

Transport for NSW submission

Introduction

Transport for NSW (TfNSW) appreciates the opportunity to provide input to the Australian Communications and Media Authority (ACMA) on matters relating to 6GHz spectrum sharing.

TfNSW's response will focus exclusively on matters related to Cooperative Intelligent Transport Systems (C-ITS) Class Licence and the potential risks associated with the standard power outdoor spectrum allocations in the lower 6 GHz range.

The C-ITS class license band, allocated for Intelligent Transport Systems (ITS) applications, is directly adjacent to this 6 GHz band. The C-ITS band is critical for Connected and Automated Vehicles and other ITS applications. It must remain interference-free for safety reasons. While Automatic Frequency Coordination can mitigate interference within the same band, it does not address adjacent-band interference. TfNSW therefore have a reasonable expectation that interference will be a material risk for C-ITS Systems.

TfNSW's submission will address concerns regarding interference that could affect the operation and reliability of C-ITS communications. The submission will propose the ACMA to limit the standard-power operations to portions of the 6 GHz band that are not directly adjacent to the C-ITS band.

Importance of 5.9 GHz Band for C-ITS and nationally agreed principles

The 5.9 GHz class licence, designated for C-ITS, enables vehicle-to-vehicle and vehicle-to-infrastructure communications. It is a critical enabler for state government service delivery, including public transport, and for achieving broader objectives of a safer, more efficient, productive, and sustainable transport system. While C-ITS technologies are currently being trialled, any future large-scale deployment will require adequate interference-free spectrum to support these applications. This includes increased utilisation of spectrum-dependent equipment on road infrastructure (e.g., traffic signals) and within vehicles. Continued allocation of the 5.9 GHz band to C-ITS is essential to facilitate Australia's adoption of technologies that enhance road safety, improve traffic flow, and ensure the timely and reliable delivery of safety-critical messages.

Furthermore, the [National Road Transport Technology Strategy](#) and [2024-27 National Connected and Automated Vehicle \(CAV\) Action Plan](#) were agreed by all jurisdictions through the Infrastructure and Transport Ministers' Meeting (ITMM), supporting

Transport for NSW submission

nationally harmonised, safe and responsible adoption of road transport technologies. The principles behind these strategies highlight the need for information to be transmitted and received in a way that is safe, timely, accurate, reliable, non-distracting, and meets the needs of the relevant use cases. Spectrum interference would result in this principle not being met.

Concerns of potential interference from RLAN devices

Given that many C-ITS messages are safety-critical, it is imperative to preserve the integrity of the 5.9 GHz spectrum. Any potential interference from Radio Local Area Network (RLAN) devices must be rigorously assessed to ensure that the performance and reliability of road safety applications are not compromised.

In its previous consultation, *“Proposed updates to the LIPD Class Licence for 6 GHz RLANs,”* ACMA acknowledged the need to protect the C-ITS band by introducing out-of-band (OOB) device restrictions and limiting RLAN usage to low-power indoor and very-low-power outdoor applications.

With this new proposal of permitting standard power outdoor applications, it may not be possible for WiFi systems to meet those OOB restrictions hence causing interference to C-ITS systems.

Electronic Communications Committee (ECC) Report 355 highlights that very low power applications operating at 5,945 MHz with OOB emission levels of -37 dBm/MHz and -45 dBm/MHz can, under certain scenarios, degrade the performance of a single Communications-Based Train Control radio link below 5,935 MHz. While this specific case is not directly applicable to Australia, similar interference risks may arise for the C-ITS spectrum below 5,925 MHz if RLAN operations above 5,925 MHz include outdoor standard-power applications.

Recommendations to ACMA

TfNSW respectfully requests that ACMA thoroughly assess the implications of permitting standard-power applications within the lower GHz RLAN band and the potential impact on safety-critical C-ITS operations. We recommend that standard-power RLAN applications using Automatic Frequency Coordination be allowed only above 5,945 MHz, and that out-of-band emissions for outdoor applications remain limited to -37 dBm/MHz.