Australian Government | acma Australian Communications and Media Authority

Remaking the low interference potential devices class licence

Outcomes paper

SEPTEMBER 2025

Canberra
Level 3
40 Cameron Avenue
Belconnen ACT

PO Box 78
Belconnen ACT 2616

T +61 2 6219 5555
F +61 2 6219 5353

Melbourne
Level 32
Melbourne Central Tower
360 Elizabeth Street
Melbourne VIC

PO Box 13112
Law Courts
Melbourne VIC 8010

T +61 3 9963 6800
F +61 3 9963 6899

Sydney
Level 5
The Bay Centre
65 Pirrama Road
Pyrmont NSW

PO Box Q500
Queen Victoria Building
NSW 1230

T +61 2 9334 7700
F +61 2 9334 7799

Contents

Executive summary

The ACMA regularly updates the Radiocommunications (Low Interference Potential Devices) Class Licence 2015 (2015 LIPD Class Licence) in response to changes in technology and requests to support new technology applications that:

- align Australia with international arrangements
- support standardised, efficient equipment supply arrangements.

The 2015 LIPD Class Licence is due to 'sunset' on 1 October 2025.

From March to May 2025, we held a public consultation on a proposed draft of the Radiocommunications (Low Interference Potential Devices) Class Licence 2025 (2025 LIPD Class Licence) that would:

- replace the 2015 LIPD Class Licence
- introduce new, or update existing, arrangements for several items.

This paper provides a summary of submissions and the ACMA's responses.

Having considered the responses received to this consultation, we have decided to proceed with making the 2025 LIPD Class Licence. This includes the following new arrangements that were contained in the draft instrument:

- wireless audio transmitters using wireless multi-channel audio system (WMAS) in the 520–694 MHz range
- digital modulation radiocommunications transmitters in the 5150–5250 MHz band
- radio local area network (RLAN) radiocommunications transmitters in the 6425–6585 MHz band
- radiodetermination radiocommunications transmitters in the 13.4–14 GHz band
- radiodetermination radiocommunications transmitters in the 76–77 GHz band.

We will also proceed with the implementation of low-power narrowband frequency-hopping transmitters in the 5925–6425 MHz band, with the addition of a requirement to use contention-based protocols.

Introduction

Under Part 4 of Chapter 3 of the *Legislation Act 2003*, most legislative instruments are automatically repealed. They 'sunset' on the 1 April or 1 October that first occurs 10 years after the instrument was registered.[1] This is an automatic process applying to most instruments.

The 2015 LIPD Class Licence will sunset on 1 October 2025, unless remade before that date.

We consulted on a draft of the 2025 LIPD Class Licence between March and May 2025. The proposed draft incorporated the provisions in the 2015 LIPD Class Licence, with minor changes as well as new arrangements to facilitate the use of emerging technologies.

The proposed new arrangements were for:

- WMAS technologies for wireless microphones in the 520–694 MHz range
- frequency-hopping radiocommunications transmitters in the 5925–6425 MHz band
- digital modulation radiocommunications transmitters in the 5150–5250 MHz band
- RLAN radiocommunications transmitters in the 6425–6585 MHz band
- radiodetermination radiocommunications transmitters in the 13.4–14 GHz band
- radiodetermination radiocommunications transmitters in the 76–77 GHz band.

We received submissions from 30 parties. Public submissions are listed in Appendix A and are available on the ACMA website.

[1] Under subsection 54(2) of the *Legislation Act 2003*, certain classes of legislative instruments are exempted from sunsetting provisions. The instrument to which this paper relates does not fall within these categories.

Proposed changes to the 2015 LIPD Class Licence

Review of existing instrument

We proposed to make the following changes to the 2015 LIPD Class Licence to improve readability and correct references:

- Creation of separate tables for each category of transmitter and listing limitations under each table to improve the readability of the instrument.
- Updating references to European Telecommunications Standards Institute (ETSI) standards that are outdated or no longer exist.
- Removal of the limitation from item 45 of Schedule 1 to the 2015 LIPD Class Licence (Table 5, item 4 in the 2025 LIPD Class Licence), which required compliance with a standard. The standard that was referred to in that limitation is not freely available.
- Removal of the exceptions listed in limitation (b) for item 65A and limitations (c) and (d) in item 71A of Schedule 1 to the 2015 LIPD Class Licence (Table 8, item 18 and Table 9, item 9 in the 2025 LIPD Class Licence). These provisions have not been utilised throughout the life of the 2015 LIPD Class Licence and are not required.

Submissions received and ACMA response

We received positive feedback regarding the review of the 2015 LIPD Class Licence as well as the proposed changes to the general reformatting set out in the 2025 LIPD Class Licence. Submissions were supportive of our decision to remove standards that are not freely available as well as provisions that are not utilised.

Explanatory statement suggestions

There was a suggestion to add text to the explanatory statement to the 2025 LIPD Class Licence such as was present in previous versions of the LIPD Class Licence, to provide plain-English information clarifying the limitations of the instrument and potential safety implications. Text has been included in the explanatory statement to the 2025 LIPD Class Licence.

Radiofrequency identification (RFID) transmitters in the 920–926 MHz band

Multiple submissions contained comments on the power levels and bandwidth of the arrangements for RFID transmitters[2] in the 920–926 MHz band. There is significant interest in increasing the minimum power and frequency range of these devices. However, the impact on existing services would need to be assessed against before accommodating this power increase. We will work with industry to consider possible changes to arrangements for RFID transmitters in the 900 MHz frequency range under a future update to the 2025 LIPD Class Licence.

[2] RFID transmitter means a radiocommunications transmitter used for a radiofrequency identification tag.

Ultra-wideband (UWB) transmitters in the 7.7–8.3 GHz band

Several submissions contained comments regarding UWB devices in the 7.7–8.3 GHz band. Suggestions included relaxing conditions on fixed outdoor operation of UWB devices. However, the impact on existing services would need to be assessed against before accommodating this proposal. We will work with industry to consider possible changes to arrangements for UWB devices in the 7.7-8.3 GHz band in a future update to the 2025 LIPD Class Licence.

New items

In parallel to reviewing the 2015 LIPD Class Licence ahead of it sunsetting, we also proposed to introduce arrangements to enable the operation of a range of new radiocommunications devices.

WMAS technologies for wireless audio transmitters

We proposed to introduce arrangements in the 520–694 MHz range to facilitate the use of WMAS.[3]

Submissions received

Eight submissions specifically addressed our proposal to introduce arrangements for WMAS technology in the 520–694 MHz band. Overall, the feedback was supportive, with 2 submissions raising concerns about allowing WMAS operation above 612 MHz. These stakeholders stated that enabling WMAS in this range could be seen as pre-empting future decisions regarding band planning in the 600 MHz band. They referenced previous instances where ACMA applied spectrum embargoes in situations of uncertainty and suggested that WMAS use be restricted to below 612 MHz. This approach, they argued, would help avoid the need to replan WMAS deployments if the 600 MHz band is later repurposed for other services.

ACMA response

The 617–698 MHz band is currently in the monitoring phase of band planning activities, as outlined in the Five-year spectrum outlook (FYSO). As detailed in the draft FYSO 2025–30, the government has indicated plans to explore future options for television broadcasting, which may involve reassessing its spectrum requirements.

To avoid pre-empting this government process, we do not intend to restrict the frequency range available for WMAS devices. Spectrum embargoes are used to limit the issuing of new apparatus licences within a band. At this time, there is no plan to limit existing licences for other users in the band. WMAS devices are expected to have a lower market penetration compared to consumer-grade microphones, which already operate above 612 MHz.

WMAS is primarily used in high-end Program Making and Special Events (PMSE) and professional audio applications. These systems are typically dynamically tuneable and, depending on individual products' overall tuning range, are likely to be adaptable to retuning if future band planning changes occur.

As consulted, arrangements for WMAS in the 520–694 MHz band will be incorporated into the 2025 LIPD Class Licence.

[3] Technical characteristics and parameters for WMAS are described in System Reference document ETSI TR 103 450.

Frequency hopping radiocommunications transmitters in the 5925–6425 MHz band

We proposed to introduce arrangements for low-power narrowband frequency-hopping transmitters in the 5925–6425 MHz band.

Submissions received

Eight submissions commented on the proposed arrangements to introduce frequency hopping transmitters into the 5925–6425 MHz frequency range. All submissions were generally supportive of introducing frequency hopping transmitters, however some also raised concerns and suggestions. There was general agreement among submissions that the implementation of arrangements for frequency hopping devices in the 5925–6425 MHz frequency range should either be delayed until the finalisation of the European standardisation work or should only be implemented if another channel access mechanism is adopted.

Out-of-band emissions below 5925 MHz

Two submissions contained comments regarding the out-of-band emissions level proposed in the consultation. One submission suggested the requirement of item 5, note 42 be relaxed from -45 dBm/MHz to -37 dBm/MHz to align with other VLP transmitters, such as item 14, note 49. Another submission also raised whether item 14, note 49 should be brought into alignment with ETSI EN 303 687 and reduced to -45 dBm/MHz.

ETSI EN 303 687 BRAN-230030 Work Item

It was pointed out in three submissions that narrowband arrangements in the ETSI EN 303 687 standard have not yet been finalised. Those respondents recommended that the ACMA wait for the conclusions of the work item BRAN-230030[4] before implementing arrangements for frequency hopping devices in the 5925–6425 MHz frequency range.

Contention-based protocols

Multiple submissions contained recommendations that the ACMA adopt a requirement for the use of contention-based protocols by frequency hopping devices in the 5925–6425 MHz frequency range to facilitate improved spectrum sharing. Submissions suggested adopting either the entire EN 303 687 standard, particularly sections 4.3.6.3, or adopt another technology standard or arrangement to facilitate spectrum sharing protocols.

Technology neutrality

It was pointed out in one submission that the ETSI EN 303 687 standard, as it is currently made, does not provide for technology neutrality, only having channel access mechanisms for IEEE WiFi devices. It was noted that there is an active work item ongoing to address this and suggested that we either wait or adopt another comparable standard such as ETSI 300 328 or allow other equivalent protocols.

ACMA response

In our consultation paper, we proposed to adopt an out of band emission limit of -45 dBm/MHz for frequency hopping devices to align our arrangements with ETSI EN 303 687, making them consistent with the developing European arrangements. Note that we are not applying this to RLAN transmitters in upper 6 GHz as detailed in item 14, note 49, reflecting differences between the two technologies.

[4] Technical Committee (TC) Broadband Radio Access Networks (BRAN) is the core competence centre within ETSI for broadband radio access networks. Work Item REN/BRAN-230030- 6 GHz WAS/RLAN; Harmonised Standard for access to radio spectrum includes development of a channel access mechanism for Narrowband Frequency Hopping equipment operation.

Given the feedback received, we have decided to include a requirement to use contention-based protocols for multiple access by frequency hopping devices in the 5925–6425 MHz frequency range. This requirement replicates a similar requirement outlined in clauses 48 and 49 of the Schedule to the 2015 LIPD Class Licence and is technology neutral. This will allow any new contention-based protocols developed in work item BRAN-230030 to be utilised in the future while also allowing current protocols to be utilised, including those defined by the Federal Communications Commission (FCC) in KDB 987594 D02.

Digital modulation radiocommunications transmitters in the 5150–5250 MHz band

We proposed to broaden the type of devices allowed to operate in the 5150–5250 MHz band to include all digital modulation radiocommunications transmitters.

Submissions received and ACMA response

Two submissions expressed support for our proposal to introduce digital modulation transmitters in the 5150–5250 MHz band. Arrangements for digital modulation radiocommunications transmitters in the 5150–5250 MHz band are included in the 2025 LIPD Class Licence, as consulted.

RLAN radiocommunications transmitters in the 6425–6585 MHz band

In *Future use of the upper 6 GHz band – Outcomes paper* (the 6 GHz outcomes paper), we outlined our decisions related to future arrangements for the upper 6 GHz band (6425–7125 MHz). This included a commitment to include the frequency range 6425–6585 MHz in the 2025 LIPD Class Licence to support RLAN use.

To implement this decision, we proposed to increase the upper bound of items 63AA and 63AB in Schedule 1 to the 2015 LIPD Class Licence (Table 8, items 13 and 14 in Schedule 1 to the 2025 LIPD Class Licence) from 6425 MHz to 6585 MHz.

Submissions received and ACMA response

Of the 30 submissions that were received to the consultation, 10 specifically addressed the proposal to include arrangements for RLAN radiocommunications transmitters in the 6425–6585 MHz band. The submissions were polarised between support and opposition of the proposals in the consultation, and the broader decisions previously articulated in the 6 GHz outcomes paper.

Support for RLANs in the 6425–6585 MHz band

There was strong support for the inclusion of arrangements for RLANs in the 6425–6585 MHz band. It was highlighted that a spectrum split at 6585 MHz represents a pragmatic and forward-looking approach to maximising the utility of the upper 6 GHz band. This split was seen as enabling shared use of the spectrum while balancing the needs of various technologies and stakeholders. It was emphasised that rigorous technical studies are essential to ensure that mobile broadband and future wireless services operating above 6585 MHz will not cause harmful interference to incumbent RLAN operations below that threshold.

Some respondents pointed to international precedents, noting that countries such as the United States, Canada, South Korea, and several South American nations have already allocated the entire upper 6 GHz band for RLAN use. There was also a view that the remainder of the upper 6 GHz band should not be allocated to wide-area wireless broadband (WA WBB) but instead be made available for expanded RLAN use. Several stakeholders

advocated for including the entire 6425–7125 MHz range in the 2025 LIPD Class Licence. Concerns were raised about the risk of Australia becoming a 'secondary market' if it adopts a segmented approach that lacks international harmonisation. This could result in delayed access to advanced Wi-Fi technologies, higher costs, or limited availability of devices. Reference was made to international proposals that aim to maximise spectrum efficiency while preserving long-term regulatory flexibility.

Opposition to RLANs in the 6425–6585 MHz band

Opposition to including RLAN arrangements in the 6425–6585 MHz band was also expressed. It was argued that there is no immediate need to make this band available for RLANs, claiming that the 500 MHz already allocated in the lower 6 GHz band (5925–6425 MHz) remains underutilised, based on crowd-sourced data. Concerns were raised that introducing RLANs in this band could lock in a frequency boundary that may not align with an international device ecosystem, potentially requiring costly, bespoke solutions for the Australian market. It was noted that a market of Australia's size may not be able to sustain such unique approaches.

Another key issue was the lack of international and domestic studies on adjacent-band coexistence. It was argued that any technical requirements needed to ensure compatibility between RLANs and adjacent WA WBB networks could not be applied retrospectively to RLAN devices already in use. These concerns were echoed by multiple respondents, who also emphasised the need to resolve adjacent channel coexistence issues before implementing RLAN arrangements in this band.

While not opposing RLAN use in the 6425–6585 MHz band, some respondents recommended safeguards to prevent harmful interference with future WA WBB operations in the upper 6 GHz band. Suggestions included imposing out-of-band emissions (OOBE) limits on RLAN equipment operating in the lower portion of the band. It was noted that wideband RLAN devices using 160 MHz or 320 MHz channels could pose a risk to 6G systems operating directly above, especially when devices are in proximity. Narrow guard bands may not be sufficient to protect these systems from performance degradation, such as reduced throughput or increased latency.

ACMA response

On the proposition that the ACMA's approach would create a so-called 'secondary market' in Australia – noting that in spectrum management circles this term more regularly refers to the trading or sale of licence holdings among licensees – the evidence does not support this. RLAN devices that operate in the 6425–6585 MHz band are already available internationally, owing to the existing allocation of spectrum above 6425 MHz in major international markets. Differences between the RLAN frequency boundary of Australian arrangements compared to other international arrangements are likely to be catered for by software programming of devices to disable channels not authorised in Australia. This is commonplace for RLAN (and other consumer) devices, which already cater for local differences in frequency allocations across the world. If guard bands are required (see below), they will be considered as part of a technical liaison group (TLG) process that establishes arrangements for WA WBB services, as foreshadowed in the 6 GHz outcomes paper.

In terms of device proliferation in the 5925–6425 MHz band, that band has only been available for RLAN use in Australia for 3 years. It is relatively new in comparison to the 2.4 GHz and lower 5 GHz RLAN bands which have been available for many years. The 5925–6425 MHz band partnered with the 6425–6585 MHz band will deliver expanded access

to high-capacity wireless communication providing enhanced access to data-intensive applications such as ultra-HD streaming, immersive gaming, remote education and other augmented reality-enabled experiences. Device penetration always takes time in the consumer technology space – consumers do not automatically replace routers as newer-generation models become available and it usually takes several years for legacy devices to cycle out of the market. However, the sooner the new arrangements are put in place, the quicker new devices can start being supplied to the Australian market. Given other countries have already allocated all or some of upper 6 GHz for RLANs, there is a readily available supply of new devices for our market.

Adjacent-band coexistence issues were also previously addressed in the 6 GHz outcomes paper. As mentioned above, the 6 GHz outcomes paper flagged that a potential guard band between RLAN and wireless broadband services may be needed. This would also be a consideration if a different band-split arrangement were adopted, including with the boundary at 6425 MHz. While we acknowledge that the size of a potential guard band will depend on whether RLAN devices have band filtering – which may be impacted by international arrangements such as those under consideration in Europe – the potential for a guard band was factored into our original decision. So while the possible alignment of European arrangements with ours is encouraging, it is not critical to implementing these decisions. It was also noted in the 6 GHz outcomes paper that the prospective guard band would need to come from spectrum above 6585 MHz and it will be further considered when we develop the technical arrangements for wireless broadband services. We have not seen evidence that adjacent-band coexistence between RLAN devices that adhere to existing standards and wireless broadband services will not be feasible.

Lastly, we do not agree that waiting for a European decision is critical. As outlined in the 6 GHz outcomes paper, the key benefit of the 6585 MHz frequency boundary is that it unlocks access to an additional 160 MHz /320 MHz channel. A frequency boundary lower than 6585 MHz would not enable this outcome. While we are monitoring the developments in Europe, a potential European decision that has a frequency boundary below 6585 MHz would not provide access to the additional 160/320 MHz channel. Standards for both RLANs and WA WBB equipment exist in the band, so equipment availability is not a concern. Further, as described above, concerns around a potential need for additional band filtering due to coexistence issues are not sufficiently compelling to warrant such a delay.

Proposed way forward

We conducted an extensive consultation process prior to coming to the decisions outlined in the 6 GHz outcomes paper. Since that time, proponents of both RLANs and WA WBB have continued to prosecute arguments for and against our decisions, both in response to this consultation process and through other channels. While inter-service coexistence and equipment availability are key considerations in both making and implementing these decisions, we have yet to see evidence that such implementation will pose an unacceptable risk to either – when balanced against the opportunity cost of delaying implementation and taking into account current international developments. We also note that inter-service considerations will be further addressed when a TLG is established to consider technical frameworks to support the introduction of WA WBB services above 6585 MHz, which again was factored into our planning decisions.

Accordingly, arrangements for RLAN radiocommunications transmitters in the 6425–6585 MHz band are included in the 2025 LIPD Class Licence, as proposed.

Radiodetermination radiocommunications transmitters in the 13.4–14 GHz band

We proposed to introduce arrangements in the 13.4–14 GHz band to facilitate the use of radiodetermination radiocommunications transmitters.

Submissions received and ACMA response

There were no specific comments raised regarding our proposal to introduce radiodetermination transmitters in the 13.4–14 GHz band. One submission, however, pointed out a typo on the power limit in the draft 2025 LIPD Class Licence. We confirm we will set the power limit to a maximum EIRP of 25 mW as per EN 300 440 and arrangements for radiodetermination radiocommunications transmitters in the 13.4–14 GHz band are included in the 2025 LIPD Class Licence, as consulted.

Radiodetermination radiocommunications transmitters in the 76–77 GHz band

We proposed to expand arrangements for radiodetermination radiocommunications transmitters in the 76–77 GHz band to include radiodetermination radiocommunications transmitters that comply with ETSI EN 301 091-1.

Submissions received and ACMA response

There were no specific comments raised regarding our proposal to introduce radiodetermination transmitters in the 76–77 GHz band that comply with ETSI EN 301 091-1. Arrangements for radiodetermination radiocommunications transmitters in the 76–77 GHz band are included in the 2025 LIPD Class Licence, as consulted.

Next steps and future updates

We have proceeded with making the 2025 LIPC Class Licence, including the following new arrangements that were contained in the draft instrument:

- wireless audio transmitters using WMAS in the 520–694 MHz range
- digital modulation radiocommunications transmitters in the 5150–5250 MHz band
- RLAN radiocommunications transmitters in the 6425–6585 MHz band
- radiodetermination radiocommunications transmitters in the 13.4–14 GHz band
- radiodetermination radiocommunications transmitters in the 76–77 GHz band.

We have also proceeded with the implementation of low-power narrowband frequency-hopping transmitters in the 5925–6425 MHz band, with the addition of a requirement to use contention-based protocols.

We will work with industry to examine potential changes to arrangements for RFID transmitters in the 900 MHz band and UWB transmitters in the 7.7–8.3 GHz band. If appropriate, we will consult on these changes in a future update to the 2025 LIPD Class Licence.

Appendix A: List of submissions

Thirty public submissions were received from the following organisations. They are available on the ACMA website:

- Apple
- Australasian Railway Association
- Australian Mobile Telecommunications Association
- Australian Music Association
- Cisco Systems
- Ericsson
- Event Communications Australia
- FiRa Consortium (Regulatory Working Group Chair)
- GS1 Australia
- Hewlett Packard Enterprise Australia
- IEEE 802 LAN/MAN Standards Committee
- InfraBuild
- Intelsat
- Jands
- Japan Electronics and Information Technology Industries Association (JEITA)
- Kuehne+Nagel
- Look Inventory Solutions
- NBN CO
- Optus
- Profiles RF Management Pty Ltd
- Qualcomm International Inc.
- RFID General Public Trading Pty Ltd
- Sennheiser UK Ltd
- Shure
- SICK Sensors
- Telstra
- TPG Telecom
- Ultra Wide Band Alliance
- Unique Micro Design Pty Ltd
- Wi-Fi Alliance.