



April 17, 2009

Mr. Leonard St.-Aubin  
Director General  
Telecommunications Policy Branch  
Industry Canada  
16<sup>th</sup> Floor  
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By E-Mail: wireless@ic.gc.ca

Dear Mr. St.-Aubin:

**Re: Consultation Paper on the Possible Use of the Extended-Ku Spectrum Bands for Direct-to-Home (DTH) Satellite Broadcasting Services, DGTP-003-08**

### **Introduction**

1. Shaw Communications Inc. ("Shaw"), on behalf of its affiliates Star Choice Television Network Incorporated (now known as "Shaw Direct") and Shaw Broadcast Services (SBS), urges the immediate amendment of the spectrum utilization policy for the 3-30 GHz range to permit use of the extended-Ku spectrum bands for DTH satellite broadcasting services. Shaw Direct and Telesat have entered into an agreement for the construction, launch and operation of a new extended Ku-band satellite. If the requested change to spectrum utilization policy is granted immediately, Shaw Direct and Telesat will be able to bring a new extended-Ku band satellite into operation in the next 30 months and to deliver up to 100 additional high definition (HD) television services to DTH and cable customers. This will ensure that Shaw Direct and SBS can remain competitive and continue to fulfill Canadian broadcasting policy objectives.
2. 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.
3. Building and launching a new extended Ku-band satellite is the only viable means by which Shaw Direct can expand its capacity, remain competitive, and continue to fulfill important Government economic and broadcasting policy objectives. Without the change, Shaw Direct will be unable to fulfill pending regulatory requirements. A refusal by Industry Canada to immediately change the existing policy would have the following negative consequences:

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- A valuable infrastructure investment will be lost to Canada in an economic period in which continued growth and investment is being actively supported by the Government.
  - Shaw Direct will be unable to satisfy expanded basic carriage and distant signal linkage requirements, which will take effect on August 31, 2011.
  - Shaw Direct will be unable to meet the growing demands of its 900,000 DTH households for choice, particularly in the provision of high-definition programming.
  - SBS will be unable to provide competitive programming signal delivery services to 2,017 small Canadian cable systems and millions of household customers (many of whom live in small, rural and remote communities) who rely on them for the receipt of over-the-air, specialty and pay television services.
  - SBS will be unable to offer Canadian programmers a competitive signal uplink service that allows them to efficiently deliver their 133 television services to cable and DTH customers across Canada.
  - The Governor-in-Council's Directions<sup>1</sup> to CRTC mandating the promotion of a dynamically competitive market for DTH distribution undertakings (the "Directions") will be undermined. By disrupting Shaw Direct and SBS services, the benefits of competition will be denied to Canadian DTH customers, satellite-reliant small cable systems and their customers, and programmers who use SBS uplink services.
  - Contributions by Shaw Direct to the creation and exhibition of Canadian programming for the benefit of the Canadian broadcasting system will be jeopardized.
  - Shaw Direct and SBS will lose the opportunity to create an efficient, in-orbit back-up capability to ensure the ongoing viability of Shaw Direct and SBS in the event of a serious transponder failure on our existing satellites.
  - Scarce Canadian radio spectrum will be protected for terrestrial uses that could be reasonably accommodated by alternative spectrum or technological alternatives to microwave transmissions.
4. To avoid these outcomes and realize the positive benefits of new investment in Canadian high-tech infrastructure, Shaw urges an immediate policy change that:
- designates the 10.95-11.2 GHz and 11.45011.7 GHz bands in the extended Ku-band for priority use by fixed satellite service, including DTH, and
  - terminates the operation of fixed terrestrial service in such bands three years after the issuance of Industry Canada's new spectrum policy.
5. Reasons in support of the proposed modification of the policy pertaining to the use of the extended Ku-band, as well as relevant background, are set out below. In addition, Shaw's detailed responses to the specific questions posed in the Consultation Paper are found in the Appendix to this submission.

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<sup>1</sup> Directions to the CRTC (Direct-to-Home (DTH) Satellite Distribution Undertakings) Order, SOR/95-319, July 6, 1995, 1995 Canada Gazette Part II, p. 1924

## Shaw Direct's DTH Satellite Distribution Business

6. Shaw Direct is a direct-to-home (DTH) satellite distribution undertaking, licensed by the Canadian Radio-television and Telecommunications Commission (CRTC). Shaw Direct is required by Industry Canada to make use of Canadian satellites for the distribution of its Canadian programming services.<sup>2</sup> Consistent with that policy, Shaw Direct has secured the use of all available conventional Ku-band transponders on Telesat's Anik F1R satellite located at 107.3°W and on Telesat's Anik F2 satellite located at 111.1°W.
7. Shaw Direct uses its securely encrypted satellite system to deliver 471 programming services in English, French, Aboriginal and ethnic languages (including 399 Canadian broadcasting and programming services, and 52 high-definition (HD) services) to almost 900,000 households across Canada. A large proportion of these households are located in rural and remote communities. Based on Statistics Canada's reported average of 2.5 persons per household<sup>3</sup>, approximately 2.25 million Canadians receive television via Shaw Direct.
8. Since beginning operations in 1997, Shaw Direct has invested more than \$1.2 billion in developing and operating its DTH service, finally achieving modest positive cash flow (on a consolidated basis with SBS) in 2004.
9. Provided that Shaw Direct can remain competitive by means of acquiring extended Ku-band capacity, it expects to continue making substantial annual capital investments in the range of \$70 to \$90 million. These annual investments would be in addition to the hundreds of millions of dollars which Shaw Direct is prepared to invest in a new extended Ku-band satellite.

## Capacity is Fully Utilized

10. Shaw Direct's transponders on Anik F1R and Anik F2 are now *completely full*. Shaw Direct has already made and will continue to make significant investments to implement compression or modulation advances to maximize the efficient use of its conventional Ku-band spectrum. However, further compression and modulation advances will not be sufficient to satisfy the imminent capacity needs of Star Choice and SBS.
11. In addition, Shaw Direct has made good faith offers to negotiate for the use or acquisition of additional transponders on Anik F1R and Anik F2, including some used by CBC for newsgathering on Anik F1R. These offers have not been taken up. In any event, such additional capacity would not be sufficient to satisfy imminent capacity demands, including those that will be triggered by broadcasters' digital transition and pending CRTC basic carriage requirements for DTH that will be in place by September 1, 2011.
12. No other conventional Ku-band spectrum is accessible to and compatible with the Shaw Direct network and customer equipment. At the same time, spectrum in other bands and at other orbital locations is insufficient to meet the capacity needs of Shaw Direct and SBS in an economical and timely fashion. This is explained below at paragraphs 41 to 48.

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<sup>2</sup> See <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08453.html>.

13. In the DTH satellite sector, Shaw Direct competes vigorously with Bell TV, which also operates a CRTC-licensed DTH undertaking that makes use of BSS frequencies. With Telesat's launch of Nimiq 5 (scheduled for early 2010), Bell TV will have a total of 80 transponders, 28 more than Shaw Direct (even after accounting for the fact that it has agreed to sell 16 transponders to Echostar). This will mean that Bell TV will have 54% more broadcast capacity than Shaw Direct.
14. In addition to competing with Bell TV, Shaw Direct competes with various terrestrial broadcasting distribution undertakings (BDUs), most notably CRTC-licensed or exempt cable systems, as well as foreign DTH satellite systems (Echostar and DirecTv) that make use of BSS frequencies whose signals can be received in Canada. Neither American DTH companies nor terrestrial BDUs face significant capacity restraints going forward.

### **SBS's Program Signal Delivery and Uplink Operation**

15. SBS, formerly known as Cancom, operates three businesses:
  - a CRTC-licensed satellite-relay distribution undertaking ("SRDU") that delivers 113 conventional television and radio signals via satellite to more than 400 BDUs that do not have terrestrial access to a sufficient number of distant broadcasting signals to meet the needs of their subscribers. These BDUs, which are located in 2,017 communities across Canada, serve millions of Canadian households,
  - unregulated satellite-to-cable pay and specialty television delivery services that allow small cable systems to offer satellite-delivered digital programming services, through their head-ends, directly to set-top boxes of subscribers in a manner that allows small cable to be competitive with DTH in a cost-effective manner, and
  - a programming uplink service that provides Canadian programmers with a means of efficient distribution to BDUs across Canada served by SBS.
16. Shaw Direct and SBS operate using the same satellite technology platform. Joint use of the platform creates efficiencies that are integral to the competitiveness of both businesses, as well as their respective abilities to fulfill Canadian broadcasting and economic policy, as discussed below. Capacity limitations affecting Shaw Direct equally impact the ability of SBS to meet the demands of its SRDU, uplink and specialty and pay television delivery customers.

### **The Pressing Need For More Satellite Bandwidth**

17. Shaw urgently requires additional satellite capacity for Shaw Direct and SBS in order to (i) meet market demand for high-definition services (ii) continue fulfilling public policy objectives in support of DTH competition and television service extension (iii) satisfy new mandatory carriage and distant signal linkage requirements imposed by the CRTC pursuant to Broadcasting Public Notice CRTC (BPN) 2008-100, (iv) sustain current levels of mandated revenue-based contributions (which today total in the order of \$30M annually) for the creation and presentation of Canadian programming, and (v) provide in-orbit back-up to ensure a robust and reliable satellite delivery infrastructure.

## **Increasing Demand for High Definition Content**

18. With the increasing roll-out of high-definition television sets to consumers, sales of HD DTH receivers are growing rapidly. As such, there is a strong consumer expectation that the programming services provided by cable and satellite distribution services will maximize the capabilities of consumer hardware. Indeed, the most pressing demand from satellite and cable customers is for the addition of HD channels. If HD programming is not available, customers will increasingly migrate to the provider claiming the largest number of HD channels. In order to remain competitive, Shaw Direct requires sufficient capacity to launch high quality HD channels as they become available and in response to subscriber demands. Without the ability to offer an equivalent number of HD channels to those offered by its competitors, Shaw Direct's ability to continue operating successfully will be seriously undermined.

## **Fulfilling Public Policy Objectives for Extension of Service and DTH Competition**

19. Shaw Direct and SBS fulfill the key public policy objectives of extension of service to small communities and dynamic DTH competition. Their investments and growth have had a tremendously positive effect on Canadians' access to a wide breadth of high-quality digital television services at an affordable price. By successfully developing these services, Shaw Direct and SBS have made an invaluable contribution to keeping Canadians within the regulated broadcasting system and preventing attrition to the black market.
20. The extension of broadcasting services to all communities across Canada has been an important objective of the CRTC and the Government of Canada for almost 30 years. In 1980, the CRTC established the Therrien Committee to report on the most suitable means of extending television and radio services to remote and underserved communities. The recommendations of this committee led to the licensing of Cancom (now SBS) as an SRDU in 1981, and the subsequent development of hundreds (now thousands) of small cable systems that relied on Cancom for the reception of conventional, specialty and pay television services for their subscribers. SBS has continued to this day as an essential contributor to the achievement of the CRTC's extension of service policy objectives.
21. For its part, DTH enables every Canadian – even in remote areas – to receive the same broad, high quality, digital broadcasting distribution service that can be received by a television viewer in a major urban centre.
22. In *Directions to the CRTC (Direct-to-Home (DTH) Satellite Distribution Undertakings) Order (SOR/95-319)*, the Government of Canada directed the CRTC to license DTH undertakings. The Order stated that:

DTH distribution undertakings will become increasingly important primary and alternative means for the distribution of Canadian programming services, in both official languages, as well as of foreign programming services to subscribers in all parts of Canada

and then directed the CRTC

to promote, through licensing, a dynamically competitive market for DTH distribution undertakings.

23. Shaw Direct and Bell ExpressVu were accordingly licensed by the CRTC in 1995 as DTH undertakings. Shaw Direct commenced operations in 1997 with zero customers and quickly grew its subscriber base to the current level of approximately 900,000 households. The licensing of competitive DTH services ensured that all Canadians were offered competitive pricing, scope and quality in their broadcasting distribution services.
24. From a public policy perspective, the competitive entry of DTH into the market meant that cable was given a strong incentive to digitize – thus improving the quality of Canadian communications infrastructure while at the same time making possible the addition of many new Canadian digital programming undertakings to the system.
25. The commitment of Star Choice and SBS to the fulfillment of the government’s policy objectives and the extensive and ongoing investments in developing their networks and businesses must be taken into account by Industry Canada in determining whether to permit the use of extended Ku-band for DTH. These achievements and contributions support the implementation of the requested policy change as quickly as possible.
26. Indeed, the importance of DTH to Canadian public policy is also recognized in the *Telecommunications Act*. Section 28 of the Act gives the CRTC the power to grant priority to the distribution of broadcasting services that are direct to the public in resolving disputes with respect to satellite capacity allocation. Shaw submits that a similar priority should be recognized by Industry Canada in determining the access that should be provided in the future to the extended Ku-band by terrestrial and satellite users.

#### **Satisfying New Mandatory Carriage and Distant Signal Linkage Requirements**

27. Currently, Shaw Direct is required to carry only one signal of each national, over-the-air network and 13 small-market, independent services. There is no requirement that these signals be delivered in high definition unless the broadcaster is transmitting over-the-air in digital. As a result, most over-the-air services are currently transmitted by Shaw Direct in standard definition.
28. However, as of August 31, 2011, as a licensed DTH undertaking, Shaw Direct will be subject to a number of CRTC carriage and linkage requirements that will add to the capacity pressures already imposed upon it by the market. These new requirements will be formalized in the coming months pursuant to BPN CRTC 2008-100. Specifically, Shaw Direct will be required to deliver:
  - one signal of every major over-the-air Canadian broadcasting group per province,
  - one signal per province supplied by an “independent” (i.e. small market) over-the-air station,
  - where applicable, the educational television service of each province, and
  - distant Canadian over-the-air signals from any time zone from which distant non-Canadian signals are also distributed.

29. Most of these signals will be in high definition, given the mandatory analog shut-off date of August 31, 2011. This is even more likely to the extent that broadcasters are granted the relief they are now seeking from their over-the-air digital transmission requirements<sup>4</sup>, since they will have been relieved of significant expenditure requirements that would otherwise be a pre-requisite to the digital conversion.
30. In addition to these increased carriage requirements for HD broadcast services, the CRTC has signalled that it supports an even further extension of DTH distribution of conventional broadcasters. As well, it has indicated that it is open to receiving applications for mandatory distribution from services that consider such an order to be consistent with the realization of broadcasting policy objectives.<sup>5</sup>
31. There is no possibility of Shaw Direct's meeting the CRTC's 2011 carriage obligations or any extension thereof without the addition of significant amounts of new satellite capacity made possible by the use of the extended Ku-band.

### **Ability to Make Contributions to Canadian Programming**

32. If the requested change to the extended Ku-band policy is not implemented and Shaw Direct's competitiveness is affected, it may be unable to sustain its current level of contributions to the production and exhibition of Canadian programming.
33. As noted, Shaw Direct currently contributes in the order of \$30M per year (5% of gross revenues) to television production funds. There is no guarantee that if Shaw Direct becomes uncompetitive and contributions are reduced, these funds can be recovered from other BDUs. The continued availability of non-Canadian, black market satellite service in Canada means that existing subscribers may not acquire their content services from other licensed broadcast distributors.

### **Policy Supports DTH Use of Extended-Ku Band**

34. The use of extended Ku-band for DTH has international precedents and the possibility of such use has been considered before by Industry Canada.
35. DTH use of extended Ku-band is permitted by the ITU Radio Regulations and is already used extensively for DTH in Europe, Asia and South America.
36. In Canada, the possibility of using the band for ubiquitous services such as DTH was discussed by Industry Canada with satellite industry representatives in 2005 and was also expressly contemplated by the 2006 Call for Applications to License Satellite Orbital Positions.

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<sup>4</sup> Such a request by broadcasters has been accepted for discussion by the CRTC pursuant to *Broadcasting Notice of Consultation 2009-113*, and the CRTC has now suggested the possibility that it could approve a situation whereby some broadcasters are permitted to retain broadcasting licences and privileges absent over-the-air transmission. The matter is also currently under discussion before the *Standing Committee on Canadian Heritage* pursuant to their current hearings into "The Evolution of the Television Industry In Canada and its Impact on Local Broadcasting".

<sup>5</sup> See CRTC *Report to the Governor in Council on English-and French-language broadcasting services in English and French linguistic minority communities in Canada*, issued March 30, 2009.

37. Shaw Direct, under its former business name “Star Choice”, supported Telesat's application in the 2006 Call for Applications to obtain authorization to use extended Ku-band at the 111.1°W position. As Star Choice noted in its letter of support dated November 15, 2006 that was attached to Telesat's public application:

We believe it is critical for the Canadian broadcasting system that we be able to harvest this spectrum. Growing in to a contiguous frequency band at orbital positions we already make use of provides significant benefits in terms of earth segment infrastructure, which will result in the best possible economic costs for the 870,000 Canadian households which enjoy Star Choice today.

38. The use of the extended Ku-band for DTH was also supported in the 2006 Call for Applications by Ciel, the Canadian Association of Broadcasters and the Canadian Satellite Users Association.
39. Accordingly, Shaw submits that an immediate policy change to support DTH use of the extended Ku-band in Canada is consistent with both international spectrum-use policy and regulations, and is in the public interest.

### **Extended Ku-Band Is The Only Option**

40. The use of the extended Ku-band for DTH is the only feasible option for expanding Shaw Direct's capacity. The only technical change needed to add extended Ku-band capacity to the Shaw Direct network, beyond procuring the capacity on the satellite from Telesat, would be low-noise block (LNB) replacements on customer antennae. No alteration would be required to the dishes themselves. Since extended Ku-band is already used for DTH in other parts of the world, LNB replacements are already available in the market at competitive prices. While the cost to replace all current HD customers' LNBs would not be insignificant (in the order of \$70 million), this remains the least cost alternative, even if such alternatives existed. In addition, the replacement of an LNB will result in far fewer subscriber disruptions than additional change-outs of antennae, mounts or inside equipment.

### **No Alternatives To Extended Ku-Band Exist**

41. No other conventional Ku-band transponders are available to Shaw Direct from any other satellite operator (Canadian or foreign) within the arc between 107.3°W and 111.1°W. Any conventional Ku-band transponders that might be available outside that arc cannot be used by Shaw Direct because the elliptical dishes used by Shaw Direct customers cannot receive signals from outside of that arc. Reception of such satellite signals would require a second or steerable dish, which is cost-prohibitive and would be rejected by customers. Bell TV, Echostar and DirecTv currently have access to substantially more satellite capacity using BSS frequencies than does Shaw Direct, and they can offer a broader array of services that can be received using only one dish. Shaw Direct's continued competitiveness depends on it remaining a single, small dish service.
42. Other than conventional Ku-band, the only other satellite frequencies that could conceivably be used for DTH are C-band, Ka-band and BSS. None of these is viable for Shaw Direct. In addition, none could provide back-up to Shaw Direct's conventional Ku-

band transmissions. This back-up capability would benefit both Shaw Direct DTH customers and SBS's cable customers, as well as strengthen the Canadian broadcasting system generally.

43. While C-band satellite capacity is available, it requires the use of very large dishes that consumers will no longer accept and would render Shaw Direct uncompetitive. DTH is a small dish service.
44. Ka-band is not a viable solution for the expansion of Shaw Direct's capacity for a range of reasons. There is currently no Ka band satellite at 109.2°WL, the orbital slot which some have suggested could be used by Shaw Direct. Even if a satellite could be made available in time to meet Shaw Direct's pressing capacity needs, 109.2°WL is located only 2 degrees from the slots of each of Anik F1R and Anik F2. With such tight spacing (3 satellites over approximately 4 degrees), the LNBS would be virtually on top of each other and would have to be further away from the reflector. In addition, Ka-band is a higher frequency than extended Ku-band. Taken together, these factors would require the development and roll-out of antennae that would be over 40% larger than that currently in use, the addition of another LNB to Shaw Direct antennae and a feed-arm for the new LNB which would be almost 50% longer than the existing feed-arms for current Shaw Direct LNBS. In addition, the mount for such equipment would require greater stability, which in turn would require mount repositioning on some customer residences. The technical, marketing and cost implications of these changes would undermine the competitiveness of Shaw Direct. Customers will not accept dish and feed-arm sizes of this magnitude. In addition, the cost to implement a Ka-band solution would be \$300 million more than an extended Ku-band solution and would thus be cost-prohibitive.
45. The new 17 GHz band (17.3-17.8 GHz), referred to as reverse DBS ("RDBS"), is also not a viable alternative for Shaw Direct. Shaw does not believe that a new RDBS satellite and ground equipment could be brought into operation soon enough to meet the capacity needs of Shaw Direct and SBS. No systems anywhere in the world use this band. No RDBS satellite exists. No ground segment has been designed or developed by vendors to receive transmissions from such a satellite. In addition, there may be international coordination issues that would further slow any effort to make an RDBS satellite operational.
46. For new RDBS equipment to operate successfully within the Shaw Direct network, it would also have to accommodate transmissions from Ku-band satellites. To do so, a differently shaped dish and larger dish mount would be required to allow Shaw Direct customers to view RDBS transmissions in addition to transmissions from conventional Ku-band satellites.
47. 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. Beyond the issue of cost, extensive equipment change-outs and redesigns to receive RDBS satellite transmissions would cause further subscriber disruption and possible attrition.

48. As such, RDBS is a theoretical future alternative that is only in the research and development phase. While Shaw Direct has supported the efforts of Industry Canada to ensure that access to this band is secured by Canada<sup>6</sup>, it does not believe that an RDBS satellite could be launched in time to meet Shaw Direct's imminent capacity needs. Shaw Direct may consider the use of RDBS over the long term (i.e. probably more than ten years from now), but RDBS cannot help Shaw Direct to meet the demands of its subscribers and government and regulatory public policy objectives in the near term. The simple LNB replacement that would be required to access extended Ku-band spectrum in current orbital slots is a much more efficient solution for Shaw Direct's imminent capacity needs.

### **Alternatives Available To Current Fixed Service Licensees**

49. Based on the terrestrial licence analysis filed by Telesat with the RABC in its consideration of the Consultation Paper, Shaw understands that there are only a limited number of current fixed service licensees in the extended Ku-band. The moratorium announced by the Department ensures that this number will not increase.
50. Shaw believes that the future capacity requirements of the fixed services can be accommodated in a number of different ways, including:
- retuning of existing transmitters in 10.95-11.2 GHz and 11.45-11.7 GHz bands to 10.70-10.95 GHz and 11.20-11.45 GHz bands, including use of non-standard pairings, in some cases;
  - moving some types of existing transmitters in 10.95-11.2 GHz and 11.45-11.7 GHz bands to other bands, including 6 GHz, VHCM 12.7GHz, 15GHz, 18GHz, and 23GHz bands;
  - migration to wireline systems, primarily fibre networks; and
  - other options, including better utilization of existing capacity, in-band backhaul, and satellite services.
51. 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.
52. While the optimal accommodation may vary depending on the needs of a particular FS user, it is apparent that the fixed service licensees have several options at their disposal. By contrast, Shaw Direct's only viable option for capacity expansion is through use of the extended Ku-band.

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<sup>6</sup> In this context, Star Choice supported the applications by Telesat to secure authorization to use this band at the 107.3°W and 111.1°W orbital slots where Star Choice makes use of the Ku-band.

## **Conclusion**

53. Shaw Direct's immediate DTH capacity requirements – and hence its ability to continue to meet the needs of its customers and competitive challenges, and to meet the public policy objectives assigned to it – cannot be met without the proposed designation of the extended Ku-band to the fixed satellite service.
54. The use of the extended Ku-band for DTH in the manner proposed by Shaw in these comments is in the public interest, consistent with sound economic policy, and fundamental to the maintenance of competitive DTH service in Canada. It is also critically important to the SRDU and uplink services that SBS provides to Canadians based on the Shaw Direct satellite platform.
55. Shaw urges Industry Canada to amend its spectrum policies to implement the recommendations made by Shaw in this submission expeditiously. In this regard, Shaw notes that Industry Canada has been aware of Shaw's requirement for satellite capacity in the extended Ku-band since November 2006. Shaw also notes that the in-service date of Telesat's planned extended Ku-band satellite is largely dependent upon this consultation process being favourably concluded as soon as possible.

Yours truly,

Peter Bissonnette  
President  
Shaw Communications Inc.

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

## Appendix

### Responses of Shaw to the questions and issues raised by Industry Canada in the Consultation Paper

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.*

- Shaw submits that Industry Canada's spectrum policy should accommodate the provisioning of DTH services in the 10.7-11.7 GHz band; specifically in the 10.95-11.2 GHz and 11.45-11.7 GHz band segments.
- Shaw proposes that the 10.95-11.2 GHz and 11.45-11.7 GHz bands should be designated for priority use by the Fixed Satellite Service ("FSS"). Shaw proposes that three years after issuance of the Department's new spectrum policy to implement the foregoing approach, the operation of fixed service ("FS") systems utilization in the bands 10.95-11.2 and 11.45-11.7 GHz should terminate. Until then, any uncoordinated FSS deployment in these bands would be on a no-protected basis with respect to FS transmitters licensed prior to 2009 (i.e. before the moratorium)<sup>7</sup>.
- Shaw proposes that the FS should have priority over the FSS in the bands 10.7 – 10.95 GHz and 11.2 – 11.45 GHz. Use of the FSS in these bands would be limited to applications that pose minimal constraints on the deployment of the FS. However, this restriction should not apply to feeder links to the MSS operating in accordance with footnote C16C.
- In the 10.7 – 10.95 GHz and 11.2 – 11.45 GHz bands, Industry Canada Industry may wish to consider granting additional flexibility for FS users, such as the right to use smaller antennas.

(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?*

- Yes, in accordance with the proposals set out in the response to question 1(a).

*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 revised Industry Canada spectrum utilization policy for the 10.7-11.7 GHz band should be established on a general<sup>8</sup> and permanent basis.

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<sup>7</sup>Previously co-ordinated FSS receivers should continue to be protected from FS interference.

<sup>8</sup> The policy should not be limited to any specific orbital positions(s).

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?*

- Shaw proposes that Industry Canada should:
  - (a) allow soft segmentation of the 10.7 – 11.7 GHz band between FS and FSS;
  - (b) maintain priority for FS utilization over the FSS use in the 10.7 – 10.95 GHz and 11.2 – 11.45 GHz band segments. Use of the FSS in these bands would be limited to applications that pose minimal constraints on the deployment of the FS<sup>9</sup>;
  - (c) maintain the current moratorium on the licensing of new terrestrial FS transmitters in the 10.95-11.2 GHz and 11.45-11.7 GHz band on a permanent basis;
  - (d) permit use of the 10.95-11.2 GHz and 11.45-11.7 GHz bands for ubiquitous DTH applications in the FSS; and
  - (e) three years after issuance of the new spectrum policy, terminate the use by the FS of the 10.95-11.2 GHz and 11.45-11.7 GHz bands. Until then, any uncoordinated FSS deployments in these bands would be on a no-protection basis with respect to FS transmitters licensed prior to 2009 (i.e. prior to the moratorium).

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?*

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

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

- Shaw does not advocate that Industry Canada seek a new bilateral arrangement to address U.S. FS networks. Geometric and geographic conditions are such that very few U.S. FS links are, or would be, deployed in such a way that they could negatively impact FSS DTH subscribers. Shaw Direct will assume the risk of any such negative impact. Protection to FS networks in the U.S. from FSS networks is afforded internationally based on ITU Radio Regulations Article 21 limits. Coordination with other FSS systems can be undertaken following the normal ITU process.

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<sup>9</sup> This restriction should not apply to feeder links to the MSS operating in accordance with footnote C16C.

*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)?*

- Shaw is opposed to authorizing use of the extended Ku-band to provide DTH services on a non-standard basis. This would be unworkable, both from a commercial and a consumer perspective. The level of interference to the FSS would change over time in an uncontrollable and unpredictable manner. The interference caused by future FS links could impact existing, hitherto unaffected, DTH customers and their service could cease to function at some point after months or even years of good reception. This would not be acceptable for Canadian consumers receiving a ubiquitous broadcasting service such as DTH.

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

- As discussed above, the extended Ku-band is the only viable option for the delivery of new DTH broadcasting services by Shaw Direct.