



Rogers Communications Inc.

333 Bloor Street East
Toronto, Ontario M4W 1G9
Tel. (416) 935-7211
Fax (416) 935-7719
rwi_gr@rci.rogers.com

Dawn Hunt
Vice-President
Regulatory

May 25, 2009

Mr. Leonard St-Aubin
Director General, Telecommunications Policy Branch
Industry Canada
16th Floor
300 Slater Street
Ottawa ON K1A 0C8

Sent via email: wireless@ic.gc.ca

Dear Mr. St-Aubin:

Re: Canada Gazette, Part I, January 10, 2009, Consultation on the Possible Use of the Extended-Ku Spectrum Bands for Direct-to-Home (DTH) Satellite Broadcasting Services – DGTP-003-08

Rogers Communications Inc. (Rogers) appreciates the opportunity to provide reply comments on the above-noted consultation.

The documents are being sent in Adobe Acrobat Professional Version 8.0.
Operating System: Microsoft Windows XP.

Yours very truly,

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

Dawn Hunt
DH/jt

Attach.

**Reply Comments of Rogers Communications Inc.
(Rogers)**

Canada Gazette Notice No. DGTP-003-08

Consultation Paper on the Possible Use of the Extended-Ku
Spectrum Bands for Broadcasting Services

Published in the Canada Gazette, Part I
January 10, 2009

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Introduction

1. Rogers Communications Inc. (“Rogers”) is in receipt of comments filed by various parties, including an abridged version of Telesat Canada’s comments, in response to the Department’s consultation paper titled **Consultation Paper on the Possible Use of the Extended-Ku Spectrum Bands for Direct-to-Home (DTH) Satellite Broadcasting Services – DGTP-003-08** (“the Consultation Paper”). In the Consultation Paper, the Department proposed to make certain designation changes in the band 10.7-11.7 GHz (“the 11 GHz band”) to facilitate DTH services. Specifically, the Department has requested public comments regarding whether the extended-Ku bands 10.95-11.2 GHz and 11.45-11.7 GHz (“the extended-Ku bands”) should be designated only to the fixed-satellite service (“FSS”) such that these bands would be used exclusively for DTH services. Among other things, the 11 GHz band is currently used for fixed service microwave backhaul systems that support cellular and Personal Communications Services (“PCS”) commercial mobile services.
2. Rogers hereby files the following reply comments. Rogers also participated in the development of, and fully supports, the reply comments of certain fixed service providers.
3. As it noted in its comments, Rogers relies heavily on the use of a variety of fixed service spectrum bands, including the 11 GHz band, for microwave backhaul systems that are used in the provision of advanced commercial mobile voice and data services. Rogers uses microwave backhaul for serving the vast majority of its radio base station sites. Rogers’ demand for fixed service spectrum will continue to grow along with the rapid growth of next generation broadband mobile data services.

4. By using standardized fixed service frequency bands, Rogers has access to leading edge backhaul technology developed for either the European or North American markets, which means that Rogers is able to benefit from equipment availability and economies of scale. This in turn translates into services that are affordable and of high quality.
5. Rogers' wireless service is currently available to approximately 94.8% of the Canadian population. Its next generation wireless services using Universal Mobile Telephone System/High-Speed Packet Access ("UMTS/HSPA") technology are currently available to over 75.6% of the Canadian population. Rogers' advanced high-speed wireless data services include mobile access to the Internet, wireless e-mail, digital picture and video transmission, mobile video, music downloading, video calling and two-way short messaging service ("SMS").
6. A significant driver of broadband mobile data usage in Canada is the popularity and proliferation of smartphone consumer devices that support the use of broadband mobile data services and applications. Smartphones allow business and consumer users to increase their productivity by leveraging the benefits of broadband mobile services while they are on the move.
7. As the popularity of smartphones continues to grow, wireless service providers such as Rogers must rapidly expand their backhaul facilities to support mobile data services. 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.
8. Cellular and PCS radio base stations are not necessarily located where fibre is available. Moreover, microwave is generally a less costly alternative compared to fibre outside urban areas. 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 backhaul capacity that may be required to improve coverage or increase capacity. For these reasons, Rogers and other wireless service providers will continue to heavily rely on microwave for their backhaul requirements.

9. It is also important for the Department to remember that each microwave spectrum band has unique characteristics that address a different need. Lower frequency bands are less susceptible to path loss and allow for longer link distances. Higher frequency bands can only be used for much shorter link distances. Bands such as the 11 GHz band are used to support link distances that are in the middle of the two extremes.
10. As noted in its comments, Rogers is concerned with the Department's proposal to limit the extent to which the 11 GHz band may be used for fixed service microwave backhaul systems since this band is one of a few bands that are available to efficiently address mid-range link distances. This concern is compounded by the fact that, in a separate consultation paper, the Department has proposed to limit the extent to which the 15 GHz band may be used by the fixed service.¹ Like the 11 GHz band, the 15 GHz band is used to serve mid-range link distances.
11. If adopted, the Department's proposals will have the effect of creating a void in the microwave options that are available to wireless service providers for mid-range, medium and high capacity back-haul links. Further, the proposed displacement of fixed service microwave backhaul systems from the extended-Ku bands in the 11 GHz band will be costly. In total, there are hundreds of fixed service links in these bands. Added to the substantial

¹ Consultation Paper on Using a Portion of the Band 14.5-15.35 GHz for Tactical Common Data Link (TCDL) Systems (DGTP-004-08), December 2008.

capital cost of replacing 11 GHz microwave systems is the cost of engineering and installing new links.

12. Restricting fixed service users to the remaining portion of the 11 GHz band will also result in the premature congestion of this spectrum. Well over 1,000 fixed service links are at risk of being displaced from part of the 15 GHz band. Some of these links will necessarily need to be accommodated in the 11 GHz band.

13. As outlined in greater detail below, it is clear that fixed service providers are unanimously opposed to the proposal to grant FSS DTH proponents the exclusive use of the extended-Ku bands. Further, the comments filed by the DTH proponents provide no compelling reasons for the Department to designate the extended-Ku bands for the exclusive use of FSS for DTH services. It is patently clear that these parties simply want to avail themselves of the least costly alternative for adding capacity to their systems and to shift the economic burden associated with their future requirements onto the backs of incumbent fixed service users by displacing them from the extended-Ku bands.

The Spectrum Utilization Policy Should Not Be Changed

14. The comments filed by Bell Canada, Harris Stratex, Rogers, SaskTel, Telus and Terago, confirm that these parties do not support the proposal that the spectrum utilization policy of the Ku frequency band should be changed to grant FSS DTH the exclusive use of the extended-Ku bands. For example, the Fixed Service Providers' submission states that they "are firmly opposed to the prospect of re-designating the extended Ku band for the exclusive use by the fixed satellite service (FSS)".² Terago is opposed to the proposal in

² Fixed Service Providers Comments, p. 1.

light of “its inequitable consequences”.³ Sasktel agrees that the proposal would be inequitable since “it seeks to eliminate the Fixed Services (FS) from half of the band, while still requiring the FS to share the other half of the band” with FSS proponents.⁴

15. These parties are also opposed to the proposal on the basis that they committed resources and developed future plans for their continued use of the entirety of the 11 GHz band on the basis of the Department’s recently issued spectrum utilization policy for this band (SP 3-30). For example, the Fixed Service Providers state the following in this regard:

*We have committed our resources and planning to the availability of this spectrum for the immediate and long term future as it was our expectation that the satellite service providers would utilize the spectrum designated for their use. Manufacturers base the efficient design of their radio equipment on the specific characteristics of the spectrum allocated and commit developmental resources on the basis of the regulatory certainty provided by Industry Canada’s spectrum policies.*⁵

16. Similarly, Terago has noted that the periodic and detailed review of Industry Canada’s policies is intended to provide regulatory stability, whereas the current proposal, coming so soon after the last review of the spectrum utilization policy, would “undermine that regulatory and commercial stability”.⁶ Rogers agrees with these parties that the Department should maintain the course that it previously established for the use of this band and it should avoid the significant disruption to the plans of the fixed service providers that would result if the current proposal is adopted.

³ Terago Comments, p. 1.

⁴ SaskTel Comments, p. 3.

⁵ Fixed Service Providers Comments, p. 1.

⁶ Terago Comments, p. 2.

17. The fixed service providers are also opposed to the proposal on the basis that the FSS DTH proponents have other viable alternatives to satisfy their future capacity requirements.

18. For example, SaskTel has noted that the FSS DTH proponents have had the opportunity to develop the 17 GHz band for DTH. Specifically, SaskTel notes that:

There are other spectrum alternatives available for DTH, namely the 17 GHz Broadcasting Satellite Service (BSS) band and (17.3-17.8 GHz). Use of the 17 GHz BSS band better aligns with FCC and ITU directions on satellite broadcasting services.⁷

19. Various other viable alternatives that are available to the FSS DTH proponents have been cited by the Fixed Service Providers, including capacity that is available from Ciel. The Fixed Service Providers state the following in this regard:

On the FSS side, there are alternatives to the Ku band for DTH broadcasting services, namely the use of the Ka bands 17.3-17.8 GHz and 18.3-19.3 GHz for which satellite technology is available as evidenced by the number of FSS applicants for licences in the US.

Furthermore in 2008 a Ka-FSS license was awarded to Telesat at 118.7 WL, and Ciel was recently awarded 6 new Approvals in Principle by Industry Canada to develop spectrum at the orbital locations listed below:

91°W 17/24 GHz BSS Band

⁷ SaskTel Comments, p. 3.

91°W Ka FSS Band

103°W 17/24 GHz BSS Band

107.3°W 17/24 GHz BSS Band

109.2°W Ka FSS Band

138°W 12 GHz BSS Band.

It is clear therefore that Canada has ample resources for broadcasting satellite services, including 500 MHz of spectrum, both polarizations, at each of six orbital locations which can be used in combinations to cover all Canada or create regional beams. Each of the beams can support 32 broadcasting FM TV channels. We submit that these allocations should be exhausted before other spectrum is designated for FSS DTH.⁸

20. Rogers notes that these views are echoed in the comments of the fixed service users within the RABC's response.⁹

21. It is evident that the FSS DTH proponents are transparently attempting to avoid the cost associated with developing the 17 GHz BSS band. For example, Shaw makes the following claims in this regard:

Accordingly, it is foreseeable that the costs of an RDBS satellite and ground equipment would be higher than the costs of launching and using an extended Ku-band satellite. Shaw Direct estimates that the incremental cost of adding the RDBS frequency would be approximately \$200 million, making the cost of capacity expansion uneconomical.¹⁰

⁸ Fixed Service Providers Comments, pp. 5-6.

⁹ RABC Comments, p. 5.

¹⁰ Shaw Comments, p. 9.

22. Shaw's best alternative to making the investment necessary to develop the 17 GHz BSS band is to simply shift the cost of their future capacity requirements onto the incumbent fixed service providers who would be displaced from the extended-Ku band.

23. Rogers submits that the Department should not grant exclusive use of the extended-Ku bands to FSS DTH and thereby allow DTH proponents to impose the burden of their future requirements on incumbent fixed service users. Clearly, shifting costs in this manner would be unfair and unreasonable and FSS DTH proponents should be required to make productive use of the 17 GHz BSS spectrum that is currently lying fallow.

24. In an attempt to divert the Department's attention away from the question regarding whether they have other viable alternatives for expanding the capacity of their DTH services, Shaw and Telesat have asserted that the industrial development and economic investment activities associated with the use of the extended-Ku bands is reason enough to proceed.

25. For example, in its comments, Shaw claims that:

The construction and launch of a new extended Ku-band satellite will represent a significant investment of hundreds of millions of dollars in Canadian infrastructure during difficult economic times, and will contribute to the further deployment of broadband infrastructure.¹¹

26. Telesat makes similar claims where it states the following in this regard:

Expeditious approval of this proposed change in policy will permit Telesat to immediately commence construction of and investment

¹¹ Shaw Comments, p. 1.

*in a new xKu band satellite...this investment will further stimulate economic activity in all regions of the country.*¹²

27. It is important for the Department to remember that the extent to which accommodating FSS DTH in the extended-Ku bands will generate investment is not the issue in this consultation. The primary consideration is whether FSS DTH proponents require the exclusive use of this spectrum or whether they have other alternatives. Therefore, the comments of the FSS DTH proponents in this regard are irrelevant. In any event, the industrial development and economic investment activities cited by these parties would be equally applicable to other viable alternatives, such as, for example, the development of the 17 GHz BSS band for DTH.

28. Most of the parties that support the exclusive use of the extended-Ku bands for DTH have made hollow claims that the incumbent fixed service users have viable alternatives in other spectrum bands. Some of these parties have cited the microwave spectrum bands that were listed in question 4 of the Consultation Paper and they have not provided any evidence or worthwhile analysis demonstrating that these bands are suitable alternatives to the 11 GHz band.

29. For example, without any justification for its position, Shaw offers the following hollow claim in its comments:

Shaw believes that the future capacity requirements of the fixed terrestrial service can be accommodated in other fixed service allocations at 6, 15, 18 GHz and the remaining portions of the 11 GHz Ku band, and that these bands are suitable and there is

¹² Telesat Comments, p. iii.

*sufficient spectrum to accommodate any potentially displaced fixed service systems from the extended-Ku bands.*¹³

30. Other FSS DTH proponents, such as Intelsat, have simply offered no comment whatsoever on this important issue. Evidently, these parties believe that the impact of the proposal on fixed service providers that currently serve over 21 million Canadians is of little import.

31. Similarly, the FSS DTH proponents believe that their exclusive use of the extended-Ku bands is justified given that “there are only a limited number of current fixed service licensees in the extended Ku-band”¹⁴ and that “only 425 transmitters are licensed to operate in the xKu bands”.¹⁵ Without providing any evidence to substantiate its claims, Shaw makes the following baseless claim:

*Indeed, based on a mathematical analysis, Shaw believes that almost all of the current terrestrial users in the 10.95-11.2 GHz and 11.45-11.7 GHz bands could be accommodated in the 10.70-10.95 and 11.20-11.45 GHz bands.*¹⁶

32. Similar unfounded claims are found in a report that was prepared by Lemay-Yates Associates for Telesat and that was attached to Telesat’s comments. Specifically, the report provides the following important caveat with respect to its findings regarding the supposed alternatives available to fixed service licensees in the extended-Ku band:

Detailed engineering studies would be required to confirm which of the options would be the best choice in any specific situation. The

¹³ Shaw Comments, p. 13.

¹⁴ Ibid, p. 10.

¹⁵ Telesat Comments, p. 17.

¹⁶ Shaw Comments, p. 10.

*analyses presented in this Report do not supplant the normal technical studies and coordination activities that would be required by licensees prior to changing frequency assignments or applying for licences in other bands. In particular before making any change to licensed systems, the licensee would have to perform technical and coordination studies to ensure lack of interference with other radio licensees within the relevant coordination zones.*¹⁷

33. Despite this strong qualification regarding the usefulness of its findings, the report confidently and superficially states that “it should be relatively easy” to fit the incumbent fixed service systems in the extended-Ku bands into the lower portion of the 11 GHz band or into other bands.¹⁸ Later, the report twice qualifies this statement as being valid only if there are adequate channels available in the lower portion of the band, which the report assumes but makes no attempt to confirm.¹⁹

34. The comments of these parties grossly understate the difficulty of relocating fixed service systems from the extended-Ku bands to other bands. As noted above, lower frequency bands allow for longer link distances while higher bands can only be used for much shorter link distances. Bands such as the 11 GHz band can support link distances that are in the middle of the two extremes. SaskTel has similarly noted the value of 11 GHz spectrum where it states that:

*The 11 GHz spectrum is important for backhaul applications due to the combination of favourable propagation characteristics and antenna gain advantages allowing short to medium link distances we suited to urban backhaul links.*²⁰

¹⁷ Telesat Comments, Appendix 6, p. 5.

¹⁸ Ibid, Appendix 6, p. 12.

¹⁹ Ibid, Appendix 6, p. 16.

²⁰ SaskTel Comments, p. 4.

Lower frequency bands are in many cases more congested, and preference should be given to long haul systems in the lower frequency bands where possible. Therefore, in most cases a higher frequency band would likely be the most viable spectrum option for a displaced 11 GHz link.²¹

35. Having concluded that the 15 GHz band would be a likely destination for displaced 11 GHz links, SaskTel then states that “options for 15 GHz will likely be extremely limited, depending on the results of the public consultation from Canada Gazette Notice DGTP-004-08 ‘Consultation Paper on Using a Portion of the Band 14.5-15.35 GHz for Tactical Common Data Link (TCDL) Systems’”.²²

36. The Fixed Service Providers have made similar observations and have also explained why the 6 GHz band would not be a suitable alternative to the 11 GHz band:

In addition, the current SRSP for the 11 GHz band allows the use of antennas as small as 4-feet in diameter, which are ideal for urban and sub-urban applications where the support structures are usually roof-tops. The use of smaller antennas in this manner also minimizes the aesthetic concerns that would arise with the use of larger antenna sizes, which are required, for example, for backhaul links in the 6 GHz band.²³

37. In its comments, Rogers explained why none of the other spectrum bands are direct (or even close) substitutes for the 11 GHz band with respect to microwave backhaul applications. None of the DTH proponents have provided evidence in their comments that contradicts this fact. Indeed, the

²¹ Ibid, p. 5.

²² Ibid, p. 5.

²³ Fixed Service Providers Comments, p. 10.

Lemay-Yates report included in Telesat's comments repeatedly acknowledges that the typical link distances associated with other fixed service bands are not comparable to the typical link distances in the 11 GHz band.²⁴

38. Notwithstanding the unsubstantiated claims of the FSS DTH proponents, the fact remains that there are currently no practical alternatives to the use of the 11 GHz band for fixed service backhaul systems.

Transition Proposals

39. In their comments, a number of FSS DTH proponents have urged the Department to implement a transition policy whereby incumbent fixed service licensees would be required to vacate the extended-Ku bands within three years after the issuance of the revised spectrum utilization policy.²⁵

40. As noted above, Rogers and other fixed service providers are firmly opposed to granting FSS DTH the exclusive use of the extended-Ku bands. In the event that the Department elects to proceed with this proposal, Rogers submits that a transition period of no less than five years should be provided for fixed service systems to vacate the extended-Ku band only as required, after a revised spectrum utilization policy is issued by the Department.

41. Rogers believes that a three-year transition period would be unjustifiably short, especially in light of the fact that the FSS DTH proponents have said that they require a minimum period of three years to manufacture and launch an extended-Ku satellite. It would be entirely unreasonable for the Department to require the transition of incumbent fixed service systems from the extended-Ku band before an extended-Ku DTH satellite is placed into

²⁴ Telesat Comments, Appendix 6 (see for example, 4 GHz, 6 GHz, 7 GHz and 8 GHz bands on p. 20; 18 GHz band on p. 25; 23 GHz band on p. 26; 24 GHz, 28 GHz and 38 GHz bands on p. 28).

²⁵ Telesat Comments, p. iii.

operation. A five-year transition period would allow fixed service providers to continue to operate while the FSS DTH proponents are funding, planning, constructing, launching and placing into operation their extended-Ku band satellite. Rogers submits that any failure by the DTH proponents to utilize the extended-Ku band for DTH within one year of the displacement of fixed service systems should result in the extended-Ku band reverting back to its current designation for fixed service use on a shared basis with FSS.

Conclusion

42. Rogers relies heavily on the use of a variety of fixed service spectrum bands, including the 11 GHz band, for microwave backhaul systems that are used in the provision of advanced commercial mobile voice and broadband mobile data services. Since Rogers uses microwave backhaul for serving the vast majority of its radio base station sites, it is expected that Rogers' demand for fixed service spectrum will continue to grow along with the rapid growth of next generation broadband mobile data services. The comments of other fixed service providers corroborate Rogers' view regarding the growing requirements for additional fixed service backhaul capacity and fixed service spectrum to satisfy these requirements.

43. Rogers is concerned with the proposed displacement of fixed service microwave backhaul systems from the extended-Ku bands at the same time that the Department is also proposing to limit the use of portions of the 15 GHz band by fixed service microwave backhaul systems. These bands are required for the provision of mid-range backhaul links and limiting the use of fixed services in these bands will create a void in the options available to fixed service users. Several parties share this concern and the DTH proponents have failed to demonstrate that there are suitable fixed service alternatives to the extended-Ku band.

44. Rogers and other fixed service providers are firmly opposed to the proposed designation of the extended-Ku band for the exclusive use of FSS for DTH services. These parties have provided ample evidence that there are other viable alternatives available to DTH proponents. Accordingly, FSS DTH proponents must not be granted exclusive use of the extended-Ku band or be permitted to shift the economic burden associated with their future capacity requirements onto the backs of incumbent fixed service users.

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