

EXPLANATORY STATEMENT

Issued by the Australian Communications and Media Authority

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

Radiocommunications Act 1992

Purpose

The purpose of the *Radiocommunications Advisory Guidelines (Managing Interference from Transmitters – 2.5 GHz Mid-band Gap) 2012* (the **Advisory Guidelines**) is to provide guidance to assist in the protection of radiocommunications receivers operating in, or adjacent to, the frequency band 2570-2620 MHz (the **2.5 GHz Mid-band Gap**) from interference caused by radiocommunications transmitters operating under a spectrum licence in the 2.5 GHz Mid-band Gap. The Advisory Guidelines also provide guidance to assist in the protection of radio-astronomy services operating in the Mid-West Radio Quiet Zone in Western Australia.

Legislative Provisions

Section 262 of the *Radiocommunications Act 1992* (the **Act**) provides that the Australian Communications and Media Authority (the **ACMA**) may make written advisory guidelines about any aspect of radiocommunication or radio emissions.

Subsection 262(2) of the Act provides a non-exhaustive list of examples of the matters about which advisory guidelines may be made, one of which is ‘interference with radiocommunications’.

The Advisory Guidelines are a legislative instrument under the *Legislative Instruments Act 2003*.

Background

The 2500-2690 MHz frequency band is used primarily by free to air broadcasters and the Australian Broadcasting Corporation (ABC) for television outside broadcasting (**TVOB**), including electronic news-gathering (**ENG**). However, broadcasters have faced uncertainty about long-term spectrum arrangements in that frequency band since 2000, when the band was identified internationally for broadband wireless access services (**WAS**).

In January 2010, the ACMA commenced a review of the 2500-2690 MHz frequency band to:

- > plan and allocate the band to maximise the overall benefit derived from that spectrum; and
- > provide incumbent licensees with greater long-term certainty in light of strong emerging demand for the band to be used for competing purposes—for example, for WAS.

In January 2010, the ACMA released a discussion paper, '*Review of the 2.5 GHz band and long-term arrangements for ENG*'¹ (**January 2010 discussion paper**). The January 2010 discussion paper included the ACMA's preliminary view on its preferred approach for the band, which was broadly:

- > reallocation of the 2500–2570 MHz and 2620–2690 MHz bands for spectrum licensing, with technical frameworks that are technology flexible but are optimised for WAS;
- > conversion of ENG apparatus licences to spectrum licences in the 2570–2620 MHz band; and
- > facilitation of ENG/TVOB access to identified alternative bands.

Following consideration of responses received to the January 2010 discussion paper, in October 2010 the ACMA announced its intention to give existing ENG services access to the 2.5 GHz Mid-band Gap and to make the 2500-2570 MHz and the 2620-2690 MHz bands (together, the **2.5 GHz band**) available in Australia to support WAS, including 4G mobile broadband.²

To assist stakeholders in understanding how the ACMA reached a view on appropriate future arrangements in the 2.5 GHz band and alternative bands, the ACMA released a response paper, '*Review of the 2.5 GHz band and long-term arrangements for ENG – Response to Submissions*' which summarised the issues raised in response to the January 2010 discussion paper and set out the ACMA's preliminary response to those issues.³

To provide long term access in the 2.5 GHz Mid-band Gap the ACMA proposed to convert the ENG/TVOB apparatus licences in the 2.5 GHz Mid-band Gap to spectrum licences. To enable the conversion to spectrum licensing the ACMA is required to put in place a spectrum licence technical framework for the 2.5 GHz Mid-band Gap. The technical framework will define a spectrum licensee's rights and obligations and provide an interference management framework for the 2.5 GHz Mid-band Gap.

The Advisory Guidelines are part of a set of legal instruments which will give effect to the spectrum licence framework applicable to the 2.5 GHz Mid-band Gap. The other instruments required for this purpose are listed below:

- > *Radiocommunications (Spectrum Designation) Notice No. 1 of 2012*;
- > *Radiocommunications Spectrum Conversion Plan (2.5 GHz Mid-band Gap) 2012*;
- > *Radiocommunications (Unacceptable Levels of Interference — 2.5 GHz Mid-band Gap) Determination 2012*; and

¹ The full discussion paper can be accessed at:

http://www.acma.gov.au/webwr/assets/main/lib311275/2.5ghz_discussion_paper_ifc01-10.pdf.

² See ACMA media release 132/2010, 21 October

http://www.acma.gov.au/WEB/STANDARD/pc=PC_312322.

³ Response to submissions paper, and submissions received, can be accessed at: www.acma.gov.au/WEB/STANDARD/pc=PC_312013.

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

Operation

These Advisory Guidelines are part of the technical framework that the ACMA is implementing to enable ENG/TVOB to be supported in the 2.5 GHz Mid-band Gap under spectrum licensing.

The Advisory Guidelines aim to manage the potential for unwanted emissions, blocking and intermodulation products caused by radiocommunications transmitters operating under a spectrum licence in the 2.5 GHz Mid-band Gap. These transmitters have the potential to interfere with radiocommunications receivers of different services including:

- > fixed services, such as point-to-point links authorised under apparatus licences and operating in spectrum adjacent to the spectrum licensed 2.5 GHz Mid-band Gap;
- > space services, including space research systems receiving signals from deep space in spectrum below the spectrum licensed 2.5 GHz Mid-band Gap; and
- > radiolocation receivers authorised for use under apparatus licences in the band 2700-2800 MHz, above the spectrum licensed 2.5 GHz Mid-band Gap.

The Advisory Guidelines set out the technical parameters that spectrum licensees should use to assist in mitigating interference to receivers operating in or adjacent to the 2.5 GHz Mid-band Gap.

Operators of spectrum licensed services and apparatus licensed services should use the Advisory Guidelines in the planning of services or the resolution of interference.

The ACMA will take the Advisory Guidelines into account when determining whether a spectrum licensee is causing interference to a radiocommunications receiver that is being operated in accordance with applicable licence conditions.

The Advisory Guidelines do not limit the actions of a spectrum licensee in negotiating operating or protection requirements with another licensee.

Consultation

The ACMA has consulted extensively with stakeholders about its plans to develop a spectrum licensing technical framework for the 2.5 GHz Mid-band Gap.

In July 2011, the ACMA set up a number of short-term industry technical liaison groups (**TLGs**) to assist with the development of technical frameworks including the support of ENG/TVOB in the 2.5 GHz Mid-band Gap and the introduction of 4th generation broadband mobile/wireless access services in the 2500-2570 GHz and 2620-2690 MHz bands.

As part of the TLG process for the 2.5 GHz mid-band Gap, existing licensees providing ENG/TVOB licensees as part of the TLG process for the 2.5 GHz Mid-band Gap were asked to consider and

provide advice to the ACMA on technical aspects required for the development of the spectrum licence technical framework. These included:

- > the development of the core conditions of the spectrum licensed band in accordance with section 66 of the Act;
- > the development of the determination on unacceptable levels of interference made under section 145 of the Act;
- > the development of any associated advisory guidelines made under section 262 of the Act; and
- > the development of the draft spectrum licence.

The ACMA prepared several papers which outlined its proposed approach to the spectrum licensing framework for the 2.5 GHz Mid-band Gap. These papers were made available by the ACMA to ENG/TVOB licensees for comment.

The ACMA had regard to the views expressed by the ENG/TVOB licensees when preparing these Advisory Guidelines. There were no specific or significant concerns raised by the licensees in relation to the Advisory Guidelines.

The ACMA also undertook wider public consultation in relation to these Advisory Guidelines. On 13 July 2012, the ACMA released draft legislative instruments (including a draft version of these Advisory Guidelines) for comment.⁴ These instruments were accompanied by an information paper to explain the draft instruments and provide context to assist interested parties in making a submission.⁵

Submissions to the consultation were open until 3 September 2012. A total of 4 responses were received. There were no specific or significant concerns raised in the submissions relating to the Advisory Guidelines.

Regulatory Impact Analysis

The Office of Best Practice Regulation (the OBPR) approved the Regulation Impact Statement '*Future Arrangements for the 2.5 GHz radiofrequency band and long-term arrangements for ENG*' on 24 May 2011 (OBPR ID 11300).

Documents incorporated into the Advisory Guidelines by reference

The Advisory Guidelines incorporate the following documents by reference:

- > RALI FX-03 Microwave Fixed Services Frequency Coordination, which are Radiocommunications Assignment and Licensing Instructions produced by the ACMA that provide important radiocommunication technical policy, guidelines and useful information

⁴ See http://www.acma.gov.au/scripts/nc.dll?WEB/STANDARD/1001/pc=PC_410423.

⁵ The information paper can be accessed at:
http://www.acma.gov.au/scripts/nc.dll?WEB/STANDARD/1001/pc=PC_410423.

for the coordination and licensing of microwave fixed services. Copies of these instructions are available from the ACMA's website at www.acma.gov.au.

- > RALI MS-32 Coordination of Apparatus Licensed Services within the Mid-West Radio Quiet Zone, which are Radiocommunications Assignment and Licensing Instructions produced by the ACMA that provide processes for co-ordination with the Mid-West Radio Quiet Zone. Copies of these instructions are available from the ACMA's website at www.acma.gov.au.

Detailed Description of the Instrument

Further details of the Advisory Guidelines are set out in Attachment A.

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 *Legislative Instruments Act 2003* applies to cause a statement of compatibility to be prepared in respect of that legislative instrument. This statement is Attachment B.

NOTES ON SECTIONS

Part 1 – Preliminary

Section 1.1 – Name of guidelines

This section provides that the name of the Advisory Guidelines is the *Radiocommunications Advisory Guidelines (Managing Interference from Transmitters – 2.5 GHz Mid-band Gap) 2012*.

Section 1.2 – Commencement

This section provides that the Advisory Guidelines commence on the day on which the *Radiocommunications Spectrum Conversion Plan (2.5 GHz Mid-band Gap) 2012* commences. This provision ensures that the commencement of the Advisory Guidelines coincides with the process for converting existing apparatus licences in the band to spectrum licences.

Section 1.3 – Purpose

This section states that the purpose of the Advisory Guidelines is to manage interference from radiocommunications transmitters operated under a spectrum licence to protect receivers operating under other radiocommunications licences in or adjacent to the 2.5 GHz Mid-band Gap.

The ACMA intends to take these Advisory Guidelines into account in settling any interference dispute that may arise between spectrum licensees and any licensees in or adjacent to the licensed areas and bands.

Section 1.4 – Interpretation

This section provides definitions for the terms used in the Advisory Guidelines. Some terms used in the instrument have the same meaning as in the *Australian Radiofrequency Spectrum Plan 2009*, the Act and the *Radiocommunications (Unacceptable Levels of Interference - 2.5 GHz Mid-band Gap) Determination 2012*.

Part 2 – Background

Section 2.1 – Background

This section provides general information and guidance on mitigating interference to radiocommunications receivers operating in and adjacent to the 2.5 GHz Mid-band Gap from radiocommunications transmitters operated under a spectrum licence in the 2.5 GHz Mid-band Gap. The section lists the radiocommunications receivers covered by the Advisory Guidelines. The section also recommends ITU-R Recommendation P.1144 as a guide to be followed for the suitable propagation model for determining path loss for planning transmitters to minimise the risk of interference to receivers covered by the Advisory Guidelines.

Part 3 – Other Spectrum Licensed Receivers

Section 3.1 – Background

This section provides that Part 3 of the Advisory Guidelines applies to fixed receivers operating in spectrum licensed bands other than the 2.5 GHz Mid-band Gap. The Part is intended to apply to fixed receivers that operate on frequencies that are in close proximity to the 2.5 GHz Mid-band Gap.

Section 3.2 – Wireless access services

This section provides a description of wireless access service network stations that are likely to be operating in the 2500-2570 MHz and 2620-2690 MHz bands. The section provides that the necessary technical information can be found in the documents that make up the technical framework for spectrum licences in the 2.5 GHz band.

Section 3.3 – Protection requirements

Subsection 3.3(1) sets out the protection requirements for fixed receivers operated under a spectrum licence in the 2.5 GHz band that exist prior to the registration of transmitters operated under spectrum licences in the 2.5 GHz Mid-band Gap. The protection requirements mean that it is typically necessary for fixed transmitters operating under spectrum licences in the 2.5 GHz Mid-band Gap to operate in coordination with nearby fixed receivers. Subsection 3.3(2) provides directions to the location and antenna information of fixed receivers to facilitate this coordination.

Part 4 - Fixed Service Receivers

Section 4.1 – Background

This section explains that Part 4 addresses how transmitters operated under spectrum licences in the 2.5 GHz Mid-band Gap should be co-ordinated with receivers in systems operating as fixed services in spectrum in and adjacent to the 2.5 GHz Mid-band Gap. The types of systems referred to include point-to-point fixed links operating on an ad-hoc basis and those in formalised point-to-point link bands.

The formal point-to-point fixed link bands are assigned in accordance with criteria set out in Radiocommunications Assignment and Licensing Instruction (**RALI**) FX-3 and this section refers spectrum licensees to the RALI when considering the deployment of infrastructure under the spectrum licence. A note to subsection 4.1(2) also points to the Register of Radiocommunications Licenses for details of existing fixed service receivers. A copy of the latest version of RALI FX-03 is available from the ACMA's website.

Section 4.2 – Protection requirements

This section sets out the protection requirements for spectrum licensees to ensure that the licensee does not cause interference to point-to-point fixed links currently in the Register of Radiocommunications Licences.

For apparatus-licensed point-to-point fixed links not located in the 2.1 GHz and 2.2 GHz bands, protection requirements are found in relevant recommendations of the ITU-R and RALI FX-03.

For apparatus-licensed point-to-point fixed links located in the 2.1 GHz and 2.2 GHz bands, protection requirements are found in RALI FX-03.

Part 5 – Radio astronomy service receivers

Section 5.1 – Background

This section explains that Part 5 applies to the protection of sensitive radio astronomy service receivers operated in bands in and adjacent to the 2.5 GHz Mid-band Gap.

The section also describes the site located in remote central Western Australia which has been identified for future radio astronomy use and has been protected by the establishment of the Mid-West Radio Quiet Zone by the *Radiocommunications (Mid-West Radio Quiet Zone) Frequency Band Plan 2011*.

The Mid-West Radio Quiet Zone has been established across the radio spectrum from 100 MHz through to 25 GHz.

Section 5.2 – Protection requirements

This section requires licensees in areas adjacent to the Mid-West Radio Quiet Zone to coordinate proposed stations with reference to the methods and limits set out in RALI MS-32.

Statement of Compatibility with Human Rights

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

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

This 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

Under section 262 of the *Radiocommunications Act 1992* (the **Act**) the Australian Communications and Media Authority (the **ACMA**) may make advisory guidelines about any aspect of radiocommunication or radio emissions.

The purpose of the *Radiocommunications Advisory Guidelines (Managing Interference from Transmitters – 2.5 GHz Mid-band Gap) 2012* (the **Advisory Guidelines**) is to provide guidance to assist with the management of interference from radiocommunications transmitters operated under a spectrum licence in the 2.5 GHz Mid-band Gap, so as to provide for the protection of radiocommunications receivers operating in or adjacent to the 2.5 GHz Mid-band Gap.

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 *Legislative Instruments Act 2003* (the **LIA**) applies to cause a statement of compatibility to be prepared in respect of that legislative instrument.

The Advisory Guidelines are a legislative instrument subject to disallowance under section 42 of the LIA.

Human Rights Implications

The Advisory Guidelines do not engage any of the applicable rights or freedoms.

Conclusion

The Advisory Guidelines are compatible with human rights as they do not raise any human rights issues.