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GENERAL NOTICE

NOTICE 1757 OF 2003



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 PROVISION OF WIRELESS INTERNET ACCESS USING ISM FREQUENCIES

1. The Independent Communications Authority of South Africa ("the Authority") hereby provides notice and invites comment on the Provision of Wireless Internet Access Using ISM Frequencies, under sections 27 of the Telecommunications Act, No 103 of 1996 ("the Act").
2. Interested persons are hereby invited to submit written representations, including an electronic version of representation in Microsoft Word, of their views on- Provision of Wireless Internet Access Using ISM Frequencies by no later than 16h00 on Monday, 21 July 2003.
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:

Ms. Mandla Msimang

Senior Manager: Policy Analysis & Development

ICASA, Private Bag X1, Marlboro, 2063; or

ICASA, Block B, Pill Mill Farm, 164 Katherine Street, Sandton, Gauteng.

5. Where possible, written representations should also be emailed to mmsimang@icasa.org.za and copied to rachterberg@icasa.org.za.

6. All written representations submitted to the Authority pursuant to this notice shall be made available for inspection by interested persons from 23 July 2003 at the ICASA Library and copies of such representations and documents will be obtainable on payment of a fee.

7. 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.

8. With respect to the documentation determined not to be open to public inspection as aforementioned in paragraph 7 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.

9. 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.

10. These questions have been incorporated into the annexure hereto titled "DISCUSSION DOCUMENT- PROVISION OF WIRELESS INTERNET ACCESS USING ISM BAND FREQUENCIES" (hereinafter referred to simply as the "Discussion Document").

11. 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.

12. 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 WIRELESS INTERNET ACCESS USING ISM BAND FREQUENCIES

1. Objective

- 1.1. ICASA's goal in holding a consultation is to examine the concerns raised by the provision of public telecommunications services using Wireless Local Area Network (WLAN) technologies which are currently available on the 2.4 GHz and 5 GHz bands, in particular Bluetooth, Home RF, WiFi (IEEE standard 802.11b), HiperWLAN 2, etc.
- 1.2. WLAN technology uses the 2.4 GHz and 5 GHz frequencies, which are exempted from radio licensing of ISM equipment and other types of equipment particularly specified by regulation.
- 1.3. ICASA seeks to facilitate the provision of telecommunications services using WLAN technology to provide internet access in public places ("hotspots")

2. Introduction

- 2.1. A recent upsurge in the use of WLANs by small businesses using spread spectrum radio communications equipment has generated interest in this area of communications.
- 2.2. Although WLAN is a technology that has been around for some time, only recently has it gained popularity to a point where the public is beginning to explore the benefits of its widespread use. WLAN uses wide band access to a data network like the Internet at high speeds generally 64 kb/s per user, as long as users are located within contact distance from a WLAN base station.
- 2.3. The equipment is low-cost and is designed primarily to operate in the 2.4–2.4835 GHz radiofrequency band. It is particularly suitable for short-range communications applications such as WLANs, which can be used to link computers in private telecommunication networks.
- 2.4. Historically, most WLAN deployments have been part of internal company wireless intranet solutions. However, the technology has recently been used to make such private telecommunication networks available to the public to provide internet access and it is this that has attracted the attention of the Authority. As a result, the Authority seeks to clarify details about the WLAN regulatory framework.
- 2.5. ICASA is thus seeking input from the public to come up with ways in which the spirit of unlicensed frequencies in ISM bands is maintained together with regulations, if necessary, to facilitate the general provision of wireless internet access on a customer premise or single piece of land or contiguous pieces land owned by the same person.
- 2.6. The Authority would like to investigate the current trend towards the roll out of public WLANs in the ISM bands, having particular regard to the following objectives of the Telecommunications Act:
 - Encouragement of investment and innovation in the telecommunications industry;
 - Promotion of the universal and affordable provision of telecommunication services;
 - Promotion of the provision of a wide range of telecommunication services in the interest of the economic growth and development of the Republic;
 - Promotion of the development of telecommunication services which are responsive to the needs of users and consumers;
 - Promotion and facilitation of convergence of telecommunication, broadcasting and information technology.

3. What is a WLAN?

- 3.1. WLAN is an acronym for Wireless Local-Area Network. WLAN supports network communication over short distances using radio or infrared signals instead of traditional network cabling. It is a type of Local-Area Network (LAN) that uses high-frequency radio waves rather than wires to communicate between nodes.
- 3.2. A LAN (wireless or wired) is a computer network that spans a relatively small area. Most LANs are confined to a single building or group of buildings. However, one LAN can be connected to other LANs over any distance via telecommunication facilities.

3.3. WLAN Standards

3.3.1. There are a number of WLAN standards around the world. The European Telecommunications Standardisation Institute (ETSI) has a standardized WLAN called HiperLAN2. The American community, the Institute of Electrical & Electronics Engineers (IEEE) has created a standard called 802.11b, 802.11a and recently 802.11g. In the industry, 802.11 are also known as "Wi-Fi".

3.3.2. WLAN operates in two unlicensed bands:

3.3.2.1. The standards 802.11b and 802.11g operate in the 2.4GHz band, together with many other devices including Bluetooth and cordless telephones.

3.3.2.2. The 802.11a standard operates in the 5GHz band, which at this point is relatively free of interference from other electrical devices operating in this band.

3.3.3. A WLAN network core component consists of:

3.3.3.1. A WLAN access point, which is effectively a base station that can support many clients. It broadcasts messages on a certain frequency and interrogates responses from clients.

3.3.3.2. The WLAN access card is the client interface that talks to the access point. Typically it can be a PC card or compact Flash card format that can be inserted into a laptop or Personal Digital Assistant (PDA).¹

3.3.3.3. In accordance with section 36(B) of the Telecommunications Act, it is the Authority's initial view that WLAN equipment (the access point and the access card) forms part of Customer Premises Equipment (CPE).

Kindly provide your comments on whether WLAN forms part of Customer Premises Equipment.

4. Usages for WLANS

4.1. The Authority has done some initial investigation and has identified that there are presently 2 (two) key market areas for WLAN:

4.1.1. Private (Corporate, Small Office, Home)

- Usage is mainly as an adjunct to corporate fixed LAN provided via a Private Telecommunications Network (PTN), giving users the freedom to move within their premises;
- WLANs are used as the major hub for all wireless Internet connections within the home or office. WLAN access points usually connect to a major backbone via fixed or wireless networks, e.g. an ADSL/cable modem.

4.1.2. Public Access WLAN

- Usually referred to as public 'hot spots'.
- Provides public access usually in highly targeted areas where business users frequent or places where people wait, and are relatively stationary e.g. airports, train stations, coffee shops, hotels, shopping centres.

Do you agree that the above-mentioned are the two principle markets for WLAN installation? Kindly provide your input on the size, nature and scope of the above-mentioned markets.

¹ <http://www.broadcastpapers.com/broadband/EricssonWLAN02.htm>

The Authority is interested in the business case for *public* WLANs in South Africa, where possible; kindly provide information on the business case for WLANs in South Africa? How is it different from/similar to the business case in other jurisdictions?

5. Regulatory Framework for WLANS

5.1. Spectrum Licensing

5.1.1. Currently, in terms of the "Declaration of Certain Apparatus to be and not to be Radio Apparatus for the Purposes of Act No 3 of 1952," N° 1790 issued on 17 November 1995, WLANs used for short distance in the ISM bands on single sites (e.g. in an office complex) are permitted and exempt from spectrum licensing. They must, however:

- 5.1.1.1. operate in accordance with specified EIRP (total radiated power);
- 5.1.1.2. utilise equipment that has been type approved in terms of section 54 of the Act;
- 5.1.1.3. cause no interference to other users of other ISM equipment within the band or other radio users outside the band;
- 5.1.1.4. acknowledge that no complaints of interference will be investigated;
- 5.1.1.5. be confined to the same premises/buildings and between the computer systems of the same user.

5.1.2. Thus a WLAN can be deployed for use in the ISM bands without a spectrum licence in accordance with the above.

6. Service Licensing

6.1. Section 32 of the Telecommunications Act prescribes that "...no person shall provide a telecommunication service except under and in accordance with a telecommunication service licence...". If the provision of wireless internet access via a WLAN is not dealt with in terms of an existing service licence category, then ICASA may prescribe a service category for such a service. ICASA may also prescribe telecommunication services or activities that may be provided without a licence.

6.2. One of the issues that the Authority seeks to address is whether a person providing a public WLAN is providing a telecommunication service and if so must it be licensed in this case or not?

6.2.1. The Act defines "**telecommunication**" as "... the emission, transmission or reception of a signal from one point to another by means of electricity, magnetism, radio or other electromagnetic waves, or any other agency of a like nature, whether with or without the aid of tangible conductors."

6.2.2. In terms of the Act, "**telecommunication service**" is any service provided by means of a telecommunication system.

6.2.3. "**Telecommunication system**" is defined in the Act as any system or series of telecommunication facilities or radio, optical or other electromagnetic apparatus or any similar technical system used for the purpose of telecommunication.

6.2.4. "**Telecommunication facilities**" include any wire, cable, antenna, mast or other thing, which is or may be used for or in connection with telecommunication.

6.3. It is the Authority's initial view that the owner of a public WLAN ("Hotspots") is providing a telecommunications service (conveyance of signals) to third parties. However, it should be further pointed out that although providing a telecommunication service, the actual function of a "Hotspot", while used on customer premises, is the same as that, of the service provided at a traditional wired-LAN Internet Café.

- 6.4. Internet Cafés using cable to network its computers are not subject to licensing obligations. By treating wireless technology similarly to cable-based networks, businesses using wireless technologies will not be unfairly disadvantaged. This will encourage new (wireless) players into the market and develop technology to benefit the sector.
- 6.5. In terms of the Radio regulations mentioned in paragraph 5 above, the radio equipment concerned has already been exempt from a spectrum licence. Therefore, the Authority sees merit in exempting the owners of "Hotspots" operating WLAN equipment on their customer premises from obtaining a service licence on the grounds that use of a wireless technology, using frequency that is already exempt, should not by itself make a licence necessary. Such exemption would be made in terms of section 33(2) of the Telecommunications Act.

The Authority seeks your comments on its intention to create a new service category in terms of section 33(2) of the Telecommunications Act for wireless internet access and to exempt that service from a licence.

In line with the previous question, the Authority proposes the following definition for wireless internet access and seeks your comments thereon:

"Wireless Internet Access means: Internet access obtained over short distances using low power radio signals instead of traditional network cabling"

The Authority further proposes that such service category, if created be permitted without a telecommunications service licence where:

- a) The service is provided on a single premises;**
- b) The service falls within the limits of a low power device; and**
- c) The person providing the Wireless Internet Access is using the services of licensed VANS.**

- 6.6. The Authority is aware that wireless equipment could potentially be used to communicate outside or between customer premises and such use would be outside the licence exemption.

Please provide your views on the relationship between the provision of wireless internet access via WLANs and the existing rights of licensed operators (e.g. VANS, Mobile Cellular Telecommunications Service licensees, Public Switched Telecommunications Services Licensees, etc.)

7. Conclusion

The Authority seeks the views of all interested parties on the above, and on any other matters which may not have been raised in the document related to its intention to create a new service licence category for wireless internet access in terms of section 33(2) of the Telecommunications Act and to exempt that service from a licence.

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