Review of Australian satellite filing procedures

Consultation paper

SEPTEMBER 2023

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[Executive summary 1](#_Toc144213378)

[1 Introduction 3](#_Toc144213379)

[1.1 Need for review 3](#_Toc144213380)

[1.2 Current satellite system filing procedures 3](#_Toc144213381)

[1.3 Overview of review 4](#_Toc144213382)

[1.4 Overview of changes 5](#_Toc144213383)

[1.4.1 Restructured document for readability and clarity 5](#_Toc144213384)

[1.4.2 Application and assessment process 6](#_Toc144213385)

[1.4.3 Assessment criteria 6](#_Toc144213386)

[1.4.4 Procedures for approved applicants 8](#_Toc144213387)

[1.4.5 Change in access to an ITU satellite filing 8](#_Toc144213388)

[2 Revisions to application and assessment process 9](#_Toc144213389)

[2.1 When an application is required 9](#_Toc144213390)

[2.1.1 Current requirements 9](#_Toc144213391)

[2.1.2 Revised requirements 9](#_Toc144213392)

[2.2 Short-duration missions 9](#_Toc144213393)

[2.3 Filing conditions 10](#_Toc144213394)

[3 Revisions to assessment criteria 12](#_Toc144213395)

[3.1 Australian jurisdiction 12](#_Toc144213396)

[3.2 Operational control 12](#_Toc144213397)

[3.3 Australian benefit 13](#_Toc144213398)

[3.4 Coordination with Australian satellite systems 14](#_Toc144213399)

[3.5 Requirements for ‘planned band’ applications 14](#_Toc144213400)

[3.6 Requirements for amateur satellite bands 15](#_Toc144213401)

[4 Revisions to ongoing management of satellite systems 16](#_Toc144213402)

[4.1 ITU satellite coordination process 16](#_Toc144213403)

[4.2 Information on IFIC cost recovery charges 16](#_Toc144213404)

[4.3 Management of satellite systems through milestones 16](#_Toc144213405)

[5 Change in ownership 18](#_Toc144213406)

[6 Drivers of future change 19](#_Toc144213407)

[6.1 International arrangements 19](#_Toc144213408)

[6.2 ACMA approach to satellite filing 20](#_Toc144213409)

[6.3 Relationship between filing and licensing 20](#_Toc144213410)

[6.3.1 Discussion of alternative approaches 21](#_Toc144213411)

[6.4 Large NGSO satellite systems 22](#_Toc144213412)

[6.5 Critical infrastructure 23](#_Toc144213413)

[6.6 ITU cost recovery 23](#_Toc144213414)

[6.7 ITU Radio Regulations Board (RRB) 24](#_Toc144213415)

[6.7.1 Extension to bringing into use timelines 24](#_Toc144213416)

[6.7.2 Satellite coordination difficulties and filing priority 25](#_Toc144213417)

[6.7.3 Status of WRC decisions recorded in WRC plenary minutes 25](#_Toc144213418)

[6.7.4 Equitable use of geostationary orbits and Resolution 40 25](#_Toc144213419)

[6.7.5 Equitable use of non-geostationary orbit and spectrum resources 26](#_Toc144213420)

[6.7.6 Radio Regulation 4.4 27](#_Toc144213421)

[7 Invitation to comment 29](#_Toc144213422)

[7.1 Making a submission 29](#_Toc144213423)

[7.2 Publication of submissions 29](#_Toc144213424)

[7.3 Privacy 29](#_Toc144213425)

Executive summary

Before operating a satellite system, the technical details of the satellite system must be filed with the International Telecommunication Union ([ITU](https://www.itu.int/en/Pages/default.aspx)) by an ITU Member State. In Australia, the Australian Communications and Media Authority (ACMA) acts as the Australian administration for the ITU’s satellite filing process. We assess requests to file satellite systems with the ITU in accordance with the [*Australian procedures for the coordination and notification of satellite systems*](https://www.acma.gov.au/publications/2012-01/guide/australian-procedures-coordination-notification-satellite-systems) (referred to in this document as the Australian satellite filing procedures or filing procedures).

While still functional, the filing procedures were last updated in 2011 and we consider it timely to once again review them to ensure they provide a flexible, contemporary approach that supports Australian satellite operators.[[1]](#footnote-2)

This paper outlines proposed changes to the filing procedures, which are intended to improve the clarity and readability of the procedures and to ensure they are more reflective of the current regulatory environment and industry practices. This paper also explores environmental, policy and regulatory matters that might inform future changes to our approach to satellite filing and to the licensing of space-based communication systems.

In brief, changes are proposed to:

* improve clarity and readability of the filing procedures
* provide clarity on the ongoing obligations of satellite operators
* introduce a new option for the assessment of short-duration mission applications
* update the assessment criteria for new filing applications, with the more substantial changes being:

seeking assurances that the applicant (when associated with a foreign entity) has a process in place to ensure confidential Australian satellite information remains in the applicant as an Australian entity (under the ‘Australian jurisdiction’ assessment criterion)

for existing satellite operators, including consideration of past performance when considering the benefit to Australia of a new filing request (Australian benefit criterion)

* provide an option (in certain cases such as short-duration mission satellites) for simplified involvement in the ITU satellite coordination process

require that all scenarios that result in a change ownership of an entity with rights to an ITU satellite filing be considered by the ACMA. Currently it is only if a filing is transferred from one entity to another that an assessment is made by the ACMA – changes in company ownership are not currently considered.

To aid consideration, areas of key proposed changes to existing requirements are highlighted in the draft revised filing procedures.

Discussion of matters that might inform future changes is outlined in the section on ‘Drivers of future change’. Matters considered include:

the ACMA’s approach to satellite filing

the relationship between satellite filing and licensing

large non-geostationary orbit (NGSO) satellite systems and emerging satellite coordination matters being monitored by the ITU [Radio Regulations Board](https://www.itu.int/en/ITU-R/conferences/RRB/Pages/default.aspx) which, depending on how they are treated at the ITU World Radiocommunication Conference 2023 ([WRC-23](https://www.itu.int/wrc-23/)), might have relevance to both our radiocommunications licensing and satellite filing procedures.

Our conclusion is that our overall approach to filing and licensing remains appropriate, and no changes are planned. However, we are aware of developments in the policy environment, regulatory reform and spectrum demand drivers impacting on satellite communications. We intend to continue to monitor these developments and seek industry views on whether these trends and changes necessitate a change in our approach.

We welcome comment on the matters presented in this paper. Feedback received will be used to inform the update to the filing procedures and to identify other areas for possible future consideration and review.

Throughout this document, we use the term ‘satellite system’ as defined in the ITU [Radio Regulations](https://www.itu.int/pub/R-REG-RR),[[2]](#footnote-3) as it is a broad term covering both geostationary orbit (GSO) and non-geostationary orbit (NGSO) systems.[[3]](#footnote-4) In certain circumstances we use the narrower term ‘satellite network’,[[4]](#footnote-5) for example when discussing requirements that apply to GSO systems or considering ITU requirements that specifically refer to ‘satellite network’.

# Introduction

## Need for review

Before operating a satellite system, the technical details of the satellite system must be filed with the International Telecommunication Union (ITU) by an ITU Member State. The ACMA assesses requests to file a satellite system with the ITU in accordance with the [Australian procedures for the coordination and notification of satellite systems](https://www.acma.gov.au/publications/2012-01/guide/australian-procedures-coordination-notification-satellite-systems%22%20%5Ct%20%22_blank) (referred to in this document as the Australian satellite filing procedures or filing procedures for short).

The Australian satellite filing procedures set out the ACMA’s policies and procedures for dealing with applications for a new satellite system to be filed with the ITU. While still functional, the filing procedures have not been reviewed since 2011. Since then, there have been changes to ITU requirements and changes in the Australian and international market for satellite operators and satellite operations.

When the filing procedures were last revised in 2011, most of the ACMA’s satellite filing work was in supporting geostationary orbit (GSO) satellites. Now we see interest from research organisations (predominantly universities) and new companies interested in non-geostationary orbit (NGSO) satellite systems.

Research organisation missions typically have a much shorter time from mission conceptualisation to deployment and a shorter satellite lifespan[[5]](#footnote-6) due to the common use of small satellites known as CubeSats[[6]](#footnote-7) which are not replenished at end of life. While CubeSats and other small satellites are often used by research missions, they can also be used by commercial and government users. The key distinguishing factor from a regulatory perspective is the mission’s short duration, not solely the size of the satellite used.

At present there are 11 Australian satellite operators. Four of these are relatively new operators and research organisations, for whom since 2020 we have approved filing applications supporting NGSO satellite systems with a short lifespan for research purposes. Our experience is that some aspects of the current filing procedures are not well suited to the satellite systems with short mission lives being developed by research organisations and could be improved.[[7]](#footnote-8)

The ACMA’s regulatory practices and obligations have also evolved since 2011. With learnings from industry feedback and our experience assessing new applications, we have identified some provisions that require updating or are no longer relevant.

These factors have prompted us to review our filing procedures.

## Current satellite system filing procedures

Our current filing procedures comprise 3 main parts. The first part provides an introductory background to the filing procedures and the satellite regulatory framework. The second part covers the application and assessment process. The third part deals with our procedures for managing a satellite filing after an application is approved and submitted to the ITU.

The satellite regulatory framework is described in the draft revised filing procedures. To avoid duplication, that material is not repeated here. An overview of remaining content of the current filing procedures is presented below in Table 1: Overview of current filing procedures.

Overview of current filing procedures

|  |
| --- |
| Current filing procedures |
| **Application and assessment process** |
| * How to apply to the ACMA for a new satellite filing.
* Criteria that need to be fulfilled for the ACMA to accept the application to file a new satellite system with the ITU, with the principal assessment criterion being substantive Australian benefit derived from the use of the radio frequencies. Other criteria include:
* the applicant must be an Australian company
* compatibility with Australian and ITU spectrum arrangements, both legislative and administrative
* new applicants must demonstrate that they have technical and financial credentials to support the filing.
* The management level within the ACMA for the decision to accept or reject the application.
* Guidance on the requirements for domestic coordination between Australian satellite operators.
 |
| **Procedures for managing a filing submitted to the ITU**  |
| Obligations of satellite operators.The international process of coordination and notification of satellite systems (this is what happens after a system is filed with the ITU).Milestones that need to be met by Australian satellite operators, in order to manage Australian obligations and ITU requirements for bringing a satellite system into use.Process of transferring access to the filing between Australian satellite operators.The requirement to cost recover the ACMA’s activities supporting the filing and subsequent processes. |

## Overview of review

We have reviewed our filing procedures and developed draft revised filing procedures for consultation. This paper outlines the proposed changes to the filing procedures. It also explores environmental, policy and regulatory matters that might inform other future changes to our approach to satellite filing and to licensing of space-based communication systems. Key matters considered are:

* international arrangements
* the ACMA’s approach to satellite filing
* the relationship between satellite filing and licensing
* large NGSO satellite systems

emerging issues in satellite coordination identified by the ITU [Radio Regulations Board](https://www.itu.int/en/ITU-R/conferences/RRB/Pages/default.aspx) (RRB).

While we have previously explored our approach to licensing of space-based communications systems in our previous consultation on the [draft *Five year spectrum outlook 2022–27*](https://www.acma.gov.au/consultations/2022-03/draft-five-year-spectrum-outlook-2022-27-consultation-122022) (FYSO),[[8]](#footnote-9) the intent of this consultation is to explore more broadly the relationship between filing and licensing and need for a possible change in approach at the filing stage.

Our conclusion at this stage is that our overall approach to filing and licensing remains appropriate, and no changes are planned. However, we are aware – as discussed here and outlined in our [draft FYSO 2023–28](https://www.acma.gov.au/five-year-spectrum-outlook) – of developments in the policy, regulatory reform and spectrum demand drivers impacting on satellite communications. We intend to continue to monitor these developments and seek industry views on whether these trends and changes necessitate a change in our approach.

Feedback received will be used to finalise the update to the filing procedures and to identify areas for possible future consideration and review.

In addition to matters discussed in this paper, we are aware of technology innovations that will allow consumer mobile phones to communicate directly with a satellite system (known as satellite direct to mobile). We are separately investigating these developments and will consider them in more detail in our annual work program, to be outlined in our finalised FYSO 2023–28.

## Overview of changes

Having conducted an initial review of the filing procedures, we have identified a need to update the procedures to:

* improve clarity and readability – achieved in part by restructuring the procedures to provide greater clarity on the regulatory background, and application and assessment process
* clarify the ongoing obligations of satellite operators
* introduce a new option for the assessment of short-duration mission applications

revise the assessment criteria and procedures for managing the coordination and notification of satellite systems to be more reflective of the current regulatory environment and industry practices.

Proposed changes are outlined below, with more substantial changes discussed in the following sections. To aid consideration, areas of key proposed changes to existing requirements are highlighted in the draft revised filing procedures.

### Restructured document for readability and clarity

The filing procedures have been restructured for clarity and readability using our learnings from assisting new satellite operators to understand the filing process to present the information in a more understandable way. The result is a revised document structure:

* Sections 1 and 2 are new sections that have been drafted based on existing text.
* Section 1 (Introduction) provides background on the radiocommunications regulatory regime as it applies to satellite filing. It includes information contained in the document [*Satellite coordination and notification regulatory environment*](https://www.acma.gov.au/publications/2012-01/guide/satellite-coordination-and-notification-regulatory-environment). As such, that document will no longer be required when the update is finalised, and it will be removed from the ACMA website.
* Section 2 (Application and assessment process) outlines the application and assessment process, covering matters such as when a filing is required, who in the ACMA approves a request to file, likely conditions of approval and obligations once a filing is approved.
* Section 3 (Assessment criteria) deals only with the assessment criteria. This is based on the section ’The ACMA procedures for assessing proposed new satellite systems’ in our existing filing procedures. Material not related to the assessment criteria has been moved into sections 1 and 2. Text with key changes to the assessment criteria are highlighted in the consultation draft.
* Section 4 (Procedures for approved applicants) is based on the section ‘Procedures for managing the coordination and notification of satellite systems’ in our existing filing procedures. Key changes highlighted in the consultation draft.
* Section 5 (Change access to an ITU satellite filing) is a new section considering ownership changes, though text about transfer and relinquishing a filing is as per current filing procedures.

Section 6 (Charges) provides a consolidated summary of the cost recovery requirements for satellite filing activity, based on existing material in the current filing procedures.

Beyond these improvements for clarity and readability, we are also proposing more substantial changes, discussed below.

### Application and assessment process

Our review of the filing procedures identified:

* that there was ambiguity about when (beyond new filing requests) an assessment by the ACMA is required. For example, modification to the existing filings, ownership changes and filing transfers
* a need to provide clear guidance for conditions typically associated with any approval of a filing request

a need to include requirements for short-duration missions conforming with ITU Resolution 32 (WRC-19)[[9]](#footnote-10) for short-duration missions.

These matters have been addressed in Section 2 (Application and assessment process) of the draft revised filing procedures and are discussed in Section 2 (Revisions to application and assessment process) of this document.

### Assessment criteria

To improve clarity, assessment criteria are grouped into categories. The proposed categories and the nature of proposed changes are summarised below in Table 2: Summary of changes to assessment criteria. Changes are discussed in Section 3 (Revisions to assessment criteria).

Summary of changes to assessment criteria

|  |
| --- |
| Summary of changes  |
| **Conformity with planning arrangements**  |
| * No change (except for minor edits to assist readability).
 |
| **Australian jurisdiction** |
| * Additional information requested to allow consideration of whether the applicant is a subsidiary of a foreign company, controlled by, or related to a foreign entity or has access to satellite filings through another administration of an ITU Member State.
* In such cases, the applicant needs to provide information showing how the satellite operator functions independently from the foreign entity and how confidential Australian satellite information about other Australian satellite operators is restricted to the applicant as an Australian satellite operator.
 |
| **Operational control**  |
| * No change.
 |
| **Technical and financial credentials**  |
| * Revised to make clear that having technical and financial credentials is an ongoing requirement.
 |
| **Australian benefit** |
| * This criterion currently requires that a satellite system provide ‘substantive’ Australian benefit. We are replacing ‘substantive’ with ‘substantial’. That is there needs to be a substantial Australian benefit for ACMA to agree to file, where substantial has its ordinary meaning (that is, of ample or considerable importance, size or worth).
* Revised to make clear that for there to be a benefit to Australia, Australia must be in the service area of the proposed satellite service.
* For new applicants from existing satellite operators, including consideration of past performance as part of assessing Australian benefit. This will include consideration of compliance with the requirements of our filing procedures for existing filings and the Australian benefit provided by those filings.
 |
| **Coordination with existing Australian satellite systems[[10]](#footnote-11)** |
| * Changed to give an option of filing with agreement in principle between Australian satellite operators with coordination to be completed before satellite system is brought into use.
* Additional text and restructured to give greater clarity about our expectation of how coordination is achieved between Australian satellite operators and how disputes will be addressed.
 |
| **Applications in ITU ‘planned bands’** |
| * Deletion of the requirement that applications to make use of planned bands over the territory of another country will only be considered if accompanied by the approval of the administration of that country.
* Deleted due to potential delays in obtaining approval and that the ITU process for planned bands includes the opportunity for any administration to have its territory removed from the service area of the satellite system.
 |
| **Additional requirements for amateur satellites** |
| * Requiring that applications for use of amateur satellite bands require a letter of support from the Australian amateur community and to undertake frequency coordination through the [International Amateur Radio Union](https://www.iaru.org/reference/satellites/). This requirement is reflective of how we have assessed recent applications.
 |

### Procedures for approved applicants

Section 4 (Procedures for approved applicants) of the revised filing procedures is essentially the same as the existing section ‘Procedures for managing the coordination and notification of satellite systems’ in our existing filing procedures with the following changes:

* Schedule of milestones for ensuring that ITU obligations are met to be referred to as guidance on best practice rather than a mandatory requirement.
* Additional flexibility provided to short-duration missions and filings in bands not subject to coordination with regard to the requirement for participation in the ITU satellite coordination process (International Frequency Information Circular).
* Inclusion of a statement that the ACMA’s ongoing support for a satellite operation is conditional on there being a substantial benefit to Australia.
* Inclusion of text reminding satellite operators that the ACMA’s filing procedures do not identify all ITU requirements that are applicable to satellite systems and the onus is on the satellite operator to be aware of, and operate in accordance with, ITU requirements.

Changes to milestone arrangements and participation in the ITU satellite coordination process are discussed in more detail in Section 4 (Revisions to ongoing management of satellite systems) of this document.

### Change in access to an ITU satellite filing

Section 5 (Requirements for change in access to an ITU satellite filing) of the revised filing procedures is based on the existing material of the current filing procedures regarding transfer of and relinquishing a filing. It includes a requirement that when ownership arrangements change (that is, when the business is sold or transferred to another entity), the satellite operator must apply to the ACMA for re-assessment of whether it is in Australia’s interest to support the change in right of access to the filing.

Ownership changes will now include changes to the parent entity if the satellite operator is a subsidiary of, or controlled by, another entity.

The purpose of this amendment is to ensure that the new owner qualifies for the ACMA to manage the satellite filing on its behalf. These changes are discussed in more detail in Section 5 (Change in ownership) of this document.

# Revisions to application and assessment process

## When an application is required

### Current requirements

The current filing procedures specify that an application must be submitted for a new satellite filing and (in a separate section of the procedures) for transfer of an existing filing to another entity.[[11]](#footnote-12) While not explicitly stated, in practice we also require an application to be submitted and assessed for modifications to existing filings, as these can be as complex as the initial filing.

### Revised requirements

In the revised draft filing procedures, for clarity, in one section we list all the circumstances when a filing application must be submitted to the ACMA. We propose that an application will be required:

* for a new ITU satellite filing (existing requirement)
* to modify an existing ITU satellite filing, such as adding or changing a frequency band, or altering orbital parameters (reflecting current practice)

to transfer use of an existing ITU satellite filing to another entity (existing requirement)

for a change in ownership of a satellite operator with access to an ITU satellite filing (new requirement).

As discussed at Section 5 (Change in ownership), we propose that when ownership of the satellite operator[[12]](#footnote-13) changes (for example, when the business is sold or transferred to another entity), the new owner must apply to the ACMA for re-assessment of whether it is in Australia’s interest to support the change in right of access to the filing.

The purpose of these requirements is to ensure that satellite operators seeking significant changes to existing filing arrangements still meet the criteria for the ACMA to act on their behalf.

## Short-duration missions

Currently applications from all new satellite operators are required to be considered by the full board of the ACMA Authority regardless of the type or lifespan of the proposed satellite system.

Over the last 3 years, the ACMA has submitted satellite filings to the ITU for a small number of research organisations (4) for satellite systems with a limited lifetime intended for the purposes of demonstration, proof of concept, research or education. These systems typically have rapid development and deployment timeframes compared to other satellite systems.

Our view is that such applications have a lower risk profile compared with other satellite systems and an expedited approvals process can apply. The ITU has also recognised the unique nature of these systems, and at the ITU World Radiocommunication Conference 2019 (WRC-19) developed ITU [Resolution 32](https://www.itu.int/dms_pub/itu-r/oth/0C/0A/R0C0A00000F0015PDFE.pdf) (WRC-19) on short-duration missions.

We propose to modify our filing procedures to include a new category of ‘short-duration mission’ based on ITU Resolution 32 (WRC-19). For such missions we propose to expedite ACMA approvals to achieve a shorter time between submission of an application and determination of the outcome.

We propose that for an application to be considered by the ACMA as a ‘short-duration mission’, it will need to meet the requirements of ITU Resolution 32 (WRC-19). This includes the following conditions:

* the assignments are in the bands that are not subject to the ITU coordination procedure under Section II of Article 9 of the Radio Regulations
* the total number of satellites does not exceed 10
* the duration of the mission will not be longer than 3 years starting from the date of deployment of the first satellite into the orbit which was notified in the ITU filing. Note the ITU will cancel the filing after 3 years under Resolution 32
* the satellite system has the capability to cease transmitting immediately in order to eliminate harmful interference

the filing will be submitted to the ITU pursuant to ITU Resolution 32 (WRC-19).

Irrespective of whether it is a short-duration mission, we (in our procedures) reserve the right to refuse expedited evaluation if we consider that the application warrants more detailed examination under the normal evaluation process (for example, due to sensitives or matters of national significance).

To implement these changes, material has been included in our filing procedures (Section 2, Applicant and assessment process). We are also proposing an option of abridged requirements for participation in the ITU satellite coordination process in certain frequency bands as a way of minimising the regulatory burden and cost of participating in the ITU satellite coordination process, discussed in this paper in section 4.1 (ITU satellite coordination process).

## Filing conditions

In addition to the assessment criteria, an assessment typically results in our identification of a number of conditions to which an applicant is required to agree before we will submit the filing to the ITU.

We propose to set out the commonly included conditions in the filing procedures. This is to ensure applicants are aware of likely obligations prior to lodging an application.

These conditions normally include that the applicant agrees and accepts:

* that approval to file does not in any way imply that the ACMA will issue radiocommunications licences providing authorisation for the applicant to provide a service within Australia’s territory. Authorisation will be considered under our relevant policies at the time a radiocommunications licence application is received
* that various bands are under review from time to time and that future licensing will be dependent on the outcome of those processes
* it is the applicant’s responsibility to conduct its own due diligence with regard to current polices and reviews that might affect future licensing
* if an application for an NGSO satellite constellation is approved, the ACMA may require one or more milestones to formalise the dates for the realisation of the entire constellation. We recognise that many factors may affect the delivery of a constellation and suggest that these milestones be reviewed periodically by both parties
* in the event that the implementation of an NGSO satellite constellation differs from the original application in any detail (such as number of satellites, orbital height, inclination), the appropriate modification of the ITU satellite filing may be made to reflect the implemented NGSO satellite constellation. Depending on the circumstances, this may require the satellite operator to submit a new filing request
* that the ACMA’s ongoing support for a satellite operation is conditional on there being a substantial benefit to Australia

to adhere to the ongoing obligations listed in ‘Ongoing obligations of the satellite operator’ section of the filing procedures or any other requirements of the ACMA as set out in the procedures.

# Revisions to assessment criteria

Changes proposed to satellite filing assessment criteria are outlined below for consideration and comment.

## Australian jurisdiction

The filing procedures currently require that non-government applicants must be a company that is incorporated in Australia, carries on business in Australia and has management staff in Australia. Alternatively, the satellite operator may be a department of the Commonwealth of Australia or a Commonwealth agency, or a part of a state or territory government.

We have submitted a number of filings for universities and so to remove any doubts we have added text to clearly recognise that universities that are established under state, territory or federal legislation meet the Australian jurisdiction requirement.

We also propose to include an additional requirement if the applicant is a subsidiary of a foreign company or controlled by or related to a foreign entity. In such cases, the applicant would be required to provide information showing how the satellite operator functions independently from the foreign entity and how confidential Australian satellite information about other Australian satellite operators is restricted to the applicant as an Australian satellite operator.

The reason for this proposed change is that we have observed that some satellite operators (via parent companies or related entities) may have access to filings through multiple administrations. While this practice is limited in relation to Australian-filed satellite operators, if it expands it does present a potential concern about ensuring that confidential Australian satellite coordination information is only available to satellite operators involved in the Australian process.

In part, this concern relates to the ACMA approach to satellite filing. That is, before a new filing is approved by the ACMA and submitted to the ITU, we require it to be considered by operators of existing Australian-filed satellite systems to determine if there are any coordination issues. At this stage, it is not a significant concern and the corporate structures we have observed are relatively simple. Our proposed changes are more to ensure appropriate processes are in place for the future.[[13]](#footnote-14)

## Operational control

The filing procedures currently require that the satellite operator must be able to exercise operational control of the satellite system.

We propose to include an additional provision to clarify what operational control entails, as follows:

Space stations must be fitted with devices to ensure immediate cessation of their radio emissions by telecommand, whenever such cessation is required under the provisions of the Radio Regulations.[[14]](#footnote-15)

Compliance with the Radio Regulations is already required under assessment criterion *Conformity with planning arrangements*. However, we propose to include this more specific requirement here to provide improved visibility about the requirements for operational control.

## Australian benefit

This criterion currently requires that the applicant’s satellite system, should it be brought into use, must provide ‘substantive’ Australian benefit derived from the use of the radiofrequency spectrum.

Our first proposed change is replacing ‘substantive’ with ‘substantial’. That is, the satellite system must provide *substantial* Australian benefit, where substantial has its ordinary meaning (that is, of ample or considerable importance, size or worth).[[15]](#footnote-16)

To provide guidance on our interpretation of this requirement, the procedures currently present examples of services which might be considered to provide ‘substantive’ Australian benefit. We intend to retain the same examples to provide guidance, as follows:

* the provision of a majority of a satellite service’s capacity to Australians, particularly if this meets the needs of consumers that are under-served or not served
* a service which assists an Australian government (or government agency) in performing its activities[[16]](#footnote-17)

radiocommunications links to be used by recognised research bodies for the purposes of scientific research or environmental monitoring, or by Australian industries providing commercial services either exclusively into Australia or into other countries in addition to Australia.

While these examples are firmly indicative of the attributes we consider against this criterion, the filing procedures do not currently include any more precise requirements.

We propose to include the specific requirement under this criterion that Australia must be included in the service area of the applicant’s satellite system. In practice, this has been a baseline requirement in our application of the filing procedures since inception but was not explicitly stated.

Our intention is to remove any doubt that a satellite system which does not include Australia in its service area does not qualify under this criterion. This will preclude applicants whose satellite system excludes Australia, yet claim to provide some Australian benefit, such as expected future financial benefits or expected development of space-related industries in Australia.

We propose to clarify that our assessment against this criterion of applicants with existing satellite filings will include consideration of past performance regarding compliance with the filing procedures and the Australian benefit provided by existing filings.

## Coordination with Australian satellite systems

The filing procedures currently require an applicant to coordinate the technical aspects of its satellite system (for management of potential for interference) with Australian satellite operators who already hold an ITU satellite filing. This coordination must be completed before the ACMA submits the satellite filing to the ITU. In practice, this requirement was difficult for satellite operators to comply with because a new satellite system in its design stage does not allow for effective frequency coordination.

We acknowledge it is unnecessary to require applicants to complete domestic coordination so early in the filing process. So, we propose to amend this criterion to instead require that domestic satellite coordination needs only to be *initiated* when an application is submitted to the ACMA. By initiated we mean there is acknowledgement from both operators that development of an agreement has commenced with the intention of both to operate in good faith to complete the agreement before the launch of the space station, before bringing into use the frequency assignments of the satellite system or as otherwise agreed between satellite operators.

The current procedures list frequency and orbital separation triggers for coordination between Australian satellite systems. These requirements are taken from the Radio Regulations. Rather than repeat ITU requirements (which may change), the revised procedures simply state that the coordination triggers provided in the Radio Regulations are to be used to determine the need for domestic coordination.

## Requirements for ‘planned band’ applications

The term ‘planned bands’ means the specific frequency bands detailed in Appendices 30 (BSS downlink),[[17]](#footnote-18) 30A (BSS uplink) and 30B (FSS services)[[18]](#footnote-19) of the ITU Radio Regulations. These bands have been comprehensively planned, applying the principle of equitable use: there are a small number of plan entries for every country, and the first-come, first-served principle does not apply. In the filing procedures, the term ‘planned bands’ includes the plans detailed in these Appendices and any potential modifications to these plans.

Satellite systems that use frequencies covered by appendices 30, 30A and 30B are subject to significantly different procedures from other satellite systems.

The change we propose to this criterion is to delete the following provision:

Applications to make use of planned bands over the territory of another country will only be considered if accompanied by the approval of the administration of that country.

This requirement relates to applications for use of the planned bands in addition to planned assignments recorded in the Radio Regulations (as per Appendices 30, 30A and 30B). Such applications are likely to include foreign territories in the service area of the proposed satellite system. The process of coordination with other administrations under the Radio Regulations includes the opportunity for any administration to object to the proposed satellite system and to have its territory removed from the service area of the satellite system. Therefore, we consider that imposing our own requirement to seek an approval from a country over which territory the applicant intends to use a planned band creates unnecessary delays and is redundant, as it duplicates the existing ITU process.

## Requirements for amateur satellite bands

We propose to introduce a new criterion that clarifies our requirements regarding applications that use amateur satellite bands. This will require a letter of support from the Australian amateur community and to undertake frequency coordination through the International Amateur Radio Union.

The new criterion is reflective of how we have assessed applications for amateur satellite filings and is included in our filing procedures to give visibility of how such applications are treated.

# Revisions to ongoing management of satellite systems

Our proposed amendments to the procedures for managing a satellite filing after we have approved an application are explained below for your consideration and comment.

## ITU satellite coordination process

As part of the ITU satellite coordination process, the ITU publishes details of new and modified satellite systems in its fortnightly International Frequency Information Circular ([IFIC](https://www.itu.int/en/ITU-R/space/Pages/brificMain.aspx)). The purpose of the IFIC is to provide national administrations with information about new and modified satellite systems so they can determine whether these systems might cause interference or problems to satellite systems previously filed with the ITU.

Satellite operators with an existing satellite filing through the ACMA are required to participate in this process by providing the ACMA with written comments on each IFIC.

In frequency bands that are not subject to coordination procedures under Section II of Article 9 of the Radio Regulations, and which are often used by short-duration missions, no response is required by the ITU process and satellite operators often have no objections to such filings published in the IFIC. In this circumstance, it is considered a valid coordination strategy to not initiate objections to the new filings in these bands, as coexistence is much more likely when compared with bands which are subject to the more complex ITU coordination process.

Since participation in the IFIC process attracts cost recovery charges, it is proposed that providing written comments on satellite filings in bands not subject to coordination procedures under ITU RR Section II of Article 9 will be optional. However, Australian satellite operators will be required to respond to the comments received from foreign administrations regarding publication of its own satellite system. This would mean that the operator accepts the risk of interference from a newly published foreign satellite system and will not cause interference to those systems.

No change is proposed to the requirement for all Australian-filed satellite operators to respond to comments received from foreign administrations regarding their own satellite system.

## Information on IFIC cost recovery charges

To raise awareness of ACMA cost recovery processes for IFIC work, we have included information explaining the ACMA’s IFIC cost recovery charges. This is for information only – there are no changes to existing cost recovery arrangements.

## Management of satellite systems through milestones

We propose to modify the section of the filing procedures titled *Ongoing management of satellite systems through milestones.* The purpose of this section is to ensure that satellite operators make progress towards deployment of a satellite system following submission of the filing. The aim of this is to avoid the problem associated with the filing of satellite systems that never result in the deployment of a satellite system and the provision of services – this is known as the ‘paper satellite’ problem (because the system only exists on paper if it is never deployed).

While we strongly discourage the creation of paper satellites (intentional or otherwise), our experience in requiring rigorous compliance to the milestones is problematic for both the ACMA and satellite operators.

In the period since the milestones were introduced, we have not seen a need to ensure compliance with them. We propose toremove the requirement to meet the milestones and instead publish them separately as a guide for satellite operators to meet the ITU requirements for bringing a satellite system into use.[[19]](#footnote-20)

# Change in ownership

The current filing procedures for satellite filing transfer requests requires an assessment against criteria. There is currently no such requirement for other scenarios that result in change of ownership (for example, when the business is sold or transferred to another entity).

To ensure a consistent approach and provide an opportunity for the ACMA to assess whether it is in Australia’s interest to support the change in right of access to the filing, we propose to introduce a new requirement that describes a satellite operator’s obligations when access to the filing changes. These requirements will apply when the business is sold or transferred to another entity and will apply in scenarios when there are changes to the parent entity if the satellite operator is a subsidiary of or controlled by another entity.

The purpose of this requirement is to ensure that the new operator qualifies or that the parent entity continues to qualify for the ACMA to manage the satellite filing on its behalf.

To date, ownership changes have not been a significant concern. We have only observed complete change in ownership of a company with access to an Australian satellite filing and as such we have not considered scenarios involving a partial change in ownership, as these seem unlikely to occur.

However, by proposing changes, we are seeking to clarify appropriate processes for the future, in particular to support the assessment of Australian interest, in the context of ownership changes.

When changes are related to corporate restructuring, the ACMA may waive the need for a full application if it can be demonstrated that the changes do not substantially change the ownership relationship.

We strongly encourage operators to contact us in advance of proposed ownership changes to discuss the change and the potential implications for ongoing access to satellite filings.

These proposed requirements have been included in a new section comprising all matters that relate to filing ownership (Section 5, Change of access to an ITU satellite filing), which includes the existing requirements for transfer and relinquishing of a satellite filing.

# Drivers of future change

In this section, we consider matters that might inform future changes in our approach to satellite filing and licensing. We have considered how other countries approach satellite filing and examine other contemporary developments in the satellite industry that may impact on satellite filing activity. We also considered emerging issues in satellite coordination being monitored by the Radio Regulations Board in its draft report to WRC-23.

## International arrangements

A review of international filing procedures shows that they are unique to each jurisdiction and vary in form, approach and requirements. Some procedures are enclosed in national legislation in a multi-document framework, while others are published in the form of policies and guidelines sometimes limited to a few pages.

While the procedures vary between countries, there are some common requirements. Considering requirements of the administrations of the [UK](https://www.ofcom.org.uk/spectrum/information/satellites-space-science/satellite-filings), [USA](https://www.ecfr.gov/current/title-47/chapter-I/subchapter-B/part-25)[[20]](#footnote-21), [Canada](https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/licences-and-certificates/satellite-services), [Germany](https://www.bundesnetzagentur.de/EN/Areas/Telecommunications/Companies/FrequencyManagement/FrequencyAssignment/SatelliteCommunications/SatFu/node.html), [Singapore](https://iris.imda.gov.sg/application/licence-for-the-use-of-satellite-orbital-slot), [New Zealand](https://www.rsm.govt.nz/about/publications/pibs/pib-60/) and [Brazil](https://www.gov.br/anatel/pt-br/regulado/satellite),[[21]](#footnote-22) the following observations can be made:

* most administrations (but not all) accept applications only from entities registered within the country of administration
* all applications attract a fee which is either fixed or based on the type of satellite system with some administrations prescribing ongoing fees (the USA administration mandates payment of substantial bonds once the approval is given, to ensure deployment of the authorised services)
* domestic frequency coordination with other satellite systems needs to be completed
* compliance with the ITU filing process is mandatory
* technical ability to control the mission and financial capability to fund the mission needs to be demonstrated
* capability to immediately cease radio emissions by telecommand if necessary to avoid causing harmful interference

reporting requirements on the progress of the deployment or operation of the space stations in the satellite system.[[22]](#footnote-23)

With the exception of the US requirement for a bond, these requirements are similar in principle to those of the Australian satellite filing procedures.

When the same government entity is responsible for the national frameworks relating to both physical spacecraft and frequency management, additional requirements regarding the physical spacecraft (for example, space debris mitigation) may be included in the satellite filing/licensing procedures.[[23]](#footnote-24) The ACMA is not responsible for such matters, and they are not considered in our procedures.

There are varying approaches concerning the relationship between licensing to provide a service and the ITU satellite filing process. While in Australia licensing and filing are 2 separate processes and the ACMA agreeing to file does not in any way imply that the ACMA will issue radiocommunications licences providing authorisation for the satellite systems. In some other countries, licensing is considered first with filing a sub-part of the licensing process. In Canada, for example, an ITU filing application is required as part of the licensing process and the filing can be submitted up to 6 months in advance of the licence application. However, if the licence application is not approved, the ITU filing is cancelled.[[24]](#footnote-25) It is similar in the USA where licensing is normally considered first, with the ITU satellite filing considered as part of the licence application process (if one does not already exist) and the ITU filing might not be submitted to the ITU until after the licence has been approved.[[25]](#footnote-26)

In the UK and New Zealand, licensing and satellite filing are separate processes similar to the ACMA approach.

## ACMA approach to satellite filing

Our current approach to satellite filing is to only file when there is a clear substantive benefit to Australia. This approach is used to curtail applicants looking to submit speculative filings that could later be used (traded) for commercial benefit (known as ‘paper filings’, and this is considered in our current filing procedures).

Our view is that this is still the appropriate approach as it ensures ACMA resources are only utilised for satellite filing activities where there is a clear *substantial* benefit to Australia.

As such, we intend to continue our current approach (with the refinements discussed in this paper) as it supports satellite filing for a range of organisations in cases that are clearly beneficial to Australia.

## Relationship between filing and licensing

Although filing and licensing are separate processes, they are related. We generally require a satellite operator to have obtained an ITU satellite filing before a radiocommunications licence authorising operations in Australia is issued. However, it is not necessary for an operator to have filed their satellite system through Australia to be licensed in Australia – in most cases satellite operators (being overseas based) obtain their filing through a foreign administration.

For Australian-filed satellite operators, while the filing assessment process broadly considers potential Australian licensing implications (via assessment for conformity with planning arrangements), any agreement to file does not commit the ACMA to issuing a licence. All licences must be applied for separately and are assessed against current requirements as required by the *Radiocommunications Act 1992* and associated policies when an application is made.

That said, when considering licence applications under the Radiocommunication Act, the ACMA is required to consider a range of matters (see subsection 100(4) of the Act). Depending on the specifics of an application, a matter that might be relevant is the impact on existing Australian satellite filings. While the weighting given to any considerations in the decision-making process will depend on specific circumstances, as a general principle, greater weight is normally given to consideration of the impact on an Australian satellite filing if the operation of the satellite is authorised by a radiocommunications licence.

For foreign satellite operators (operators with satellite systems filed through other administrations) that have an associated radiocommunications licence in Australia, the ACMA’s normal approach is to rely on the ITU satellite coordination process to manage interference. Our view is that coordination matters between foreign-filed satellite systems are the responsibility of the relevant filing administration and satellite operators. Accordingly, Australia’s and the ACMA’s role is limited to the domestic licensing of these satellite systems.

We acknowledge that this approach can create complexity in the licence application process.[[26]](#footnote-27) For that reason we encourage cooperation and coordination between satellite operators to achieve mutual benefit, without the burden and delays of additional prescriptive regulation.

### Discussion of alternative approaches

In developing the 2022-2027 FYSO we explore our approach to licensing of space-based communications systems[[27]](#footnote-28). While industry responses supported our current approach [[28]](#footnote-29) we are aware that different processes are taken by other national spectrum regulators. Some regulators of larger markets have more prescriptive approaches to the regulation of satellite systems, including public consultation on applications received. Such approaches are comparatively more interventionist than the Australian approach, though they can address both ITU satellite filing and domestic licensing as a single process. These regulatory systems have developed over time to reflect regulatory approaches and the market environment of the countries concerned. To date, our view has been that there has been no need for such systems in Australia.

A range of interventions is possible, including large upfront bonds, licence application windows (‘processing rounds’ in some countries), public consultations on licence applications, auctioning of licences, and comparative assessment based on ‘benefits’ to be provided, measured against criteria (often called ‘beauty contests’). Some of these interventions are being implemented or considered overseas (for example, by Ofcom and the Federal Communications Commission).

Given the global nature of satellite systems, we are cautious about introducing additional regulatory overlays on licensing, given satellite systems are already subject to ITU processes and that there are established regulatory arrangements in other major jurisdictions that also consider compatibility between satellite systems. It is also likely that such interventions would be burdensome, and potentially duplicative of issues already considered by other regulators, with the potential for delays in considering licence applications (especially if public consultation on licence applications were introduced). Any interventions are likely to be applied to a licence type, rather than a particular satellite product (that is, interventions would likely apply to all space/space receive licences and possibly earth/earth receive and area-wide apparatus licences to capture gateway earth stations). Therefore, it is not yet clear if additional regulatory intervention by the ACMA would be proportionate to the potential benefits.

While we will continue to monitor domestic and global developments, we welcome views on how we could approach the relationship between licensing and filing in the future. In any such discussion, it is important to recognise that an ITU filing date does not give priority[[29]](#footnote-30) over existing services in Australia (nor does it affect how the ACMA considers the impact on Australian-filed satellite systems) as licence applications are assessed under the Radiocommunications Act as described above.

We are interested in views from operators with deployed satellite systems serving Australia, potential aspirants, industries that would benefit from new services and other users of spectrum. We are particularly interested in views on whether a case exists for us to investigate potential additional domestic regulatory intervention. If so, what might these interventions look like and how might they interact with arrangements in other major markets?

We note that any future work will be considered as part of the ACMA’s annual work program outlined in the FYSO.

## Large NGSO satellite systems

While large NGSO satellite systems bring the benefits of lower latency and greater capacity, we are aware of concerns that the emergence of operational and planned large NGSO systems will result in an increasingly contested spectrum environment, potentially placing pressure on established spectrum frameworks and raising questions of competition and equitable access. While there is no consensus in the satellite industry on the issues and possible treatment, commonly expressed concerns include:

supporting early innovators (providers of NGSO satellite systems) will hinder the development of future satellite systems because of interference concerns (potentially restricting future competition)

to avoid in-line interference events, separation of hundreds of kilometres is required between NGSO gateways[[30]](#footnote-31)

congested orbits and large NGSO systems may constrain the capacity/throughput of GSO satellites and small NGSO satellites.[[31]](#footnote-32)

We are alert to the various perspectives on ‘congestion of space’, orbital debris and the potential impact on optical astronomy raised by the current resurgence in interest in the use of large constellations. However, these matters are related to the physical objects in orbit and are primarily the responsibility of the nation launching these satellite systems, which in Australia is the Australian Space Agency as the relevant regulator. Nonetheless, we are aware that these concerns are discussed at the [United Nations Office for Outer Space Affairs](https://www.unoosa.org/oosa/index.html) Committee on the Peaceful Uses of Outer Space, a forum that the Australian Space Agency participates in as part of the Department of Industry, Science and Resources.[[32]](#footnote-33)

While a number of the large NGSO constellations have authorisations to provide services in other markets such as the US,[[33]](#footnote-34) only a few are active in the Australian market. Satellite systems authorised for operation in Australia have been granted authorisation under our current long-standing approach that relies heavily on the framework provided by the ITU for the global management of spectrum and satellite orbit resources. This is consistent with the Australian Government’s default principle which encourages regulators to not impose any additional requirements for operating in Australia if a system, service or product has been approved under a trusted international standard or risk assessment, unless it can be demonstrated that there is a good reason to do so. This approach aligns with Australia’s [commitment](https://www.industry.gov.au/trade/australias-standards-and-conformance-infrastructure) to use trusted international standards and risk assessments under the World Trade Organization’s Technical Barriers to Trade Agreement.

To date we have not filed a large NGSO satellite system so our role has been limited to the licensing of such systems. At this stage we are not proposing any changes to our filing procedures specifically for large NGSO systems as our view is that our procedures can apply equally in scope to all types of satellite systems. We are interested in views from industry as to whether changes are required.

## Critical infrastructure

The Department of Home Affairs is the lead Australian Government agency for critical infrastructure. Critical infrastructure is infrastructure that provides services that are essential for everyday life such as energy, food, water, transport, communications, health, banking and finance.

Space technology is a critical infrastructure sector identified under the [*Security of Critical Infrastructure Act 2018*](https://www.legislation.gov.au/Series/C2018A00029). However, the critical infrastructure regime is not directly relevant to the requirements for filing satellite systems, these critical infrastructure obligations may result in a future obligation on a satellite operator once they have built the proposed satellite system.

At this stage we are monitoring developments and see no need to include reference to critical infrastructure requirements as part of our assessment of satellite filing applications.

Further information on critical infrastructure is available on the [website](https://www.homeaffairs.gov.au/about-us/our-portfolios/national-security/security-coordination/critical-infrastructure-resilience) of the Department of Home Affairs.

## ITU cost recovery

Submission of a satellite filing to the ITU attracts cost recovery charges from the ITU which can range from a few hundred to tens of thousands of Australian dollars, depending on the complexity of the filing.[[34]](#footnote-35) In each calendar year, the ITU offers national administrations one filing that is free of charge. The national administration may choose which filing receives the free entitlement.

Our current filing procedures do not make any provision on how this free entitlement is to be used. The ACMA has only taken up the offer on 2 previous occasions[[35]](#footnote-36) – in all other years the entitlement was forgone.

As financial viability of the applicant is part of our assessment process, which includes the ability to pay all relevant ITU charges, our view is that there is limited justification for providing a satellite operator with use of the entitlement. Doing so would provide financial assistance which would be contradictory to the requirement that applicants are financially viable.

For this reason, we have included advice in the draft revised filing procedures that our normal practice will be to not utilise the free filing entitlement as satellite operators are required to be financially viable with the ability to pay ITU charges. However, we are open to views from industry on alternative approaches.

## ITU Radio Regulations Board (RRB)

The RRB identifies, amongst other matters, emerging issues in satellite coordination in a report to each WRC. The current draft of the RRB report to WRC-23[[36]](#footnote-37) has recommendations from the RRB regarding provisions of the Radio Regulations for enhancing the linkage between the notification, coordination and registration procedures, and the basic principles concerning the use of the radiofrequency spectrum and satellite orbits for consideration at WRC-23.

There are a number of issues which we are monitoring, which depending on how they are treated at WRC-23, might have relevance to both our radiocommunications licensing and satellite filing procedures. These are:

* request for extension to satellite systems bringing into use timelines (draft RRB report section 4.3)
* satellite coordination difficulties and filing priority (section 4.6)
* use of WRC Plenary minutes (4.9)
* equitable use of geostationary orbits and Resolution 40 (Rev. WRC-19) (4.10)
* long-term sustainability and equitable access and rational use of the non-geostationary orbit and spectrum resources (4.12)

satellite systems operating under ITU RR 4.4 (4.13).

### Extension to bringing into use timelines

Section 4.3 of the draft RRB report considers issues and difficulties in acceding to the requests the Board has received since WRC-19 for extensions to the time limit for bringing into use (BIU) or bringing back into use frequency assignment in cases of either *force majeure[[37]](#footnote-38)* or co-passenger delay.

The draft report noted that the vast majority of requests cited the COVID-19 pandemic as the *force majeure* event and described in detail the type of information that should be provided to facilitate the consideration of a request for extension of the regulatory time limit.

While not currently of direct relevance to the ACMA’s approach to filing and licensing, satellite operators are encouraged to make themselves aware of how the RRB considers such requests.

It also worth noting that such requests typically occur just before or just after the expiry of the BIU regulatory time limits. Australian satellite operators are advised to undertake extra due diligence when considering which satellite systems still require coordination when close to the BIU regulatory time limits.

### Satellite coordination difficulties and filing priority

Section 4.6 of the draft RRB report noted that as the number of satellites in orbit and the use of certain frequency bands increases, it is becoming more complex and more important to complete satellite network coordination in order to avoid harmful interference.

In discussing cases presented to the RRB, the draft report noted cases where administrations challenged the date of protection of recorded frequency assignments or where notifying and bringing into use a satellite network before completing any or very little of the required satellite network coordination (as provided by ITU RR 11.41).[[38]](#footnote-39)

In summary, the RRB encouraged administrations to complete frequency coordination before launching satellites and reminded administrations that the coordination process is a 2-way process and that no administration obtains any particular priority as a result of being the first to start either the advance publication phase (Section I of Article 9) or the request for coordination procedure (Section II of Article 9).

The ACMA’s view is that while accepting it is not possible to successfully complete all required coordination before launching a satellite, we expect that reasonable efforts are made to complete practically achievable coordination as soon as possible.

### Status of WRC decisions recorded in WRC plenary minutes

Section 4.9 of the draft RRB report noted that since WRC-15, the Board has amended the relevant Rules of Procedure (RoP)[[39]](#footnote-40) with ‘notes’ that precisely quote the Minutes of the WRC-19 Plenary sessions to ensure that administrations are fully aware of all WRC decisions, including those reflected in WRC Plenary minutes.

The RRB has also published a [compendium](https://www.itu.int/en/ITU-R/conferences/RRB/Documents/ai%204_1_compendium%20to%20be%20published%20as%20special%20topics_English.docx) of WRC decisions concerning the application of the Radio Regulations. Satellite operators are encouraged to review this material for their own awareness and understanding of the ITU satellite regulatory requirements beyond those specified in the Radio Regulations.

### Equitable use of geostationary orbits and Resolution 40

Section 4.10 of the draft RRB report considers statistics derived from submissions on [Resolution 40](https://www.itu.int/dms_pub/itu-r/oth/0C/0A/R0C0A00000F0018PDFE.pdf) (Rev. WRC-19) information. Resolution 40 considers the practice of ’satellite hopping’, whereby a single space station is used to bring more than one frequency assignment to GSO satellite networks into use at different orbital locations within a 3-year period. The RRB considerations concerned whether there was any potential misuse of the bringing into or bringing back into use (BIU/BBIU) provisions.

The draft report notes that satellite operators that encountered delays with their satellite project would often consider using an in-orbit satellite to meet their BIU regulatory time limits and avoided seeking an extension from the Board or WRC. Many turned to satellite operators that had in-orbit satellites available for leasing. It was therefore not surprising that the same satellite had been reused multiple times over the last 7 to 8 years since a market for short-term in-orbit satellite leasing had emerged in the last decade.

The view of the RRB was that when such a reuse benefited different administrations and unrelated satellite operators, there was no misuse of the BIU provisions.

The view of the RRB in its draft report was that the key indicator of potential misuse is when frequency assignments are repeatedly brought into use or brought back into use only for a short period of time. This type of practice allows an administration to maintain its recording in the MIFR (which maintains the international recognition and rights for protection of the frequency assignments to the GSO satellite networks) by simply satisfying the BIU/BBIU requirements without maintaining any satellite with the required transmitting and receiving capability beyond the required 90-day BIU/BBIU period. The RRB considers that such a practice is contrary to the principles of Article 44 (Use of the Radio-Frequency Spectrum and of the Geostationary-Satellite and Other Satellite Orbits) of the ITU Constitution, the intent of the Radio Regulations and the essence of the regulatory provisions governing access to the radio spectrum and geostationary orbit.

In line with this view, the RRB draft report has the following recommendation:

To further limit spectrum reservation practices, WRC-23 is invited to request the ITU-R to study possible measures to restrain the use of the same satellite or different satellites to repeatedly bring into use and bring back into use the same frequency assignments of a satellite network or system for a short period of time only.

While the ACMA is the Australian filing administration responsible for submitting Resolution 40 information (as required), the Department of Infrastructure, Transport, Regional Development, Communications and the Arts leads the Australian preparatory processes for WRC-23. Satellite operators interested in the matter should contact the Department to discuss Australia’s position on this matter.

In terms of satellite coordination requirements, as this BIU activity typically occurs just before expiry of the BIU regulatory time limits, Australian satellite operators are advised to undertake extra due diligence when considering which satellite networks require coordination for networks close to the BIU regulatory time limits.

### Equitable use of non-geostationary orbit and spectrum resources

Section 4.12 of the draft RRB report notes the increased number of low Earth orbit (LEO) NGSO satellite system filings. Issues discussed in the draft report are similar to those we observed in our discussion in section 6.4 Large NGSO satellite systems.

The RRB noted that ITU Plenipotentiary Conference 2022 considered these issues in a new ITU resolution.[[40]](#footnote-41) The resolution instructs the Radiocommunication Assembly, as a matter of urgency, to perform the necessary studies through relevant ITU Radiocommunication Sector (ITU-R) study groups on the issue of the increasing use of radio-frequency spectrum and associated orbit resources in non-geostationary orbits and the long-term sustainability of these resources, as well as on equitable access to, and rational and compatible use of, the GSO and NGSO and spectrum resources, consistent with the objectives of Article 44 of the ITU Constitution. The Director of the Radiocommunication Bureau is to report to WRCs on the results of implementation of the resolution.

While Australia has not filed a large NGSO satellite system, the ACMA will monitor this work to understand implications for our future approach to satellite filing and licensing.

In terms of any development at WRC-23 and associated Australian positions, interested parties should contact the Department of Infrastructure, Transport, Regional Development, Communications and the Arts, which leads the Australian preparatory processes for WRC-23.

### Radio Regulation 4.4

Radio Regulation 4.4 (ITU RR 4.4) states that:

Administrations of the Member States shall not assign to a station any frequency in derogation of either the Table of Frequency Allocations in this Chapter or the other provisions of these Regulations, except on the express condition that such a station, when using such a frequency assignment, shall not cause harmful interference to, and shall not claim protection from harmful interference caused by, a station operating in accordance with the provisions of the Constitution, the Convention and these Regulations.

The RoP on ITU RR 4.4 states at 1.5:

... that the determination of whether or not a frequency assignment to a transmitting station is capable of causing harmful interference to the stations of another administration operating in accordance with the Radio Regulations does not lie only on the side of the administration operating the transmitting station that may be producing the interference and other administrations should have information about a use under No. 4.4 to assess its interference potential or identify the source of harmful interference. For this reason, an administration intending to use a frequency assignment to a transmitting station under No. 4.4 has to notify to the Bureau this frequency assignment, pursuant to Article 11, if possible prior to bringing it into use*.*

As outlined in the RoP, when notifying the use of frequency assignments to be operated under ITU RR 4.4, the notifying administration must provide a confirmation that it has determined that the transmitter station will not cause harmful interference to the stations of other administrations operating in compliance with the Radio Regulations, and that it has identified measures to avoid harmful interference and to immediately eliminate it in case of a complaint.

In section 4.13 of the draft RRB report, the RRB noted an increased reliance on ITU RR 4.4 by administrations and satellite operators as a means to secure access to spectrum and orbital resources they wished to use for providing commercial services. For these satellite systems, in particular NGSO systems, the RRB view was that the interference situation was uncertain due to the large number of orbital planes and satellites. The RRB also expressed a view that demonstrating conformity with the RoP on ITU RR 4.4 becomes very challenging when thousands of satellites could be involved and that it was not clear that administrations and operators fully understood their obligations under ITU RR 4.4 and its impact on the quality of service and capacity of their satellite system.

The RRB had 2 recommendations for WRC-23 concerning use of ITU RR 4.4:

* WRC-23 is invited to confirm that frequency assignments to satellite networks and systems recorded under No. 4.4 are not entitled to protection from harmful interference amongst each other.

WRC-23 is invited to encourage administrations to avoid the use of No. 4.4 for commercial applications.

While the ACMA has made a small number of filings under ITU RR 4.4, these have been to support experimental stations typically for a single satellite and not designed to provide high-quality service. This is a scenario for which the RRB noted that compliance with requirements of RoP on ITU RR 4.4 was achievable.

In general, the ACMA is reluctant to accept applications for which the intended use is not consistent with an ITU allocation (that is under ITU RR 4.4). For this reason, operation under ITU RR 4.4 is not considered in our filing procedures. Any applications under ITU RR 4.4 would be considered as an out-of-policy request on a case-by-case basis.

# Invitation to comment

## 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

Space Systems Section

Australian Communications and Media Authority

PO Box 78

Belconnen ACT 2616

The closing date for submissions is COB, **Wednesday 11 October 2023**.

Consultation enquiries can be emailed to satellite.coordination@acma.gov.au

## Publication of submissions

We publish submissions on our website, including personal information (such as names and contact details), except for information that you have claimed (and we have accepted) is confidential.

Confidential information will not be published or otherwise released unless required or authorised by law.

## Privacy

View information about our policy on the [publication of submissions](https://www.acma.gov.au/publication-submissions), including collection of personal information during consultation and how we handle that information.

Information on the *Privacy Act 1988,* how to access or correct personal information, how to make a privacy complaint and how we will deal with any complaints, is available in our [privacy policy](https://www.acma.gov.au/privacy-policy).

1. The 2011 update was the result of a public consultation process that commenced in [October 2010](https://webarchive.nla.gov.au/awa/20101018222531/http%3A/acma.gov.au/WEB/STANDARD/pc%3DPC_312294) on requirements that were developed in [1999](https://webarchive.nla.gov.au/awa/20020103155234/http%3A/www.aca.gov.au/sst/before/sstbef-asscriteria.htm). The outcome of the review was announced in [October 2011](https://webarchive.nla.gov.au/awa/20120316193650/http%3A/www.acma.gov.au/WEB/STANDARD/pc%3DPC_410198) and came into effect on 1st of January 2012. [↑](#footnote-ref-2)
2. In this document, we refer to the ITU Radio Regulations as the Radio Regulations or ITU RR. [↑](#footnote-ref-3)
3. Satellite system is defined in ITU RR 1.111 as a space system using one or more artificial earth satellites, where a space system (ITU RR 1.110) is any group of cooperating earth stations and/or space stations.

employing space radiocommunication for specific purposes. [↑](#footnote-ref-4)
4. Satellite network is defined in ITU RR 1.112 as satellite system or a part of a satellite system, consisting of only one satellite (typically a GSO satellite) and the cooperating earth stations. [↑](#footnote-ref-5)
5. Typically, up to 5 years. [↑](#footnote-ref-6)
6. A CubeSat is a standardised type of small satellite comprising up to six modular units (or cubes) each measuring 10 x 10 x 10 cm. [↑](#footnote-ref-7)
7. Mainly in terms of clarity of requirements for those not experienced in satellite regulatory matters and the approval process for new applicants. [↑](#footnote-ref-8)
8. This explored the need for changes to our approach to licensing. Based on responses, our view in 2022 (as recorded in the [Response to submissions](https://www.acma.gov.au/sites/default/files/2022-09/Response%20to%20submissions%20to%20Draft%20FYSO%202022-27.pdf), Draft FYSO 2022–27) was that no changes were required and that we would maintain a watching brief on emerging regulatory arrangements in other jurisdictions. [↑](#footnote-ref-9)
9. [ITU Resolution 32 (WRC-19)](https://www.itu.int/dms_pub/itu-r/oth/0C/0A/R0C0A00000F0015PDFE.pdf) [↑](#footnote-ref-10)
10. Existing means satellite systems which the ACMA has submitted to the ITU prior to a new application request and satellite systems for which a complete application has been received prior to the new filing request but is still undergoing assessment. [↑](#footnote-ref-11)
11. [Australian procedures for the coordination and notification of satellite systems](https://www.acma.gov.au/publications/2012-01/guide/australian-procedures-coordination-notification-satellite-systems), p. 23 [↑](#footnote-ref-12)
12. The satellite operator that has access to the satellite filing. [↑](#footnote-ref-13)
13. While we note that the [*Corporations Act 2001*](https://www.legislation.gov.au/Series/C2004A00818)contains definitions of subsidiaries, affiliates and related cooperate bodies, our intention here is to provide general guidance on our expectations and not introduce rigorous requirements for ownership. Nevertheless, the Corporations Act does provide a useful reference point for considering such matters in the future (if required), for example, if we are required to deal with more complex corporate structures associated with satellite operators. [↑](#footnote-ref-14)
14. ITU RR 22.1 requires ‘Space stations shall be fitted with devices to ensure immediate cessation of their radio emissions by telecommand, whenever such cessation is required under the provisions of these

Regulations’. [↑](#footnote-ref-15)
15. By contrast, *substantive* in its ordinary sense means having a firm basis in reality or that is meaningful. [↑](#footnote-ref-16)
16. This may be the Australian Government, or the government of a state or territory of Australia. [↑](#footnote-ref-17)
17. ‘Broadcasting satellite service’ as defined in the Radio Regulations. [↑](#footnote-ref-18)
18. ‘Fixed satellite service’ as defined in the Radio Regulations. [↑](#footnote-ref-19)
19. For most satellite systems, under ITU requirements satellite operators have 7 years to deploy a satellite system and commence communication activities, commencing on the date when details of the system are first filed with the ITU. This is known as ‘bringing into use’ (BIU). If a satellite system has not been brought into use after the allotted time, the filing expires and is permanently deleted. [↑](#footnote-ref-20)
20. FCC ITU satellite filing requirements are contained within its licensing procedures and not in a separate standalone document. Refer [FCC rules and regulations](https://www.fcc.gov/wireless/bureau-divisions/technologies-systems-and-innovation-division/rules-regulations-title-47) Part 25 Satellite Communications. [↑](#footnote-ref-21)
21. Note mainly about licensing with only some pages in English. [↑](#footnote-ref-22)
22. For example, the FCC the has a surety bond that is based on meeting deployment milestones. [↑](#footnote-ref-23)
23. For example, Canadian procedures include a requirement for a space debris mitigation plan. [↑](#footnote-ref-24)
24. Refer section 5.2 ITU filing submission in Innovation, Science and Economic Development Canada Procedure for the Submission of Applications for Spectrum Licences for Space Stations ([CPC-2-6-02](https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/learn-more/key-documents/procedures/client-procedures-circulars-cpc/cpc-2-6-02-licensing-space-stations)). [↑](#footnote-ref-25)
25. Refer FCC Rules and regulations [Part 25](https://www.ecfr.gov/current/title-47/chapter-I/subchapter-B/part-25), particularly 25.110 and 25.111. Note in the FCC process a licence application is termed a ‘filing’ which is different to an ITU satellite filing. [↑](#footnote-ref-26)
26. To some extent this is unavoidable given the interaction between the international ITU processes and domestic licensing. [↑](#footnote-ref-27)
27. See section on Satellite communications starting page 16 of the 2022–27 FYSO. [↑](#footnote-ref-28)
28. As evident by submissions to the consultation on draft FYSO [2022–27](https://www.acma.gov.au/consultations/2022-03/draft-five-year-spectrum-outlook-2022-27-consultation-122022). [↑](#footnote-ref-29)
29. Priority of ITU satellite filings is considered in ITU-R [Resolution 2](https://www.itu.int/dms_pub/itu-r/oth/0C/0A/R0C0A00000F0002PDFE.pdf) (REV.WRC-03) Equitable use, by all countries, with equal rights, of the geostationary-satellite and other satellite orbits and of frequency bands for space radiocommunication services and in ITU Rule of procedure on 9.6 “d) in the application of Article 9 no administration obtains any particular priority as a result of being the first to start either the advance publication phase (Section I of Article 9) or the request for coordination procedure (Section II of Article 9). [↑](#footnote-ref-30)
30. An in-line interference event is when satellites from 2 different NGSO satellite systems appear to be in the same part of the sky. The result is that interference levels can temporarily increase on the gateway links between the gateway earth station and the satellite station. As NGSO satellites are moving, the period of an individual in-line event may be brief. The overall impact depends on a number of factors, such as how often it occurs and the robustness of the satellite system to such events. The same scenario is normally avoided in GSO satellite systems due to their fixed orbital separation. [↑](#footnote-ref-31)
31. For a discussion on these issues and differing views from industry, see the Ofcom consultation on [Non-geostationary satellite systems](https://www.ofcom.org.uk/consultations-and-statements/category-2/non-geostationary-satellite-systems), licensing updates and submissions received. [↑](#footnote-ref-32)
32. See the [Department of Industry, Science and Resources](https://www.industry.gov.au/policies-and-initiatives/australian-space-agency/international-collaboration-on-space) website for more information about Australia’s international collaboration on space. [↑](#footnote-ref-33)
33. The [FCC approved space station list](https://www.fcc.gov/approved-space-station-list) is an unofficial list of space stations authorised by the FCC under Part 25 or granted access to the US market (pursuant to Section 25.137 of the FCC’s rules). For more details use the [FCC Authorizations List](https://licensing.fcc.gov/cgi-bin/ws.exe/prod/ib/forms/reports/swr014b.hts) to generate a report of satellite space stations with current authorisations by licensee. [↑](#footnote-ref-34)
34. In accordance with [ITU Council Decision 482](https://www.itu.int/en/ITU-R/space/costrecovery/Pages/default.aspx), a cost recovery fee is applicable for satellite network filings received by the ITU Radiocommunication Bureau. [↑](#footnote-ref-35)
35. See the ITU list of satellite networks that have been nominated for [annual free entitlement](https://www.itu.int/net/ITU-R/space/costrec/free_ent.asp), from 2016. [↑](#footnote-ref-36)
36. [DRAFT REPORT](https://www.itu.int/md/R23-RRB23.2-C-0002/en) BY THE RADIO REGULATIONS BOARD TO WRC-23 ON RESOLUTION 80 (REV.WRC-07), 5 April 2023. [↑](#footnote-ref-37)
37. Force majeure is a legal term that literally means ‘greater force’. In this context it relates to the occurrence of unforeseen events in the launch of satellites into space (an inherently risky activity), such as the unscheduled rapid disassembly of rockets carrying a satellite payload. [↑](#footnote-ref-38)
38. ITU RR 11.41 After a notice is returned under No. 11.38, should the notifying administration resubmit the notice and insist upon its reconsideration, the Bureau shall enter the assignment in the Master Register with an indication of those administrations whose assignments were the basis of the unfavourable finding (see also No. 11.42 below). (WRC-12). 11.41.2 When submitting notices in application of No. 11.41, the notifying administration shall indicate to the Bureau that efforts have been made to effect coordination with those administrations whose assignments were the basis of the unfavourable findings under No. 11.38, without success. (WRC-12). [↑](#footnote-ref-39)
39. Refer ITU [Rules of Procedures](https://www.itu.int/pub/R-REG-ROP/en) approved by the RRB. [↑](#footnote-ref-40)
40. See RESOLUTION 219 (BUCHAREST, 2022) Sustainability of the radio-frequency spectrum and associated satellite-orbit resources used by space services in [Collection of the Basic Texts of the International Telecommunication Union adopted by the Plenipotentiary Conference](https://www.itu.int/hub/publication/s-conf-plen-2022/), 2023. [↑](#footnote-ref-41)