

Capricorn Space Submission: Replanning the 2 GHz band: Review of the 2 GHz Television Outside Broadcast Frequency Band Plan. Consultation Number IFC 45/2021

Introduction

Capricorn Space thanks the ACMA for the opportunity to respond to its *Consultation paper—Replanning the 2 GHz band: Review of the 2 GHz Television Outside Broadcast Frequency Band Plan* (“the consultation paper”).

We note that the main intent of the review of the *Television Outside Broadcast (1980-2110 MHz and 2170-2300 MHz) Frequency Band Plan 2012* (“the TOB band plan”) is to excise the 2 x 30 MHz segments 1980-2010 MHz and 2170-2200 MHz which will no longer be available for television outside broadcasting (TOB) services, and will instead be made available for mobile-satellite services (MSS).

As such, the main revision of TOB band plan, as per the *Draft Radiocommunications (Television Outside Broadcasting) (2010-2110 MHz and 2200-2300 MHz) Frequency Band Plan 2022* (“the draft TOB band plan”) is the review of the lower frequency limit of each segment, along with editorial changes to “reflect contemporary legislative drafting practices” as stated in the consultation paper.

Co-primary status with respect to fixed links

However, we believe that the review of the TOB band plan is a timely opportunity to revise the provisions for earth stations, as it coincides with a growth in the burgeoning Australian space industry.

As per page 5 of RALI FX 21 “*Due to the introduction of TOB in the bands 2010-2110 MHz and 2200-2300 MHz the clearance of fixed point-to-point links was necessary in areas of high TOB activity. The clearance areas for the 2010-2110 MHz and 2200-2300 MHz bands are defined in the [TOB band plan] and shown in Figure 3 and 4 [reproduced below].*”

Note that Figure 3 shows an amalgamation of the areas within which fixed links may operate as a secondary service only (under section 8(3) of the draft TOB band plan) and those within which they must not operate at all (under section 8(2) of the draft TOB band plan).

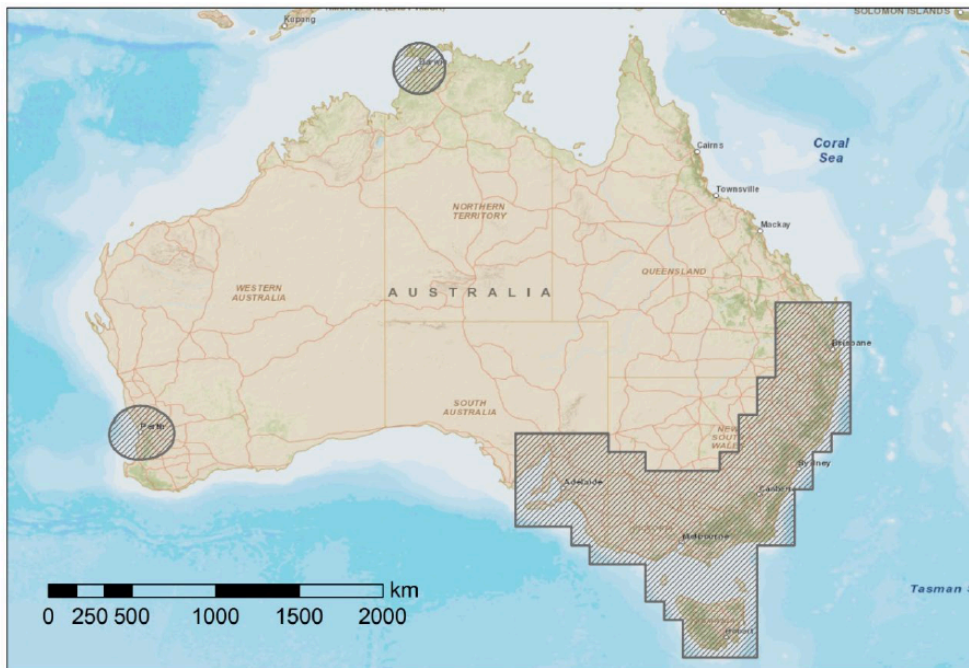
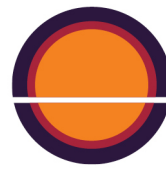


Figure 2: Fixed point-to-point clearance areas for the 2010-2110 MHz band

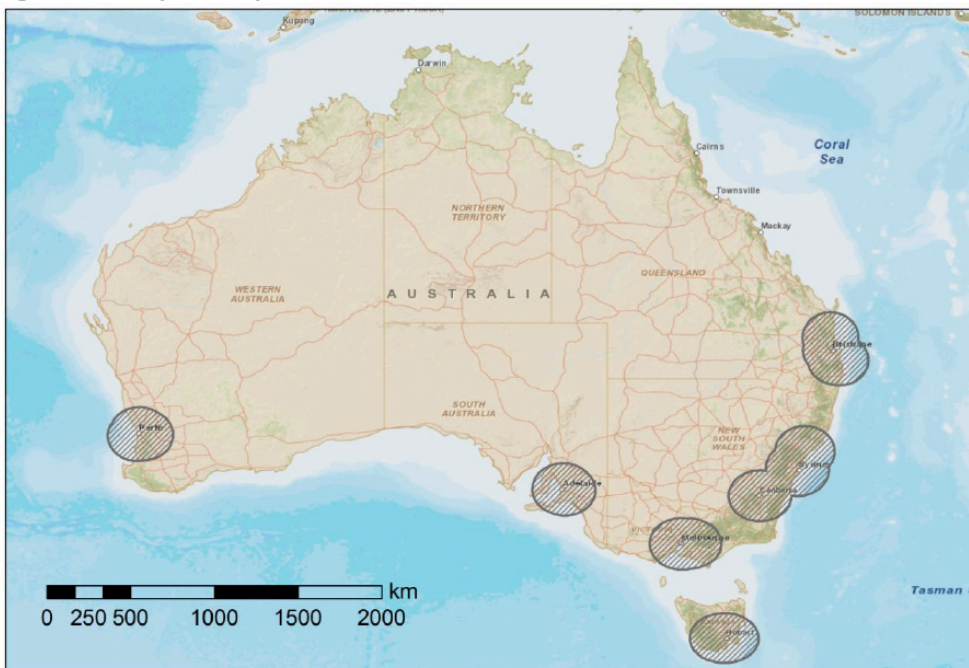


Figure 3: Fixed point-to-point clearance areas for the 2200-2300 MHz band

It is noteworthy that fixed point to point links are permitted to continue operating as a co-primary service, with respect to TOB, in remote areas outside the areas in Figures 3 and 4 of RALI FX 21. In these same areas of low TOB activity however, earth stations continue to operate as secondary services, with respect to both fixed links and TOB.

We see no reason why fixed links would have priority over earth stations as a primary service. S-Band earth stations require significant investment and as such fixed links should be coordinated with earth stations on a first-in-time basis (and vice versa). Earth stations should not be subject to a “no interference, no protection” basis as a secondary service with respect to fixed links.

As such, we request that the ACMA review Sections 7 and 9 of the draft TOB band plan as follows:

7 Purposes of 2010–2110 MHz and 2200–2300 MHz frequency bands

- (1) The 2010 MHz to 2110 MHz frequency band may be used for the following purposes:
 - (a) a television outside broadcast service;
 - (b) subject to section 8, a fixed service (point to point);
 - (c) subject to section 9, ~~the operation of an earth station in the 2025 MHz to 2110 MHz frequency band as a secondary service for the purposes of the spectrum plan.~~

~~Note: — See section 6 of the spectrum plan.~~

- (2) The 2200 MHz to 2300 MHz frequency band may be used for the following purposes:
 - (a) a television outside broadcast service, other than a service involving the operation of an airborne television outside broadcast station;
 - (b) subject to section 8, a fixed service (point to point);
 - (c) subject to section 9, ~~the operation of an earth receive station as a secondary service for the purposes of the spectrum plan.~~

~~Note: — See section 6 of the spectrum plan.~~

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9 Use of earth stations and earth receive stations

- (1) A frequency band specified in section 7 must only be used for the purposes of operating an earth station or earth receive station in accordance with this section.
- (2) The part of the 2010 MHz to 2110 MHz frequency band above 2025 MHz must not be used for the purposes of operating an earth station in the Perth area.
- (3) The 2200 MHz to 2300 MHz frequency band must not be used for the purposes of operating an earth receive station in the Perth area.
- (4) In this section, **Perth area** means the area described by a circle with a radius of 15 kilometres whose centre is located at latitude 31.802522 South and longitude 115.885160 East.

(5) If the 2010 MHz to 2110 MHz frequency band is used for the purposes of the operation of an earth station in an area described in item 1 of Schedule 1 or an area

described in item 1 of Schedule 2, the service is operated as a *secondary service* for the purposes of the spectrum plan.

Note: See section 6 of the spectrum plan.

(6) If the 2200 MHz to 2300 MHz frequency band is used for the purposes of the operation of an earth receive station in the area described in item 2 of Schedule 1, the service is operated as a *secondary service* for the purposes of the spectrum plan.

Note: See section 6 of the spectrum plan.

Revision of Embargo 23

Similarly, if fixed links can be co-primary with TOB in areas of low TOB activity, we do not see a reason why earth stations cannot operate on a co-primary basis with TOB services in these areas.

We note that to date, as part of the process of seeking exemption from Embargo 23, the ACMA requires that earth station licences carry special conditions specifying that earth station transmitters operate on a “no interference” basis with respect to TOB, while earth station receivers operate on a “no protection” basis with respect to TOB. The revision of the TOB band plan to elevate earth stations to co-primary status with fixed links and TOB in remote areas—as per the previous section above—will not automatically eliminate this, as this is a policy decision for the ACMA, separate from the legislative band plan.

That said, to support the elevation of earth stations to co-primary status, we would also request the ACMA to revise Embargo 23 such that instruction 3 of the embargo only applies to the fixed link clearance zones in Attachment 1. For example:

3. Assignments for earth stations (earth receive and fixed earth licence options) in the frequency range 2025-2110 MHz **inside the areas detailed in Tables 1 and 3 of Attachment 1, and in the frequency range 2200-2300 MHz, outside the Mingenew Earth Station Protection Zone (Attachment 2) inside the areas detailed in Tables 2 and 3 of Attachment 1**, will be considered on a case-by-case basis by the Manager Spectrum Planning Section. **The restrictions of Embargo 23 do not apply to new or existing earth stations located in the Mingenew Earth Station Protection Zone (Attachment 2).**

The wording of Attachment 1 itself would not need to be changed, since it refers to a prohibition of assignments rather than a consideration of assignments on a case-by-case basis. As such, it is proposed that instruction 3 of Embargo 23 refer directly to the relevant Table numbers of Attachment 1.

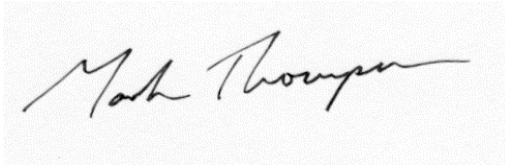
We acknowledge that the polygon defined in Table 3 of Attachment 1 is larger than the polygon defined item 1 of Schedule 2 of the draft TOB band plan, as it:

- a) includes additional coordinates to include Regional North QLD;
- b) includes a further 60 km buffer around the polygon bounded by the coordinates;
and
- c) applies to 2200-2300 MHz as well as 2010-2110 MHz.

Conclusion

Capricorn Space requests that, at a minimum, the draft TOB band plan be revised to make earth stations co-primary with fixed links outside the areas specified in Schedules 1 and 2 of the TOB band plan.

Separately, we would also request that the ACMA revise Embargo 23 such that the case-by-case consideration of exemption to the embargo for earth stations is limited to the areas of higher TOB activity in Attachment 1 of Embargo 23.



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27 February 2022