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Office of the SJ6
HQNZDF
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Wellington 6011

From: NZDF Spectrum Advisor

28 February 2022

Radio Spectrum Management Policy and Planning
Ministry of Business, Innovation and Employment
Wellington 6011

Dear Sir/Madam

FEEDBACK ON DRAFT FIVE YEAR SPECTRUM OUTLOOK 2022-2026

The New Zealand Defence Force (NZDF) is a significant government user of radio communications and the frequency spectrum, both in terms of the diversity of radio applications it employs and the spectrum it requires to support its activities. The NZDF commends the Ministry of Business, Innovation and Employment (MBIE) Radio Spectrum Management (RSM) for their commitment to support, inform, allow feedback and enable innovation through the management of the radio spectrum along with their efforts and focus in regional and global radio spectrum harmonisation.

Secure and resilient access to spectrum from MF through to mmWave frequencies is a key component of NZDF capability for its global and regional military operations and training. The NZDF is also required to support Search and Rescue and public protection and disaster relief (PPDR) activities from the Pacific islands to Antarctica (including all of NZ). The NZDF is and will continue to be highly reliant on access to spectrum for a range of applications such as:

- Voice and data communications critical to the support of its command and control functions. This ranges from small bandwidth single channel voice circuits to full multi-node meshed voice and data battlespace networks,
- Intelligence gathering, surveillance and reconnaissance activities. These are key capabilities that place heavy demand across multiple systems, both manned and unmanned, in multiple spectrum bands to be able to operate safely and effectively,
- Navigation, radiolocation, radiodetermination, positioning and timing. New or upgraded platforms such as the P8A Poseidon maritime patrol aircraft, the upgraded frigates, new ships and the Network Enabled Army programme are all increasing our spectrum requirements, and
- Weapons systems operations (kinetic and electromagnetic). These systems may be linked together with the above systems or operating remotely and are increasingly spectrum dependant and critical to our safety and success in conflict environments.

Harmonisation

The NZDF Spectrum Office has a focus on harmonisation, standardisation and interoperability between NZ's allies and major partner countries' military forces across all facets of its operations. Across all countries' the areas of spectrum operations, sharing, interference resolution and management have been acknowledged as critical to any modern military force and the importance of getting them right is rapidly gathering momentum. The NZDF will continue to support RSM in the national, regional and international harmonisation work to ensure the NZ and the NZDF spectrum objectives can continue to be met.

With regards to the World Radio Conference 2023 (WRC-23), agenda items 1.1, 1.2, 1.9, 1.16 are of concern to the NZDF due to their direct or adjacent spectrum impacts on current and allied military applications and equipment in use. The NZDF is also closely watching agenda items 1.4, 1.7, 1.8, and 1.11 for any future opportunities or impacts. These concerns and interests show the breadth of what is being considered in the NZDF and we wish to ensure that RSM have the same breadth of view from IMT to aeronautical and maritime communications and future systems support.

Regulatory Framework

The NZDF agrees with, supports and wishes to be consulted on and to contribute to reviewing and amending the NZ radiocommunications regulatory framework to reflect the modern environment of radio and non-radio spectrum dependant systems. The NZDF considers this a high priority item with an outcome that will enable the NZDF and law enforcement agencies to deal effectively with security and safety threats that cause potential or actual harm. This includes Counter Unmanned Aeronautical Systems (UAS) or Improvised Explosive Devices (IEDs) along with the ability to detect, monitor, disrupt, intervene and prevent targeted communications in support of its activities.

Cellular bands

The NZDF and the wider Five Eyes countries see 5G and beyond cellular services as potential opportunities to support both our Bases and Camps in their wide range of daily activities, and also operations in support of PPDR or Humanitarian Assistance/Disaster Relief (HA/DR) activities. The former is likely to be in the shape of commercial arrangements from vendors, but the second may require mechanisms to quickly obtain spectrum support if the NZDF obtains these systems to be rapidly deployed and used anywhere needed in NZ. The NZDF wishes to be involved in consultations on creating that support.

Work Plan Priorities

Within the published Work Plan Priorities the NZDF have identified the following items that may have direct impacts on its communication and information systems capability and welcome the opportunity to provide feedback during the development of these activities.

Band Planning and technical studies:

- Review and re-plan 3.3-3.4 GHz, 3.4-3.8 GHz and potentially 3.8-4.2 GHz bands, including technical consultation.
- Review and re-plan the 24-30 GHz band including technical consultation.
- Commence planning work for spectrum bands where management rights are due to expire from 2028.

Allocation design and implementation:

- Progress implementation of decisions on the 1700-2300 MHz band.

- 5G spectrum - detailed consideration of allocation of spectrum rights: 3.3-3.41 GHz, 3.5 GHz, 3.8-4.2 GHz and 24-30 GHz bands for 5G and associated technologies.
- Investigate ways to get more use out of the radio spectrum and adopt tighter spectrum practices.
- Consider spectrum sharing, tiered and dynamic access mechanisms for 5G *and other allocations*.
- Consider if the Radiocommunications Act enable or constrains access arrangements and spectrum sharing.

Regulatory management and administration:

- Develop options for law enforcement agencies regarding use of wireless electronic counter measures and associated technologies.
- Scope issues and develop proposals to modernise the Radiocommunications Act 1989.
- Continue to proactively engage in ITU and APT issues relating to spectrum.
- Develop and implement revised operational approach to small cell network licensing.

Monitoring Priorities:

- Monitor developments in satellite technology and use of new satellite bands (the NZDF is involved in research in V/W bands).
- Monitor international development in spectrum sharing, tiered and dynamic access mechanisms for 5G *and other allocations*.
- Monitoring sector needs, training and qualifications for radio specialists.

As a significant government user of radio communications and the frequency spectrum, both in terms of the diversity of radio and non-radio applications it employs and the amount of spectrum it requires to support its activities, the NZDF welcomes the ability to provide feedback on this draft Five Year Spectrum Outlook.

Secure and resilient access to spectrum is a key component of NZDF capability for its regional and global military operations and training, and its required readiness to support NZ regional or national civil emergencies. The NZDF has interests across nearly all spectrum bands and wishes to be an active participant in shaping the fair future use and management of radio spectrum in NZ and regionally, to continue to be an effective Force for NZ.

Kind Regards,
On behalf of the NZDF SJ6



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