EXPLANATORY STATEMENT

Approved by the Australian Communications and Media Authority

Radiocommunications – 3.4 GHz Band Omnibus Variation 2018 (No.1)

Radiocommunications Act 1992

Authority

The Australian Communications and Media Authority (**ACMA**) has made the *Radiocommunications – 3.4 GHz Band Omnibus Variation 2018 (No. 1)* (the **Variation Instrument**) under section 88, subsection 145(4) and section 262 of the *Radiocommunications Act 1992* (the Act) and in accordance with subsection 33(3) of the *Acts Interpretation Act 1901* (the AIA).

Section 88 of the Act provides that the ACMA may determine rules for the assignment of spectrum licences and the circumstances in which licences can be varied, issued or cancelled as the result of an assignment.

Section 145 of the Act provides that the ACMA may refuse to include details of a radiocommunications transmitter that is proposed to be operated under a spectrum licence on the Register of Radiocommunications Licences, maintained by the ACMA under Part 3.5 of the Act, if the ACMA is satisfied that the transmitter could cause an unacceptable level of interference to the operation of other radiocommunications devices under that spectrum licence or any other licence.

Subsection 145(4) of the Act provides that the ACMA may determine, by written instrument, what are unacceptable levels of interference for the purposes of section 145 of the Act.

Section 262 of the Act provides that the ACMA may make written advisory guidelines about any aspect of radiocommunications or radio emissions.

Under subsection 33(3) of the AIA, where an Act confers a power to make, grant or issue any instrument of a legislative character, the power shall be construed as including a power exercisable in the like manner and subject to the like conditions (if any) to repeal, rescind, revoke, amend, or vary any such instrument.

The instrument is a disallowable legislative instrument for the purposes of the *Legislation Act 2003* (**the LA**).

A provision-by-provision description of the instrument is set out in the notes at **Attachment A**.

Purpose and operation of the instrument

The purpose of the Variation Instrument is to amend the following instruments that apply to the 3.4 GHz spectrum licenced band:

- *Radiocommunications (Trading Rules for Spectrum Licences) Determination 2012* (**the Trading Rules Determination**)
- *Radiocommunications (Unacceptable Levels of Interference – 3.4 GHz Band) Determination 2015* (**the ULI Determination**)
- *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 3.4 GHz Band) 2015* (**the RAG Rx**)
- *Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 3.4 GHz Band) 2015* (**the RAG Tx**).

The 3575-3700 MHz (**3.6 GHz**) band has recently been made available for re-allocation in various geographic areas of Australia, pursuant to three re-allocation declarations made by the Minister for Communications. Consequently, the ACMA will soon be allocating spectrum licences in this part of the band and so has expanded and extended the technical framework that currently applies to existing 3425-3492.5 MHz and 3542.5-3575 MHz (**3.4 GHz**) band spectrum licences to spectrum licenses that may be issued in the 3.6 GHz band. Amendments have also been made to support the deployment of next generation fixed and mobile broadband services as well as to define interference management criteria with other licensed services operating in and adjacent to the 3.6 GHz band.

The Trading Rules Determination sets out the rules for the trading of spectrum licences. The ACMA specifies the minimum contiguous bandwidth (MCB) in the Trading Rules Determination as the smallest contiguous bandwidth that must be held in a geographic area after a trade has occurred. This ensures that the potential for fragmentation in the various spectrum bands is reduced.

The RAG Rx and RAG Tx provide guidance on the management of interference to and from radiocommunications devices operating under spectrum licences in the 3.4 GHz band with other licensed radiocommunications devices. The ACMA takes these Advisory Guidelines into account when determining whether interference is being caused to or from a device operating under a 3.4 GHz band spectrum licence and how that interference may be managed.

Under subsection 145(1) of the Act, the ACMA may, if it is satisfied that the operation of a radiocommunications transmitter could cause an unacceptable level of interference to other radiocommunications devices, refuse to register the transmitter. The ULI Determination sets out what is meant by an 'unacceptable level of interference' in relation to a radiocommunications transmitter operated under a spectrum licence issued in the 3.4 GHz band.

Background

A spectrum licence permits a licensee, subject to specified conditions, to operate radiocommunications devices within a particular spectrum space, defined by a frequency band and a geographic area. Interference occurring between adjacent spectrum licences consists of in-band interference across geographic boundaries, and out-of-band interference across frequency boundaries. Interference can also occur between spectrum licensed services and services operating under apparatus licences and class licensing arrangements.

The Act provides a number of means by which the ACMA may manage interference to and from radiocommunications transmitters and receivers operating under a spectrum licence. These include the ability to make advisory guidelines under section 262 of the Act about interference management and to determine by written instrument what constitutes an unacceptable level of interference under subsection 145(4) for the purpose of registering transmitters. Along with the conditions on a spectrum licence, these form the technical framework for a spectrum licenced band.

The 3.4 GHz band was originally made available for re-allocation by way of the issue of spectrum licences in April 2000. Licences issued as a result of that re-allocation process were, largely, re-issued in 2015, and further spectrum licences in unallocated spectrum in the band were allocated through an auction process pursuant to the *Radiocommunications (Spectrum Licence Allocation – Multi-band Auction) Determination 2017*. The ACMA has a technical framework in place that covers these frequency ranges. Spectrum licences within these frequency ranges are issued for use in various metropolitan, major regional centres and regional areas of Australia.

The set of legal instruments that form the technical framework for the 3.4 GHz band are the *Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 3.4 GHz Band) 2015*, *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 3.4 GHz Band) 2015* and the *Radiocommunications (Unacceptable Levels of Interference – 3.4 GHz Band) Determination 2015.*

On 5 March 2018, the Minister for Communications made the following re-allocation declarations (the **Declarations**):

> *Radiocommunications (Spectrum Re-allocation—3.6 GHz Band for Adelaide and Eastern Metropolitan Australia) Declaration 2018*
> *Radiocommunications (Spectrum Re-allocation—3.6 GHz Band for Perth) Declaration 2018*
> *Radiocommunications (Spectrum Re-allocation—3.6 GHz Band for Regional Australia) Declaration 2018*

The Declarations provide that the spectrum in frequency ranges 3.6 GHz band is to be reallocated by issue of spectrum licences in specified metropolitan and regional areas defined in the Declarations.

The 3542.5-3575 MHz segment of the 3.4 GHz band and the 3.6 GHz band are directly adjacent to each other and spectrum in the 3.4 GHz and 3.6 GHz bands is considered substitutable from an economic perspective. For this reason it was decided to incorporate the 3.6 GHz band into the existing technical framework for the 3.4 GHz band. It is also considered that a single technical framework will simplify network design for any licensees that may acquire holdings of spectrum across any segment of the 3.4 GHz and 3.6 GHz bands and will help to reduce the complexity of any future defragmentation of spectrum holdings in the broader 3400–3700 MHz band.

In March 2018, the ACMA established a Technical Liaison Group (**TLG**) to provide advice on what changes should be made to the 3.4 GHz band technical framework to accommodate the allocation and issue of spectrum licences in the 3.6 GHz band and emerging technologies. In addition to changes to the 3.4 GHz band technical framework, the TLG also proposed updating the Trading Rules Determination to ensure it extends to the trading of spectrum licences in the 3.6 GHz band.

It was also identified that the Trading Rules Determination still included a definition for a minimum contiguous bandwidth (MCB) in the 26500-27500 MHz (27 GHz) band. The 27 GHz band was, until January 2017, subject to spectrum licensing. However, upon licence expiry the licences were not re-issued. The band is now subject to apparatus licensing. The MCB definition for the 27 GHz band is therefore no longer required.

Consultation

Before the Variation Instrument was made, the ACMA was satisfied that consultation was undertaken to the extent appropriate and reasonably practicable, in accordance with section 17 of the LA.

The ACMA has consulted extensively with stakeholders about the updates to the Trading Rules Determination, RAG Rx, RAG Tx and the ULI Determination.

In March 2018, the ACMA established the TLG. Incumbent spectrum and apparatus licensees, manufacturers and other interested stakeholders for the 3.4 GHz and 3.6 GHz bands were invited to participate in the TLG process. The role of the TLG was to consider and provide advice to the ACMA on updates required to ensure that the technical framework:

- incorporates the 3.6 GHz band;
- includes interference management requirements with all relevant services in and adjacent to the 3.6 GHz band; and
- accommodates new technologies such as active antenna systems.

The outcomes of the TLG are available on the ACMA website at www.acma.gov.au.

The ACMA took into account the views expressed by the TLG when preparing variations to the Trading Rules Determination, RAG Rx, RAG Tx and the ULI Determination. The ACMA also publically consulted on the draft variations proposed to be made to those instruments from 18 May to 15 June 2018 in order to give all interested parties an opportunity to comment on the proposed changes.

Three technical framework options where included in the public consultation. A summary of the major difference between these options follows:

- Option 1: Applied a mandated synchronisation fall-back condition to manage interference between 3.4 GHz and 3.6 GHz spectrum licences (synchronisation requirement). It also considered different dates for the synchronisation requirement to commence under two separate sub-options;
- Option 2: Only mandated a synchronisation requirement in the 3.6 GHz band. Stricter out-of-band emission limits applied between 3.4 GHz licences and between 3.4 GHz and 3.6 GHz band licences when needed to manage interference;
- Option 3: Maintained the existing 3.4 GHz band technical framework and created a new one for the 3.6 GHz band. Stricter out-of-band emission limits applied between 3.4 GHz and 3.6 GHz band licences when required to manage interference.

Eleven submissions were received during the public consultation period. Most submissions were in favour of Option 1 and having the synchronisation requirement start when any 3.6 GHz band spectrum licences issued via auction commence on 30 March 2020. This approach was adopted by the ACMA. As a result of the public consultation no additional changes were proposed to be made to

the Trading Rules Determination. However, a number of changes to the other instruments to be varied were identified and have been incorporated into the Variation Instrument. Many of these were minor in nature and were made in order to clarify the proposed operation of the technical framework across the band and to correct minor errors. The most significant change was to the ULI Determination. This involved the inclusion of a new subsection 9(4) that states that sections of the device boundary that extend beyond a licence area and only pass over water are not considered to fail the device boundary criteria. The possible inclusion of this subclause was included in the consultation paper. All submissions that addressed the matter supported the inclusion of this new provision.

Regulatory impact

The ACMA consulted with the Office of Best Practice Regulation (the **OBPR**) on the requirement for a Regulation Impact Statement (**RIS**). The OBPR advised that the Variation Instrument does not warrant the preparation of a RIS because the instrument is likely to have only minor and machinery impacts. The reference number for the OBPR's assessment is OBPR ID 23648.

Documents incorporated by reference

The Variation Instrument incorporates the following instruments and documents made by the ACMA by reference, or otherwise refers to them:

> The Australian Spectrum Map Grid 2012 (ASMG);
> The Radiocommunications Assignment and Licensing Instruction No. FX 14, Point to Multi-point Fixed Services in Specified Parts of the 3.4 – 3.5 GHz Band (RALI FX 14);
> The Radiocommunications Assignment and Licensing Instruction No. FX 19, Frequency Coordination and Licensing Procedures for Apparatus Licensed Broadband Wireless Access Services in the 1900–1920 MHz and 3575–3700 MHz Bands (RALI FX 19);
> The Radiocommunications Assignment and Licensing Instruction No. MS 39, Frequency Coordination and Licensing Procedures for Apparatus Licensed Public Telecommunication Services in the 3.5 GHz Band (RALI MS 39);
> The Radiocommunications Assignment and Licensing Instruction No. MS 44, Frequency Coordination Procedures for the Earth Station Protection Zones (RALI MS 44).

Each of these documents and instruments made by the ACMA is incorporated as existing from time to time, as permitted by subsection 314A(2) of the Act. Copies of the documents and instruments are published on the ACMA's website at www.acma.gov.au.

The Variation Instrument also incorporates, or otherwise refers to, several International Telecommunication Union (ITU) Recommendations (ITU-R Recommendations). The ITU describes itself as the United Nations' specialised agency for information and communication technologies, and the ITU-R Recommendations constitute a set of international technical standards developed by the Radiocommunication Sector of the ITU. They are available to be downloaded for free from the ITU's website at www.itu.int. The ITU-R Recommendations are incorporated as existing from time to time, as permitted by subsection 314A(2) of the Act.

The Variation Instrument also incorporates the following legislative instruments, or otherwise refers to them:

- *Radiocommunications (Spectrum Re-allocation—3.6 GHz Band for Adelaide and Eastern Metropolitan Australia) Declaration 2018;*
- *Radiocommunications (Spectrum Re-allocation—3.6 GHz Band for Perth) Declaration 2018; and*
- *Radiocommunications (Spectrum Re-allocation—3.6 GHz Band for Regional Australia) Declaration 2018.*

The legislative instruments listed above may be obtained from the Federal Register of Legislation (www.legislation.gov.au). The legislative instruments listed above are incorporated as in force from time to time, in accordance with subsection 14(1) of the LA.

The Variation Instrument also refers to the Geoscience Australia website accessible at www.ga.gov.au, and the Register of Radiocommunications Licensees accessible at www.acma.gov.au.

Statement of compatibility with human rights

Subsection 9(1) of the *Human Rights (Parliamentary Scrutiny) Act 2011* requires the rule-maker in relation to a legislative instrument to which section 42 (disallowance) of the LA applies to cause a statement of compatibility with human rights to be prepared in respect of that legislative instrument.

The statement of compatibility set out below has been prepared to meet that requirement.

Overview of the Variation Instrument

Section 88 of the *Radiocommunications Act 1992* (the Act) provides that the ACMA may determine rules for the assignment of spectrum licences and the circumstances in which licences can be varied, issued or cancelled as the result of an assignment.

Section 145 of the Act provides that the Australian Communications and Media Authority (ACMA) may refuse to include details of a radiocommunications transmitter that is proposed to be operated under a spectrum licence on the Register of Radiocommunications Licences if the ACMA is satisfied that the transmitter could cause an unacceptable level of interference to the operation of other radiocommunications devices under that or any other spectrum licence, or any other licence.

Subsection 145(4) of the Act provides that the ACMA may determine, by written instrument, what are unacceptable levels of interference for the purposes of section 145.

Section 262 of the Act permits the ACMA to make advisory guidelines about any aspect of radiocommunication or radio emissions.

The purpose of the *Radiocommunications – 3.4 GHz Band Omnibus Variation 2018 (No.1)* (the Variation Instrument) is to amend the following instruments:

- *Radiocommunications (Trading Rules for Spectrum Licences) Determination 2012*
- *Radiocommunications (Unacceptable Levels of Interference – 3.4 GHz Band) Determination 2015*
- *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 3.4 GHz Band) 2015*
- *Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 3,4 GHz Band) 2015.*

These amendments are made to expand the definition of the 3.4 GHz band to include the 3.6 GHz band and support the allocation of spectrum licences in the band and deployment of next generation fixed and mobile broadband services. The amendments also define protection requirements for apparatus licensed services operating in and adjacent to the 3.6 GHz band.

Human Rights Implications

The ACMA has assessed whether the Variation Instrument is compatible with human rights, being the rights and freedoms recognised or declared by the international instruments listed in subsection 3(1) of the *Human Rights (Parliamentary Scrutiny) Act 2011* as they apply to Australia.

Having considered the likely impact of the instrument and the nature of the applicable rights and freedoms, the ACMA has formed the view that the Variation Instrument does not engage any of those rights or freedoms.

Conclusion

The Variation Instrument is compatible with human rights as it does not raise any human rights issues.

ATTACHMENT A

Detailed description of the instrument

Section 1 Name

This section provides for the instrument to be cited as the *Radiocommunications – 3.4 GHz Band Omnibus Variation 2018 (No.1).*

Section 2 Commencement

This section provides that the instrument commences on the day after it is registered on the Federal Register of Legislation.

Section 3 Authority

This section identifies the provisions that authorise the making of the instrument, namely sections 88 and 262, and subsection 145(4), of the *Radiocommunications Act 1992*.

Section 4 Variation – *Radiocommunications (Trading Rules for Spectrum Licences) Determination 2012*

This section provides that Schedule 1 varies the *Radiocommunications (Trading Rules for Spectrum Licences) Determination 2012*.

Section 5 Variation – *Radiocommunications (Unacceptable Levels of Interference – 3.4 GHz Band) Determination 2015*

This section provides that Schedule 2 varies the *Radiocommunications (Unacceptable Levels of Interference – 3.4 GHz Band) Determination 2015*.

Section 6 Variation – *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 3.4 GHz Band) 2015*

This section provides that Schedule 3 varies the *Radiocommunications Advisory Guidelines (Managing Interference to Spectrum Licensed Receivers – 3.4 GHz Band) 2015.*

Section 7 Variation – *Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 3.4 GHz Band) 2015*

This section provides that Schedule 4 varies the *Radiocommunications Advisory Guidelines (Managing Interference from Spectrum Licensed Transmitters – 3.4 GHz Band) 2015*.

Section 8 References to other instruments

This section provides that in the instrument, unless the contrary intention appears:

- a reference to any other legislative instrument is a reference to that other legislative instrument as in force from time to time; and
- a reference to any other kind of instrument is a reference to that other instrument as in force from time to time.

Schedule 1 – Amendments

Item 1 – Schedule 1 (item 13)

The table in Schedule 1 to the Trading Rules Determination defines the MCB for different spectrum licence bands. The frequency range in item 13 has been extended to incorporate the 3.6 GHz band.

Item 2 – Schedule 1 (item 14)

Item 14 of the table in Schedule 1 has been deleted as the 27 GHz band is no longer subject to spectrum licensing. Accordingly, the definition of an MCB is no longer required.

Schedule 2 – Amendments

Item 1 Subsection 5(1) (definition of *3.4 GHz band*)

The definition of the ***3.4 GHz band*** in the ULI Determination has been extended to include the 3.6 GHz band.

Item 2 Subsection 5(1) (after the definition of *geographic area*)

New definitions ***HCIS identifier*** and ***hierarchical cell identification scheme*** or ***(HCIS)*** have been added. This is due to the inclusion of a new Schedule 4 in the ULI Determination which uses these terms.

Item 3 Subsection 5(1) (after the definition of *Recommendation ITU-R P.526-13*)

A definition of ***total radiated power*** has been included. This term is referenced in a new note inserted in Part 2, paragraph 1 of Schedule 2 of the ULI Determination by item 7 of the instrument.

Item 4 Paragraph 9(1)(b)

This item adds the new subsections 9(3) and (4) (inserted by item 5 below) as exceptions that may apply to the general statement in paragraph 9(1)(b) that interference caused by a radiocommunications transmitter operated under a 3.4 GHz spectrum licence will be deemed to be unacceptable if any part of the device boundary of the transmitter lies outside of the geographic area of the licence.

Item 5 Subsection 9(2)

New subsections 9(3) and 9(4) have been added after subsection 9(2).

Subsection 9(3) has been included so that assessment of the device boundary criteria defined in Schedule 2 of the Determination is not required within defined earth station protection zones (**ESPZs**) in Schedule 4 of the Determination. Interference management into ESPZs is managed via alternate means as defined in the RAG Tx.

Subsection 9(4) has been included so that any radials that extend beyond the licence area that only pass over the Australian territorial sea baseline are not considered to fail the device boundary criteria. The exceptions to this are radials that cross defined sections of the Gulf of St Vincent and Bass Strait (as defined by the HCIS identifiers IW3E, IW3I, IW3M, IW6A, IW6E, KX9, LX7, LX8, LX9). This is because there is a strong risk of interference to and from services deployed in Adelaide and Yorke Peninsula, as well as, between Victoria and Tasmania due to frequent and long periods of ducting.

Item 6 Schedule 2 (Part 1, paragraph 1)

This section has been updated to reduce the minimum step size of the device boundary from 500 metres to 250 metres. This change along with the change in the level of protection used for the device boundary also requires an amendment to the maximum number of increments ‘m’ for each radial of the device boundary. The new maximum value of ‘m’ is calculated by determining the distance required for the horizontally radiated power from a transmitter operating at the maximum in-band radiated power permitted by a 3.4 GHz spectrum licence to drop below the level of protection defined

in Part 2 of Schedule 2 of the ULI Determination. Smooth earth propagation is assumed in calculations. For the purpose of the calculation the victim receiver is assumed to have the receiver characteristics defined in Schedule 2 of the ULI Determination.

For the scenario defined above a distance of 108 km was determined. This equates to 432 increments of length 250 metres. Therefore the maximum value of 'm' is set at 432.

Item 7 Schedule 2 (Part 2, paragraph 1, after the definition of RP)

A new note has been added to provide guidance to licensees on how to determine the device boundary for transmitters with active antenna systems.

Item 8 Schedule 2 (Part 2, paragraph 1, in the definition of LOP))

The level of protection that the device boundary criteria is assessed against has been increased from –111 dBm per MHz to –98 dBm per MHz. This is intended to support the deployment of services closer to the geographical boundary of spectrum licences.

Item 9 Schedule 2 (Part 3, paragraph 3)

The changes to this section are to mirror the reduction in the step size of the device boundary made in other sections from 500 metres to 250 metres.

Item 10 Schedule 3 (Part 3, paragraph 1)

The changes to this section mirror the reduction in the step size of the device boundary from 500 metres to 250 metres.

Item 11 After Schedule 3

A new Schedule 4 has been inserted into the Determination. It defines the geographical area of earth station protection zones (ESPZs). It is intended that the device boundary criteria are not deemed to fail within these areas provided the offending radial does not also cross the geographical boundary of another spectrum licence.

Schedule 3 – Amendments

Item 1 Subsection 1.4(1) (definition of *3.4 GHz band*)

The definition of the ***3.4 GHz band*** in the RAG Rx has been extended to include the 3.6 GHz band.

Item 2 Subsection 1.4(1) (after the definition of *Act*)

A definition of an ***active antenna system*** has been included. This is due to the use of the term in an amendment to Schedule 3 of the RAG Rx made by the instrument.

Item 3 Subsection 1.4(1) (after the definition of *subsection 145(4) determination*)

A definition of ***unwanted emissions*** has been included. This term is intended to replace the terms spurious and out-of-band emissions in the RAG Rx.

Item 4 Part 3

The following key changes to Part 3 of the RAG Rx have been made by substituting that Part:

- Subsection 3.1(1) has been amended to provide guidance on how in-band interference is managed between spectrum licences that have a condition included on their spectrum

licence requiring them to synchronise with other spectrum licensees in the 3.4 GHz and 3.6 GHz band (***synchronisation requirement***);

- Subsections 3.1(2) and (5) have been amended to include guidance on how in-band interference from apparatus licences in the 3575-3700 MHz band is managed;
- Subsection 3.1(4) has been amended to reference the new subsection 3.2(4) that provides additional guidance to spectrum licensees on managing interference from radiodetermination service;
- A new subsection 3.2(4) has been included to provide advice and guidance to spectrum licensees on managing interference with radiodetermination services.

Item 5 Subsection 4.1(1)

The term 'out-of-band' emissions is replaced with the broader term 'unwanted' emission.

Item 6 Subsection 5.1(3)

Subsection 5.1(3), including the note, has been replaced to provide new guidance on how adjacent band interference is managed between spectrum licensees.

Item 7 Subsection 5.1(4)

Subsection 5.1(4) has been repealed as the restricted block is no longer in use. It is replaced with the text from the previous subsection 5.1(5).

Item 8 Subsection 5.1(5)

Subsection 5.1(5) has been repealed as the corresponding text has been moved to subsection 5.1(4). It is replaced with the text from the previous subsection 5.1(6). A note has been added providing guidance on how devices with active antenna system (AAS) are dealt with for the purposes of managing interference.

Item 9 Subsection 5.1(6)

Subsection 5.1(6) has been repealed as the corresponding text has been moved to subsection 5.1(5)

Item 10 Schedule 1 (paragraph (3))

The adjacent channel selectivity of the notional receiver has been updated to account for larger bandwidth systems typically associated with next generation fixed and mobile wireless broadband systems.

Item 11 Schedule 1 (paragraph (5))

The receiver blocking requirement of the notional receiver has been updated to account for larger bandwidth systems typically associated with next generation fixed and mobile wireless broadband systems.

Item 12 Schedule 3

Schedule 3 has been repealed because it is no longer required to manage adjacent band interference. This is done via the mechanisms referred to in the amended subsection 5.1(3) of RAG Rx.

Schedule 4 – Amendments

Item 1 Subsection 1.5(1) (definition of *3.4 GHz band*)

The definition of the ***3.4 GHz band*** in the RAG Tx has been extended to include the 3.6 GHz band.

Item 2 Subsection 1.5(1) (definition of *RALI FX19*)

The title of RALI FX19 has been updated to reflect the removal of the 2010-2025 MHz band from the RALI.

Item 3 Subsection 1.5(1) (after the definition of *RALI MS 39*)

A definition of ***RALI MS 44*** has been included. This is because it is referenced in new Parts 9 and 10 of the RAG Tx.

Item 4 Section 2.3 (first dot point)

With the extension of the definition of the 3.4 GHz band to include the 3.6 GHz band, fixed links now also operate within the 3.4 GHz band, not just adjacent to it. Section 2.3 has been amended to reflect this.

Item 5 Section 2.3 (fifth dot point)

Section 2.3 has been updated to include references to new Parts 9 and 10. A note has been added providing guidance on how devices with AAS are dealt with for the purposes of managing interference.

Item 6 Subsection 3.1(1)

With the extension of the definition of the 3.4 GHz band to include the 3.6 GHz band fixed links now also operate within the redefined 3.4 GHz band, not just adjacent to it. Subsection 3.1(1) has been amended to reflect this.

Item 7 Subsection 4.2 (3) (second sentence)

A spelling error has been corrected.

Item 8 Section 4.3

The protection requirements for earth stations operating in the 3600-4200 MHz band in section 4.3 have been amended. The major changes to section 4.3 are:

- inclusion of coordination criteria to manage co-channel interference into earth receiver stations operating in the 3600-3700 MHz band;
- inserting a definition of a new radiofrequency filter for use in coordination;
- including a note below Table 1 of Part 4 clarifying how the RF filter applies to an antenna with multiple earth station receive licences operating on it; and
- adding a requirement for spectrum licensees to notify affected earth receive licensees of any new systems to ensure they have a suitable radiofrequency filters installed.

In addition to the changes to section 4.3, a new section 4.4 has been included to provide guidance on how to manage interference to incumbent earth receiver stations operating in the 3600-3700 MHz band.

Item 9 Section 5.1

A spelling error has been corrected.

Item 10 Section 5.2(2)

Section 5.2 has been amended to remove the additional unwanted emission limit requirement for devices operating under a spectrum licence when managing adjacent band interference with apparatus licences. Adjacent band interference is now managed on a first-in-time basis as per the protection criteria specified in the relevant Radiocommunications Assignment and Licensing Instructions (RALI). Clarification has also been included as to who is responsible for bearing costs when managing interference with apparatus licences.

Item 11 Section 6.1

The frequency range of operation for radiolocation services has been extended from 3300-3400 MHz to 3100-3400 MHz to reflect current and proposed use.

Item 12 Section 6.2

The frequency range of operation for radiolocation services has been extended from 3300-3400 MHz to 3100-3400 MHz to reflect current and proposed use.

Item 13 Section 7.1

The frequency range for devices operated under a class licence has been extended to include the 3.6 GHz band.

Item 14 Note after subsection 8.2(2)

A spelling error has been corrected.

Item 15 After subsection 8.2(3)

A new subsection 8.2(4) has been added to provide guidance on how cross border interference is managed between spectrum licensees in lieu of other arrangements being agreed to. A note has also been included to provide guidance on how devices with AAS can be considered for the purposes of managing interference.

Item 16 After Part 8

New Parts 9 and 10 have been inserted into the RAG Tx. New Part 9 provides guidance on how to manage interference with ESPZs. New Part 10 provides guidance on how to manage interference into the earth station facility operated near Uralla (NSW).