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Dawn Hunt
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July 28, 2010

Sent via email: wireless@ic.gc.ca

Director General, Telecommunications Policy Branch
Industry Canada
16th Floor, 300 Slater Street
Ottawa, ON
K1A 0C8

Re: *Canada Gazette*, Part I, May 14, 2010, "Consultation on the Use of the Band 25.25-28.35 GHz, Gazette Notice No. DGTP-002-10"

Rogers appreciates the opportunity to provide comments on the above-noted consultation.

The documents are being emailed in Adobe Acrobat Professional Version 8.0. The operating system used is Microsoft Windows XP.

Regards,

A handwritten signature in black ink, appearing to be "Dawn Hunt", written in a cursive style.

Dawn Hunt
DH/gt

Attach.

Comments of Rogers

July 28, 2010

Canada Gazette Notice No. DGTP-002-10

Consultation on the Use of the Band 25.25-28.35 GHz

Published in the Canada Gazette, Part I
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Introduction

1. The Department has issued a consultation paper titled **Consultation on the Use of the Band 25.25-28.35 GHz – DGTP-002-10** (“the Consultation Paper”). In the Consultation Paper, the Department has invited comments on its proposals for a band plan and licensing process, as well as on other issues associated with the band.
2. Rogers is pleased to provide the following comments regarding the issues under consideration in the Consultation Paper.
3. Rogers has participated in the development of the Radio Advisory Board of Canada’s (“RABC”) response to the Consultation Paper and agrees with the RABC’s comments. Rogers supports Industry Canada’s efforts towards making available new spectrum for point-to-point systems, which are critical to the provision of advanced new mobile broadband services. We trust that the Department will make every effort to adopt the recommendations contained in the following comments as soon as possible.
4. In addition to the remarks made by the RABC we wish to add further comments. The Department’s proposal to make spectrum in the band 25.25-28.35 GHz (“the Band”) available for fixed backhaul systems is welcomed but does not fill the void created by recent decisions in the 11¹ and 15² GHz bands. Rogers relies heavily on the use of a variety of fixed service spectrum bands for digital microwave backhaul systems that are used in the provision of advanced commercial mobile voice and broadband data services. In fact, Rogers uses microwave backhaul for serving a significant amount of its mobile radio base station sites. Rogers expects the demand for fixed service spectrum by itself and the industry in general to continue to grow in the near future along with the rapid growth of next generation broadband mobile data services.
5. As the popularity of smartphone devices grows, mobile data usage will explode. A recent and widely reported study regarding mobile data trends noted that the popular iPhone smartphone device typically generates 30 times the mobile data traffic of a basic-feature mobile phone and that lap-tops equipped with a 3.5G modem will generate 450 times the traffic of a basic mobile phone³. It is not surprising therefore that mobile data traffic is currently forecast to double every year between 2009 and 2013.⁴

¹ Gazette Notice DGTP-013-09 – Decision Regarding Spectrum Utilization Policy for the 11 GHz Band

² Gazette Notice DGTP-012-09 - Spectrum Utilization Policy, Technical and Licensing Decisions on a Portion of the Band 14.5-15.35 GHz for Tactical Common Data Link (TCDL) Systems

³ *Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update*, January 29, 2009. http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.pdf

⁴ Ibid.

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6. In light of these developments, it is clear that wireless service providers such as Rogers must expand their backhaul facilities to support these burgeoning services and critical enablers. Although the use of fibre-optic systems is an important option for providing additional backhaul capacity, the use of microwave transmission will continue to be the preferred option in many cases.
 7. For example, while fibre may be an economic alternative in some locations, it is a less attractive alternative than microwave in other locations for a number of reasons. First, since the geographic location of cellular and PCS radio base stations is determined by factors such as coverage, capacity and land-use issues, base stations are not necessarily located where fibre is available. This is especially true in circumstances where base stations are located on residential buildings, industrial or agricultural lands, and in urban areas that are located outside the footprint of Rogers' Cable network. Second, microwave is generally a less costly alternative compared to fibre outside urban areas, and the cost of microwave capacity has fallen significantly in recent years. Third, microwave backhaul systems can often be deployed more quickly than fibre-optic systems and therefore they permit wireless service providers such as Rogers to swiftly add or augment backhaul capacity that may be required to support additional coverage or capacity that is necessary to maintain the high quality of service that Rogers provides to its customers. For these reasons, Rogers and other wireless service providers will continue to heavily rely on microwave for their backhaul requirements.

4. First Come, First Served

The Department seeks comments on implementing an FCFS licensing process in the bands 25.25-26.5 GHz and 27.5-28.35 GHz.

8. Rogers supports the implementation of a FCFS licensing process for the bands. This approach would be consistent with the licensing process used for the majority of other fixed point-to-point bands.

5.1 Band Plan

Given the very different European and U.S. band plans, the Department seeks comments on the two band plan options provided above.

9. Rogers fully supports the adoption of the lower portion (25.25 GHz to 26.5 GHz) of the Department's proposed Canadian band plan Option 1, which is to harmonize with the European band plan. It would take advantage of equipment currently being produced for the European market. By harmonizing with the European band plan in the lower portion of the proposed Canadian band plan, Canadian carriers will have access to industry standardized equipment and economies of scale. Rogers also agrees with the RABC recommendation to re-evaluate the demand of TDD and FDD systems in the near term and develop incremental FDD channels within this lower portion of the band in the event that the demand for FDD channels exceeds the demand of TDD channels. As noted in more detail below, we believe that the Band will be used more heavily by FDD point to point systems.

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10. Rogers agrees with the RABC recommendation to designate the upper part (27.5 – 28.35 GHz) for FDD operation.

Comments are also sought on point-to-point versus point-to-multipoint systems, i.e. is one expected to be more heavily deployed than the other? Are both systems compatible in the same frequency range?

11. Rogers believes that FDD point-to-point systems will be more heavily deployed than TDD point-to-multipoint systems. This will be due to the migration of digital microwave transport systems from the 11 GHz and 15 GHz bands, as a consequence of the Department's recent decisions with respect to these two bands and due to the dramatic growth of mobile broadband data traffic. These factors will place increased demands on backhaul facilities and on the need for more backhaul spectrum.
12. Point-to-multipoint systems have had more than a reasonable opportunity to deploy within this band. As the Consultation indicates, carriers with point-to-multipoint systems have had since 1996 to deploy systems within this band without success, which prompted the Department to open the lower and upper portions of the band for fixed systems. It is clear that there is very little interest in deploying point-to-multipoint systems in the Band.
13. Rogers believes that careful engineering may permit both systems to co-exist in the same frequency range. However, the presence of TDD point-to-multipoint systems would create large "exclusion areas" relative to point-to-point systems, meaning that it will be impossible to operate FDD systems in the same area. Therefore, the practice of allowing TDD systems to operate throughout the band would not be an efficient use of spectrum and the Department should not permit both systems to occupy the same frequency range. Instead, TDD systems should be restricted to a separate portion of the band so that FDD systems may be implemented elsewhere in the band.

Is there greater interest in deploying FDD or TDD systems in this band?

14. Rogers believes that there will likely be a greater interest in deploying FDD systems in this band. Wireless carriers require new or expanded FDD microwave facilities for backhaul to their mobile base stations to accommodate the dramatic growth of mobile broadband data traffic. Further, as indicated by participation at the RABC working group, the majority of carriers had indicated interest in FDD systems whereas only one member of the RABC working group had expressed interest in TDD systems.

Other than the two options provided, is there another band plan that Industry Canada should be considering? If yes, provide supporting information/rationale and address any related issue outlined herein.

15. As noted above, Rogers believes that it is most practical to harmonize the lower portion (25.25 GHz to 26.5 GHz) with the European band plan in order to for carriers to have access to industry standardized equipment and economies of scale. The demand for FDD and TDD systems in the lower portion should be evaluated in the near term. If demand for FDD systems far outnumbers demand for TDD systems, then some or all of the channels assigned to TDD systems should be redesignated into FDD channels. The upper portion (27.5 GHz to 28.35 GHz) should be designated for FDD systems.

Specifically, for the band 25.25-26.5 GHz:

Are channel bandwidths of 28 MHz appropriate? Is it beneficial to align with the European band plan in terms of duplex spacing given that FDD operation will be limited to six paired channels? Is there interest in making equipment to support Option 2, with the same channelling plan as in Europe, but with a different duplex spacing for FDD operation?

16. Rogers agrees with the recommendation to align with the European band plan in the lower portion, to take advantage of equipment currently being produced for the European market. As stated above, in the event that a near-term demand analysis determines that the demand for TDD systems is low, part of the TDD spectrum in the lower portion of the band may be redesignated for FDD systems. To facilitate this future activity, Rogers recommends that any TDD systems deployed should occupy channels from the centre of the proposed TDD channel range, to prevent displacement at a future date.
17. Rogers believes that 28 MHz channels are appropriate for a minimal channel size, and believes that the Department should provide operators with the option of combining two-28 MHz channels into a duplexed 56 MHz channel, in order to provide necessary bandwidth to support high-bandwidth applications, such as backhaul for burgeoning mobile broadband services.

Specifically, for the band 27.5-28.35 GHz:

Is it preferable to have channel bandwidths of 25 or 50 MHz, or channel bandwidths of 28 MHz?

18. Rogers believes that the Department should re-allocate the spectrum for FDD applications. Rogers believes that channels of at least 25 or 28 MHz should be used. As noted above, operators should be given the option of combining two channels in order to increase their available bandwidth to support mobile broadband services.

5.2 Spectrum Access

In order to keep the band available on an FCFS basis, the Department proposes to apply the following principles:

- (a) Assignments of blocks will be on an “as needed” basis. Licensees will be required to demonstrate their need for spectrum for each request.
- (b) A second block will only be assigned to a licensee in the same service area when the original block assignment cannot be reused.
- (c) Assignments will be brought into service within a period not greater than six months from receipt of an approval-in-principle/licence.
- (d) A licensee will be assigned the same frequency blocks, to the extent possible, in all authorized service areas.
- (e) Requests for wide area authorization, for example, large regions of a province, will not be considered.
- (f) Point-to-point systems may have shared access where it is determined that their usage requirements are low.
- (g) Should demand exceed supply in a particular area, the Department reserves the right to review the use and consider a competitive process at any time.

The Department seeks comments on these principles.

- 19. Rogers agree with these principles, providing that channels may be combined (e.g. $28 + 28 = 56$ MHz) in order to provide additional bandwidth to support fast-growing and traffic-intensive services such as mobile broadband services.

The Department seeks comments on the licensing options and the use of a user-defined service area.

- 20. Rogers believes that the implementation of a user-defined service area facilitates an efficient licensing process and therefore strongly supports its implementation.

6.3 Licence Fees

In the Consultation Paper, the Department seeks comments on licensing options for the band and has proposed an annual fee of \$0.00003205 per MHz per population, with a minimum of \$150 per licence.

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21. This proposed fee structure introduces a potential source of confusion: the population applicable to the licence at hand is difficult to determine for point-to-point systems.
 22. The Consultation seeks comments on items such as the use of the spectrum for fixed point-to-point systems. The RABC has determined that there is a large interest in using the spectrum for short-hop, fixed, point-to-point FDD systems, i.e. for transport. As a result, it is difficult to determine the applicable population for a transport system: the size of the population at each radio transceiver cannot readily be determined. Also, it would not be reasonable to include the population spanned by the point-to-point radio link if that population is not accessed by the same radio link, as in the case of a point-to-multipoint access radio system. Clearly, tying fixed point-to-point fees to population is unworkable and would not be appropriate. As the RABC stated, the Department should implement the same fee and fee structure that is used in the 38 GHz band, i.e. on a spectrum grid-cell basis, using the same grid-cell map as that used for 38 GHz⁵.

Conclusions

23. Rogers appreciates the Department making more spectrum available for fixed point-to-point systems; however spectrum made available in the 25 – 28 GHz band does not fill the void left by recent decisions that will result in fixed systems being displaced from the 11 and 15 GHz bands.
24. Rogers supports a derivative of the proposed Canadian band plan Option 1 which is to harmonize the lower portion (25.25 GHz – 26.5 GHz) with that of Europe. In the near term, the demand of channels by TDD systems should be evaluated and if demand is not sufficient, then some or all of the TDD channels should be restructured for FDD systems. The upper portion (25.5 GHz – 28.35 GHz) should be structured to accommodate FDD systems.
25. We expect that point-to-point FDD systems will have the greatest need for this band. TDD point-to-multipoint systems will deny the use of the band by FDD point-to-point systems and would not be an efficient use of this band.
26. Operators should be given the option of combining adjacent channels, e.g. two 28 MHz channels into higher bandwidth 56 MHz channels, for applications that require higher bandwidth.
27. Rogers agrees with the FCFS licensing processes proposed by the Department. The Department should implement the same fee and fee structure that is used in the 38 GHz band, i.e. on a spectrum grid-cell basis, using the same grid-cell map as that used for 38 GHz.
28. Rogers Communications appreciates the opportunity to provide comments on this important Consultation.

*** End of Document ***

⁵ CPC-2-1-17, Issue 3, sections 3.7 and 3.5