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Mr. Andrew Haire
Deputy Director General (Telecoms)
Infocomm Development Authority of Singapore
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Singapore 038988

Via fax: Fax: (65) 6211 2116
Via email: IDA_consultation@ida.gov.sg

Dear Mr. Haire:

QUALCOMM Incorporated would like to thank the Infocomm Development Authority of Singapore for the opportunity to provide comments on *its Consultation Paper on the Proposed Framework for the Reallocation of Spectrum in the 900 MHz and 1800 MHz Frequency Bands*.

QUALCOMM is a pioneer of CDMA (code division multiple access) digital wireless technology and one of the leading enablers of 3G, as well as other advanced wireless products and services. These solutions are available today for a number of communications applications, including mobile cellular, fixed wireless access, broadband wireless access, trunking and satellite services. QUALCOMM leads the world in the development of 3G CDMA chipsets and solutions and has licensed its essential CDMA patent portfolio to more than 140 telecommunications equipment manufacturers worldwide. QUALCOMM technology continues to enable the enterprise, network operators and manufacturers, developers and wireless end-users by providing technology innovation and leadership in the wireless industry worldwide.

QUALCOMM strongly supports IDA's proposal to use the 900 MHz and 1800 MHz frequency bands for 3G services using IMT technologies such as HSPA. The provision of 3G service in 900 and 1800 MHz is a cost effective method for extending the coverage of advanced 3G service areas and improving the user experience through increased indoor coverage. The propagation characteristics associated with the lower frequency bands will result in the need for fewer base stations thus reducing capital and operational expenditures while also providing higher capacity than GSM. The use of these bands for 3G services will enable operators to help support the demand for additional spectrum for advanced data-intensive services in the coming years.

Regulatory and Standardization Support

As the IDA notes, there is strong regulatory and standardization support for the use of the 900 and 1800 MHz for 3G services. The 900 and 1800 bands are identified in the ITU-R Radio Regulations for IMT-2000, both 3GPP and ETSI have approved UMTS900 and 1800 technical specifications and the European Conference of Postal and Telecommunications Administrations (CEPT) made up of 47 Administrations has adopted an Electronic Communications Committee (ECC) decision to designate the 900 MHz and 1800 MHz bands for IMT-2000/UMTS.¹ This was followed by the European Commission (EC) also adopting,

¹ ECC Decision of 1 December 2006 on the designation of the bands 880-915 MHz, 925-960 MHz, 1710-1785 MHz and 1805-1880 MHz for terrestrial IMT-2000/UMTS systems <http://www.ero.dk/documentation/docs/docfiles.asp?docid=2189&wd=N>

on June 13, 2007, an EC Decision that designates and makes available in the European Union the bands 900 MHz and 1800 MHz for UMTS systems and on July 25, 2007, a proposal for directive of the European Parliament and the Council to repeal the GSM Directive²

Additionally, the ECC has produced two reports related to compatibility issues for the introduction of UMTS in the 900 and 1800 MHz bands alongside GSM. ECC Report 82 studies the compatibility for UMTS operating within the GSM 900 and GSM 1800 frequency bands.³ This report concludes that UMTS900/1800 networks can be deployed in urban, sub-urban and rural areas in co-existence with GSM900/1800 networks by using appropriate values for carrier separation. ECC Report 96 studies the compatibility between UMTS900/1800 and systems operating in adjacent bands⁴.

Regulators in Belgium, Finland, France, Switzerland and Portugal have approved the use of the 900 MHz for UMTS service. For instance, on July 9, 2007, the French regulator, ARCEP, authorised existing mobile operators to deploy UMTS UMTS900 as of 2008. The Spain, Italy, Germany, Norway and Sweden are also considering similar approvals this year. Operators in Australia and New Zealand have also made public announcements about WCDMA trials or future deployments in the 900 MHz band.⁵ In Japan, eMobile launched HSDPA in the 1800 MHz band in March 2007.⁶

Broad Industry Support

QUALCOMM is a key provider of leading-edge chipset and software solutions and provides support for 3G CDMA technologies including WCDMA/HSPA in a variety of frequency bands. In January 2006, QUALCOMM, Nortel and Orange achieved the industry's first WCDMA and HSDPA calls at 900 MHz. QUALCOMM recently sampled RTR 6285, a highly integrated, single-chip, quad-band WCDMA solution that allows support of WCDMA/HSPA in the 900 MHz band at no additional chipset cost. A number of other vendors have publicly announced solutions for 3G technologies in these frequency bands.

Additionally the GSM Association has commissioned a study on UMTS900 and identified substantial economic and society gains from the deployment of UMTS850/900.⁷ In a press release from June 2007, the GSMA called on Administrations to open the 900 MHz spectrum band to 3G to enable an additional 300 million people globally to enjoy mobile broadband services by 2012.⁸ The Global mobile Suppliers Association (GSA) maintains an up-to-date fact sheet on industry, regulatory and standard developments pertaining to the use of the 900 MHz band for 3G services.⁹

Conclusion

QUALCOMM appreciates the opportunity to provide these comments and commends the IDA in being in the forefront of furthering advanced services in the marketplace. QUALCOMM looks forward to continuing to support the IDA in this initiative.

Recognizing that the IDA is interested in the potential use of the 800 MHz band, but that it is not a focus of the current allocation exercise, QUALCOMM would like to reiterate that the 800 MHz band is also an ideal band for advanced IMT services and is used globally in the provision of 3G voice and advanced wireless data services.

² COM(2007) 367 "Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of repealing Council Directive 87/372/EEC,"

http://ec.europa.eu/information_society/policy/radio_spectrum/docs/ref_docs/com/com2007_367_en.pdf

³ ECC Report 082, "Compatibility study for UMTS operating within the GSM 900 and GSM 1800 frequency bands,"

<http://www.ero.dk/documentation/docs/doccategory.asp?catid=4&catname=ECC/ERC/ECTRA%20Reports>

⁴ ECC Report 096, "Compatibility between UMTS 900/1800 and systems operating in adjacent bands + Appendix 'SMC scenario for GSM-R'", <http://www.ero.dk/documentation/docs/doccategory.asp?catid=4&catname=ECC/ERC/ECTRA%20Reports>

⁵ Global mobile Suppliers Association, Information Paper on UMTS900, June 2007. www.gsacom.com/downloads

⁶ http://www.emobile.jp/cgi-bin/e_press.cgi?id=361

⁷ Ovum Consulting, "Market Study for UMTS900: A report to GSM, February 2007,"


www.gsmworld.com/documents/umts900_full_report.pdf

⁸ http://www.gsmworld.com/news/press_2007/press07_43.shtml

⁹ See footnote 4.

Should you have any questions, please contact me at + 1 202 263-0028 or thomasw@qualcomm.com.

Respectfully,

A handwritten signature in black ink, appearing to read "Thomas V. Wasilewski". The signature is written in a cursive style with a prominent initial 'T'.

Thomas V. Wasilewski
Senior Director, Government Affairs

cc: TAN SengHee, Singapore Country Manager, QUALCOMM International
Julie Garcia Welch, Director Government Affairs, QUALCOMM International