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Chairperson
Cc: Mr Manyaapelo Richard Makgotlho
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Dear Dr Mncube

RE: TELKOM'S WRITTEN SUBMISSION ON THE DRAFT TERRESTRIAL BROADCASTING FREQUENCY PLAN 2013

Telkom SA SOC Limited ("**Telkom**") welcomes the opportunity to provide comments on the draft Terrestrial Broadcasting Frequency Plan 2013 ("**BC Plan**") as published in Government Gazette No. 36129 (Notice 55 of 2013) of 04 February 2013.

Comments pertaining to the draft BC Plan are attached. We trust that our contribution will facilitate the further development of this document.

Yours sincerely

DR ANDREW BARENDSE
GROUP EXECUTIVE: REGULATORY AFFAIRS

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TELKOM'S SUBMISSION ON THE DRAFT TERRESTRIAL BROADCASTING FREQUENCY PLAN 2013 AS PUBLISHED 04 FEBRUARY 2013 IN GOVERNMENT GAZETTE No. 36129 (NOTICE 55 OF 2013)

1. Introduction

Telkom congratulates the Authority on a very well drafted, thorough and professional document. In particular, Telkom wishes to commend the Authority on their vision and drive to lead the entire SADC Region in developing the newly proposed SFN's for terrestrial broadcasting services, which deliver up to seven national multiplexers for each SADC country, including South Africa, using only the frequency band 470 – 694 MHz. This must be considered in the context of the ITU GE-06 Plan, which only catered for two national multiplexers using the entire UHF band between 470 – 862 MHz.

Telkom has not performed a technical analysis of the proposed broadcasting frequency plans and will therefore not attempt to comment on the specifics of the various plans outlined in Annexures A through L. Nevertheless, Telkom wishes to raise a few matters for further consideration by the Authority. Telkom will also highlight a number of editorials to be addressed.

This submission is structured as follows: General principles of support are provided in Section 2. This is followed by Sections 3 and 4, which provide general comments and editorial proposals, respectively.

2. General principles of support

2.1 Efficient Planning

In principle, Telkom supports the draft BC Plan as contained in Annexures A through L, as this plan facilitates the release of prime spectrum in the range 694-790 MHz ("**700 MHz**") and 790-862 MHz ("**800 MHz**") for IMT based services and applications.

2.2 Redesign of the 2nd Mobile Multiplex

Telkom supports the redesign of the 2nd mobile multiplex to create a 3rd terrestrial multiplex, as envisaged by the Authority in Annexure G. Based on an analysis of international trends, Telkom resolves that mobile television is a niche service, which has received limited uptake. In most jurisdictions, including South Africa, mobile television has been used to incentivise uptake or retention of a commercial television service, as opposed to providing a primary platform for content delivery. As a result, Telkom concludes that a single mobile multiplex is sufficient to address the current/future needs of mobile broadcasting and that allocating further capacity to the mobile television service is inefficient and ineffective use of spectrum.

2.3 Single Frequency Network Assignments Post 2015

As indicated above, Telkom congratulates the Authority for the work done pertaining to the design of SFN's to provide seven national multiplexers in the band 470-694 MHz. Telkom notes that current analogue broadcasters utilise 8 MHz of bandwidth for the provision of a single Standard Definition (SD) channel. Due to technological developments (i.e. DVBT-2 and MPEG-4) broadcasters are now able to provide up to 20 SD channels or 5 HD channels per 8 MHz of bandwidth, depending on the type of content. Hence, the new Digital Terrestrial Television ("DTT") SFN Assignment plan in Annexure J can provide up to 140 SD channels or 28 HD channels. In light of the current analogue broadcasting regime (i.e. 1 SD channel per 8 MHz) the plan proposed in Annexure J is deemed sufficient to address the current and future broadcasting spectrum requirements. Moreover, the unlikely scenario of broadcasters requiring additional spectrum may be offset by further technological developments such as improved transmission techniques and encoding algorithms and the use of the VHF band as well as satellite technology.

2.4 Implications of the DTT Frequency Plan

Telkom applauds the Authority on their vision to utilise channel 48 solely for multiplex 7 deployments, where the use thereof is minimized. This will facilitate the implementation of possible WRC-15 decisions pertaining to the lower edge of the 700 MHz band namely 694 MHz. Moreover, Telkom would like to highlight the discussions/studies regarding WRC-15 Agenda Item 1.2 where amongst others the lower edge (694 MHz) of the 700 MHz band is subject to refinement.

3. General Comments

3.1 Issues covered in the Plan (section 2.2 of draft BC Plan)

> The Plan proposes that possible requirements for the introduction of DAB before television migration has created spectrum availability in the VHF band, be dealt with by using the L-Band in the short term. Dab systems may be operated in the VHF band, the L-Band and via satellite.

Telkom notes the proposal to use the L-band in the short term for DAB services. Telkom wishes to highlight the ongoing studies within ITU-R WP5D regarding the possible use of this band for IMT services. To this extent the L-Band is included in a list of possible candidate bands for IMT, supported in particular by Europe. Although these studies are only in its infancy, it is recommended that decisions pertaining to the future use of this band be delayed until after WRC-15. It is however also noted that this proposal is not addressed further in the draft BC Plan.

3.2 Other pertinent issues (section 2.4 of draft BC Plan)

3.2.1 Digital Dividend

> The first digital dividend will reduce the UHF broadcast band to 790 MHz and the second digital dividend will reduce the band to 694 MHz. It is important that a guard band need to be included by the users of the upper band from 694 MHz upwards to ensure interference free implementation. It will also be important to ensure that planning is performed to ensure that no adjacent channel interference occurs between UHF DTT broadcast and the new services to be implemented.

The reference to "*users of the upper band*" in the second sentence in the above paragraph is not clear. It is anticipated, although it must still be concluded by WRC-15, that the guard band will be within the second digital dividend (i.e. 694 – 790 MHz). It should however be noted that WRC-15 may also decide that the lower limit of 694 MHz further refined to accommodate a suitable guard band.

3.2.2 Digital Terrestrial Television Broadcasting

> The anticipated spectrum to be released by analog services from current analogues services will translate to bandwidth for new services or enhancement of existing services. Frequencies between 470 MHz and 694 MHz are reserved for future services are being coordinated with the neighboring Administrations. (See **Annexure J** for details.)

It is Telkom's view that the last sentence in the above paragraph should be reviewed editorially. Telkom recommends the following amendments to this sentence: "*Frequencies between 470 MHz and 694 MHz are reserved for future broadcasting services and are being coordinated with the neighbouring Administrations*". Nevertheless, it should be noted that pending the outcome of WRC-15 the frequency limit of 694 MHz may be reviewed.

3.2.3 IMT (International Mobile Telecommunications)

It is not clear why the paragraph dealing with IMT is limited to the first Digital Dividend only. Telkom recommends that the second Digital Dividend, i.e. 694 – 790 MHz also be added to this section. This is based on the fact that the band 694 – 790 MHz has been allocated to mobile, except aeronautical mobile services and identified for IMT by WRC-12. The second Digital Dividend is also already addressed in various other sections of the draft BC Plan including, for example, the sections dealing with "Digital Dividend" (page 14) and "Re-utilization of Spectrum after Analogue Switch-Off" (page 16). Annexure J in the draft BC Plan also plans for SFN's post 2015 by taking into account the second Digital Dividend. Furthermore, it has also been included in the draft National Radio Frequency plan 2013. Telkom therefore recommends that this paragraph be expanded to also include the band 694 – 790 MHz.

3.3 Annexure G of draft BC Plan

Whereas all other tables use a sequential numbering in the column titled "No", in Annexure G this field uses non-sequential numbers. It is not clear if this is an editorial error or intentional; in the case of the latter it is suggested that a footnote be added to the table to clarify this.

3.4 Annexure H of draft BC Plan

Whereas many multiplexers are indicated as "OPE" or operational, no "Onair dates" have been recorded. Telkom recommends that the "Onair dates" be added to the Table for sake of completeness. Moreover, an "Onair date" has been recorded for Durban Victoria Embankment although this date is obviously wrong (i.e. 1/0/1900).

3.5 Annexure L of draft BC Plan

With regard to Table 1 (DTT assignments proosed [proposed] for removal) it is noted that, whereas the station “Houmoed” is not listed in Annexure G, the station Pofadder is listed in Annexure G. This discrepancy must be investigated and corrected as required. It is furthermore, noted that, whereas it is proposed in Annexure L that the current assignments at Pofadder namely channels 55 and 59 are to be deleted, according to Annexure J, seven new channels at higher powers are planned for this station. This must be verified and corrected, if needed.

The purpose of Table 4 (TV assignments proposed for removal post migration of analogue transmissions to DTT) is not clear. These stations seemingly do not appear in the current plans. For example, according to Annexure F, Calvinia transmits on channel 30 but for SABC 1 (page 95). According to Annexure E, Calvinia transmits on channel 22 for SABC 2 (page 77). It is recommended that additional information pertaining to this section be provided.

4. Editorial Comments

4.1 Introduction and background

> The Authority published the first Final Terrestrial Broadcast Frequency Plan in October 1999. Since then, three revisions were published namely in July 2002 (Gazette no 23695, notice 1341 of 2002); December 2005 (Gazette no. 28299, notice no. 1513 of 2005) and December 2009. The primary purpose of the 2009 Final Terrestrial Broadcasting Frequency Plan was to facilitate comprehensive deliberations on digital planning parameters and to incorporate frequencies for digital terrestrial television and mobile digital terrestrial television for the dual illumination period.

The 3rd and final BC Frequency plan was published 18 November 2009 and not December 2009 as indicated in the 4th line in the above paragraph from section 1. Telkom recommends that details pertaining to this Plan (i.e. Gazette no. 32728, notice no. 1538) also be added as was done for the 1st and 2nd Plans. Furthermore, it should also be noted that this Plan, although published in November 2009, was published as the 2008 Plan. This should be reflected as such in the last sentence.

4.2 Acronyms

a) "**DTT**" has been defined twice - duplication should be deleted.
b) Both "**LI**" and "**LIC**" are simply indicated as "*licensed*"; Telkom recommends that these definitions be expanded to indicate the difference between these two terms.
c) "**MUX**": whereas the term has been defined as "*Multiplex Operator*", Telkom suggest that the definition should be "Multiplex" or "Multiplexer" based on the use of this acronym in the draft BC Plan.
d) Both "**OP**" and "**OPE**" are simply indicated as "*Operational*"; Telkom recommends that these definitions be expanded to indicate the difference between these two terms.
e) "**PSB**": whereas the term "*Public Service Broadcaster*" has been defined, Telkom recommends that this be changed to "PBS" and "Public Broadcasting Service". The acronym "PSB" has not been used in the draft BC Plan whereas "PBS" is used.
f) "**SFN**": Telkom recommends that this acronym be defined as "*Single Frequency Network*"; i.e. the word "*configuration*" should be deleted.
g) "SP": Whereas the term "SPA" has been defined, Telkom recommends that the term "SP" also be defined and, as in the cases of OP/OPE and LI/LIC, the difference in both terms should be clearly indicated.

4.3 Guiding Principles (section 2 of the draft BC Plan)

4.3.1 Categorisation of services

> The categorisation considered the following:
>
> - Expressions of interest for commercial, community and digital broadcasting services;

In the context of the paragraph and the above sentence in particular, Telkom is of the view that the above sentence be changed to: "*…commercial, community and ~~digital~~ public broadcasting…*"

4.3.2 Protection of national and regional Identity, Character and Culture

> The Terrestrial Broadcasting Frequency plan attempts to give every citizen access to at least one broadcast frequency assignment for a service in his or her language of choice. In areas of greater demand, such as dense metropolitan areas, a greater number of frequency assignments are grouped together to address this need. The Authority has noted that the roll out of digital terrestrial and satellite broadcasting services would assist in alleviating the shortage of frequency assignments in some geographic areas.

In the above paragraph, and in particular the first sentence, the reference to "*broadcast frequency assignment*" seems to be incorrect since citizens don't get access to broadcasting frequency assignments *per se*. Rather, the plan should attempt to give every citizen access to at least one broadcasting "channel" or "programme". Telkom recommends that this be clarified and corrected as required.

4.3.3 Efficient use of the National Frequency Spectrum

Telkom recommends that the reference to "ITU R Radio Regulations" in the last sentence of this paragraph be changed to "ITU Radio Regulations" since the Radio Regulations are a legal instrument of the ITU (not the ITU-R) as it complements the ITU Constitution and Convention.

4.4 Frequency Assignment Table Structure (section 3.1 of the draft BC Plan)

> Africa, as a signatory to the ITU Convention, and more particularly having acceded to the Regional Agreements concerning VHF-FM Sound broadcasting and VHF/UHF television broadcasting, is obliged to adhere to the planning principles agreed to in the planning conferences organised by the ITU to plan the broadcasting frequency bands.

It is noted that “Africa” is not a signatory to the ITU Convention but rather South Africa. Alternative, reference could be made to the fact that all countries within Africa are signatories to the ITU Convention.

4.5 Frequency Tolerances (section 3.8 of the draft BC Plan)

> **3.8 Frequency Tolerances**
>
> For both VHF and UHF TV bands, the tolerance shall be 500 Hz. Table 6 show frequency tolerances for audio broadcasting.

The reference to “Table 6” in the above section should be changed to “Table 8”.

4.6 References

Reference is made to the ITU Radio Regulations, editions of 2004. It is not clear why reference is not made to the latest edition of the ITU Radio Regulations namely the 2012 edition.

The same applies for the reference to SATFA, which has been replaced by the National Table of Frequency Applications covering the frequency bands up to 3000 GHz.

4.7 Annexure L of draft BC Plan

The second table in Annexure L (i.e. DTT Assignments - Effective Radiated Power (ERP) proposed for reduction) should be fixed editorially (coordinates are split, title split, etc.).