OPTUS

Submission in response to ACMA Discussion Paper

Exploring the future use of the 1880–1920 MHz band

Public Version

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OPTUS RESPONSE TO ISSUES FOR COMMENT

1. Optus welcomes the opportunity to provide a submission in response to the ACMA's Discussion Paper *Exploring the future use of the 1880–1920 MHz band – November 2021* (consultation 40/2021); updated in January 2022.

2. Optus commends the ACMA for engaging industry in formulating its plans for this spectrum in order to inform further replanning work under the ACMA's work program for its five-year spectrum outlook (FYSO).

3. Optus sets out its feedback to the issues relevant to Optus below and would welcome the opportunity to discuss our feedback with the ACMA.

PRELIMINARY CO-EXISTENCE CONSIDERATIONS

4. Optus submits that any significant deployment of high-power base stations and services in the 1.9 GHz spectrum (1880 – 1920 MHz) has the potential to undermine the utility of 1.8 GHz and 2.1 GHz bands. Optus notes that, in Australia, 1.7 to 2.2 GHz spectrum has been allocated based on ITU-R Recommendation M.1036-3 B4 frequency arrangements. That is, the band plan is as below:

   (i) 1805 – 1880 MHz: **FDD** mode, 3GPP band-3 (1.8 GHz band) Downlink;

   (ii) 1880 – 1920 MHz: **TDD** mode, 3GPP band-39 (1.9 GHz band);

   (iii) 1920 – 1980 MHz: **FDD** mode, 3GPP band-1 (2.1 GHz band) Uplink;

5. The coexistence of TDD systems in the 1.9 GHz band with the adjacent FDD systems will present challenges to effective interference management and Optus submits that any such proposals require thorough consideration and planning. Despite the recent developments in the 1.9 GHz ecosystem and a constant increase in the number of devices that support band 39, Optus notes that there has not been a successful case of coexistence of these three bands (i.e., band 1, 3, and 39).

6. In Australia, both 1.8 & 2.1 GHz bands have been heavily used by MNOs for mobile coverage services (e.g., there are roughly 85k and 110k base stations deployed in 1.8 GHz and 2.1 GHz, respectively). If the new 1.9 GHz band plan results in interference or restrictions in either of the 1.8 or 2.1 GHz bands, the impacts on the existing mobile networks and services will be significant.

7. Accordingly, Optus submit that any new assignment in the 1.9 GHz band should not:

   (i) Cause any interference with the adjacent bands, particularly with the 2.1 GHz Uplink;

(ii) Mandate any new deployment restrictions in the adjacent bands, particularly in the 1.8 GHz downlink band.

BAND PLANNING SCENARIOS

8. Optus notes the ACMA's comments that there "is interest in access to the 1.9 GHz band for several different, and potentially competing, uses." Optus has reviewed the scenarios that the ACMA has developed to aid discussion and sets out our preliminary proposal for the 1.9 GHz band plan below.

1880 – 1900 MHz

9. Currently, this frequency range is mainly used for Digital Enhanced Cordless Telecommunications (DECT) systems. Since DECT is still the major technology for short-range radio systems such as cordless phones and headsets, DECT usage should be supported in this frequency range, given the devices comply with the *Radiocommunications (Digital Cordless Communications Devices — DECT Devices) Standard 2017.*

10. The use of *DECT-2020* can be supported as well. DECT-2020 (released October 2020) can be used for both small and large-scale industrial (and consumer) IoT and M2M use cases. These include local area deployments for Ultra-Reliable Low Latency (URLLC) and massive Machine Type Communication (mMTC). The allocation of this frequency range for DECT and DECT-2020 will be aligned with the international developments and standards.

1900 – 1910 MHz

11. This frequency range is currently being considered internationally (particularly in Europe) for Future Rail Mobile Communication System (FRMCS). It can be allocated to FRMCS systems in Australia as well, if:

(i) The two conditions mentioned under paragraph 7 are satisfied;

(ii) The Railway industry considers this frequency as a replacement for their existing 1.8 GHz spectrum, and thereby vacate all/part of their current 1.8 GHz holdings.

1910 – 1920 MHz

12. Apart from the existing framework for point-to-point and point-to-multipoint deployments in regional and remote areas, no other services should be deployed in this part of the band. This is because Optus considers that the band is too close to the 2.1 GHz uplink and could cause interference to the base station receivers, especially in metro areas.