Automatic sunsetting of

legislative instruments

Proposal to remake the Radiocommunications (Mid-West Radio Quiet Zone) Frequency Band Plan 2011

Consultation paper

OCTOBER 2022

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Executive summary

The [Radiocommunications (Mid-West Radio Quiet Zone) Frequency Band Plan 2011](https://www.legislation.gov.au/Details/F2011L01520) (the band plan) is part of a multi-tiered spectrum planning regulatory arrangement in place to support the Australian Radio Quiet Zone Western Australia (ARQZWA) and its ongoing viability for radio astronomy services.

Under Part 4 of Chapter 3 of the *Legislation Act 2003*, most legislative instruments ‘sunset’. That is, they are automatically repealed on 1 April or 1 October that first occurs 10 years after they are registered. This is an automatic process applying to most legislative instruments, regardless of their content.

The band plan is due to sunset on 1 April 2023. We have formed the preliminary view that the band plan is operating effectively and efficiently, and continues to form a necessary and useful part of the legislative framework.

The ACMA proposes to remake the Radiocommunications (Mid-West Radio Quiet Zone) Frequency Band Plan 2011 with only such minor changes as are referred to below, and to retitle it the Radiocommunications (Australian Radio Quiet Zone Western Australia) Frequency Band Plan 2023. A draft of the proposed new band plan is available in the key documents section of this consultation.

We invite comments from interested parties on the proposed new band plan by **COB, Monday 14 November 2022**. Information about making a submission is in the [Invitation to comment](#_Invitation_to_comment) section of this consultation paper.

# About the band plan

The ACMA established the Australian Radio Quiet Zone Western Australia (ARQZWA) on 11 April 2005 with the introduction of Spectrum Embargo 41. The ARQZWA aims to maintain the ‘radio-quietness’ of a site in remote Western Australia, near Boolardy Station, around 300 km north-west of Geraldton. The area has very low levels of radiofrequency energy because of its low population and remote location.

The ARQZWA facilitates the development and use of new radioastronomy technologies at that location, and supports Australia’s hosting of the Square Kilometre Array (SKA). Since 2005, the Murchison Radioastronomy Observatory (MRO) has been developed at the centre of the ARQZWA. It is home to several significant radioastronomy projects, with the construction of the SKA set to commence in 2023.

There is a multi-tiered spectrum planning regulatory arrangement in place to support the ARQZWA and its ongoing viability for radio astronomy services. This includes the [Radiocommunications (Mid-West Radio Quiet Zone) Frequency Band Plan 2011](https://www.legislation.gov.au/Details/F2011L01520) (the band plan).

Other parts of the ARQZWA spectrum planning arrangements are described in [Appendix A](#_Appendix_A:_Spectrum).

## Band plan

A frequency band plan made under section 32 of the *Radiocommunications Act 1992* (Radiocommunications Act) must set out the purpose, or purposes, for which the frequency band or bands designated in it can be used. The use of a frequency band may include the reservation of spectrum in that band for the prevention or control of interference to radiocommunications.

The band plan commenced on 11 July 2011. It establishes a radio quiet zone (RQZ) in the mid-west region of Western Australia.

The band plan establishes 2 zones:

**RQZ (inner):** within the frequency range 70 MHz to 25.25 GHz, and within a distance of 70 km from the ARQZWA centre point (latitude 26.704167° South, longitude 116.658889° East)

**RQZ (outer):** within the frequency range 70 MHz to 25.25 GHz, and between a distance of 70 to 150 km from the ARQZWA centre point (latitude 26.704167° South, longitude 116.658889° East).

Services authorised to operate in the RQZ (inner) zone that are not radio astronomy services – in relation to radio astronomy services – are defined as secondary services. Applicants for new licences within both the RQZ (inner) and RQZ (outer) zones are required to consult with the MRO entity before applying for a licence. The MRO entity is responsible for operating the Murchison Radioastronomy Observatory. The entity is currently the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

# Issues for comment

The ACMA is seeking comment on the continuing need for the band plan, and its effectiveness and efficiency.

## Need for the band plan

The band plan is an important part of the regulatory framework in place to support the ARQZWA. Maintaining the band plan, which has legislative force, would provide greater predictability for all parties by maintaining the radio quietness of the ARQZWA while facilitating access to other users in the area (where appropriate). We consider the provision of additional certainty is desirable.

In particular, the ACMA considers the certainty that the band plan provides will continue to assist the Commonwealth to maintain the suitability of the site for radio astronomy, while managing the impacts on other uses, including mining, in the surrounding areas.

### Question 1

### Is the band plan still needed? If so, why? If not, why not?

## Effectiveness and efficiency of the instrument

Our assessment is that current regulatory arrangements in support of the ARQZWA are largely operating effectively. We have not been required to adjudicate in negotiations between the MRO entity and prospective licensees around the ARQZWA area. Further, there have been no reports to the ACMA of interference to radioastronomy services within the ARQZWA.

Table 1 shows the number of assignments within each of the zones of the band plan. Of the 268 assignments currently registered within the area covered by the plan, 123 assignments were issued after its commencement.

Assignments within the area covered by the band plan

|  |  |  |
| --- | --- | --- |
| Band plan zone | Current assignments | Assignments since commencement of the band plan |
| RQZ (inner) | 6 | 0 |
| RQZ (outer) | 268 | 123 |

Based on the ACMA Register of Radiocommunications Licences as at 1 August 2022.

Table 2 outlines the top 5 licence holders within the area covered by the band plan. Telstra holds over one-third of assignments, with Big Bell Gold Operations and Crosslands Resources holding 19 per cent each of assignments in the area.

Top 5 licensees within the area covered by the band plan

|  |  |  |
| --- | --- | --- |
| Licensee | Current assignments | Percentage of current assignments |
| Telstra Corporation Limited | 92 | 34% |
| Big Bell Gold Operations Pty Ltd | 50 | 19% |
| Crosslands Resources Ltd | 50 | 19% |
| DBNGP (WA) Nominees Pty Ltd | 20 | 7% |
| Shire of Murchison | 8 | 3% |

Based on the ACMA Register of Radiocommunications Licences as at 1 August 2022.

The ACMA has conducted preliminary consultation with representatives of the CSIRO. Under current arrangements in the band plan and RALI MS 32, prospective licensees around the ARQZWA are required to consult CSIRO as the ‘MRO entity’ on their proposals. The CSIRO has advised that it works with prospective licensees in the ARQZWA to facilitate operations as much as possible.

CSIRO have also advised that in the interest of stability for all stakeholders, it will not seek any technical changes to the parameters of the band plan (for example, geographic scope, frequency bands).

We are not aware of any major concerns about the operation of the band plan. Therefore, our view is that the band plan is largely operating effectively and efficiently.

### Question 2

### Is the band plan effective and efficient? If not, why not?

## Potential enhancements

The ACMA is seeking stakeholder comments on potential amendments to the band plan as discussed below.

### Operation of services authorised under class licence

Section 137 of the Radiocommunications Act states that the ACMA must not issue a class licence that is inconsistent with the spectrum plan or any relevant frequency band plan. Under the current version of the band plan, section 7 describes the permitted purposes of an applicable frequency band. This includes any additional services mentioned in section 8 of the band plan. Subsection 8(1) states (emphasis added):

An applicable frequency band may also be used for services provided under an apparatus licence whether issued before or after the commencement of this Frequency Band Plan.

Strict interpretation of section 137 of the Radiocommunications Act and the band plan together could conclude that services provided using radiocommunications devices authorised via class licence are not able to be provided in the areas and frequency bands covered by the band plan.

However, there may be some instances where it is necessary for radiocommunications devices authorised via class licence to be used within the areas and frequency bands covered by the band plan.

The interaction between class licences and the band plan was considered when the band plan was made. We proposed to include conditions in several class licences, such that operation of radiocommunications transmitters must not cause harmful interference to radio astronomy receivers operating at the centre of the ARQZWA and must be consistent with the band plan. However, it was decided to include conditions only in class licences where sufficient protections did not already exist, with those conditions being no more extensive than necessary to provide adequate protection to radio astronomy services within the ARQZWA.

Appendix B lists the 15 current class licences and any current provisions related to the ARQZWA included within them. An example is the [Radiocommunications (Low Interference Potential Devices) Class Licence 2015](https://www.legislation.gov.au/Details/F2022C00281). This states that operations within 70 km of the MRO are not authorised if they will cause interference with the operation of radio astronomy observations by the observatory.

Nonetheless, there may be inconsistencies in current class licensing arrangements that need to be addressed. We would like to explore whether the provisions of the band plan need to be reviewed regarding operations authorised by a class licence and any potential inconsistencies between the band plan and class licences.

#### Option 1: Maintain current band plan provisions

If it is considered desirable for services provided via class licence to not be permitted in all cases within the geographic area and frequency band covered by the band plan, no changes will be required to the current provisions of the band plan.

However, modifications would be required to various class licences to explicitly exclude the geographic area and frequency band covered by the band plan from their scope. Appendix B lists the 15 current class licences and identifies current provisions related to the ARQZWA included within them, if any.

#### Option 2: Include class licences as an ‘additional service’ in the band plan

If it is desirable for services provided via class licence to be permitted within the ARQZWA in any case, those services would need to be included in section 8 of the band plan as an additional service. A potential amendment to section 8 of the band plan to facilitate this would be required by adding a new subsection (5), as follows:

(5) An applicable frequency band may also be used for services provided under a class licence whether issued before or after the commencement of this frequency band plan.

In cases where the operation authorised by a class licence is not desirable within the ARQZWA, the relevant area and frequency range can then be considered for explicit exclusion from the class licence. This is the case, for example, in the [Radiocommunications (Intelligent Transport Systems) Class Licence 2017](https://www.legislation.gov.au/Details/F2021C01285) where operations within 70 km of the Murchison Radioastronomy Observatory are not authorised.

The preferred option for the ACMA is Option 2, as it provides the flexibility to authorise class-licensed services within the ARQZWA where necessary.

We are seeking stakeholder views on the treatment of services provided via class licence within the ARQZWA.

### Question 3

### Should Option 1 or Option 2 be pursued regarding the operation of services provided via class licence within the ARQZWA? Why?

### If Option 2, which class licences should be modified, if any, and what changes, if any, should be made regarding operations within the ARQZWA? Why?

### Supplementary radio quiet zones

The current band plan refers to the possible establishment of supplementary radio quiet zones. These provisions have not been used since the commencement of the band plan. Use of these provisions would require a variation to the band plan.

We are proposing to remove supplementary radio quiet zone provisions to further streamline the instrument. Should the establishment of supplementary radio quiet zones become necessary, the development of a new band plan – or a variation to the existing band plan – would be considered in consultation with stakeholders.

### Other amendments

The current band plan uses the term ‘MRO entity’ to refer to the entity responsible for operating the Murchison Radioastronomy Observatory. The entity is currently the Commonwealth Scientific and Industrial Research Organisation (CSIRO). To simplify the instrument, we are proposing to refer directly to the CSIRO instead of the MRO entity in the Radiocommunications (Australian Radio Quiet Zone Western Australia) Frequency Band Plan 2023.

### Question 4

### Do you support the making of the Radiocommunications (Australian Radio Quiet Zone Western Australia) Frequency Band Plan 2023? If not, why not?

## Proposed suppression of Spectrum Embargo 41

As discussed in [Appendix A](#_Appendix_A:_Spectrum), [Spectrum Embargo 41](https://www.acma.gov.au/publications/2019-10/rules/embargo-41) currently forms part of the regulatory arrangement in place to support the ARQZWA. Spectrum embargos are policy statements by the ACMA outlining the circumstances where it is likely to refuse to issue an apparatus licence in parts of the spectrum.

Spectrum Embargo 41 prevents new assignments in the frequency range 70 MHz to 25.25 GHz within 70 km of the ARQZWA. This replicates the RQZ (inner) zone of the band plan. The band plan outlines the following requirements for the RQZ (inner) zone:

Services authorised to operate that are not radio astronomy services are taken to be ‘secondary services’ in relation to radio astronomy services.

Applicants for new apparatus licences are required to consult with the MRO entity before applying for a licence.

Given the identical requirements of the band plan, Spectrum Embargo 41 appears to be unnecessary. Therefore, we are seeking stakeholder comments on the suppression of Spectrum Embargo 41.

### Question 6

### Is the proposed suppression of Spectrum Embargo 41 supported? If not, why not?

# Invitation to comment

Comments are sought from the public regarding our proposal to remake the Radiocommunications (Mid-West Radio Quiet Zone) Frequency Band Plan 2011, with minor changes, on the basis that it is operating effectively and efficiently.

## Making a submission

We invite comments on the issues set out in this consultation 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, Monday 14 November 2022**.

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

#### Publication of submissions

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# Appendix A: Spectrum planning arrangements for the ARQZWA

There is a multi-tiered spectrum planning regulatory arrangement in place to support the ARQZWA and its ongoing viability for radio astronomy services. This includes:

The [Radiocommunications (Mid-West Radio Quiet Zone) Frequency Band Plan 2011](https://www.legislation.gov.au/Details/F2011L01520) (the band plan)

[Spectrum Embargo 41](https://www.acma.gov.au/publications/2019-10/rules/embargo-41)

[Radiocommunications Assignment and Licensing Instruction (RALI) MS32](https://www.acma.gov.au/publications/2019-08/instruction/rali-ms32-mid-west-radio-quiet-zone)

Provisions in the [Australian Radiofrequency Spectrum Plan 2021](https://www.legislation.gov.au/Details/F2021L00617) (ARSP)

Specific arrangements in relevant spectrum, class and apparatus licences.

This appendix describes the spectrum planning regulatory arrangements in place as at September 2022, with the exception of the band plan. This is discussed in the body of this document.

Under section 299 of the Radiocommunications Act, we must have regard to any agreement, treaty or convention between Australia and another country or countries that makes provision in relation to radio emission. Australia is party to the [Convention Establishing the Square Kilometre Array Observatory](https://www.aph.gov.au/-/media/02_Parliamentary_Business/24_Committees/244_Joint_Committees/JSCT/2019/Convention_SKA/SKAO_Convention_Signed_12_March_2019.pdf). We must have regard to this convention.

## Spectrum Embargo 41

[Spectrum embargoes](https://www.acma.gov.au/spectrum-embargoes) are ACMA policy statements outlining the circumstances where we are likely to refuse to issue an apparatus licence in parts of the spectrum.

[Spectrum Embargo 41](https://www.acma.gov.au/publications/2019-10/rules/embargo-41) was created on 11 April 2005. The embargo was the first step in establishing the ARQZWA. It prevented the assignment of apparatus licences within the frequency range 108 MHz to 25.25 GHz (but excluding bands managed under the *Broadcasting Services Act 1992*) within 100 km of Mileura Station (Latitude 26° 22’ 58.7” South, Longitude 117° 19’ 6” East).

The embargo has evolved since its initial establishment, including a shift in the centre location, frequency range and radius of the area included in the embargo. The current embargo, which was last reviewed on 19 December 2014, prevents new assignments in the frequency range 70 MHz to 25.25 GHz within 70 km of the ARQZWA centre at latitude 26.704167° South, longitude 116.658889° East.[[1]](#footnote-2)

## Radiocommunications Assignment and Licensing Instruction MS32

Radiocommunications Assignment and Licensing Instructions (RALIs) provide advice on frequency assignment policy and coordination procedures. They reflect our current policies and set the technical framework for the operation of radiocommunications equipment and services.

[RALI MS32](https://www.acma.gov.au/publications/2019-08/instruction/rali-ms32-mid-west-radio-quiet-zone) sets out processes to coordinate apparatus licensed services within the ARQZWA. It provides criteria for assessment of proposed assignments within a coordination zone. This zone lies between the embargo area and a radius of up to 260 km from the centre of the RQZ, depending on frequency.

In cases where interference from the proposed radiocommunications transmitter would exceed the threshold levels specified in this RALI, the prospective licensee must implement interference-mitigation measures and consult with the MRO entity to reach agreement on adequate interference protection.

Where applicable, the coordination processes in RALI MS32 are also applied to radiocommunications transmitters operating under spectrum licences.

## Australian Radiofrequency Spectrum Plan

Section 32 of the Act requires that a frequency band plan must be consistent with the [Australian Radiofrequency Spectrum Plan 2021](https://www.legislation.gov.au/Details/F2021L00617) (the spectrum plan).

While the spectrum plan makes provision for radio astronomy in a number of bands, it does not make specific provision for radio astronomy in the full range of bands that are identified for operation in the ARQZWA and set out in the band plan.

In order to achieve consistency, subsection 10(8) of the spectrum plan specifies that a frequency band may be used for a radio astronomy service if provision is made for such use in a frequency band plan.

Australian footnote AUS103 to the spectrum plan also sets out that: ‘the Murchison Radioastronomy Observatory (MRO) (latitude 26° 42' 10.4" S, longitude 116° 39' 37.0" E) hosts the Australian Square Kilometre Array Pathfinder (ASKAP) operating in the band 700–1 800 MHz and the Murchison Widefield Array (MWA) operating in the band 80–300 MHz’.

## Licensing arrangements

### Spectrum licences

Since the establishment of the ARQZWA, all relevant spectrum licences have either been issued or re-issued to include measures to protect radio astronomy receivers operating within the ARQZWA from harmful interference.

### Class licences

Under section 137 of the Radiocommunications Act, we must not issue a class licence that is inconsistent with the spectrum plan or a frequency band plan.

Clauses are included in the following class licences. They require that a radiocommunications transmitter operating under the class licence must not cause harmful interference to radio astronomy receivers operating at the centre of the ARQZWA:

the [Radiocommunications (Low Interference Potential Devices) Class Licence 2015](https://www.legislation.gov.au/Details/F2022C00281)

the [Radiocommunications (Communication with Space Object) Class Licence 2015](https://www.legislation.gov.au/Details/F2022C00699)

the [Radiocommunications (Citizen Band Radio Stations) Class Licence 2015](https://www.legislation.gov.au/Details/F2021C00632).

### Apparatus licences

Special condition 52A is typically included on apparatus licences where the area of operation could potentially include or be close to the ARQZWA.

Special condition 52A states:

This service must not cause interference to radioastronomy services operating within the Australian Radio Quiet Zone Western Australia (ARQZWA) as defined in the Radiocommunications (Mid-West Radio Quiet Zone) Frequency Band Plan.

This service is coordinated as per the consultative process and coordination zone parameters of the Radiocommunications Assignment and Licensing Instruction ‘Coordination of Apparatus licensed Services within the Australian Radio Quiet Zone Western Australia’ (RALI MS32).

## Summary

Figure 1 illustrates the combined effect of the band plan, Spectrum Embargo 41 and RALI MS32. Figure 2 illustrates the geographic coverage of the various regulatory arrangements.

Spectrum planning regulatory arrangements for ARQZWA

|  |  |
| --- | --- |
|  | **Distance from centre (km)** |
| **Frequency band (MHz)** | 0–70 |  | 70–100 | 100–120 | 120–140 | 140–145 | 145–150 | 150–165 | 165–180 | 180–190 | 190–260 |
| 70–100 |   |  |  |  |  |  |  |  |  |  |  |
| 100–30 |   |  |  |  |  |  |  |  |  |  |  |
| 230–400 |   |  |  |  |  |  |  |  |  |  |  |
| 400–520 |   |  |  |  |  |  |  |  |  |  |  |
| 520–694 |   |  |  |  |  |  |  |  |  |  |  |
| 694–1000 |   |  |  |  |  |  |  |  |  |  |  |
| 1000–2300 |   |  |  |  |  |  |  |  |  |  |  |
| 2300–6000 |   |  |  |  |  |  |  |  |  |  |  |
| 6000–10000 |   |  |  |  |  |  |  |  |  |  |  |
| 10000–25250 |   |  |  |  |  |  |  |  |  |  |  |

|  |  |
| --- | --- |
|  | **Band plan:** Radiocommunications transmitters are taken to be a secondary service in relation to radio astronomy; MRO entity consultation required.**Spectrum Embargo 41:** Restriction on the issue of new apparatus licences. |
|  |  |
|  | **Band plan:** MRO entity consultation required. |
|  |  |
|  | **RALI MS32:** Defines coordination criteria for radiocommunications transmitters operating within a specified distance from the centre of the ARQZWA; MRO entity consultation required where coordination criteria are not met.  |

Geographic coverage of regulatory arrangements for ARQZWA



Inner dark red shaded circle: 50 km radius (coordination point for RALI MS32).

Outer red shaded circle: 70 km radius (inner zone of the ARQZWA band plan).

Red line: 150 km radius (outer zone of the ARQZWA band plan).

Other circles of various radii indicate the coordination thresholds for different frequency ranges specified in the Annex to RALI MS32.

# Appendix B: Provisions in class licences relevant to the band plan

|  |  |
| --- | --- |
| **Class licence** | **Provisions regarding the ARQZWA** |
| [Radiocommunications (27 MHz Handphone Stations) Class Licence 2015](https://www.legislation.gov.au/Details/F2021C00637) | None. Frequencies included in the class licence are outside of the scope of the band plan.  |
| [Radiocommunications (Aircraft and Aeronautical Mobile Stations) Class Licence 2016](https://www.legislation.gov.au/Details/F2021C00648) | None. However, this class licence includes frequencies and the geographic area covered by the band plan.[[2]](#footnote-3)  |
| [Radiocommunications (Body Scanning – Aviation Security) Class Licence 2018](https://www.legislation.gov.au/Details/F2021C01284) | None. However, this class licence is limited to security-controlled airports, of which there are none within the area covered by the band plan. |
| [Radiocommunications (Cellular Mobile Telecommunications Devices) Class Licence 2014](https://www.legislation.gov.au/Details/F2021C00641) | None. This class licence is limited to communications with licensed public telecommunications service (PTS) base stations. However, this could include frequencies and the geographic area covered by the band plan. |
| [Radiocommunications (Citizen Band Radio Stations) Class Licence 2015](https://www.legislation.gov.au/Details/F2021C00632) | Operations within 70 km of the Murchison Radioastronomy Observatory are not authorised if they will cause interference with the operation of radio astronomy observations by the observatory. |
| [Radiocommunications (Communication with Space Object) Class Licence 2015](https://www.legislation.gov.au/Details/F2022C00699) | Includes a note regarding operations within the RQZ (inner) zone. |
| [Radiocommunications (Cordless Communications Devices) Class Licence 2014](https://www.legislation.gov.au/Details/F2021C00645) | None. However, this class licence includes frequencies and the geographic area covered by the band plan.2 |
| [Radiocommunications (Emergency Locating Devices) Class Licence 2016](https://www.legislation.gov.au/Details/F2021C00646) | None. However, this class licence includes frequencies and the geographic area covered by the band plan.2 |
| [Radiocommunications (Intelligent Transport Systems) Class Licence 2017](https://www.legislation.gov.au/Details/F2021C01285) | Operations within 70 km of the Murchison Radioastronomy Observatory are not authorised.  |
| [Radiocommunications (Low Interference Potential Devices) Class Licence 2015](https://www.legislation.gov.au/Details/F2022C00281) | Operations within 70 km of the Murchison Radioastronomy Observatory are not authorised if they will cause interference with the operation of radio astronomy observations by the observatory. |
| [Radiocommunications (Maritime Ship Station — 27 MHz and VHF) Class Licence 2015](https://www.legislation.gov.au/Series/F2015L01197) | Class licence limited to maritime ship stations (not on land and therefore not within the ARQZWA).  |
| [Radiocommunications (Overseas Amateurs Visiting Australia) Class Licence 2015](https://www.legislation.gov.au/Series/F2015L01114) | None. However, this class licence includes frequencies and the geographic area covered by the band plan.2 |
| [Radiocommunications (Public Safety and Emergency Response) Class Licence 2013](https://www.legislation.gov.au/Details/F2021C00640) | None. However, this class licence includes frequencies and the geographic area covered by the band plan.2 |
| [Radiocommunications (Radio-controlled Models) Class Licence 2015](https://www.legislation.gov.au/Details/F2021C00629) | None. Frequencies included in the class licence are outside of the scope of the band plan. |
| [Radiocommunications (Radionavigation—Satellite Service) Class Licence 2015](https://www.legislation.gov.au/Series/F2015L01510) | None. Authorises RNSS receivers only – therefore no interference potential to radio astronomy. |

1. GDA94 datum. [↑](#footnote-ref-2)
2. This class licence did not require conditions for protection of radio astronomy services in the ARQZWA as the risk of interference to the observatory was considered to be low. [↑](#footnote-ref-3)