

30th January 2024

Response to Consultation: Satellite direct-to-mobile services: regulatory issues

Lacuna Space would like to thank ACMA for the continuous review of possibilities to accommodate communication between LIPDs and satellites in the frequency band 915-928 MHz. We have already co-signed a response submitted by the LoRa Alliance (dated 12th of January 2024), which fully captures our views.

However, being in good discussions with ACMA (and other stakeholders) since 2021, we would like to express once again that we have a strong interest from local partners. Moreover, we would like to highlight as pointed out by the Low Earth Orbit Satellite Working Group the economic benefit that could come from greater LEO satellite use, including by facilitating IoT services and applications.

We have tested our system in various locations and proved technical feasibility and outstanding performance levels throughout the testing. This testing was conducted without exceeding power limits as defined in current LIPD class licence regulations, and we want to emphasize that no increase in power for LIPD-satellite systems is requested. We understand that an update of the LIPD class license to accommodate satellite systems has not yet been implemented for the main reason that the satellite-to-LIPD link might impact sensitivity of radio astronomy receivers in the radio quiet zones. We understand that these receivers must be protected and approached CSIRO to discuss the matter. We understand that any RF signals in the band 694-1000 MHz that exceed -228 dBm/Hz are prohibited (RALI MS32), and we understand the reasoning for such a low value. Still, we would like to kindly request to consider any possibilities to allow the operations of LIPD-satellite systems, potentially on a limited operational scheme. For example, Lacuna Space could commit to reduced transmission duty cycles, sharing in time domain, or change of operating frequency based on CSIRO's current band(s) of focus.

We would like to emphasize once more that our decision to operate in the 915-928 MHz LIPD bands is based on technology and user needs. Although IoT solutions are proposed in various other bands, the band 915-928 MHz is the most economically viable band for users of LIPD technology. This is based on the fact that the extension of the existing IoT ecosystem in 915-928 MHz with a satellite component only requires minimal (if any) hardware modifications.

We are aware that various forms of hybrid terrestrial/ satellite systems are currently under review with respect to potential regulatory changes in Australia. Some of these systems might also impact the radio quiet zones, and some will particularly impact said zones more significantly due to higher power and duty cycles, and/or higher revisit times. Given Lacuna Space's efforts to design a system that minimizes illumination from satellites to existing ground infrastructures, we hope that ACMA considers the points outlined in this response letter when decisions are discussed and made.