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30 January 2023

Bethuel Nkgadime
350 Witch-Hazel Avenue,
Eco Point Office Park,
Eco Park, CENTURION,
Gauteng

Per email: BNkgadime@icasa.org.za

CC: PZimri@icasa.org.za

Dear Mr Nkgadime,

**RE: TELKOM SUBMISSION IN RESPONSE TO THE PROPOSED
AMENDMENT OF ANNEXURE B OF THE RADIO FREQUENCY SPECTRUM
REGULATIONS, 2015, AS AMENDED**

Telkom thanks the Independent Communications Authority of South Africa (“ICASA” or “the Authority”) for the opportunity to provide comments on the proposed amendment to Annexure B of the Radio Frequency Spectrum Regulations, 2015, (“RFSR”) as published in Government Gazette 47792, Notice No. 1527 of 2022 published on 21 December 2022 (“**proposed amendment**”).

Telkom will appreciate the opportunity to present at a public forum on the proposed amendment, if the Authority decides to conduct oral hearings.

We trust that the attached inputs will assist the Authority in finalising the proposed amendment.

Yours Sincerely

A handwritten signature in black ink, appearing to read 'J. Smit', written in a cursive style.

Johan Smit

Acting Group Executive: Regulatory Affairs and Government Relations

Telkom Submission:

Proposed amendment of Annexure B of the Radio Frequency Spectrum Regulations

Telkom SA SOC Limited: Reg no 1991/005476/30. **Directors:** MS Moloko (Chairperson), S Taukobong (Group Chief Executive Officer), DJ Reyneke (Group Chief Financial Officer), O Ighodaro, B Kennedy, KP Lebina, PCS Luthuli, EG Matenge-Sebesho, M Nyati, KA Rayner, IO Selele, SP Sibisi, H Singh, LL Von Zeuner, SH Yoon*

Company Secretary: AC Ceba *Korea

1 EXECUTIVE SUMMARY

The Radio Frequency Spectrum Regulations ("RFSR") were published through Notice No. 279 in Government Gazette No. 38641 on 30 March 2015. The RFSR was amended several times, with the latest amendment published in Government Gazette 45690, Notice No. 737 of 2022, of 21 December 2021.

Annexure B of the RFSR provides for the use of apparatus within the specified frequency bands without a spectrum licence, provided that such use complies with all the specified technical parameters and operational provisions applicable to each frequency band as contained in the table in Annexure B.

The frequency bands contained in Annexure B are also allocated to various radiocommunication services on a primary basis as per the National Table of Frequency Allocations. Telkom (and others) have been licensed to use some of these frequency bands for various radiocommunication services such as mobile, fixed, satellite, etc. Such licensed and primary uses are protected. Therefore, the apparatus listed in Annexure B always operate on a strictly non-interference and non-protection ("NINP") basis.

Telkom supports the initiative taken by the Authority to earmark the band 5925-6425 MHz for Wireless Access Systems / Radio Local Networks ("WAS/RLAN") and including same in Annexure B of the RFSR. This is in line with international developments relating to the use of this band. Telkom also supports the application of the technical and operational use of the band for RLAN/WAS in line with African Telecommunication Union ("ATU") and European Union ("EU") and CEPT.

The band 5925-6425 MHz is licensed to Telkom (and others) for terrestrial fixed links and satellite earth stations (uplinks). Both these services use this band on a primary basis. Therefore, the licensed services must be protected while allowing the WAS/RLAN applications to operate on a strictly NINP basis.

Monitoring and enforcement of the use of the band by WAS/RLAN applications is therefore critical to ensure compliance with the prescribed technical and operational parameters and to avoid harmful interference to the licensed services. If this is not done, we may have a situation like the 2.4 GHz band, where the rules are not being followed and harmful interference with licensed services is the order of the day.

Telkom is concerned that the intended use of the band is not clearly reflected in the proposed amendment, although all the details are captured under “*Additional Requirements*” (Column E in the table). For avoidance of doubt in respect of the intended use of the band for WAS/RLAN, Telkom proposes additional text to be added directly into the table in Annexure B, as addressed later in this submission.

Furthermore, Telkom supports the exclusion of the consideration of the frequency band 6425-7125 MHz from the proposed amendments as this band will be considered for IMT services at the upcoming WRC-23 (agenda item 1.2). Telkom supports this band for consideration of IMT services and recommends that it should not be considered for unlicensed use, including for WAS/RLAN.

2 SPECIFIC COMMENTS

2.1 Maximum power applicable and operational restrictions in the band 5925-6425 MHz

Two values for maximum power (i.e., e.i.r.p.) are provided in the proposed amendment, namely 23 dBm and 14 dBm. These maximum power levels relate to the use of WAS/RLAN for indoor and indoor/outdoor use respectively. The operational restrictions (i.e. indoor and/or outdoor) should be written into Column C (“*Maximum Radiated Power, Field Strength or Sensitivity Limits*”). It is critical that these essential operational restrictions be added directly into the table as not all readers may look at the additional information contained in the documents listed in Column E where these restrictions are very clearly contained. Also, having an option in Column C for two power limits without clarification as to why different power levels apply to the band is confusing and will lead to incorrect application, which may lead to licensed services experiencing harmful interference.

The Authority's proposed power limits on the use of the band 5925-6425 MHz for WAS/RLAN deployments are in line with the ATU recommendation as well as the European Union (“EU”) and CEPT. These power values are generally referred to as “Low power indoor (LPI)” and “Very low power (VLP) portable use (indoor/outdoor)” for the power levels of 23 dBm and 14 dBm respectively. The power limits and restrictions pertaining to indoor/outdoor deployments are based on the outcome of detailed compatibility and sharing studies conducted in Europe, taking into account the existing services operating in the band (see ECC/DEC/(20)01). The use of the band in South Africa for primary services (i.e. fixed and satellite uplinks) is the same as in Europe.

Therefore, the outcome of the sharing studies is also relevant to South Africa and therefore the power levels and operational restrictions are supported.

ATU-R Recommendation 005-0 (*The Implementation of Emerging Radiocommunication Technologies Namely: 5G/IMT2020; HAPS; FSS ESIM; MSS Applications; FSS VSAT And Other Applications; WiFi in 6GHz; WiGig In 60GHz and 5G NR-U*) dated July 2021 confirms these power levels and operational restrictions and stipulates the following:

“Designate the frequency band 5925 - 6425 MHz for use by WAS/RLAN equipment restricted to very low power (VLP) (both outdoor and indoor use) and low power indoor (LPI) use only on a non-exclusive, non-interference and non-protected basis” (own emphasis)

Based on the above, Telkom recommends that Column C in the table in Annexure B be amended to reflect the operational restrictions that apply in this band, as follow (underlined additional text to be added to Column C):

23 dBm e.i.r.p (Lower power indoor use only/outdoor use not allowed)

14 dBm e.i.r.p (Very low power indoor/outdoor)

2.2 Proclaimed intention of use of these bands

Telkom is concerned that the notice¹, in paragraph 3, may misguide the intention on use of the band. In paragraph 3 of the notice, the Authority proclaims that the 6 GHz band could be used for amongst others, “backhaul”, which may create the impression that such services, which is normally also referred to as point-to-point links, could be provided through the unlicensed use in the 6 GHz band. Based on Telkom's comments in section 2.1 above, the use of the band for WAS/RLAN is limited to low power indoor use and very low power indoor/outdoor use, which are generally not associated with backhaul services. Also, the reference to “FWA” in the context of the proposed unlicensed use of the band 5925-6425 MHz should also be clarified. These clarifications could be done by adding appropriate text into the table in Annexure B.

In addition, in paragraph 2 of the notice, the Authority proposes to incorporate the lower 6 GHz (5925 – 6425 MHz) and the 122 – 246 GHz radio frequency bands for Non-Specific Short-range Applications in Annexure B of the RFSR. Telkom wishes to highlight that “non-specific short-range applications” is a specific category of application in the context of short range devices (“SRDs”) and that the band 5925-6425 MHz is not intended to be used for such applications (only the band

¹ Notice of intention to amend Annexure B of the Radio Frequency Spectrum Amendment Regulations, 2021, as published in GG47792, Notice 1527 of 2022, dated 21 December 2022

122-246 GHz). The Authority should correct the reference of non-specific SRD in terms of the band 5925-6425 MHz.

Telkom therefore requests the Authority to communicate the intended use of these bands very clearly when publishing the final updated Annexure B.

2.3 Additional requirements to the band 5925-6425 MHz

Telkom recommends that the reference to Annex 3 in the ATU Recommendation 005-0 be changed as follows: "ATU-R Rec.005-0, Annex 3, 2021"

Additionally, Telkom recommends that the reference to (EU) 2021/1067 also be clarified (to provide more details, perhaps a hyperlink to the relevant document).

2.4 Use of the bands 122-122.25 GHz, 122.25-123 GHz, and 244-246 GHz

According to the proposed amendment, the frequency bands 122-122.25 GHz, 122.25-123 GHz, and 244-246 GHz are to be used for non-specific SRDs and that such use is in line with CEPT/ERC/REC 70-03. The Authority proposes a maximum radiated power of 100 mW in all three frequency bands.

According to the October 2022 edition of CEPT/ERC/REC 70-03, the band 122-122.25 GHz has a maximum power restriction of 10 dBm/250 MHz e.i.r.p. and -48 dBm/MHz at >30° elevation. This is very different from the proposed 100 mW e.i.r.p proposed by the Authority. Telkom recommends that the proposed power value be re-assessed. The proposed values for the other two bands (i.e. 100 mW) are in line with CEPT/ERC/REC 70-03.

With regards to the applicable standard to be applied in these three frequency bands, Telkom recommends a reference to EN 305 550-2 (i.e. part 2 of the standard), which contains the "*Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive*". The "*Technical characteristics and test methods*" are contained in EN 305 550-1, which is a normative standard reference in part 2 of the standard.

2.5 Other amendments to Annexure B of the RFSR

The notice creates the impression that the purpose of the amendments is address the bands 5925 – 6425 MHz, and the three bands above 122 GHz. However, Telkom observed that other amendments, including deletions, have also been made to the table contained in Annexure B

when compared to the version published on 24 December 2021.² These further changes have not been clearly mentioned or reflected in the notice.

In some cases, apparatus previously identified for unlicensed use in certain frequency bands, have now been proposed for deletion. It is not clear from the proposed amendments as to what the status of the already deployed apparatus will be if the relevant frequency band have been removed from Annexure B in the RFSR. Telkom recommends that this be addressed in the final updated RFSR.

For example, the frequency band 64-66 GHz, which was previously available for unlicensed deployment of PTP digital fixed radio systems at a maximum power of 55 dBm e.i.r.p. have now been incorporated into the broader band 57-71 GHz available for MGWS systems at a maximum radiated power of only 40 dBm. Whereas this change could be supported, it is not clear from the notice what will be the status of links that have previously been deployed (on a licensed exempted basis) in the band 64-66 GHz at the higher power level. In another example, the use of the band 915-919.5 MHz for non-specific SRDs have been removed. It is not clear what will happen with the existing deployed SRDs in this band. The status of existing deployed apparatus must be clarified.

For several other bands, changes were made that brings Annexure B of the RFSR more in line with CEPT/ERC/REC 70-03 whereas others are not. Most of these frequency bands are not directly applicable to Telkom and we will therefore not comment on these specifically.

Telkom recommends that a notice amending Annexure B of the RFSR should be published in such a way that all proposed changes be clearly highlighted, to allow the public and industry to comment on all such changes.

² GG45690, GN 737 of 2021