Remaking the Radiocommunications (Communication with Space Object) Class Licence 1998

Response Paper

OCTOBER 2015

Canberra

Red Building   
Benjamin Offices  
Chan Street   
Belconnen ACT

PO Box 78  
Belconnen ACT 2616

T +61 2 6219 5555  
F +61 2 6219 5353

Melbourne

Level 32   
Melbourne Central Tower  
360 Elizabeth Street   
Melbourne VIC

PO Box 13112  
Law Courts   
Melbourne VIC 8010

T +61 3 9963 6800  
F +61 3 9963 6899

Sydney

Level 5   
The Bay Centre  
65 Pirrama Road   
Pyrmont NSW

PO Box Q500  
Queen Victoria Building   
NSW 1230

T +61 2 9334 7700 or 1800 226 667  
F +61 2 9334 7799

Copyright notice

[Creative Commons logo](http://i.creativecommons.org/l/by/3.0/88x31.png)

<http://creativecommons.org/licenses/by/3.0/au/>

With the exception of coats of arms, logos, emblems, images, other third-party material or devices protected by a trademark, this content is licensed under the Creative Commons Australia Attribution 3.0 Licence.

We request attribution as: © Commonwealth of Australia (Australian Communications and Media Authority) 2015.

All other rights are reserved.

The Australian Communications and Media Authority has undertaken reasonable enquiries to identify material owned by third parties and secure permission for its reproduction. Permission may need to be obtained from third parties to re-use their material.

Written enquiries may be sent to:

Manager, Editorial and Design  
PO Box 13112  
Law Courts  
Melbourne VIC 8010  
Tel: 03 9963 6968  
Email: [candinfo@acma.gov.au](mailto:candinfo@acma.gov.au)

Introduction 1

Space object and radionavigation-satellite service class licences 2

Frequency ranges of the radionavigation-satellite service 3

Potential interference and out-of-band considerations 4

The 1980-2010 MHz and 2170-2200 MHz frequency ranges of the mobile-satellite service 5

Stations operating on a vessel 6

Use of notes in the class licences 6

Foreign space objects determination and jamming prohibition 8

Consequential instrument amendments 8

# Introduction

Under Part 6 of the *Legislative Instruments Act 2003*, the *Radiocommunications (Communication with Space Object) Class Licence 1998* (the space object class licence) was set to ‘sunset’ on 1 October 2015. On 21 April 2015, the Australian Communications and Media Authority (ACMA) sought comments on a proposal to remake the space object class licence with some changes while retaining the overall effect of the instrument (see [IFC 13/2015](http://acma.gov.au/theACMA/Consultations/Consultations/Current/remaking-the-communication-with-space-object-class-licence)). The consultation period closed on 29 June 2015.

This response paper identifies those areas where submissions to the consultation process in [IFC 13/2015](http://acma.gov.au/theACMA/Consultations/Consultations/Current/remaking-the-communication-with-space-object-class-licence) were focussed, including the ACMA proposal to make a new class licence, the *Radiocommunications (Radionavigation-Satellite Service) Class Licence 2015* (the radionavigation-satellite service class licence), and as a result of further consultation (see [IFC 19/2015](http://www.acma.gov.au/theACMA/Consultations/Consultations/Current/varying-the-foreign-space-objects-determination-and-rnss-jamming-prohibition)), on consequential amendments required to other legislative instruments.

Consultation on the *Radiocommunications (Communication with Space Object) Class Licence Consequential Amendments Instrument 2015* ([IFC 19/2015](http://www.acma.gov.au/theACMA/Consultations/Consultations/Current/varying-the-foreign-space-objects-determination-and-rnss-jamming-prohibition)) was completed on 3 September 2015. It identified amendments that were required to the *Radiocommunications (Foreign Space Objects) Determination 2014* (the foreign space objects determination) and *Radiocommunications (Prohibited Device) (RNSS Jamming Devices) Declaration 2014* (the jamming prohibition) as a result of remaking the space object class licence.

# Space object and radionavigation-satellite service class licences

The ACMA completed the consultation phase of remaking the *Radiocommunication (Communication with Space Object) Class Licence 1998* and making the *Radiocommunications (Radionavigation-satellite service) Class Licence 2015* on 29 June 2015.

There were [12 submissions](http://www.acma.gov.au/theACMA/Consultations/Consultations/Current/remaking-the-communication-with-space-object-class-licence) received from:

* Australian Department of Defence (Defence)
* Australian Maritime Safety Authority (AMSA)
* Australian Subscription Television and Radio Association (ASTRA)
* Communications Alliance.
* European Commission (EC)
* Free TV Australia (Free TV)
* Geoscience Australia (GA)
* Inmarsat
* Omnispace Australia
* SingTel Optus Pty Ltd (Optus)
* Telstra Pty Ltd (Telstra)
* Thuraya Telecommunications Company (Thuraya)

The following is a synopsis of the comments received based on five key areas:

* frequency ranges of the radionavigation-satellite service
* potential interference and out-of-band considerations
* the 1980-2010 MHz and 2170-2200 MHz frequency ranges of the mobile-satellite service
* stations operating on a vessel
* use of notes in the class licences.

## Frequency ranges of the radionavigation-satellite service

There was consensus in the submissions to implement a new regulatory regime for the class licensing of the radionavigation-satellite service by making a new class licence containing the frequency ranges of the radionavigation-satellite service that are used to provide service to ubiquitous earth stations in Australia. The list of frequencies in the radionavigation-satellite service class licence are:

* 1164 to 1215 MHz
* excised from the space object class licence
* 1215 to 1240 MHz
* excised from the space object class licence
* 1240 to 1300 MHz
* 1240 – 1260 MHz excised from the space object class licence
* 1260 – 1300 MHz added to support current usage
* 1559 to 1610 MHz
* excised from the space object class licence

The ACMA received a submission from the EC supporting inclusion of the 5010-5030 MHz frequency range in the radionavigation-satellite service class licence. The submissions were unable to provide any detail of current or planned use of the band 5010-5030 MHz, although the EC did state that *“Galileo is also investigating using the 5010 to 5030 MHz band for both space-to-Earth feeder and service downlinks.”*

Details of the expected Galileo signals can be found in [Recommendation ITU‑R M.2031](http://www.itu.int/rec/R-REC-M.2031/en). The EC advised that the in-service use of those downlink frequencies is *“some years off”*, though would *“nevertheless recommend that the new RNSS class licence includes the 5010 to 5030 MHz RNSS downlink band in order to enable ready authorisation of new user services when they are needed.”*

The EC submission also proposed the ACMA consider the band 2483.5-2500 MHz that is allocated (in the *Australian Radiofrequency Spectrum Plan 2013*) to the radiodetermination-satellite service (RDSS) for space-to-Earth use. The EC advised that the IRNSS and BeiDou regional systems are *“known to use this band”* and that they are *“also investigating use of these bands on a global basis”* for similar reasons to the 5010-5030 MHz.

***ACMA response***

Despite the medium-to-long term plans by the EC to bring the 5010-5030 MHz band into service, there is little evidence to suggest that it is appropriate for the ACMA to include this band in the radionavigation-satellite service class licence at this time. Further, and as Defence noted in its response, *“the systems described in* [Report ITU*‑*R M.2219](http://www.itu.int/pub/R-REP-M.2219) *… would appear to be more suited to an apparatus licence regime, rather than inclusion in [the radionavigation-satellite service] class licence.”*

Should a service be provided by the EC or another radionavigation-satellite service operator in the future, the ACMA will reconsider the most appropriate licensing regime to support use of the 5010-5030 MHz range at that time.

On the EC proposal to consider the band 2483.5-2500 MHz that is allocated to the RDSS for regional use by IRNSS and BeiDou, the ACMA would consider the most appropriate licensing regime to support use of the 2483.5-2500 MHz range if a service were to be provided in Australia in the future.

## Potential interference and out-of-band considerations

There was some concern raised in a number of submissions about the potential for interference (caused and received), its impact on radionavigation-satellite receivers and how the ACMA intends to minimise the potential for interference from in-band and out-of-band apparatus licensed services.

GA noted that the changes to the regulatory framework for the radionavigation-satellite service may impact how the ACMA handles interference issues caused by apparatus licensed transmitters in the same or adjacent frequency bands. Further, GA noted that there are international efforts *“regarding collaboration to protect GPS spectrum”* noting an increase in demand from adjacent bands.

***ACMA response***

The quantum of spectrum available to the radionavigation-satellite service in the class licence is 187 MHz. As identified in Annex A to the consultation paper, the radionavigation-satellite service is also co-primary with a number of other services including Earth Exploration Satellite Service (active), radiolocation, Aeronautical Radionavigation Service (ARNS) and space research (active).

The ACMA has planned use of the bands included in the radionavigation-satellite service class licence to support the ubiquitous deployment of radionavigation-satellite service receivers. Such spectrum management arrangements are consistent with the domestic and international usage of the band and arrangements established internationally.

Given the nature of many uses of these bands, as a general rule, the ACMA would not plan for services or applications, or authorise stations in these bands if they were likely to have an adverse effect on the operation of radionavigation-satellite service receivers. The ACMA notes that there are expected to be only a limited number of legitimate exceptions to this general rule. Current examples include the established arrangements for the use of radionavigation-satellite service jammers under tightly defined circumstances (see *Radiocommunications (Prohibited Device) (RNSS Jamming Devices) Exemption Determination 2014*), and the sharing of the 1240-1300 MHz band with Defence radiolocation systems as per the AUS1A footnote of the *Australian Radiofrequency Spectrum Plan 2013*.

In establishing spectrum planning arrangements for new services or applications the ACMA considers the potential for co-existence with existing planned services/applications and stations. As part of this consideration, the ACMA generally consults publicly on any proposed changes to the spectrum management framework. Therefore, in line with normal practice, the ACMA would consult with stakeholders where changes are contemplated to the established spectrum management framework in those bands included in the radionavigation-satellite service class licence.

Internationally, efforts are being undertaken to better understand the potential for interference from adjacent band services that are being increasingly adopted; however, the ACMA has no intention at this time to mandate specific operating requirements on either the radionavigation-satellite service, or other in-band or adjacent-band services to protect radionavigation-satellite service receivers.

## The 1980-2010 MHz and 2170-2200 MHz frequency ranges of the mobile-satellite service

A number of submissions to the consultation provided comment on the proposal to remove the 1980-2010 MHz and 2170-2200 MHz frequency ranges of the mobile-satellite service (MSS) from the space object class licence.

Those in favour of maintaining the frequency range in the space object class licence were predominantly satellite operators, noting that next generation networks with service areas including Australia will be available in the near future. Inmarsat noted that it “*is one of two MSS operators selected to provide MSS services in Europe [and] … planned for launch in 2015”* although there is no plan to provide coverage of Australia.

Omnispace noted that *“the segments proposed to be deleted are internationally allocated for MSS S-band”* and that *“there is significant international interest in the use of this band for MSS services as evidenced by the number of ITU-R S-band filings.”* Omnispace noted that it *“is keen to establish an MSS S-band service for low-cost ubiquitous terminals in rural and remote Australia for M2M and other services that would benefit from the ability to class licence these terminals.”*

ASTRA, Defence, Free TV and Telstra were all supportive of removing the 1980-2010 MHz and 2170-2200 MHz frequency ranges from the space object class licence, Free TV noting *“the ACMA has developed arrangements to support the introduction of television outside broadcast (TOB) … on an interim basis.” “Currently there are 4 TOB licensees within the bands 1980–2010 MHz and 2170–2200 MHz.”*

Telstra noted that “*these bands are already allocated on a co-primary basis to the Mobile Service and are identified for IMT under Radio Regulation No.* ***5.388****, and with equal priority for either terrestrial and/or satellite implementation of IMT*.”

***ACMA response***

A number of responses to the consultation paper provided support for (presumably ubiquitous) MSS use of the band but noted that there is no firm timing for a service to be provided to Australia.

The ACMA acknowledges the responses regarding the commitment the ACMA first made in 2010 to support interim use of the band for TOB, pending consideration of the potential future use of the band for mobile broadband. The ACMA understands the importance, for operational certainty to TOB users, that proposals to authorise additional services (such as mobile broadband or ubiquitous class licensed MSS services) are not made until a future review occurs.

Whilst it is recognised that Embargo 23[[1]](#footnote-1) applies and the ACMA has made it clear both in the development of TOB arrangements and consideration of mobile broadband[[2]](#footnote-2) that the band is a candidate to support future mobile broadband services, any decision on the use of the band for mobile broadband would be undertaken in a future review allowing further opportunity for industry comment. The review would consider the broad range of current and potential uses of the band including TOB and MSS.

At this time, the ACMA is of the view that there remains insufficient justification to maintain the frequencies in the space object class licence and hence has decided to remove them. While MSS remains a possible use, it is by no means the only possible use and at present, the ACMA does not wish to forestall other options for its use. Leaving the band planned for MSS tends to favour one possible long-term outcome, but would be inconsistent with the actual domestic status of the band.

It is noted that the ACMA will continue to consider applications for apparatus licences for individual earth stations on a case-by-case basis consistent with the current planned use of the band for interim TOB.

## Stations operating on a vessel

In reviewing the space object class licence, the ACMA proposed a number of changes to the way maritime ship stations would be authorised under the licence. The objective was to maintain the original intent of the space object class licence but to remove explicit terminal and associated performance standards because the requirement to maintain them placed a burden on the ACMA and industry to ensure the space object class licence is kept up-to-date.

Three submissions directly addressed the issue of maritime ship stations and in general, ASTRA, AMSA and Inmarsat were supportive of the proposed changes, with ASTRA noting it was important *“to ensure that maritime mobile direct-to-home earth stations remain licensed under the space object class licence”* and AMSA noting that *“the changes should have no material effect to existing or future maritime users”.*

Inmarsat identified that “*the proposed new space object class licence appears to exclude the operation of maritime ship stations which are not operating as part of the GMDSS … whether intended or not*”.

AMSA noted that the proposed definition of a ‘qualified operator’ had been modified to remove *“specific reference to AMSA-issued qualifications”* and that this may not be sufficient for AMSA purposes given that AMSA issues qualifications for operations in the Global Maritime Distress and Safety System (GMDSS). Although the details of AMSA specific qualifications are contained on the ACMA website, AMSA proposes *“that it would be beneficial to retain the old text which references AMSA, or something similar”*.

***ACMA response***

The ACMA, in consultation with AMSA, has sought to ensure that maritime ship stations not subject to the requirements of the GMDSS maintain regulatory continuity when the space object class licence is remade.

Further, the AMSA has provided a definition for inclusion in the space object class licence for the GMDSS and the ACMA has reworded the instrument such that being a qualified operator is only necessary for operations in the GMDSS. This is because there are cases where earth stations on board maritime ship stations are not operating in the GMDSS (i.e. reception of television or internet services). Further, AMSA’s request for the instrument to be specific about AMSA’s ability to issue qualifications for operations in the GMDSS has been addressed.

## Use of notes in the class licences

Defence raised concerns that the notes in both the space object and radionavigation-satellite service class licences seem insufficient for class licensed users to understand that their receivers are not protected from interference caused by apparatus licensed or spectrum licensed devices; specifically, the note in section 8 of the proposed space object class licence and the note in section 4 of the radionavigation-satellite service class licence.

In lieu of the note, Defence proposed that the radionavigation-satellite service class licence “*include a condition with words to the effect that for the band 1240-1300 MHz, an RNSS receiver must accept any interference caused by a radiocommunications station operated by the Department of Defence in accordance with the Spectrum Plan.*”

***ACMA response***

Notes contained in legislative instruments can be a useful tool as they can provide further explanation as to the operation or application of particular provisions.

With regard to the notes in section 8 of the space object class licence and section 4 of the radionavigation-satellite service class licence (stated below), these are generic notes, typically included in class licences issued by the ACMA.

*Note:* A radiocommunications device to which this class licence applies will not be afforded protection from the interference caused by other radiocommunications services.

The ACMA does not typically afford protection to radiocommunications receivers operating under a class licence. There are planning arrangements often implemented in the licence to limit co-channel and adjacent channel interference caused by transmitters, but when an interfering radiocommunications device is operating in accordance with its licence, a class licensed receiver cannot claim protection.

The ACMA has maintained this note under section 8 of the space object class licence and section 4 of the radionavigation-satellite service class licence.

With regard to including a specific licence condition that addresses operations by Defence in the band 1240-1300 MHz, the ACMA considers that there is no need for such a condition in the radionavigation-satellite service class licence. Radionavigation-satellite receivers operating under the radionavigation-satellite service class licence are not afforded protection from an apparatus licensed transmitter operating in accordance with its licence, be it operated by Defence or by any other licensed operator.

# Foreign space objects determination and jamming prohibition

## Consequential instrument amendments

The foreign space objects determination extends application of the Act outside of Australia to the foreign space objects listed in the foreign space objects determination. In order to allow licensed operation of ubiquitous Earth stations receiving radionavigation-satellite service communications from stations on foreign space objects by, the United States Department of Defense[[3]](#footnote-3) (on behalf of GPS) and the European Union (on behalf of Galileo), it was necessary for these foreign space objects to be included in Schedule 2 of the foreign space objects determination.

Both parties have written to the ACMA as a response to making the radionavigation-satellite service class licence and requested to be removed from Schedule 2 as their inclusion is no longer necessary in order for the ubiquitous reception of radionavigation-satellite services to be authorised under the radionavigation-satellite service class licence.

The jamming prohibition prohibits the operation or supply, or possession for the purpose of operation or supply, of a RNSS jamming device under section 190 of the Act. These jamming devices can affect services over significant distances, interfering with other licensed radiocommunications, and posing a risk to public safety.

Consultation on the space object class licence proposed an alternative licensing regime for the radionavigation-satellite service and excising the frequencies of the radionavigation-satellite service into a new class licence. As a result, the frequency bands applicable to the jamming prohibition would not reference the appropriate instrument; therefore, the jamming prohibition needs to be varied to reference the new RNSS class licence.

Consultation on the *Radiocommunications with Space Object) Class Licence Consequential Amendments Instrument 2015* was completed on 3 September 2015.

There were [four submissions](http://www.acma.gov.au/theACMA/Consultations/Consultations/Current/varying-the-foreign-space-objects-determination-and-rnss-jamming-prohibition) received from the European Commission, Australian Maritime Safety Authority, Department of Defence and Geoscience Australia. The submissions supported the consequential amendments to be made to the foreign space objects determination and the jamming prohibition as a result of remaking the space object class licence.

***ACMA response***

Submissions received to the consultation were supportive of the proposals made by the ACMA. Accordingly, the proposals have been implemented.

1. Embargo 23 is available from [www.acma.gov.au](http://www.acma.gov.au) as in force and last revised September 2013. [↑](#footnote-ref-1)
2. See IFC 36/2011 Band plan for television outside broadcast response to submissions paper and IFC 13/2011 - Towards 2020—Future spectrum requirements for mobile broadband available [↑](#footnote-ref-2)
3. The United States Department of Defense’s inclusion in Schedule 2 is administered by the Australian Department of Defence. [↑](#footnote-ref-3)