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12 October 2012

Dear Chairperson,

NEOTEL SUBMISSION - DRAFT FREQUENCY MIGRATION REGULATION AND PLAN

The following notice issued by the Authority has reference:

- Notice inviting comments regarding the “Draft Frequency Migration Regulation and Radio Frequency Migration Plan (Government Gazette no. 35598 published on 17 August 2012, notice number 606 of 2012).

Please find herewith Neotel’s submission on this notice.

Neotel would like to participate in the hearings that the Authority plans to hold following the comment period on this matter.

Please acknowledge receipt of this submission.

Yours sincerely,

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NEOTEL (PROPRIETARY) LIMITED

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Submission to ICASA:

“Draft Frequency Migration Regulation and Frequency Migration Plan”

Government Gazette No. 35598, Notice 606 of 2012, 17 August 2012

Submission Date: 12 October 2012

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1. INTRODUCTION

1. The Authority's "draft Frequency Migration Regulation and Frequency Migration Plan" present a milestone in the development of the Information and Communication Technology ("ICT") sector in South Africa. Neotel fully supports the Authority's endeavours in this regard.
2. Neotel thanks the Independent Communications Authority of South Africa ("the Authority") for the opportunity to comment on the "Draft Frequency Migration Regulation and Frequency Migration Plan" published in Government Gazette No. 35598, Notice 606 of 2012, 17 August 2012.
3. Neotel also wishes to commend the Authority for the consultative and responsive manner of engagement on this critical issue. We believe that the finalisation of this process is overdue and congratulate the Authority on its efforts in this regard.
4. Neotel's approach in this submission is to deal with each of the major proposals in the migration regulations followed by comments on the frequency migration plan that the Authority makes in turn.

2. DRAFT RADIO FREQUENCY MIGRATION REGULATION

5. Neotel supports finalisation of the draft Frequency Migration Regulation and hereby submits further comments in this regard.
6. In making these comments, Neotel assumes that the Authority has duly followed the necessary process as required by the Electronic Communications Act 36 of 2005 ("ECA") in making the regulations. In terms of section 4(5) of the ECA *"the Authority must, not less than 30 days prior to making regulations, inform the Minister in writing of its intention and the subject matter of the regulations"* (RSA, 2005).
7. Neotel observes that the draft Regulation makes reference to the Southern Africa Development Community Frequency Allocation Plan ("SADC FAP"). In this regard, Neotel wishes to inform the Authority that the development of SADC FAP had limited consultation. Neotel understands that the SADC FAP was developed under the auspices of the Communications Regulatory Authorities of Southern Africa ("CRASA"). Although the SADC FAP has been formally adopted by the ICT Ministers in Luanda in May 2010, Neotel suggests that due processes should be followed in the adoption of such Plan and that there should be continuous consultation with the industry.

8. With respect to migration cost, Neotel submits that where migration is required to be expedited, the cost of migration could be shared amongst spectrum holders.
9. Neotel suggests the following editorials on the Frequency Migration Regulations:
 - 9.1. Delete “ITU” means the International Telecommunication[s] Union.
 - 9.2. Insert “WRC” means the World Radiocommunication Conference.
 - 9.3. Section 3(4) Delete “[Allocation and] Assignments of radio frequency spectrum

3. DRAFT RADIO FREQUENCY MIGRATION PLAN

3.1 Introduction

10. Neotel commends the Authority for the detailed work completed on the “Draft Frequency Migration Plan” (“the Plan”). Neotel’s comments with respect to the draft Frequency Migration Regulation also apply to the Plan.
11. In general, Neotel supports the contents of the Plan but have some specific comments on certain allocations and sub-allocations in the Plan.
12. A further general comment is that the Plan appears to be a discussion document in nature and needs to be reworked to reflect a regulation.

3.2 Review of Legislation and Regulations (Section 2)

13. The Department of Communications has embarked on a policy review process commencing with the amendment of the ECA and the ICASA Act. The Electronic Communications Amendment Bill (2012) places the frequency planning function, hence this process, under the control of the Minister. The EC Amendment Bill further seeks to place the migration plans development with the Minister as stated in the Amendment of Section 34. Substitution of subsection (7)

“ ...the Minister must – coordinate a plan for migration of existing users, as applicable, to make available radio frequency spectrum to satisfy the requirements of the subsection (2) and the objects of this Act and the related legislation” (EC Bill, 2012).
14. In this regard Neotel submits that the Authority should consider these policy developments in order to prevent duplication and further delays in the implementation of spectrum licensing.

3.3 450 - 470 MHz (4.11.13)

15. Neotel submits that the Authority takes note of the developments in the 450-470 MHz band and also explores other bands that are as valuable as well as conducive for the development of rural Broadband Wireless Networks. In this regard reference is made to the ITU Radio Regulations footnote below of which the band is already allocated to Mobile Service and identified for IMT:

“5.286AA The band 450-470 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). See Resolution 224 (Rev.WRC-07). This identification does not preclude the use of this band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-07)”

16. The Authority has set out in Government Gazette No. 34961, Notice 44, 23 January 2012, that the rollout target and obligation on successful licensees are as follows:

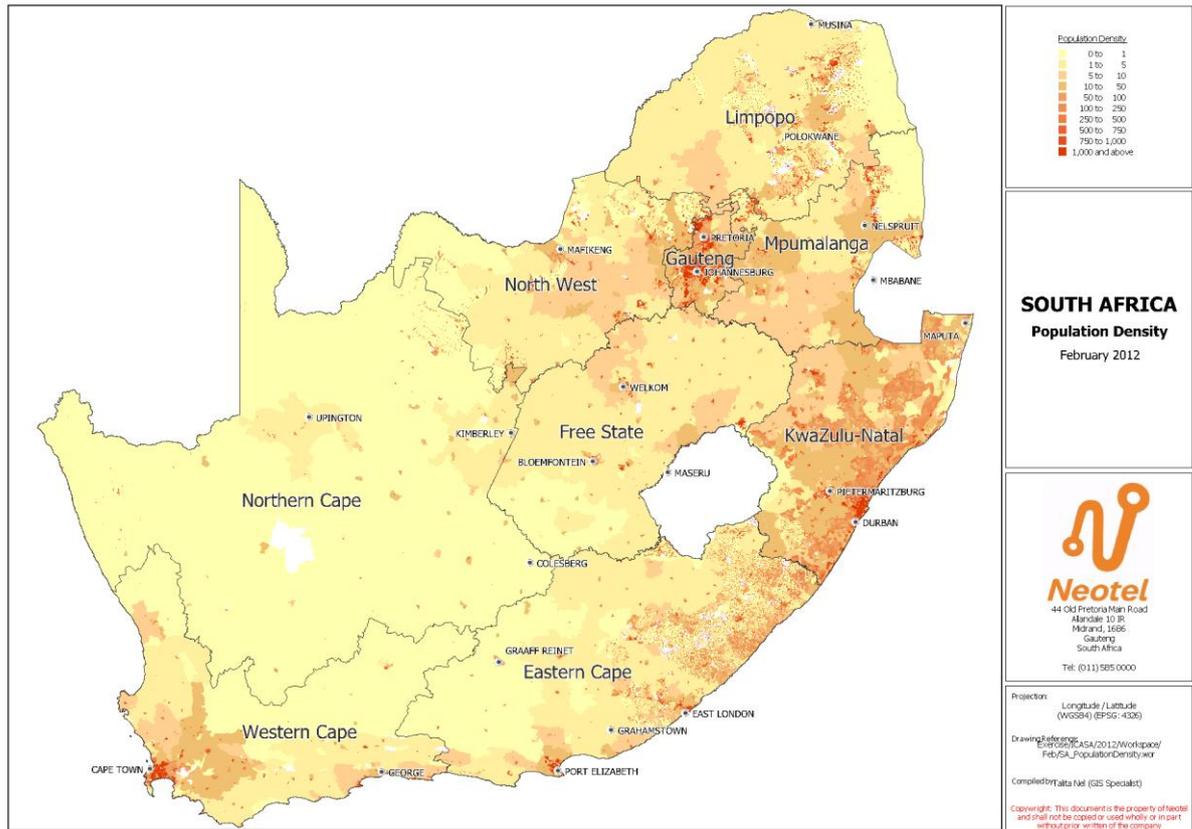
16.1. Package 1 will be 70% geographic coverage in 5 years of which 50% must exclude Gauteng, Cape Town and Durban metros;

16.2. Package 2 and 3 will be 50% population coverage in four years.

17. Neotel fully supports the Authority’s endeavours to increase access to Broadband Wireless Access services especially in the rural and underserved areas.

18. The Authority should however consider replacing the geography based coverage targets in favour of population based coverage targets. The problem with geographic coverage targets is that they mandate the rollout of networks in areas where people do not live, or in areas that are so sparsely populated, that alternatives to mobile data such as satellite broadband are significantly more cost effective. Figure 1 below shows South Africa’s population density levels in different geographic areas. The map shows large areas of land that have less than 1 person per square kilometre. Based on this, 37% of South Africa’s geographic area has a population density of fewer than 1 person per square kilometre. Further, 86% of South Africa’s geography has fewer than 10 people per square kilometre. Using the Authority’s current proposal, network infrastructure would be rolled out to the South Africa’s geography where less than 1 person per kilometre lives. This would be an inefficient means of providing access to services to those areas. Geographic coverage therefore is an inefficient means of ensuring that universal access objectives are achieved.

Figure 1: Population density map of South Africa



19. Neotel submits that radio frequency bands such as the 450-470 MHz band are better suited for coverage of sparsely populated rural areas. The 450-470 MHz band is being widely used to provide coverage in many sparsely populated developing countries, including Namibia, Mozambique, and Angola (See the CDMA450 Global Update: March 2011). The Authority should focus its attention on ensuring that this band is made available for Broadband Wireless Access as soon as possible in order to ensure that as many South Africans as possible are able to get connected.
20. In this regard Neotel supports migration from this band in order to realign the South African allocation with future technological developments to enjoy the economies of scale that the harmonised use of this band will bring to the SADC Region.

3.4 694 - 790 MHz (4.11.14)

21. The International Telecommunication Union’s (“ITU”) World Radiocommunication Conference 2012 (“WRC-12”) took place from 23 January to 17 February 2012. The ITU convenes WRC’s every 3-4 years with the participation of the Member States and Sector Members. WRCs revise the ITU Radio Regulations which include the international table of frequency allocations.

22. WRC-12 concluded its work on the 17 February 2012 with the publication of the Provisional Final Acts of that Treaty Conference which was adopted by Member States. In this regard Neotel believes that latitude should be allowed to take into account the outcomes of the deliberations at WRC-12 as endorsed by the Cabinet.
23. One of the key outcomes of WRC-12 was a resolution for sharing of the mobile services in the broadcasting bands. The following footnote was added to the band 470 to 790 MHz in ITU Region 1.
24. “ADD
- 5.3XX** *In Region 1, the use of the band 694-790 MHz by the mobile, except aeronautical mobile, services is subject to the provisions of Resolution **COM5/10 (WRC-12)**. See also Resolution **224 (Rev.WRC-12)**.” (ITU, 2012, p. 22-23).*
- Resolution **COM5/10 (WRC-12)** includes the use of the frequency band 694-790 MHz by the mobile, except aeronautical, mobile service in Region 1.
- Resolution **224 (Rev.WRC-12)** includes the frequency bands for the terrestrial component of International Mobile Telecommunications (“IMT”) below 1GHz.
25. The intention of the above-mentioned resolution is to harmonise the use of IMT across the three ITU Regions. Resolution COM5/10 (WRC-12) however resolves to allocate the band 694-790 MHz on a co-primary base and to identify the band for the use of IMT (ITU WRC-12, p. 304). WRC-12 also resolved to conduct studies on the channel arrangements in time for WRC-15 whereafter the allocation will become available immediately following that Conference.
26. Various countries, supported by other interested countries insisted to have a so-called second digital dividend (“DD2”) declared at WRC-12. Footnote 5.317A below was modified to identify parts of 698-960 MHz already allocated to mobile for IMT in R1 and R3.
- “5.317A** *Those parts of the band 698-960 MHz in Region 2 and the band 790-960 MHz in Regions 1 and 3 which are allocated to the mobile service on a primary basis are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). See Resolutions **224 (Rev.WRC-07)** and **749 (WRC-07)**. This identification does not preclude the use of these bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations (WRC-12)”*
27. Neotel supports a proactive step to maximise the value of this spectrum that might be dormant and not effectively utilised.

3.5 790 - 862 MHz (4.11.15)

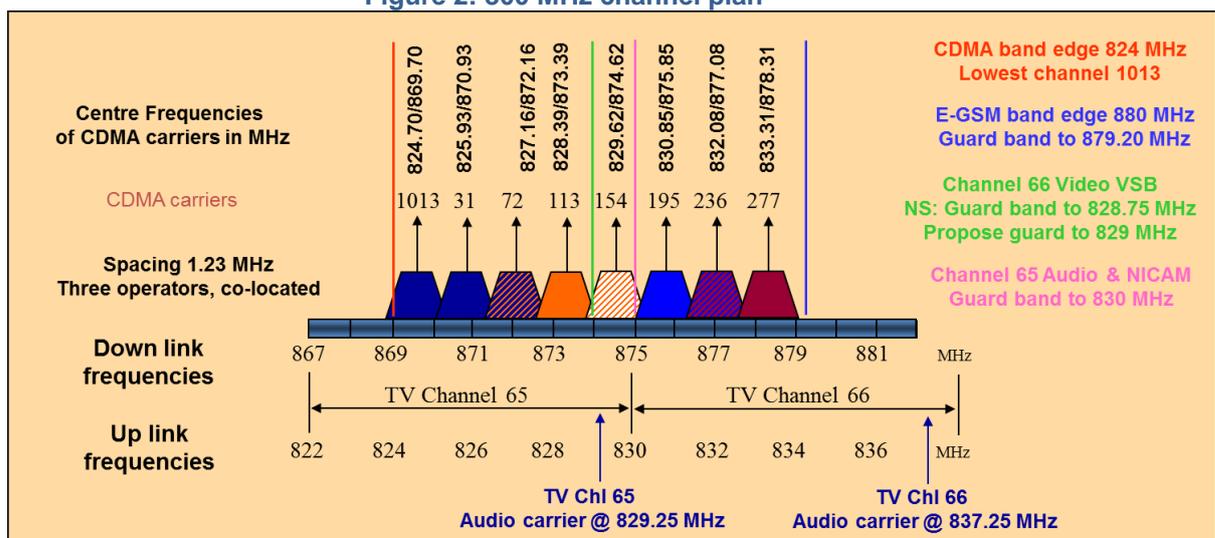
28. Neotel supports the Authority's proposed design of the frequency channel arrangements for the 800 MHz (790-862 MHz) band, in line with relevant authorities in ITU Region 1 and the relevant ITU-R recommendations. This design of the migration and channel arrangements are contained in Government Gazette 34872, General Notices 911 and 912, which capture the "Draft Spectrum Assignment Plan for the combined licensing of the 800 MHz and 2.6 GHz Bands" and the "draft Invitation To Apply for radio frequency spectrum license to provide broadband wireless access for urban and rural areas using the complementary bands, 800 MHz and 2.6 GHz".
29. With respect to GG 34872, Neotel submits that the Authority should move "Package 1" to the middle of the 800 MHz band (i.e. swap the Sentech and the Package 1 assignment). This would afford licensees the opportunity to apply for the wholesale package, and maximise 2 x 10 MHz assignment with the wholesale package assignment to allow for greater LTE capacity and speeds to be provided on a wholesale basis. This in-band migration/swap will benefit all parties who gain access to the band.
30. In the same Government Gazette, the Authority proposes assigning 2x10 MHz (791-801 MHz paired with 832-842 MHz) and a further 2x1.2 MHz (830.8-832 MHz paired with 875.8-877 MHz) in the 800 MHz band to Neotel. Neotel supports this approach to Neotel's in-band migration as follows:
 - 30.1. Following a competitive, comparative bidding process which culminated in the issuance of the SNO licence in 2006, Neotel was assigned spectrum in the 800 MHz band, which it uses to deliver consumer and SME services. As the Authority explains, Neotel has been assigned 2 x 4.92 MHz in of the band spread throughout the frequency range 827.775-832.695 MHz paired with 872.775-877.695 MHz.
 - 30.2. In 2003, ICASA obtained a study from Qualcomm supporting the dual use of the 800 MHz band in South Africa for broadcasting and telecommunication services. ICASA subsequently carried out an inquiry into sharing of 800 MHz spectrum between broadcasting and telecoms, and published its findings in February 2004. The outcome of this inquiry was a decision to conduct research to formulate possible sharing criteria between broadcasting and telecommunication services in the band. On 30 March 2004, the SA Table of Frequency Allocations was published, including National Footnote 27, which confirmed the requirement for research on sharing to be done. A field trial was undertaken in February 2005 by Transtel, Eskom, Ericsson and Qualcomm, to assist ICASA with regard to a sharing criteria. In August 2005, Neel Smuts Consultancy undertook a co-

existence study, which was submitted to ICASA. On 31 October 2006, ICASA published the outcome of its research in the Government Gazette, permitting electronic communications network operators to apply for 800 MHz spectrum, on the basis of sharing with broadcasters in TV Channels 65 and 66. Following the application, ICASA assigned 800 MHz spectrum to Neotel on 28 March 2007.

30.3. The band-plan for the use of the band - specifically for CDMA2000 or technologies using the same band plan - provides for eight 1.23 MHz uplink channels within TV Channels 65 and 66, with a total bandwidth, including guard bands, of a little over 10 MHz. The matching downlink channels are above the TV band, adjacent to the E-GSM band.

30.4. The current frequency channel plan for the 800 MHz band is depicted below in Figure 2. The total spectrum available in 800 MHz band currently for telecoms operators, in which Neotel has assignments, is therefore a little over 2 x 10 MHz.

Figure 2: 800 MHz channel plan



30.5. The Authority's planned assignment of spectrum in the 800 MHz band is therefore reasonable in the context of Neotel's existing assignments, and the need for Neotel to migrate its services within the band.

31. Neotel further wishes to bring it to the Authority's attention that the 800 MHz band (790-862 MHz) has already been allocated to MOBILE services on a primary basis (ITU, 2008). This current allocation must be corrected in Table 5 (page 66) of the "draft Frequency Migration Plan".

32. Neotel appeals to the Authority to expedite and prioritise the Digital Migration process by moving broadcasters out of these channels so that Neotel could be in a better position to roll out services to additional areas in the 800 MHz band.
33. Neotel additionally requests the Authority to commence with the licensing of 800 MHz channels well ahead of the cut-off date of the dual illumination period. This will ensure early rollout of the much needed services in the rural and underservices areas.
34. In conclusion on this band, Neotel wishes to remind the Authority of National Footnote 17 (“NF17”) in the 2008 draft Frequency Band Plan, which stated that *“No further assignments will be made in band 790-854 MHz until the migration to digital television is complete”*. Government Gazette 29345 emphasises this fact by states *“that there will be no further assignments of broadcasting services on both channels 65 (822-830 MHz) and 66 (830-838 MHz)”* (ICASA, 2006). The reason for is that if a digital transmitter is turned on in a Neotel coverage area on channel 65 or 66, this will cause harmful interference to the services that area.

3.6 862 - 890 MHz (4.11.16)

35. Neotel supports the Authority’s proposed re-planning efforts of the band in line with Government Gazette 34872 as stated above.
36. Neotel hereby wishes to make a correction under this allocation, that the Mobile assignment (880–890 MHz paired 925-935 MHz) is currently not assigned to Neotel.

3.7 890 - 942 MHz (4.11.17)

37. Neotel requests that the Authority corrects the sub-allocations and the respective assignments in this band which are, in this draft Plan, entirely assigned to Cell C.

3.8 942 - 960 MHz (4.11.18)

38. Neotel further suggests that the Authority also corrects the sub-allocations and the respective assignments in this band.

3.9 1920 - 1980 MHz paired with 2110 - 2170 MHz (3G Band) (4.11.24bis)

39. On 22 February 2012, the Authority published a notice in Government Gazette 34040, “Notice in terms of licensing of the 3G and 1800 MHz radio frequency band in South Africa”, indicating assignments in the respective bands.
40. Neotel reminded the Authority on numerous occasions of its deemed rights granted in terms of the Telecommunications Act No. 103 of 1996, section 30B (2), on access to the

third generation (3G) radio frequency spectrum bands. The 3G band in this case refers to the radio frequency channels 1920-1980 MHz paired with 2110-2170 MHz.

41. The above-mentioned Government Gazette suggests that a migration process has been concluded without proper consultation with the respective parties.
42. Neotel respectfully seeks clarity from the Authority on the status of the 3G band with respect to the above-mentioned Government Gazette.

3.10 2500 - 2690 MHz (4.11.29)

43. Neotel supports the Authority's proposed re-planning efforts of the band in line with Government Gazette 34872.

3.11 3400 - 3600 MHz (4.11.30)

44. At WRC-07 this band was allocated to the MOBILE except aeronautical mobile service on a primary basis and is identified for International Mobile Telecommunications (IMT). This allocation was agreed subject to coordination under provision No. 9.21 of the Radio Regulations (ITU, 2008). This allocation is effective from 17 November 2010.
45. Neotel submits that designating the band to IMT only is sufficient. IMT includes various standards and identifying the band to IMT will be all inclusive of the other broadband wireless access systems.

3.12 3600 - 4200 MHz (4.11.31)

46. Neotel notes that the Authority proposes to allocate parts of the C-band (3600-3800 MHz) to BFWA services. The Authority additionally proposes to migrate the VSAT services to the Ku-band.
47. In this regard, Neotel submits that while the intention of harmonisation is good, the prevention of unacceptable interference is also very critical. Furthermore, Neotel has made significant investment in providing satellite services to our customers in South Africa and on the continent. Neotel is providing services to clients in the rain affected equatorial areas such DRC and Madagascar by means of our hub station in Krugersdorp, Gauteng. Allowing terrestrial services close to Neotel's satellite receive frequencies in the C-band, 3600 – 4200 MHz, will cause enormous harmful interference to our service.
48. The C-band is critical to satellite services providers as it offers relatively reliable communications which is not as susceptible to rain fading as the higher Ku-band frequencies.

49. Neotel therefore respectfully submits that migrating VSAT services from the C-band to the Ku-band is impractical as it cannot be considered as a like-for-like substitution. The Gauteng area is extremely prone to heavy rain conditions, especially during most of the summer period; therefore the C-band is crucial in this respect as well as for covering the sparsely populated areas of the country.
50. In preparation for the WRC-07 conference, studies were conducted and concluded that it would be extremely challenging to coordinate between Fixed Satellite Services (FSS) and Broadband Fixed Wireless Systems (BFWA) which require coordination distances of tens of kilometres. At WRC-07, South Africa opposed this allocation and has not changed this position at WRC-12.
51. For the reasons above, Neotel hereby respectfully oppose this allocation and suggests that the Authority conduct further studies and consultation in this regard.

3.13 10700 - 11700 MHz (4.11.36)

52. For the same reasons mentioned in section 3.12 above, Neotel opposes blanket migration of the VSAT services to this Ku-band.

4. CONCLUSION

53. Neotel thanks the Authority for its efforts to ensure that spectrum is used efficiently and effectively. The review of the migration plan is an overdue and laudable initiative. To ensure that this happens with the intended outcomes being realised, Neotel suggests that the main issues raised in the public consultation process be considered for further inclusion in the process ahead.
54. Neotel would like to participate in any hearings that the Authority holds in respect of these Draft Frequency Migration Regulations and the Plan.
55. Neotel remains at the Authority's disposal to clarify anything in this submission or to assist in the finalisation of these Draft Regulations and Plan.