# Submission to RSM's "Re-planning options for frequency bands within 1710-2300 MHz Discussion document"

## Executive summary

Huawei New Zealand welcomes the opportunity to respond to RSM "Re-planning options for frequency bands within 1710-2300 MHz Discussion document" (referred to as the *RSM Discussion Document* in the rest of this document) released in March 2020. This *RSM discussion document* sets out some proposals in regards to new usage of the 1800MHz Duplex Gap, the unpaired 2000MHz band, the paired 2200MHz band, and the paired 2100MHz band expansion.

In this submission, Huawei New Zealand responds to a number of questions raised in the RSM Discussion Document. Huawei New Zealand offers the following information for RSM consideration,

1. The 1800MHz duplex gap 1785~1804.8/1805MHz has been reportedly approved and used for wireless audio hand-held devices, mostly, in European nations where additional requirements, in particular a maximum e.i.r.p. of 20mW, are mandated. RSM may consider to align its decision with these jurisdictions.
2. Huawei New Zealand welcomes RSM's proposal of making reservation on the paired 2100MHz band extension for IMT use, and encourage RSM to monitor the global development of this band;
3. Huawei New Zealand suggests RSM to keep on monitoring the overall development of the unpaired 2000MHz and the paired 2200 MHz band.
4. Whilst adequate guard-band is needed at the high end of the paired 2200MHz band, it is suggested that RSM should delay its decision on the bandwidth of this guard-band and to monitor relevant studies being carried out by standard bodies; giving RSM some clear international standards to follow.

The above summary is addressed to Radio Spectrum Management New Zealand.

Huawei Technologies New Zealand

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*Question 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?*
*Question 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?*

Response:

It has been reported in [1] that, wireless audio hand-held devices are allowed to operate over 1785~1804.8/1805MHz with the max e.i.r.p. of at 20mW in Australia, Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Luxembourg, Malta, The Netherlands, Norway, Portugal, Romania, Slovenia, Spain, Sweden, Switzerland, UAE. A few jurisdictions have some variants, e.g., Bulgaria puts a specific emission mask over 1785~1805MHz to protect IMT over 3GPP Band 3, and in UK 1785~1800MHz is used on a shared base and the maximum e.r.p is set to 50mW.

From the supporting eco-system perspective, it is reasonable to deduce that there is a plethora of radio hand-held devices in conformance to the above regulatory requirements.

RSM's proposal seems to align with those jurisdictions mentioned above on the spectrum range, and RSM is suggested to align with those jurisdictions and set the maximum e.i.r.p. to 20mW.

*Question 3: Do you agree with RSM's proposal to postpone a decision on the Unpaired 2000 MHz band (2100-2025 MHz) until there is clarity on international harmonised use for the band? If not, what is the best value use for this band?*

Response:

Huawei New Zealand encourages RSM to closely monitor the international harmonization and development of this band.

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

Response:

Huawei New Zealand encourages RSM to closely monitor the international harmonization and development of this band.

*Question 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?*

*Question 9 Do you agree that the reserved spectrum would be adequate to support the growing demand in space activities?*
*Question 10: Is there a better use for the spectrum between 2081.5-2110 MHz and 2256.5-2290 MHz? If so, what?*
*Question 11: Do you agree with the proposal to use 10 MHz guard bands in the frequency range 2290-2300 MHz?*

Response:

The ECC has developed the ECC Report 172 [2] which investigated the coexistence between a LTE TDD macro base station and an earth station satellite receiver (for both Earth Exploration Satellite Service and Space Research Service) at the 2290 MHz boundary. In ECC Report 172 the base station assumes non-Active Antenna Systems. The results in Report 172 indicate a feasible implementation of LTE TDD Broadband Wireless System operating within the band 2300-2400MHz with a geographical separation distance of 3-7 km, in addition to a few conventional site engineering means, to mitigate the interference to the operation of space services below 2390MHz.

Huawei New Zealand is aware that very recently in March 2020 ECC decided to start new studies to be able to use the 2.3 GHz band with the 5G standard, including Active Antenna Systems. The outcomes of the technical compatibility study is expected to be available in July 2021.

Thus Huawei New Zealand encourages RSM to delay its decision on the bandwidth of the guard-band at the high end of the paired 2200MHz band and to monitor relevant studies being carried out by standard bodies.

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

Response:

No Comment.

**Reference list**

[1] Frequencies for wireless microphones, APWPT, March 2020, https://www.apwpt.org/downloads/handoutfrequencies2019.pdf;

[2] ECC Report 172, Broadband Wireless Systems Usage in 2300-2400 MHz, March 2012;