

30 June 2021

Radio Spectrum Management Policy and Planning  
Ministry of Business, Innovation and Employment  
PO Box 2847  
WELLINGTON, NZ 6140

Email: [Radio.Spectrum@mbie.govt.nz](mailto:Radio.Spectrum@mbie.govt.nz)

Re: Consultation submission on WLAN use in the 6 GHz Band

Omnispace LLC (Omnispace) appreciates the opportunity to submit a response to the Radio Spectrum Management (RSM) discussion document, “WLAN use in the 6 GHz Band” (Discussion Document).

Omnispace provides its views and comments in response to the consultation issues identified by RSM in the Discussion Document. Omnispace has strong and specific interests in the 5925 MHz-7125 MHz band (6 GHz band) because it utilises portions of this band for the Telemetry, Tracking and Command (TT&C) of its existing satellite gateway feeder links.

### *Background on Omnispace*

Omnispace is the owner and operator of the only currently on orbit global non-geostationary orbit (“NGSO”) satellite system in the 2 GHz S-band (1980-2025 MHz Earth-to-space / 2170-2200 MHz space-to-Earth) with feeder links in the 5175-5250 MHz (Earth-to-space) and 7010-7075 MHz (space-to-Earth) bands. Omnispace’s NGSO system has been brought into use in accordance with applicable International Telecommunication Union (“ITU”) regulations. Omnispace is leveraging over NZD\$1 billion of assets that the company acquired to deploy its NGSO system to provide MSS and hybrid connectivity via a complementary ground component (CGC) and is now investing in new technology and infrastructure as part of its next generation global constellation to provide hybrid 5G connectivity.

Omnispace is managed by veteran satellite industry executives and has investments from leading private equity firms and strategic partners with a successful track record in the wireless and satellite domains. Earlier this year, Omnispace announced that it had secured an additional US\$60 million in equity financing to advance the development of its 5G non-terrestrial network (NTN) and expand its 2 GHz spectrum footprint in key markets globally. The Omnispace network will power critical global communications, including 5G and mobile Internet of Things (IoT) connectivity, directly from its satellites in space to mobile devices around the world. This funding will enable Omnispace to build upon the investments it has already made to validate 3GPP standards-based 5G products and technologies and demonstrate 5G connectivity from space. Omnispace’s shareholders include Columbia Capital LLC, Telecom Ventures LLC, Greenspring Associates, Fortress Investment Group, and Intelsat S.A.



Omnispace, LLC

7900 Tysons One Place, Suite 1250, Tysons, Virginia 22102

+1 (202) 930-7922 [omnispace.com](http://omnispace.com) [info@omnispace.com](mailto:info@omnispace.com)

Omnispace is currently offering MSS capacity in various markets through its existing operational on-orbit F2 satellite network. The F2 satellite network is the first element of the NGSO constellation that will be capable of providing 24 x 7 coverage and connectivity around the globe (“Omnispace System”).

Omnispace’s hybrid MSS system can provide a broad range of services, including a wide array of possible commercial and government communications:

- **Industries:** Commercial MSS services to enterprises in agriculture, mining, fishing, etc.;
- **Connectivity:** Internet connectivity in rural and remote areas;
- **Emergencies/Public Safety:** Communications during natural and man-made emergencies, as well as disaster warnings to the public and government agencies;
- **Defence:** Increased capacity and resiliency for mobile defence applications;
- **Internet of Things (IoT):** Connected car applications, smart city (urban and rural), transportation and logistics (on-shore and off-shore);
- **Unmanned Aerial Vehicles:** situational awareness for disasters such as fires, damage caused by weather events, delivery, insurance inspections;
- **Hybrid:** In areas that are lacking in coverage or capacity due to blockage or density; and,
- **Aviation Networks:** hybrid network that utilises both satellite and terrestrial networks to provide Internet access to airline flights.

Built around globally harmonised spectrum in the 2 GHz band and 5G NTN (Non-Terrestrial network) advanced technologies, the Omnispace System is ideally positioned to provide a wide array of commercial and government communications needs, subject to requisite licences and approvals.

Thank you again for the opportunity to submit a response to the RSM’s discussion document, “WLAN use in the 6 GHz Band.” Omnispace’s comments on the Discussion Document are presented in Attachment 1. Please contact me should there be a need for clarification or additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Mindel De La Torre".

Mindel De La Torre  
Chief Regulatory and International Strategy Officer  
Omnispace LLC  
7900 Tyson’s One Place, Suite 1250  
Tyson’s, Virginia 22102 USA  
Email: [mdelatorre@omnispace.com](mailto:mdelatorre@omnispace.com)  
Phone: +1.202.930.5935  
[www.omnispace.com](http://www.omnispace.com)

## Attachment 1

### **Consultation Questions for Comment**

*Q1. Do you agree with RSM's proposal on making the 5925-6425 MHz available for WLAN use?*

Omnispace supports the RSM's proposal on making 5925-6425 MHz the next available band for Wireless Local Area Network (WLAN) use. Any proposed introduction of WLAN devices in this band should be subject to appropriate regulatory and/or technical measures to ensure that they will in fact have a "low interference potential" for the primary services in the band, such as the FSS. In Omnispace's view, the risk of aggregate interference into FSS uplinks in 5925-6425 MHz may be acceptably low for WLAN operations if the WLAN devices are limited to low power indoor operations and very low power outdoor operations, similar to the parameters proposed by the RSM.

*Q2. What are your views on the potential future use of 6425-7125 MHz for new applications (e.g. Wi-Fi or IMT)?*

Omnispace agrees with the RSM's view that the additional 500 MHz from 5925-6425 MHz will provide sufficient spectrum for WLAN or Wi-Fi at this time. Given the ongoing studies and preparations for WRC-23 on Agenda Item 1.2, Omnispace agrees that consideration of the upper part of the 6 GHz band for new applications is premature at this time.

Omnispace is particularly interested in the future of the 6425-7125 MHz band because the gateways for our current NGSO constellation utilise this band (5175-5250 MHz uplink/7010-7075 MHz downlink). Omnispace believes that extensive studies on sharing and compatibility will need to be undertaken at the international level to ensure protection of incumbent services such as the FSS from WLANs in the relevant parts of the band, particularly to determine if additional constraints may be necessary to protect NGSO MSS feeder links.

Omnispace, however, does not support consideration of the use of the 6 GHz band for IMT, as it implies exclusive, primary use of the band for mobile services. Compatibility between high-powered outdoor IMT deployments and both FSS uplinks and downlinks in the same band will be impractical and difficult to achieve. As an NGSO system, our receivers utilise tracking antennas that operate from near horizon to horizon during each satellite pass, making them particularly susceptible to interference from other sources, particularly at low elevation angles. Moreover, in addition to the large amount of IMT spectrum currently available, WRC-19 identified over 17 GHz of high-band spectrum for IMT. There is no indication that additional encumbered spectrum is required for IMT and the current spectrum available for 5G services should be more than enough to accommodate the 5G demand in New Zealand.

*Q3. Do you agree that RSM should include 5925-6425 MHz in the GURL-SRD for WLAN low power indoor and very low power use?*

Omnispace agrees with the inclusion of the 5925-6425 MHz band in the GURL-SRD for low power indoor and very low power outdoor deployments of WLANs based on the parameters expressed in the RSM's Discussion Document. The RSM proposal – maximum 24 dBm EIRP, 11 dBm/MHz EIRP density for low power indoor, and 14 dBm EIRP, 1 dBm/MHz EIRP density for very low power – is generally consistent with those studied and adopted in the UK, Europe and South Korea. Such levels would be an appropriate baseline for the consideration of rules for low power indoor and very low power WLANs in this band. Consistent with the GURL-SRD framework, Omnispace expects that WLAN operations in this band would be a non-protected basis vis-a-vis primary services such as the FSS. In addition, the RSM may also want to consider whether out-of-band emission limits (which were adopted by the ECC) are also appropriate.

Omnispace, however, does not support “standard power” (i.e., higher powered) outdoor deployments of WLAN in this band.

*Q4. 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?*

Omnispace has no view at this time on a regulatory compliance standard for WLAN use in the 6 GHz band.

*Q5. What are your views on using a licensing approach to support 30 dBm EIRP WLAN devices?*

Omnispace has no view at this time on the use of a licensing approach to support 30 dBm EIRP WLAN devices.

*Q6. 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?*

Omnispace does not support “standard power” (i.e., higher power devices) for outdoor use under a dynamic spectrum access system such as the automatic frequency coordination (AFC) system adopted in the United States. In Omnispace's view, it would be difficult to ensure that WLANs operating under the GURL-SRD framework would remain “low interference potential” with respect to the primary FSS without indoor restrictions and low- or very low- power limits, especially when there is no reliable means of capping the aggregate emissions from the WLANs.

*Q7. Any other comments?*

Omnispace appreciates the opportunity to submit a response to the RSM's thoughtful discussion document, “WLAN use in the 6 GHz Band” and has no additional comments at this time.