

# **WLAN use in the 6 GHz band**

## **MBIE RSM Discussion Document**

2degrees Submission, 30 June 2021





## 1 Introduction

Two Degrees Mobile Limited (**2degrees**) welcomes the opportunity to comment on the Ministry of Business, Innovation and Employment (**MBIE**) Discussion Document, *WLAN use in the 6 GHz band*.

While we recognise the importance of WLAN for the delivery of broadband in both homes and offices, we consider:

- MBIE should not allocate the upper portion of the 6 GHz band to WLAN. This is a candidate band for IMT at WRC-23, and New Zealand should not make decisions that prevent New Zealand allocation in line with these WRC decisions.
- MBIE should not allow higher power use of WLAN in the lower portion of the band. This mixes band plans of different regions, is inconsistent with the approach taken in Europe and Australia, and could jeopardise use of the 6 GHz band for the majority.

We set out further details in relation to MBIE's specific questions below.

## 2 Responses to MBIE questions

### Question 1: Do you agree with RSM's proposal on making 5925 - 6425 MHz available for WLAN use?

2degrees supports the allocation of 5925 - 6425 MHz for WLAN systems: an additional 500 MHz will provide a very significant increase in the total amount of spectrum available for WLAN, which will meet the increasing need for WLAN use. We recognise the current allocation of three blocks in the 5 GHz band is more fragmented. Allocation of a contiguous 500 MHz block will enable larger channel bandwidths to be available more often, which in turn will enable users to take advantage of the faster speeds available from their fixed networks.

We support the allocation of internationally harmonised spectrum: New Zealand relies on larger overseas markets for its equipment supply and allocating internationally harmonised spectrum will ensure cost effective WLAN equipment is available.

### Question 2: What are your views on the potential future use of 6425 - 7125 MHz for new applications (e.g. Wi-Fi or IMT)?

The frequency range 6425 - 7125 MHz is a candidate band for IMT in Region 1 and China. While currently only 7025 - 7125 MHz is a candidate band for IMT in Region 3, past experience shows that the IMT allocation range may be expanded to 6425 - 7125 MHz (for example, the adoption of the APT 700 MHz band for IMT in Region 3 and other parts of the world highlights that significant changes can happen over time).

With significant development yet to happen leading up to WRC-23 and post WRC-23, we agree with MBIE that it is important to hold off any decision on this band until more information on international developments is available.

Notably, any allocation of the lower 6 GHz to WLAN would provide a very significant amount of new spectrum for Wifi, and give MBIE time to further consider the allocation options for the upper 6 GHz band in future.



**Question 3: Do you agree that RSM should include 5925 - 6425 MHz in the GURL-SRD for WLAN low power indoor and very low power use?**

2degrees supports MBIE's proposal for GURL with power limits of 24 dBm (11 dBm/MHz) for indoor use and 14 dBm (1 dBm/MHz) in all locations. This is in line with the limits adopted in the UK and Australia, and similar to Europe.

**Question 4: Do you agree that RSM should mandate ETSI EN 303 687 as the radio standard for WLAN use in the 6 GHz band? Is there any other regulatory compliance standard we should consider?**

2degrees supports the adoption of ETSI EN 303 687 for WLAN in the lower 6GHz band.

**Question 5: What are your views on using a licensing approach to support 30 dBm EIRP WLAN devices?**

2degrees does not support MBIE's proposal to allow higher power devices in the 6 GHz band. Enabling higher power limits is not in line with what Europe and Australia have adopted and has the potential to create interference issues, undermining use of this band:

- The higher power proposal is a North American proposal, where the whole band was allocated to WLAN. New Zealand should not 'mix and match' band use from different regions. This can lead to significant and costly interference issues, for example as has occurred in New Zealand 850 MHz and 900MHz cellular bands.
- In its discussion document on Managed Spectrum Parks, MBIE noted "the allocation process and technical parameters of licencing have encountered problems and over the ten years of operation, disputes have taken a considerable amount of RSM time and effort to resolve". Allowing higher power devices has the potential to create a similar issue for the 6 GHz band.
- Interference from TDD systems has a greater impact on adjacent bands compared to FDD systems. Given the upper 6 GHz is a potential candidate for IMT, MBIE needs to be careful with the limits applied to lower 6 GHz band allocations. Introducing higher power use to meet the needs of a few could jeopardise the longer-term utility of this band.

Notably, these limits may be changed in the future once there is greater clarity on the use of the full 6 GHz band. We support the ACMA approach, which acknowledged the current limits "allows additional time for future developments in the upper 6 GHz band to become clearer".

**Question 6: What are your views on supporting 36 dBm EIRP standard power devices using Automatic Frequency Coordination (AFC) system? Do you have any proposals to provide AFC systems to New Zealand?**

As per our response to Question 5, we do not support mixing the adoption of 6 GHz band use from two different 'regions', which can lead to interference issues.

Further, given the upper portion of the 6 GHz band is a candidate for IMT, MBIE needs to be careful to ensure the use of the lower 6 GHz band does not undermine this before key international decisions are made.