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**Vodacom's written submission in response to ICASA's Draft Radio Frequency  
Spectrum Migration Plan 2018**

**[Government Gazette Number: 41854, Notice Number 494 of 24 August 2018]**

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## INTRODUCTION

Vodacom (Pty) Ltd (“Vodacom”) welcomes the opportunity to comment on the “Draft Radio Frequency Spectrum Migration Plan” (“the Draft Frequency Migration Plan”)<sup>1</sup> as published by ICASA (“the Authority”) in Government Gazette No. 41854, Notice Number 494 of 24 August 2018.

Vodacom confirms its 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: Vodacom’s comments in principle on the Draft Frequency Migration Plan;
- Part B: Vodacom's specific comments on the Draft Frequency Migration Plan.

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

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<sup>1</sup> Independent Communications Authority of South Africa, notice number 494 of 2018, Government Gazette No. 41854 published on 24 August 2018

## 1 Part A: In Principle Comments

Vodacom congratulates the Authority on completing the substantial endeavor of drafting a Frequency Migration Plan to migrate spectrum assignments in line with the National Radio Frequency Plan of 2018<sup>2</sup> (“NRFP 2018”).

Vodacom divides the draft Frequency Migration Plan into three distinct parts for the purpose of its analysis and commentary:

1. **The Current Radio Frequency Migration Regulations:** This appears to be schedule containing an overview of the current Radio Frequency Migration Regulations<sup>3</sup>. Vodacom notes these regulations under the assumption that the Authority is not inviting comments on final regulations.
2. **Explanatory Sections:** Sections one, two, and three in part two of the document, explain the principles and processes the Authority followed to prepare the Draft Frequency Migration Plan. Vodacom notes that these sections are very similar to the first<sup>4</sup> and second<sup>5</sup> drafts of the 2012 Frequency Migration Plan.
3. **The proposed Frequency Migration Plan:** Section four, five and six address the substance of the proposed Frequency Migration Plan.

Vodacom’s in principle comments address three overarching topics. First, Vodacom comments on the process requirements that arise from the tight coupling between National Radio Frequency Plans and Frequency Migration Plans. Then Vodacom, endeavors to shed some light on the how spectrum re-farming can be understood, in contrast to spectrum redeployment. Finally, Vodacom offers comments on the execution of spectrum migration plans.

### 1.1 A1 Principle comments on the process followed to prepare the draft Frequency migration plan

There are strong links between the National Radio Frequency Plan (NRFP) and the Frequency Migration Plan (FMP). These links are explicit in the definition of the “Radio Frequency Plan” in the Electronic Communications Act<sup>6</sup> and the The Radio Frequency Migration Regulations of 2013<sup>3</sup>.

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<sup>2</sup> Independent Communication Authority of South Africa, notice number 266 of 2018, Government Gazette Number 41650 published on 25 May 2018

<sup>3</sup> Independent Communication Authority of South Africa, notice number 352 of 2013, Government Gazette Number 36334 published on 3 April 2013

<sup>4</sup> Independent Communications Authority of South Africa, notice number 606 of 2012, Government Gazette Number 35598 published on 17 August 2012

<sup>5</sup> Independent Communications Authority of South Africa, notice number 1064 of 2012, Government Gazette Number 36031 published on 24 December 2012

<sup>6</sup> Electronic Communications Act, 2005 (Act no. 36 of 2005) as amended

The Electronic Communications Act defines the radio frequency plan as follows:

**“radio frequency plan”** means the national radio frequency plan contemplated in section 34 that includes, but is not limited to—

- (a) a table of frequency allocations for all bands below 3 000 GHz taking into account the ITU table of allocations, in so far as such allocations have been adopted and agreed upon by the Republic, which may include designations of certain utilisations; and
- (b) a plan, as applicable, for the migration of systems and equipment of existing users within specific radio frequency bands, including radio frequency bands for security services, to different frequency bands;

This suggests that combination of the NRFP and the FMP constitute the “radio frequency plan” contemplated in the Act.

The principles articulated in the Authority’s Radio Frequency Migration Regulations illuminate the link between the NRFP and the FMP as follows:

#### **4. Principles**

- (1) Radio frequency spectrum migration must be in accordance with the Radio Frequency Migration Plan.
- (2) Radio frequency spectrum migration must be consistent with the National Radio Frequency plan.
- (3) The National Radio Frequency Plan itself must be consistent with the International Telecommunications Union (ITU) Radio-regulations as updated by WRC, and with the SADC FAP.
- (4) Allocations and assignments of radio frequency spectrum that are no longer in line and accordance with the National Radio Frequency Plan will be migrated.

The Authority’s Radio Frequency Migration Regulations go further to prescribe how the relationship between the NRFP and the FMP is operationalized:

#### **Process for Radio Frequency Migration**

The Authority shall initiate a process of radio frequency migration in the following circumstances:

- (a) As specified in the Frequency Migration Plan.
- (b) Where a change in the use of a radio frequency band is required to bring the South African National Radio Frequency Plan in line with the final acts of the latest WRC and in turn, the latest ITU Radio-Regulations Edition.
- (c) Where a change in the use of a radio frequency band is required to ensure harmonisation of the latest published South African National Radio Frequency Plan with the latest approved SADC FAP.

Bearing the above in mind, Vodacom has previously proposed that the Frequency Migration Plan should ideally be incorporated in the National Radio Frequency Plan. Vodacom stands by this position.

Nevertheless, Vodacom appreciates that the drafting of a NRFP and FMP are large complicated undertakings. In 2013 the Authority finalised the Frequency Migration Plan<sup>3</sup> before finalising the National Radio Frequency Spectrum Plan of 2013<sup>7</sup>.

In the current consultation we are confronted with a situation where the Final 2018 National Radio Frequency Plan<sup>2</sup> was published in May 2018, while the consultation on the 2018 Frequency Migration Plan was initiated in August 2018. As a result, the draft Frequency Migration Plan contains a number of anachronisms and contradictions that are difficult to resolve. Vodacom deals with some<sup>8</sup>, but not all, of these in its specific comments on paragraphs in the Draft FMP.

**Vodacom proposes that the Authority ought to amend the NRFP of 2018 to resolve any inconsistencies that arise between the final FMP and the current NRFP.**

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<sup>7</sup> Independent Communication Authority of South Africa, notice number 352 of 2013, Government Gazette Number 36336 published on 28 June 2013

<sup>8</sup> Vodacom's detailed commentary focusses on the possible IMT bands identified in NF9 of NRFP 2018

## 1.2 A2 Principle comments on re-farming

South African radio frequency spectrum licenses have been converted to be technology neutral in line with the objects of the Act<sup>6</sup>.

**2. Object of Act.**—The primary object of this Act is to provide for the regulation of electronic communications in the Republic in the public interest and for that purpose to—

- (a) promote and facilitate the convergence of telecommunications, broadcasting, information technologies and other services contemplated in this Act;
- (b) promote and facilitate the development of interoperable and interconnected electronic networks, the provision of the services contemplated in the Act and to create a technologically neutral licensing framework;

The technology neutral legal and licensing framework affords licensees the flexibility to re-farm spectrum from one technical standard (eg. 2G, 3G, LTE, LTE-A) to another on a site-by-site basis to match the local traffic and device patterns. Vodacom and other South African operators optimize their Radio Access Networks to meet the needs of South African consumers in ways that would not have been possible if every change in technology standards required an amendment of the associated spectrum licenses.

Vodacom notes that the Authority's definition of spectrum re-farming (refer to paragraph *1.2.3 Spectrum re-farming* of the Draft FMP) remains unchanged from previous draft and final Frequency Migration Plans published in 2012 and 2013.

The FMP definition of spectrum re-farming is contentious and elicited comments from Vodacom, MTN, Cell-C and Telkom in response to the First Draft Frequency Migration Plan of 2012<sup>4</sup>. A source of the contention arises from the inference that spectrum licensees could be expected to amend their licenses when they re-farm spectrum from one technical standard (eg. 2G, 3G, LTE, LTE-A) to another. Such an outcome would be both impractical and counterproductive.

The contention about the term spectrum re-framing is amplified by the Authority's commentary on Spectrum Re-farming (refer to paragraph *4.12 Commentary on Spectrum Re-farming* of the current Draft FMP):

This trend also leads to the phenomenon that as a larger number of users migrate to smart-phones the incumbent 'voice only' bands i.e. GSM 900 and 1800 MHz in this case will have spectrum which is being inefficiently utilized (due to fewer users). However, as these bands have been allocated for a particular application the incumbent licensees are not able to use the same band for other purposes (e.g. mobile broadband)

This comment is followed by a number of factually incorrect *Points of consideration for GSM/Mobile bands*:

South Africa still retains a large number of its subscriber base for Voice with the current 2G GSM spectrum (900 MHz and 1800 MHz) being fully utilized by the current license holders.

Leading to a conclusion that:

Until such a stage is reached that the subscriber base using existing 2G spectrum is reduced in size to a level where the existing 2G bands have spare capacity, the issue of spectrum re-farming should not be allocated high priority.

Vodacom respectfully draws the Authority's attention to the following facts:

- Both the 2013<sup>7</sup> and the 2018<sup>2</sup> NRFP list IMT900 and IMT1800 as typical applications for the relevant radio frequency spectrum bands. Furthermore, the associated radio frequency spectrum assignments and licenses are technology neutral. Given that no IMT spectrum has been assigned for LTE in South Africa to date, the fact that South African mobile operators are able to offer 4G services demonstrates that spectrum has been re-farmed away from 2G (and 3G) to provide a more optimal and efficient mix of 2G, 3G, and LTE capacity. Vodacom and other South African operators do use "2G" bands to provide mobile broadband services using 3G and LTE in addition to GSM.
- While it is true that a significant proportion of South Africans use 2G devices for voice services, it is not true that the 900MHz and 1800 MHz bands are being utilized fully for 2G services. Vodacom acknowledges that matching 2G, 3G and LTE capacity to demand is very challenging in a spectrum constrained operating environment. For example, on sites where Vodacom uses its assignments in the IMT900 and IMT1800 bands to provide LTE services, careful capacity planning is done to ensure that sufficient capacity is set aside to carry 2G traffic.

Vodacom submits that the premise that changes to the FMP and to the NRFP are required to allow for IMT900 and IMT1800 spectrum to be used to provide services other than GSM is incorrect.

As in 2012, Vodacom proposes that Radio Frequency Re-farming be removed from the scope of the Frequency Migration Plan. Quoting from Vodacom's submission at the time:

The ITU-R states that all Administrations have plans to introduce new radiocommunication services and for some this may include the need to move existing users of the radio spectrum to new technologies of new frequency bands through the process of spectrum redeployment. According to ITU-R<sup>9</sup>, spectrum redeployment is defined as follows:

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<sup>9</sup> Recommendation ITU-R SM.1603-1

*“Spectrum redeployment (spectrum refarming) 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 timescales.”*

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 existing spectrum user to voluntarily decide to return the frequencies used to the spectrum manager for reassignment. 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 refarming 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

As a final comment, Vodacom notes that the Authority contemplates “re-farming” between IMT standards (eg. 2G, 3G, and LTE) as a means to assign IMT spectrum to new entrants:

- The GSM 900 MHz and 1800 MHz frequencies are currently occupied by the incumbent mobile operators who have nationwide assignments. If there is a case to inject competition in this market, a re-farming exercise would also need to consider ways and means to re-allocate spectrum between the incumbents and new entrant(s) so as to facilitate free and fair competition. Such an exercise could be carried out for both 900 and 1800 bands at the same time in conjunction with assignments in other bands allocated to IMT to allow existing operators to maintain their existing level of service.

In this regard Vodacom cautions that migration must not infringe on the rights of incumbent licensees.

Vodacom does not agree with the Authority’s interpretation of spectrum re-farming and Vodacom opposes the erosion of the principle of technology neutrality. Nevertheless, Vodacom supports the principle of spectrum redeployment or in-band migration of spectrum assignments when it is warranted to improve the efficiency with which IMT spectrum can be used.

## 1.3 A3 Principle comments on the execution of spectrum migration plans

### 3.3.5 Conclusions regarding time frame.

It has been established that the forward looking time frame for a process of spectrum migration should be between 3 to 5 years from the moment of announcement, unless otherwise specified.

To ensure that there is no confusion, where there are multi-year radio frequency spectrum licences, these should generally not exceed 5 years. Where there is a spectrum migration planned for a particular frequency band, there is nothing to stop a licence being issued for the period up to the date at which transmission should cease if the licensee is able to 'live with' this.

Notwithstanding the Authority's conclusion that 3 to 5 years is a reasonable timeframe to conclude spectrum migrations, experience has shown that even seemingly simple spectrum migration plans can be difficult to execute. In practice spectrum migration does not take place organically after a RFSAP has been published.

Vodacom proposes that the Authority should be capacitated to proactively drive the execution of Radio Frequency Spectrum Assignment Plans ("RFSAP"). Aspects of such capacity could include:

- a) A framework for prioritizing migration plans;
- b) Proactive identification of stakeholders and communication with stakeholders;
- c) Regular monitoring and progress reports on migration projects.

Furthermore, the Authority should guard against new spectrum assignments that could jeopardize strategic spectrum migration projects.

## 2 Part B: Specific Comments

### 2.1 B1: Development of the Radio Frequency Migration Plan

#### Paragraph 4.4.3 Analysis of SABRE

Vodacom presumes that an analysis of SABRE should have been input to the spectrum allocations in the NRFP 2018. The Draft Frequency Migration Plan traverses this ground again.

To the extent that an analysis of SABRE is meaningful at this point in time, Vodacom proposes that it should be done in terms of the current National Radio Frequency Plan (that is NRFP 2018). Accordingly, Vodacom proposes that the text of this paragraph be amended as follows:

The analysis conducted showed that the following migration of services out of specified bands as proposed under SABRE (1 and 2) was taken into consideration in developing the Radio Frequency Migration Plan ~~2013~~ **2018**.

Furthermore, table 1 would have to be updated with an analysis of SABRE in the context of NRFP 2018.

Frequency Band (MHz)	Planned Allocation under SABRE	Current Allocation in NRFP <b>2013 2018</b>

Finally, the last phrase of paragraph 4.4.3 appears to be an editorial error. Vodacom proposes that this phrase be removed:

~~WRC 15 Resolutions of which some are considered in the Draft Migration Plan 2018~~

#### Paragraph 4.6 SADC Frequency Allocation Plan (FAP)

Given that the SADC Frequency Allocation Plan was revised in 2016, Vodacom presumes that South African that the SADC Frequency Assignment Plan (“FAP”) was considered as input into the NRFP 2018, (as WRC-15 resolutions were considered for adoption.) Should this not be the case, Vodacom proposes that the NRFP be amended to reflect the extent to which South Africa adopted the SADC FAP.

**Paragraph 4.10.13 450 – 455 & 455 – 456 & 456 – 459 & 459 – 460 & 460 - 470 MHz**

This band is well suited to provide mobile broadband in sparsely populated areas as well as connectivity for the Internet of Things applications. Today the LTE device ecosystem for this band (LTE band 31) consists of 110 devices. Despite the relatively small device ecosystem, this band should be regarded as being of national strategic importance because of the role it can play as an enabler for the 4<sup>th</sup> Industrial Revolution and to provide mobile broadband in sparsely populated areas.

Vodacom notes that the Authority did develop a Radio Frequency Assignment Plan<sup>10</sup> for this band and that the plan came into effect on 1 April 2018. Vodacom proposes that the Authority engages with the current occupants of the band to agree to committed timelines for migration. Vodacom further proposes that the Authority actively monitors the progress of migration and addresses any challenges proactively.

**Paragraph 4.10.14 694 – 790MHz and Paragraph 4.10.15 790 – 862 MHz**

The effective use of spectrum in these bands for IMT services remains contingent on the successful conclusion of the Digital Terrestrial Television (DTT) Migration.

Vodacom supports government's initiatives to expedite DTT migration, so that South Africans can experience the benefits that improved mobile broadband coverage and capacity will bring as soon as possible.

**Paragraph 4.10.16 862 - 890 MHz**

Vodacom draws the Authority's attention to an inadvertent factual error in this paragraph. 880 to 890 MHz is to Cell-C not to Neotel. Vodacom proposes that following changes to correct the error:

Mobile (880-890 MHz paired with 925-935 MHz) – currently assigned to ~~Liquid Telecom (Neotel) Cell-C.~~  
C.

It is essential to note that alarms were not part of the SABRE proposed allocations and may need to be consolidated within designated alarm bands. Additionally there is some level of confusion with regards to the Wireless Access Service (824-849 MHz paired with 869-894 MHz) as part of the NRFP – given that such an assignment would interfere with the Mobile band assigned to ~~Liquid Telecom (Neotel) Cell-C.~~

Vodacom supports the proposals to:

- Align re-planning efforts within the 800 MHz band as defined in the ITA of 2016<sup>11</sup>. Government Gazette Number 40145 (Notice Number 438 of 2016).
- Remove the assignment for Wireless Access Services in this band.

<sup>10</sup> Independent Communications Authority of South Africa, notice number 270 of 2015, Government Gazette number 38640 published on 30 March 2015.

<sup>11</sup> Independent Communications Authority of South Africa, Notice Number 438 of 2016, Government Gazette Number 40145 published on 23 September 2016.

It is not entirely clear what the SADC FAP proposed common sub-allocation is, but the Authority's reference to Government Gazette 41082<sup>12</sup> suggests an intention to introduce IMT850. Vodacom opposes the introduction of IMT850 into a band plan that has been harmonized for IMT800.

The Authority's proposal to migrate existing users out of the band is too broad. A literal interpretation of this proposal suggests that the Authority is proposing that Cell-C's IMT900 assignment be migrated.

Vodacom does not support the proposals to:

- Re-plan the entire band to accommodate IMT850 as per SADC FAP proposed common sub-allocation/ utilization.
- Indiscriminately migrate existing users out of this band.

Vodacom proposes that the text be altered as follows:

It is proposed to:

- Align re-planning efforts within the 800 MHz band as defined in Government Gazette Number 40145 (Notice Number 438 of 2016)<sup>17</sup>.
- Remove the assignment for Wireless Access Services in this band.
- ~~Re-plan the entire band to accommodate IMT (terrestrial) as per SADC FAP proposed common sub-allocation/ utilization.~~
- ~~Migrate existing users out of this band.~~

#### Paragraph 4.10.17 890 to 942MHz

This paragraph deals with part of the IMT900 band. Paragraph 4.10.17 correctly references the RFSAP for IMT900<sup>13</sup> which prescribes in band migration of the original GSM900 assignments. Vodacom proposes editorial corrections to the text of this paragraph:

This ~~Plan~~ was implemented through a notice in the Government Gazette;

- RFSAP was developed and is contained in Government Gazette number 38640 (Notice Number 275 ~~of 275~~ of 2015)

#### Paragraph 4.10.18 942 to 960 MHz

This paragraph also deals with part of the IMT900 band. However, paragraph 4.10.18 contradicts paragraph 4.10.17 and is incorrect. Vodacom proposes that the contents of this paragraph be altered as follows:

**This Plan was implemented through a notice in the Government Gazette;**

<sup>12</sup> Independent Communications Authority of South Africa, Notice Number 648 of 2017, Government Gazette Number 41082 published on 1 September 2017

<sup>13</sup> Independent Communications Authority of South Africa, notice number 275 of 2015, Government Gazette number 38640 published on 30 March 2015

- **RFSAP was developed and is contained in Government Gazette number 38640 (Notice Number 275 of 2015)**

~~This band currently is allocated for GSM900 (Vodacom, MTN). There is currently no spare capacity left in this band.~~

- ~~It is proposed that:~~
- ~~No migration is planned for the band, the allocations remain as is;~~
- ~~Spectrum re-farming, when deemed necessary is carried out based upon the principles and policies defined in section 4.12; and~~
- ~~RFSAP to be developed.~~

#### **Paragraph 4.10.19 1350 - 1375 (1492- 1517)/ 1375 – 1400 (1427 – 1452) MHz**

Vodacom notes that 1427 to 1518 MHz is identified as a possible terrestrial IMT band in NF9 of NRFP 2018. The assignment of spectrum to other services in potential IMT bands can create the need for migration at a later point in time when the Authority may want to assign spectrum to IMT. Therefore, Vodacom cautions against new assignments of spectrum in the band from 1427 to 1518 MHz.

Vodacom's understanding is that spectrum allocation is dealt with the NRFP, and that an FMP must be consistent with the current NRFP. Hence Vodacom is perplexed by the Authority's proposal to "allocate" spectrum in these paragraphs. In the event that the Authority effects changes to spectrum allocations, Vodacom proposes that the NRFP be amended to ensure consistency between the NRFP and the FMP.

Given that IMT can be used both to provide mobile and nomadic services, a more restrictive allocation to BFWA is not warranted. Therefore, Vodacom does not support the allocation of spectrum in IMT bands to BFWA.

Vodacom proposes that references to allocations be removed from paragraph 4.10.19:

- ~~Allocation to rural broadband (BFWA) due to good propagation characteristics.~~
- ~~Feasibility Study was delayed until after WRC-15 decision (enabling harmonization, equipment availability etc.).~~

#### **Paragraph 4.10.20 1452 to 1492 MHz**

Vodacom observes that the band is allocated to MOBILE except aeronautical mobile, BROADCASTING and BROADCASTINGSATELLITE in NRFP 2018. Therefore the proposal to modify the allocation is superfluous.

- ~~Modify the allocation in this band and align it with the ITU Region 1 to include FIXED, MOBILE except aeronautical mobile, BROADCASTING and BROADCASTINGSATELLITE.~~

Given that IMT can be used to provide both mobile and nomadic services, a more restrictive allocation to BFWA is not warranted. Therefore, Vodacom does not support the allocation of spectrum in IMT bands to BFWA.

Vodacom proposes that references to allocations be removed from paragraph 4.10.20:

- ~~Allocate this band to PTP/ PMP/ BFWA depending upon the availability of equipment. Communal/ private repeaters could also operate in this band.~~

#### **Paragraph 4.10.28 2300 – 2450 MHz**

Vodacom supports the allocation of 2300 to 2400 MHz to IMT as in the NRFP 18 and the RFSAP for IMT2300<sup>14</sup>.

#### **Paragraph 4.10.29 2500- 2690 MHz**

Vodacom notes and supports the current RFSAP<sup>15</sup>.

#### **Paragraph 4.10.30 3400 – 3600 MHz**

Vodacom notes and supports the current RFSAP<sup>16</sup>.

#### **Paragraph 4.10.30 3600 – 4200 MHz**

Vodacom supports the migration of VSAT systems out of the 3600 to 3800 MHz band. Vodacom supports the allocation of 3600 to 3800 MHz to BFWA and the development of a RFSAP for this band.

#### **Paragraph 4.11 Summary of the Authority's decision**

It is not clear what decisions are being summarized in this paragraph. It would be strange to be informed of decisions that should only be made after consultation has concluded.

Vodacom requests that the Authority provide clarity on the context of these decisions.

#### **Paragraph 4.12 Commentary on Spectrum Re-farming**

Refer to Vodacom's principle comments on spectrum re-farming in Part A.

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<sup>14</sup> Independent Communications Authority of South Africa, notice number 276 of 2015, Government Gazette number 38640 published on 30 March 2015

<sup>15</sup> Independent Communications Authority of South Africa, notice number 277 of 2015, Government Gazette number 38640 published on 30 March 2015

<sup>16</sup> Independent Communications Authority of South Africa, notice number 278 of 2015, Government Gazette number 38640 published on 30 March 2015

## 2.2 B2: Potential Impact of Spectrum Migration

### Paragraph 5.1 Bands planned for IMT

Vodacom notes the column headings of table 3. The third column is labelled “Current allocation”. The contents of this column are not the same as in NRFP 2018. Vodacom requests that the Authority updates the content of the third column to be consistent with NRFP 2018.

The NRFP refers to IMT as opposed to GSM and UMTS. Vodacom proposes that the references to GSM and UMTS allocations be removed.

<b><del>This does not include the frequency already allocated and assigned to GSM / UMTS.</del></b>
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### Paragraph 5.2 Frequency Migration Resolutions resulting from WRC 15

Vodacom notes the list of WRC-15 resolutions with the understanding that the NRFP 2018 reflects the resolutions as adopted by South Africa and that the FMP will be consistent with the latest NRFP.

Vodacom proposes that the Authority amend the NRFP of 2018 to resolve any inconsistencies between the final FMP and the current NRFP.

### Paragraph 5.3 Other Migration Issues

Vodacom notes the column headings of table 4. The third column is labelled “Proposed allocation”.

The contents of this column are not the same as in NRFP 2018. Vodacom requests that the Authority updates the content of the third column to be consistent with NRFP 2018. Vodacom’s understanding is that spectrum allocation is dealt with the NRFP, and that an FMP must be consistent with the current NRFP. Hence Vodacom is perplexed by the apparent proposals to change band allocations in in the draft FMP. Vodacom proposes that the Authority amend the NRFP of 2018 to resolve any inconsistencies that arise between the final FMP and the current NRFP.

Vodacom notes that 1427 to 1518 MHz is identified as a possible terrestrial IMT band in NF9 of NRFP 2018. Vodacom does not support the allocation of this band to BFWA.

## 2.3 B3 Frequency Migration Plan

### Paragraph 6.1 Progress Update to Frequency Migration Plan 2013

The heading of this paragraph appears to be incorrect. Vodacom proposes that the heading be changed as follows:

Progress Update to Frequency Migration Plan ~~2013~~ 2018

The description of Column 2 appears to be incorrect. Vodacom proposes that it be changed as follows:

Column 2 states the existing allocation in the National Radio Frequency Plan ~~2013~~ 2018 and also any applications that are mentioned in the NRFP.

Vodacom, observes that the content of Column 2 is not identical to NRFP 2018. For example, 694 to 790 MHz is allocated to MOBILE on a co-primary basis in NRFP 2018, and there is no reference to RADIO ASTRONOMY in the band. Vodacom requests that the Authority verify column 2 against NRFP 2018 and rectifies errors.

The description of Column 3 states that *“Column 3 indicates the proposals for new allocations and utilization. The proposed allocation is indicated along with the source of the proposal (SABRE, WRC, SADC FAP, New ICASA proposals).”*

Vodacom requests that the Authority resolve the logical tension between an FMR that is required to be consistent with the current NRFP and an FMR that proposes new and different allocations to the current NRFP. Vodacom proposes that the Authority amend the NRFP of 2018 to resolve any inconsistencies that arise between the final FMP and the current NRFP.

Frequency Band (MHz)	FMP proposed allocation	Vodacom's position
450 to 470	IMT450	Vodacom supports migration to IMT450
694 to 790	IMT700	Vodacom supports migration to IMT700
790 to 862	IMT800	Vodacom supports migration to IMT800
862 to 890	IMT850	Vodacom opposes migration to IMT850
1427 to 1518	Rural BFWA	Vodacom opposes new assignment pending the

Frequency Band (MHz)	FMP proposed allocation	Vodacom's position
		outcome of IMT feasibility studies
1710 to 1785 paired with 1805 to 1880	Feasibility study on re-farming "GSM"	Vodacom does not agree with the Authority's understanding of re-farming. Vodacom is open to studies into the feasibility of in band migration of IMT spectrum
1920 to 1980 paired with 2110 to 2170	Feasibility study on re-farming "UMTS"	Vodacom does not agree with the Authority's understanding of re-farming. Vodacom is open to studies into the feasibility of in band migration of IMT spectrum
2300 to 2400	IMT2300	Vodacom supports migration to IMT2300
3300 to 3400	Feasibility study on the co-existence of RADAR and IMT	Vodacom supports the feasibility study
3400 to 3600	BFWA and Mobile IMT	Vodacom only supports IMT because IMT can provide both mobile and nomadic services.
3600 to 4200	Feasibility study on migration of VSAT systems out of 3600 to 3800 MHz.	Vodacom supports a feasibility study on migration of VSAT systems out of 3600 to 3800 MHz.

END