Sunsetting of spectrum licensing legislative instruments

Outcomes paper

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# Introduction

The Australian Communications and Media Authority (ACMA) released the [Proposal to remake instruments for the 700 MHz, 1800 MHz, 2.5 GHz and 2.5 GHz mid-band gap spectrum licensed bands](https://www.acma.gov.au/consultations/2022-11/proposal-remake-instruments-700-mhz-1800-mhz-25-ghz-and-25-ghz-mid-band-gap-spectrum-licensed-bands-consultation-362022) consultation paper on 4 November 2022. The paper sought industry feedback on our proposed draft legislative instruments linked to the technical framework for several spectrum licence bands that are due to sunset on
1 April 2023.

The proposed legislative instruments to be remade were:

Radiocommunications Advisory Guidelines (Managing Interference from Transmitters – 700 MHz Band) 2012.

Radiocommunications Advisory Guidelines (Managing Interference to Receivers – 700 MHz Band) 2012.

Radiocommunications (Unacceptable Levels of Interference – 700 MHz Band) Determination 2012.

Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 1800 MHz Band) 2012.

Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 1800 MHz Band) 2012.

Radiocommunications (Unacceptable Levels of Interference – 1800 MHz Band) Determination 2012.

Radiocommunications Advisory Guidelines (Managing Interference from Transmitters – 2.5 GHz Band) 2012.

Radiocommunications Advisory Guidelines (Managing Interference to Receivers – 2.5 GHz Band) 2012.

Radiocommunications (Unacceptable Levels of Interference – 2.5 GHz Band) Determination 2012.

Radiocommunications Advisory Guidelines (Managing Interference from Transmitters – 2.5 GHz Mid-band Gap) 2012.

Radiocommunications Advisory Guidelines (Managing Interference to Receivers – 2.5 GHz Mid-band Gap) 2012.

Radiocommunications (Unacceptable Levels of Interference – 2.5 GHz Mid-band Gap) Determination 2012.

The proposed instrument to repeal was the Radiocommunications Advisory Guidelines (Additional Device Boundary Criteria – 1800 MHz Lower Band) 2012.

Five submissions were received to the consultation paper from the following organisations:

Australian Mobile Telecommunications Association (AMTA)

Bureau of Meteorology (BoM)

FreeTV

Optus

Telstra.

These submissions are available on the [ACMA website](https://www.acma.gov.au/consultations/2022-11/proposal-remake-instruments-700-mhz-1800-mhz-25-ghz-and-25-ghz-mid-band-gap-spectrum-licensed-bands-consultation-362022). A summary of submissions received and our response to the issues raised are outlined below. The [outcomes of the consultation](#_3_Outcomes_of) and how to implement these are listed in the final section of
this paper.

# Summary and response to issues

All 5 submissions were generally supportive of the proposed draft legislative instruments. This section summarises any additional responses to the specific issues for comment in the consultation paper, as well as any additional issues raised. Our views on these responses are also provided.

## Issues for comment

**Question 1**

The ACMA seeks comment on the proposed amendments in the remaking of the Radiocommunications Advisory Guidelines (Managing Interference from Transmitters – 700 MHz Band 2012).

The Optus, AMTA and Telstra submissions were supportive of the proposed changes, except for the inclusion of Parts 6 and 7 in the draft instrument.[[1]](#footnote-2) These submitters argued that it would lead to inefficient use of the available spectrum, with modelling showing it would create exclusion zones up to several kilometres in size around any apparatus licences in the 804 MHz to 809 MHz frequency band (804 MHz band). These submitters considered that the proposed change would create a level of uncertainty in network rollout and investment plans in a way that was not disclosed or foreshadowed when the 700 MHz spectrum licences were originally allocated in 2013.

Optus, AMTA and Telstra proposed an alternative approach to manage interference with new apparatus-licensed services in the 804 MHz band. The proposal was to adopt a ‘notification protocol’ for any new apparatus licences. This would involve an apparatus licensee notifying 700 MHz spectrum licensees of their intention to deploy. The apparatus licensee could then choose to implement appropriate interference mitigation measures, such as additional radiofrequency filtering, or could investigate options in another band (such as the 400 MHz band). Under this approach, it was intended that apparatus licences in the 804 MHz band would operate as a ‘secondary service’ to 700 MHz spectrum licences, thereby not preventing the deployment of future systems.

#### ACMA response

We are constantly reviewing arrangements to either improve spectrum utilisation or support the introduction of new services. This includes, for example, our ongoing work to review the technical frameworks associated with existing spectrum licences to support 5G and new technologies such as active antenna systems. These can impact services operating in or adjacent to the bands in question, and, as such, there is often a need to consider how to manage this as part of any changes made.

We have included Parts 6 and 7 in the Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 700 MHz Band) 2023. This provides guidance on the management of interference with apparatus-licensed land mobile, point-to-point and point-to-multipoint services operating in the 804 MHz band. Arrangements for these services were put in place as part of the implementation of outcomes to the [803–960 MHz band review](https://www.acma.gov.au/803-960-mhz-overview). As a result, apparatus licences affected by this replanning decision have been progressively re-locating into the
804 MHz band.

While these arrangements were not in place when 700 MHz spectrum licences were originally allocated in 2013, all spectrum licensees were part of the public consultation on, and supported the outcomes of, the [803–960 MHz band review](https://www.acma.gov.au/803-960-mhz-overview). This included the decision to re-locate land mobile, point-to-point and point-to-multipoint licences operating into the 804 MHz band. It allowed the 814 MHz to 825 MHz and 856 MHz to 870 MHz frequency bands to be re-allocated for the issue of spectrum licences (which occurred in 2021). As these apparatus licences are required to move, we consider it appropriate that they be afforded protection on the basis of the ACMA’s standard ‘first-in-time’ coordination principle. This means these apparatus licences will generally be required to coordinate with any existing 700 MHz band spectrum-licensed radiocommunications devices. However, any future devices newly operated under
700 MHz band spectrum licences will need to coordinate with the apparatus licences. Consequently, the ACMA has included Parts 6 and 7, as consulted on, which point to protection criteria contained in radiocommunications assignment and licensing instructions (RALIs) [RALI LM8, RALI FX16 and RALI FX22](https://www.acma.gov.au/ralis-frequency-coordination).

To address some of the concerns raised by spectrum licensees, we intend to review the protection criteria contained in these RALIs in 2023. It is not intended that this review would impact the level of protection provided to existing apparatus licences or any apparatus licences re-locating as part of the implementation of the 803–960 MHz band review outcomes. However, we could consider alternative criteria for proposed new land mobile, point-to-point and point-to-multipoint licenses issued after a certain date (yet to be determined).

In addition, we are aware that many operators either have not, or do not, plan to relocate their apparatus licensed services in the 800 MHz band. For example, the retuning of point-to-point and point-to-multipoint services into part of the 804 MHz band was completed on 30 June 2021. A majority of these services did not move into the relevant part of the 804 MHz band. The transition of land mobile services is required to be completed by 30 June 2024. Similarly, we are aware that a large number of land mobile services are not planning to move into the relevant part of the 804 MHz band.

**Question 2**

The ACMA seeks comment on the proposed amendments in the remaking of the Radiocommunications Advisory Guidelines (Managing Interference to Receivers –
700 MHz Band) 2012.

No issues were raised to the proposed amendments.

**Question 3**

The ACMA seeks comment on the proposed amendments in the remaking of the Radiocommunications (Unacceptable Levels of Interference – 700 MHz Band) Determination 2012.

No issues were raised to the proposed amendments.

**Question 4**

The ACMA seeks comment on the proposed amendments in the remaking of the Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 1800 MHz Band) 2012

Telstra supported the remaking of the Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 1800 MHz Band) 2012 and the proposed amendments to that instrument. Telstra also supported the deletion of the information contained in Part 7 of this instrument on the use of mobile communications systems on-board Aircraft (MCA), acknowledging that it applies to more than just the 1800 MHz band. However, it recommended this information be made available in another format by the ACMA. This includes the recommended technical conditions for use of MCA systems within spectrum licensed bands.

#### ACMA response

The ACMA notes Telstra’s recommendation. The ACMA also notes that this information is already contained in the licensing procedures for obtaining a PMTS C licence and these requirements are reflected in the licence requirements. The ACMA will consider the best way to make this information available in an alternative format on our website.

### Question 5

The ACMA seeks comment on the proposed amendments in the remaking of the Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 1800 MHz Band) 2012.

No issues were raised to the proposed amendments.

### Question 6

The ACMA seeks comment on the proposed amendments in the remaking of the Radiocommunications (Unacceptable Levels of Interference – 1800 MHz Band) Determination 2012.

No issues were raised to the proposed amendments.

### Question 7

The ACMA seeks comment on the decision to revoke the Radiocommunications Advisory Guidelines (Additional Device Boundary Criteria – 1800 MHz Lower Band) 2012 and include relevant provisions into the remade Radiocommunications (Unacceptable Levels of Interference – 1800 MHz Band) Determination 2012.

No issues were raised to the proposed amendments.

### Question 8

The ACMA seeks comment on the proposed amendments in the remaking of the Radiocommunications Advisory Guidelines (Managing Interference from Transmitters – 2.5 GHz Band) 2012.

The Telstra submission noted the proposed update to include a reference to Recommendation ITU-R M.1849 in Part 7 of the replacement instrument. Telstra observed that while the recommendation provides some information regarding the technical and operational characteristics of meteorological radars, it is informational (rather than prescriptive) and does not materially assist spectrum licensees in protecting BoM weather radars.

The Bureau of Meteorology (BoM) submission raised the following points with regards to new Part 7:

The reference to the ITU-R Recommendation (Rec) M.1464 should be amended to reference the latest ITU-R Rec M.1464-2 rather than ITU-R Rec M.1464-1. This would also include changes that have been made to the recommendation’s title. The new title would be:

‘Characteristics of non-meteorological radiolocation radars, and characteristics and protection criteria for sharing studies for aeronautical radionavigation and radars in the radiodetermination service operating in the frequency band
2 700 to 2 900 MHz’.

BoM supported the inclusion of ITU-R Rec M.1461 and ITU-R Rec M.1849.

BoM proposed the inclusion of a new provision, which would specify the maximum out-of-band emissions from transmitting stations operating in the 2.5 GHz spectrum licence band at the location of meteorological radar sites. The proposed text to be added to this instrument was:

‘(8) Protection is required for all radiodetermination services receivers operated by the Bureau of Meteorology in the 2700–2900 MHz band. The maximum power flux density limit at the radar site for out-of-band emissions from a station under a spectrum licence in the 2.5 GHz band is -132.9 dBm/MHz/m2 at the antenna height, at the radar site. Currently there is no RALI describing coordination requirements with Bureau of Meteorology radiodetermination services in the band 2700 to 2900 MHz, but such a RALI could be developed in the future.’

#### ACMA response

We note Telstra’s comments on the inclusion of ITU-R Rec M.1849. The ACMA considers the recommendation to be useful information and has kept the recommendation in the instrument.

We have agreed to BoM’s proposal to amend the reference to ITU-R Recommendation M.1464-1. To ensure it remains current, the ACMA will not include a version number. The title of the recommendation will be amended to reflect the
current title.

The ACMA does not intend to adopt any new criteria for spectrum licensed transmitters at this point in time. The requirement to meet a specified power flux density limit would require substantial consultation with spectrum licensees. We will consider the proposal on the possible development of more detailed protection criteria for meteorological radars in the 2700 MHz to 2900 MHz frequency band as part of the more detailed [review of the 2.5 GHz spectrum licence technical framework](https://www.acma.gov.au/spectrum-licence-technical-framework-review) planned for the last quarter of 2023.

### Question 9

The ACMA seeks comment on the proposed amendments in the remaking of the Radiocommunications Advisory Guidelines (Managing Interference to Receivers
– 2.5 GHz Band) 2012.

No issues were raised to the proposed amendments.

### Question 10

The ACMA seeks comment on the proposed amendments in the remaking of the Radiocommunications (Unacceptable Levels of Interference – 2.5 GHz Band) Determination 2012.

While no issue was raised to the proposed amendments, Telstra did highlight its desire to update the spectrum licence core conditions to accommodate AAS technologies at a suitable time.

#### ACMA response

The review of the 2.5 GHz spectrum licence technical framework (SLTF) is on the ACMA’s work program, as specified in the five-year spectrum outlook (FYSO)
2022–26. The review of the 2.5 GHz SLTF is proposed to begin in the last quarter of 2023, but is dependent on the progress of the 700 MHz SLTF review, which is proposed to begin in the first quarter of 2023.

### Question 11

The ACMA seeks comment on the proposed amendments in the remaking of the Radiocommunications Advisory Guidelines (Managing Interference from Transmitters – 2.5 GHz Mid-band Gap) 2012.

No issues were raised to the proposed amendments.

### Question 12

The ACMA seeks comment on the proposed amendments in the remaking of the Radiocommunications Advisory Guidelines (Managing Interference to Receivers
– 2.5 GHz Mid-band Gap) 2012.

No issues were raised to the proposed amendments.

### Question 13

The ACMA seeks comment on the proposed amendments in the remaking of the Radiocommunications (Unacceptable Levels of Interference – 2.5 GHz Mid-band Gap) Determination 2012.

#### FreeTV supported the remaking of the legislative instruments related to the 2.5 GHz mid band gap. In relation to remaking the Radiocommunications (Unacceptable Levels of Interference – 2.5 GHz Mid-band Gap) Determination 2012, FreeTV had no objection to the proposed changes to the device boundary criteria. It noted it mirrors those the ACMA has been progressively making to all spectrum licensed bands.

FreeTV indicated its desire to be part of the technical liaison group (TLG) for the
2.5 GHz band SLTF review.

#### ACMA response

The ACMA will invite FreeTV to join the TLG for the 2.5 GHz band SLTF review.

# Outcomes of consultation

After considering submissions to the consultation paper, we have remade the identified legislative instruments as proposed in the consultation paper, with the following amendments proposed by BoM in relation to the Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 2.5 GHz Band) 2023:

* The reference to ITU-R Recommendation M.1464 no longer includes a version number. The intention being that the latest version of the recommendation should always be considered.
* The title of ITU-R Recommendation M.1464 was corrected to ‘Characteristics of non-meteorological radiolocation radars, and characteristics and protection criteria for sharing studies for aeronautical radionavigation and radars in the radiodetermination service operating in the frequency band 2 700–2 900 MHz’.

The ACMA has also repealed the Radiocommunications Advisory Guidelines (Additional Device Boundary Criteria – 1800 MHz Lower Band) 2012 and included relevant provisions into the Radiocommunications (Unacceptable Levels of Interference – 1800 MHz Band) Determination 2023, as proposed in the
consultation paper.

The ACMA will also:

* In the second quarter of 2023, review the protection criteria in [RALI LM8, RALI FX16 and RALI FX22](https://www.acma.gov.au/ralis-frequency-coordination) for apparatus-licensed land mobile, point-to-point and point-to-multipoint services operating in the 804 MHz band. It is not intended that this review would impact the level of protection provided to existing apparatus licences or any apparatus licences re-locating as part of the 803–960 MHz band review outcomes. However, we could consider alternative criteria for proposed new land mobile, point-to-point and point-to-multipoint licenses issued after a certain date (which is yet to be determined).
* In the last quarter of 2023, review the 2.5 GHz SLTF. As part of this review, we will consider BoM’s request to provide more detailed guidance on the management of interference with meteorological radar stations.
1. Parts 6 and 7 provide guidance on the management of interference with apparatus-licenced land mobile, point-to-point and point-to-multipoint services operating in the 804 MHz to 809 MHz frequency band. [↑](#footnote-ref-2)