WILTSHIRE & GRANNIS LLP

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**BY ELECTRONIC MAIL**

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**Re: *Canada Gazette*, Part I, June 12, 2010, Notice No. DGSO-001-10, *Decisions on the Transition to Broadband Radio Service (BRS) in the Band 2500-2690 MHz and Consultation on Changes Related to the Band Plan***

Dear Ms. Gilfillan:

3G Americas, LLC, the leading industry association representing the GSM family of technologies in the Americas, including HSPA and LTE, appreciates the opportunity to submit comments to Industry Canada in response to Notice No. DGSO-001-10, Part B, Consultation on the Frequency Band Plan for the band 2500-2690 MHz as published in the *Canada Gazette*, Part I, June 12, 2010 (the "Consultation"). 3G Americas has a broad membership of leading wireless operators and vendors promoting, facilitating, and advocating the deployment of the GSM family of technologies throughout the Americas.[1] In these comments, 3G Americas encourages Industry Canada to allocate internationally-harmonized portions of the 2500-2690 MHz band for dedicated Frequency Division Duplex ("FDD") use to maximize the spectrum available for data-intensive wireless broadband service.

***Internationally-harmonized, dedicated FDD spectrum makes the most efficient use of the band***

Industry Canada will achieve the most efficient use of the 2500-2690 MHz band by designating internationally-*harmonized* frequency ranges for dedicated FDD use. Allocating separate frequency ranges for use by FDD and Time Division Duplex ("TDD") will be a more efficient allocation than if FDD and TDD are allowed in the same portions of the band because, as the Department recognized, [2] guard bands will not be needed within an FDD-dedicated band.

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[1] 3G Americas Board of Governor members include Alcatel-Lucent, Andrew, AT&T, Cable & Wireless, Ericsson, Gemalto, HP, Huawei, Motorola, Nortel Networks, Nokia, Openwave, Research in Motion, Rogers, T-Mobile USA, Telcel, Telefónica, and Texas Instruments.

[2] It is generally agreed that a minimum of a 5 MHz guard band is necessary between FDD and TDD operations, as well as another 5 MHz guard band between unsynchronized TDD systems operating in the same service area. Consultation § 8.2.

Likewise, the equipment currently in development for this band is based on globally-recognized standards and so an allocation reflecting a globally-harmonized recommendation will enable rapid, affordable deployment of infrastructure, devices, and innovative applications within Canada. In other words, internationally-harmonized bands dedicated for FDD use will enable more efficient use of more spectrum more affordably and more quickly than if the band is allocated to permit use of TDD in the same frequency ranges as FDD.

Specific FDD allocation will also enable the allocation of wide, contiguous blocks of spectrum that are needed for data-intensive wireless broadband services. Wider channels are required to support high-speed mobile technologies that the broadband market will increasingly demand. This means that spectrum allocated for mobile broadband should be as contiguous as possible. Although allocations based primarily on 5 and 10 MHz blocks may have been appropriate for second, and even third, generation data services, they simply are not sufficient to support advanced data services and the growing consumption of mobile broadband applications. It is estimated that future, data-intensive wireless broadband services will require at least 20 MHz per channel and that each operator will require a minimum of two paired channels to support the higher data rates that consumers will demand.[3]

Because of the need for wide and paired channels for mobile broadband, 3G Americas was pleased that the Brazilian telecommunications regulator, ANATEL, recently announced that it plans to adopt such a plan. ANATEL will pair 2500-2570 MHz with 2620-2690 MHz for FDD use, and allocate 50 MHz for TDD use at the center. ANATEL's plan, an internationally-harmonized band plan for 2500-2690 MHz, has specific frequency ranges designated for FDD and TDD use, aligning the band with Option 1 of the International Telecommunication Union's ("ITU's") Recommendation ITU-R M.1036-3.[4]

It is vital that other governments likewise recognize the exponentially-growing demand for spectrum presented by mobile broadband. The ITU's spectrum-demand forecasts underscore the need for forward-looking spectrum planning. The ITU analyzed how much additional spectrum will be needed to support commercial wireless services in members' markets and concluded that, including currently assigned spectrum, the spectrum requirements by 2020 for a *single network* within a *single country* will range from 1280-1720 MHz, based on degree of development.[5] The ITU's findings are consistent with research from Rysavy Research

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3 *See also* Rysavy Research, *Transition to 4G, 3G Broadband Evolution to IMT-Advanced,* Figure 8 (Sep. 2010), available at http://www.3gamericas.org/documents/3G_Americas_RysavyResearch_HSPA-LTE_Advanced_FINAL.pdf (showing LTE performs with most spectral efficiency in 20 MHz channel) ("Transition to 4G White Paper") (included as Attachment 1).

4 *Frequency arrangements for implementation of the terrestrial component of International Mobile Telecommunications-2000 (IMT-2000) in the band 806-960 MHz, 1710-2025 MHz, 2110-2200 MHz and 2500-2690 MHz,* Recommendation ITU-R M.1036-3, Sec 6.1.3 and Table 3.

5 International Telecommunication Union, *Estimated spectrum bandwidth requirements for the future development of IMT-2000 and IMT-Advanced*, ITU-R Report M.2078 (2006); 3G Americas, LLC, *3GPP Technology Approaches for Maximizing Fragmented Spectrum*

commissioned by 3G Americas that found that mobile operators in the busiest markets will need more than 200 MHz of spectrum by 2016 to meet increasing demand.[6] The NGNM Alliance (a coalition of operators, industry partners, and academic advisors focused on providing a vision for technology evolution beyond 3G) extrapolated from the ITU's forecast to determine that beyond identified spectrum allocations, countries in Region 2, the Americas, will need an additional 557-997 MHz by 2020.[7]

Allocating wide, contiguous, internationally-harmonized FDD blocks within the 2500-2650 MHz band will allow mobile operators access to the necessary bandwidth for data-intensive applications while protecting new and existing operations from significant interference and minimizing spectrum that must be used for guard bands. 3G Americas encourages Industry Canada to adopt such a band plan, in order to maximize the long-range availability of sufficient spectrum for user demands.

***Additional Considerations***

While the Department has not sought comment about spectrum caps, for the same reasons as discussed above, 3G Americas encourages Industry Canada to refrain from imposing spectrum caps on the band. Simply put, from a technical perspective, spectrum caps do not work in a world where applications demand such intensive spectrum use. Operators need sufficient spectrum to offer the data-intensive services that users demand. If spectrum is available to operators in sufficient amounts to offer multimedia advanced services, investment in infrastructure and devices will continue and users will benefit from faster service delivery dynamics and new value-added mobile broadband services. But the converse is also true: caps can prohibit operators from having sufficient spectrum to offer users the services that users want and will ultimately stifle investment.

Finally, 3G Americas encourages the use of open standards in the band, to promote competition and value to consumers. Open, internationally-deployed standards will help to ensure a competitive market and will encourage innovation, affordability and rapid entry of new and innovative devices to the market to serve society's needs. Industry Canada can best position the 2500-2690 MHz band for future technology evolution by ensuring that open standards are used within the band.

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*Allocations* 20 (2009), available at http://www.3gamericas.org/documents/3GA%20Underutilized%20Spectrum_Final_7_23_092.pdf ("3G Americas Fragmented Spectrum White Paper").

*See* Transition to 4G White Paper at 21-22 and Figure 7.

[7] *See* A White Paper Update by NGMN Alliance, *Next Generation Mobile Networks Spectrum Requirements Update* (October 5, 2009), available at http://www.ngmn.org/fileadmin/user_upload/Downloads/Technical/NGMN-WP_Spectrum_Requireme nts.pdf.

***Conclusion***

3G Americas appreciates the opportunity to provide input on the frequency plan for the 2500-2690 MHz band. 3G Americas encourages Industry Canada to maximize the benefits of the band by allocating specific, internationally-harmonized frequency ranges for FDD use. 3G Americas also encourages Industry Canada to maximize benefits of competition and innovation in the band by refraining from imposing spectrum caps and using open standards.

Respectfully submitted,

/s/

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