

February 28, 2022

Draft Five Year Spectrum Outlook 2022-2026
Radio Spectrum Management Policy and Planning
Ministry of Business, Innovation and Employment
PO Box 2847
WELLINGTON 6140
NEW ZEALAND
Radio.Spectrum@mbie.govt.nz

Re: DSA and Supporting Companies Comments to the Public Consultation on “DRAFT FIVE YEAR SPECTRUM OUTLOOK 2022-2026”.

Dear Sir/Madam,

The Dynamic Spectrum Alliance (DSA¹) supported by the signatories below respectfully submits its comments in response to the Public Consultation on the Radio Spectrum Management (RSM) Draft Five Year Spectrum Outlook 2022-2026 (FYSO).²

The DSA and signatories consider that a main priority for the FYSO should be to make spectrum bands available to create an environment that provides digital transformation. To do so, the focus should be delivery of spectrum for all services and systems that provide digital transformation, including Wi-Fi, and not focused on or limited to any one technology.

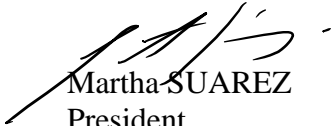
To support broadband connectivity in New Zealand, RSM should make available the full 6 GHz band (5 925 – 7 125 MHz) for General User Radio Licence operation to enable uses such as Wi-Fi operation, and even 5G NR-U technologies. This will be of significant economic benefit to New Zealand.

¹ The DSA is a global, cross-industry, not for profit organization advocating for laws, regulations, and economic best practices that will lead to more efficient utilization of spectrum, fostering innovation and affordable connectivity for all. Our membership spans multinationals, small-and medium-sized enterprises, as well as academic, research and other organizations from around the world all working to create innovative solutions that will benefit consumers and businesses alike by making spectrum abundant through dynamic spectrum sharing. A full list of DSA members is available on the DSA’s website at www.dynamicspectrumalliance.org/members

² Available online at <https://www.rsm.govt.nz/projects-and-auctions/consultations/five-year-spectrum-outlook-2022-2026/>

The DSA and signatories appreciate the opportunity to respond to the Ministry's draft FYSO consultation. We are available to discuss these comments, or to provide additional information, should you have any questions.

Yours sincerely,


Martha SUAREZ
President
Dynamic Spectrum Alliance



Supported by

Broadcom, Inc.
Cisco Systems, Inc.
Hewlett Packard Enterprise
Intel Corporation
Meta Platforms Inc. (formerly Facebook, Inc.)
Qualcomm Incorporated

COMMENTS TO THE PUBLIC CONSULTATION

Introduction

The Draft Five Year Spectrum Outlook 2022-2026 (FYSO) outlines the direction of work and focus for Radio Spectrum Management. The DSA recognises the aspirational nature of this document and the intention of highlighting issues that need to be prioritised over the next five years.

As a consultation process, the draft FYSO provides no specific issues or questions to address. Accordingly, these comments address both the overall approach of the FYSO, as well as specific issues.

Strategic Direction

The DSA agrees with the Ministry that radio spectrum is a “vital resource that enables wireless digital connectivity”. We also agree that the spectrum contributes to economic growth, innovation and global competitiveness.

These ideals should be the basis for the Ministry in setting specific targets or priorities. An important part of this is the provision of digital transformation using radiocommunication technologies and the radio spectrum resource as a high priority. The focus then, should be on the provision of a comprehensive strategy for enabling broadband, looking at all the technologies that contribute to wireless digital connectivity, including 6 GHz Wi-Fi as a component of that approach.

Of course, New Zealand is a part of the international community, and there are implications in terms of harmonized use of the radio spectrum, and equipment ecosystems, cost and availability.

Technologies Driving Change (Section 2)

This section of the FYSO provides a snapshot of the Ministry's views of technologies that are driving change. These are identified in Section 2 as:

- Satellites
- Growth in wireless broadband traffic³
- IoT/M2M
- Private networks

Section 2.2 addresses the growth in wireless broadband traffic. The DSA agrees that there has been significant uptake in the use of wireless broadband, and broadly agrees with the Ministry's view that increased video usage, availability of streaming services and other applications are important factors. The DSA also agrees that the impact of COVID-19 with increased demands for video conferencing and working from home have also been factors.

What the Ministry has not taken into account, is the importance of Wi-Fi for off-loading 5G traffic as well as for delivering broadband connectivity in the home and in public spaces. Indeed, Wi-Fi can be employed to complement 5G, for example access to the 5G network may be provided through 5G mmWave customer premises equipment that also serves to connect to multiple Wi-Fi devices. As a result of Government policies and programmes, many houses now have fibre to the home and they need access to the latest Wi-Fi services and technologies to realise the potential of the services that are presented, and to eliminate bottlenecks in their broadband service. In addition, the needs of multiple users and devices are leading to increased data demands and there is greater expectation for fast downloads of large files. It can also be expected that augmented reality and virtual reality applications will significantly increase data demands for Wi-Fi based services and technologies in the 2022-2026 timeframe.

These user demands can only be addressed by having access to suitable spectrum that can enable significantly larger channel sizes than those available currently to enable the latest Wi-Fi

³ Figure 2 refers to "Cellular mobile – 5G", while the corresponding section 2.2, relates to "Growth in wireless broadband traffic". Figure 2 should be corrected.

technology evolutions (Wi-Fi 6E and, by 2024, Wi-Fi 7) and thus support the evolving spectrum needs of innovative users and applications.

The FYSO notes that the government has focused on enhancing coverage and connectivity and that the focus will shift to addressing capacity constraints, including ensuring there is sufficient capacity to cater for future growth. This is laudable, however there is no corresponding priority listed in the workplan to make this capacity available, other than “investigate use” and “monitoring”. Further information on the increased capacity available through the allocation of 1 200 MHz of licence-exempt spectrum for use by technologies such as Wi-Fi is available on the Dynamic Spectrum Alliance website.⁴

It is recognised that applications such as IoT, M2M and private networks are all important growth areas in terms of spectrum demand. Wi-Fi responds to many of the needs of these applications and will continue to do so in the future. Many factories and commercial businesses already employ Wi-Fi systems for their needs, and more are expected to do so as equipment is renewed or replaced, and as industrial users move towards integrating digital wireless connectivity (Industry 4.0).

Any assessment of economic growth of a transformative technology should include an assessment of the economic costs resulting from slow uptake. Wi-Fi equipment at 6 GHz is available for operation over the whole 1 200 MHz band (5 925 – 7 125 MHz) now, and products are already available in the market. Making available the full 6 GHz band for licence-exempt use should be a priority to provide the full economic growth potential of broadband, enabled by the global ecosystem of devices supporting Wi-Fi in this band.

Making available the full 5 925 – 7 125 MHz band for licence-exempt use by technologies such as Wi-Fi, provides an additional benefit from its ability to share spectrum with other users, including fixed and satellite. This has been clearly demonstrated in Europe and is noted by the Ministry in its consultation document.

⁴ <http://dynamicspectrumalliance.org/resources/>

Trends in Spectrum Management (Section 3)

Spectrum management results from a need to address actual, or likely, harmful interference. In considering the various spectrum management mechanisms available to RSM, it is noted that modern technology is increasingly providing solutions to interference issues without the need for traditional spectrum management. For this reason, licence-exempt, or in New Zealand parlance – General User Radio Licence (GURL) spectrum, are the mostly heavily used bands. They require little or no management, and as spectrum is made available on a “non-interference basis”, technology is used to address interference issues.

In addition to the four areas highlighted in this section, consideration should be given to the operation of Wi-Fi to provide next generation broadband connectivity solutions in widely available GURL bands.

Conclusion

A main priority for the FYSO should be to make spectrum bands available to create an environment that enables digital transformation. To do so, the focus should be delivery of spectrum for all services and systems that provide digital transformation, including Wi-Fi, and not focused on or limited to any one technology.

To support broadband connectivity in New Zealand, RSM should make available the full 6 GHz band (5 925-7 125 MHz) for General User Radio Licence operation. This will be of significant economic benefit to New Zealand.

Delivery of broadband is a continuously evolving challenge. Meeting these challenges today, and keeping up with future demand, requires access to Wi-Fi spectrum that will allow for dense deployment of access points. Wider channel bandwidths can be enabled by opening the full 1 200 MHz for these denser deployments. Wider channel bandwidth also enables new, innovative, low latency use cases like augmented reality and virtual reality.

Additionally, GURL use of the 6 GHz band would also support future growth in 5G through mobile traffic offloading and enable 5G NR-U technology use.

The 6 GHz consultation has already been undertaken and RSM is in a position to make recommendations to government to make the full 5 925-7 125 MHz band available for GURL use, rather than take a “wait and see” approach with its attendant economic costs.
