
**Submission to Innovation, Science and Economic Development Canada**
**by**

**SSI Canada**

**In Response to SMSE-009-21**

***"Consultation on Updates to the Licensing and Fee Framework for Earth Stations and Space Stations in Canada"***

**October 4, 2021**

## Introduction and Context

1. SSi Micro Ltd., doing business as SSi Canada ("SSi"), is pleased to submit the following comments to Canada's Minister of Innovation, Science and Economic Development ("ISED" or the "Department") in response to *Canada Gazette* notice SMSE-009-21, "***Consultation on Updates to the Licensing and Fee Framework for Earth Stations and Space Stations in Canada"*** (the "Consultation").

2. For the most part, our comments are presented as direct responses to the questions the Department poses in the Consultation.

## Background and Executive Summary

3. Founded in 1990, SSi is headquartered in Yellowknife, Northwest Territories, with a Satellite Teleport and Network Operations Centre in Ottawa, Ontario. SSi specializes in the design, deployment and operation of innovative and cost-effective communications networks to support the needs of communities with little to no terrestrial access to the outside world.

4. We understand first-hand the challenges faced in providing effective and affordable service to remote and outlying areas, and in providing a competitive alternative to the incumbent operator in small and remote markets.

5. Remote area connectivity has many facets, and we are constantly evaluating, developing and integrating new technologies to ensure our offerings remain attractive and competitive.

6. SSi has deployed advanced satellite networks and local wireless facilities that deliver communications services throughout Nunavut under the "QINIQ" brand, and in communities of the Northwest Territories, an area spanning over three million square kilometres. We are also working with partners to expand communications services in other northern and remote markets of Canada.

7. SSi makes extensive use of both satellite and fibre transport to provide Canadian consumers, businesses and governments with connectivity services. Our customers in satellite-dependent areas rely on services we provide using Fixed Satellite Services ("FSS") in both the C-band and the Ka-band.

8. We note that in the May 2021 *Decision on the Technical and Policy Framework for the 3650-4200 MHz Band and Changes to the Frequency Allocation of the 3500-3650 Band* (SLPB-002-21, the "C-Band Decision"), ISED recognized the unique needs of satellite-dependent areas by preserving the primary allocation of the full 500 MHz to the FSS space-to-Earth service in those areas.

9. In this Consultation, ISED is seeking input on how to simplify the licensing approach and fee structure for both earth stations and space stations. The Department states it wishes to "reduc[e] fees overall to support the evolution of the satellite industry and facilitate the deployment of innovative satellite solutions, including those for broadband connectivity."[1]

10. While we certainly support the objective of reducing fees overall, SSi is concerned that there may be a contradiction between the determination made in May 2021 to enable telecommunications service providers, such as ourselves, to use the full C-band spectrum to deliver much-needed voice and broadband internet service in the most underserved parts of the country, and the potential impact of the revised fees upon the operation of such TSPs.

11. We are concerned that in an effort to migrate satellite usage towards promising technologies, such as new and emerging Low Earth Orbit and Medium Earth Orbit constellations, the Department could (unintentionally) make existing Geostationary operations in satellite-dependent areas too costly to be sustained by the Canadian TSPs serving those markets.

12. In other words, we are concerned that the effort proposed in this Consultation to "simplify" and "reduce fees overall" may unintentionally transfer – at least for the short to medium term – the burden of fees to the very segment of the industry that provides the greatest level of service to consumers living in high-cost, satellite dependent areas. This is also the segment that can least support potentially increased fees: last-mile service providers such as SSi, who are today dependent on satellite backbone connectivity, and who have also developed a strong track record of providing innovative and essential broadband services to people in Canada's Northern and mid-North regions.

13. We urge the Department to verify and, if necessary, modify its proposals to ensure that users dependent on satellite backbone connectivity to provide last-mile broadband services in remote areas do not face fee increases, even if for an interim time period, simply because demand for spectrum reallocated in Southern Canada from the C-band to terrestrial services is expected to be high.

14. The Department must ensure consistency among the decisions it takes to encourage sustained, and sustainable, service to Canada's underserved satellite-dependent areas. This objective cannot be undermined in the name of simplification and administrative efficiency.

15. For ease of reference, we have grouped the Department's questions and our responses to correspond to their presentation in the Consultation itself.

[1] Consultation, paragraph 9.

**Specific Comments on the Consultation**

***Q1. ISED is seeking comments on its proposals to:***

- ***a. Use spectrum licences to authorize fixed and transportable earth stations and ESIMs within Canadian territory, with multiple earth stations authorized under a single licence.***
- ***b. Issue the proposed spectrum licences for a Tier 1 service area, and have those licences authorize the radio service and frequency bands.***
- ***c. Apply the general conditions of licence that are listed in annex A to earth station spectrum licences.***

*SSi Comments*

16. SSi fully supports the proposals to use spectrum licences to authorize multiple earth fixed and transportable earth stations under a single licence. The move to spectrum licences should reduce the administrative burden for the Department and licensees alike.

17. We also fully support the proposal to licence fixed and transportable earth stations for a Tier 1 service area, with the licences issued authorizing the relevant radio service and frequency bands. This will reduce administrative burdens on both satellite users and the Department, as well as increasing the flexibility of operators, especially of transportable earth stations, by authorizing earth station usage across the top Tier in use in Canada.

18. The general conditions of licence listed in annex A are appropriate for earth station spectrum licences.

***Q2. ISED is seeking comments on its proposals to:***

- ***a. Implement spectrum licences that require site approvals for all earth stations described above operating in any frequency band.***
- ***b. Collect and assess the technical information listed in annex B as part of the site approval process.***
- ***c. Require earth station licensees with site-approved spectrum licences to hold licences for entire spectrum blocks, as per relevant SRSPs.***

*SSi Comments*

19. SSi supports these proposals so long as the site-approval administrative process, which the Consultation (paragraph 38) identifies as “yet to be defined”, does not prove to be more onerous than the existing site-specific process for radio licensing.

20. We do note that it is still difficult to calculate the impact of these proposed requirements on SSi. As a C-band FSS user operating extensively in satellite-dependent areas, we must either obtain ISED's agreement to designate our existing facilities in a non-satellite dependent area as a gateway facility – and therefore capable of using the full 500 MHz between 3700 and 4200 MHz for the vital purpose of supporting communications in Canada's North – or make other arrangements to communicate through a third-party gateway facility.

21. SSi could be faced with the difficulty of being able to use a "full band" between 4000 and 4200 MHz at our Network Operations Centre and the full 500 MHz between 3700 and 4200 MHz at sites in satellite-dependent areas.

22. We would appreciate early clarification of the situation from the Department as well as its impact on the fees SSi would be required to pay under the proposed structure.

***Q3. ISED is seeking comments on any additional technical information that should be required for site-approved earth stations. In providing comments, respondents are requested to include supporting arguments and a rationale.***

*SSi Comments*

23. SSi is not in a position at this time to propose any additional technical information that the Department should require for site-approved earth stations.

***Q4. ISED is seeking comments on what other types of earth stations, in addition to those identified, could be subject to spectrum licences that require site approvals.***

*SSi Comments*

24. SSi has no comment on this matter at this time.

***Q5. ISED is seeking comments on its proposal to adopt generic spectrum licences in order to authorize systems of identical fixed earth stations and ESIMs.***

*SSi Comments*

25. SSi supports this proposal.

***Q6. ISED is seeking comments on its proposals to allow generic spectrum licensing systems of identical fixed earth stations and ESIMs in the frequency bands discussed above.***

***Q7. ISED is also seeking comments on any other bands that should be considered for generic spectrum licensing for fixed earth stations and ESIMs, including for systems of identical receive-only earth stations in the 4000-4200 MHz band. In providing comments, respondents are requested to include supporting arguments and a rationale.***

*SSi Comments – Questions 6 and 7*

26. SSi has no comment at this time on the Department's proposals for generic spectrum licensing systems as proposed.

***Q8. ISED is seeking comments on its proposals to:***

- ***a. Issue generic spectrum licences for ESIMs on a no-interference, no-protection basis.***
- ***b. Require ESIM licensees to provide a contact that would be available to respond to interference issues 24 hours a day, 7 days a week, as per the licence conditions in annex A.***
- ***c. Require applicants. To submit technical information needed to confirm compliance with SRSP-101 when they apply for generic spectrum licences for ESIMs and for fixed earth stations intended for self-installation by consumers.***

*SSi Comments*

27. SSi generally supports these proposals.

***Q9. ISED is seeking comments on whether an RSS should be developed for earth stations intended for self-installation by consumers.***

*SSi Comments*

28. While SSi has no specific views concerning whether the Department should develop an RSS for earth stations intended for self-installation by consumers, we note that any such RSS must be carefully drafted so that it has no anti-competitive effects that might restrict the development of competitive satellite systems, including non-Canadian LEO systems.

29. SSi believes self-installed systems do have significant potential to improve the quality and affordability of broadband internet access to consumers and businesses in satellite-

dependent areas by offering a competitive alternative in markets that continue to be distorted by the operations of the dominant incumbent local exchange carrier.

***Q10. ISED is seeking comments on its proposals to:***

- ***a. Introduce spectrum licensing for space stations in all satellite services, with licences authorizing the radio service, the frequency band(s), the orbital location and a coverage area***
- ***b. Set the licence term on a case-by-case basis for satellites that are not FSS, BSS or MSS***
- ***c. Apply the existing conditions of licence for space stations, published as N2-Space station licences, to the new spectrum licences.***

*SSi Comments*

30. SSi has no comment with respect to these proposals.

***Q11. ISED is seeking comments on its proposal to introduce spectrum licensing to authorize FSS feeder link and/or TT&C spectrum used by space stations to support MSS, with licences issued immediately after a favourable licensing decision and fees applicable once satellites are in operation.***

***Q12. ISED is seeking comments on whether to require MSS satellite operators to comply with the rules regarding minimum holdings for FSS feeder link spectrum, as defined in RP-008. In providing comments, respondents are requested to include supporting arguments and a rationale.***

*SSi Comments – Questions 11 and 12*

31. SSi has no comment on these proposals.

***Q13. ISED is seeking comments on its proposals to:***

- ***a. Issue spectrum licences instead of approvals in principle for MSS satellites, with fees remaining payable only once satellites are launched and operational***
- ***b. Issue spectrum licences for MSS satellites with a 20-year term***
- ***c. Issue separate spectrum licences for MSS satellites and MSS earth stations, with each licence assigned a fee.***

*SSi Comments*

32. SSi has no comment on these proposals.

***Q14. ISED is seeking comments on its proposals to:***

***a. Issue the three types of satellite-related spectrum licences separately and assign a separate fee for each***
***b. Allow communication with multiple GSO satellites on a single earth station licence***
***c. Require separate earth station licences for NGSO systems***

*SSi Comments*

33. SSi supports these proposals. In particular, we believe that the proposal identified as Q14(b) above will facilitate the operations of TSPs and others relying on GSO satellites.

34. We support the proposal identified as Q14(c). Although we recognize that it would be more convenient and easier for TSPs such as SSi to migrate our operations to NGSO systems if we were not required to obtain a new earth station licence, separate from the licences we already hold for earth stations communicating with GSO satellites, it appears that the earth stations to be used for NGSO systems are likely to be sufficiently different from conventional earth stations that separate licensing is warranted.

***Q15. ISED is seeking comments on its proposal to assign a consumption-based fee to earth station spectrum licences, where site and station approvals are required, as follows:***

- ***Below or equal to 1 GHz: $2000/MHz***
- ***Above 1 GHz and below or equal to 3.4 GHz: $100/MHz***
- ***Above 3.4 GHz and below or equal to 7.075 GHz: $20/MHz***
- ***Above 7.075 GHz and below or equal to 17.3 GHz: $10/MHz***
- ***Above 17.3 GHz and below or equal to 51.4 GHz: $5/MHz***
- ***Above 51.4 GHz: $1/MHz***

***Q16. ISED is seeking comments on its proposal to assign a consumption-based fee to generic earth station spectrum licences for fixed earth stations and ESIMs at the rate of $5/MHz.***

*SSi Comments – Questions 15 and 16*

35. Although the proposed consumption-based fees appear to be roughly neutral as to their impact on SSi, which uses spectrum across the North in the 3.4 GHz to 7.075 GHz band and in

a limited geographic area in the 17.3 GHz to 51.4 GHz band, we are concerned that the principle of linking fee rates to non-satellite competition for the frequencies used could result in harm to firms using, in particular, the C-band to serve satellite-dependent territories in Northern Canada.

36. As noted above, ISED has preserved the use of the full 3700-4200 MHz band for FSS in satellite-dependent territories. Because this frequency band is in demand elsewhere in Canada for 5G mobile services, the fee attached to it is relatively high. However, foreseeable demand for use of this frequency band to deliver 5G mobile services in satellite-dependent territories is still relatively low.

37. We urge ISED to ensure that its policies with respect to the use of C-band and other frequencies for FSS in satellite-dependent territories are reflected consistently throughout the rules applicable to FSS licensees.

38. Similarly, it appears these proposals could put FSS users serving satellite-dependent areas at a significant cost disadvantage compared to licensees that qualify for generic earth station spectrum licences. Under ISED's proposal for generic spectrum licensing in the 3700-4200 MHz band, "identical receive-only earth stations that are part of an enterprise network" would benefit from generic licensing and, therefore, a licence fee set at 25% of the fee established for FSS users that require site-specific licences.

39. Given ISED's admission that "location information would be required to establish protection" even for the proposed recipients of generic spectrum licences in this band, the administrative costs associated with these two types of licences do not appear to justify the differential fee rate.

40. If the Department's proposal is intended to provide a subsidy for a particular type of earth station users, such as the broadcasters that make use of receive-only earth stations in this band, we urge ISED to be explicit both about its intentions and the reasons for them.

***Q17. ISED is seeking comments on its proposal to modify the consumption-based fee for spectrum licences for MSS earth stations operating in bands allocated to MSS as follows:***

- ***At or below 3 GHz: $1500/MHz***
- ***Above 3 GHz: $5/MHz***

***Q18. ISED is seeking comments on its proposal to assign the spectrum licence fee for MSS earth stations based on the maximum amount of spectrum a system is capable of using, within a range of possible operation. This amount would be the assigned spectrum used in the fee calculation.***

*SSi Comments – Questions 17 and 18*

41. SSi has no comment on these proposals at this time.

***Q19. ISED is seeking comments on its proposals to:***

- ***a. Modify the MSS satellite spectrum licence fee to $124.84/MHz***
- ***b. Assign a consumption-based fee for new spectrum licences for all other satellites (that are not FSS, BSS or MSS) at $124.84/MHz***

*SSi Comments*

42. SSi has no comment on these proposals at this time.

***Q20. ISED is seeking comments on its proposals to:***

- ***a. Introduce a two-step fee for space station spectrum licences for constellations of NGSO satellites in any satellite service that are subject to phased deployment milestones***
- ***b. Apply the first fee step currently at $62.42/MHz from the launch of the first satellite up until the deadline for the first deployment milestone (typically year 6). The second fee step, currently at $124.84/MHz, would apply thereafter and would continue until the end of the licence term, recognizing that all annual fees will increase over time, according to the CPI.***

*SSi Comments*

43. While we have no objection in principle to the introduction of a fee schedule that is phased to coincide with phased deployment milestones for new satellite services, we urge ISED to consider whether the effect of this proposal is not to introduce a cross-subsidy from existing services towards the single foreseeable NGSO system that will be subject to Canadian licensing requirements.

***Q21. ISED is seeking comments on its proposals to introduce a minimum annual spectrum licence fee of $160 for earth stations and $300 for space stations, and to apply these fees whenever the application of the consumption-based fee model would result in a fee lower than those amounts.***

***Q22. ISED is seeking comments on its proposal to apply a minimum annual spectrum licence earth station fee of $160 to radioastronomy sites.***

***Q23. ISED is seeking comments on its proposals to introduce developmental spectrum licence fees for earth stations and space stations at a flat rate of $160 and $300, respectively.***

***Q24. ISED is also seeking comments on limits to eligibility requirements for developmental spectrum licences, limits on frequency bands where developmental licences could be issued, and conditions of licence that could be applied. In providing comments, respondents are requested to include supporting arguments and a rationale.***

*SSi Comments – Questions 21 to 24*

44. SSi has no comment with respect to these proposals.

***Q25. ISED is seeking comments on its proposal to apply a prorated fee, of 1/12$^{th}$ of the relevant annual fee for each month until March 31 of the fiscal year, for licences issued part-way through a licensing year.***

*SSi Comments*

45. SSi has no comment with respect to this proposal.

***Q26. ISED is seeking comments on its proposals to:***

- ***a. Issue short-duration licences for periods of less than one year***
- ***b. Assign a prorated fee of 1/12$^{th}$ of the total annual fee per month, with the lowest fee possible being $160 for earth stations and $300 for space stations***

*SSi Comments*

46. SSi has no comment with respect to this proposal.

***Q27. ISED is seeking comments on its proposals to set service standards for the issuance of licensing decisions for satellite-related spectrum licences as follows:***

- ***Space stations: 126 days***
- ***Generic earth stations: 126 days***

- ***Site-approved earth stations: 126 days***
- ***Additional sites under an existing site-approved earth station licence: 49 days***

*SSi Comments*

47. SSi has no comment with respect to this proposal.

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