

Date: 10 Mar, 2005

By post and by email

Office of the Telecommunications Authority
29/F, Wu Chung House
213 Queen's Road East
Wan Chai
Hong Kong

Dear Sir/Madam,

**Submission of Comment on the Consultation Paper for
Licensing Framework For Deployment of Broadband Wireless Access**

Submission by Pacific Internet (Hong Kong) Limited to the Office of the
Telecommunications Authority

If you have any queries, you may contact Edmond Lo (Director, Technologies &
Development) at edmondlo@pacific.net.hk or Tel. 23354466.

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Part A: Executive Summary

1. Pacific Internet (Hong Kong) Limited welcomes the opportunity to comment on the Licensing Framework For Deployment of Broadband Wireless Access (BWA). We support a limited number of BWA license should be granted to eligible licensees so that commercial services can be deployed in a more controllable environment.
2. We believe that application of license should be open to service providers not limited to those with FTNS license to encourage investment on infrastructure for this new technology.
3. In addition, Pacific Internet (Hong Kong) Limited believes backhaul application of BWA is different in nature to last-mile access and should be taken care via two separate licenses or as options.
4. We also support that technology deployment should not be limited by the license of BWA. Although WiMAX is viewed as the technology of choice for BWA, other technology implementations such as OFDM should also be available to be chosen by the licensee as long as the spectrum and radio power requirement are met.

Part B- Statement of Interest

5. Broadband Wireless Access (BWA) is a worldwide technology trend. With the invention of WiFi and Intel's Centrino Technology, people's acceptance to wireless network access has become popular. Voice over IP application has also evolved and being integrated into the WiFi world. These are evidences to demonstrate that Wireless technology (such as BWA) is viable and a necessity for modern cities like Hong Kong.

6. Under the current circumstances, it is found that the security measures and law enforcements are not very beneficial for service offering by Operator for Wireless access. With the current WiFi deployment as an example, rogue access point and frequency interference is not avoidable. Everyone can purchase and host a WiFi access point with the capability to jeopardize a paid commercial service. Pacific Internet (Hong Kong) Limited is interested to provide her customers with a secured access all the time while BWA is one of the available options.

Part C- Specific Comments

7. In view of BWA, it is recommended to license its usage of frequency band and installation/operation of BWA equipment so as to provide a favorable business environment for potential licensee. The official time for license should be around end 2005 while trial license should be granted starting mid 2005 for early testing by Operators. *(Clause 5)*

Applications of BWA

8. Although BWA can be deployed for both backhaul and last-mile customer access, it is suggested to deploy separate licenses for these two types of applications and to allocate separate frequency bands to these licenses. This can help to achieve better radio planning and more manageable RF interference. *(Clause 6)*
9. With the withdrawn of Type II interconnection at telephone exchanges by 30 June 2008, the last-mile access to each building will be dominated by 1 to 2 FTNS. The choices for independent Internet Service Provider will become much restricted. Even though BWA is a viable way to provide service, the installation of BWA Radio equipment would require separate negotiations with landlords. It is therefore suggested that OFTA should enforce some controls to lessen the burden of roof top access or possible installations at street poles of public utilities or even street lamps. *(Clause 9)*

Spectrum for BWA in Hong Kong

10. With wide selection of equipment available in the band and that WiMax equipment will also implement in the 3.4–3.6GHz range, it is therefore agree that this band is best suitable for allocation to BWA deployment. *(Clause 19)*

Standard Issues

11. It is agreed that the existing technology neutrality principle shall be kept. However, to promote interoperability and equipment investment (client as any client side radio or client data adapters), it is suggested that WiMAX should be in favor in case a technology has to be chosen. However, freedom selection of implementation technology should be granted to licensee as long as specific spectrum or other requirements are met *(Clause 32)*. .

Licensing Issues

12. Since the application of BWA is very board and is not just limited to wireless extension of fixed line, we should not limit the scope of the BWA license to FTNS only which will slow down the BWA application development in Hong Kong. Internet is already a basic communication tool for most of the people and business in Hong Kong. The demand for remote access and mobility of Internet service is

growing rapidly where BWA should be a very good solution. In order to benefit the Internet users both residential and business, the BWA license should NOT be linked with FTNS license. *(Clause 37)*

13. As the radio coverage of BWA equipment is non line of sight and with reach as far as 30 miles, certain degree of mobility is inherited even with a single BWA base station installation. With the application of some systems such as WLAN switches or other proprietary solutions, roaming or mobility across different base stations can already be achieved. Also, as the mobility version of IEEE 802.16e is actively under development and hence it is unavoidable that the BWA technology will have some overlapping and convergence with the existing 2.5G or 3G mobile networks in terms of mobility. However, it would be very difficult to enforce or to restrict this mobility in some cases while it is also not reasonable for licensed Operators to invest on obsolete BWA equipment without support of mobility rather than more advanced BWA equipment with roaming or mobility capability. It is therefore recommended to cover the mobility and roaming in the forthcoming BWA license. *(Clause 38)*

Spectrum Assignment Method

14. The auction of frequency spectrum inherent competitive advantage of big players with financial strength to out-bid smaller players. To invite new Operators' investment in the BWA infrastructure, it is therefore suggested a combined approach should be used (beauty contest and by auction). While a portion of the spectrum will be allocated to licensees based on proposals, a portion of the spectrum can be reserved for expansion based on public auctions. *(Clause 43)*

Part D – Conclusion

15. In conclusions, Broadband Wireless Access is a forthcoming technology with possible application as wireless backhaul, last-mile replacement to copper wire, and even mobile wireless access. It is therefore important for Hong Kong to properly regulate to provide a favorable environment for commercial operators.
16. Pacific Internet (Hong Kong) Limited believes that utilization of license frequency band can help protect the infrastructure investments with law enforcements.
17. We welcome the license proposal but does not support on the mandatory requirement of FTNS license for Broadband Wireless Access license.
18. In view of the technology open environment of Hong Kong, we believe that the license should not mandate on technology implementation of Broadband Wireless Access.
19. We also believe that separate licenses (or as optional types) can be defined for backhaul and last-mile application of Broadband Wireless Access.