

12 October 2012

Independent Communications Authority of South Africa

Attention: Mr Manyapelo Richard Makgotlho

Email: rmakgotlho@icasa.org.za

Dear Sir

WAPA'S SUBMISSIONS ON THE DRAFT FREQUENCY MIGRATION REGULATIONS AND DRAFT FREQUENCY MIGRATION PLAN

1. WAPA has noted the publication by the Authority of Draft Frequency Regulations ("the Draft Regulations") and a Draft Frequency Migration Plan ("the Draft Plan") for public comment and sets out its submissions on these documents below.

General comments

2. WAPA welcomes the undertaking by the Authority of the exercise which has resulted in the publication of the Draft Regulations and Draft Plan. These are critical high-level frameworks which will form a context for specific spectrum assignment plans and should help to guide industry in its future planning.
3. WAPA's general view is that – while different parties may have specific difficulties with the Draft Regulations and the Draft Plan dependent on their current positioning and perspective – both documents are sound and the proposals made are generally substantiated.
4. It is therefore unfortunate that the Draft Plan has had to be presented without – to the best of WAPA's knowledge – the Authority having access to the results of a comprehensive audit of current levels of utilisation of spectrum in South Africa. WAPA appreciates that this matter is currently beyond the control of the Authority but the Authority will nevertheless agree that making spectrum management and migration decisions in the absence of accurate data is fundamentally unsound practise.

The Draft Regulations

5. WAPA has no specific comment with regard to the Draft Regulations.

The Draft Plan

6. WAPA has more than 120 members providing wireless access and backhaul services. Of necessity the majority of these members use licence-exempt spectrum for service provision,

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particularly for the provision of the access part of their network where no viable licensed spectrum alternatives are available.

7. It follows that WAPA welcomes and strongly supports the sections of the Draft Plan setting out the intention to allocate greater amounts of frequency for Broadband Fixed Wireless Access (BFWA) and especially Rural BFWA.
8. WAPA submits that the proposal to allocate the 1350 – 1375 (1492-1517) / 1375 – 4000 (1427-1452) MHz band to rural BFWA has significant potential to enable service providers to significantly improve their service offering by providing better-managed access services using licensed spectrum.
9. In the same vein WAPA welcomes and supports the more general BFWA proposals set out in sections 4.11.20, 4.11.24, 4.11.25, 4.11.26 and 4.11.27 of the Draft Plan.

Increasing spectrum allocated as licence-exempt / lite-licensed

10. WAPA is concerned that the Draft Plan does not indicate any intention to increase the amount of radio frequency spectrum to be made available on a licence-exempt or light-licensed basis for fixed links.
11. The Authority is well aware of the benefits accruing to creating more licence-exempt or lite-licensed bands and that these benefits accrue to consumers as well as to all users of spectrum, WAPA submits that an opportunity is being missed to build on the proven success of the 5 GHz and 17 GHz bands in enabling service provision.
12. WAPA submits further that there is a great deal of spectrum above 10 GHz which could and should be made available on a licence-exempt basis or such other alternative licensing model as may be appropriate.
 - 12.1. To illustrate this point WAPA requests that the Authority give due consideration to including a migration plan for the 24 GHz band, which is currently not dealt with in the Draft Plan.
 - 12.2. The current allocation of this band as set out in the National Radio Frequency Plan is as follows:

ITU Region 1 Allocations	South African Allocations	Typical Applications	Comments
24.00 - 24.05 AMATEUR AMATEUR-SATELLITE 5.150	AMATEUR AMATEUR-SATELLITE 5.150	ISM (24-24.25 GHz)	Government Gazette No 31290, Notice No 926 of 2008 refers
24.05 – 24.25G RADIOLOCATION Amateur Earth exploration-satellite (active) 5.150	RADIOLOCATION Amateur Earth exploration-satellite (active) 5.150	ISM (24-24.25 GHz)	Government Gazette No 31290, Notice No 926 of 2008 refers

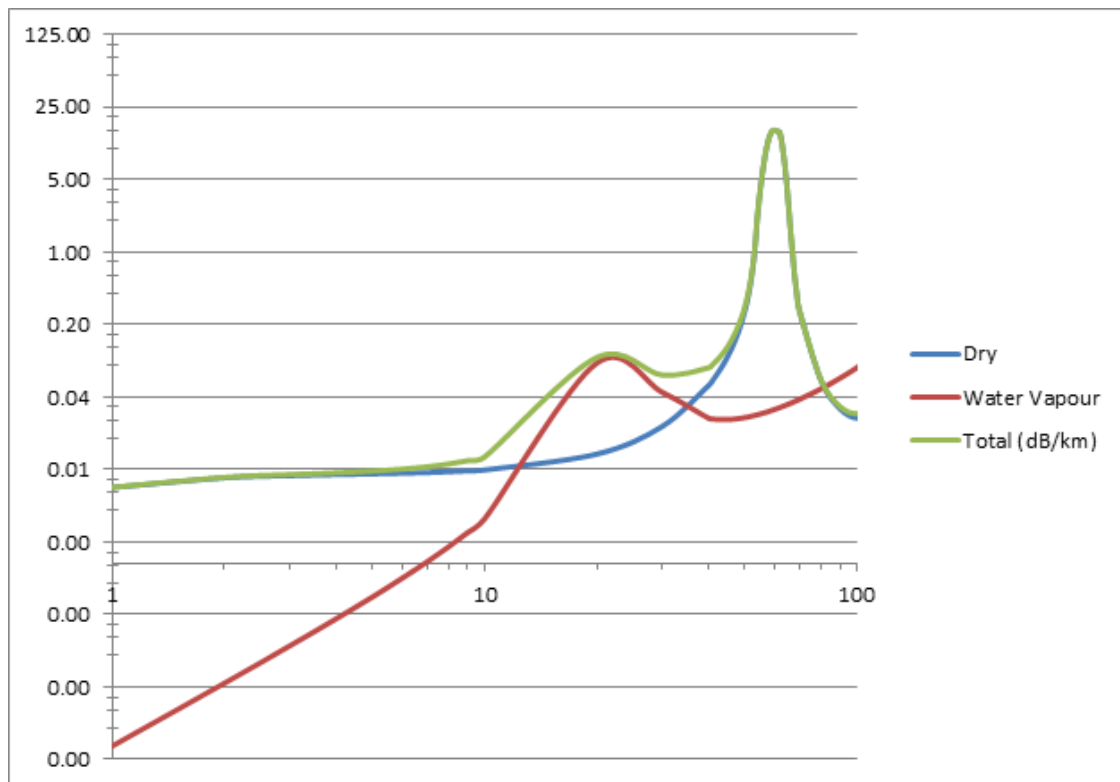
- 12.3. The secondary, licence-exempt basis on which this band may be used is detailed in Annexure B to the Radio Regulations 2010:

Frequency Band	Type of Device	Maximum Radiated Power or Field Strength Limits & Channel Spacing	Relevant Standard	Additional Requirements
24.00 - 24.25G	Non-specific SRD	100mW eirp. No duty cycle restriction. No channel spacing.	EN 300 440 EN 301 489-1,3 EN 60950	CEPT/ERC/REC 70-03
24.05 – 24.25G	FDDA	100mW eirp. No duty cycle restriction. No channel spacing.	EN 300 440 EN 301 489-1,3 EN 60950	CEPT/ERC/REC 70-03

- 12.4. WAPA's view is that this band should be made available for a wider range of uses, including fixed high-capacity PtP links using highly directional antennas, and that the maximum eirp should be increased for such services.
- 12.5. WAPA submits that this band (amongst others) has the potential to provide for a range of point-to-point transmission facilities to support local broadband distribution and network applications.
- 12.6. WAPA notes that there is already equipment such as Ubiquiti airFibre (<http://www.ubnt.com/airfiber>) which is being widely deployed in other jurisdictions as a cost-effective solution to wireless broadband provision in underserved areas. Under the current allocation for 24GHz ISM this equipment cannot be deployed in South Africa.
13. In the same vein WAPA notes with concern that the Draft Plan does not cater for bands above 40 GHz, with particular reference to the V-Band (60 GHz) and E-Band (70 – 80 GHz and 92 – 98 GHz).
- 13.1. The V-Band is currently seeing the commencement of substantial deployments under the 802.11ad standard across the world¹. Use of this band is characterised by significant capacity throughput over very short distances as a result of the atmospheric absorption / attenuation in the band.
- 13.2. This is illustrated in the graph below based on the ITU-R P676-9² standard:

¹ See as a summary http://en.wikipedia.org/wiki/IEEE_802.11#802.11ad

² See http://www.itu.int/dms_pubrec/itu-r/rec/p/R-REC-P.676-9-201202-1!!PDF-E.pdf



13.3. The E-Band is also growing in popularity amongst operators for the provision of short backhaul and last mile fibre-equivalent services with 1 to 2 Gigabit throughputs.

13.4. Equipment vendors have already made kit for the E-Band readily available.

13.5. Finally, in this regard, it is WAPA's understanding that there is in any event currently very little use of these bands in South Africa and that the monitoring of use of such bands is not within the capacity of the Authority at this time.

14. WAPA accordingly calls on the Authority to ensure that the Draft Plan addresses creating greater space for innovation and service provision in bands currently not being utilised or which are significantly under-utilised, subject to the necessary studies to determine appropriate technical restrictions on use.

15. It is WAPA's position that both of these bands as well as others above 40 GHz should be made available to operators in South Africa as soon as possible.

Alternative licensing models

16. WAPA welcomes the discussion of wholesale open access and managed spectrum parks as examples of alternative licensing models which could be employed in South Africa. WAPA agrees that such models can introduce flexibility, greater co-operation, lower costs and self-management to the assignment and use of radio spectrum.

17. WAPA submits that the introduction of alternative licensing models as a spectrum management tool is long overdue and that there is evidently a critical need for a new approach to certain bands. There is a wealth of international experience testifying to increases in efficiency both in

the use of spectrum and in the activities of the regulator subsequent to the regulator adopting lite-licensing or “centralised database” licensing models.

18. WAPA's view is that the 17 and 24 GHz bands would be ideal for the implementation of a lite-licensing regime, as would the E-Band and V-Band as set out above. Such a regime would require that an operator register the A and B points of each link, specifying GPS coordinates, equipment, power, gain, antenna types and antenna heights.
19. While recognising the complexities involved, WAPA notes that the TV White Space trial authorised by the Authority is effectively a trial for a lite-licensing regime. Furthermore the non-availability of spectrum suitable for the provision of access services has resulted in heavy use of the available licence-exempt bands in South Africa, resulting in local operators already having substantial experience in co-operating in the management of interference.
20. Given the constraints under which the Authority operators in managing spectrum and enforcing the Radio Regulations, the devolution of responsibility to an appropriate intermediary within the context of agreed rules and procedures should, it is submitted, be viewed as a pragmatic response to current challenges.
21. WAPA therefore requests that the Authority consider including in the Draft Plan a note that specific bands will be migrated to an alternative licensing model.

Conclusion

22. In conclusion WAPA confirms that it wishes to participate in oral hearings held in relation to the Draft Regulations and Draft Plan and extends its appreciation to the Authority for its efforts to date.

Regards

Wireless Access Providers' Association