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GENERAL NOTICE

NOTICE 221 OF *2006*

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

NOTICE IN TERMS OF SECTION 27 OF THE TELECOMMUNICATIONS ACT, NO. 103 OF 1996 ("THE ACT") INVITING REPRESENTATIONS WITH REGARD TO THE USE OF THE BAND 5725 – 5875 MHz FOR BROADBAND FIXED WIRELESS ACCESS.

1. The Independent Communications Authority of South Africa ("the Authority") hereby provides notice and invites comment on the use of the band 5725 – 5875 MHz for broadband Fixed Wireless Access (FWA).

2. Interested persons are hereby invited to submit written representations, including an electronic version of representation in Microsoft Word, of their views on- the use of the band 5725 – 5875MHz for broadband (FWA) by no later than 14 April 2006

3. Persons making representations are further invited to indicate whether they are requesting an opportunity to make oral representations (and the estimated duration there of, which duration shall not exceed one hour).

4. Written representations may be posted or hand delivered for the attention of:

Mr. Mandla Mchunu

Manager: Spectrum Management,
Email: mmchunu@icasa.org.za;
Tel: +27 11-321-8323
Fax: +2711-321-8538
Private Sag X10002 or Block A
Sandton Pinmill Farm
***2146 164** Katherine Street*
South Africa Sandton

5. All written representations submitted to the Authority pursuant to this notice shall be made available for inspection by interested persons from 21 April 2006 at the ICASA Library and copies of such representations and documents will be obtainable on payment of a fee.

6. At the request of any person who submits a written representation or document pursuant to this notice, the Authority may determine whether such representation or document, or portion thereof, relates to the financial capacity or business plan of any person, or to any other matter reasonably justifying confidentiality, in which event such representation or document shall not be made available for inspection by members of public. If the request for non-disclosure to public is refused, the person making the request will be allowed to withdraw the representation or document in question.

7. With respect to the documentation determined not to be open to public inspection as aforementioned in paragraph 6 above, the Authority may direct that the public or any member or category thereof, shall not be present during the oral submission relating to such documentation; provided that those present shall have been notified of this intention, allowed to object thereto and after such objections had been considered by the Authority.

8. In order to provide for a wider basis for representations to be made during the enquiry, the Authority has compiled questions that are pertinent to this issue.

9. These questions have been incorporated into the annexure hereto titled "**DISCUSSION DOCUMENT- PROVISION OF BROADBAND FIXED WIRELESS ACCESS USING** THE **5725 – 5875 MHz BAND** (hereinafter referred to simply as the "Discussion Document").

10. Representations may address any relevant issue, whether or not such issue has been raised in the Discussion Document. Furthermore, it is not a prerequisite that representations should address any or all of the issue raised in the Discussion Document.

11. The findings, recommendations and conclusions by the Authority following public comment, will be published in the Government Gazette in accordance with Sections 27 of the Act.

DISCUSSION DOCUMENT- PROVISION OF BROADBAND FIXED WIRELESS ACCESS USING THE 5725 - 5875 MHz BAND

1 Objective

A key objective of this exercise is to provide sufficient spectrum for new Fixed Broadband wireless access devices which will provide greater choice of access and distribution technologies to users, and advance the competitiveness of the telecommunications industry. To that end, the Authority recognizes the importance of harmonising the spectrum policy and technical requirements with regional and global activities and developments in order to ensure that maximum benefits are derived from the economies of scale. As well, it is important to encourage the development of innovative applications without causing an increase in harmful interference to other services co-existing in the same spectrum. Broadband Fixed Wireless access devices will therefore be required to operate in accordance with parameters selected to permit compatible co-existence between users in the same frequency band and with other services using these bands. A number of countries including Australia' and the United Kingdom[2] have concluded their industry consultations on the use of higher EIRP in this frequency band.

3 The band 5725 -5875 MHz

New types of radio technologies are already available that utilise protocols for dynamically controlling access to spectrum and these enable similar equipment to operate satisfactorily even when within interfering range. These technologies have the potential to be deployed either as private networks or as part of a shared publicly available network.

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[1] 5.8 GHz band Apparatus Licensing for regional/rural Broadband Wireless Services, Invitation *to* comment - Document SP6/04 July 2004.

[2] The Authorisation Regime for fixed broadband services operating in the frequency range 5725 - 5875MHz - OFCOM

The Authority considers that the main issues arising from the proposal to allow telecommunication services to use the band **5725 – 5875** MHz can be summarised as a need to understand:-

- the overall economic benefit
- the potential for interference to existing users
- the possibility of congestion in licence-exempt spectrum
- the quality of service that could be offered

The band **5725-5875** MHz is designated internationally for industrial, scientific and medical (ISM) applications. Thus, radiocommunication services operating within this band must accept harmful interference which may be caused by ISM devices. In addition to the ISM applications, other low powered licence exempt devices using spread spectrum techniques are permitted in the **5725-5850** MHz band. Licence-ISM spectrum is not exclusive, and is generally shared with many other disparate users. It would be very difficult for a network to be planned in the usual way, as activity in the band is not predictable and use of the spectrum in any given area cannot be co-ordinated.

Q1 Taking into consideration that the quality of service cannot be guaranteed in this part of the spectrum, should ICASA limit the use of this band to private networks.

Q2 To what degree is it possible to guarantee service permanence and continuous service quality for telecommunications services provided to the public with no protection or non-interference guarantee?

Q3 How could users be informed of the characteristics of service quality of this type of network?

Q4 If this band were to be used to provide telecommunications services to the public, with no guarantee of protection, and on the basis of non-interference, do you feel it would be necessary to charge a fee to any operator using these frequencies to provide telecommunications services? If so, what do you propose the fees be for these frequency bands?

It should be noted that currently in the United States, specifications for the licence exempt devices for U-NII include an **EIRP** limit of 4 watts in this frequency band. This level allows for communications within and between buildings, as well as, for Wide area network operation.

The Authority is seeking views on the use of Broadband FWAs in the 5725-5875 MHz band.

Technical Parameters for the use of 5.725-5.875 MHz

The peak transmit power [3] must be the lesser of 1W or 17dBm + 10logB, where B is the bandwidth in MHz

The peak power spectral density must not greater than 17dBm in any 1MHz band

The antenna gain must not exceed 6dBi (equivalent to 4W e.i.r.p.), except under conditions as specified below

- for the antenna gain to be greater than 6dBi, is that the transmit power [4] must be reduced, so as to not to exceed the e.i.r.p. of 4W
- for fixed point-to-point applications, the antenna gain may not exceed 23dBi without a reduction in transmitter output power
- for antennas with a gain higher than 23dBi the transmit power must be reduced so as to keep the e.i.r.p. within 200W
- the peak power spectral density [5] should not exceed 17dB in any 1MHz
- up to 10MHz above or below the band the e.i.r.p. must be less than -17dBm/MHz
- for frequencies greater than 10MHz above or below the band the e.i.r.p. must be less than -27dBm/MHz

The system must automatically discontinue transmission if there is no information

Q5 Please comment on the above-listed conditions. What other conditions should ICASA impose?

[3] The maximum transmit power as measured over an interval of time of at most 30/B or the transmission pulse duration of the device, whichever is less, under all conditions of modulation.

[4] The total energy transmitted over a time interval of at most 30/B (where B is the 26 dB emission bandwidth of the signal in hertz) or the duration of the transmission pulse, whichever is less, divided by the interval duration.

[5] The peak power spectral density is the maximum power spectral density, within the specified measurement bandwidth, within the operating band.

For Frequency hopping systems.

Carrier frequencies must be separated by at least 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater

Maximum bandwidth must not exceed 1 MHz

System must hop pseudo-randomly

Occupancy on any frequency may not more than 0.4s in any 30s period

The must be at least 75 hopping frequencies

For systems using digital modulation techniques.

The minimum 6dB bandwidth must be at least 500kHz

In any 100kHz outside the frequency band the power at least 20dB below the highest level in any 100kHz portion of the band

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Advertisements: Tel: (012) 334-4673, 334-4674, 334-4504
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