11 December 2025

Vodacom's Submission to the Authority's "SECOND DRAFT NATIONAL RADIO FREQUENCY PLAN 2025"

1. INTRODUCTION

Vodacom Pty Ltd ("Vodacom") wishes to thank the Independent Communications Authority of South Africa (ICASA) for the opportunity to make a submission on the Authority's "SECOND DRAFT NATIONAL RADIO FREQUENCY PLAN 2025" as published in the Government Gazette No. 53637 on 07 November 2025.

Vodacom remains committed to supporting the Authority's efforts to ensure spectrum is managed efficiently, transparently, and in a manner that encourages innovation, infrastructure investment, and digital inclusion in South Africa.

2. GENERAL COMMENTS

Vodacom welcomes the Authority taking cognisance of the concerns raised by stakeholders with respect to the first draft of the National Radio Frequency Plan (NRFP) for 2025, and subsequently publishing a second draft for further comment. We support the Authority's forward planning objectives of expanding IMT spectrum availability across low, mid, and high bands, thereby proactively enabling next-generation connectivity for South Africa.

In order to achieve these objectives, the Authority needs to be deliberate in its actions as recorded in the NRFP. In this regard, we therefore recommend that the Authority establish clear timelines for Radio Frequency Spectrum Assignment Plan (RFSAP) development and spectrum auctions, develop effective coexistence rules for emerging technologies such as High-Altitude IMT Base Stations (HIBS) that ensure it does not cause harm to land-based International Telecommunications Mobile (IMT) Networks, which would discourage related investments, and adopt licensing and pricing frameworks that incentivise further and greater investments. These measures will ensure the timely availability of spectrum, encourage infrastructure investment, and accelerate the deployment of 4G and 5G networks and beyond. This will drive universal connectivity, digital inclusion, and, importantly, socioeconomic growth.

3. SPECIFIC COMMENTS

450–470 MHz:

Vodacom supports ICASA's proposal to identify this band for IMT services due to its superior propagation characteristics particularly for rural coverage including expanded reach for IoT applications. The band's ability to provide deep indoor penetration is particularly valuable for applications such as smart utilities and industrial IoT services.

To fully realize these benefits, Vodacom emphasizes the need to confirm the device ecosystem with vendors to ensure multi-band devices that support 450–470 MHz for both IoT and IMT services. This will require close collaboration with global suppliers to secure cost-effective solutions that align with international standards.

Globally, the 450–470 MHz band has started to gain traction for IMT use cases in several regions. Countries in Europe, such as Poland, the Czech Republic, and Norway, have deployed LTE networks in the 450 MHz range to provide rural broadband and IoT connectivity. In Asia, nations like China and Indonesia have explored this band for smart grid and industrial IoT applications. Similarly, South American countries, including Brazil, have utilized 450 MHz for LTE-based rural coverage.

700/800/1800/2100/2600 MHz (HIBS in IMT bands):

Vodacom acknowledges ICASA's forward-looking approach in making provisions for HIBS as a potential application that may operate on a secondary status basis in IMT bands. This proposal aligns with global trends following WRC-23 decisions and ITU Radio Regulations, which make provision to permit HIBS operations under specific conditions in IMT-identified bands.

The potential implementation of HIBS could be helpful to supplement terrestrial IMT networks in certain areas, particularly in rural and unserved areas where traditional infrastructure deployment is economically challenging. However, this has significant potential to pose a risk of harmful or unacceptable interference to primary IMT networks, depending on the separation distances between the networks. Vodacom urges the Authority to publish effective technical guidelines for interference management and coordination with primary terrestrial IMT deployments to ensure the protection of existing IMT services without imposing new constraints on such existing primary networks and their users.

The Authority is kindly requested to clarify the following:

1. Has the Authority finalised a Radio Frequency Spectrum Assignment Plan (RFSAP) for the bands intended for High-Altitude IMT Base Stations (HIBS) and their operational conditions? We are not aware of such an RFSAP being published yet and therefore look forward to the Authority's consultation in this regard.
2. The draft NRFP refers only to ITU Resolution 212 (Res 212), which we are of the view is insufficient as Res 212 makes provision for two significantly different values for the power flux density (pfd) limits applicable to HIBS to ensure the protection of IMT networks. We assume the limit applicable to HIBS in respect of the protection of IMT Base Stations would be the appropriate value as the default limit,

as provisioned under Resolution 212. Notwithstanding, for the avoidance of doubt, the Authority should clearly specify this pfd limit value as applicable to Base Stations (as shown in Figure 1 below) in the NRFP, and that will be applicable by default in South Africa.

$-136 + 0.21\ (\theta)^2$	$dB(W/(m^2 \cdot MHz))$	for $0° \le \theta \le 8.3°$
$-121.8 + 0.08\ (\theta)$	$dB(W/(m^2 \cdot MHz))$	for $8.3° < \theta \le 90°$

where θ is the angle of arrival of the incident wave above the horizontal plane, in degrees ;

Figure 1: pfd limit for the protection of IMT base stations.

Given that IMT station registration in the ITU Master International Frequency Register (MIFR) is likely to be operationally onerous, the Authority could instead take a more pragmatic approach and instead require any local HIBS operators to publicly publish their planned deployment for comment, and then only be allowed to proceed with HIBS deployment subject to:

- there are being no current or pending IMT base stations that could be adversely impacted (in-band and adjacent band)
- established commercial agreements between HIBS infrastructure operators and applicable MNO(s)

In a similar vein, and in the interest of efficient cross-border frequency management, we also recommend that the Authority enter into bilateral agreements with neighbouring countries, ensuring that it is able to secure prior notice for comment from neighbouring countries for such planned HIBS deployments in those countries.

1500 MHz (1427–1518 MHz):

Vodacom acknowledges that the Authority now reflects the current RFSAP (GG 48353, March 2023) and its alignment with WRC-23 outcomes. Vodacom welcomes this update and recommends formally including the band in the next IMT auction roadmap to fully utilize it as a high-capacity band for 5G growth.

3300–3800 MHz:

Vodacom supports the identification of this band for IMT, as well as the references to RFSAP developments and WRC-23 resolutions. However, clarity is needed on migration plans for incumbent legacy Broadband Fixed Wireless Access (BFWA) services and coordination procedures for the 3600–3800 MHz range, as this band is essential for nationwide 5G IMT deployment. An effective roadmap including

definitive dates to complete migration of such legacy services would create investment certainty, prevent IMT deployment delays, and accelerate the delivery of mass-market consumer benefits.

4800–4990 MHz:

Vodacom acknowledges that this band has been accepted as an IMT band in Africa and that RFSAP development is planned. We request that the Authority confirms the timelines for the availability and consultation for 4800–4990 MHz, as it is critical for additional mid-band 5G capacity.

Upper 6 GHz (6425–7125 MHz):

Vodacom appreciates that the Authority now recognises this band is heavily used for fixed services in South Africa, making migration challenging due to the lack of suitable alternative bands in the medium term. We therefore encourage the Authority to conduct a feasibility study to understand all band dynamics, potential impacts, and the impact of coexistence between fixed and IMT services, or even between fixed and any other proposed type of service.

Collectively, a substantial volume of MNO long-haul microwave infrastructure relies on this band, supporting hop distances between 14 km and 50 km. These links are predominantly installed in semi-urban and remote regions where deploying fibre is either expensive or operationally impractical.

Vodacom encourages the Authority to develop and publish a comprehensive migration strategy that clearly outlines timelines, compensation provisions, and alternative spectrum allocations for existing fixed services. An inadequately considered reallocation of this band could disrupt thousands of operational links and severely impact network stability. For South Africa, it is essential to adopt a balanced strategy that protects critical backhaul infrastructure while enabling future technologies.

26 GHz (24.25–27.5 GHz):

Vodacom acknowledges the Authority's identification of the 26 GHz band for IMT and supports the Authority's efforts to enable mmWave spectrum for future IMT evolution. However, we wish to emphasize that this band currently serves a critical role in current MNO networks for mobile backhaul via point-to-point (PTP) links, and enterprise connectivity through point-to-multipoint (PTMP) systems.

While the fixed-link deployment rate in this band has tapered down in recent years, these links remain essential for high-capacity transport in areas where fibre rollout is not feasible. In previous engagements,

Vodacom reiterates our earlier recommendation that the Authority consider assigning the 26.5–27.5 GHz range for IMT mmWave deployments in this band as a first phase of making this band available for IMT use, given that it represents a sweet spot between the 26 GHz and 28 GHz microwave bands, with less potential for interference. Notwithstanding, larger-scale IMT deployments in this band remain uncertain at this stage and should still be considered as a possible requirement in future.

37–43.5 GHz:

Vodacom supports the Authority's decision to conduct a feasibility study (as per its Frequency Migration Plan) for the 37 GHz and 45 GHz bands prior to developing an RFSAP for IMT in these bands. We support the Authority's efforts to reallocate this spectrum for next-generation technologies, provided that migration is managed in a structured and transparent manner.

45.5–47 GHz / 47.2–48.2 GHz:

Vodacom supports the identification of these bands for IMT but requests clarity on the migration of displaced services and the timing of RFSAP development. Clarity on these aspects is essential to enable investment planning and technology roadmaps.

4. CONCLUSION

Vodacom supports the publication of a second draft of the NRFP-25 in the spirit of effective consultation and commends ICASA for promoting regulatory alignment and digital competitiveness. Vodacom is available for further engagement and collaboration to ensure South Africa's spectrum roadmap maximizes economic impact and social benefit.