

28 February 2022

The Manager
Space Systems Section
Australian Communications and Media Authority
PO Box 78
Belconnen ACT 2616

RE: Replanning the 2 GHz band: Review of the 2 GHz Television Outside Broadcast Frequency Band Plan

Dear Sir/Madam,

Omnispace Australia Pty Ltd ("Omnispace") appreciates the opportunity to submit a response to the Australian Communications and Media Authority's Consultation Paper, "Replanning the 2 GHz band: Review of the 2 GHz Television Outside Broadcast Frequency Band Plan." Omnispace has far ranging and specific interests in the 2 GHz S-band given that it operates a mid-Earth orbit (MEO) 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 5 GHz and 7 GHz bands.

Background on Omnispace

Omnispace's 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 Mobile Satellite Services (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 currently offers 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 is on track to launch additional satellites into space this year – one in April and then another mid-year, leading to the significant expansion of the Omnispace System.

Omnispace continues to invest in new technology and infrastructure as part of its next generation global constellation designed to provide hybrid 5G connectivity. The Omnispace network will power critical global communications, including 5G NTN 5G (Non-Terrestrial Network) and Internet of Things (IoT) connectivity, directly from its satellites in space to mobile devices around the world. Omnispace is building upon the investments it has already made to validate 3GPP standards-based 5G products and technologies and to demonstrate 5G connectivity from space.

Omnispace's hybrid MSS system can provide a broad range of services of interest to Australia, 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 utilises both satellite and terrestrial networks to provide Internet access to airline flights.

In Australia, Omnispace has an operational satellite Earth station at Ningi QLD with MSS feeder links for its F2 satellite network in the 5 GHz and 7 GHz frequency bands. Ningi also provides Fixed Satellite System (FSS) feeder links for the ASIABSS satellite network in the 7 GHz segment.

Additionally, Omnispace has been working closely with ACMA throughout its 2 GHz replanning process with the goal of offering hybrid satellite terrestrial IoT service in Australia. In this regard, Omnispace currently has an experimental licence for a viticulture pilot in Victoria – a project that has performed very well.

Built around globally harmonised spectrum in the 2 GHz band and 5G NTN 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 provide comments on the “Replanning the 2 GHz band: Review of the 2 GHz Television Outside Broadcast Frequency Band Plan.”

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

Sincerely,



Les Davey
Ph: [REDACTED]
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 "Replanning the 2 GHz band: Review of the 2 GHz Television Outside Broadcast Frequency Band Plan."

Omnispace has an operational MEO non-geostationary orbit ("NGSO") satellite system in the 2 GHz S-band (1980-2025 MHz Earth-to-space / 2170-2200 MHz space-to-Earth) and is interested in acquiring a nationwide licence to provide mobile satellite service / complementary ground component (MSS/CGC) service throughout Australia; thus, the company has a keen interest in the outcome of ACMA's replanning of the 2 GHz band.

Issues for Comment

1. Omnispace supports ACMA's proposal to repeal the current Television Outside Broadcasting ("TOB") frequency band plan and to utilise the 1980-2010 MHz / 2170-2200 MHz band for MSS and CGC services. As the ACMA is aware, the 1980-2010 MHz / 2170-2200 MHz band is globally harmonised for MSS and is being increasingly utilised for such services including 5G Non-Terrestrial Networks (NTN), which are being standardised in 3GPP Release 17. 3GPP member companies have strongly supported S-Band NTN standardisation to achieve the following:
 - Coverage: offer more cost-effective and available support for high-value mobility services in remote, isolated, unserved, and underserved markets to help bridge the digital divide;
 - Service Continuity: reinforce 5G reliability for consumers and devices on trains, planes, ships, automobiles and other mobile platforms;
 - Resiliency: exhibit less vulnerability to outages due to physical attacks or natural disasters
 - Service Augmentation: create new economic opportunities in sectors such as agriculture, mining and logistics through ubiquitous, geographically agnostic connectivity;
 - Scalability: ensure attractively priced, mass-market focused products and services through global standardisation and globally harmonised frequency allocations; and,
 - Wide-Area IoT: support powerful new business cases for Internet of Things uses in widely distributed vertical markets, such as, for example, energy, transportation and agriculture.
2. We further support that the ACMA has placed a one-year limit on the term of any new or reissued TOB licences issued during the transition period and that these licences will include a note advising that forthcoming replanning activities may require licensees to change frequency or cease transmission.
3. Omnispace proposes that the timelines be expedited for implementing MSS / NB-MSS and CGC and for transitioning TOB out of the bands. As an operator interested in providing MSS / CGC services in the 2 GHz S band, Omnispace respectfully proposes to work with the ACMA and FreeTV to develop mechanisms to achieve this. In non-metropolitan areas, service should be allowed to commence as soon as the class licences are amended and then, once the MSS allocation of licences occurs, the winning operators should be able to work with the ACMA and FreeTV to implement an earlier transition period, thereby facilitating earlier service availability.

4. As Omnispace has highlighted in its submission to the separate consultation on the Proposed licensing arrangements for 2 GHz narrowband mobile-satellite services and 28 GHz fixed-satellite services, Omnispace proposes that the ACMA maintain the 2 x 30 MHz for MSS / CGC and does not fragment the band by allocating 2 x 5 MHz for narrowband MSS. Our rationale is as follows:
 - a. Traditional MSS is also capable of transmitting narrowband signals, and Omnispace is of the view that the most efficient use of this spectrum would be as a part of the contiguous 2 x 30 MHz MSS allocation.
 - b. Allocating 2 x 5 MHz in the upper part of the 1980-2010 MHz / 2170-2200 MHz band unnecessarily fragments the normal 2 x 15 MHz bandwidth for MSS licences in this band.
 - c. Such a fragmentation is not only highly unusual and not in line with global best practice but could result in operational and administrative challenges in satellite operation.
 - d. Having the entire 2 x 30 MHz S-band MSS allocation would allow the ACMA to conduct an equitable allocation for two licences of 2 x 15 MHz, which would better accommodate future 5G non-terrestrial networks.
 - e. MSS has global (or semi-global depending on the orbits) coverage and to limit the band to an NB-IoT application of the MSS will only allow one subset of service when a panoply of MSS applications should be permitted to meet market demands.
 - f. Allowing the wider variety of services to be offered to the Australian continent as those that MSS systems are able to offer globally would result in more viable and credible business plans and a better use of the global spectrum and orbital resources.
 - g. Single country satellite applications have an inherent economy of scale disadvantage compared to global satellite systems.
5. Omnispace continues to advocate for a technology neutral approach to the 1980-2010 MHz / 2170-2200 MHz band such that licensees may deploy MSS or MSS/CGC or A2G depending on their business model. We note that while the 2 GHz outcomes paper noted that replanning arrangements would include support for CGC and A2G, the ACMA has not made provision for offerings in the draft 2 GHz MSS band plan. Omnispace agrees with ACMA that it is worth considering whether there should be restrictions that allow access to offer CGC/A2G only for MSS licensees who have deployed an active satellite service. Omnispace is of the view that this would be best achieved under the licence allocation process rather than in this proceeding to replan the 2 GHz frequency band.
6. Omnispace supports the ACMA's intention to continue the operation of scientific licences in the 2 GHz band for experimental and demonstration purposes for satellite uses on a short-term basis during the TOB transition. Omnispace currently has a scientific licence to demonstrate satellite IoT technology at a vineyard in Victoria and has benefitted from trialling the technology and developing new and beneficial applications for satellite IoT technology for smart agriculture projects including sensor data and analytic software with winemakers.