

15 February 2013

Dr Stephen Mncube
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Attention: Mr Manyapelo Richard Makgotlho

Per email: chairperson@icasa.org.za
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Dear Dr Mncube

Vodacom's submission in response to the 2nd Draft Frequency Migration Regulation and Radio Frequency Migration Plan

Please find herewith Vodacom's submission in response to the 2nd Draft Frequency Migration Regulation and Radio Frequency Migration Plan as published by the Authority in Government Gazette No. 36031, Notice No. 1064 of 2012, 24 December 2012.

Vodacom hereby confirms its willingness to participate in any further consultative process which the Authority may schedule in respect of this matter.

Yours sincerely



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Vodacom's written submission in response to the invitation for comments to the
2nd Draft Frequency Migration Regulation and Frequency Migration Plan
[Notice 1064, Government Gazette 36031 of 24 December 2012]

INTRODUCTION

Vodacom (Pty) Ltd ("Vodacom") welcomes the opportunity to comment on the 2nd draft Frequency Migration Regulations and Frequency Migration Plan as published by ICASA ("the Authority") in Government Gazette No. 36031 of 24 December 2012. We further confirm our willingness to participate in any further consultative process which the Authority may undertake in this regard.

Our submission is comprised of two parts:

- Part A details Vodacom's general comments on key proposals of the Draft Frequency Migration Regulations and Draft Frequency Migration Plan
- Part B details Vodacom's specific comments

Vodacom's suggested additions are marked with bold and underlining and deletions are marked in ~~bold and strikethrough~~.

PART A: GENERAL COMMENTS

Comments made in response to the 1st Draft Radio Frequency Migration Regulations and Radio Frequency Migration Plan¹

In response to the 2nd Draft Radio Frequency Migration Regulations and Frequency Migration Plan, Vodacom has re-iterated some of its views that were previously made in response to the 1st Draft Radio Frequency Migration Regulations and Frequency Migration Plan. This is because we strongly believe that these inputs will improve the following:

- Consistent terminology and approach adopted in other related national regulations or ITU-R Radio Regulations and Recommendations; and
- make it easier to interpret and understand the final radio frequency migration regulations and plan.

Some of these inputs are consistent with those made by various stakeholders in response to the 1st Draft Radio Frequency Migration Regulations and Frequency Migration Plan.

Incorporation of the Migration Plan with the Band Plan

The migration plan should form part of the band plan so that all spectrum planning provisions are contained in a single document. The migration plan should be specific and where possible, not leave any matter to be determined at a later date.

Migration Timeframes

The proposed duration of migration is 3-5 years from the moment of announcement. The term announcement causes confusion as to whether it means the publication date of the migration plan or the proposed date when a spectrum band begins migration. Vodacom proposes that the first two lines of paragraph 3.3.5 should read as follows:

"It is proposed that the forward looking time frame for a process of spectrum migration should be 3-5 years from the moment of ~~announcement~~, publication of spectrum migration regulations, unless otherwise specified."

Spectrum Re-farming

¹ Draft Frequency Migration Regulations and Frequency Migration Plan as published in Government Gazette No. 35598 of 17 August 2012

Vodacom urges the Authority to strongly consider the proposals made by several stakeholders in response to the Draft Radio Frequency Migration Regulations² regarding the adoption of "spectrum re-deployment" instead of "spectrum re-farming" as defined by the ITU-R. Below, Vodacom reiterates its proposal in this regard.

The definition proposed by the Authority, for Radio Frequency Spectrum Re-farming reads:

"Radio Frequency Spectrum Re-farming" means the process by which the use of a Radio Frequency Spectrum band is changed following a change in allocation, this may include change in the specified technology and does not necessarily mean that the licensed user has to vacate the frequency.

The definition states that spectrum re-farming includes changes to specified technology and that existing users need not vacate the frequency band. This contradicts the proposed definition of spectrum migration which involves the movement of spectrum users to another frequency 'location'³. Vodacom is of the view that spectrum re-farming pertains to the change of technology used for the same radio communication service. Spectrum re-farming is out of scope of the frequency migration regulations because spectrum licenses issued by the Authority are technology neutral, therefore a licensee can change the technology used without the need for approval by the Authority. Spectrum re-farming should not be considered as a migration technique. Frequency bands which have been identified for spectrum re-farming should be excluded from the radio frequency migration plan.

The ITU-R states that all Administrations have plans to introduce new radiocommunications services and for some this may include the need to move existing users of the radio spectrum to new technologies or new frequency bands through the process of spectrum redeployment. According to the ITU-R⁴, spectrum redeployment is defined as follows:

"Spectrum redeployment (spectrum re-farming) is a combination of administrative, financial and technical measures aimed at removing users or equipment of the existing frequency assignments either completely or partially from a particular frequency band. The frequency band may then be allocated to the same or different service(s). These measures may be implemented in short, medium or long time-scales."

There are two types of spectrum redeployment: voluntary spectrum redeployment and regulatory spectrum redeployment. Voluntary spectrum redeployment represents the case when an administration decides to implement spectrum redeployment and to use methods to encourage an

² Draft Frequency Migration Regulations and Frequency Migration Plan as published in Government Gazette No. 35598 of 17 August 2012

³ See Vodacom's comment on the definition of spectrum migration under specific comments

⁴ Recommendation ITU-R SM.1603-1

existing spectrum user to voluntarily decide to return the frequencies used to the spectrum manager for re-assignment. Alternatively, the spectrum user may re-engineer the spectrum assignment to improve spectrum efficiency. Regulatory spectrum redeployment is the approach most associated with an administrative policy to redeploy spectrum.

The above definition of spectrum redeployment treats spectrum redeployment and spectrum re-farming as the same. Vodacom is of the view that if the Authority adopts the above definition of spectrum redeployment, the change from one technology to another within the assigned spectrum should be treated as voluntary spectrum redeployment and should not be included in the Radio Frequency Migration Plan i.e. regulatory spectrum redeployment.

Ensuring Consistency of Proposed Migration Plan

Vodacom suggests that the Radio Frequency Spectrum Migration Plan should be consistent with the SABRE migration plan. In line with earlier comments, the migration plan should form part of the National Radio Frequency Plan (NRFP) band plan.

Vodacom suggests the removal of column 3 - Proposed Allocation/ (Utilization) from the proposed migration plan. The proposed Allocation/ (Utilization) listed are sub-allocations in line with the SADC Frequency Allocation Plan (FAP). Vodacom suggests that these entries be incorporated in column 4 – Notes on migration/usage of the proposed migration plan. Additionally, the current structure of the migration plan should be dissolved and incorporated into the NRFP. Vodacom submits that changes in the NRFP band plan should not be made through changes in the migration plan. Vodacom suggests that changes to frequency allocations should be done in the NRFP band plan. This is in line with the comment to incorporate the migration plan within the band plan.

PART B: SPECIFIC COMMENTS

B1: Draft Frequency Migration Regulations

Paragraph 2 – Purpose

If Vodacom's suggestion on incorporating the migration plan into the NRFP band plan is not accepted, the following comment should be considered. Vodacom proposes that the purpose of the draft frequency migration regulations should be amended to read as follows in order to enhance clarity and the relationship between the migration regulations and the National Radio Frequency Plan (NRFP):

“The purpose of these regulations is to establish the framework by which the Authority may migrate users of the radio frequency spectrum to align with the frequency allocations under the National Radio Frequency Plan of South Africa.”

B2: Draft Frequency Migration Plan

Paragraph 1.2 – Radio Frequency Spectrum Migration definition

Vodacom submits that the proposed definition of radio frequency spectrum migration is confusing due to the reference to spectrum location. It is not clear what the phrase 'radio frequency spectrum location' refers to. In light of the above Vodacom proposes that the definition of Radio Frequency Spectrum Migration should be amended to read as follows:

“Radio Frequency Spectrum Migration means the movement of users ~~or uses~~ of radio frequency spectrum from their existing radio frequency spectrum ~~location~~ band to another.”

Vodacom is of the view that the Authority's attempt to create a broad definition of radio frequency spectrum migration to include re-farming creates problems. Vodacom submits that spectrum re-farming should be excluded from the definition of radio frequency spectrum migration in line with our comments on the definition of spectrum re-farming.

Paragraph 1.2.3 - Spectrum re-farming definition

In line with general comments on spectrum re-farming, Vodacom disagrees with including spectrum re-farming as a migration technique. Vodacom suggests the deletion of paragraph 1.2.3 - Spectrum re-farming from the migration plan, and all other reference made to it. Spectrum re-farming should be removed from the migration plan as it indicates a change of technology to provide the same radio communication service. Spectrum licenses issued by the Authority are technology neutral. The impact of migration is the movement of licensees out of a spectrum band whereas spectrum re-farming does not require licensees to vacate the band.

In line with Vodacom's comment on the definition of Radio Frequency Spectrum Migration, the concept and definition of spectrum re-farming are out of scope of the migration regulations. The

move from GSM to LTE does not fall under the definition of spectrum migration. Both technologies/applications are deployed under the same allocation i.e. mobile. Migration is only necessary when there is a change in allocation in a spectrum band.

Paragraph 2.2 to Paragraph 4.8

Vodacom submits that all analytical and observatory material which the Authority used to derive the migration regulations and migration plan should be maintained as background information in the final migration plan.

Paragraph 2.3.1 lists the processes that should be followed when conducting spectrum migration. In order to give legal standing to this list, Vodacom proposes that paragraph 2.3.1 should be removed from the migration plan and included in the migration regulation.

Paragraph 4.9 – Proposed Migration Plan

Frequency spectrum bands which do not require frequency migration should not be included in the proposed migration plan. This is in line with the general comment on spectrum re-farming, as these sub-bands require no migration but are stipulated to undergo spectrum re-farming.

Table 3 – proposed migration plan contains column 3 entries which are intended to contain the proposed allocation/ (utilization). Vodacom noted that in many instances the proposed allocation to the new radio communication service has not been declared, leaving only the specific utilization. In light of the general comment to delete column 3 of the proposed migration plan, if its presence is crucial, Vodacom suggests amending the column 3 title. Column 3 entries do not consist of allocations. It would seem fair to change the title to “typical application”.

Frequency band specific comments

450-470 MHz

Vodacom supports the Authority's proposal to conduct a feasibility study to establish current spectrum utilisation, appropriate channel plan and harmonisation in the 450-470 MHz band. Vodacom is concerned that there are no timelines regarding when the feasibility study will be conducted. Vodacom propose that the feasibility study should be conducted within 1 year after the publication of the Frequency Migration Plan.

470-790 MHz

Vodacom supports re-planning of broadcasting spectrum to accommodate digital television within the band 470-694 MHz whilst ITU-R studies are continuing to determine the lower edge of the 694-790 MHz band. The lower edge is set by taking into account a trade-off between the spectrum

requirements for the mobile service and the spectrum requirements for the broadcasting service. Depending on the outcome of the studies the lower edge could be set to:

- 694 MHz, or
- above 694 MHz, or
- below 694 MHz.

Vodacom supports that the migration of broadcasting services from this band (694-790 MHz) be aligned with the on-going efforts to migrate broadcasting services within the 800 MHz band.

790-862 MHz

Vodacom supports that the migration of broadcasting services from this band be aligned with the on-going efforts within the 800 MHz band. Vodacom is of the view that the FMP should not refer the withdrawn Government Gazette 34872 which was still at a draft stage when it was withdrawn.

Vodacom supports the migration of fixed links from the 856-864.1 MHz band, and the migration of Self Help stations to below 694 MHz. The Authority states that there are few of these Studio to Transmitter Links. Furthermore Vodacom supports the migration of Self Help stations into the broadcast band below 694 MHz.

862 – 890 MHz

Vodacom's understanding of the proposals for migration contained in this band is that they pertain to the 850 MHz sub-band (i.e. 824-849 MHz paired 869-894 MHz), not the entire 862-890 MHz band. It is therefore suggested that the Authority's proposal explicitly indicate which sub-band they pertain to considering that there are several sub-bands in the 862-890 MHz band. The proposals should be re-phrased as follows:

...It is proposed for the 824-849 MHz paired 869-894 MHz sub-band to:

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Vodacom supports the migration of wireless Access Systems which are deployed using the 850 MHz band (824-849 MHz paired 869-894 MHz) because this band plan overlaps with the 800 MHz and 900 MHz channel plans. Vodacom does not support the Authority's reference to a draft and withdrawn Government Gazette. Such action is inappropriate as it seeks to pre-empt the outcome of a separate and incomplete consultation process.

1980 – 2010 MHz

Vodacom disagrees with the proposal to migrate fixed links into this band. According to SABRE fixed links should be migrated to above 3GHz. ICASA goes against Res. 212 of WRC-07 to implement IMT in the bands 1885-2025 MHz and 2110-2200 MHz. Mobile service is the primary allocation in this band in accordance with NRFP. The table 3 entry of the migration plan excludes this information.

Vodacom submits that the proposed utilization within the proposed migration plan should be for IMT (terrestrial). Fixed links should be migrated to frequencies above 3 GHz as previously proposed by SABRE.

2300-2450 MHz

Vodacom supports the migration of fixed links and Outside Broadcasting links out of this band in order to enable the deployment of IMT applications under the Mobile service allocation.

2500-2690 MHz

Vodacom does not support the Authority's reference to a draft and withdrawn Government Gazette. Such action is inappropriate as it seeks to pre-empt the outcome of a separate and incomplete consultation process. Vodacom proposes that a study on the current utilisation of this band should be undertaken and then migrate existing users to alternative frequency bands including in-band migration to achieve harmonisation with the adopted channel plan⁵.

3400-3600 MHz

Vodacom submits that an audit should be conducted on the usage of this band. Vodacom supports the Authority's proposal to migrate current users in order to align the band with the adopted channel plan⁶.

3600-4200 MHz

Vodacom supports proposal not to migrate C-band to Ku-Band due to extensive usage of the band and favourable propagation characteristics of the C-Band compared to the Ku-Band.

⁵ Option C1 of ITU-R Recommendation 1036

⁶ Option F2 of ITU-R Recommendation 1036