

**Regulatory Affairs and Government Relations**

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20 May 2022

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Independent Communication Authority of South Africa  
Dr Ivy Matsepe-Casaburri Building  
350 Witch-Hazel Avenue  
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Via email: [rmakgotlho@icasa.org.za](mailto:rmakgotlho@icasa.org.za)

Dear Mr Makgotlho

**RE: TELKOM'S SUBMISSION PERTAINING TO THE AUTHORITY'S NOTICES  
REGARDING THE DRAFT RADIO FREQUENCY ASSIGNMENT PLANS**

Telkom SA SOC LTD ("Telkom") welcomes the opportunity to provide written comments to the Authority in respect of the draft Radio Frequency Spectrum Assignment Plans for the radio frequency bands IMT450, IMT700, IMT750, IMT800, IMT850, IMT900, IMT1500, IMT2300, IMT3300, and IMT3500 ("**draft RFSAPs**"), as published in Government Gazette 46160 (Notices 1961 to 1970 of 2022), dated 31 March 2022.

Written submissions are due no later than 16h00 on Friday, 20<sup>th</sup> May 2022. Telkom requests an opportunity to make oral representation, if the Authority decides to hold public hearings pertaining to the draft RFSAPs.

Please find herewith Telkom's written comments on the draft RFSAPs.

Yours Sincerely



**Dr Siyabonga Mahlangu**

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Telkom's submission to the Independent Communications Authority of South Africa

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Draft Radio Frequency Spectrum Assignment Plans for the radio frequency bands  
IMT450, IMT700, IMT750, IMT800, IMT850, IMT900, IMT1500, IMT2300, IMT3300, and  
IMT3500

Government Gazette No. 46160 (Notices 1961 to 1970 of 2022), dated 31 March 2022

## 1. Introduction

The Independent Communication Authority of South Africa (“the Authority” or “ICASA”) published the draft Radio Frequency Spectrum Assignment Plans for the radio frequency bands IMT450, IMT700, IMT750, IMT800, IMT850, IMT900, IMT1500, IMT2300, IMT3300, and IMT3500 (“draft RFSAPs”) in Government Gazette 46160 (Notices 1961 to 1970 of 2022) on 31 March 2022 and invited written representations from interested persons.

The Authority prescribed RFSAPs on 30 March 2015 for IMT450, IMT700, IMT750, IMT800, IMT900, IMT2300, IMT2600, and IMT3500. On the same day, the RFSAP for IMT850 was deferred. The IMT850 RFSAP was published on 29 March 2019 (GG42337, GN165). The RFSAP for IMT2600 was updated on 22 May 2020 (GG43341, GN285), changing the FDD/TDD channelling arrangement to an all TDD plan.

Telkom provides comments of a general nature applicable to all RFSAPs in Section 3. Matters specific to each RFSAP is provided in Section 4. A summary of key points for each IMT band is provided in Section 2 (Executive Summary).

## 2. Executive Summary

- a. IMT450: Telkom supports the adoption of frequency arrangement D14 for this band. The development of exclusion zones for Government services in this band must be concluded before this band is made available through an ITA. Telkom migrated all its point-to-point links from this band, although the designated bands could not be used due to the unavailability of suitable equipment. Telkom is also of the view that Swiftnet does not need to migrate from the 450 MHz band as its assignment falls outside Band D14 and will not interfere with IMT deployments in Band D14.
- b. IMT700: Whereas the Minister announced the end of dual illumination as 28 February 2022, this date was extended to 30 June 2022 by the High Court following the eTV review application. However, eTV took the High Court decision on review to the Constitutional Court, which will review the analogue switch-off date. The Authority may therefore have to review this provision considering the outcome of the Constitutional Court decision.
- c. IMT750: Telkom supports the use of the band for 20 MHz SDL. TDD is not an option in this band. Telkom also request clarity with regards to the use of the guard bands below and above the IMT700 band.
- d. IMT800: The use of IMT800 takes precedence over the use of IMT850.
- e. IMT850: The IMT850 band requires extensive rethinking. Telkom recommends that the IMT850 RFSAP be abrogated and not implemented in South Africa.
- f. IMT900: Telkom supports the in-band refarming of the band and making 2x5 MHz available through an ITA process.
- g. IMT1500: Telkom supports this band for IMT but recommends that the entire 90 MHz (i.e. 1427-1518 MHz) be made available for IMT, noting that the bottom part of the band (i.e. 1427-1452 MHz) depends on the migration of fixed links, which will require sufficient time to implement. As a start, the RFSAP for the entire band 1427-1517 MHz could be developed.
- h. IMT2300: Telkom doesn't support the implementation of an exclusion zone in FAR147 as this is unnecessary and will lead to ineffective use of this spectrum. Telkom recommends continuation of the current bilateral process between Telkom and Denel/DoD.

- i. IMT3300: Telkom supports the use of this band for IMT and making same available through an ITA process.
- j. IMT3500: This band has been assigned to licensees for IMT use.

### 3. General comments

#### 3.1 Referencing ECC Recommendations

The Authority added a reference to ECC/REC(11)04 and ECC/REC(11)05 to several draft RFSAPs. These recommendations relate to cross-border frequency coordination in the 800 MHz and 2600 MHz frequency bands respectively. In some cases, reference to ECC/REC(15)01 has been added. This recommendation deals with the bands 700 MHz, 1452-1492 MHz, 3400-3600 MHz, and 3600-3800 MHz. Referencing to these recommendations in Regulations 1 (Glossary) and 7 (Frequency Coordination) is not always correct and Telkom recommends that these be verified, and amended, as needed. Additional referencing is also needed, for example ECC/REC (14)04 for the band 2300-2400 MHz.

Telkom also recommends that the titles of these ECC Recommendations be added in Section 1.

#### 3.2 Ad sub-regulation 5.7 (“Dynamic Spectrum Sharing”)

Dynamic Spectrum Sharing (“DSS”) is used as a tool to introduce multiple technologies within the same band, for example introducing 5G New Radio (NR) in bands previously used only for LTE. Sharing of a band therefore improves the efficient use of spectrum. DSS is in contrast with Static Spectrum Sharing, which is splitting the assigned bandwidth between technologies. DSS is applied by a licensee using its own assigned spectrum, i.e. it doesn’t apply between operators.

#### 3.3 General changes

a) Telkom recommends that sub-section 3.5 in all the draft RFSAPs be amended in line with the following (e.g., IMT2300):

“**3.5** Frequency bands ~~assigned~~ identified for IMT~~2300~~ include the bands from 2300 MHz to 2400 MHz.”

b) The title of Appendix D seems incorrectly labelled as “*Interference Resolution Process*”. Telkom recommends that the title be changed to “*Frequency coordination Process*”. The content of Appendix D clearly stipulates the process to request coordination with a neighbouring country before the deployment of a new base station. The need for invoking Appendix D is determined through the application of Regulation 7.

A similar change to the title of Appendix D is also required in sub-regulation 7.11.





## 4. Band Specific comments

### 4.1 IMT450

#### 4.1.1 Channelling plan

The Authority favours ITU channelling plans D13 and D14 with a recommendation to proceed with D14 (sub-regulation 6.3). Telkom supports the adoption of the D14 channelling plan.

Swiftnet Pty Ltd, a subsidiary of Telkom, has been issued with a spectrum licence for using frequencies within the 450 MHz band (licence No. 276-609-0). The Swiftnet assignment falls outside the band D14 and within Band D13. Telkom is of the view that the Swiftnet assignment can be retained as it will not interfere with IMT deployments in Band D14.

#### 4.1.2 Development of exclusion zones

In sub-regulation 6.2, the Authority states that it will develop “exclusion zones” to protect Government services operating in this band as part of this RFSAP. It is not clear when this will be done. Telkom recommends that this be done before this band is made available through an ITA as these exclusion zones will impact the availability of band D14 on a national basis and the determination of the value of the frequency band.

In the same vein, information pertaining to the use of the band for Government Services, as per sub-regulation 9.1, and as far as it impacts the availability of D14 on a national basis, should be made available before the band is made available through an ITA.

#### 4.1.3 Radio Frequency Migration

Telkom has concluded migration of its 450 MHz links from this band. However, migration to the proposed designated frequency bands, as per sub-regulation 10.1, was not possible as suitable equipment does not exist in those bands. Telkom had to use alternative designation bands and technologies to give effect to the migration of these links.

With regards to Swiftnet, as indicated above, Telkom is of the view that migration is not required as its assignments will not interfere with the D14 IMT deployments. Telkom’s proposal is in line with sub-regulation 5.2 of the draft RFSAP namely: “*The use of the band is limited to IMT services; narrowband services capable of coexistence with IMT may also*”

*be permitted. PPDR-supporting or M2M services might be implemented via IMT.*” (own emphasis). This proposal will also lead to improved spectrum efficiency as it will increase the use of the band 450-470 MHz and allows for the deployment of narrowband IoT, once band D14 has been implemented. Swiftnet is in the process of consider its options with regards to the use of its assignment and will approach ICASA in future regarding this.

#### **4.1.4 General comments**

Telkom recommends that reference to 3GPP TS 38.521-1 for 5G NR also be added to sub-regulation 5.6.4.

### **4.2 IMT700**

#### **4.2.1 Transitional arrangements**

Whereas the Minister announced the end of dual illumination as 28 February 2022, this date was extended to 30 June 2022 by the High Court following the eTV review application. The Minister welcomed this decision and indicated that all SABC transmitters will be switched-off by this date.

However, eTV took the High Court decision on review to the Constitutional Court, which will review the analogue switch-off date. The Constitutional Court hearing will take place on 20 May 2022. The Authority may therefore have to review this provision based on the outcome of the Constitutional Court hearing.

In any event, Telkom reminds the Authority that the digital dividend bands must be fully cleared for exclusive mobile use. This include SABC channels, eTV, private and regional broadcasting systems (e.g. Trinity broadcasting), Studio-to-Transmitters Links (STLs) and self-help broadcasting gap fillers. Unless all these systems are migrated, the 700 MHz and 800 MHz bands are not fully available for mobile use on a national basis.

#### **4.2.2 General comments**

Telkom recommends that the table of frequency allocations in Appendix A should exclude the band 470-694 MHz, as this band is not part of the IMT700 frequency band.

### 4.3 IMT750

#### 4.3.1 Use of guardbands within and outside the IMT700 band

Telkom supports the use of the band 738-758 MHz (20 MHz), within the centre guardband of the IMT700 band, as an SDL band for IMT services. Although this is not directly aligned with the CRASA recommended use for the centre guardband namely for Public Protection and Disaster Relief (PPDR), Telkom is of the view that the use of the 20 MHz for IMT will be a more effective use of this band. In any event, PPDR applications could still be accommodated through the deployment of IMT in this band.

Figure 1 in the draft RFSAP also indicates two guardbands i.e. below and above the IMT700 band. The 9 MHz guardband below IMT700 MHz is indicated as available for Programme-making and Special Events (PMSE) whereas the 3 MHz guardband above IMT700 does not reflect its potential use. The acronym PMSE has not been defined in the draft RFSAP.

The CRASA recommended use of these two guardbands for PPDR (i.e., 5 MHz and 3 MHz below and above IMT700 respectively). Whereas the IMT750 band deals exclusively with the band 733-758 MHz, it is not clear what will happen with the two guardbands above and below the IMT700 band and when these will be made available for licensing and for what services these will be available. Telkom recommends that this be addressed in the IMT750 RFSAP since they are reflected in Figure 1.

#### 4.3.2 Supplementary downlink (SDL)

In sub-regulation 3.6, the Authority indicates that the “*Likely use of this band will be for mobile data communications, e.g. as a Supplementary Downlink (SDL) band.*” This band (i.e. 733-758 MHz) is adjacent to the IMT700 downlink band, i.e. there is no guardband with the IMT700 downlink band. Therefore, the IMT750 band must be used as SDL, to be able to coordinate successfully with the IMT700 downlink band. TDD cannot be deployed in the IMT750 band as this will cause harmful interference with the IMT700 band.

Telkom therefore recommends the following change to sub-regulation 3.6:

*“Likely use of this band will be for mobile data communications, ~~e.g.~~ The band shall be used as a Supplementary Downlink (SDL) band.”*

### **4.3.3 Ad Section 9 (“End of Transitional Arrangements”)**

See Telkom’s comments pertaining to sub-regulation 9.1 as reflected above for the IMT700 band.

## **4.4 IMT800**

### **4.4.1 Compatibility with the IMT850 band**

The Authority is aware that there is only 4 MHz guardband between the IMT800 downlink band (i.e.791-821 MHz) and the IMT850 uplink band (i.e. 825-830 MHz). The Authority previously indicated that the use of the IMT800 band will take precedence over the use of the IMT850 band (see note 4(ii), page 28 of 205 of the Final IMT Roadmap, 2019). Therefore, sub-regulation 5.4 will not apply in terms of the possible harmful interference stemming from the use of the IMT850 band.

See also Telkom’s comments pertaining to the use of the IMT850 band, in section 4.5 below.

### **4.4.2 Ad Section 9 (“End of Transitional Arrangements”)**

See Telkom’s comments pertaining to sub-regulation 9.1 as reflected above for the IMT700 band.

## **4.5 IMT850**

Telkom is of the view that the draft RFSAP for the IMT850 band needs extensive re-thinking. In several places, the content in the IMT850 RFSAP is in fact the same as that of the IMT800 RFSAP; the lines between these two plans are crossed several times.

Telkom recommends that the IMT850 band should not be adopted in South Africa as it is not compatible with other bands and, as currently proposed by the Authority, cannot be used for IMT systems. Reasons are provided below.

### **4.5.1 Ad Section 4 (“Channelling Plan”)**

The IMT850 RFSAP refers to the band 825-830 MHz paired with 870-875 MHz (i.e. 2x5 MHz). This is part of the 3GPP band 5 (i.e. 824-849 MHz paired with 869-894 MHz).

This band is also reflected as frequency arrangement A1 in ITU-R Recommendation M.1036-6.

The IMT850 band should not be confused with the European 3GPP band 20 for the 800 MHz band (i.e. 832-862 MHz paired with 791-821 MHz), which is reflected as arrangements A3 in M.1036-6.

In terms of the draft RFSAP, it seems that the Authority decided that only the lower portion of the IM850 band will be implemented, i.e. 825-830 MHz. This is based on the outcome of the feasibility study and the reference to only this 5 MHz band in sub-regulation 4.1. Implementation of the upper part of the IMT850 band has been abandoned due to compatibility issues with GSM-R systems.

Telkom recommends that the lower portion of the IMT850 band also be abandoned for the following reasons:

- Band A1 (or 3GPP band 5) is based on an FDD configuration; it is not feasible to implement only the lower portion of the band. This band cannot be implemented as a standalone TDD (no technology support) or FDD (no suitable return band).
- Compatibility with the IMT800 band must be guaranteed; implementation of the IMT800 band will take preference above the IMT850 band.
- Deployment of only 5 MHz is not feasible.

Reference to 2x30 MHz in sub-regulation 4.1 is incorrect; this must be 5 MHz.

The reference to the IMT800 arrangement in sub-regulation 4.2 is incorrect; this should be IMT850. Table 1 and Figure 1 should also be amended to reflect channel arrangement A5 (not A3) and then only a sub-set of the FDD arrangement.

#### **4.5.2 Ad Section 6 (“Implementation”)**

Telkom supports the clearing of the band as per sub-regulation 6.1.1. With the upper part of the IMT850 not being implemented, any existing FDD systems will have to be migrated out of this band.

With regards to sub-regulation 6.1.2, the reference to A3 arrangement is incorrect. As indicated, the A3 arrangement is used in IMT800, which is the band that has been licensed through the recently concluded spectrum auction. The Authority seems to conflate the IMT850 and the IMT800 frequency bands.

The references to “*most important sub 1 GHz band in Region 1*” and “*Band 20*” are all in relation to the IMT800 band, not the IMT850 band. The reference to Region 1 clearly signals to the IMT800 band since the IMT850 band is used predominantly outside Region 1.

In sub-regulation 6.3, the Authority also refers to the IMT800 band, which should be changed to the IMT850 band.

If the Authority decides to retain the lower 5 MHz of 3GPP Band 5 (or A1), although Telkom strongly recommends against this, the draft RFSAP must be amended extensively to reflect the deployment of a portion of the IMT850 band, and only the lower leg of the FDD arrangement, within the guardband of the IMT800 band.

#### **4.5.3 Ad Section 8 (“Assignment”)**

Sub-regulation 8.1 also refers to the IMT800; this should be changed to reflect the assignment of IMT850 (i.e. lower 5 MHz of 3GPP Band 5 or ITU arrangement A1).

#### **4.5.4 Ad Section 9 (“End of Transitional Arrangements”)**

See Telkom’s comments pertaining to sub-regulation 9.1 as reflected above for the IMT700 band.

#### **4.5.5 Ad Section 10 (“Revocation”)**

Telkom doesn’t support the proposed amendment of licences in the IMT850 band. As indicated above, Telkom recommends that the IMT850 RFSAP be cancelled and not implemented in South Africa, for the reasons mentioned above. In any event, it is not clear which licence will be amended and how they will be amended seeing that the Authority no longer plans to implement 3GPP Band 5 (arrangement A1). Telkom’s proposal is also aligned with the Authority’s objective that all existing transmissions in the IMT850 band should be cleared (sub-regulation 11.2).

#### **4.5.6 Ad Section 11 (“Radio Frequency Migration”)**

Telkom supports the clearing of all transmissions in the IMT850 band (i.e. 825-830 MHz paired with 870-875 MHz).

## 4.6 IMT900

### 4.6.1 Ad Section 6 (“Implementation”)

Telkom supports implementation of in-band refarming and making available 2x5 MHz in a future ITA process. The due date for implementation was 31 March 2020, which expired more than two years ago. Telkom also supports the new effective date of 31 March 2023, as per sub-regulation 6.4 in the draft RFSAP.

### 4.6.2 General comments

Reference to IMT800 in sub-regulation 3.7 must be changed to IMT900.

## 4.7 IMT1500

### 4.7.1 Frequency range for IMT1500

The Authority proposes that the band 1452-1492 MHz be implemented as IMT1500. It is not clear why the Authority decided to limit the frequency band to only 40 MHz, whilst the ITU identified the band from 1427 MHz to 1518 MHz for IMT. One possibility could be that the bands 1427-1452 MHz and 1492-1518 MHz are used for fixed links, which will need to migrate to make these bands available for IMT. Telkom is of the view that this should not delay the implementation of the band 1427-1517 MHz as these links could be migrated.

Whereas Europe initially implemented the band 1452-1492 MHz for IMT SDL (ECC Decision (13)03) in 2013, this band was extended in 2017 to also include the bands 1427-1452 MHz and 1492-1518 MHz (ECC Decision (17)06). This was done following the identification of the band 1427-1518 MHz for IMT at WRC-15. Europe therefore implemented the full band from 1427-1518 MHz.

Telkom recommends that the Authority also implements the entire frequency band from 1427-1518 MHz for IMT and that the RFSAP be designed accordingly. This allows for 18 blocks of 5 MHz for IMT (i.e. 90 MHz) with a guard band of 1 MHz at the upper end of the band for protection of Mobile Satellite Services (MSS) earth stations operating above 1518 MHz. While the upper and lower parts of the bands (i.e. 1427-1452 MHz and 1492-1517 MHz) will require migration before IMT could be implemented in these bands, the RFSAP could be designed for the entire band 1427-1517 MHz.

See also comments below regarding additional protection required.



#### **4.7.2 Ad Section 4 (“Channelling Plan”)**

In sub-regulation 3.6, the Authority states that the feasibility study recommended that the band be used for IMT-TDD. In sub-regulation 4.2, the Authority reflects that either G1 or G3 will be used. No final decision has been made in this regard. All assignments in this band should follow the same configuration, i.e. either TDD or SDL but never both. That decision must be made before the band can be made available through an ITA.

Telkom recommends that the band be made available for SDL, in line with the deployment in Europe. Sharing with MSS operating above 1518 MHz was concluded in Europe (ECC Report 263) and allows for a 1 MHz guardband (i.e. 1517-1518 MHz). Although Working Party 5D (WP5D) continues with the compatibility studies including studies pertaining to the use of the band for TDD, such use may lead to additional protection criteria. To maximise on the economy of scale of technology in this band, Telkom recommends alignment with Europe on SDL.

This band, when used for SDL, is favoured for carrier aggregating with the 800 MHz and 900 MHz bands (see NR band n91/n92/n93/n94) as per other Region 1 countries. Since South Africa is using IMT800 and IMT900, there will be a guaranteed ecosystem for devices supporting these band combinations. It is therefore recommended that the SDL configuration will be the best solution for IMT deployments in South Africa in the IMT1500 band.

#### **4.7.3 Ad Section 9 (“Amendment”)**

It is not clear which licenses will be amended in this band, because there are no assignments in the band and therefore no licences to be amended, as indicted in Regulation 10. Telkom recommends that this RFSAP be amended to reflect this reality.

### **4.8 IMT2300**

#### **4.8.1 Coordination within FAR147**

Telkom does not agree with the proposed IMT exclusion zone within FAR147. There is also no definition for FAR147. This should be defined to avoid any doubt regarding the area requiring coordination.



Telkom has been coordinating with the relevant parties, in good faith, since 2018 in the area around Struisbaai in the 2300 MHz frequency band. The testing done by Denel in the area is ad hoc and limited to only during daytime. From October 2018 until March 2022, testing occurred on only 38 days, excluding cancelled and no-fly days (due to cloud cover for example). These testing slots have been coordinated with Denel and / or the Department of Defence (DoD) and during those 38 days Telkom was able to terminate all 2300 MHz transmissions in the area to allow testing to be done without the risk of harmful interference.

This procedure can continue until use of the band for testing has been migrated to another frequency band, as per the draft RFSAP (i.e. until 31 March 2024). If Telkom is forced to implement a permanent exclusion zone, it means that the 2300 MHz band in this area will be un-used for more than 99% of the year, which clearly goes against the efficient use of spectrum and which will deprive Telkom from using its nationally assigned spectrum.

Telkom deployed IMT2300 systems in the area and these are serving customers. While switching-off these systems during day times for these tests can be tolerated, the bandwidth is needed at night time. A complete shutdown of these systems can therefore not be supported and is in any event not necessary.

#### **4.8.2 Ad Regulation 6 (“implementation”)**

The Authority proposes that the updated IMT2300 RFSAP comes into effect on 1 April 2023. Telkom recommends that this RFSAP come into effect on the date of publication as there is nothing in it that warrants a delay until 1 April 2023.

#### **4.8.3 Ad Regulation 9 (“Amendments”)**

Telkom supports the use of the IMT2300 band exclusively for IMT.

In terms of licence amendments, Telkom respectfully reminds the Authority of its application to amend its 2300/2400 MHz spectrum licence to reflect its refarming of the sub-band 2360-2387 MHz for IMT services. This application was submitted to the Authority on 30 July 2021.

It is not clear why migration of fixed and outside broadcasting links must be completed only by 31 March 2024. As per Telkom’s application, Telkom refarmed its legacy systems to

IMT, and, in Telkom's view, outside broadcasting links are no longer deployed in this band. Save for accommodating the use of the Denel mobile systems in FAR147 until 31 March 2024, this band could be made available for exclusive IMT use with immediate effect.

#### 4.8.4 General comments

Telkom recommends a few editorial changes to the draft RFSAP, as indicated below.

- c) Sub-section 2.2 could be improved. Telkom recommends the following changes:
- "2.2 The feasibility study concerning the 2300 – 2400 MHz ~~LTE~~ 3GPP band 40 is mandated by the Radio Frequency Band Migration Regulations and Plan, 2019<sup>FN</sup> ~~contained and in the IMT Roadmap 2014 and IMT Roadmap 2019~~<sup>174</sup> and concluded that the Authority proceeds with an RFSAP for IMT in this band."*

*FN: Government Gazette No. 42337, Notice 166, 29 March 2019*

## 4.9 IMT3300

### 4.9.1 General comments

Reference to Figure 4 must be changed to Figure 1 in sub-regulation 4.2.

## 4.10 IMT3500

### 4.10.1 Maximum radiated power

Telkom recommends that the maximum power limit for base stations in the 3500 MHz band be increased to 68 dBm/5MHz EIRP. The use of this maximum EIRP is aligned with the international application for this band:

- a) ECC Decision (11)06 stipulates a maximum base station in-block EIRP of  $\leq 68$  dBm/(5 MHz). CEPT Report 67 also stipulates the maximum base station power of 68 dBm/5 MHz.
- b) In the USA, the FCC stipulates a base station power in non-rural areas of 1640 watts per megahertz (i.e. 62.15 dBm). Assuming a 18 dBi antenna, this equals

70 dBm/5MHz. The FCC also allows double this power in rural areas (i.e. 3 dB increase).

- c) In Canada, 77.5 dBm EIRP (60 MHz) is allowed in the 3.5 GHz band. This equals 67.5 dBm/5 MHz.

Telkom's radios are capable of 8 x 50W for a single sector (using 8tx8rx configuration), which equates to 56dBm. Should we use maximum power over 50MHz, it will be 46 dBm/5MHz (excluding antenna gain). Deploying antennas between 18-25dBi, this means an EIRP of 64-71 dBm/5MHz. Therefore, 61dBm/5MHz will limit potential deployments and therefore the recommendation to allow 68 dBm/5 MHz.

Telkom also recommend that the maximum power for user equipment be set at 28 dBm. This is required since most 3.5 GHz user equipment devices are anticipated to be desktop or outdoor routers (not mobile handhelds). Alternatively, the Authority could limit the power to 23 dBm for mobile handsets while the power is set at 28 dBm for routers. The use of this higher Total Radiated Power (TRP) is aligned with the international application for this band:

- a) CEPT Report 67 stipulates the maximum mobile station power of 28 dBm.
- b) In the USA, the FCC stipulates a mobile station power of 1 watt (i.e. 30 dBm).

#### **4.10.2 General comments**

- a) The 3500 MHz band has been harmonised globally for IMT at WRC-15, not WRC-19 as indicated in sub-regulation 3.6.
- b) In terms of sub-regulation 9.2, reference to "licensees" should be changed to "licences" since the latter is amended, not "licensees".
- c) Appendix A, extract on National Table of Frequency Allocations, reflects the band 3400 to 3800 kHz. This must be replaced with the band 3400-3600 MHz.