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AMTA Submission

Australian Communications & Media Authority

Automatic sunseting of legislative  
instrument: Proposal to remake  
instruments for the 2.3 GHz spectrum-  
licensed band—Consultation paper



## About AMTA

The Australian Mobile Telecommunications Association (AMTA) is the peak industry body representing Australia's mobile telecommunications industry. Its mission is to promote an environmentally, socially and economically responsible, successful and sustainable mobile telecommunications industry in Australia, with members including the mobile network operators and service providers, handset manufacturers, network equipment suppliers, retail outlets and other suppliers to the industry. For more details about AMTA, see <http://www.amta.org.au>.



## Introduction

AMTA strongly supports the ACMA proposal to remake the three legislative instruments comprising the 2.3 GHz spectrum licence technical framework (SLTF).

We note that the ACMA:

- also proposes to restructure SLTF instruments such that common elements across multiple spectrum-licensed bands are consolidated in a proposed new instrument—the *Radiocommunications (Interpretation — Technical Framework) Determination 2023* (“the ITFD”); and
- flags that they have proposed updates to the structure and formatting of the SLTF to align with those of other bands (to ensure consistency across bands).

That said, the consultation paper is light on detail and for all three SLTF instruments notes that there are “no band-specific changes” proposed. As such, we were disappointed to discover many non-trivial changes throughout the four documents, and we would have appreciated clear descriptions—or at least even being directed to—individual changes made, rather than a broad description of “updating for consistency”.

## AMTA views on draft changes to the 2.3 GHz SLTF

### Comments applicable to multiple instruments

AMTA notes that for each of the draft “Unacceptable Levels of Interference Determination” (ULoI) made under s145(4) of the *Radiocommunications Act 1992* (“the Act”) and the two draft “Radiocommunications Advisory Guidelines” (RAG) made under s262 of the Act, the “Purpose” section has been removed, with some paragraphs being retained only in a subsequent “Background” section. We believe that the purpose of these instruments should be maintained to state what these intend to achieve, up front, not buried in the background section.

We note that multiple definitions are proposed to be moved from the SLTF instruments to the ITFD. In each of the SLTF instruments, there is a Note clarifying that “A number of other expressions used in this instrument may be defined in an instrument made under subsection 64(1) of the Australian Communications and Media Authority Act 2005, including...” We note that for a reader wanting to know where these expressions are defined, it may not be clear which is the instrument “made under subsection 64(1) of the [ACMA Act]”. As such, we suggest that in each of the three SLTF instruments, this Note explicitly state the name of the instrument, i.e. “*Radiocommunications (Interpretation — Technical Framework) Determination 2023*”.

Furthermore, there a number of definitions where there is no description provided, rather just a reference to another part of the instrument. We believe this can has the reader scrolling up and

down the document unnecessarily, depending on the level of detail sought. We recommend maintaining high-level descriptive definitions, complemented by the references proposed. These definitions include:

- in the ULol, ***device boundary*** and ***device boundary criterion***
- in the RAG for managing interference to spectrum-licensed receivers (the “Rx RAG”), ***adjacent channel selectivity, intermodulation response rejection, compatibility requirement*** and ***notional receiver performance level***
- in the proposed ITFD, ***effective antenna height, emission designator, harmful interference***.

With respect to sections specifying the required “Accuracy” refer to 95% confidence, AMTA recommends that these provisions should be updated to align with 3GPP compliance requirements/methodologies, for the SLTFs for all frequency bands.

## **Unacceptable Levels of Interference (ULol) Determination**

### ***Part 7—“Unacceptable levels of interference”***

Subsection 7(1) of the ULol defines the “unacceptable levels of interference” which consist of either (1)(a) contravention of a core condition of the spectrum licence, or (1)(b) any part of the device boundary (DB) lies outside the geographic area of the spectrum licence.

This definition of unacceptable levels of interference is followed by certain exemptions: one exempting registration-exempt transmitters from the ULol, and the others permit parts of the DB to ‘overspill’ outside the geographic area of the spectrum licence in certain circumstances.

In the existing (2013) ULol,

- subsection (2) is intended to permit the DB spilling outside the Australian Spectrum Map Grid (ASMG) in certain conditions, while
- subsection (3) is intended to permit the DB spilling outside the spectrum licence area provided the overspill is only over sea (i.e. not crossing over land).
  - Subsection (3) states that this is not permitted if the overspill crosses over certain HCIS tiles covering bodies of water across which atmospheric ducting is considered likely to occur, i.e. across the St Vincent Gulf (west of Adelaide) and across the Bass Strait (between Victoria and Tasmania).

However, in the proposed ULol, the focus of subsection (2) changes from allowing overspill outside the ASMG, to allowing overspill over sea. This means that—except for the provision regarding the “ducting corridors”—the proposed subsections 7(2) and 7(3) are now identical. To address this, we suggest that subsection 7(2) is now redundant and can be deleted, such that subsection 7(3) becomes 7(2).

Furthermore, we note that in the provision “(iii) *does not cross over an area within any of the following HCIS identifiers...*”, the word ‘over’ has been changed to ‘into’. **AMTA does not support this change.**

In the aforementioned provision exempting registration-exempt transmitters (i.e. subsection (4)), we note that it is proposed to delete a clarification that states *“Accordingly, the transmitters are not required to meet the device boundary criteria specified in this Determination”*. We don’t see the need to delete this and see no harm in leaving it in for clarification.

Going back to subsection (1), the description of the unwanted emission limits and “out-of-area” emission limits is unnecessarily cumbersome. Since the unwanted emission limits and the “out-of-area” emission limits are the only core conditions in the 2.3 GHz licences, we believe it would be simpler to end the subsection (1)(a) after *“contravention of a core condition of the licence [full-stop]”*.

Lastly, we support the greater clarity provided by replacing the language *“Paragraph (1)(b) does not apply”* with *“a level of interference mentioned in paragraph (1)(b) is not unacceptable”*.

#### ***Part 9—“Transitional—radiocommunications transmitters registered before commencement of this instrument”***

AMTA wishes to support the ACMA’s introduction of these “grandfathering clauses” in SLTFs and agree with the existing clause being expanded to permit minor changes (where these would not result in the DB extending further along any radial). Again, this is a material change which should have been highlighted in the consultation paper.

However, we believe that the grandfathering clause in subsection (2) is incorrectly framed. It currently reads *“a level of interference caused by a relevant transmitter is unacceptable if it would have been unacceptable under the [ULoI] as in force at the time the relevant transmitter was included in the Register”*. The way it is currently worded, this binds all transmitters in perpetuity to the ULoI in force at the time that they were registered, regardless of whether or not they now also satisfy the current in-force ULoI.

Rather, this should be an **exemption only for a limited number of transmitters** which (a) the transmitter satisfied the ULoI in force at the time it was registered and (b) now does not satisfy the current ULoI. To achieve this, it should therefore be worded the other way around: *“a level of interference... is not unacceptable if it would have been deemed not to be unacceptable under this Determination as in force at the time the relevant transmitter was included in the Register”*. This should also be reviewed and corrected in the relevant s145 Determinations made for other spectrum-licensed bands.

Clause 9(4) referring to *“additional device boundary”* and the associated definitions in clause 9(5), should be deleted, since the only *“additional device boundary”* is defined for the 1800 MHz Band.

#### ***Item 2 of Schedule 1—Device boundary criterion***

The definition of “RP” should be in dBm EIRP **per 5 MHz**, not per MHz, to align with the reference bandwidth in the Level of Protection (LOP).

### ***Item 3 of Schedule 1—Calculation of propagation loss for device boundary criterion***

We have some suggestions for item 3 of Schedule 1:

- Subsection (1)(b) is missing the reference to section 4.5.2 of Rec. ITU-R P.526-15.
- Subsection (1)(b): Reference to the clutter loss calculation of Rec. ITU-R P.2108-0 has changed from section 3.2 to section 3, even though subsection (4) later refers to section 3.2 specifically. Should this also refer to section 3.2?
- Subsections (2)(c) and (3)(b): For a new reader or anyone that's not an experienced AP, the term "average ground height" is inconspicuous and may not draw attention to the fact that there is a prescriptive calculation for this. There should be an explicit reference to item 2 of Schedule 2 of the ITFD.
- Subsection (3)(b): The instruction should be modified to make it clearer that the path profile needs to use the average ground height; in this sense, the existing wording in the current (2013) ULol is clearer. To facilitate this, perhaps the reference to the DEM-3S can be omitted, since this is already explicit in the average ground height calculation. Rather, this section should clearly instruct that for the path profile, the height of the path profile at each point is the value of the average ground height worked out for the coordinates of that point.

### ***Schedule 3 of the current (2013) ULol***

We note that, from Schedule 3 of the current (2013) ULol:

- Part 1—Antenna height of a transmitter—is proposed to be deleted.
- Part 2—Average ground height—is proposed to be moved to the ITFD.
- Part 3—Vincenty's Direct Formulae—is proposed to be moved to the ITFD.

We note that the omission of Part 1—*Antenna height of a transmitter*—reduces the clarity of the document, and we believe this section should be retained.

## **Transmitter RAG**

### ***Part 4—Space services***

We support the ACMA's proposed clean-up of references to the requirement to protect earth station receivers being conditions on the spectrum licence; it reads better now.

There is a reference to "*Earth stations and earth receive stations...*"; this is confusing and should be replaced with "*Earth receive stations...*", noting that you cannot 'protect' an earth station (transmitter).

While we support the above changes, they were not identified in the consultation paper.

### ***Part 5—Mobile services***

Typo: 2900 MHz should be 2290 MHz in both section 12(2) and in section 13(a).

The following two clauses cancel each other out, rendering this Part redundant: on the one hand, *“Apparatus licensed fixed receive stations used for AMTA services are afforded protection from 2.3 GHz spectrum licensed radiocommunications transmitters”*, but also *“the transmitter is not taken to cause unacceptable interference to an apparatus licensed fixed receive station used for AMTA services”*. We would appreciate further discussion and clarification from the ACMA as to the intent of this Part.

#### **Part 8—Radio Astronomy Services**

The ACMA proposes the addition of protection requirements for the ARQZWA, which is another material change that was not highlighted in the consultation paper.

#### **Part 9—Radio Astronomy Services**

Should the reference to Recommendation ITU-R P.526 be updated to the latest version of the Recommendation?

### **Receiver RAG**

#### **Part 1—Preliminary**

AMTA supports that the descriptive definition of **receiver blocking** has been maintained; but we suggest that a reference to item 4 of Schedule 1 should be added. The definition of **centre frequency** should be deleted from this instrument, since it is in the ITFD.

#### **Part 2—Overview**

We support the addition of the clarification that *“this instrument... (c) sets out minimum receiver performance requirements that the ACMA will assume are met by a radiocommunications receiver, when considering whether to provide protection to the receiver in accordance with this instrument, so that the onus of managing interference is not solely placed upon the operators of radiocommunications transmitters”*.

#### **Part 3—Managing interference from other services**

Subsection 8(3) discusses out-of-band interference, even though section 8 is titled “in-band interference”. Since similar text is repeated in the following section 9 on “out-of-band interference”, it can be deleted from 8(3).

8(4) includes a significant clarification from the ACMA, changed from *“The interference management framework, if any is required, for devices operated under a class licence is contained in the relevant class licence”* to *“The ACMA does not intend to act in relation to in-band interference to a 2.3 GHz receiver caused by a radiocommunications transmitter operated under a class licence where the operation complies with all relevant conditions of the class licence”*. **We**

**disagree with this provision**, noting that the “no interference” condition associated with class-licensed operation means nothing if it cannot be enforced by the regulator.

#### ***Part 4—Minimum level of receiver performance***

We note that this is similar to the existing part, with some wording changes, and includes a clarification that “*a receiver should meet the notional receiver performance level to gain protection*”, which is useful.

#### ***Part 5—Compatibility requirement***

We support the modifications that the ACMA proposes in this section, which add both more clarity and also correctness around the application of the concept of the compatibility requirement and how it differs from the notional receiver performance level.

The ACMA proposes to add a new subsection 13(1) stating “*In relation to a fixed receiver specified in subsection (2), the licensee of a fixed transmitter operated under an apparatus licence or a spectrum licence must ensure that the transmitter meets the compatibility requirement in item 1 of Schedule 2*”. We support this addition.

Wording in the current Rx RAG refers to the receiver “meeting” the compatibility requirement, which is not a useful concept, since the receiver has to meet the notional performance, not the compatibility requirement. Rather, it is other transmitters which have to protect receiver by complying with the compatibility requirement. Accordingly, the ACMA’s proposed changes, in 13(1), refer to the *transmitter* meeting the compatibility requirement. To be afforded protection, the receiver is identified as a “specified receiver”, if it is (a) operated under a spectrum licence; (b) satisfying the notional receiver performance and (c) registered first-in-time. We welcome and support the proposed changes in this section.

#### ***Schedule 1—Notional receiver performance level***

We welcome and support the updates in general, which “modernise” the notional receiver performance to align with 3GPP. However, we note that the filter attenuation specification in section (3) is from the Rx RAG for the 850/900 MHz Band, and that in turn, that was a condition that was carried over from the old 800 MHz Band SLTF—noting the very particular situation of having the 800 and 900 MHz bands with opposite site sense and with only 1 MHz guard band. This filter should not be included in the Rx RAG for the 2.3 GHz band, and we request the removal of that section.

#### ***Schedule 2—Compatibility requirement***

We support the clarification that the compatibility requirement is “*to be provided by a radiocommunications transmitter operated under an apparatus licence or a spectrum licence*”. However, if that is the case, it is erroneous to describe the compatibility requirement as a



“minimum wanted signal level”, and it needs to be changed to a “maximum unwanted signal level”. With such a change to this definition, the magnitude of the compatibility requirement (in dBm per 5 MHz) also needs to be adjusted to reflect this. Noting that this is a band-specific change which we did not expect upon reading the consultation paper, **we request that the ACMA consult with spectrum licensees further to determine an appropriate level of protection.**

## **Interpretation Technical Framework Determination (ITFD)**

Part 4 states that this instrument (i.e. the ITFD) defines expressions used in (a) this instrument; (b) instruments made under subsection 145(4) of the Act; and (c) advisory guidelines made under subsection 262(1) of the Act. For clarity, point (b) should explicitly describe such instruments as *“Unacceptable Levels of Interference Determinations”* and point (c) should explicitly refer to *“Radiocommunications Advisory Guidelines”*.

In Schedule 2 of the ITFD

- The title of Schedule 2 should be corrected to include *“average ground height”*.
- Typo: “Vicenty” should be “Vincenty”
- This reference to *“Vincenty’s Direct Formulae”* should be followed by a reference to *“item 3 of this Schedule”*.
- Replace “9 DEM-3S cells” with “nine (9) DEM-3S cells” to avoid confusion (noting the previous DEM was 9-seconds).
- Typo in subsection (2): “for the purposes of Step 2”
- In the draft IFTD, the ACMA has omitted the Note referring to the *Digital Elevation Model Interpretation* document. We request that this Note be retained.

Australian Mobile  
Telecommunications Association

PO Box 1507, North Sydney, NSW 2059

50 Berry St, Suite 504, Level 5, North Sydney NSW 2060

[www.amta.org.au](http://www.amta.org.au)