Scientific apparatus licences

Guidelines

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Introduction

This guide is intended to provide general information about the use of spectrum for scientific trials, within [broadcasting services bands (BSB)](https://www.acma.gov.au/bands-broadcasting-services) spectrum, and for the use of high power amateur stations. It provides information about the scientific apparatus licence and the process for applying for a licence. We consider each application for a scientific apparatus licence on a case-by-case basis.

The ACMA’s scientific licensing arrangements are intended to foster and encourage the development and testing of new radiocommunications technologies, services and devices.

A scientific apparatus licence authorises the operation of a station on a specific frequency, at specified locations or within specified areas, and typically has bespoke technical and operational conditions.

We issue apparatus licences of a ‘type’ determined under section 98 of the *Radiocommunications Act 1992* (the Radiocommunications Act). Scientific licences are a type of apparatus licence.

A scientific licence may be used for the following purposes:

research into radiocommunications

investigation of radiocommunications

instruction in radiocommunications

demonstration of equipment

* testing of equipment

trials of new radiocommunications technology

radio propagation path testing.

# General policy approach for scientific apparatus licence

Scientific licences are issued predominantly for trials of new technologies, or of the technical functions of new products. However, trials may also include incidental market testing.[[1]](#footnote-1)

In general, scientific licences do not authorise trials that primarily relate to the non‑technical aspects of new services or products – for example, trials with a primary purpose of market development.[[2]](#footnote-2) The ACMA may refuse an application for a scientific licence if it is not satisfied that the proposed trial relates primarily to a new technology or the technical functions of a new product.

The issue of a licence for a specific trial should not be taken as an indication of future spectrum availability beyond the specified licence term.

In particular:

Issue of a licence for a trial or other scientific use confers no rights to use of the spectrum other than for the purpose of the trial or use.

Issue of a licence in relation to a part of the spectrum for a trial or other scientific use does not preclude trials of other systems using that spectrum.

Issue of a licence to trial a particular technology or product does not imply that
the technology or product will be introduced into Australia permanently or, if it is, that the trial provider will be licensed to use the technology or product on an ongoing basis.

## Matters to be considered for scientific apparatus licences

Section 100 of the Radiocommunications Act provides that the ACMA must have regard to (among other matters) the following when deciding whether to issue an apparatus licence:

the effect on radiocommunications of the proposed operation of transmitters under the licence, including the risk of interference

whether the person proposed to operate the licence is appropriately qualified

* any risk of death or injury, or loss of or damage to property from the operation of the proposed transmitters
* if the relevant spectrum is in the BSB, whether it has been made available under section 34 of the *Broadcasting Services Act 1992* (BSA)

all matters that we consider relevant.

## Other matters relevant to scientific apparatus licences

Other matters that the ACMA is likely to consider relevant when deciding whether to issue a scientific apparatus licence may include, but are not limited to:

* spectrum availability (having regard to the location and time of the proposed use), including whether frequencies required for the proposed use are already licensed or planned for another purpose
* whether the applicant was the holder of an apparatus licence that was cancelled in the previous 2 years (see section 100(5) of the Radiocommunications Act)
* the purpose for which the licence will be used, including whether it is for the purpose of market development
* the nominated date for commencement of the licensed use and its duration
* the preparedness of the applicant to commence operation of a device on the nominated date
* whether the trial could practicably proceed using a different location or frequencies
* what strategies have been identified in the event of interference between the proposed device and other radiocommunications
* the relevance of the information to be obtained through the proposed operation of the device
* the willingness of the applicant to work with the ACMA, where the information to be obtained could be of interest to the ACMA or Australian Government
* the time required to assess the proposed technical specifications compared to the duration of the proposed operation of a device
* whether the device to be operated is consistent with the use for which the spectrum has been allocated in the Australian Radiofrequency Spectrum Plan 2021 and any relevant frequency band plan
* if the relevant spectrum is in the BSBs, whether it has been made available under section 34 of the BSA
* if the relevant spectrum is in frequency ranges covered by a re-allocation declaration made by the ACMA under section 153B of the Radiocommunications Act or by a spectrum licence, whether ‘special circumstances’ justify the issue of the licence.

# Applications

Applicants for a scientific apparatus licence in non-BSB spectrum should use the [Scientific assigned apparatus licence form](https://www.acma.gov.au/publications/2019-11/form/form-scientific-assigned-apparatus-licence). Applicants for a scientific apparatus licence in BSB spectrum should complete the [Application for an apparatus licence in the broadcasting services bands form](https://www.acma.gov.au/publications/2019-11/form/form-b12-application-apparatus-licence-broadcasting-services-bands-bsb).

Applicants for licences in non-BSB spectrum are encouraged to contact an Accredited Person (AP) to discuss their proposed licensing arrangement and to obtain the services of the AP to assist in the preparation of an application to the ACMA. Applicants should apply directly to the ACMA for apparatus scientific licences in BSB spectrum.

Accredited Persons can, among other things, assist in developing appropriate technical specifications for a proposed licence and identifying other matters relating to proposed frequency ranges, including coordination with incumbent services in the band. Please see the [ACMA website](https://www.acma.gov.au/find-accredited-person) for a list of Accredited Persons.

Applicants may include extra material as necessary in support of their application. The provision of extra information is encouraged where the operational requirements are complex, including where large amounts of spectrum are required.

The applicant is responsible for identifying appropriate technical specifications for the proposed licence and including this information on the form. In general, we will assess the suitability of proposed technical specifications provided by the applicant but will not propose appropriate technical specifications for a particular use case. The absence
of proposed technical specifications on the form may result in us refusing to issue
a licence.

If the proposed use is a trial that involves the participation of the public, the application should address the provision or availability of equipment, and how consumers or retailers will be informed of the limited duration of the trial.

# Trials of new radiocommunications technologies

The ACMA facilitates trials of new technologies or products, including for broadcasting purposes, by issuing scientific apparatus licences. Licences are generally only issued in circumstances where the trial is unlikely to cause interference to existing services.

We will consider applications for scientific licences for the purposes of conducting trials on a case-by-case basis. However, we may call for expressions of interest in conducting trials in a specific location, including after receiving an application to conduct a trial in that location.

Licences may be issued for trials in BSB or non-BSB spectrum. If a trial is to be conducted in BSB spectrum, spectrum may need to be made available under
section 34 of the BSA prior to the issue of a scientific licence.

Only applicants who are in a position to commence a trial of new radiocommunications technologies or services in the near future should apply for a scientific licence. The ACMA will generally not issue a licence if we consider that the proposed trial is unlikely to eventuate.

To allow adequate time to consider all relevant matters associated with the trial, applicants are encouraged to submit their scientific licence application at least 90 days prior to the preferred start date of the trial. This gives us sufficient time to consider relevant matters before that date. Where the ACMA requests more information about the proposal, further time to consider the application may be required. We may not be able to consider an application in time for the nominated start date of a trial if the application is received too close to the proposed start date.

Where a proposed trial requires the use of a significant amount of spectrum or complex spectrum planning work, it is recommended that applicants submit their application as early as possible.

## Spectrum availability

The ACMA generally gives priority to long-term services when planning spectrum and does not reserve spectrum for possible radiocommunications trials.

Scientific apparatus licences for trials of new radiocommunications technologies will generally be issued where spectrum is not already in use for other purposes and where a trial will not cause interference to existing services.

However, we may decide to not issue a scientific licence for the purposes of a trial even where the requested spectrum is available.

## Competing applications for trials

The ACMA may not issue licences for all applications for trials if we receive multiple applications seeking to use the same spectrum during the same or overlapping periods. In this circumstance, the ACMA prefers applicants to resolve competing demands though negotiation.

However, if negotiation does not produce a workable solution, the principles used to guide us in reaching a decision may include:

the purpose of each trial

the date that each application was submitted

the preparedness of each applicant to commence operating on a device on the nominated date

the nominated date and duration of each trial

whether a trial could practicably proceed using a different location or frequencies

other matters that we consider relevant.

# Scientific licences in broadcasting spectrum bands (BSBs)

Additional considerations and regulatory requirements apply in relation to the issue of a scientific licence in BSB spectrum. Under paragraph 34(1)(g) of the BSA, the ACMA may make BSB spectrum available (for a temporary period) for purposes other than broadcasting, or for trials of new broadcasting technology to assist the broadcasting industry to make informed decisions about choices of delivery platforms for broadcasting services.

However, some parts of the BSB spectrum in Australia are already heavily congested – for example, FM radio frequencies in regional and metropolitan areas. As a result, BSB spectrum is often very scarce. Noting the matters listed below, where an application is made for a scientific apparatus licence in scarce BSB spectrum, we may decide to not issue a licence.

The ACMA may decide to not issue a scientific apparatus licence in BSB spectrum if our planning process for that spectrum is incomplete, or if the planning is complete but spectrum remains unallocated.

Subject to spectrum availability, the ACMA is supportive of trials of new broadcasting technologies, as they facilitate industry acquiring information relevant to business decisions about the delivery of broadcasting services. However, in general we will not permit broadcasting services to be transmitted under a scientific licence. Our view is that the technical aspects of the trial are able to be tested and assessed by the transmission of a test signal or looped audio content.

In considering applications for a scientific licence in BSB spectrum, we will, in addition to considering the objects of the BSA and the Radiocommunications Act, have regard to the planning criteria in section 23, and the matters in section 34(2) of the BSA (when making a decision under subsection 34(1) of the BSA), and other relevant matters, including:

the purpose of the licence

local spectrum scarcity

the proposed timing and duration of the licence

whether the trial could practicably proceed using a different location or frequency

whether the applicant already holds a licence for a similar trial in a different market

the relevance of the information to be obtained through the proposed trial.

# High-power amateur station operation

Our current policy is to use scientific licensing to authorise operation of high-power stations that have traditionally been licensed under the amateur licensing framework. We consider that such high-power transmissions are consistent with the purposes of scientific apparatus licences, as stated in the introduction above. In particular, high-power amateur use is usually conducted for the purposes of research and investigation into radiocommunications.

In considering an application for a scientific licence to authorise high-power amateur stations, we will typically consider:

the interference risk associated with the station, should the licence be issued, taking into account:

technical and operational details of the station, including antenna height/tilt

the frequency range(s) in which the high-power station would operate

whether the station would be located in an urban, regional or remote area

the other stations licensed to operate in the relevant frequency range(s) (including under class licensing) that are operating, or expected to be operating, proximate to the location of the station

the electromagnetic energy (EME) risk associated with operation of the station, including:

the location of the station, including whether the station is accessible to the public or proximate to publicly accessible areas (for example, if the station is close to a property border)

whether the station is likely to comply with the EME public exposure requirements of the Radiocommunications Licence Conditions (Apparatus Licence) Determination 2015

the applicant’s awareness of EME compliance (including record-keeping) requirements

the purpose for which the high-power station would be used (for example, earth-moon-earth), including duty cycle/expected time of operation (would it only be operated at high-power at certain times of the day)

the level of qualification held by the applicant

any other matter the ACMA considers relevant to the application.

Applicants are encouraged to undertake their own due diligence in relation to the interference and EME risks associated with their proposed high-power amateur station. In particular, applications should include a report prepared by a suitably qualified person (such as an AP) of the likely interference and EME risks associated with the station.

As with other scientific licences, our policy is to limit any high-power amateur scientific licences to 12 months.

# Applicable conditions, licence duration, taxes and charges, and other matters

Devices operated under scientific apparatus licences must comply with the relevant obligations specified in:

the [*Radiocommunications Act 1992*](https://www.legislation.gov.au/Details/C2023C00161)

the[Radiocommunications Licence Condition (Apparatus Licence)
Determination 2015](https://www.legislation.gov.au/Details/F2021C01209)

the[Radiocommunications Licence Conditions (Scientific Licence)
Determination 2023](https://www.legislation.gov.au/Details/F2023L01123)

individual licence conditions.

Where conditions are applied to individual licences, these conditions are printed on the licence itself. It is the responsibility of the licensee to ensure that they are aware of, and comply with, all legislative requirements applicable to the device.

The operation, possession and supply of devices may also be restricted or affected
by the [Radiocommunications Equipment (General) Rules 2021](https://www.legislation.gov.au/Details/F2023C00236) (the General Equipment Rules).

## No interference no protection

Scientific apparatus licences will generally be issued on a ‘no interference, no protection’ basis. This means that operators must not cause interference to other radiocommunications and cannot claim interference protection from other
licensed devices.

## Reporting requirements

Successful trial applicants may be required to provide reports to the ACMA on the trial (technical and non-technical aspects) during its operation and/or at its conclusion. Reports are to be provided by the date requested and may be made available to the Minister for Communications or other Commonwealth entities, or released publicly (subject to confidentiality considerations).

## Licence duration

Scientific apparatus licences will generally have a maximum duration of 12 months and be renewed only in exceptional circumstances. As noted elsewhere in these guidelines, the issue of a scientific licence should not be taken as an indication of future spectrum availability beyond the allocated licence term.

## Equipment standards

Devices operated under scientific apparatus licences must comply with the General Equipment Rules. The rules require that devices comply with certain applicable standards. These applicable standards cover radiocommunications, electromagnetic energy and electromagnetic compatibility requirements where relevant. There are prohibitions on the supply, possession and operation of devices that do not comply with an applicable standard.

Where a device does not comply with an applicable standard, a person must apply to the ACMA for a permit (and be issued with the permit) to supply or legally operate and possess the device.

The application and issue of a permit for a device that does not meet an applicable standard is separate to the licensing process, and the issue of a licence does not guarantee the issue of a permit under the General Equipment Rules. Please see the [ACMA website](https://www.acma.gov.au/general-equipment-rules) for more information about the permit scheme under the General Equipment Rules, including the applicable fees.

## Taxes and charges

Issue and renewal charges apply to scientific apparatus licences, as well as a tax on issue and renewal (and, if the licence is for more than 12 months, on each anniversary of the day the licence came into force). The [ACMA website](https://www.acma.gov.au/fees-apparatus-licences) has more information about applicable taxes and charges. It is a condition of the licence to pay all relevant taxes and charges.

## Licence transfers

Scientific apparatus licences (like most other apparatus licences) may be transferred from one licensee to another, where we approve the transfer. [Our website](https://www.acma.gov.au/transfer-or-trade-your-licence) has more information about how to transfer your licence to another person and the rules that apply to licence transfers.

## Third-party use of a licence

Parties other than the licensee may be authorised to operate a device under a scientific apparatus licence. [Find out more](https://www.acma.gov.au/let-someone-else-use-your-licence) about how to authorise another person to operate a device under a scientific apparatus licence.

## More information

For further details about scientific apparatus licences or to submit an application, please contact the ACMA Customer Service Centre.

Tel: 1300 850 115
Fax: (02) 6219 5353
Email: info@acma.gov.au
Website: [acma.gov.au/contact-us](https://www.acma.gov.au/contact-us).

1. Market testing is testing to assess the customer reaction to a service or device. [↑](#footnote-ref-1)
2. Market development is the expansion of products or services into new markets. [↑](#footnote-ref-2)