# Summary and rationale of changes to the 26 GHz and 28 GHz AWL technical framework

JULY 2022

In December 2020, the ACMA began receiving applications for area-wide apparatus licences (AWLs) in the 26 GHz and 28 GHz bands. These AWLs authorise access for wireless broadband services and fixed satellite services. RALI MS46 is the key policy document for AWLs in these bands and outlines the rules for issuing AWLs, as well as device coordination requirements. Other RALIs are also relevant to coordination of AWLs, as they provide interference management procedures for other services in applicable bands – such as RALI MS44 for earth stations.

In recognition that AWLs are a new concept and their implementation in the 26 GHz and 28 GHz bands is complex, the ACMA undertook a [review](https://www.acma.gov.au/consultations/2022-02/improving-technical-arrangements-awls-26-ghz-and-28-ghz-bands-consultation-042022) of RALI MS46 and other related policy documents in February 2022. We wanted to improve the understanding and operation of these technical arrangements and to expand the utility of the AWL arrangements in these bands.

Based on feedback from industry and our internal review, the following changes to MS46 were made in July 2022:

Incorporation of new coordination arrangements around the Mingenew satellite park that would permit access for AWL services in this area. This includes:

new coordination arrangements in RALI MS46 for transmitters in the frequency range 25.5–27 GHz (see section 3.7 of RALI MS46)

new coordination arrangements in RALI MS44 for AWL receivers in the frequency ranges 24.65–25.25 GHz and 27–29.5 GHz (also highlighting that coordination is recommended but not mandatory in 28.1–30 GHz, or in 27.5–28.1 GHz when located outside of defined areas, given AWL receivers in these frequencies/areas are not afforded protection from existing or future earth stations). The proposed minimum earth station elevation angle of 3° is consistent with Article 21.14 of the ITU-R Radio Regulations

removal of the frequency ranges 24.75–25.25 GHz and 25.5–29.5 GHz from Embargo 49.

Providing additional information in RALI MS46 about coexistence between devices operating under AWLs that overlap in frequency and area – that is, when 2 AWLs authorise access in a particular area on the same frequency. This change aims to ensure the AWL issued first will not be impacted by an overlapping AWL by detailing the scenarios when devices need to be protected, or won’t be afforded protection. This means that in some cases, devices located outside the area or frequency that is overlapped will also be captured by these arrangements. A more detailed description is contained in Appendix B of RALI MS46. Related changes to the wording of the relevant licence condition and advisory note attached to new AWLs were also made – see sections 2.3.4 and 2.4.4, respectively.

Consolidating the arrangements contained in other documents, namely the transfer of:

restrictions currently in Embargo 79 to RALI MS46 (so that only AWLs and space receive apparatus licences will be issued in the frequency range 24.7–30 GHz) – see section 2.1 of RALI MS46. This resulted in Embargo 79 being suppressed

arrangements for coordinating earth stations with fixed links from RALI MS38 into RALI MS46 – see section 3.6 of RALI MS46. This resulted in MS38 being suppressed.

Permitting the AWL area-boundary conditions to be exceeded when there is an active agreement with the affected licensees – see sections 3.3.1 and 3.3.2 of RALI MS46.

In RALI MS46, permitting the use of more detailed coordination instead of using the prescribed protection ratio tables when coordinating with fixed link receivers. This would entail the use of Frequency Dependent Rejection (FDR) in scenarios when the protection ratio tables might produce overly-conservative sharing results – see Appendix D of RALI MS46.

Including a requirement in RALI MS46 that fixed outdoor transmitters that are exempt from registration must not be operated unless they are successfully coordinated with the Australian Radio Quiet Zone (as detailed in RALI MS32). This addition aligns with the intent of RALI MS32, which covers permanent transmitters and would mitigate a small risk that these transmitters may cause interference to radioastronomy receivers. This addition is contained in section 3.8 of RALI MS46.

Making a range of editorial updates to RALI MS46 to improve the clarity of the document and the understanding of the AWL technical framework. This includes:

providing a summary of previous planning decisions in the 26 and 28 GHz bands as background

introducing new sections containing the definition of key terms used in the RALI, and an overview of how the technical framework operates

providing a reference to RALI MS43 for information relating to coexistence arrangements for SRS earth receive stations in other frequency bands

removing the text ‘within a 24-hour window’ from the SRS earth receive station protection requirement and expressing the ‘percent of time not exceeded’ as an input to the propagation model to be used for coordination. These changes remove the ambiguity with ITU-R Recommendation SA.609-2, which states the percent of time of 0.001% is based on the worst 5 minutes within the worst hour of the year, and are consistent with how the time percentage is specified in other RALIs (for example, RALI MS43). The level of protection afforded to SRS earth stations is not materially altered by these changes

clarifying that the registration of receivers is encouraged but not mandatory (as only registered receivers are afforded protection), and that RALI MS46 contains the requirements to be met before an AWL receiver can be registered (or references to those requirements)

reordering the document to better reflect to chronological operation of the technical framework (that is, licence issue before device coordination and registration)

removing surplus information and moving all information in the previous Chapter 2 to other sections of the new RALI MS46 to avoid repetition

making minor editorial changes and improvements.