



27 November 2015

ICASA

Attention: Mr M S Mchunu

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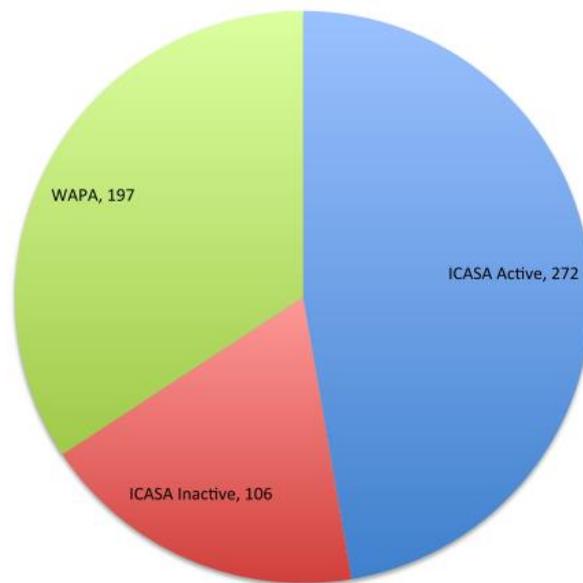
Dear Sir

SUBMISSIONS 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)”

1. WAPA refers to 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)” published as General Notice 895 of 2015 in GG 39180 on 8 September 2015 (“**the Discussion Document**”).
2. Our responses to the invitation to comment on the Discussion Document can be summarised as follows:
 - 2.1. We applaud measures already taken by the Authority to open up use of radio frequency spectrum bands above 50 GHz and welcome the initiation of a new process in the same vein to facilitate use of the V and E Bands.
 - 2.2. We support the proposal regarding the V Band.
 - 2.3. We offer qualified support for the proposal regarding the E Band.

WAPA's interest in the Discussion Document

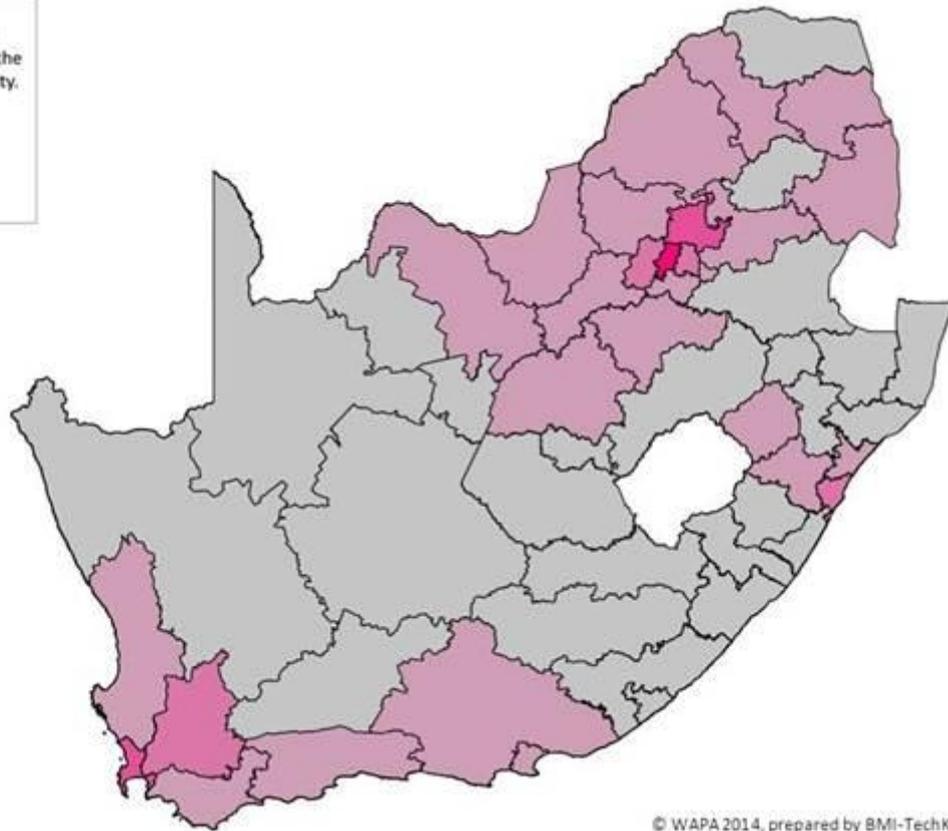
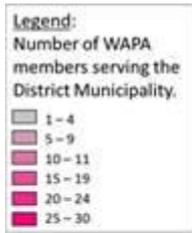
3. WAPA was formed in 2006 as a non-profit organisation representing the Interest of wireless Internet service providers (WISPs) in both urban and rural locations in South Africa. WAPA promotes technical and business best practices for wireless connectivity providers and engages in policy work to promote spectrum allocation and assignment, wholesale service provision and SMME enablement.
4. WAPA currently represents more than 220 organisations, including large and small players, as well as support industries such as equipment vendors and software providers.



WAPA Current Market share of active ICASA ECNS license holders
42%

Source: www.icasa.org.za, WAPA membership database

5. The average WAPA member is an SMME providing extensive coverage in rural areas in South Africa where there is no cost-effective alternative access means. WAPA members are found throughout South Africa and collectively have an extensive footprint.



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Figure 1: WAPA Members Coverage across District Municipalities, 2014

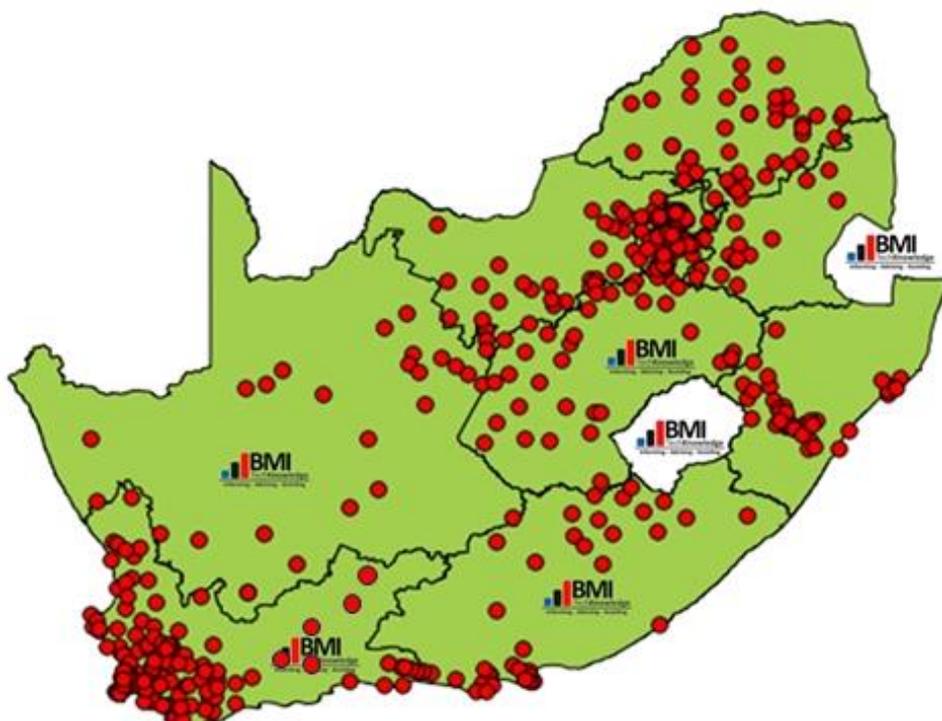


Figure 2: WAPA Members Coverage Map, June 2012 - WAPA members collectively have quite an extensive footprint, with a specific focus on rural areas.

6. WAPA members have a proven track record of price reduction and service innovation in the provision of broadband services to areas which, as a consequence of perceived commercial non-viability, have been largely neglected by the large operators.
7. It should be noted that the strong growth in this industry has been made despite the legal and regulatory constraints imposed on operators in this industry, the lack of support and the non-availability of critical scarce resources such as licensed radio frequency spectrum suitable for the deployment of broadband access networks. There has been huge growth in the fixed wireless access industry; it is estimated that there may be as many as 500 SMME wireless access providers in South Africa.
8. WAPA members generally focus on using open standard wireless technologies such as the 802.11 Wi-Fi standards, but an increasing number of members also hold licensed spectrum in the upper GHz ranges for the purpose of operating point-to-point links.
9. WAPA works to promote the model of community-based SMMEs covering small areas and interconnecting with each other to achieve ubiquitous coverage. This fosters job creation and skills transfer, and results in deepening broadband penetration in South Africa.
10. More information about WAPA is available from <http://www.wapa.org.za>.

The E Band

1 Do you think light licensing would be an appropriate approach for the E band in South Africa?

WAPA supports light licensing as a spectrum management model and would welcome its introduction in South Africa. As an association of wireless Internet service providers (WISPs) we have experienced the massive growth in use of the 5.8 GHz band which has rendered it unusable in some areas and this is a feature of licence-exempt spectrum use in South Africa. We believe that light licensing – properly implemented – provides a degree of control over and coordination of usage which can benefit the industry and allow improved quality of service for users.

We are concerned, however, that the design, testing and implementation of a system may lead to unnecessary delays in making E Band spectrum available and would therefore support allocation of the relevant portion of the band on a licence-exempt basis until such time as a light licensing framework can be implemented.

2 Are there any other licensing approaches that should be considered by the Authority for the E band?

There are five broad licensing approaches which can be considered:

- Licensed
- Licence-exempt
- Light-licensed
- Split: licensed, licence-exempt
- Split: licensed, light-licensed

WAPA:

- Does not support a full licensed approach on the basis that this does not constitute an efficient use of the available spectrum in the band taking into account the properties of spectrum in the band which reduce the need for full co-ordination
- Supports a licence-exempt model
- Supports a light-licensed model
- Supports a model which provides for both licensed and licence-exempt use
- Supports a model which provides for both licensed and light-licensed use

This support is based on efficiency considerations as well as the need to enable competition and to maintain a balance between licensed and other management models. Given the nature of the band the primary advantage of licensed over light-licensed use is certainty in future network deployment.

We note that other jurisdictions have adopted a variety of approaches, as detailed in ETSI White Paper No. 9: E-Band and V-Band: Survey on status of worldwide regulation¹.

¹ http://www.etsi.org/images/files/ETSIWhitePapers/etsi_wp9_e_band_and_v_band_survey_20150629.pdf

3 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?

Members have identified potential uses of this band for extension of existing fibre-based networks through delivery of last-mile fibre-like solutions, other access provision and backhaul services. We do not see any impact on the proposed licensing approach.

4 Do you think a self-coordinated approach is appropriate under certain circumstances in the E band?

See response to question 1 above.

5 Are there any other potential approaches apart from band segmentation to accommodate the different spectrum demands in the E band?

We support the proposed approach.

The V Band

6 What other applications for V-band spectrum should the Authority consider as part of this process?

The V Band can be used for backhaul, gigabit connections and ad hoc high-capacity links.

7 What technical sharing criteria should apply in a licence-exempt environment?

We support use of Transmit Power Control (TPC) as required in other licence-exempt bands in South Africa. A minimum antenna gain of 30dBi is generally applied in other jurisdictions.

We do not support a requirement to use Dynamic Frequency Selection (DFS) which has proved highly problematic to our members.

The characteristics of this spectrum allow for a high degree of spectrum reuse due to narrow beamwidth and we agree that there is no need for co-ordination in the V Band.

8 What principles should guide the allocation of spectrum for V band services?

The V Band should be allocated as licence-exempt subject to the above technical requirements and type approval of equipment.

9 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.

Yes. While there is obviously a concern with how this could be controlled, there is a greater amount of spectrum available in rural areas with an associated lower risk of interference.

WAPA wishes to express its strong support for this kind of approach. Greater flexibility in spectrum management can play a key role in bring affordable and improved services in rural areas.

Suggestions for regulatory approaches to the E Band and V Band

10 Is there another approach that should be considered by the Authority?

We believe that all possible approaches have been canvassed.

The proposed E-band framework

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

We do not support a conventional licensing approach on the basis that this does not constitute an efficient use of the available spectrum in the band taking into account the properties of spectrum in the band which reduce the need for full co-ordination. Further such an approach ignores the potential for innovation and competition based on use of this band.

12 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.

We agree that the approach is practical and affords protection to licensed users but note that it limits flexibility and aggregation of 250 MHz channels for higher capacity links, i.e. it effectively limits aggregation to 10 x 250 MHz.

13 Do you agree with the segmentation as proposed?

Yes.

14 Will online registration be feasible?

Yes. As set out above, however, we are concerned about the time taken to implement an online registration system.

15 Will a 14 day registration requirement be effective and practical?

Yes, recognising that there is an incentive to register links as quickly as possible.

16 Is there another approach that should be considered by the Authority?

As noted above we support allocation on a licence-exempt basis until a light licensing framework is established.

17 Are there any other factors that the Authority should consider?

None that we are aware of.

18 Is this type of regulation (for at least a portion of the E band) really necessary in view of light licensing looking fairly attractive?

As noted above a licensed portion of the band provides certainty in terms of network planning. WAPA supports a future review of this position based on uptake in the licensed portion of the band.

19 Do you have any views as to whether the self-coordination approach or the regulator-coordinated approach is preferable?

Nothing further to that set out above.

20 Do you think an annual licence fee per point-to-point link is an appropriate approach whereby the licensee has exclusive, protected spectrum?

Taking into account the decision by the Authority to apply the minimum fee to PtP links above 50 GHz, annual radio frequency spectrum fees will be minimal.

The cost of utilising the light licensed portion of the band should not exceed the annual licence fee and application cost applied to use of the licensed portion.

21 Do you think this is a sensible approach? Please provide alternative suggestions if you disagree.

This is a bulk licensing arrangement and the status of bulk assignments appears unclear. Presumably the spectrum assigned would then be charged for according to the PtA formula at ZAR15 000 000 per 250 MHz channel. This does not seem feasible.

22 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?

We agree that this is a reasonable approach. There should be a relaxed application process whereby an operator could apply for access to that spectrum if it can be demonstrated that there is no other available spectrum in those bands.

23 Whether the Authority should specify channels?

The Authority should not place a limitation on the channels.

24 If the Authority should specify channels, whether they should be for FDD or TDD or both?

WAPA has no specific comment.

How the channels should be specified, also considering RF bandwidth?

We support the adoption of 250MHz channels.

The proposed V-band framework

26 Please indicate if you agree with the Authority's view.

We agree with the proposal as set out in the Discussion Document.

27 What other considerations should guide the Authority's decision in this regard?

Speedy implementation of the proposal regarding the V Band will allow for explosive growth in the municipal areas by allowing deployments on an interim basis pending obtaining the required municipal and other permissions. C

28 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?

None that we are aware of which are additional to the technical considerations referred to above.

29 Do you think there may be benefits to requiring link registration in this band and that this should be considered?

The characteristics of the band strongly militate towards licence-exempt allocation. There is a view within WAPA, however, that link registration as a mandatory requirement will assist with unlicensed operators and provide a model where licensed operators can be more easily identified.

30 If you think that links should be registered, would you consider that to be compatible with MWGS to be licence-exempt?

We have no comment in this regard.

31 Do you agree with the parameters set out above? Please substantiate your response.

Yes.

Conclusion

11. WAPA trusts that the above submissions will assist the Authority in its deliberations around this process and is committed to assisting further.

Regards

WAPA Regulatory Advisors