Proposed updates to RALI FX23 Consultation paper

September 23

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# Executive summary

Frequency coordination and licensing procedures for point-to-multipoint (PMP) services in the 5.6 GHz band (5600–5650 MHz) are detailed in RALI FX23. We propose to make updates to Annex D, which contains the locations and parameter values for potential new sites for future weather radars. This will enable the 5.6 GHz band to be utilised to its optimal efficiency by ensuring co-ordination with incumbent services is based on the most current technical characteristics. In particular, we are proposing to:

Remove the sites from Annex D for which there is now a licensed weather radar in that area, meaning the listing in Annex D is no longer needed.

Include details of the new sites in Annex D that are being considered for new radar deployments.

As part of the outcomes of the [Future approach to the 3.6 GHz band](https://www.acma.gov.au/future-approach-36-ghz-band) consultation process, we developed interim arrangements for coordinated apparatus licensing in Section 3.2bis of RALI FX23. This was to preserve options for the migration of
3.6 GHz PMP licences to the 5.6 GHz band. The arrangements for 5.6 GHz PMP licensing were released in December 2018. Under this arrangement, a 3.6 GHz band licensee could migrate to the 5.6 GHz band in cases where coordination shows they would not deny access to spectrum for any other 3.6 GHz PMP licensee.

We are of the view that the interim arrangements that support the migration of 3.6 GHz band PMP licences to the 5.6 GHz band are no longer required and can now
be removed.

We also propose to make a series of editorial updates the RALI FX23 to help improve readability and accuracy.

# Issue/s for comment

We’re seeking your feedback regarding:

The proposed changes to Annex D.

The proposed removal of the interim arrangements contained in Section 3.2bis of RALI FX23.

# Introduction

As part of the outcomes of the [Future approach to the 3.6 GHz band](https://www.acma.gov.au/future-approach-36-ghz-band) consultation process, we identified several mitigation strategies for affected incumbent point-to-multipoint (PMP) licensees, including wireless internet service providers (WISPs). This resulted in the ACMA developing coordinated apparatus-licensing arrangements for PMP services in the 5.6 GHz band.

Arrangements for 5.6 GHz PMP licensing were finalised in December 2018 with
the release of Radiocommunications Allocation and Licensing Instruction FX23
([RALI FX23](https://www.acma.gov.au/publications/2019-08/instruction/frequency-coordination-and-licensing-procedures-point-multipoint-services-56-ghz-band)). This RALI details coordination and licensing procedures for
apparatus-licensed PMP services in the 5.6 GHz band – between PMP, and PMP
and weather radars.

The ACMA regularly reviews spectrum planning technical frameworks to ensure that they remain current and consistent with contemporary technologies and operational practices. As outlined in the [Draft frequency coordination requirements review work program for 2023–24](https://www.acma.gov.au/consultations/2023-06/draft-frequency-coordination-requirements-review-work-program), RALI FX23 has been earmarked for review to ensure it
remains current.

This paper outlines proposed updates to RALI FX23. In particular, we propose to update Annex D for RALI FX23. This contains the locations and parameter values for potential sites for future weather radars. It includes the addition of new sites and removing sites that are no longer required in Annex D, as radar systems are now either licensed at these locations or within the general area. This will enable the
5.6 GHz band to be utilised with increased efficiency by ensuring co-ordination is based on the most up-to-date technical characteristics and planning arrangements.

Section 3.2bis of RALI FX23 was developed to preserve options for the migration of 3.6 GHz PMP licences to the 5.6 GHz band as an interim arrangement in 2018. This arrangement enables the migration of 3.6 GHz band licences to the 5.6 GHz band. For areas where there were potentially multiple 3.6 GHz PMP licensees interested in moving to the 5.6 GHz band, we developed a process to provide a suitable amount of time to support the migration of services. We are of the view that 5 years was a sufficient timeframe to support that migration. This paper proposes to remove the interim arrangements contained in section 3.2bis of RALI FX23.

We also propose to make a series of editorial updates the RALI FX23 to help improve readability and accuracy.

We welcome comment from interested stakeholders on the changes to RALI FX23 proposed in this paper. Details of all proposed changes are contained in the following sections.

## Current use of the band

The 5.6 GHz band is currently used for fixed PMP and radiodetermination services. Table 1 shows the number of each type of services as of 1 June 2023. The Bureau of Meteorology (BoM) currently holds 130 out of 136 radiodetermination licences in the band that are used to support operation of weather radars. PMP licensed operators are mainly WISPs, mining, transport and general government users.

Number of existing licences in the 5.6 GHz band

|  |  |  |
| --- | --- | --- |
|  | Point-to-multipoint | Radiodetermination |
| **Number of licences** | **192** | **136** |

The geographical locations of existing radiodetermination and PMP services in the band is shown in Figure 1. Current PMP services are mainly spread geographically in Queensland and New South Wales.

The locations of existing radiodetermination and PMP services in the 5.6 GHz band



Figure 2 shows the distribution of existing radiodetermination and PMP services in the 5.6 GHz band. As shown in Figure 2, radiodetermination assignments are spread across the band, with a majority (113 of 136) located around the centre of the band. Figure 2 also shows that the majority of PMP assignments are located in the
5600–5620 MHz and 5630–5650 MHz frequency segments. This distribution
aligns with the assignment instructions in FX23, where 5600–5620 MHz and
5630–5650 MHz frequency ranges are defined for PMP licences, and 5620–5630 MHz frequency range is set aside for radiodetermination services.

The distribution of existing radiodetermination and point-to-multipoint services across the 5.6 GHz band

Figure 3 shows the growth in PMP services in the band in recent years, indicating significant growth over the last 4 years. Modernising coordination arrangements in FX 23 will help support continued growth in the band while continuing to support coexistence with radiodetermination services.

The growth of radiodetermination and point-to-multipoint services over the last 6 years in the 5.6 GHz band.

# Proposed updates to RALI FX23

This section outlines the changes proposed to be made to RALI FX23. A
marked-up version of this draft RALI is also available in Attachment A (including editorial changes).

## Proposed changes to Annex D of RALI FX23

RALI FX23 defines the relevant coordination procedures to be followed by prospective PMP licensees seeking to access to the 5.6 GHz band. This includes coordination with existing (licensed under a radiodetermination licence) and future weather radar systems. The locations and parameters of future radar sites are listed in Annex D of RALI FX23 for coordination purposes, which preserves these locations for potential use by weather radars.

Since the initial issue of RALI FX23 in 2018, the details in Annex D have become outdated, so we intend to make the following updates:

Remove any sites that are no longer being considered for a new radar deployment where radars are now licensed near those locations.

Include details of new sites which are being considered for a future radar deployment.

Table 2 provides details of potential sites for future weather radars as currently listed in Annex D of RALI FX23. Several sites in Annex D had been identified in each area to preserve the options available for the BoM as they go through their planning process.

The ACMA has reviewed the sites in Annex D and is of the view that all sites in
Table 2 can be removed from Annex D. This is because the BoM now holds licences authorising the operation of radars in close proximity to those locations. We have also consulted the BoM on this view.

Table 3 lists new locations that have been identified by the BoM as potential sites for future weather radars (the 2 sites are in the same general area to help preserve the options available to BoM as they go through their planning process). We propose including these new sites in Annex D of RALI FX23.

Current Annex D: Potential radar sites requiring co-ordination – proposed for removal

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Site name | State | Lat(GDA94)(dec deg) | Long(GDA94)(dec deg) | Centre frequency(MHz) | Pulse width(ns) | Antenna diam(m) | 3 dB Beam-width (°) | Min. up-tilt angle (°) | TX power (kW) | Ant Gain (dBi) | EIRP (dBW) | Antenna height (m AGL) |
| Wellington – Yeoval | NSW | -33.157110 | 145.191116 | 5625 | 500 | 4.2 | 1.0 | 0.5 | 250 | 45 | 97.2 | 20 |
| Wellington – Wambangalang | NSW | -32.614305 | 148.413025 | 5625 | 500 | 4.2 | 1.0 | 0.5 | 250 | 45 | 97.2 | 20 |
| Wellington – Obley West | NSW | -32.725105 | 148.499759 | 5625 | 500 | 4.2 | 1.0 | 0.5 | 250 | 45 | 97.2 | 20 |
| Willandra – Waranary Hill | NSW | -33.047015 | 145.39419 | 5625 | 500 | 4.2 | 1.0 | 0.5 | 250 | 45 | 97.2 | 20 |
| Willandra – Moolbong | NSW | -33.352478 | 144.962907 | 5625 | 500 | 4.2 | 1.0 | 0.5 | 250 | 45 | 97.2 | 20 |
| Willandra – Hillston East | NSW | -33.471497 | 145.587395 | 5625 | 500 | 4.2 | 1.0 | 0.5 | 250 | 45 | 97.2 | 20 |
| Brewarrina – Town | NSW | -29.961174 | 146.860648 | 5625 | 500 | 4.2 | 1.0 | 0.5 | 250 | 45 | 97.2 | 20 |
| Brewarrina – Mt Oxley | NSW | -30.198910 | 146.239430 | 5625 | 500 | 4.2 | 1.0 | 0.5 | 250 | 45 | 97.2 | 20 |

Updated Annex D: Potential radar sites requiring co-ordination – proposed for inclusion

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Site name | State | Lat(GDA94)(dec deg) | Long(GDA94)(dec deg) | Centre frequency(MHz) | Pulse width(ns) | Antenna diam(m) | 3 dB Beam-idth (°) | Min. up-tilt angle (°) | TX power (kW) | Ant Gain (dBi) | EIRP (dBW) | Antenna height (m AGL) |
| Bybera – Boggabilla | Qld | -28.192719 | 151.040299 | 5625 | 500 | 4.1 | 1.0 | 0.5 | 400 | 45 | 101 | 20 |
| Goondwindi – Boggabilla | Qld | -28.52234 | 150.32657 | 5625 | 500 | 4.1 | 1.0 | 0.5 | 400 | 45 | 101 | 20 |

## Removal of interim arrangements supporting the migration of existing 3.6 GHz band PMP licensees

Section 3.2bis of RALI FX23 provides interim arrangements that support the potential migration of 3.6 GHz PMP licensees to the 5.6 GHz band.[[1]](#footnote-2) These arrangements provide a ‘reservation’ for 3.6 GHz band PMP licences in the 5.6 GHz band by requiring proposed 5.6 GHz services to coordinate with them as if they have
already migrated.

We are of the view that these interim arrangements are no longer required as:

The arrangements have been in place since December 2018, providing 3.6 GHz PMP licensees with more than 4 years to migrate to the 5.6 GHz if they wished to.

We are planning to [introduce new arrangements in the 3.8 GHz band to support local area wireless broadband services](https://www.acma.gov.au/consultations/2023-06/allocation-area-wide-apparatus-licences-38-ghz-band), which would provide an alternate option for 3.6 GHz PMP licensee to migrate to.

Based on the above view, we propose to remove the interim arrangements from
RALI FX23.

# Invitation to comment

## Making a submission

We invite comments on the issues set out in this discussion paper.

[Online submissions](https://www.acma.gov.au/have-your-say) can be made by uploading a document. Submissions in PDF, Microsoft Word or Rich Text Format are preferred.

Submissions by post can be sent to:

The Manager

Spectrum Planning Section

Australian Communications and Media Authority

PO Box 78

Belconnen ACT 2616

The closing date for submissions is **COB,** **Friday 20 October 2023**.

Consultation enquiries can be emailed to freqplan@acma.gov.au.

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# Appendix A: Draft RALI FX23

Please refer to the key documents section of the consultation to view the draft
RALI FX23.

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1. 3.6 GHz band PMP licensees effected by the Radiocommunications (Spectrum Re-allocations – 3.4 GHz and 3.7 GHz Bands) Declaration 2022 have until July 2027 to vacate the band. [↑](#footnote-ref-2)