

# SaskTel Comments:

Canada Gazette Notice DGTP-003-08

Consultation Paper on the Possible Use of the  
Extended-Ku Spectrum Bands for Direct-to-  
Home (DTH) Satellite Broadcasting Services

April 16, 2009

## INTRODUCTION

Saskatchewan Telecommunications ("SaskTel" or "the Company") is pleased to provide this response to Gazette Notice DGTP-003-08 "*Consultation Paper on the Possible Use of the Extended-Ku Spectrum Bands for Direct-to-Home (DTH) Satellite Broadcasting Services*", dated December 22, 2008 ("the consultation").

SaskTel commends Industry Canada ("the Department") for providing an opportunity for the telecommunications industry to submit comments on the questions raised in the consultation regarding future use of the Extended-Ku spectrum band. Because the proposed changes, if implemented, will require displacement of existing users, it is important to receive and consider input and comments from all affected parties.

SaskTel has 14 licensed microwave links currently operating in the Extended-Ku frequency bands that would be directly impacted by any proposal to allow DTH services in this spectrum. Due to the wide geographic distribution of consumer DTH receivers, as well as consumer expectations of service, industry consensus is that fixed point to point links and DTH services cannot co-exist in the same frequency band, and that all fixed point to point links must be displaced if DTH services were to be allowed in the Extended-Ku band. This would equate to a very significant capital investment for SaskTel, with no benefits or increased return on investment. Furthermore, SaskTel believes that the DTH service providers do have other options to increase their DTH capacity that do not require use of the Extended-Ku band spectrum.

SaskTel has participated with the Radio Advisory Board of Canada (RABC) and major industry players in creating the RABC submission to Canada Gazette Notice DGTP-003-08. SaskTel fully supports the RABC submission.

Below SaskTel offers our responses to the specific questions raised by the Department in the consultation.

## SASKTEL RESPONSE TO REQUEST FOR PUBLIC COMMENTS

**1. (a) The Department seeks comments as to whether the spectrum utilization policy of the Ku frequency band 10.7-11.7 GHz should be changed to accommodate the provisioning of DTH services and, if so, what the designated use for each of the sub-bands should be.**

SaskTel believes that the above segmentation proposal is not equitable because 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. There are other spectrum alternatives available for DTH, namely the 17 GHz Broadcasting Satellite Service (BSS) band (17.3-17.8 GHz). Use of the 17 GHz BSS band better aligns with FCC and ITU directions on satellite broadcast services. SaskTel notes that Ciel Satellite Group is seeking customers interested in utilizing any of its satellite capacity through a Call for Interest, which includes 17 GHz BSS capacity at 103° W and 107.3° W. We also note Telesat's recent application for the 17 GHz BSS licence at 111.1° W showing plans to launch a new 17 GHz BSS satellite for service in 2012.

Although the 17 GHz BSS band has not yet been developed, there is keen interest in utilizing this spectrum for DTH services, and the 17 GHz BSS band will be the spectrum of choice for future DTH services. Any use of the Extended-Ku band for DTH will only be a short term solution to address interim capacity issues which will not be used over the long term for DTH. SaskTel does not feel that forcing FS users to be displaced from the Extended-Ku band to support an interim DTH service is a fair solution.

**(b) More specifically, should the designation be as requested in section 3.1 above, namely that the extended-Ku bands 10.95-11.2 GHz and 11.45-11.7 GHz be designated only to the fixed-satellite service, and the bands 10.7-10.95 GHz and 11.2-11.45 GHz continue to be designated to the fixed-satellite and fixed services under the current policy stipulations?**

SaskTel opposes the designation of the Extended-Ku bands (10.95-11.2 and 11.45-11.7 GHz) for exclusive Fixed Satellite Services (FSS). As noted in the answer to 1 (a) above, there are other alternatives for the DTH service provider that will not require the displacement of existing users. 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 well suited to urban

backhaul links. It must also be noted that the rapid growth of communications networks has resulted in a great demand for additional backhaul links.

Sharing between FS and FSS systems in the same band is feasible through cooperative frequency coordination and proper site selection and engineering. Sharing is not possible between the FS and DTH satellite services, where the consumer DTH receivers are widely distributed geographically, and the expectation by consumers of a ubiquitous service available in all locations.

***If these designations are made as described in 1(b) above:***

***2. Should they (a) be for a limited duration, and (b) be made conditional on the bringing into use the extended-Ku bands for DTH services within a specified period of time?***

The DTH community has expressed an interim need for Extended-Ku band spectrum for DTH services pending development of the 17/24 GHz BSS band. Given the high level of interest in the 17 GHz BSS band, it will not be long before it becomes developed and widely utilized. Therefore, any designation for Extended-Ku DTH must be for a limited duration to avoid the spectrum being underutilized. SaskTel agrees with the suggestion of some RABC members that the spectrum should revert back to a shared FS/FSS status after 8 years from the Department's decision.

SaskTel must also emphasize the need for regulatory stability. SaskTel has made a considerable investment in this band, and will require further investments to vacate the band for an interim period. Network operators require regulatory stability to properly plan network deployments in response to expected rapid expansion of 3G and 4G networks. The status quo for this band should be maintained while alternatives are being explored.

***3. Comments are sought as to the disposition of the current fixed service licensees in the extended-Ku bands. Should they be permitted to continue operating in these bands and, if so, under what conditions?***

Fixed services should be permitted to continue to operate in these bands. SaskTel does not believe that a transition for the FS out of the Extended-Ku bands is in the best public interest. However, should the Department elect to revise their policy to limit the use of the Extended-Ku band by the Fixed services, then a reasonable transition time will be required. Given that typical timeframes for satellite construction and launch is about 3 years, SaskTel believes that no FS displacement should take place before the three year

window. A minimum two year notification will be required so that operators can have sufficient time to construct replacement facilities, and notification of displacement should only be given where necessary, i.e. where it can be shown that the FS link in question will be detrimental to DTH service delivery.

Earlier transition to the formal notification date would be at the expense of the DTH service providers. The cost of link migration is more than the capital cost of the affected FS radio equipment. As noted above, non-capital costs would also be incurred by FS operators, including costs related to network planning, link engineering, civil works, network downtime, and licensing fees. These costs are significant, and the transition of these FS systems out of the extended-Ku bands would provide no benefit or return on investment for the affected operators, only increased cost and reduced options for future network design activities.

***4. Comments are sought as to whether the future capacity requirements of the fixed service can be accommodated in other fixed service allocations at 6, 15, 18 GHz and the remaining portions of the 11 GHz Ku band. Are these bands suitable and is there sufficient spectrum to accommodate any potentially displaced fixed service systems from the extended-Ku bands?***

SaskTel foresees significant growth in requirements for backhaul services due to the rapid growth of 3G and 4G networks. The 11 GHz band has favourable propagation properties well suited for backhaul links. The remaining portions of the 11 GHz band unaffected by the DTH proposal are already crowded in most major urban centers, making it necessary in many cases to look at other alternatives, including other bands.

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.

An ideal alternative band for 11 GHz is the 15 GHz band. However, 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.*" In fact, if Industry Canada elects to allocate approximately 40% of the 15 GHz band to TC DL systems and mandates displacement of the affected 15 GHz links, while at the same time

requiring displacement of 11 GHz systems to allow for DTH systems, then spectrum choices and frequencies to accommodate all of these displaced systems will be extremely limited. In many urban areas across the country, it will likely become impossible to find a suitable frequency assignment for a displaced system.

Most 11 GHz equipment has limited frequency agility, i.e. the ability to tune to another channel in the same band. In many cases a change in frequency will require replacement of the RF components. Many of the existing radios are manufacture discontinued, eliminating the option of a simple replacement. Changing bands will of course require replacement of not only the radio, but all of the antenna and transmission line equipment. Adding to these very significant costs will be the costs of link design, engineering, frequency coordination, and installation, with no increased benefits or return on investment.

***5. Comments are sought on the coordination requirements with fixed systems in the U.S. and coordination with other FSS systems.***

Please refer to the RABC submission.

***If these designations are not made as described in 1(b) above:***

***6. Should consideration be given to authorizing the use of the extended-Ku bands to provide DTH services on a non-standard basis (i.e. receive-only earth stations shall not claim protection from harmful interference from any current and future authorized fixed service stations)?***

It is generally agreed by both the FS and FSS interests that it would not be viable to authorize the use of the Extended-Ku band to provide DTH satellite services on a non-standard basis. The wide distribution of consumer DTH receivers would be geographically unpredictable and, given the expected volume, interference mitigation for individual DTH receivers from FS transmitters would be commercially impractical and unworkable from a consumer perspective. In addition, the user of the non-standard service would necessarily have to be informed of the lack of protection in a manner similar to that required by the FCC in granting waivers from US footnote NG104. Non-standard DTH usage would not work and would only delay development of FS and FSS networks in this band.

***7. Comments are sought on how the near-term DTH capacity requirements can be met.***

The Department has already made provisions for the orderly growth in demand for DTH capacity by making provisions for more spectrum in higher bands. Given this, we believe that the Extended-Ku band is not the only viable option for the delivery of new DTH broadcasting services. In particular the BSS bands offer a viable alternative. The availability of technology to make use of these bands is demonstrated by the fact that several FSS operators have applied for licences. While the proposal supported by the FSS interests is perhaps an efficient way to upgrade viewers' equipment and is certainly the least costly option for the satellite services provider, it only achieves this distinction by shifting the economic burden to the current FS users.