



TELSTRA GROUP LIMITED

Submission to ACMA Consultation:

Proposal to remake instruments for the 2.3 GHz spectrum-licensed band

Public Submission

Friday 13 October 2023



1 Introduction

We welcome the opportunity to provide our views to the ACMA's options paper on the **Proposal to remake instruments for the 2.3 GHz spectrum-licensed band**. We strongly support the ACMA's proposal to remake the instruments. These are important instruments that serve an important function in managing the coordination of transmitters in and adjacent to the 2.3 GHz band, and these instruments should not be allowed to sunset.

We also support the ACMA's proposal to create a new **Interpretation Determination**, the *Radiocommunications (Interpretation - Technical Framework) Determination 2023*. While there is already a Radiocommunication Interpretation Determination¹ containing a broad range of definitions across all types of radiocommunication including maritime, aeronautical, space, etc, we agree with the ACMA's proposed approach to create a separate Interpretation Determination specifically for the spectrum-licensed technical framework.

The remainder of our paper contains comments on each of the four draft instruments.

We also commend AMTA's submission to you, which has identified additional matters beyond those captured in our submission.

2 Comments on the draft instruments

In this section, we provide specific feedback on each of the draft instruments.

2.1. Draft Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 2.3 GHz Band) 2023

We have only one observation on the draft RAG Tx.

- **Part 1, Section 5 (Definitions), Note 2.** We observe that Note 2 (p.3) of the RAG Tx refers to a future instrument that may be made by the ACMA under the ACMA Act. Clearly, this "future" instrument is the new Interpretation Determination. We recommend the ACMA reference the new Interpretation Determination instrument by name in the RAG Tx.² This will provide much clearer guidance to users of the RAG Tx than the current approach of stating that the ACMA may make an instrument under section 64(1) of the ACMA Act.

¹ Radiocommunication (Interpretation) Determination 2015. See <https://www.legislation.gov.au/Details/F2021C00635>

² If the ACMA is concerned the new Interpretation Determination instrument won't have been made ahead of the remaking of the RAG Tx, the ACMA could refer to the Interpretation Determination using the full proposed title, but add, "expected to be known as ..." ahead of the title.



2.2. Draft Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 2.3 GHz Band) 2023.

We make the following observations about the draft RAG Rx.

- **Schedule 1, Notional Receiver Performance Characteristics.** The entire section defining the notional receiver performance characteristics in Schedule 1 has been re-written and is stated to be derived from the relevant 3GPP standards. The newly re-written schedule, at first pass, appears vastly different to the current Schedule 1 in the existing RAG Rx – previously, the schedule fitted on one page with no tables or formulas, and after re-writing extends to 2.5 pages with formulas, tables, different breakpoints in the frequency offsets, etc. Despite the apparent magnitude of changes, there was no discussion in the 2020/21 TLG process, nor has any explanatory text been provided in the consultation paper. In fact, the consultation paper explains that there are no substantive changes to the RAG Rx,³ despite what appears at first pass, to be quite a substantial re-write.

The ACMA notes the information in Schedule 1 is derived from 3GPP standards, and our closer inspection reveals the additional information to be correctly aligned with the relevant 3GPP standards, with the appropriate options selected for the Australian market.

So, while our review of the content arrives at the conclusion that the schedule is sound, we would have appreciated better explanation in the consultation paper, or through a Tune Up session, to explain the changes and why the ACMA has moved to put an increased level of detail directly into the schedule of the RAG Rx.

- **Schedule 1, Subsection 1(3), notional radiofrequency selectivity mask.** This subsection defines the response characteristics of the receiver's filter. This mask appears to have been lifted from the 850/900 MHz RAG Rx, and if applied to the 2.3 GHz band would be impractical to implement (82 dB attenuation at 9 MHz offset). Notional receiver filter characteristics for receivers operating in the 2.3 GHz band were not discussed in the 2020/21 2.3 GHz band TLG, and as such, there is no agreed set of notional receiver filter characteristics for this band. We request the ACMA remove section 1(3) from Schedule 1 of the RAG Rx.
- **Schedule 1, Section 4, Receiver blocking** (p.11). In the first line of section 4, the RAG Rx says "*For radiocommunications receivers operating in 2303 MHz to ...*". We note licences in this band commences at 2302 MHz, and we wonder whether this is a typographical error?
- **Schedule 1, Section 4, Receiver blocking** (p.11). The ACMA references 2330 MHz as the upper limit of the range of frequencies over which receiver blocking levels are to be determined. We think that the range of frequencies should be 20 MHz outside the range of the band, which would be from 2282 MHz (correctly articulated – see previous point) to 2420 MHz, rather than 2330 MHz.

³ Consultation paper, bottom of p.5.



2.3. Draft Radiocommunications (Unacceptable Levels of Interference – 2.3 GHz Band) Determination 2023.

We make the following observations about the draft ULOI.

- **Part 1, Section 5 (Definitions), Note 3.** As with Note 2 in the RAG Tx (see above), in section 5 of the ULOI, Note 3 (p.3) refers to a future instrument that may be made by the ACMA under the ACMA Act. As with the RAG Tx, we recommend the ACMA reference the new Interpretation Determination instrument by name in the ULOI as well.
- **Section 8, Accuracy.** We observe the ACMA has included a definition of “Accuracy” in the new Interpretation Determination (see section 6 of the new Interpretation Determination). However, rather than referencing the new Interpretation Determination from the ULOI, the ACMA has retained the full definition of “Accuracy” in the ULOI. We propose it would be better to reference the definition of Accuracy in the Interpretation Determination from the ULOI, rather than directly include the definition in the ULOI. We appreciate that in the ULOI, the definition of accuracy is linked to Schedule 1 of the ULOI (DBC calculation) whereas in the new Interpretations Determination, the definition of accuracy is linked to Schedule 2 of the Interpretation Determination (Vincenty’s formula), however, where sure there is a way to define “accuracy” once, and link to it for each use.

2.4. Draft Radiocommunications (Interpretation – Technical Framework) Determination 2023

We make the following observation about the draft Interpretation Determination.

- **Schedule 1, Section 1, Definitions.** The list of definitions contains a definition for “*in-band*”, which is linked to the spectrum defined in the appropriate licence type, where (a) is a spectrum licence, (b) is an AWL, and (c) is a traditional apparatus licence. Further down in the list of definitions, “*out-of-band*” is defined as frequencies that are not in-band. Ordinarily, the word “band” is used to refer to the entirety of a particular band, rather than the subset of the band for which a licensee has a licence to operate. Thus, terms like “out-of-band emissions” (which is defined in the Radiocommunications (Interpretation) Determination 2015⁴) carries a specific meaning, that is associated with tighter unwanted emission filtering than is required between adjacent users within the band.
We wonder whether, given the intention of “in-band” and “out-of-band” in this context is intended to refer only to the licensed spectrum range, whether it might be better to use the term “channel”, i.e., “in-channel” and “out-of-channel”, to avoid the potential for confusion.
We propose that if the ACMA is agreeable to use a different word to “band” that it does not use the word “block” as this could be misinterpreted to refer to the “resource blocks” that form the structure of transmissions for LTE and 5G-NR transmission coding schemes.
- We also suggest that a definition of 3GPP be included in the list of definitions since that standards body is also frequently referred to in many elements of the technical framework.⁵

⁴ <https://www.legislation.gov.au/Details/F2021C00635>

⁵ We note the term “*ITU-R Recommendation*” is defined, so it would be helpful to also define “*3GPP Standard*”.



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- We also suggest that the definitions of **mean power**, **true mean power** and **maximum true mean power** be expanded to include text referring to the relevant 3GPP document (3GPP TS 37.141) which defines the requirements and conformance tests for base station equipment.

For example, the definition for “**mean power**” could be expanded to include “... *the average power measured during an interval of time that is at least 10 times the period of the lowest modulation frequency. This power should be measured in accordance with the guidance provided in 3GPP TS 37.141.*” Similar expansions should be introduced for the other terms **true mean power** and **maximum true mean power**.