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Office of the Telecommunications Authority
29/F., Wu Chung House
213 Queen's Road East
Wanchai
Hong Kong
Attention: Head, Economic Analysis and Research
Fax: 2803 5112

Nokia Siemens Networks
H.K. Limited
Hong Kong

Telephone +852-2967-3388
Fax +852-2967-3251

Suites 2508-2510A,
25/F., Skyline Tower,
39 Wang Kwong Road,
Kowloon Bay,
Kowloon,
Hong Kong

Dear Sir / Madam,

Arrangements for the Frequency Spectrum in the 1.9 – 2.2 GHz Band upon Expiry of the Existing Frequency Assignments for 3G Mobile Services

In response to OFCA's second consultation paper "Arrangements for the Frequency Spectrum in the 1.9 – 2.2 GHz Band upon Expiry of the Existing Frequency Assignments for 3G Mobile Services" issued on December 28th, 2012. Nokia Siemens Networks submits this response to present views.

Thank you for your attention.

Yours faithfully,

Nokia Siemens Networks H.K. Limited

Nokia Siemens Networks H.K. Ltd.

Network growth and capacity demand

1. Nokia Siemens Networks believes that the industry needs to prepare for a dramatic mobile broadband traffic growth by 2020. This also calls governments and organizations to allocate spectrum to prepare for this growth. The recent allocation of 850MHz, 900MHz, 2.6GHz and 2.3GHz is a good example. NSN sees this traffic growth demand is a key driver to utilize their spectrum use existing 2x15MHz 2.1G spectrum. The hybrid approach of license renewal results to the loss of at least 30% of the network capacity in 2.1GHz. Hong Kong is well-known for being challenging in terms of radio conditions and congestion, frequency spectrum resource is then the key to guarantee user experiences and cope with the massive traffic demand in the long run. If the network capacity is reduced while the technology evolution is seriously obstructed due to the missing spectrum in 2.1GHz, apparently, it is a technology obstacle to retain the user experience and achieve service continuity. Before finalizing the option for spectrum re-allocation, this has to be taken into consideration and thoroughly resolved.

Technology evolution

2. Mobile network technology is evolving. This evolution is driven by a global standardization body (3GPP) responsible to define the technology standard for the industry. Operators need continuous upgrade on infrastructure to improve “the utilization of spectrum” and maintain good user experience. For example, since the launch of 3G network, data download speed has been improved by x 50 times (ie. 21Mbps/384kbps) by means of deploying all the frequency resources available as well as introducing new radio technologies. Although the advancement of radio technologies would improve the spectral efficiency in a fixed amount of frequency spectrum resources in principle, those techniques would demand terminal support and the associated benefits are typically radio condition and network loading dependent.

3. Based on the most widely adopted 3G technology today, it is possible to achieve 42Mbps download speed by using 2x10MHz of existing adjacent carrier. The evolution in 3GPP has already defined the technology to achieve higher download speed, e.g. download speed of 126Mbps with 2x15MHz contiguous frequency band at 2.1GHz.

4. Referring to the proposed spectrum allocation in clause 52 in the second consultation paper dated 28 Dec 2012, this may lead to a situation that all license owners will own 2x10MHz spectrum. This will be a stopper of technology evolution on 3G download speed as mention above.

Conclusion

5. Taking into account of the ongoing HSPA+ evolution being standardized in 3GPP, the current spectrum allocation in 1.9-2.1MHz can fully benefit user download speed experience bringing by a smooth technology evolution without user service disruption.

6. Considering the uncertainties of the amount of continuous spectrum that operators will get in the hybrid approach (Option 3), NSN believes Option 1 in the consultation paper serves the best interest to the industry and continues to uphold Hong Kong being the most advanced mobile broadband society in Asia.