



06 May 2024

Subject: Plan-S response to ACMA's Five-year Spectrum Outlook 2024–29 and 2024–25 Work Program

Dear Sir/Madam,

We appreciate the opportunity to share our perspectives on ACMA's Five-year Spectrum Outlook 2024–29 and 2024–25 work program, which aims to support Australia's government communications and media objectives and priorities. It is worth mentioning that we commend ACMA for its leadership in driving discussions on the efficient utilization of spectrum to address the digital gap, foster innovation and competition, and work towards achieving net zero emissions. These efforts have significantly contributed to enhancing the social and economic well-being of Australian citizens and industries.

In a world where 85% of the Earth's surface remains without terrestrial networks due to geographic and economic constraints, the utilization of satellite technology to bridge this digital gap carries great importance for countries where terrestrial networks are not economically feasible to cover large areas. Therefore, we believe that satellite connectivity is an essential instrument for seamless coverage of IoT devices, regardless of their location, thereby assisting in reducing the digital gaps between different parts of a country or the globe.

As a satellite operator, Plan-S is committed to addressing global challenges for coverage and fostering a sustainable future for the IoT ecosystem. With the Connecta IoT System, a cutting-edge system optimized for massive narrowband IoT connectivity, we offer unparalleled cost efficiency, high reliability, low latency, and comprehensive global coverage.

A distinguishing feature of the Connecta IoT System is its hybrid Direct-to-Satellite (D2S) and Gateway-to-Satellite (G2S) connectivity. This dual approach offers flexibility, enabling dual-connectivity options and seamless integration with existing systems. Plan-S operates D2S links within the frequency ranges of 862-870 MHz or 902-928 MHz, contingent upon their availability, while fully complying with national regulations regarding short-range devices or low interference potential devices (LIPD) for device-to-satellite links (Earth-to-space).

For satellite-to-device links of D2S connectivity, the Connecta IoT system utilizes the same frequency band if national regulation permits¹. Therefore, we commend the activities planned for 2024-2025, particularly the commitment to monitor international and domestic developments that may prompt variations to the LIPD class license. Moreover, we appreciate the statement to further assessment of the authorization of IoT earth station receivers in the 900 MHz band.

¹ Otherwise, Connecta IoT satellite system employs the frequency band 400.15-401 MHz for D2S connectivity.



In this regard, we would like to call attention to that likewise to ACMA's consideration, in Europe, ECC has drafted a report (ECC Report 357), ["Regulatory analyses of satellite use in the band 862-870 MHz to communicate with terrestrial SRD"](#), to enable satellite downlink in the frequency band 862-870 MHz, which is equivalent to the frequency band 915-928 MHz in Australia. As a next step, WG FM44 will address the comments received during the public consultation of this report at its next meeting scheduled for 13-15 May 2024.

Thanks to technological advancements, we believe that the use of the frequency band 915-928 MHz for the satellite-to-SRD devices will promote the efficient use of spectrum without causing any harmful interference to existing SRD devices as shown in the Draft ECC Report 357 for the frequency band 862-870 MHz in Europe. Thus, permitting the use of this band for satellite downlink helps to achieve the goals of supporting innovation and the adoption of new and emerging technologies, while continuing to safeguard the interests of current users. This will also advance spectrum sharing in this band.

On this matter, Plan-S would like to emphasize its readiness to cooperate directly with ACMA to promote the efficient use of spectrum by introducing a new dimension to this frequency band utilization.

Nonetheless, recognizing the necessity for an intermediate layer between satellites and densely deployed IoT devices, Plan-S has inserted the G2S intermediate layer. This layer aims to provide higher physical data rates, leveraging the 2 GHz MSS band.

Due to signal propagation characteristics, device ecosystem, and harmonization of spectrum for MSS across all three ITU regions, the industry has shown increasing interest in the 2 GHz MSS band, primarily for direct-to-device and M2M/IoT applications. In response to this demand, administrations have begun reconsidering spectrum plans for this band. Therefore, we highly appreciate your efforts in the frequency bands 2005-2009 MHz and 2195-2200 MHz to advance all regulatory actions enabling the provision of services by a plural number of providers on a shared basis. This initiative facilitates the efficient use of spectrum, encourages innovation, expands service offerings, and promotes competition, ultimately benefiting all citizens.

Moreover, we would like to emphasize that Plan-S, as an IoT or narrowband MSS operator, is keenly interested in utilizing this part of the spectrum to provide IoT services in Australia, aligning with ACMA's priorities and Australia's policies. These include closing the digital gap, supporting innovation and competition, particularly in regional, remote, and rural areas of Australia, committing to net zero emissions by 2050, and advancing farming practices through the use of IoT technologies in various fields.

For instance, the Connecta IoT System revolutionizes the agriculture industry by bringing advanced connectivity, data insights, and real-time monitoring to farms. By enabling precision farming, reducing resource wastage, enhancing productivity, and ensuring environmental sustainability, Plan-S contributes significantly to shaping the future of agriculture, making it more resilient and responsive to the challenges of the modern world.



Furthermore, we welcome ACMA's efforts to provide a framework that fosters innovation and investment in the country, particularly in the rest of the 2 GHz MSS band. It is essential to point out that enabling this spectrum for more operators can potentially bring new use cases and opportunities for Australian citizens. This will ensure that the spectrum, as a scarce resource, is effectively used to create social and economic value in the country.

We believe that the best approach for allocating the spectrum in the frequency bands 1980-2015 MHz and 2170-2195 MHz will be applied by the ACMA to satisfy these priorities and goals outlined in the Work Program.

Overall, the use of spectrum by multiple operators and/or services and applications will foster competition, lower prices, and enhance the quality of service. Moreover, this approach will push current operators to compete with new entrants by investing more in their networks. In contrast, the absence of effective competition fails to benefit the public or the country's economy.

In conclusion, as an MSS operator interested in providing IoT services in Australia² through our in-house design Connecta IoT satellite system by using the 915-928 MHz band and the 2 GHz MSS band, we see opening the spectrum to new stakeholders in the both 1980-2005 MHz / 2170-2195 MHz and 2005-2009 MHz / 2195-2200 MHz band and enabling new possible applications or services in the 915-928 MHz band as a valuable step forward to supporting innovation, offering a wide variety of services, promoting competition, and thereby enabling consumer satisfaction. These efforts will significantly contribute to enhancing the social and economic well-being of Australian citizens and industries and realizing Australia's government communications objectives and priorities.

Plan-S stands ready to collaborate closely with ACMA to encourage innovation, investment, and consumer well-being in Australia's telecommunications industry.

We appreciate the opportunity to contribute our insights to this consultation.

Respectfully submitted,

Fazlı KAYBAL

Spectrum and Regulatory Affairs Manager



² In this regard, we would like to mention that we want to be included in the Radiocommunications (Foreign Space Objects) Determination 2014.



About Plan-S:

Plan-S was established in 2021 with the primary mission of providing IoT connectivity and Earth Observation services across diverse sectors such as agriculture, oil & gas, maritime, transportation, energy, finance, and more. Additionally, Plan-S is dedicated to the design and manufacture of satellite systems, encompassing satellites, ground stations, and ground devices, as well as the essential network software for seamless operation. Plan-S has five operational satellites and has started to partner with industry leaders in PoC projects.

In the second half of 2024, Plan-S plans to commence its IoT services with the deployment of 12 IoT satellites into orbit until the end of that year. The company's long-term vision includes the deployment of a constellation comprising 200+ satellites by 2027, to be executed in three major phases, contingent upon market demands and requirements.

For more details about Plan-S, please visit <https://www.plan.space/>