17 April 2020

Radio Spectrum Management Policy and Planning
Ministry of Business, Innovation and Employment
PO Box 2847
WELLINGTON 6140
Radio.Spectrum@mbie.govt.nz

1710-2300 MHz Discussion Document

We would like to thank the Ministry for the opportunity to submit on the 1710-2300 MHz Discussion document.

1800 MHz Duplex Gap

1. *Do you agree with the RSM proposal to use the 1800 MHz duplex gap (1785-1805 MHz) for radio microphones? If not, what is a better use of this block of spectrum?*

   We agree with this approach, provided that radio microphones are commonly available in this band, and that the band is wide enough (when considering guard bands) to accommodate the number of radio microphones likely to be used.
   Is there any possibility that this band may be re-planned internationally? (e.g. to create a single 1800 MHz TDD band for mobile broadband).

2. *What size guard band would be appropriate for achieving compatibility between radio microphone use and mobile networks operating below 1785 MHz and above 1805 MHz?*

   We do not have any comment on this question.

Unpaired 2000 MHz Band

3. *Do you agree with RSM's proposal to postpone a decision on the Unpaired 2000 MHz band (2010-2025 MHz) until there is clarity on international harmonised use for the band? If not, what is the best value use for this band?*

   We agree that a decision on this band is postponed until there is further clarity on likely international use or unless there is a significant New Zealand use case now.

Kordia Limited
Level 3 | 162 Victoria Street West | Auckland 1010
PO Box 2495 | Auckland 1140 | New Zealand
T. +64 9 551 7000 | www.kordia.co.nz

Fixed Links in Lower Paired 2200 MHz Band

4. *Do you agree with RSM's proposal to use the lower portions of the Paired 2200 MHz band (2025-2081.5 MHz and 2200-2256.5 MHz) available for fixed links to enable clearing of the 'L' and 'LL' bands (1427-1524 MHz)?*

   We agree with this approach, provided that there is fixed link equipment readily available in this band.

5. *Do you agree that the proposed channel plan for fixed links in Figure 1 would be adequate to transition those affected licences in 'L' and 'LL' fixed link bands? If not, why not?*

   This may be appropriate. We note that Recommendation F.1098-1 also offers a 2.5 MHz channel raster that may be more appropriate since it better matches the 2 MHz and 4 MHz channels in the current L band.
   This reduced channel bandwidth could be used to provide more channels, or it could reduce the amount of the Paired 2200 MHz band required to provide the same number of channels so the band allocated to space operations could be increased. This would depend on what duplex spacing is used with a 2.5 MHz channel raster (the 189 MHz duplex spacing given in the example in F.1098-1 would not be practical).

   In either case, the channel plan will only be feasible if vendors support the 1098 plans.

6. *Do you agree that the proposed channel plan for fixed links could also accommodate short-term licences that may or may not align with the channel raster on a case-by-case basis and are subject to coordination with fixed links for TV outside broadcasts of major events and for space operation?*

   We agree that there should be some flexibility for the allocation of short-term licences for non-fixed linking services. As described in our answer to question 8 below there are other users that are interested in spectrum around 2 GHz.

7. *Are there better uses for the lower portions of spectrum in the Paired 2200 MHz band? If so, what?*

   We do not have any comment on this question.

Space Operation in Upper Paired 2200 MHz Band

8. *Do you agree with RSM's proposal to reserve 2081.5-2110 MHz and 2256.5-2290 MHz exclusively for space operation in New Zealand? If not, why not?*

   We have seen real demand for spectrum in the 2 GHz band for space operation with numerous licences for space operation in this band already, and agree that this band should be allocated for space operation. However, this band should be allocated only primarily for space operation, not reserved exclusively for space operation. We have seen demand for other spectrum uses in the broad 2 GHz band, such as short-term use of wireless cameras.

   Some of these non-space users' equipment can be tuned over a wide bandwidth and do not specifically need to be in the Paired 2200 MHz band. However, there are few parts of the 2 GHz band not controlled by Management Rights so other non-space usage should be allowed in this band.

   Existing licence holders for space operations in this band should be given continuance radio licences beyond the March 2021 expiry date of the Management Right.

   Kordia also has a fixed link in Wellington in this Upper Paired 2200 MHz that we would like to continue operation of after the expiry of our Management Right.

9. *Do you agree that the reserved spectrum would be adequate to support the growing demand in space activities?*

   We do not know whether this will be sufficient spectrum. Some space operation licences do not require full time use of the spectrum and it may be feasible to consider a sharing arrangement where one organisation manages allocations and bookings for usage from licence holders.

   The number of channels needed for L-band linking should be assessed – if it is determined that fewer channels are sufficient then leftover spectrum could be allocated to space operation (or at least reserved for either space operation or L-band linking depending on future usage requirements).

10. *Is there a better use for the spectrum between 2081.5-2110 MHz and 2256.5-2290 MHz? If so, what?*

    This is a suitable use of this spectrum, but we note in our response to question 8 above that there are various other users that require occasional or localised access to spectrum around 2 GHz and the entire Paired 2200 MHz band should be available for these users.

11. *Do you agree with the proposal to use 10 MHz guard bands in the frequency range 2290-2300 MHz?*

    We do not have any comment on this question.

Paired 2100 MHz Band Expansion

12. *What is the best value use for the Paired 2100 MHz band expansion?*

    We recommend that this spectrum is reserved for air-to-ground-to-air communication with aircraft for on-board connectivity.

    A mobile-satellite service does not appear to be feasible for New Zealand.

    This spectrum should not be allocated to terrestrial mobile broadband – not all useful spectrum in New Zealand needs to be allocated to mobile broadband, especially when considering the large number of different bands available to mobile network operators. In contrast, many other radiocommunications technologies in current use have equipment available in only one or a few suitable bands (for example, digital television, fixed linking for specific distances, aeronautical navigation). Air-to-ground-to-air communication is a specific technology and application with a finite customer base and consequently a limited vendor pool. If this band isn't reserved for air services then New Zealand will be precluded from any meaningful on-board connectivity for aircraft.

Contact details for our submission are below:

Aaron Olphert
Chief Digital Officer
Email: Aaron.olphert@kordia.co.nz

We would be happy to meet with the Ministry to discuss our submission further.