SATELIOT
Space · Connecting · 5G IoT

The Independent Communications Authority of South Africa

Consultation on Draft National Radio Frequency Plan 2025

To:

The Independent Communications Authority of South Africa (ICASA)
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Introduction

Sateliot, founded in 2018, is the pioneering satellite operator providing IoT (Internet of Things) connectivity via the 3GPP 5G NB-IoT Non-Terrestrial Network (NTN) standard. As the first company to seamlessly extend Mobile Network Operators' (MNOs) terrestrial networks through satellite constellations, Sateliot enables truly global IoT connectivity. Our wholesale business model focuses on providing satellite capacity to MNOs and IoT operators, ensuring uninterrupted coverage for commercial IoT devices through GSMA-standard roaming agreements. This approach plays a critical role in addressing connectivity gaps in rural, remote, and underserved regions worldwide.

Sateliot operates through a 3GPP 5G NB-IoT NTN standard protocol which was defined by all major telecommunications industry stakeholders at 3GPP. Within the protocol, the 2GHz band was defined as one of the bands to implement the standard:

Table 1 - frequency bands for 3GPP 5G NB-IoT NTN standard

NTN Satellite Band #	Uplink (UL) operating band Satellite Access Node receive / UE Transmit FUL low – FUL high	Downlink (DL) operating band Satellite Access Node receive / UE Receive FDL low – FDL high	Duplex mode	Space duplex
256	1980 MHz – 2010 MHz	2170 MHz – 2200 MHz	FDD	190 MHz

Sateliot welcomes the opportunity to contribute to ICASA's consultation on the draft National Radio Frequency Plan. In this submission, we provide input on the impact of the Plan with a focus on MSS and Direct to Device (D2D) services for the consideration of the ICASA.

We have also aligned our response to this consultation with our response to the DCDT's consultation on the Proposed Policy Direction to ICASA for an inquiry into new individual licences.

Sateliot looks forward to ongoing discussions with ICASA and stakeholders to ensure that emerging communications technologies are accessible and beneficial to all South Africans.

It is also noteworthy that Sateliot is actively engaging with ICASA for the purpose of obtaining a licence to provide services in South Africa.

The Draft National Radio Frequency Plan

Sateliot only wishes to comment on the bands that directly affect us which are taken from the draft National Radio Frequency Plan below:

ITU Region 1 Allocation	South African Allocation	Typical Applications	Notes and Comments
1 980-2 010 MHz FIXED MOBILE MOBILE-SATELLITE (Earth-to space) 5.351A	1 980-2 010 MHz FIXED MOBILE MOBILE-SATELLITE (Earth-to space) 5.351A	Fixed links (1980 – 2010 MHz) CGC/ATC fixed systems (1980 – 2010 MHz) IMT (satellite) (1980-2010 MHz)	Paired with 2170 – 2200 MHz (International Mobile Telecommunications (IMT)) The development of satellites for IMT services to be monitored. Final Frequency Migration Plan 2019 (GG No.42337 Notice 36 of 2019)
2 170-2 200 MHz FIXED MOBILE MOBILE-SATELLITE (space-to Earth) 5.351A	2 170-2 200 MHz FIXED MOBILE MOBILE-SATELLITE (space-to Earth) 5.351A	Fixed Links (2170 – 2200 MHz) CGC/ATC fixed systems (1980 – 2010 MHz) IMT (satellite) (2170-2200 MHz)	Final Frequency Migration Plan 2019 (GG No.42337 Notice 36 of 2019) Paired with 1980 – 2010 MHz IMT (satellite)

Within the 1980-2010 MHz and its paired band of 2170-2200 MHz, Sateliot welcomes ICASA's note to monitor the development of satellites for IMT. Sateliot is a service provider within this band and provides 3GPP-based NTN complementary services for terrestrial network operators. Within the context of the satellite component of IMT, we wish to highlight that 3GPP NTN specifications were included and approved in the new Recommendation on IMT-2020 satellite.

Equally, we wish to bring to ICASA's attention an emerging trend among regulators to empower the provision of low data rate services, such as satellite IoT: with just 5MHz of spectrum allocated to narrowband satellite IoT, ICASA can open the door for at least 5 different NTN NB-IoT competitive services requiring 1MHz of spectrum each. As a scarce resource, this represents its efficient use for maximum benefit. For ICASA's consideration, we have included Australia[1]'s below:

> *2 x 5 MHz (2005–2010 MHz and 2195–2200 MHz) for shared narrowband MSS including telemetry, short messaging, and low-data-rate services such as satellite IoT (internet of things) applications.*

The Kingdom of Saudi Arabia[2] approached NTN differently by holding an NTN specific auction for 2 x 30 MHz of spectrum in the 2GHz band. The Regulator was specifically looking to cover the Kingdom's remote regions with satellite MSS, IoT, wireless connectivity on aircraft and 5G connectivity. Beyond the auction, the Communications and Information Technology Commission (CITC) recognized the importance of reserving 5 MHz of spectrum within this band for narrowband services, ensuring the prioritization of key use cases vital for the country's technological infrastructure and development.

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[1] ACMA 2GHz Band Review https://www.acma.gov.au/2-ghz-band-review
[2] CITC Publishes Information Memorandum of the Spectrum Auction for NTN in the 2100MHz Band. https://www.spa.gov.sa/2384693

Within Europe the future of the 2GHz band is currently being considered.[3] The RSPG has outlined a few possible scenarios for NTN IoT which include allocating 2 x 5 MHz within the 2GHz band, specifically noting that the low spectrum requirements make such an allocation appealing for competition allowing many operators to share the bandwidth.

We urge ICASA to consider a similar allocation, which as mentioned finds suitable live examples in Australia, Saudi Arabia and Europe.

NTN IoT in South Africa

NTN IoT has the potential to be a significant market enabler within the South African context. The technology allows for seamless, wide-area connectivity across remote, rural, and underserved regions where terrestrial networks remain economically or logistically unviable, as is the case in many geographic locations within South Africa.

Embracing NTN IoT provides South Africa with a future forward regulatory approach as satellite technologies become increasingly integrated into 5G and future 6G standards under the IMT framework and the evolving context of the satellite component of IMT. NTN IoT offers a scalable, resilient solution for supporting diverse applications, many of which are core to the South African economy. These include precision agriculture, environmental monitoring, mining and disaster response. A core feature of the satellite component of IMT is the dual nature of the technology, not looking to replace or upend terrestrial infrastructure and existing investment, but rather to extend connectivity options.

By embracing NTN IoT, South Africa can accelerate digital inclusion, strengthen national resilience, and align with global trends toward ubiquitous, satellite-enabled connectivity in the evolving IMT ecosystem all while meeting the national goal of expanding connectivity.

Conclusion

We thank ICASA for issuing this important consultation and developing the draft National Radio Frequency Plan and look forward to continuing discussions with ICASA as the process progresses. We will additionally look to contribute to the evolving discussion around MSS/IMT and NB IoT in any manner which ICASA welcomes our support.

Sincerely,

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[3] Under section 04 of the RSPG Opinion on assessment of different possible scenarios for the use of the frequency bands 1980-2010 MHz and 2170-2200 MHz by the MSS beyond 2027