



Reference AST 2022-002

The Manager, Spectrum Licensing Policy Section
Australian Communications and Media Authority
PO Box 13112
Law Courts
Melbourne Vic 8010

RE: Draft Five-year spectrum outlook 2022-27 - consultation 12/2022

This response to the ACMA consultation paper is on behalf of my company Analyse Solve & Test Pty Ltd and for use by ARCIA. In addition to my part time consultancy, I am a life member of ARCIA assisting with standards matters and also represent the WIA on both the RC004 and RC006 standards committees.

With reference to “Draft Five-year spectrum outlook 2022–27 – consultation 12/2022”, and noting Item 10 in Table 9 “Radiocommunications (UHF CB Radio Equipment) Standard 2011 (No. 1)”, the purpose of this response is request completion of the UHF CBRS services conversion to 80 (12.5 kHz) channels which would involve changing both the CB class licence and the associated equipment supply regulation. AS/NZS 4365:2011 is still fit for purpose as the “standard for performance” and I would not recommend trying to revise it, based on my experience with the project to revise AS/NZS 4268 which failed after three years work due to changed Standards Australia policy constraints. Any changes necessary can instead be enacted through the equipment rules.

BACKGROUND

As part of the UHF band replan conducted from 2008 to 2010 creating designated Government spectrum bands and converting analogue voice channels from 25 kHz to 12.5 kHz, the UHF CBRS band was also converted to 80 channels by creating an additional 40 channels interleaved between the existing channels numbered 1 to 40.

The AS/NZS 4365 standard as published only catered for 12.5 kHz operation including on telemetry channels, however following feedback, the two 25 kHz telemetry channels (22 & 23) were permitted to continue to operate and the newly created channels (61, 62 & 63) between and adjacent to them were not permitted to be used. As a result, the ACMA S162 standard in picking up AS/NZS 4365 as the standard for performance also changed the telemetry bandwidth mask and test back to that suiting a 25k Hz channel allocation. The older 25 kHz 40 channel analogue voice equipment was not allowed to be sold after the transition period of one year from when the new CBRS standard came into force. The ACMA had indicated that after a period of five years 25 kHz analogue voice equipment would no longer be allowed to operate, however when the time came, the ACMA decided not to carry that change out due to complaints from end users about a lack of consultation and the cost of replacement.

The cost of equipment has reduced significantly over time and it has now been over 10 years since the change of the service to 80 channels was initiated, so it is now appropriate to allow full utilisation of the band, unlocking additional telemetry channels and repeater frequencies currently restricted by continued use of 25 kHz equipment.

Please find attached a list of all the 12.5 & 25 kHz repeaters in Australia. The majority are still operating wideband. In the case of high power repeaters (> 8.3 W EIRP), which most of them are, LM8 would not allow you to assign a 12.5 kHz channel within 75 km of a 25 kHz channel, which is effectively a 75 km circle around each 25 kHz repeater. Considering Victoria with a reasonably dense population and the Great Dividing Range it can be seen that there is hardly any opportunity to use the “new” repeater allocations.

PROPOSED ACTIONS

Amend the CBRS Class licence and if necessary the equipment rules and initiate measures to:-

1/ Remove licence permission to transmit 25 kHz channel (16 kHz bandwidth) emissions. Older 40 channel equipment could still be permitted to operate, if its maximum frequency deviation were reduced to +/- 2.5 kHz.

2/ Require all CBRS repeaters, through their apparatus licence conditions, to comply with 12.5 kHz (10.1 kHz emission bandwidth) requirements thus allowing the interleaved repeaters to be allocated without interference and permitting extended coverage through having a greater network of repeaters to access in any geographical region.

3/ An accredited assigner has informed me of exemptions being granted to the 20 km rule for CBRS repeaters stated in the ACMA Land Mobile Licence Information Paper. In view of the greater number of repeater channels made available under the 80 channel plan, I suggest that the assignment policy be amended to remove that restriction. Further I would ask that a policy be introduced permitting the interlinking of two CBRS repeaters on different frequencies, where their geographic location services the same relative population but the respective mountains on which they are located on mutually restrict each other's coverage. This would allow individuals with access to only one repeater to contact others via both repeaters. The Land Mobile Licence Information Paper currently prohibiting the linking of CB repeaters is attached.

4/ Revisit the telemetry channel allocations and convert them all to 12.5 kHz (10.1 kHz bandwidth) operation including considering a slight relaxation in the time constraints for the service given the lower data rates. Technology has improved allowing much faster data rates on narrowband channels so the need for a greater bandwidth is not now justified. Also for dedicated telemetry systems there are more spectrum alternatives now. See commentary lower down in the information at [UHF Channel 22 & 23 - A Clarification - cb reference](#)

Alternatively if there is a large population of 25 kHz telemetry devices still in use, allow the currently unused channels to operate as 6.25 kHz emissions given that 25 kHz services always had an amount of guard band space between them. In view of the low duty cycle of these services and their expected geographical separation, there should be limited interference potential.

I trust the information and justifications above are sufficient for you to undertake the work necessary to allow the UHF CBRS service to achieve optimum performance using all 80 channels.

Yours Sincerely

Noel Higgins

Director – Analyse Solve & Test Pty Ltd.

29 April 2022