

Submission to ICASA on the discussion document regarding:

"The use and licensing of the band 57-66 GHz (V Band) and the band 71-76 GHz paired with the band 81-86 GHz (E band)."

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1. INTRODUCTION

1. Neotel thanks the Independent Communications Authority of South Africa ("the Authority" or "ICASA") for the opportunity to comment on the discussion document regarding "The use and licensing of the band 57-66 GHz (V band) and band 71-76 GHz paired with band 81-86 GHz (E band)" ("the Discussion Document").
2. This Discussion Document, published in Government Gazette No. 39180, Notice 895 of 2015, 8 September 2015, represents a further milestone in the development of the Information and Communication Technology (ICT) sector in South Africa.
3. Neotel supports the consultative and responsive manner of engagement on this critical issue and believes that the final format of a draft Regulation - effectively consulted upon - will ensure that the radio frequency spectrum is utilised efficiently as well as streamlining the Authority's spectrum award processes.
4. Neotel's approach in this submission is to make some general comments on the Discussion Document followed by detailed comments on the questions of the same.

2. GENERAL COMMENTS

5. Subject to concerns raised below, Neotel supports the finalisation of the proposed draft new Regulations and will submit further comments in this regard.
6. The Authority has published this Discussion Document for consultation as stipulated *"in terms of section 4(4)b of the Electronic Communications Act (Act No. 36 of 2005) ("ECA")*".
7. **Section 4 of the ECA refers to "Regulations by the Authority", with subsection 4(4) referring to publication of a draft Regulation for comments. Subsection 4(4)b thereof invites interested parties to make comments on a draft regulation.**
8. **The discussion document appears to be an inquiry under section 4B (Inquiries by Authority) of the ICASA Act. Neotel seeks clarity in this regard.**
9. Neotel further supports the suggestions in the Discussion Document to introduce a licence-exempt approach for the V band and a hybrid approach – a combination of light licensing and full licensing – for the E band.
10. In making further comments, Neotel assumes that the Authority shall follow the necessary due processes as required by the ECA and the ICASA Act in finalising a proposed new draft Regulation.

3. QUESTION 1

11. **Do you think light licensing would be an appropriate approach for the E band in South Africa?**
12. A combination of light licensing and full licensing in the E band has been deployed in many other jurisdictions the world over. The table below illustrate some of the pros and cons for the various types of licensing regimes that could be deployed in the E band:

License Type	Pros	Cons	Notes
Unlicensed **Examples: Russia**	Fastest rollout No recurring license fees	No guarantee against interference	Usable in Enterprise applications, where link density is very low and licensing can be a hassle
Lightly Licensed **Examples: USA, UK**	Usually quite cheap Still quite fast to rollout Some moderate guarantee against interference	No real guarantee in case of fast, dense rollouts by several operators Interference analysis cost is transferred to the operator	This type of licensing has been used to promote E-Band For mobile backhaul, the risk of interference (and cost of analysis) make it unsuitable
Fully Licensed **Examples: Germany**	Full protection of investment Very dense network rollouts by competing operators are possible	License cost can be significantly higher than affordable for mobile backhaul Speed of license issuing can be a hassle o rollout	Ideally this is the perfect solution for carrier-class network deployments and investment protection The (total) cost of licensing can nonetheless be prohibitive for massive rollouts

Source: Huawie

13. Neotel therefore supports a hybrid of light licensing and full licensing for the E band.

4. QUESTION 2

14. **Are there any other licensing approaches that should be considered by the Authority for the E band?**
15. Generally spectrum licensing and assignments are done in-house within a Regulatory Authority or an Administrative body. The other alternative is to outsource the coordination and assignment function to a trusted third party such as a spectrum management agency. The trusted third party could also be called a "Band Manager" which will have assignment or licensing rights of a designated block of radio frequency spectrum.
16. The introduction of a band manager will be to reduce transaction costs and the coordination and authorisation processes might be more efficient and effective in assigning and licensing the spectrum in a designated band.
17. As such the designated band E band could be awarded to the Band Manager or trusted third party through a competitive licensing process.
18. Neotel suggests that the Authority explores the Band Manager option.

5. QUESTION 3

19. **What other applications for E-band spectrum should the Authority consider as part of this process, and should such applications impact either the licensing approach?**
20. Neotel supports the list of applications mentioned in the discussion document.
21. Machine-to-Machine and over the top ("OTT") type of applications could be accommodated on this spectrum band.

22. Neotel is further of the view that consideration should be given for security services that could deploy services in the band in covert operations. These aforementioned operations may require a full license regime in segments of the E Band.

6. QUESTION 4

23. **Do you think a self-coordinated approach is appropriate under certain circumstances in the E band?**
24. The ECC Report 80 summarised a "light licensing regime" as: *"Light licensing regime, where the position and characteristics of the stations are recorded on a database on a first-come first-served basis, with responsibility for subsequent users to ensure the compatibility with previously notified stations"*.
25. However, Neotel submits that a hybrid of light licensing and full licensing regime should be deployed in the E Band. The full licensing regime in segments of the E band will allow operators to provide carrier grade services which may not be possible in licence exempt or light licensing environment.
26. Fibre breaks often happen in dense areas where many operators may have deployed services in the E band. Self-coordination in the entire band may lead to anticompetitive behaviour by rival operators which may slow down fast deployment and restoration of services.
27. Neotel supports a self-coordinated approach in certain segments of the E band.

7. QUESTION 5

28. **Are there any other potential approaches apart from band segmentation to accommodate the different spectrum demands in the E band?**
29. Neotel believes that band segmentation for the E band is the only option as this will alleviate the long delays in deploying services and extensive dispute resolutions. The segmentation approach will satisfy all requirements of Government and Non-government users.

8. QUESTION 6

30. **What other applications for V-band spectrum should the Authority consider as part of this process?**
31. The spectrum usage regimes are rapidly moving towards flexibility, technology neutrality, and sharing of valuable spectrum resources. Increasingly radio frequency spectrum technologies is moving towards dynamic and flexible spectrum management regimes. The ITU ICT Regulatory toolkit states that "the idea that a spectrum authorisation can be issued which is technology neutral is being replaced by a concept of technology flexibility since interference cannot be entirely avoided."
32. Neotel proposes that the deployment of applications in the V band be technology agnostic.

9. QUESTION 7

33. **What technical sharing criteria should apply in a licence-exempt environment?**
34. The V band is generally intended for the deployment Short Range Device (SRD) in an uncoordinated/unplanned deployment. Harmful interference will most likely exist between multiple users of the band.
35. Neotel is therefore of the view that, considering that the SRDs spectrum band ranges in the V band have already been allocated in the South African regulatory framework, regulatory emission limits should be set in line with industry standards and FCC and ECC recommendations.

10. QUESTION 8

36. **What principles should guide the allocation of spectrum for V band services?**
37. In order to maintain a fair and efficient use of the V band, limitations in the emissions levels often in the antenna gain has to be imposed.
38. For the ease of rapid interference resolution, Neotel suggests that all users of the V band be registered and that at least an Electronic Communication Services ("ECS") licence is required to deploy services in this band.

11. QUESTION 9

39. **As a general principle with, should the Authority relax the transmit power restrictions on case by case basis e.g. rural areas where interference risk is lower than in urban/densely populated areas?**
40. As illustrated in Figure 2 of the discussion document, the V Band is highly susceptible to rain attenuation and clear-sky attenuation caused by atmospheric absorption. This atmospheric absorption limits the distances that could be reached in the remote rural areas in anyway.
41. Neotel submits that the transmit power restriction be consistent throughout all geographic areas.

12. QUESTION 10

42. **Is there another approach that should be considered by the Authority?**
43. Neotel proposes that the Authority explores, as suggested in Question 2, the option of a Band Manager.

13. QUESTION 11

44. **Should the Authority consider conventional licensing? If so, please provide reasons.**

45. As per our previous response, Neotel is of the view that spectrum in the E band must be segmented with part of the band being coordinated through a light licensing regime and part of the band must be assigned on a conventional first-come-first-serve basis.
46. If the "band manger" or "third party outsourcing" approach is adopted, the Authority will have to consider awarding the band through a comparative bidding process such as a beauty contest or an auction.

14. QUESTION 12

47. **Do you agree with the concept of segmentation for the purposes of providing both a light-licensing and a full -licensing approach? Please provide reasons for your position.**
48. As per Neotel's previous responses, we support the concept of segmentation of the E band for light touch and full licensing regime.

15. QUESTION 13

49. **Do you agree with the segmentation as proposed?**
50. Neotel agrees with the E band segmentation as proposed.
51. Neotel however believes that the type of link-by-link coordination should be closer to light touch licensing to avoid extraordinary delays for access to the spectrum. For the avoidance of doubt, the technical sharing parameters must be set upfront in regulation to avoid harmful interference cases.

16. QUESTION 14

52. **Will online registration be feasible?**
53. Neotel believes online secure registration is feasible and that Government and non-Government links require filing with the Authority for each link for the purpose of coordination and registration. In addition registering each link in a database for the purposes of cases such as the following:
    - Environmental Assessment,
    - International coordination, and
    - Deployment in the SKA Zones.
54. It should be noted that the licensee is in the best position to determine the nature of its operations and whether those should be submitted for registration.
55. Neotel suggests that a transition period for registration should be implemented where services are already deployed in the band.

17. QUESTION 15

56. **Will a 14 day registration requirement be effective and practical?**
57. Neotel supports the 14 day registration period for the light touch regime which should be in the form of a notification.
58. Neotel submits that a provision should be included stating that on expiry of the 14 registration period, the filing to ICASA will be deemed coordinated.

18. QUESTION 16

59. **Is there another approach that should be considered by the Authority?**
60. Neotel believes that, in the light touch approach, the online registration is the most efficient and effective manner for coordination. This will certainly lower the transaction costs and will largely alleviate the administration burden in the case of paper based applications.
61. The advantage of online registration and coordination is that it can be done from anywhere in the country.

19. QUESTION 17

62. **Are there any other factors that the Authority should consider?**
63. Neotel suggests that the Authority, in advance, prescribes the data set formats (including software) to be submitted for coordination.

20. QUESTION 18

64. **Is this type of regulation (for at least a portion of the E band) really necessary in view of light-licensing looking fairly attractive?**
65. Neotel submits that there is a need for a segment of the E band to be fully licensed only. For fixed line (fibre) operators, access to the E band has to be available immediately. Radio frequency channels in the E Band have to pre-licensed and coordinated to avoid any delay in deploying fibre breaks or in case where trenching is impossible or subjected to extensive environment impact assessments. This will also avoid long outages and allow operators to be compliant with the parameters set out in the Subscriber-End User Service Charter regulations and license terms and conditions.

21. QUESTION 19

66. **Do you have any views as to whether the self-coordination approach or the regulator-coordinated approach is preferable?**
67. Neotel believes that the self-coordinated approach should be applied in the case of light touch and regulator coordinated approach for a fully licensed regime.

22. QUESTION 20

68. **Do you think an annual licence fee per point-to-point link is an appropriate approach whereby the licensee has exclusive, protected spectrum?**
69. Neotel agrees on the principle of recovering costs to protect exclusive assignments and that a once off spectrum application fees be paid to the entity managing the band. Annual spectrum should also in line with the cost of managing exclusive assignments.
70. Since the channel bandwidth will at least 250 MHz, it is not practical to charge spectrum fees using the current AIP formula, as any factor of bandwidth will escalate the fees substantially.
71. Neotel therefore submits that the Authority charge a flat rate in line with cost recovery to process an application.

23. QUESTION 21

72. **Do you think this is a sensible approach? Please provide alternative suggestions if you disagree.**
73. Neotel agrees with this approach as this will give national operators flexibility to rollout faster and more effectively and therefore could manage its own internal interference analyses and coordination.

24. QUESTION 22

74. **Do you think it is a reasonable approach to do away with the exclusivity of a frequency channel to a specific user if there is a need for spectrum by other users who cannot be accommodated in alternative channels, because of congestion? Please provide alternative suggestions if you disagree?**
75. Neotel agrees with this approach as it is the methodology the Authority is currently employing successfully.

25. QUESTION 23

76. **Whether the Authority should specify channels?**
77. Neotel agrees that the channels should be specified as it provides certainty to operators and suppliers.

26. QUESTION 24

78. **If the Authority should specify channels, whether they should be for FDD or TDD or both?**
79. Neotel submits that the Authority should confirm the mode of transmission upfront. Neotel is of the view that for the E band FDD and V Band TDD should be specified upfront.

27. QUESTION 25

80. **How the channels should be specified, also considering RF bandwidth.**
81. Neotel suggests that the Authority follow due processes to adopt the channel plan and specify the options in the draft regulation.

28. QUESTION 26

82. **Please indicate if you agree with the Authority's view.**
83. Neotel agrees with the Authority's view that the V band should be made licence exempt. In terms of ITU Radio Regulations Table of Frequency Allocation (footnote 5.138), a portion of the band has already been declared as an ISM band.

29. QUESTION 27

84. **What other considerations should guide the Authority's decision in this regard?**
85. Neotel submits, that should the Authority designate the V band as licence exempt, that the necessary consequential amendments to National Table of Frequency Allocation and a possible footnote in the ITU and SADC Table of Frequency Allocations for the V Band be implemented.

30. QUESTION 28

86. **Do you think there are any risks or other factors that the Authority should consider before making the decision that a licence-exempt approach is appropriate for the V band?**
87. Neotel's view is that considering the adoption of the ITU and international channel arrangement for the V Band, the Authority has eliminated all the known risks associated with this band.

31. QUESTION 29

88. **Do you think there may be benefits to requiring link registration in this band and that this should be considered?**
89. Neotel submits that the Authority should not register the individual links in the V band, but operators that wish to use the band must register on a database for ease of identification and coordination purposes.

32. QUESTION 30

90. **If you think that links should be registered, would you consider that to be compatible with MWGS to be licence-exempt?**
91. Neotel submits that no link registration is required, but rather a notification to the Authority that the licensee will be using the V band should be obligatory.

33. QUESTION 31

92. **Do you agree with the parameters set out above? Please substantiate your response.**
93. Neotel agrees with the Authority's compulsory parameters as it is in line with ECC/REC (09)01 which only applies to the band 57-64 GHz. However Neotel believes the Authority should specify and align the various parameters with those applications in the band, which will be as per the technical parameters specified in the National SRD Regulations.
94. Neotel submits that the Authority should be mindful of other applications already designated in the sub-bands.

34. CONCLUSION

95. Neotel thanks the Authority for its efforts to ensure that spectrum is used efficiently and effectively. The finalisation of the proposed draft Regulations is long overdue and it is a laudable initiative. To ensure that this happens with the intended outcomes being realised, Neotel suggests that the main issues raised in this public consultation process be considered for further inclusion in the process ahead.
96. Neotel would like to participate in any hearings or further consultation that the Authority holds in respect of this discussion document.
97. Neotel remains at the Authority's disposal to clarify anything in this submission or any radio frequency spectrum related matter to assist in the finalisation of the anticipated regulatory framework.