

12 May 2021

The Manager
Spectrum Planning Section
Australian Communications and Media Authority
PO Box 78
Belconnen ACT 2616

Via email to: xavier.halliwell@acma.gov.au

Re: Consultation on Exploring RLAN use in the 5 GHz and 6 GHz bands

Dear Sir or Madam,

Omnispace Australia Pty Ltd ("Omnispace") appreciates the opportunity to submit a response to the Australian Communications and Media Authority's Discussion and Options Paper on "Exploring RLAN use in the 5 GHz and 6 GHz bands."

Omnispace provides its views and comments in response to the consultation issues identified by ACMA in the Discussion and Options Paper. Omnispace has strong and specific interests in the 5 GHz and 6 GHz bands as Omnispace has an operational satellite gateway Earth station at Ningi QLD with licenced mobile-satellite service (MSS) feeder links in these bands for its Omnispace F2 ITU satellite network. The Omnispace F2 network operates in the bands 5100-5250 MHz and 6925-7075 MHz globally and in the bands 5175-5250 MHz (uplink) and 7010-7075 MHz (downlink) licenced specifically in Australia. The Ningi Earth station also provides licenced FSS feeder links for the ASIABSS satellite network in the 7025-7075 MHz (uplink) segment.

Background on Omnispace

Omnispace is the owner and operator of the only global non-geostationary orbit ("NGSO") satellite system that operates in the 2 GHz S-band (1980-2025 MHz Earth-to-space / 2170-2200 MHz space-to-Earth) with feeder links in the 5/6 GHz band. Omnispace NGSO system has been brought into use in accordance with applicable International Telecommunication Union ("ITU") regulations. Omnispace is leveraging over AUD\$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).

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. Omnispace's shareholders include Columbia Capital LLC, Telcom Ventures LLC, Greenspring Associates, Fortress Investment Group, and Intelsat S.A.

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.;
- **Hybrid:** In areas that are lacking in coverage or capacity due to blockage or density;
- **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; and
- **Aviation Networks:** hybrid network that utilizes both satellite and terrestrial networks to provide Internet access to airline flights.

Built around globally harmonized 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. To that end, Omnispace appreciates ACMA renewing the Scientific Apparatus licence to conduct an experimental IoT agricultural service in the 2 GHz band.

Thank you again for the opportunity to provide comments on the Australian Communications and Media Authority's consultation on "Exploring RLAN use in the 5 GHz and 6 GHz bands." The Omnispace comments on the Consultation Paper are presented in Attachment 1.

Please contact me should there be a need for clarification or additional information.

Sincerely,

Les Davey
Ph: 0418 312 134
Managing Director
Omnispace Australia Pty Ltd

ATTACHMENT 1

Introduction

Omnispace is pleased to have the opportunity to provide these comments on the Australian Communications and Media Authority's consultation on "Exploring RLAN use in the 5 GHz and 6 GHz bands."

Omnispace has an operational satellite Earth station at Ningi QLD with MSS feeder links for its F2 satellite network in the 5175-5250 MHz (uplink) and 7010-7075 MHz (downlink) segments of the bands. Additionally, Ningi provides FSS feeder links for the ASIABSS satellite network in the 7025-7075 MHz (uplink) segment, therefore the company has strong and specific interests in the ACMA's plans for the 5 GHz and 6 GHz bands.

Issues for Comment

In this section, Omnispace responds specifically to the issues for comment that have been raised by the ACMA's consultation on "Exploring RLAN use in the 5 GHz and 6 GHz bands."

1. What is the demand for spectrum for RLAN use in the 6 GHz band (5925–7125 MHz)?

Omnispace has no view on the demand for spectrum for RLAN use in the 6 GHz band.

Omnispace urges that any regulatory action on the 5925-7125 MHz band will need to take into consideration ACMA licenced MSS feeder downlinks at the Ningi QLD satellite Earth station. Specifically, the operation of the gateway in the 7010-7075 MHz segment must be protected.

2. Should the ACMA proceed, as proposed, to consult on a formal variation to the LIPD class licence that adds the frequency range 5925–6425 MHz for RLAN use, bounded by the parameters described in the ACMA's preliminary view section of this paper?

Omnispace does not oppose a consultation to consider a variation to the LIPD class licence to add the frequency range 5 925-6425 MHz for RLAN based on the parameters in the ACMA's preliminary view.

3. If class licensing arrangements are to be made in the lower 6 GHz band (by variation to the LIPD class licence), should alternative/additional power limits and/or other conditions be considered?

If class licensing arrangements are to be made in the lower 6 GHz band (5925-6425 MHz), and if incumbent services are protected, Omnispace could support only low

power indoor (LPI) and very low power (VLP) outdoor deployments of RLANS based on the parameters expressed in the ACMA's preliminary views.

4. **Is it appropriate to consider inclusion of the upper 6 GHz band (6425–7125 MHz) in the LIPD class licence or should this be deferred to monitor future developments (for example, in the wide-area International Mobile Telecommunications (IMT) space) as outlined in the ACMA's preliminary view? We invite comments from submitters on the utility of the band for IMT use.**

Omnispace does not support consideration of the upper 6 GHz band for RLANS in the LIPD class licence at this time. Omnispace believes that extensive studies on sharing and compatibility will need to be undertaken at the international level to protect incumbent services from class licenced RLANS or future developments of wide-area IMT in the relevant parts of the band.

In fact, Omnispace does not support any 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 MSS downlinks in the same band will be challenging at best and tremendously problematical due to aggregate interference. In any event, as noted by the ACMA, IMT now has a large amount of spectrum available with more frequency bands available soon (e.g., 3.6 GHz, 26 GHz, 850 MHz expansion and potentially 600 MHz). WRC-19 also identified over 17 GHz of high-band spectrum for IMT, therefore it is difficult to fathom how spectrum that is currently being used by licenced and operating satellite services in Australia should be repurposed for IMT.

5. **Should standard power (that is, higher power devices, including for outdoor use) operating under a dynamic spectrum access system such as the automatic frequency coordination (AFC) system adopted in the USA, be adopted in Australia for some or all of the 6 GHz band? Is there an appetite and capability for industry to provide the necessary systems to enable such use? We welcome views and evidence on the commercial and technical feasibility of introducing AFC systems in the band.**

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. Given the variety of services deployed in the entire 6 GHz band, having an AFC system would be extremely complex and difficult to manage.

6. Should the higher power regulatory arrangements and associated interference mitigation measures added to the International Telecommunication Union (ITU) Radio Regulations at WRC-19 (see Resolution 229 (Rev WRC-19)) in the 5 GHz band be included in any amendment to the LIPD class licence?

Omnispace F2 satellite receivers operate in the 5100-5250 MHz band and must be protected as Omnispace's gateway in Ningi, which is licenced by ACMA, is transmitting in this frequency range. Therefore, any amendment of the LIPD class licence to include 5 GHz band RLAN devices (e.g., outdoor use) should mandate implementation of measures on RLANs systems as set forth in Resolution 229.