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MARITIME NEWZEALAND

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1710-2300 MHz Discussion document
Radio Spectrum Policy and Planning
Ministry of Business, Innovation and Employment
PO Box 2847
Wellington

Our ref RAD8540
By email

Dear Sir/Madam

1710-2300 MHz Discussion document

Maritime New Zealand would like to submit a partial submission for the Radio Spectrum Management consultation document "Re-Planning options for frequency bands within 1710-2300 MHz – Discussion document March 2020"

The partial submission relates to questions 4, 7 and 9 below:

4. Do you agree with RSM's proposal to use the lower portions of the Paired 2200 MHz band (2025-2081.5 MHz and 2200-2256.5 MHz) available for fixed links to enable clearing of the 'L' and 'LL' bands (1427-1524 MHz)?

Maritime New Zealand doesn't object to RSMs proposal to migrate L Band fixed link services to the Paired 2200MHz band, but requests that regulatory provisions are put in place to require the certification of any fixed link licences using channel N3# or N32#, to provide for the protection of the GPS-DASS (Distress Alert Satellite System) S-band downlink frequency near the New Zealand Cospas-Sarsat ground earth station.

Maritime New Zealand operate a Cospas-Sarsat 406 Distress Beacon land earth station at Goudies Road near Taupo. The site currently has a local receive protection licence for a specific S-Band frequency (centered on 2226.472 MHz) as the downlink for the Block II GPS-DASS satellites that are fitted with a '406 beacon', search and rescue repeater.

The ground station is used to respond to 406 distress beacons fitted to vessels (EPIRBs), aircraft (ELTs) and person locator beacons (PLBs) within the NZ Search and Rescue Region, and also contributes to distress alerts in our adjacent countries regions (in particular Australia, Chile & United States).

The New Zealand medium earth orbit (MEO) component can track GPS-DASS and Galileo Satellites. There are 24 GPS-DASS satellites fitted with the Cospas-Sarsat 406 repeater using the S-Band downlink, these typically make up two-thirds of the satellites within our region and provide the bulk of the coverage in the South Pacific Region. The other third are the 24 Galileo satellites which use an internationally protected L-Band as the downlink and are therefore unaffected by the proposed changes to the Paired 2200 MHz band.

Unfortunately, there are no international protection in place for the GPS-DASS S-Band downlink frequency at 2226.476 MHz, as the GPS-DASS system was originally implemented on an 'experimental basis' in 2002 but is now also recognised by Cospas-Sarsat for operational use. The US does plan to upgrade the Block II satellites with a possible start date of 2026 and an end date after 2035. This means it is the current S-Band downlink will be required for the next 10-20 years.

The Taupo ground earth station site through the successful detection of messages from emergency distress beacons is responsible for saving a significant number of lives each year. Any interference experienced on the GPS-DASS S-Band downlink frequency would likely compromised the operation of the site, preventing the timely detection of emergency distress messages, and could significantly impair any search and rescue response.

7. Are there better uses for the lower portions of spectrum in the Paired 2200 MHz band? If so, what?

Maritime New Zealand currently has a protection licence for the GPS-DASS S-Band (centered on 2226.472 MHz) for a Cospas-Sarsat 406 distress beacon ground earth station.

The ground station is used to respond to 406 distress beacons fitted to vessels (EPIRBs), aircraft (ELTs) and person locator beacons (PLBs) within the New Zealand Search and Rescue Region and is responsible for saving a significant number of lives each year.

There is currently no end date for the GPS-DASS satellites using the S-Band downlink, this constellation currently provides the best coverage for the South Pacific region – Maritime New Zealand recommend the protection license for the ground earth station is extended after 2021 to ensure the ongoing effectiveness of search and rescue within the New Zealand and our adjacent counties Search and Rescue regions

9. Do you agree that the reserved spectrum would be adequate to support the growing demand in space activities?

Note Maritime New Zealand's answer to Question 4 and 7: The GPS-DASS satellites currently use S-Band (centered on 2226.472 MHz) for the downlink associated with Cospas-Sarsat 406 distress beacons.

The Maritime New Zealand Cospas-Sarsat 406 distress beacon ground earth station is capable of tracking satellites with both the unprotected S-Band and protected L-Band. The GPS-DASS satellites that use unprotected S-Band provide better coverage in the South Pacific region and are track by the six antennas more frequently than the Galileo satellites using L-Band. This means the S-Band downlink provides a very important component for the reception of 406 beacon distress alerts in the New Zealand Search and Rescue Region.

This is just limited to the location of the ground earth station. The extension of the existing protection past 2021 is important to ensure the operation of this site.

Yours faithfully

Jim Foye
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