1 ratio. This has been agreed between infrastructure and terminal vendor to facilitate rapid test and verification of 5G interworking to ensure a fast time to market. The selected subcarrier spacing (SCS) for the initial releases is 30 kHz.

Initially the focus of the industry will be developing a stable and reliable 5G network underpinned by a basic level of functionality. Over time the level of capabilities will evolve to include more of the functionality available within the 3GPP standards.

At this time, it is unclear as to the exact timing of when terminals and network equipment will support a plurality of frame structures. There is a push from numerous global operators for a 8:2 ratio to be supported (30 kHz SCS). This will be able to closely match LTE frame structure 2. The exact timing for the availability of this frame structure is to be confirmed however indications are that it should be available some time in Q1 2019, with the precise timing highly dependent on demand and global market forces.

Ericsson has no specific comments at this time on the application or timing of any ACMA mandated transition arrangements.

3. **The ACMA seeks comment on the proposed stricter unwanted emission limit in the 3100–3380 MHz frequency range, including whether it is appropriate to follow the Electronic Communications Committee and adopt an even stricter limit should they decide to adopt one.**

Ericsson acknowledges the industry consultation work being undertaken by the ECC.



As a general statement, Ericsson believes that there are benefits in having unwanted emission limits which align with 3GPP. Aligning with global requirements brings the benefits of global economies of scale in equipment supply.

The more stringent emission limits between may impose additional requirements on all radio equipment used in Australia and may necessitate the design and manufacture of equipment specifically designed for the Australian market. Perhaps an alternate solution could be implemented where all out-of-band limits align with the 3GPP limits and site-specific deployment registration limits be applied to locations that need additional protection. Indeed, global products may meet all or part of the additional isolation requirement in this band meaning that only minor changes or alterations would need to be made to site specific designs.

Such a proposal could allow operators to make alternate deployment choices in locations where interference to other systems may occur. Options that could be considered include:

- Site design constraints including antenna placement, tilts and/or pans to protect the impacted receiver(s).
- Deployment of non-AAS radio infrastructure which can allow for the implementation of additional filtering external to the radio unit (i.e. deploying a non-AAS Radio - Filter - Antenna).
- Choosing to deploy another frequency band in the impacted area.

4. The ACMA seeks comment from interested stakeholders on the proposed changes to the arrangements for unacceptable levels of interference in the 3.4 GHz band set out in the draft Radiocommunications (Unacceptable Levels of Interference – 3.4 GHz Band) Determination 2015 at attachments C, H and I.

No comment from Ericsson.

5. The ACMA seeks comment on potential methods to improve the device boundary criteria for paths over water. Is the text proposed by the ACMA suitable?

No comment from Ericsson.

6. The ACMA seeks comment from interested stakeholders on the draft Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 3.4 GHz Band) 2015 at attachments D and H (for Option 1) and attachments E and I (for Option 2).

No comment from Ericsson.

7. The ACMA seeks comment on the suitability of the updated coexistence arrangements for earth stations?



No comment from Ericsson.

- 8. The ACMA seeks comment on the suitability of the proposed amendments regarding coexistence with apparatus-licensed BWA services?**

No comment from Ericsson.

- 9. The ACMA seeks comment from interested stakeholders on the draft Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 3.4 GHz Band) 2015 at attachments F and H (for Option 1) and attachments G and I (for Option 2).**

No comment from Ericsson.

- 10. The ACMA seeks comment on the proposed additional out-of-band emission limit in cases where a synchronisation requirement does not apply. Is it appropriate to share the 20 MHz guard band equally between adjacent band licensees? If agreement cannot be achieved with all 3.4 GHz band licensees to share the 20 MHz guard band, are the proposed alternative limits suitable?**

Ericsson notes that a guard band of in the order of 20 MHz will be required to allow filter roll-off within AAS radios in order to protect unsynchronised TDD networks. Ericsson has no comments on how this should be allocated or assigned.

- 11. The ACMA seeks comment from interested stakeholders on the proposed amendment to the Radiocommunications (Trading Rules for Spectrum Licences) Determination 2012 to define a minimum contiguous bandwidth of 10 MHz for the 3.6 GHz band, as detailed in attachments H and I.**

No comment from Ericsson.

- 12. The ACMA seeks comment from interested stakeholders on the proposed amendment to the Radiocommunications (Trading Rules for Spectrum Licences) Determination 2012 to remove the minimum contiguous bandwidth for the 27 GHz band, as detailed in attachments H and I.**

No comment from Ericsson.