

Comments on Draft Radio Frequency Spectrum Assignment Plan for band 335.4 MHz to 380 MHz

We want to thank ICASA for the opportunity to comment on Draft Radio Frequency Spectrum Assignment Plan for band 335.4 MHz to 380 MHz published on November 25, 2022. We applaud ICASA for its forward-thinking and for seeking stakeholders' comments and opinions on the proposed frequency spectrum assignment plan in such a critical band. However, we will offer another perspective to ICASA regarding the optimum use of the frequencies under the current consultation. Although terrestrial services are one means to delivering connectivity to rural areas, satellite communications can achieve the same objective with more efficient spectrum use while utilizing a resilient network.

As per ICASA's proposed channeling plan, the band will be segmented into the following sub-bands as follow:

- 335.4 - 336 MHz, 346.0 - 356.0 MHz, and 366.0 - 386.0 MHz for PMR and/or PAMR
- 336 - 346 MHz paired with 356 - 366 MHz for Fixed Wireless Access (PTP//PTMP rural system)

Regulators tend to prioritize services based on the allocation status in their national and international frequency plans¹. Although this approach was originally designed to grant maximum protection to specific services, it could waste significant economic and connectivity opportunities for emerging markets such as South Africa. The frequencies considered in the public consultation are also allocated to Mobile Satellite Services (MSS) on a secondary basis². With that in mind, MSS can achieve nationwide coverage in South Africa with connectivity solutions and use cases such as IoT and critical infrastructure communications at a considerably lower cost than terrestrial FWA systems.

MSS networks will provide IoT connectivity solutions for many areas, including grid management for critical infrastructure, smart cities, asset tracking & logistics, digital farming & agriculture, autonomous vehicles, and environmental monitoring globally. There is a growing need for cost-effective, secure, ubiquitous IoT solutions for the oil and gas industry, mining, fishing, and agriculture, among other critical infrastructures. Moreover, MSS networks can be scalable to provide uninterrupted connectivity that exceeds the performance of their terrestrial counterparts (FWA systems, either P2P or P2MP), which utilize the same frequency bands.

More importantly, MSS systems can utilize the radio spectrum more efficiently as they can share the spectrum with other services and connect the least economically developed areas, which require substantial investments from terrestrial FWA operators to reach.

To that point, we agree with the ICASA initial conclusion on this band, as stated below, in the authority's position and the draft implementation of the radio frequency migration plan and the international mobile telecommunications roadmap in terms of section 34(16) of the Electronic Communications Act (ECA) in

¹ [The National Radio Frequency Plan-2021 \(NRFP -21\)](#).

² As per RR footnote 5.254: *"The bands 235-322 MHz and 335.4-399.9 MHz may be used by the mobile-satellite service, subject to agreement obtained under No. 9.21, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table of Frequency Allocations except for the additional allocation made in footnote No. 5.256A. (WRC-03)"*.

its Notice 739 of 2021³: *“The Authority concludes that it’s thinking on this band at this stage is that there is a high risk of leading to a more inefficient use of this spectrum band if it proceeds with an exclusive assignment just for BFWA and UAVs.”*

ICASA also acknowledges, as per the aforementioned Notice, that although other countries such as Europe and the US utilize these parts of these bands for military purposes, the ecosystem in South Africa should be utilized for other, more innovative uses. Maximizing the use of these bands with multiple innovative technologies is consistent with ICASA’s approaches to date. That said, undermining emerging technologies and applications such as MSS will negatively contribute to the maximization of the band’s utility. The maturity of FWA systems in this band is questionable and may lead to spectrum hoarding, and inefficient use as the economy of scale is not yet there.

The frequency band under question has good propagation for long reach – beyond the horizon (rural systems) with high-level coverage reliability. However, it is more suitable for telephony and low-speed data of FWA because of the limited bandwidth available. In addition, it is difficult to achieve high antenna gains with small antenna structures, and the coordination distances between co-channel systems are quite large⁴, making coexistence between the band users difficult and requiring careful planning and continuous regulatory interventions.

With all of that in mind, we urge ICASA to consider the following:

- Maintain a balanced approach to allow equitable access to the spectrum regardless of the status of allocation,
- Encourage technology neutrality as a key principle to promote different technologies that could utilize this or parts of the frequency bands,
- Allow maximum access to the spectrum by civil/commercial users,
- Refrain from adopting solutions and technologies outside ITU Region 1,
- Segment the spectrum to 5 MHz blocks to facilitate all possible use cases and technologies that could be introduced now or in the future,
- Consider more harmonized frequency bands for PMR/PAMR/PPDR, such as 136-174 MHz, 380-400 MHz, 406.1-410 MHz, 410-420 MHz, and 420-430 MHz, among others.

³ See [here](#).

⁴ [ITU-R Rec F.1401](#).