Mr. Marc Dupuis  
Director General  
Engineering, Planning and Standards Branch  
Industry Canada  
300 Slater St.  
Ottawa, ON K1A 0C8  
Via e-mail: spectrum.planning@ic.gc.ca

Dear Mr. Dupuis:

Re: *Canada Gazette* Part I, Sept. 14, 2013, SMSE-007-13 Consultation on Use of the Frequency Band 25.05–25.25 GHz (the “Consultation”)

The Canadian Satellite and Space Industry Forum (CSSIF) is an association of Canadian satellite operators, satellite service providers, and producers of satellite systems and components, with a mandate to participate in the formulation of spectrum policy and standards. CSSIF is also a member association of the RABC.

The CSSIF commends the Department for providing the opportunity to provide comments to the Department on this important matter. Members of the CSSIF have long advocated the use of the 17.3 – 17.8 GHz BSS band and its feeder link for the provision of additional and enhanced services to the Canadian public. CSSIF members first commented on issues related to the Consultation in response to the 2002 *Consultation on Revisions to Spectrum Utilization Policies in the 3-30 GHz Frequency Range* and have subsequently communicated with the Department concerning the current wording of footnote C44. Accordingly, the issues addressed in the Consultation are of direct interest to the CSSIF.

Members of the CSSIF participated in the RABC discussions concerning the Consultation. As always, the RABC comments reflect a delicate balance of disparate views. The purpose of this submission is to elaborate on the issues involved from a satellite industry perspective, and specifically where CSSIF views differ from the RABC proposal.

**Linkage between the 17 GHz BSS band and the 25 GHz FSS Band (§5.1 of the Consultation)**

CSSIF supports the proposal of the Department, which has been supported by the RABC, to delete the first sentence of footnote C44. This change would effectively decouple the 25 GHz FSS band from the 17 GHz BSS band. That is, this change would allow greater flexibility for satellite operators to use other bands for feeder links to the 17 GHz BSS band, and to use the 25 GHz band to link to other FSS space-to-Earth and BSS bands.

In many instances, satellite operators are licensed for multiple frequency bands at the same orbital position. In such cases, elimination of regulatory constraints allows operators to select uplink and downlink strapping that best meets the needs of users and most appropriately solves technical problems. As an example, a satellite operator offering capacity in the 17 GHz BSS band may select an uplink location in a high rain-rate area. In such a case, selecting a feeder-link in a frequency band below 25 GHz would improve overall availability. As another example, the current ITU Region 2 Ku-band FSS allocations are unbalanced, with a total of 1000 MHz allocated in the space-to-Earth direction and only 750 MHz available in the Earth-to-space
direction. Flexibility to use the 25 GHz band to connect to the Ku-band downlink would allow more efficient use of the entire Ku-band spectrum. Further, removal of the constraint does not preclude operators from linking the 25 GHz FSS and 17 GHz BSS bands should this be desirable, for example, as the Department points out, to serve the entire North American market from one satellite.

CSSIF does not see any requirement to align with the United States footnote NG167. In general, alignment of Canadian regulations with those in the U.S. is advocated for two reasons; to ensure availability of cost-effective equipment, and to protect operations in each country from interference caused by the other. Neither situation obtains here; uplink equipment will be produced to meet the BSS feeder link requirements in both countries. Removal of the linkage constraint in Canada will serve to make the addressable market larger for vendors. Use of the 25 GHz band in Canada for purposes other than as a feeder link to the BSS would still protect networks of other administrations (including the U.S.) by virtue of ITU footnote 5.535

Finally, decoupling the 25 GHz FSS band from the 17 GHz BSS band need not have any material effect on sharing between the FSS and the FS. As discussed below, sharing between the services may be addressed by appropriately wording footnote C44 and through implementation of a coordination process.

**Priority of the FS Relative to the FSS (§5.2 of the Consultation)**

CSSIF supports the Department’s proposal to clarify the relationship between FSS and FS licensees in the band 25.05 – 25.25 GHz. The current wording of footnote C44 effectively makes the FSS secondary to the FS in this band. No objective standard for the permissible level of interference is given, and the wording “to be deployed” implies that existing licensed FSS earth stations would be required to protect subsequently-licensed FS stations. This greatly increases the risk to the earth station operator and is a major impediment to the development of the 17 GHz BSS band.

CSSIF understands the need to protect previously-licensed FS operators in the band (including those licensed on an area basis) and the resulting ‘soft-segmentation’ of the band in favour of the FS. CSSIF does not support RABC’s proposed wording changes to footnote C44. In CSSIF’s view, the wording of footnote C44 as proposed in Section 5.3 of the Consultation fulfils this need. In light of the discussion above relating to Section 5.1 of the Consultation, CSSIF suggests the deletion of the qualifier “for feeder links”, since the constraints could equally be met if the band were used for gateway links in an FSS application. CSSIF therefore proposes the following wording for footnote C44:

**Fixed-satellite service implementation in the band 25.05 – 25.25 GHz shall be limited to applications which impose minimal constraints upon the deployment of fixed service systems, such as those using a small number of large aperture earth station antennas.**

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1. **5.535** 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.
Coordination Process (§6 of the Consultation)

CSSIF supports the establishment of a domestic coordination process between the FSS and FS in the 25.05–25.25 GHz band. We agree that this would help ensure a balanced coexistence between the two services and remove the current ambiguity. For earth station applicants, the process should be based on a power flux density (pfd) coordination threshold at a licensed FS location or at any point within a previously-licensed FS service area. There should, however, be no limitation on power flux density in areas outside previously-licensed FS service areas. Conversely, FS operators in newly-licensed service areas would need to take into account previously-licensed FSS earth stations. That is, there should be no obligation for licensed earth station operators to relocate or alter the characteristics of their transmissions to in order to reduce interference into subsequently-licensed FS operators.

CSSIF also supports the proposal that the domestic coordination process between the FSS and FS be substantially aligned with the existing coordination process between two licensed FS operators, as outlined in SRSP-324.25. Specifically, CSSIF supports:

- the 60 km or less separation distance trigger for coordination
- the dual pfd coordination thresholds and timelines

Further, we note that the pfd coordination threshold of -114 dBW/m$^2$ in 1 MHz is consistent with the value adopted in the US as a trigger for coordination between FSS earth stations and FS licensees. We see no justification for a more stringent pfd threshold.

CSSIF does not, however, support the application of provision 6.2.7 of SRSP-324.25 to the FSS case. In view of the high transmit power levels of earth station transmitters, there will be a small area in close proximity to the earth station where a pfd greater than -94 dBW/m$^2$ in 1 MHz will occur. To prohibit this pfd in unlicensed FS service areas would seriously restrict the possible locations for earth stations without protecting any existing users of the band.

CSSIF thanks the Department for addressing the long-standing issues regarding the use of the 25.05 – 25.25 GHz band and for the thoughtful proposals that have been made.

Yours sincerely,

[Signature]

Dave Lewis
Chairman