EXPLANATORY STATEMENT

Issued by the Australian Communications and Media Authority

Radiocommunications (Unacceptable Levels of Interference – 2 GHz Band) Determination 2015

Radiocommunications Act 1992

Purpose

The Australian Communications and Media Authority (ACMA) has made the *Radiocommunications (Unacceptable Levels of Interference – 2 GHz Band) Determination 2015* (the Determination).

The Determination revokes and replaces the *Radiocommunications (Unacceptable Levels of Interference – 2 GHz Band) Determination 2000* (the 2000 Instrument) without making any significant changes to the regulatory arrangements created by the 2000 Instrument.

The ACMA has made the Determination because the 2000 Instrument was due to "sunset" (i.e. be automatically repealed) on 1 October 2015, in accordance with Part 6 of the *Legislative Instruments Act 2003* (the LIA). Following review, and consultation as described below, the ACMA formed the view that the 2000 Instrument was operating effectively and efficiently, and continued to form a necessary and useful part of the legislative framework. Accordingly, the ACMA has remade the 2000 Instrument by making the Determination, without any significant changes, so that its on-going effect is preserved.

Legislative Provisions

The Determination has been made by the ACMA in accordance with subsection 145(4) of the *Radiocommunications Act 1992* (the Act) and in accordance with subsection 33(3) of the Acts *Interpretation Act 1901* (the AIA).

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

Subsection 33(3) of the AIA relevantly provides that where an Act confers a power to make a legislative instrument, 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.

Background

On 7 October 2000, the then Minister for Communications, Information Technology and the Arts made the *Radiocommunications (Spectrum Re-allocation) Declaration No.2 of 2000*, which allowed the introduction of spectrum licensing in the 2 GHz band (1900 MHz – 1920 MHz (Lower band), 1920 MHz – 1980 MHz (Upper band A) and 2110 MHz – 2170 MHz (Upper band B)) in particular geographic areas of Australia for mobile telecommunications services.

The 2 GHz spectrum licences are primarily used to authorise mobile telecommunications services in metropolitan, regional and remote areas of Australia. The 2 GHz spectrum licences are subject to the provisions outlined in the Determination which seek to ensure that high levels of emissions from transmitters operated under a 2 GHz spectrum licence are kept within the geographic area and frequency band of the licence, and that special account is taken of the increase in emission levels caused by placing transmitters at high sites.

Operation

The Determination identifies what is an unacceptable level of interference caused by a transmitter operating under a spectrum licence issued in the 2 GHz band. This is to ensure that high levels of emission from transmitters are contained within the geographic area and frequency band of the licence.

Consultation

Subsection 17(1) of the LIA requires that, before the ACMA makes a legislative instrument, the ACMA must be satisfied that any consultation that it considers is appropriate and reasonably practicable to undertake has been undertaken.

In this case, the ACMA consulted publicly from 15 December 2014 to 6 February 2015 by means of a consultation paper along with a draft version of the proposed instrument published on its website. That paper explained the sunsetting process and the ACMA's preliminary view that the existing arrangements should be saved from automatic repeal and remade without any significant changes. Interested parties were invited to comment. The ACMA received one submission in response to the consultation paper which it took into account when making the Determination and which caused it to clarify some aspects of the final instrument without altering their substantive effect.

Detailed Description of the Determination

Details of the Determination are set out in **Attachment A.**

Documents incorporated in this Determination by Reference

The Determination incorporates by reference the following documents as in force from time to time or otherwise refers to them:

- *Radiocommunications Act 1992*
- ACMA information paper: *Registration of radiocommunications devices under spectrum licences* (available on the ACMA website: www.acma.gov.au)
- *Radiocommunications Advisory Guidelines (Protection of Apparatus-licensed and Class-licensed Receivers — 2 GHz Band) 2015*
- *Radiocommunications Advisory Guidelines (Managing Interference from Apparatus-licensed and Class-licensed Transmitters — 2 GHz Band) 2015*
- *Australian Spectrum Map Grid 2014* (copies made available by the ACMA)
- Radio Regulations published by the International Telecommunication Union (available on the ITU website: http://www.itu.int)
- *Radiocommunications (Transmitter Licence Tax) Determination 2015*
- *Radiocommunications (Receiver Licence Tax) Determination 2015*

Acts and legislative instruments referenced in the Determination can be found on the Australian Government's ComLaw website (http://www.comlaw.gov.au/).

Statement of Compatibility with Human Rights

As required under the *Human Rights (Parliamentary Scrutiny) Act 2011*, a Statement of Compatibility with Human Rights has been prepared by the ACMA and is at **Attachment B.**

Regulation Impact Statement

Under the Guidance Note *Sunsetting Legislation* published by the Office of Best Practice Regulation (OBPR) in March 2013, streamlined administrative processes apply to sunsetting legislative instruments. As the ACMA has determined that the 2000 Instrument was fit for purpose, and should be remade without any significant changes, and has certified those matters to OBPR, no Regulation Impact Statement (RIS) is required in relation to the making of the Determination (OBPR reference number ID 17001).

Attachment A

Details of the *Radiocommunications (Unacceptable Levels of Interference – 2 GHz Band) Determination 2015*

Section 1 – Title

Section 1 provides that the Determination is called the R*adiocommunications (Unacceptable Levels of Interference – 2 GHz Band) Determination 2015*.

Section 2 – Commencement

Section 2 provides that the Determination commences on the day after it is registered on the Federal Register of Legislative Instruments.

Section 3 – Revocation

Section 3 provides that the 2000 Instrument is revoked.

Section 4 - Purpose

Section 4 provides that the purpose of the Determination is to set out what is an unacceptable level of interference caused by a transmitter operating under a spectrum licence issued in the 2 GHz band, so as to ensure that high levels of emissions from those transmitters are kept within the geographic area and frequency band of the licence.

Section 5 – Interpretation

Section 5 defines various terms which are used in the Determination.

Section 6 – Group of transmitters

Subsection 6(1) defines what a group of transmitters is for the purposes of the Determination.

Subsection 6(2) provides that a transmitter can belong to more than one group of transmitters.

Section 7 – Group of receivers

Subsection 7(1) defines what a group of receivers is for the purposes of the Determination.

Subsection 7(2) provides that a receiver can belong to more than one group of receivers.

Section 8 – Unacceptable level of interference

This section provides what is an unacceptable level of interference for the purposes of interference management in the 2 GHz band. A radiocommunications transmitter producing emissions that do not meet the requirements of the Determination will, in most circumstances, be refused registration by the ACMA under subsection 145(1) of the Act. Licensees who operate such devices without registration will be in breach of the licence condition referred to in section 69 of the Act and may be subject to further compliance action under the Act.

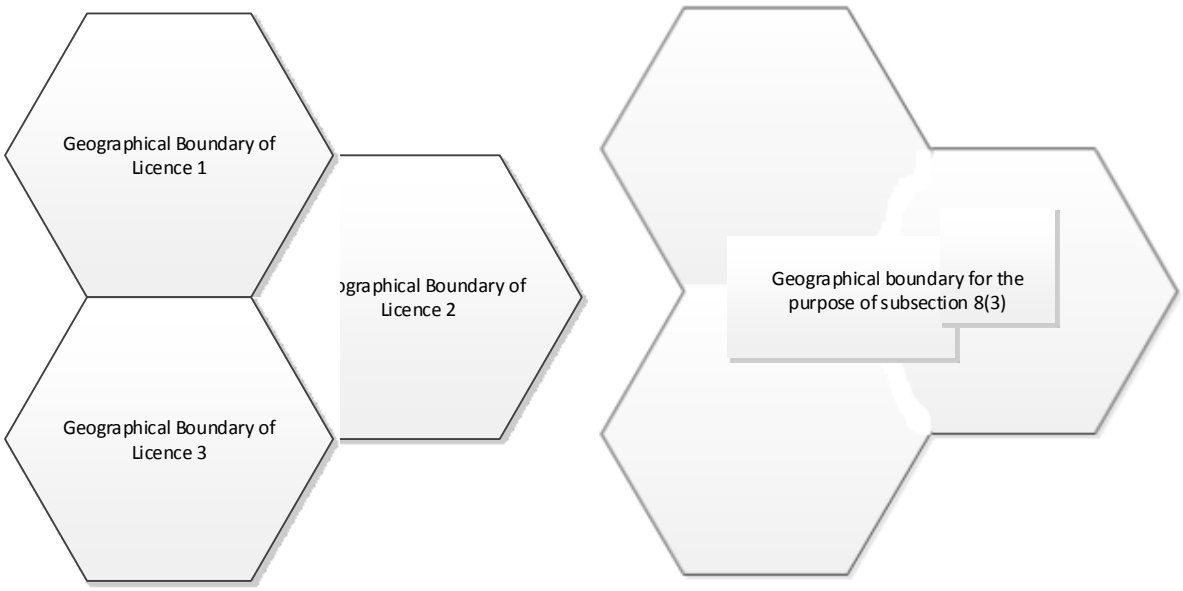
Subsections 8(1) – 8(9) of the Determination set out circumstances under which a spectrum licensed radiocommunications transmitter will be considered to have caused an unacceptable level of interference. This occurs if:

- The operation of the transmitter breaches the core conditions of the licence relating to the maximum permitted level of radio emissions from the radiocommunications transmitter outside of the geographic boundaries or frequencies of the licence (subsection 8(2));

- In relation to transmitters operating under a group of licences, either by agreement with an adjacent licensee or owned by the same licensee, that cover adjacent geographic locations,

any part of the device boundary (as defined by the Determination) lies outside the combined geographic area of the licences (subsection 8(3)) – Figure 1 below provides a graphical description of this subsection;

Figure 1



- Interference caused by a transmitter of a single licence is considered as unacceptable if the licenced registered device lies outside the geographic area of that licence (subsection 8(4));
- The device boundary for the transmitter cannot be calculated in accordance with Schedule 2 of the Determination (subsection 8(5));
- The horizontal radiated power for a mobile transmitter is greater than 25 dBm EIRP per 30 kHz (subsection 8(7));
- The horizontal radiated power for a mobile transmitter operating in the bands 1900.0-1900.5 MHz is greater than 10 dBm EIRP per 30 kHz (subsection 8(8));
- A fixed transmitter operating in the band 1920-1980 MHz has:
    - an effective antenna height for any segment 1, $he_1(\phi_n)$ greater than 20 meters; or
    - a horizontal radiated power greater than 25 dBm EIRP per 30 kHz for 1% of the time in any 1 hour period (subsection 8(9)).

Subsection 8(6) provides that in spite of subsections 8(3), 8(4) and 8(5), the operation of certain mobile, fixed or High Altitude Platform Station transmitters will not be considered to cause unacceptable interference if they operate in accordance with the core conditions of the relevant licence.

Section 9 – Emission designator

This section clarifies that the emission designator of a radiocommunications transmitter's emission is worked out in in accordance with the latest version of Appendix 1, *Classification of emissions and necessary bandwidths*, of the ITU Radio Regulations. For the purpose of working out the designation of the transmitter's emission, the references in Appendix 1 to necessary bandwidth for a given class

of emission are taken to be references to the effective occupied bandwidth of the transmitter. The emission designator of a radiocommunications transmitter's emission is relevant when determining whether two or more fixed transmitters are a group of radiocommunications transmitters under section 6 of the Determination.

Schedule 1 – Centre location and effective radius of a transmitter

This Schedule defines the centre location, in terms of the location of the antenna in latitude and longitude, and effective radius of a transmitter (and for a group of transmitters) for use in determining unacceptable levels of interference under section 8. The effective radius of a transmitter can range from zero for a fixed transmitter up to the greatest distance from the centre location of a group of transmitters to the location of any transmitter in the group.

Schedule 2 – Device boundaries

This Schedule sets out the technical procedure for calculating the device boundary of a radiocommunications transmitter or group of radiocommunications transmitters. The device boundary is a theoretical boundary calculated around a radiocommunications transmitter, or group of radiocommunications transmitters, using the methodology set out in Schedule 2. Calculation of the device boundary is relevant for applying section 8 of the Determination. For example, under subsection 8(4), a transmitter is taken to cause an unacceptable level of interference if any part of its device boundary lies outside the geographic area of the spectrum licence. Under subsection 8(5), if the device boundary of a transmitter cannot be calculated in accordance with Schedule 2, it is taken to cause unacceptable levels of interference.

Part 1 of Schedule 2 details the steps to be followed in calculating the device boundary for a single radiocommunications transmitter. For a group of radiocommunications transmitters, the device boundary is to be calculated by considering the group as if it were a single transmitter.

Part 2 of Schedule 2 defines the device boundary criterion (DBC), which is the mathematical expression used in the calculation of a device boundary in accordance with Part 1 of Schedule 2. This mathematical expression consists of the radiated power of the device (transmitter) minus the maximum power function. The DBC has functional dependencies which include the horizontally radiated power of the device, the level of protection for standard radiocommunications receivers used in the 2 GHz band, the nominal receiver antenna gain and the propagation loss over the radiocommunications path for each radial and increment combination.

The calculation of the device boundary in Part 1 of Schedule 2 is an iterative process and involves testing whether the DBC specified in Part 2 of Schedule 2 is met at increasing distances (of 500 metre increments) from the radiocommunications transmitter along radial lines spaced around the centre location of the transmitter. The latitude and longitude of the first point on a radial where the DBC is less than or equal to zero is considered to be the furthest point of the device boundary on this radial. The endpoints of each of the radials must be within the geographic area of the licence under which the transmitter operates for the transmitter to be taken not to cause unacceptable interference.

Schedule 3 – Effective antenna height

This schedule specifies the procedure for calculating effective height, taking account of average ground height above sea level and antenna height above ground.

These heights are calculated with reference to a digital elevation model sourced from Geoscience Australia and are made available to all spectrum licensees to ensure consistency in application of the propagation loss calculations.

Attachment B

Statement of Compatibility with Human Rights

Prepared in accordance with Part 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*

Radiocommunications (Unacceptable Levels of Interference – 2 GHz Band) Determination 2015

The legislative instrument is compatible with the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011.*

Overview of the Legislative Instrument

The *Radiocommunications (Unacceptable Levels of Interference – 2 GHz Band) Determination 2015* revokes and replaces the *Radiocommunications (Unacceptable Levels of Interference – 2 GHz Band) Determination 2000* without making any significant changes to the regulatory arrangements created by that instrument.

The *Radiocommunications (Unacceptable Levels of Interference – 2 GHz Band) Determination 2015* identifies unacceptable levels of interference caused by spectrum licensed transmitters operating in the 2 GHz band.

Human Rights Implications

The *Radiocommunications Unacceptable Levels of Interference – 2 GHz Band) Determination 2015* does not engage any of the applicable rights or freedoms.

Conclusion

The legislative instrument is compatible with human rights as it does not raise any human rights issues.