

The Manager
Space Systems
Australian Communications and Media Authority
PO Box 78
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ACMA Consultation: [IFC 45/2021](#) - Replanning the 2 GHz band: Review of the 2 GHz Television Outside Broadcast Frequency Band Plan

CSIRO Comments

Dear Manager,

CSIRO thanks ACMA for the opportunity to comment on the ACMA Consultation: [IFC 45/2021](#) - Replanning the 2 GHz band: Review of the 2 GHz Television Outside Broadcast Frequency Band Plan. While the IFC 45/2021 consultation document provides a helpful overview of intended changes related to TOB operations as part of their future planned transitions to the 7.2 GHz band, the CSIRO comments provided herein relate specifically to identified unacceptable (presumably unintentional) consequences for the space science services in one of the draft legislative documents – the Radiocommunications (Television Outside Broadcasting) (2010–2110 MHz and 2200–2300 MHz) Frequency Band Plan 2022, which updates the TOB Television Outside Broadcast Service (1980–2110 MHz and 2170–2300 MHz) Frequency Band Plan 2012. It is in this context that the following comments are submitted.

As ACMA is aware from our very long, close and amicable working relations over many decades, CSIRO is responsible for the management and operation of the Canberra Deep Space Communication Complex (CDSCC) and other NASA facilities in Australia under a government to government Treaty between Australia and the USA as well as a Cooperating Agency Agreement between CSIRO and NASA. CSIRO is also responsible to manage the operations of the European Space Agency (ESA) space research activities in Australia, including the operation of the Space Research Services (SRS) earth station at New Norcia in W.A. under the provisions of a long-standing Treaty between the Australian government and ESA. Accordingly, CDSCC and New Norcia are both integral and vital parts of the respective global networks represented as NASA's Deep Space Network (DSN) and ESA's tracking network (ESTRACK), respectively. Each provide ongoing and invaluable contributions to international space exploration.

They both comprise substantial earth station assets developed over 50 years of cooperation including very large antennas at the NASA CDSCC facility and ESA New Norcia facility, enabling tracking of a very large and growing multitude of international Near-Earth and Deep-Space space research missions representing spacecraft assets in excess of \$35 Billion dollars. Additionally, both NASA and ESA continue to invest substantial sums of money in expansion and upgrade projects to maintain a

world leading space science research and exploration capability in Australia. The capability for these stations to continue their space research work, under local management by CSIRO, is critically dependent on the ongoing uncompromised access to the radiocommunications assignments licensed with the ACMA, as has been the case for over 50 years.

CSIRO Comments.

In the spirit of constructive cooperative engagement, CSIRO comments are as follows. It appears the intent of the draft updated TOB Band Plan is to permit continued TOB operations in the bands 1980 – 2010 MHz and 2170 – 2200 MHz during a transition period whereby TOB will subsequently be reallocated from these bands into the 7.2GHz bands. This initiative has been prompted as part of the recent “Review of the 2GHz Band”, which amongst other things will result in the substitution of MSS into these S-Band allocations (1980 – 2010 MHz and 2170 – 2200 MHz).

The inclusion of the 2200 – 2300 MHz band appears to be a consequential ancillary detail with the intention of the new band plan being to “protect TOB services in the upper-adjacent band (2010–2110 MHz and 2200–2300 MHz)”.

There was no stated intention of establishing a “super-primary” status for TOB operations in the adjacent bands (including the 2200 – 2300 MHz band) to the detriment of the existing allocated services, but this seems to be the unacceptable and assumingly unintentional, outcome of the proposed changes to the TOB Band Plan 2012, through the following stipulation:

- Clause 7 (2), (c). “subject to section 9, the operation of an earth receive station as a **secondary service** for the purposes of the spectrum plan.”
- Clause 9 (defining the conditional exceptions to Clause 7) does not ratify the retention of the primary status of the space science services outside the Perth region.

The effects of these proposed changes (relating to the earth receive stations) do not appear to add to the intended purpose of providing adjacent band protection to TOB from the proposed migration of MSS into the 2170 – 2200 MHz band. They do however effectively relegate the primary status of the space science services (and other earth receive stations) in this band to secondary and in doing so, appears inconsistent with Section 32 (3) of the Radiocommunications Act 1992.

Reiterating, the publication (through legislative instruments) of the revised TOB Frequency Band Plan (2022) of the current proposed draft would result in an unacceptable, consequential collateral relegation of other primary services, including the vitally important space science services (space-to-Earth) in the band 2200 – 2300 MHz to secondary status.

CSIRO Suggested Resolution.

CSIRO seeks a simple but definitive rewording of the updated TOB draft 2GHz Band Plan to avoid the above-mentioned detrimental outcomes. Accordingly, in a spirit of cooperative collaboration, CSIRO suggests that ACMA consider a simple resolution that might be encapsulated in the following amendments (or something similar that will provide a satisfactory outcome):

- **Clause 7. Purposes of 2010–2110 MHz and 2200–2300 MHz frequency bands.**
 - (2) The 2200 MHz to 2300 MHz frequency band may be used for the following purposes:
 - (c) subject to section 9, the operation of an earth receive station in accordance with the purposes of the Australian Radiocommunications Spectrum Plan.

- **Clause 9. Use of earth stations and earth receive stations.**

ADD: (5) Except for the provisions of Section 9 (3) and 9 (4), Operation of earth receive stations within the Space Research (space-to-Earth), Space Operations (space-to-Earth) and Earth-Exploration-Satellite (space-to-Earth) services will continue as a primary service in accordance with the Australian Radiocommunication Spectrum Plan (ARSP) and the provisions of AUS87 will continue to apply.

[ADD: (6). License conditions for TOB transmitters as stipulated in [RALI FX21](#), Sections 5.5, 5.5.3 and 7.2 will apply as it relates to the conditions of non-interference sharing with Space Research (space-to-Earth), Space Operations (space-to-Earth) and Earth Exploration-satellite (space-to-Earth) services in the band 2200 – 2300 MHz.]

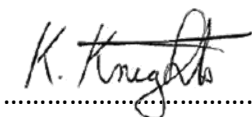
Conclusion.

CSIRO, as an interagency partner to NASA and ESA under longstanding cooperative arrangements in the management of space science service operations in Australia over 50 years, does not support the (hopefully unintentional) relegation within the draft proposed TOB 2GHz Band Plan (2022) of the science service allocation within the 2200 – 2300 MHz band to secondary status. Both NASA and ESA have invested very large amounts of money over the decades to achieve, with the cooperative collaboration of the ACMA, the requisite interference-free spacecraft tracking operations from their earth stations in Australia (as elements in a global network) in support of a vast number of current and planned near-Earth and deep space scientific missions, including in the 2200 – 2300 MHz band.

Accordingly, the continued primary status of these allocations within the 2200 – 2300 MHz band, is essential in assuring the continued security of space tracking operations into the future, consistent with the Treaty arrangements.

Thank you for the opportunity to consider and comment on the ACMA IFC 45/2021.

Yours Sincerely,



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