

Area-wide licensing

ACMA approach to introducing area-wide licences

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Introduction

Purpose

This paper sets out the approach of the Australian Communications and Media Authority (ACMA) to implementing the area-wide apparatus licence (AWL) type.

The development of an area-wide apparatus licence type is a response to changes in technology and requests from spectrum users for additional flexibility within the apparatus licensing system. The AWL type is intended to offer another form of licensed spectrum use under a set of key attributes that include:

- > **Area-based:** A licence will authorise radiocommunications devices within a specified area, rather than at specific location(s). Interference with other services is primarily managed through the use of technical conditions that apply to the geographic and frequency boundary of the licence, rather than by detailed technical specifications for radiocommunications devices authorised under the licence.
- > **Broad application:** The licences may be used for a wide range of purposes, uses, services, applications and technologies. However, an individual licence, when issued, may include special conditions that limit the operation of a radiocommunications device under the licence to an identified purpose, use or service.
- > **Scalable:** The licences will be capable of being adapted to a variety of technologies and/or uses, with different-sized areas and frequency bandwidths.
- > **Aggregable:** A number of AWLs adjacent in geography, frequency, or both, can be aggregated into a single transmitter licence, with boundary conditions applying only to the boundary of the aggregated licence, not the component licences. Aggregation is expected to require the surrender of the component licences and the issue of a new transmitter licence that covers the areas of the component licences.

This framework is intended to provide licensees with 'building blocks' to support a wide range of spectrum uses, network types and service and technology uses. AWLs include:

- > the 'area-wide' type for transmitter licences
- > the 'area-wide receive' type for receiver licences.

The paper outlines the issues on which the ACMA is seeking feedback as part of considering the implementation of AWLs in a particular frequency band. The ACMA intends that specific arrangements for interference management will be subject to stakeholder consultation before AWLs can be issued. The approach the ACMA adopts in a particular band will not necessarily be used for other bands that are considered for AWLs.

This statement of general approach cannot and does not bind the Authority's discretion in the making of future decisions about the matters discussed in this paper or any other matter. The ACMA will assess each decision it makes under the *Radiocommunications Act 1992* (the Act), and under any future legislation, on its merits and in accordance with the requirements of any applicable legislation and administrative law.

Background

The ACMA has made the Radiocommunications Legislation (2020 Measures No. 1) Instrument 2020 and the Radiocommunications Licence Conditions (Area-Wide Licence) Determination 2020 (AWL LCD) instruments, which together make up the regulatory framework for AWLs.

The first instrument consists of amendments to:

- > the Radiocommunications (Specified Radiocommunications Receivers and Types of Transmitter Licences and Receiver Licences) Determination 2014 to reference the AWL as a transmitter licence type and receiver licence type
- > the Radiocommunications (Interpretation) Determination 2015 to define the AWL concept and related terms, including that the frequency band for the service and the geographic area within which area-wide stations and area-wide receive stations (if any) are located will be specified in the licence¹
- > the Radiocommunications (Register of Radiocommunications Licences) Determination 2017 (RRL Determination) to exempt AWL licensees from certain device registration requirements, unless a licence condition requires otherwise.

The AWL LCD contains a condition for the provision, upon request, of information by licensees regarding radiocommunications devices authorised under the AWL transmitter licence type.

In June 2019, the ACMA [sought feedback](#) on drafts of these instruments. The ACMA's response to submissions can be found in the key documents section of the consultation.

¹ This information will be available on the licence PDF image for each AWL. The licence PDF image will be accessible through the Register of Radiocommunications Licences.

Features of area-wide apparatus licences

The AWL type has been designed to enhance the flexibility and adaptability of spectrum regulation and to facilitate innovation. Australia's spectrum landscape is constantly changing, with new technologies and uses of spectrum placing varying technical demands on the apparatus licensing framework. The AWL type will broaden licensee choice and facilitate new or expanded uses for spectrum.

The AWL regulatory framework provides the foundation for the area-wide transmitter licence type which will be adaptable to licensee needs. This framework is intended to provide licensees with 'building blocks' e.g. aggregated AWLs, that can be acquired to meet a range of network sizes or topographies and can essentially be service or technology neutral, as long as the standard licence conditions for the relevant band are met.

The ACMA has also established a receiver-only version of the AWL type to cater for possible future demand for such a licence option. The intended purpose of a receiver licence is to provide receivers with protection from interference through coordination and registration. As with existing receiver licences, radiocommunications devices operated under an area-wide receive licence would only be permitted to receive radiocommunications and would not be permitted to transmit radiocommunications of any kind.

In the consultation on the AWL instruments, it was proposed that AWLs will generally not require registration of devices prior to the device being operated. The ACMA considered stakeholder feedback on this proposal and has taken the view that registration of a device prior to operation under an AWL should only be required if registration is necessary to manage the risk of interference with other devices.

The ACMA will carefully consider whether device registration is needed on a band-by-band basis when considering the implementation of AWLs in a particular band (see below for more details). The main reason for reducing device registration requirements is because, in comparison to other site-based apparatus licences in which the issue of the licence is contingent on the coordination of a device at a particular location, AWLs will authorise one or more radiocommunications devices within a defined frequency range and geographic area. Interference issues will be primarily managed at the frequency and area boundaries of the licence and not by reference to the device.

As amended by the Radiocommunications Legislation (2020 Measures No. 1) Instrument 2020, the Register of Radiocommunications Devices (the Register) need not contain the details specified about radiocommunications devices at subsections 10(4), 10(5), 10(6) and 10(7) of the RRL Determination unless a requirement is specified in the AWL LCD or in the licence itself.

Issuing area-wide apparatus licences

The ACMA will carefully assess a number of issues in considering the implementation of an AWL in a particular band. This will include the licensing arrangements that exist in the relevant band (if any), the likely technologies and deployment scenarios that will be employed in the band, and the necessary conditions for co-existence of services. The ACMA will also be guided by its [Principles for spectrum management](#), including assessing the potential utility and benefit to spectral efficiency of issuing particular licence types in a band.

The ACMA will only consider using AWLs where the existing licensing, planning and/or pricing arrangements do not accommodate the likely technical characteristics of, or demand for, the service to be provided.

Generally, the ACMA does not intend to issue AWLs in a particular band, until we have consulted on and decided:

- > The technical conditions that should apply to radiocommunications devices operating under the licence and the boundary conditions of the licence (for example, the maximum signal strength levels at the geographic and/or frequency boundaries of the licence) that will apply to AWLs to mitigate the risk of interference to neighbouring and/or adjacent spectrum users.
- > The minimum and/or maximum geographic area and frequency bandwidth for licences issued in the band.
- > Whether radiocommunications devices (or a subset of devices) authorised under the proposed AWLs should be required to be registered prior to operation.
- > Whether AWLs for the particular band should be issued administratively or by price-based allocation under section 106 of the Act.
- > The amount of annual apparatus licence tax that will be applied.
- > Any other matter the ACMA considers relevant to the issue of AWLs and the operation of devices under an AWL.

Managing interference and use of spectrum

In order to maximise licensee flexibility through area-based licensing that is technology and service-neutral, geographic and frequency boundary conditions will be primarily used to manage interference between an AWL and another licence (including another AWL). This approach involves applying conditions at the geographic and frequency boundaries of the licence to manage co-existence with services adjacent in area and frequency. The ACMA expects that the area-based licensing approach will enable greater deployment flexibility to licensees compared to other apparatus licence types while still minimising the risk of interference between licensees operating radiocommunications devices in adjacent areas and frequencies.

While the AWL is conducive to small-area deployments, it is not designed to be limited to these, and its applicability to wider-area deployments will be considered when the ACMA is planning or re-planning a particular band. In contemplating the implementation of AWLs in a particular band, the ACMA will assess the potential

demand for AWLs that extend to large areas, e.g. state-wide. The ACMA will consult stakeholders as part of this consideration.

When considering AWL implementation details for a particular band, the ACMA will assess factors such as frequency range and the type of service expected to be deployed in the band to determine the minimum geographic size of any particular licence. The ACMA will use the [Australian spectrum map grid \(ASMG\)](#) and the Hierarchical Cell Identification Scheme (HCIS) to define the geographic area of the licence. In order to allow licence areas to be accurately mapped to the area in which a licensee is planning to deploy services, and to minimise arbitrary boundaries that have the potential to lead to inefficient use of spectrum, careful consideration will be given to providing an underlying grid of sufficient granularity to define the area authorised by a licence. This may include new smaller HCIS levels than currently used in the ASMG. The ACMA will consult stakeholders as part of this consideration.

Managing coexistence between authorised services is a significant consideration when developing new planning and licensing arrangements. Before AWLs are issued in a new band, the ACMA will ensure that consideration has been given to the appropriate management of the potential for harmful interference from radiocommunications devices authorised under the AWL to other spectrum users, and the potential for harmful interference from other spectrum users to radiocommunications devices authorised under the AWL. Existing services within a particular band and in adjacent bands will be considered when allocating AWLs. Arrangements, including licence conditions and associated administrative guidelines, will be made to ensure the appropriate protection of incumbent services over time while allowing new users to access the band. The ACMA will consult stakeholders as part of this consideration.

Where necessary or appropriate, the ACMA will publish technical planning information to ensure AWLs meet specific technical requirements. This technical planning information is likely to be in the form of a Radiocommunications Assignment and Licensing Instruction (RALI) that is specific to the relevant band. This material will be provided to stakeholders for consultation prior to finalisation of the technical planning.

AWL Licence Condition Determination

The AWL LCD contains a condition that is common to all area-wide transmitter licences. With some exceptions, this condition requires licensees to provide information about the location of their area-wide stations and their maximum total radiated power to the ACMA or other persons who make a written request for such information.

In considering the implementation of AWLs in a new band, the ACMA will examine whether amendments are required to the AWL LCD to include band-specific schedules containing conditions relevant to AWLs within the corresponding frequency band. Band-specific draft amendments to the AWL LCD will be subject to public consultation prior to finalisation.

Future band-specific amendments to the AWL LCD may include conditions which specify:

- > the frequencies in which radiocommunications devices are authorised to operate
- > the geographic area in which radiocommunications devices may be operated
- > the maximum equivalent isotropically radiated power (EIRP) or total radiated power (TRP) levels for radiocommunications devices operated under the licence
- > the maximum signal level at the boundary/edge of the licence area

- > any other conditions relating to the operation of radiocommunications devices under the licence.

The technical conditions for radiocommunications transmitters (and radiocommunications receivers, if applicable) and the boundary conditions for an AWL in a particular band will derive from the band-specific planning considerations.

Spectrum planning

When contemplating new band planning arrangements in a particular band (e.g. for the potential introduction of a new technology or service), the ACMA undertakes particular studies, including technical studies, and consults with key stakeholders.² The ACMA is currently considering introducing AWLs in the 26 GHz and 28 GHz bands. These are the first bands to be considered for AWLs. Following the review of the 26 GHz and 28 GHz bands, consideration will be given, where appropriate, to developing and consulting on implementation arrangements for AWLs in other bands. The approach the ACMA adopts for the 26 GHz and 28 GHz bands will not necessarily be used for other frequency bands that are considered for AWLs.

Registration of devices

Full registration details of all radiocommunications devices on the Register of Radiocommunications Licences may not be required for AWLs. This is because AWLs will authorise access within a defined frequency range and geographic area and include conditions at the frequency and area boundaries to manage interference. This will lessen the need to use device registration details to resolve interference issues.

The ACMA's starting position regarding licence and device registration of AWLs is best described as a minimal set of registration requirements.

Section 147 of the *Radiocommunications Act 1992* requires that for each apparatus licence, the licensee's name, postal address and the date of issue and expiry of the licence must be included in the Register.

In addition, the licence information requirements under subsections 10(2) and 10(3) of the RRL Determination will apply to all AWLs (for example, the licensee's client number, the date of effect of the licence and any special conditions and advisory notes associated with the licence).

The device information requirements under subsections 10(4), 10(5), 10(6) and 10(7) of the RRL Determination will not apply to AWLs unless a condition is determined in the AWL LCD (following an amendment of that instrument after band-specific planning considerations and consultation) or specified on the licence itself. Low-powered mobile and portable devices will generally not need to be registered.

The regulatory framework for AWLs establishes the general starting position of minimal registration. However, whether this starting position is appropriate will be considered on a band-by-band basis, and the ACMA will amend the necessary legislative instruments to ensure device registration where it is needed, following appropriate stakeholder consultation. As a result, the actual device registration requirements for AWLs in any particular band are not being established through the

² See the ACMA's annual [Five-Year Spectrum Outlook](#) for an overview of the planning stages and annually updated discussion of bands at various stages of planning consideration.

regulatory framework for AWLs, as when there are such requirements they will either be added as specific amendments to the AWL LCD or be put in the licence.

Pricing and methods of allocation

The ACMA will consider whether the appropriate means of allocating AWLs for transmitters in specific bands is a price-based allocation or an administrative allocation.

In deciding whether to use administrative or price-based allocation for AWLs in a particular band, the ACMA will have regard to a range of factors, including the expected demand for the licences and the administrative efficiency of running a price-based process (including determining an appropriate starting price).

Where such allocations are conducted under section 106 of the Act (i.e. a price-based allocation), the ACMA will develop a legislative instrument describing the process by which the spectrum will be allocated. The ACMA will consult with stakeholders prior to making the instrument.

Where AWLs are issued under section 100 (i.e. administratively), before issuing AWLs in any given band on a regular basis the ACMA will develop administrative allocation policies and procedures and consult on these before issuing any AWLs in that band. The ACMA's allocation procedures for AWLs in any particular band will be designed to meet the objects of the Act in section 3, including maximising the overall public benefit derived from using the spectrum. In some circumstances this could include allocation policies which have regard to a person or specified group of persons.

Administrative pricing of apparatus licences typically has two components, namely:

- > an issue or renewal charge set out in the Radiocommunications (Charges) Determination 2017³
- > a taxation charge for access to spectrum.

Taxes for apparatus licences are laid out in the Radiocommunications (Transmitter Licence Tax) Determination 2015 or the Radiocommunications (Receiver Licence Tax) Determination 2015.

The ACMA will take a consistent approach to pricing of AWLs that will take into account factors such as frequency band, lot size, technical conditions and relevant market factors. As these factors will vary across the different allocation of AWLs, how the ACMA constructs the price may vary to reflect the circumstances.

As a result, tax arrangements for AWLs will be determined on a band-by-band basis, and the transmitter and receiver licence tax determinations will require amendment each time the ACMA decides to issue the AWL type in a new band. The ACMA will consult on amendments to the tax determinations prior to a decision to issue AWLs in the relevant band.

³ Under the Charges Determination, the issue charge will be based on the per hour general service charge. The charge for renewing a licence is set out in Schedule 2 Part 8 at \$4.

Next steps

The ACMA is considering allocating AWLs in the 26 GHz (24.7–27.5 GHz) and 28 GHz (27.5–29.5 GHz) bands, including in the 25.1–27.5 range outside of spectrum licensed areas. These bands have become the focus for the potential rollout of millimetre wave (mmWave) band 5G wireless broadband services. The ACMA is currently developing the technical framework for the introduction of area-wide apparatus licences in these bands (with input from a technical liaison group), and it anticipates completing public consultation on the technical framework by end of the third quarter of 2020.

It is expected that consultation on pricing and other relevant matters, such as any covered by a ministerial direction, may occur in line with the technical framework development process, although some matters may be consulted on at a later period. The ACMA is working towards apparatus licences in the 24.7–25.1 GHz range and the 28 GHz band being available for issue from December 2020.

Where appropriate, other bands for AWLs will be considered in the future.