



Oct 31, 2005

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

Attn: Telecommunications Engineer (R 21)3

Dear Sir,

Second Consultation Paper on Licensing Framework for Deployment of Broadband Wireless Access

On behalf of Alcatel, I am pleased to submit the enclosed response to the 2nd consultation paper on broadband wireless access licensing in Hong Kong.

The second consultation paper on Broadband Wireless Access (BWA) licenses for Hong Kong has been, for the most part, consistent with Alcatel's views as a vendor of carrier grade telecommunications solutions. Alcatel agrees that a technology neutral approach is the correct one, allowing the license holder flexibility to fit its own vision with the most appropriate solution on the market. Therefore in this response, Alcatel would like to only comment on point number 37 from the OFTA document:

BWA solutions using TDD or FDD approaches are possible. For example, there are suppliers building WiMAX solutions using both FDD and TDD approaches. The WiMAX forum itself supports both TDD and FDD implementations, and the chipsets often support both modes. Alcatel recognizes the need for regulatory impartiality, and applauds OFTA for the decision to be neutral between TDD and FDD technologies in the BWA licensing scheme, however we do not agree that impartiality is necessarily achieved in the proposed licensing scheme.

Alcatel favors a TDD approach primarily because we believe that wireless IP traffic will be asymmetric. A study of traffic patterns on broadband home access is overwhelmingly downlink heavy. Data traffic in GPRS and UMTS also shows patterns of asymmetry with downlink heaviness. In our view, a flexible TDD solution allows the uplink to be engineered to suit the traffic patterns that emerge, thereby optimizing the utilization of a given 30 MHz of spectrum.

Although it is true that our TDD solution (as well as any other vendor whose TDD solution supports the 3.5 GHz spectrum) can be implemented within an FDD structure, including the 2x15 MHz structure proposed by OFTA, greater efficiencies would be achieved if a licensee had access to a contiguous spectrum of 30 MHz. The reason is simple: With 30 MHz of contiguous bandwidth, an operator can set his channel size at 10 MHz, and build an urban coverage plan based on using 3 x 10 MHz sectors for each base station site. If the contiguous size available is restricted to 2x15 MHz, then an operator of a sectorised architecture would only be able to use a 3 x 5 MHz configuration for its transceivers. The result would be a reduced



throughput per channel, (although somewhat in compensation, 6 different frequencies could be imagined in a dense urban cell site rather than only 3).

Alcatel's position is that by implementing a structure with only 2x15 MHz licenses, OFTA is implicitly biasing the FDD approach to broadband wireless. Alcatel recommends that an allocation of 2 licenses should be made available having contiguous spectrum of 30 MHz TDD, rather than 2x15 MHz FDD structure. Operators who prefer TDD solutions would naturally gravitate towards making bids on those contiguous frequency bands. For example, 2 TDD licenses of 30 MHz could be offered at 3.41-3.44 and 3.51-3.54 GHz, while the remaining 4 licenses would remain as laid out in the diagram on point 37 of the document (with FDD structure). This will result in a truly non-biased licensing scheme for the BWA auction.

Yours sincerely,

John Lipp

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