27 January 2026

Vodacom's Supplementary Written Submission on the Second Draft National Radio Frequency Plan (NRFP-25)

1. Introduction

Vodacom appreciated the opportunity to participate in the public hearings on the Second Draft NRFP-25 and wishes to hereby submit the following supplementary information for the Authority's consideration.

2. Correction

Our written submission contained some typographical errors in respect of HIBS where we only referenced one of the applicable resolutions and also referenced it as **ITU Resolution '212'**, in our comments on the applicable power flux density (pfd) limits for High-Altitude IMT Base Stations (HIBS).

This should be corrected to reflect as **ITU WRC-23 Resolutions 213, 218, and 221**, each of which specifies the applicable pfd limits for HIBS per the applicable frequency band in line with the ITU Radio Regulations ("RR") and the Authority's draft National Radio Frequency Plan ("NRFP").

Vodacom therefore wishes to replace the prior text in our first written submission with the corrected and more clearly articulated text, as shown in the table below:

Section	Prior Text	Corrected Text
HIBS in IMT bands	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.	2. The applicable power flux density (pfd) limits for HIBS are referenced in **ITU WRC-23 Resolutions 213, 218 and 221**, as applicable per band. These limits, however, remain open to potential and/or inadvertent misinterpretation. To ensure regulatory clarity, ICASA should consider specifying the default pfd limit that would apply for the protection of IMT base stations in South Africa as applicable to each of the relevant bands. Vodacom recommends that the pfd limits for the protection of IMT base stations be captured in line with WRC-23 Resolutions 213, 218 and 221. For example, in the case of Resolution 213, the default pfd limit applicable to the protection of IMT base stations should be explicitly stated in the NRFP.

We apologise for any inconvenience that this oversight may have caused.

3. Request for Clarity in the NRFP

In line with the above, Vodacom reiterates its request that the Authority:

- **Specify the exact pfd limit value applicable to the protection of IMT base stations** for each relevant band in line with Resolutions 213, 218 and 221.

- **Confirm whether these values will apply by default in South Africa**, pending any further national RFSAP development and prior consultation thereof.

4. 1500MHz - Guard Band to MSS operations

In response to the Authority's request for Vodacom's views on the appropriate Guard Band to protect MSS operations above 1518MHz from IMT operations in the 1427-1518MHz frequency band, herewith follows our current perspective, for the Authority's consideration.

For context, we remind the Authority that there are indeed alternative options in respect of potential frequency arrangements for this band defined in ITU-R Recommendation M.1036-7. However, it is noted that these options are limited to 3, namely G1 (SDL mode: 1427-1517MHz), G2 (FDD mode: 1427-1518Mhz) and G3 (TDD mode: 1427-1517MHz) which differ by only 1MHz in respect of the guard band for MSS operating above 1518MHz.

Moreover, in terms of ecosystem for this band (1427-1518MHz), while SDL appears to have gained popularity in recent years, with the FDD ecosystem being marginal, and the TDD ecosystem seemingly lagging behind. In our view the technology ecosystem remains nascent, and is still developing. We are therefore of the view that the Authority should keep its options open to potentially deploy any of the 3 available options at this stage, and in so doing not yet lock South Africa into a position that may hinder it from leveraging the benefits of future developments in this band.

We are of the view that a guard band of 7MHz i.e.1518 to 1525MHz for IMT operations below 1518MHz, is sufficient to protect MSS operating from 1525MHz upward where MSS has a primary status allocation. As a mere comparative example, in highly sensitive terrestrial IMT TDD operations which require precision timing, a guard band of 5MHz has been proven to be sufficient between adjacent networks electing to operate on an unsynchronised basis.

In the case of MSS operations in the 1518-1525MHz segment, the Authority should also take due consideration of RR Footnote 5.348:

"***5.348*** *The use of the band 1 518-1 525 MHz by the mobile-satellite service is subject to coordination under No.* ***9.11A****. In the band 1 518-1 525 MHz stations in the mobile-satellite service shall not claim protection from the stations in the fixed service. No.* ***5.43A*** *does not apply. (WRC-03)*"

Given that MSS in any event cannot claim protection from the Fixed Service, it should be considered as operating on a secondary status basis in this segment. Consequently, in our view it would not be reasonable to conclude that any safety of life applications potentially exists in this segment, nor that any MSS operations in this segment should be afforded further guard band provisions below 1518MHz.

5. Additional information on HIBS findings in other markets

A few years ago, Vodacom embarked on a trial in Mozambique with a potential HIBS-based solution. As noted at the public hearing, the testing was inconclusive. The reason for this is that the HIBS provider decided to terminate its planned HIBS based service offering shortly before the commencement of planned technical testing which included co-existence testing with existing services, such as land-based IMT.

Notwithstanding, there have been some learnings from this exercise that may be of value to share with the Authority as follows:

a. Context:
   - HIBS based solutions are terrestrial in nature, operating typically between 20 to 50km above the earth's surface. In our trial exercise the solution needed to operate at below 20km (eg: 15km) to provide a reasonable/acceptable user connectivity experience.
   - At these altitudes, HIBS stations are typically operating above that of commercial aircraft but are also typically visible from earth.

b. Regulatory Approvals
   - Given that HIBS operate within the terrestrial airspace, it was uncovered that regulatory approvals for HIBS span beyond the scope telecommunications regulator alone, and were particularly complex.
   - It was necessary familiarise the Civil Aviation Authority ("CAA") on the operation of the HIBS platform, in order for them to make an informed decision on HIBS operational parameters. The main focus was to ensure that the planned stations would not pose a risk to local aviation, as well as to ensure national security.
   - The potential visibility from the earth drew additional interest or consideration from the national defence authority who also needed to grant clearance/approvals prior to the CAA granting its approval.

6. Closing

Vodacom trusts that the above-mentioned clarifications will assist the Authority in accurately reflecting on the international regulatory framework on HIBS and ensuring adequate protection of IMT networks.

In addition, we trust that the test experiences outlined above would assist the Authority better understanding the current uncertainties and challenges related to HIBS platforms, in order to make a more informed decision on the immediate way forward.