



May 25, 2009

Ms. Pamela Miller
Acting Director General
Telecommunications Policy Branch
Industry Canada
300 Slater Street
Ottawa, ON
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BY EMAIL: wireless@ic.gc.ca

Dear Ms. Miller:

**RE: 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 - Reply Phase**

1. The following reply comments are submitted by Shaw Communications Inc. ("Shaw") on behalf of its affiliates Star Choice Television Network Incorporated (now known as "Shaw Direct") and Shaw Broadcast Services ("SBS"). Shaw filed extensive comments in the first phase of this proceeding, and has carefully reviewed the comments filed by others, including companies licensed to use fixed services in the extended-Ku bands.

Preponderance of Views Supports the Policy Change

2. We note that 12 of the 18 submissions filed with the Department in the first phase of this proceeding strongly supported the use of the extended-Ku bands for DTH services. These included the submissions of space services providers such as Telesat Canada ("Telesat") and Ciel Satellite, space service capacity users as represented by the Canadian Broadcast Distribution Association ("CBDA"), several broadcasters who rely on Shaw's satellite platform to distribute their services to Canadians, the national association representing private broadcasters and programmers, an association representing 90 small independent cable operators across Canada, as well as a Canadian domestic and international teleport operator.
3. Of the other six submissions, one (that of the Radio Advisory Board of Canada or "RABC") reflected both supporting and opposing positions given a conflict within

its membership, while another filed by two MSS operators concerned primarily the protection of their gateway stations in the allotment bands, rather than the use of the extended-Ku bands. The remaining four submissions, which clearly opposed the use of extended-Ku bands for DTH, were submitted by individual FS users and a group of FS users (Telus Communications Company, Bell Canada, Rogers Communications Inc. and Harris Stratex Networks LLC, whose submission will be referred to as the FS Group submission). The FS Group submission included comments on behalf of Bell TV., a DTH operator that operates in direct competition with Shaw Direct.

4. It is noteworthy that among the parties to the FS Group submission, Bell TV and Rogers Communications Inc. compete directly with Shaw Direct in the provision of broadcasting distribution services. Moreover, Telus Communications Company recently announced that it had entered into an agreement with Bell TV to act as Bell TV's sales' agent in Western Canada for the provision of DTH services, distributing the service under the Telus brand. It is therefore very much in the interest of these competing companies that Shaw Direct's efforts to obtain needed satellite capacity be delayed or fail, so that the competitiveness of Shaw Direct is undermined.
5. The Department does not and should not make important spectrum policy decisions by counting heads or enumerating pages of materials filed by competing interests. Nevertheless, we submit that the quantity and quality of comments filed in the first phase by supporters of a policy change, including reasoned analysis and factual evidence, far outweigh those filed by opponents of such a change. Moreover, the Department should take due account of the fact that three major opponents of using the extended-Ku bands for DTH have significant competitive interests in play that cannot help but colour the technical and regulatory arguments which they have submitted.

This Is A Formal Review

6. The Joint Fixed Services Response argued that the current proceeding does not constitute a "formal review" of the parts of SP3-30 that deal with the sharing of the 10.7 to 11.7 GHz band since this proceeding seeks comments on a "request to use extended Ku spectrum bands for DTH broadcasting services." For the reasons set out below, this is an argument wholly without merit. It has been advanced as a delaying tactic to persuade the Department to embark on yet another consultative process. It is simply intended to extend the debate well into the future at the expense of Shaw Direct's urgent need to build and bring new capacity into operation as soon as possible in order to maintain its competitiveness and fulfill regulatory expectations. As such, the argument should be rejected.
7. There is no meaningful distinction, in law or in spectrum policy-making, between a formal review and a policy review initiated by a request. Paragraph 5(1)(e) of

the *Radiocommunication Act* (the “Act”) gives the Minister, and officers of the Department through powers of delegation contained in section 3, very wide discretion to set spectrum policy, or to amend it as circumstances warrant, as follows:

5(1) Subject to any regulations made under section 6, the Minister may, taking into account all matters that the Minister considers relevant for insuring the orderly establishment or modification of radio stations and the orderly development and efficient operation of radio communication in Canada,

...

(e) plan the allocation and use of the spectrum

8. No regulations have been introduced that limit or otherwise guide the policy-making power of the Minister and his officials, either generally or with respect to particular spectrum allocations.
9. Under paragraph 5(1)(e) of the Act, the Minister is not bound by any process or specific criteria, but only by “all matters that the Minister considers relevant for ensuring the orderly development of radiocommunication in Canada.” The wide discretion with which the Minister is entrusted is entirely appropriate in view of the highly dynamic nature of spectrum management given constantly evolving radiocommunication technologies and international developments with respect to spectrum allotment.
10. In practice, the current consultation has been conducted over a significant period of time and in a manner which ensures that all affected parties have had a full opportunity to respond to the requested policy change. The Department normally consults interested parties on important changes to established spectrum policy rules by setting out proposals on which comments are solicited. This particular consultation was initiated by an official Notice published in the *Canada Gazette*, Part 1 and made widely available on the Department’s website.
11. Most such consultations have only one phase for comments. This proceeding has two phases, an initial phase and a reply phase, which has given interested parties an even greater opportunity to comment than is normally afforded in spectrum policy consultations. The reply phase means that interested parties have had the opportunity to comment not only on the Department’s proposals or posed questions, but also on the arguments and evidence provided by other commenting parties in the initial phase.
12. Additionally, in this proceeding, at the request of the RABC, the Department extended the deadline of each phase by approximately one month. As a result, commenting parties have had ample time and opportunity to consider, discuss and

debate the issues, both within and outside the RABC, and over two phases lasting some four months.

13. Spectrum policy-making as carried out by the Department is in law more of a legislative than an adjudicative function, and insofar as the Minister or his officials act within the ambit of their broad statutory powers, no further obligations as to process or procedure apply.¹ However, to the extent the duty of administrative fairness may apply, we suggest that the extensive two-phase consultative process in this case has amply fulfilled whatever procedural duties may exist.
14. Moreover, with respect to the issues of notice, this Consultation ought not to have come as any surprise to the fixed service proponents. In 2006, in the *Call for Applications to License Satellite Orbital Positions* – DGRB-001-06, Shaw made it abundantly clear in its filings that it supported Telesat’s application for extended-Ku band at 111.1°W.L., precisely in order to provide expanded DTH service as well as other video distribution services.
15. The issue of permitting the use of the extended-Ku bands for DTH use must be resolved expeditiously in order to ensure that Shaw Direct can remain a competitive DTH provider and to fulfill a wide range of regulatory objectives and expectations which apply to it as a DTH distribution undertaking. As explained above, there is no impediment, procedural, statutory, or otherwise, to the Department amending SP 3-30 GHz directly as a result of this Consultation. Calls for more consultation on the part of the FS proponents and Bell TV should be rejected as transparent delaying tactics intended to undermine the competitiveness of Shaw Direct.

The Use of Ka Band by Shaw Direct

16. Certain Fixed Service users, joined by Shaw Direct competitors Bell TV and Telus, argue that Shaw Direct can and should be required to expand its capacity through use of Ka-band options. For reasons explained below, the use of the Ka band by Shaw Direct is impracticable and would render Shaw Direct uncompetitive.
17. Specifically, in the joint Fixed Services Response, the following statement is made:

Not all direct-to-home service providers agree with the position that extended Ku is the only option available. ExpressVu, [now Bell TV] believes that BSS properly belongs in the ka-band for purposes of global development, and Ka options should be

¹ This conclusion is supported by the Federal Court’s decision in *Kohan v. Canada* (Minister of Industry) [1996] F.C.J. No. 926. This decision concerned the Minister’s wide discretion in licensing rather than spectrum allocation, but the latter is even less susceptible to concerns of administrative fairness.

exhausted first. Furthermore, the design and installation of new residential antenna is common practice in the DTH business as part of capacity expansion investments.

Later in the submission, Bell TV asserts that Ka band options are available as evidenced by numerous U.S. filings, by Telesat's licence at 118.7°W.L. and by the two approvals in principle awarded to Ciel Satellite at 91°W.L. and 109.2°W.L.

18. As Bell TV is all too aware, DTH is a small-dish service. Shaw Direct cannot be competitive with Bell TV if it is compelled to use a second dish, cumbersome home antennae that are much larger than that of its direct DTH competitor, or capacity which is not imminently ready for use.
19. As set out at some length in our initial phase submission, Ka band is simply not a viable option for Shaw Direct for a number of technological and regulatory reasons, all of which are presumably known to the satellite professionals at Bell TV – who were present during Shaw Direct briefings of the CBDA. The fact that Ka band may be used by Direct TV, or be part of a prospective “Freesat” proposal by Bell TV (as recently proposed at the CRTC's over-the-air licence renewal proceedings pursuant to Broadcasting Notice of Consultations 2009-70 2009-113) does not make it a viable spectrum alternative for Shaw Direct.
20. The reasons that Ka band is not a viable option for Shaw Direct are as follows:
 - Ciel Satellite does hold an approval in principal for a Ka band payload at 109.2°W.L, which is the only Ka band slot in Shaw Direct's neighbourhood for which Canada has a priority filing. However, given the difficulties with this orbital slot, Ciel Satellite has no current plans to construct and launch a satellite into it. Ka band capacity in orbital slots outside Shaw Direct's neighbourhood cannot be used without an expensive two dish solution, which is commercially untenable in a competitive DTH market.
 - Even if a Ka band pay load could be launched within 3 years at 109.2°W.L, the extremely tight spacing between Anik F1R at 107.3°W.L and Anik F2 at 111.1°W.L, together with the higher frequencies of Ka band which make reception more susceptible to rain fade, would require costly hardware solutions to address, including a larger dish and a stronger mount. DTH has become a small dish service, as Bell TV is all too aware. Shaw Direct cannot be competitive with Bell TV (soon to be sold under the Telus brand in Western Canada) using cumbersome home antennae much larger than those marketed by Bell TV. Moreover, a Ka band solution, even if technically feasible and marketable, would cost some \$300 million more in space costs than an extended-Ku band solution.

- Ka band is most efficiently used for regional spot beam solutions, to provide bandwidth Internet access, for example, or for the delivery of video to local market, as is done in the US. It is not a technology well-suited to providing a national, broad footprint DTH Service of the kind delivered by Shaw Direct.
- Bell TV recently announced a proposal to provide a “Freesat” service that would make available local television signals on a DTH basis to former over-the-air (OTA) viewers in markets where the local broadcaster does not convert to digital transmission. The proposal incorporates the use of Ka band. While Shaw Direct is prepared to provide a similar OTA satellite delivery mechanism using extended-Ku band capacity, the use of the new satellite for this purpose would be limited to one transponder. Shaw Direct plans to utilize the satellite predominantly for services with broad geographical distribution, not solely for the provision of a localized over-the-air satellite delivery service to a narrow base of former over-the-air viewers. The provision of Ka band service to the broad subscriber base, to be used in conjunction with the existing conventional Ku band infrastructure, would render Shaw Direct uncompetitive. As such, any suggestion by Bell TV that its proposed use of Ka band is practicable for Shaw Direct is incorrect.
- In general, Shaw Direct requires a national footprint, not regional spot beams, and we need that capacity in our orbital neighbourhood of 107.3°W.L to 111.1°W.L. For the reasons discussed in our initial submission, only extended-Ku band capacity can work in this neighbourhood. We have looked carefully at a Ka band solution, and have rejected it as technically complicated given the narrow orbital spacing, too expensive, both with respect to space segment and consumer dishes, and commercially unsaleable due to the need for cumbersome consumer dishes capable of receiving both Ku band and Ka band signals. Furthermore, Ka-band lacks the important benefit of providing in-orbit back-up to our conventional Ku-band capacity.

21. In summary, it is highly misleading for Bell TV to suggest that Shaw Direct should adopt an impractical, costly and uncompetitive technology in order to increase capacity for its DTH business.

Relocation of FS Links from Extended Ku to Other Parts of the 11 GHz Band

22. The Joint FS Response states that:

While it may be possible to retune some links within the 11 GHz band, retuning will not be possible for other links in the band. Many components only have a tuning range of 30-40 MHz and would then have to be replaced if still available.

In some cases, the make of the equipment simply prevents retuning. In these cases, the equipment will need to be replaced.

In other cases, the network topology prevents retuning.

23. Shaw itself has 28 licensed FS links in the extended Ku sub-band frequencies. It therefore has considerable experience using these frequencies for microwave backhaul. An engineering analysis prepared by Luc Gadbois, P. Eng., of Shaw (Appendix 1) indicates that virtually all FS links in the extended Ku sub-bands can be efficiently accommodated in the adjacent AP30B sub-bands.
24. That engineering analysis shows that of the 540 links currently licensed in the extended-Ku band, only 5 small groups of links, totalling about 8 to 10, could not be accommodated for technical reasons in the AP30B sub-bands.
25. In fact, most of the FS links in the extended Ku bands are in urban areas with relatively short hops. The 18 and 23 GHz bands, and even the 38 GHz band, are better suited for such links, and use spectrum more efficiently.
26. The argument in the Joint FS Response that some radios may have to be replaced because they cannot be retuned is countered by the fact that all radios need periodic replacement, and that after the three-year transition period, it is likely that a significant proportion of such radios will need to be replaced in any event due to natural attrition.

Availability of Fiber as an Alternative to Extended Ku Microwave

27. Rogers initial submission states, at paragraph 8, that:

Although the use of fiber-optic systems is an important option for providing additional background capacity, the use of microwave transmission will continue to be the preferred option in many cases.

28. Shaw notes that it, as well as Rogers, makes extensive use of fiber in its communications networks and that fiber has greater capacity than microwave. More specifically, we understand that fiber is available in the lower BC mainland to serve the needs of companies such as Terago, who currently use 11 GHz microwave links.
29. Accordingly, we submit wireless backhaul should be carried out using fiber-optic systems where such systems are in place, or can be economically installed to respond to the great demand anticipated by 3G mobile growth. Backhaul effected using fiber rather than the continued use of microwave transmissions in the extended-Ku bands will enable a more efficient use of spectrum in a manner that

fulfills a range of public policy objectives, as described in Shaw's submission of April 17.

The Use of Efficient Modulation and Compression

30. The Joint Fixed Services Response to Industry Canada's Question 7 suggests that DTH proponents have not demonstrated that all compression and modulation options have been exhausted in order to maximize conventional Ku-band capacity.
31. In fact, Shaw Direct adopted 8PSK modulation two years ago for all of its HD services at a cost of several million dollars. Shaw Direct thereby increased its Mbps by 50% for those transponders. In addition, Shaw Direct is considering moving to MPEG-4 compression going forward.
32. That being said, 8PSK modulation and MPEG-4 compression must be adopted and implemented in a manner that does not lead to unsustainable costs and disruptions to Shaw Direct's subscriber base. As a result, it cannot be adopted for all existing services given the extent of equipment change-outs that would be required. To do so would render Shaw Direct uncompetitive. The only viable alternative for the expansion of Shaw Direct's capacity remains the use of the extended Ku-band.

Conclusion

33. We thank the Department for this opportunity to provide Reply comments on an issue of paramount importance to Shaw's DTH operations.
34. Shaw's agreement with Telesat to build and launch a new extended-Ku band satellite will represent a significant infrastructure investment of hundreds of millions of dollars. This investment will support a strong Canadian satellite sector, contribute to the further deployment of broadband infrastructure, and fulfill a number of public policy objectives in connection with broadcasting and maintaining dynamic competition in the DTH distribution sector.
35. If Shaw and Telesat are to proceed with building and launching a new satellite, the requested policy change is needed as soon as possible. Pending regulatory requirements scheduled to take effect in August 2011, broadcasters' plans to largely forego conversion to digital over-the-air transmission, and increasing market demand for HD services mean a new satellite must be brought into operation within 30-36 months. The current process has provided the opportunity for all interested parties to fully review and respond to the proposed policy change. Any delay in issuing a decision on the policy change will have the effect of thwarting the proposed use of extended Ku-band for DTH, frustrating the realization of public policy objectives, and undermining the competitiveness of Shaw Direct.

36. Accordingly, we urge the Department to decide this matter expeditiously and to permit the use of extended Ku-band for DTH. Only with such a decision can work proceed on the construction and launch of a new extended Ku-band satellite while it still remains a viable solution for expanding the Shaw Direct network.

Yours sincerely,

Peter Bissonnette
President
Shaw Communications Inc.

- cc. Hon. Tony Clement, Minister of Industry
Hon. James Moore, Minister of Canadian Heritage
Mr. Michel Arpin, Vice-Chair Broadcasting, CRTC
Mr. Len Katz, Vice-Chair Telecommunications, CRTC