CSUA

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Director General
Telecommunications Policy Branch
Industry Canada
300 Slater Street
Ottawa, Ontario
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Dear Mr. Helm:

Re: Canada Gazette Part 1, Notice DGTP-001-02, January 19, 2002: Consultation on the Revisions to the Spectrum Utilization Policies in the 3-30 GHz Frequency Range

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1. The Canadian Satellite Users Association (CSUA) is pleased to submit the following comments on this very important matter. The members of CSUA include the organizations that distribute their broadcast signals by way of the domestic satellite system. This group consists of the broadcast networks, specialty, pay, pay per view and educational services. Both Canadian licensed SRDU firms are also members. These organizations are the major users of satellite services in Canada and the outcome of the industry Canada review will have a significant impact upon their businesses.

2. CSUA's comments will focus on three areas: (i) priority in the 3.7 – 4.2 GHZ and 5.925 – 6.425 GHz bands; (ii) domestic footnote C16A and (iii) issues in the 17.3 – 17.8 GHZ BSS bands and associated feeder links.

Priority to the FSS in the 3.7 – 4.2 GHz and 5.925 – 6.425 GHz Bands

3. In Section 3 of the consultation paper four questions are posed on page 10. CSUA wishes to comment on these issues as follows.

4. The evolution in usage of the conventional C-band by the fixed service provides the background for the first three questions. Once the backbone of Canada's high capacity coast-to-coast telecommunications networks, C-band microwave links have now been largely supplanted by fibre optic links. Although a handful of high-capacity routes may remain in-service for an unknown period, a large number of 4 and 6 GHz terrestrial microwave radio systems have been retired or will be retired in the near future. In contrast to trends in the terrestrial usage of the bands, the C-band remains a critical element of Canadian satellite infrastructure. CSUA's concern is that this current consultation process may result in the future satellite use and growth of conventional C-band spectrum being compromised by the continued designation of this spectrum on a shared basis between fixed satellite services and fixed terrestrial services. In particular, opening these bands to lower capacity uses in the fixed service will lead to additional users, additional fixed service sites, and more difficulties in frequency coordination.

5. In addressing the first three questions of the consultation, CSUA notes that the priority for FSS is in the national interest and can be achieved with minimal disruption to existing users, given the gradual disappearance of high-capacity microwave links in the C-band. In this regard, we advocate that additional low and medium capacity terrestrial uses not be introduced into the conventional C-band and we reject the concept of geographic or frequency segmentation as being unnecessary in the long-run and inefficient with respect to satellite usage of the bands.

6. The fourth question arises from a *Notice of Proposed Rulemaking* issued by the FCC in the United States (FCC 00-369) which had suggested imposition of additional earth station licensing restrictions. Subsequent to the Department issuing the *SP 3-30 GHz*, the FCC has rejected the idea in a R*eport and Order* (FCC02-17). CSUA submits that the proposed earth station restrictions are both unnecessary and undesirable in Canada.

Over time, the frequency coordination requirements for earth stations will diminish and ultimately disappear, thereby reducing labour and direct costs. Furthermore, siting of earth stations, even in large urban areas, will become much easier and the need to seek natural or artificial shielding reduced. Satellite news gathering and other temporary uplink usage of C-band will be facilitated.

7. Of potential long-term interest to CSUA members are Telesat's plans to make use of the C-band satellite platform for the provision of multimedia broadband services to communities that cannot economically be served by fibre. Telesat is already working on demonstration programs with Industry Canada and First Nations and other groups. While many of these communities are located in remote areas, some are quite close to urban centres. Reduction or elimination of the need to frequency coordinate earth stations will greatly facilitate such usage.

Domestic Footnote C16A

8. Footnote **C16A** reads as follows:

The use of spectrum for fixed satellite services in the bands 4500 – 4800 MHz, 10.7 – 11.45 GHz and 17.8 – 19.7 GHz in the space-to-Earth direction and 6725-7025 MHz, 12.75 – 13.25 GHz, and 28.35-29.5 GHz in the Earth-to-space direction, is presently limited to large antenna earth stations located in areas outside of urban centres. Domestic implementation of fixed-satellite services in these bands will be governed by spectrum utilization policies which will be formulated in the future. These policies will consider existing services, ITU Radio Regulations and operating criteria for sharing between services and systems.

9. This footnote first appeared in this form in the Canadian *Table of Frequency Allocations*, December 2000 edition. The version that had been included in the July 2000 public consultation was much less onerous for the FSS and there were no comments on the public record suggesting a change in language. That is, the change was made internal to the Department. CSUA understands that Telesat and other satellite interests wrote letters of protest to the Department, noting the lack of consultation. The response from the Department indicated that the measure was merely temporary and would be the subject of a further consultation (i.e the current *SP 3-30 GHz*).

10. The concern with the footnote, as currently written, relates to the words "limited to large antenna earth stations located in areas outside of urban centres". There is no definition of "large antenna" or "urban centre". The concern is that the Department could severely limit the licensing of earth stations in these bands. Teleports or other earth stations located in urban areas could not be licensed, even though it might be possible to frequency coordinate them with existing and planned uses in the fixed service.

11. Footnote **C16A** applies to a number of different frequency bands, and the impact varies.

(i) Most importantly, Footnote **C16A** applies in the 17.8 – 19.7 GHz and 28.35 – 29.5 GHz portions of the Ka-band. Segments of these bands have been designated by the FCC in the USA for ubiquitous earth station use, and both Telesat and other satellite operators would plan to extend such usage into Canada. CSUA supports the principle of 'soft segmentation' in the portion of Ka-band shared between the fixed-satellite and fixed services. Under soft segmentation, the two services retain their co-primary status, but one or the other service is given priority on a sub-band basis, such that the other service cannot cause harmful interference or demand protection. Such soft segmentation would be implemented through a series of footnotes that would replace Footnote **C16A** as it applies to the Ka-band.

(ii) The 4500 – 4800 MHz and 6725-7025 MHz bands are the 'allotment C-bands', subject to the ITU Allotment Plan contained in **Ap 30B** of the ITU *Radio Regulations*. These bands are not used on any Telesat satellites and, indeed, are not extensively used worldwide. Nevertheless, in the future, some CSUA members may wish to communicate with satellites that employ the allotment C bands. CSUA submits that the normal 'first-come, first served' rules of frequency coordination should apply between earth stations and stations in the fixed service in these bands. That is, earth stations in the allotment C-bands would be coordinated in the same way as earth stations in the conventional C-band are now treated, without *a priori* limitations on antenna diameter or location.

(iii) The 10.7 - 10.95 GHz, 11.2 – 11.45 GHz and 12.75 – 13.25 GHz bands are the 'allotment Ku-bands'. Similar comments to those given in the previous paragraph for the allotment C-bands apply.

(iv) The 10.95 – 11.2 GHz band is not subject to an allotment plan and is considered part of the 'extended Ku-band'. It is also not used on current Telesat satellites. While having the advantage of not being subject to an allotment plan, the 10.95 – 11.2 GHz band does not have an obvious pairing in the Earth-to-space (uplink) direction. CSUA submits that first-come, first served frequency coordination should apply to this band as well.

Issues Associated with the 17.3 – 17.8 GHz BSS Bands

12. In the consultation paper, the Department treats only the 17.7- 17.8 GHz portion of the 17.3 – 17.8 GHz band and indicates that "no change is proposed to the status of services in this band." Use of the 17.7 – 17.8 GHz band by the fixed service in Canada is governed by domestic footnote **C45**, which states, in part:

In the band 17.7 – 17.8 GHz Canadian stations in the fixed service shall not claim protection from and shall not cause harmful interference to Canadian domestic stations in the broadcasting –satellite service after 1 April 2007.

13. Currently Bell ExpressVu makes use of the entire 17.3 – 17.8 GHz band in the Earth-to-space direction as a feederlink for its BSS services. Feeder link stations are amenable to frequency coordination in shared frequency bands, since they are relatively few in number and are characterized by large aperture antennas. However, the ITU *Radio Regulations* allocate the 17.3 – 17.8 GHz band in ITU Region 2 to the BSS (space-to-Earth) after April 1, 2007. This BSS band will be of considerable interest, first for expansion of services similar to those now provided in the 12.2 – 12.7 GHz band, and second for the provision of new and innovative services, such as distribution of signals of local interest (through spotbeams), provision of interactive television, distribution of extremely high resolution or other broad band signals, etc. The greater flexibility afforded by use of a BSS band that is not subject to an ITU Plan is a key factor in the successful implementation of such innovative services.

14. In view of the importance of the band for BSS purposes after April 1, 2007, the Department's suggestion that no change be made in the status of services within the band is supported. However, tangible steps are required to meet this objective. The Department should issue an immediate moratorium on the licensing of new fixed services in the 17.7 – 17.8 GHz band. Furthermore, since BSS receivers are ubiquitously deployed and are highly sensitive to in-band interference, it is difficult to conceive of any usage in the fixed service that could be compliant with the provision of footnote **C45** quoted above. Therefore, the Department should undertake a consultation to deal with means of relocating existing stations in the fixed service licensed in the 17.7 – 17.8 GHz band. The procedures that were adopted in earlier radio station frequency relocations, such as those followed in the PCS and 2 GHz relocations would provide a useful framework.

24.75 – 25.25 GHz Feeder Link to the BSS

15. In the consultation paper, the Department did not raise any specific issues with respect to this band. The ITU *Radio Regulations* allocate the 24.75 – 25.25 GHz band in ITU Region 2 exclusively to the fixed satellite service, subject to footnote **5.535**, which states:

In the band 24.75 – 25.25 GHz, feeder links to stations of the broadcasting-satellite service shall have priority over other uses in the fixed-satellite service (Earth-to-space). Such other uses shall protect and shall not claim protection from existing and future operating feeder-link networks to such broadcasting satellite stations.

16. The 24.75 – 25.25 GHz band therefore is the ideal feeder-link band for the BSS in the 17.3 – 17.8 GHz band. In the Canadian Table of Frequency Allocations, the band is subject to domestic footnote **C44** which states:

Feeder links to broadcasting-satellite space stations operating in the band 17.3 – 17.8 GHz shall be implemented in the bands 24.75 – 25.25 GHz. In areas where fixed systems have been licensed using a competitive process, future earth stations (Earth-to-space) in the band 25.05 – 25.25 GHz will be permitted provided that such installations will not cause interference to any fixed service to be deployed in the authorized service area.

17. Two changes are suggested with respect to this footnote:

(i) The priority given to feeder links of the BSS relative to other uses of the FSS for this band, as indicated in international footnote **5.535,** is supported. However, it may be desirable to host BSS payloads operating at 17.3 – 17.8 GHz on Canadian satellites that also offer service in other FSS bands. Depending on the nature of the service, some flexibility to allow for cross-strapping would be desirable. Also, some of the new and innovative services that will be deployed in the 17.3 – 17.8 GHz band will require a degree of interactivity. Hence, it is anticipated that the 24.75 – 25.25 GHz band might be used for other signals associated with the BSS, in addition to the feeder-link signals. Accordingly, it is suggested that the first sentence of domestic footnote **C44** be reworded as follows:

The use of the fixed-satellite service (Earth-to-space) in the band 24.75-25.25 GHz is limited to feeder links to broadcasting-satellite space stations, or to other digital carriers in the fixed

satellite service that are associated with the broadcasting-satellite service, operating in the band 17.3 – 17.8 GHz.

(ii) The second sentence of domestic footnote **C44** contravenes the international table, where the allocation to the fixed-satellite service is exclusive in ITU Region 2. This allocation issue was raised in the August 1998 *Consultation on the 24 and 38 GHz Frequency Bands: Proposed policy and Licensing Procedures*, and that subsequently the Department decided to include the 25.05-25.25 GHz band in the spectrum that was auctioned for wireless broadband services, i.e. for the fixed service. The second sentence in domestic footnote **C44** will pose limitations on where feederlink stations may be located, especially since the fixed service is licensed on an area (ubiquitous) basis. Furthermore, as noted above, the 24.75-25.25 GHz band will likely be used, not only for feederlinks to the BSS, but also for associated interactive purposes, which could involve transmissions from ubiquitous earth stations. Accordingly, the Department is urged not to award any additional fixed service licences in the 24.75-25.25 GHz band, and not to re-allocate any forfeited fixed service licences in the 24.75-25.25 GHz band.

18. CSUA appreciates the opportunity to provide input to Industry Canada on this important matter.

Yours truly,

Don Braden
Executive Director