

CANADA GAZETTE NOTICE NO. SMSE-009-21

**CONSULTATION ON UPDATES TO THE LICENSING AND FEE
FRAMEWORK FOR EARTH STATIONS AND SPACE
STATIONS IN CANADA**

**PUBLISHED IN THE CANADA GAZETTE, PART 1
ON 14 AUGUST 2021**

**COMMENTS
OF
BCE INC.**

4 OCTOBER 2021

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1.0 INTRODUCTION

1. In accordance with the procedure set out by Innovation, Science and Economic Development Canada (the Department or ISED) in Notice No. SMSE-009-21, *Consultation on Updates to the Licensing and Fee Framework for Earth Stations and Space Stations in Canada* (the Consultation), issued in the Canada Gazette, Part 1 on 14 August 2021, we are providing comments on behalf of BCE Inc. on the proposed updates to the licensing and fee framework.

2. It is timely that the Department is consulting on the licensing and fee framework for satellite and earth stations as the satellite industry is going through a major transformation. The proposed framework will facilitate the deployment of Non-Geostationary Satellite Orbit (NGSO) systems and promote the efficient use of spectrum by satellite earth stations.

3. The introduction of new types of satellite systems and earth stations (e.g., those intended for self-installation) are enabling innovative services but they have the potential to cause interference and disrupt existing services. We therefore recommend the Department to carefully analyze the bands where generic licences are authorized and carefully assess what types of earth stations should be authorized in specific bands. Specifically, the bands where generic earth stations have the potential to disrupt existing users and bands where the presence of existing users makes it impractical to operate earth stations without interference should not be selected for such authorizations. The deployment of Earth Stations in Motion (ESIMs) has so far been limited but this could change in the future with the growing number of NGSO systems being deployed. The mobile nature of ESIMs should be an added consideration for the Department when analyzing bands where the Department is planning to authorize ESIMs. Therefore, licensing of ESIMs should be carefully analyzed by the Department in each band prior to allowing generic authorizations.

4. Below we provide our responses to those questions in the Consultation for which we have inputs for the Department.

2.0 LICENSING FRAMEWORK

2.1 Introduction of spectrum licensing for earth stations

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**

5. We generally support ISED's proposal to use spectrum licences to authorize fixed and transportable earth stations and ESIMs. We also support the proposal to issue Tier 1 licences and the general conditions of licence listed in Annex A. While authorizations under a single licence promote efficiency and reduce the administrative burden on both the regulator and licensee, it remains important that ISED consult on the list of bands and services prior to issuing such authorizations. The potential of ESIMs causing interference due to their mobile nature should be taken into account prior to issuing a single authorization in a band and for a specific service.

2.2 Earth station spectrum licences requiring site approval

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**

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.

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.

6. We agree with the Department's proposal to implement spectrum licences that require site approvals for the types of earth stations identified in the Consultation: those that require coordination with other services that share the same band or require international coordination,

transportable earth stations, large earth stations, and stations in bands where deployments are otherwise limited through policies and telemetry tele-command and control (TT&C) earth stations. We also agree with the requirement to submit the technical information listed in Annex B of the Consultation for such approvals. It is necessary to have complete technical information about such sites in order to avoid and mitigate interference from and to such sites.

7. We encourage the Department to follow site-specific approvals for earth stations that share the band with other services such as flexible use. However, in special cases such as the repurposed C-Band¹ it is appropriate to issue a single authorization for similar earth stations that already exist and are now subject to a migration plan. In all cases where approval is being sought for earth stations in bands that are currently shared with, or are planned to be shared with, flexible use systems (mobile/fixed) only site-based approvals should be issued. The use of single authorizations in such cases would unnecessarily complicate interference management and sharing in such bands.

8. We agree in principle that earth stations that are licensed in bands that are shared with flexible use licensees where a Standard Radio System Plan (SRSP) defines a band plan should be required to hold licences for entire spectrum blocks rather than just the spectrum that the earth station is using. We support the Department's proposal, which will align the satellite users in the band with the flexible-use band plan as per the SRSP and will minimize coordination and interference related issues. However, we encourage the Department to allow voluntary agreements among existing licensees to facilitate more efficient use of spectrum where the earth stations are not using the entire block of their licensed spectrum.

2.3 Spectrum licences for generic earth stations

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.

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

¹ Decision on the Technical and Policy Framework for the 3650-4200 MHz Band and Changes to the Frequency Allocation of the 3500-3650 MHz Band (the 3800 MHz Decision) at <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11699.html>.

providing comments, respondents are requested to include supporting arguments and a rationale.

9. We generally agree with the Department's proposal to use generic spectrum licences to authorize identical fixed earth stations and ESIMs. We believe that this will make the authorization process more efficient and reduce the administrative burden on licensees. We support the Department's approach to assessing which bands should be allowed for generic authorizations. However, we do not support generic authorizations in all the bands proposed by the Department in this consultation. We provide our specific comments on the bands proposed for generic licensing by ISED below.

10. **3700-4200 MHz (space-to-Earth):** A portion of this band will be repurposed for flexible use while all of it will remain available for Fixed Satellite Services (FSS) in satellite dependant areas as per the 3800 MHz Decision. The Department has also issued interim authorizations for identical receive-only earth stations that are part of an Enterprise Network² in 3700-4000 MHz of the band. These authorizations will provide protection to such earth stations from flexible use until the migration deadline. The introduction of flexible use in this band is very important for 5G deployment in Canada and the availability of this band in 2025 is expected to play a crucial role in providing the mid-band spectrum necessary for enhancing 5G capacity in Canada. The use of this band is already conditional on clearing C-Band FSS users and the authorization of any type of generic licences will further complicate the introduction of flexible use in this band.

11. We agree with the Department's proposal to restrict generic authorizations in the 4000-4200 MHz frequency range to aeronautical and maritime ESIMs and receive-only earth stations that are part of an Enterprise Network. We also support the generic authorization for identical receive-only earth stations in Enterprise Networks operating in the 4000-4200 MHz frequency range. This will allow broadcasters to continue to serve Canadians and distribute content received through these earth stations. Furthermore, we agree with the proposal to use location information to protect earth stations, but this protection should only be offered to earth stations that have uploaded their information to ISED's SMS database as part of their generic authorization. However, we urge the Department not to offer any protection from flexible use in 3700-3980 MHz to ESIMs authorized in 4000-4200 MHz band as the location of ESIMs cannot be determined and therefore it is impractical to offer protection.

² An Enterprise Network is defined in the 3800 MHz Decision as "a communications network that supports content and broadcasting distribution, including for educational and religious organizations".

12. **5925-6425 MHz (Earth-to-space):** This band was allocated by the Department for licence-exempt Radio Local Area Network (RLAN) use in Canada in ISED's 6 GHz decision³. In addition to future licence-exempt use, the band has incumbent Fixed Service (FS) licensees. In the comments in the 6 GHz consultation, concerns were raised about protection of incumbents in this band from licence-exempt RLANS and issuing any type of generic authorization may create an additional source of interference. Therefore, we agree with the Department that generic licences should be issued only to aeronautical and maritime ESIMs in this band. However, aeronautical and maritime ESIMs should not be eligible to claim protection from incumbent FS licensees in this band as they should operate on a "no-interference, no-protection" basis aligned with the proposed rules for such generic authorizations.

13. **10.7-10.95 GHz and 11.2-11.45 GHz (space-to-Earth):** We agree with the Department's proposal to allow generic licensing for fixed earth stations on a no-interference, no-protection basis in relation to the licenced FS service in the band. We are using this band for FS links extensively and therefore support the proposal to limit generic authorizations for ESIMs only to aeronautical and marine ESIMs.

14. **10.95-11.2 GHz and 11.45-11.7 GHz (space-to-Earth):** We agree with the Department's proposal to allow generic licensing for fixed earth stations and all three types of ESIMs, as long as the fixed earth stations and ESIMs are communicating in the space-to-Earth direction and operating on a no-interference, no-protection basis. The unpredictability of ESIMs' location, together with the high power transmissions of ESIMs from earth to space, may cause interference to existing FS links and should not be allowed in bands shared with the FS.

15. **11.7-12.2 GHz (space-to-Earth) and 14.0-14.5 GHz (Earth-to-space):** We agree with the Department's proposal to allow generic licensing for fixed earth stations and all three types of ESIMs in this frequency range.

16. **12.2-12.7 GHz (space-to-Earth):** This band is being used extensively for direct-to-home (DTH) television broadcasting services in Canada. This band is being considered for flexible use in the U.S.⁴ in light of the declining amount of Broadcast Satellite Service (BSS) usage in the band. Generic licences for all types of ESIMs communicating with NGSOs should not be allowed

³ Decision on the Technical and Policy Framework for Licence-Exempt Use in the 6 GHz Band <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11698.html>.

⁴ FCC Seeks Comment on Maximizing Efficient Use of 12 GHz Band <https://www.fcc.gov/document/fcc-seeks-comment-maximizing-efficient-use-12-ghz-band>.

until the future of this band becomes clear in the U.S. This band could provide an opportunity to increase much needed 5G spectrum in Canada and make use of the U.S. ecosystem should the FCC decide to allow flexible use in this band. Therefore, the Department should postpone the decision of allowing any type of ESIM in this band. Furthermore, it is important that any regulatory framework in this band provides protection to DTH services which enable broadcasters to provide TV service to Canadians across the country.

17. **13.75-14.0 GHz (Earth-to-space):** We agree with the Department's proposal to allow generic licensing for fixed earth stations and all three types of ESIMs.

18. **17.7-18.3 GHz (space-to-Earth and Earth-to-space):** We agree with the Department's proposal to allow generic licensing only for aeronautical and maritime ESIMs in this band in order to protect FS as it has priority over FSS in this band. We have no objection to the Department allowing generic licensing of aeronautical and maritime ESIMs in the space-to-Earth direction communicating with NGSO satellites in addition to Geostationary Orbit (GSO) satellites as long as they communicate on a no-interference, no-protection basis in both cases.

19. **18.3-18.8 GHz (space-to-Earth) and 18.8-19.3 GHz (space-to-Earth):** We agree with the Department's proposal to allow generic licensing for fixed earth stations and all three types of ESIMs.

20. **19.7-20.2 GHz (space-to-Earth) and 29.5-30 GHz (Earth-to-space); 28.35-28.6 GHz (Earth-to-space); 28.6-29.1 GHz (Earth-to-space); and 29.25-29.5 GHz (Earth-to-space):** We agree with the Department's proposal to allow generic licensing for fixed earth stations and all three types of ESIMs.

21. **27.5-28.35 GHz band (Earth-to-space):** We agree with the Department's proposal to prohibit any type of generic licences other than for aeronautical and maritime ESIMs communicating with GSOs. The band is planned to be used for flexible use in the Department's millimetre wave decision⁵. This frequency range forms the 3rd Generation Partnership Project (3GPP) Band n261 for 5G New Radio (5G NR) and is already deployed in the U.S. Considering that much is unknown about how ESIMs will develop with respect to NGSO systems, the Department should not make changes to the existing policy and should not allow generic licensing

⁵ Decision on Releasing Millimetre Wave Spectrum to Support 5G <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11510.html>.

for aeronautical and maritime ESIMs communicating with NGSOs. There are a number of bands in the proposal that would allow such generic licensing and we do not see any urgent need to allow such licensing in this band. The band already presents challenges for flexible use deployment with respect to FSS in the band and any changes to the policy that could lead to increasing those challenges should be avoided.

22. As already highlighted, we support the use of generic licensing for identical receive-only earth stations that belong to an Enterprise Network operating in the 4000-4200 MHz band. This is consistent with the 3800 MHz Decision where the Department allowed such use on an interim basis and protected licensees from flexible use operations in the 3700-3980 MHz band. This will allow broadcasters in Canada to make use of the C-Band with protection from flexible use in order to receive domestic and international content. We do not support the inclusion of any additional bands for generic licensing at this stage.

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**

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

23. We agree with the Department's proposal to issue generic licences to ESIMs on a no-interference, no-protection basis. We also agree with the proposal for ESIM licensees to provide 24/7 contacts and submit the required technical information as per SRSP 101. The satellite industry is evolving rapidly and the ubiquitous presence of self-installed earth stations and ESIMs could lead to significant interference issues with other licensed users in the bands. The measures that the Department plans to implement at this time are sufficient, however, the oversight measures may have to be revisited based on the number of ESIMs that are deployed in the coming years.

24. We also support the development of a Radio Standard Specification (RSS) for earth stations intended for self-installation by consumers. We agree that the current rules for earth stations were developed assuming professional installation and therefore a certification process must be introduced for such self-installed earth stations through the development of a RSS. This will ensure that the self-installed earth stations are following pre-determined rules and not causing interference to other services.

2.4 Types of licences required

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**

25. We agree with the Department's proposal to issue three types of licences, namely generic earth stations, site-approved earth stations, and space stations. We also agree with having a distinction between licences for earth stations that communicate with GSO satellites and those that communicate with NGSO satellites. This will simplify the licensing process for earth stations and will reduce the administrative burden on earth station operators.

3.0 FEE REGIME

3.1 Earth stations

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.

26. With the exception noted below, we agree with the Department's revised structure and believe that it will improve utilization of the spectrum and is better aligned with the needs of the evolving satellite industry as it transforms towards NGSO systems. The decrease in fee per MHz with higher frequency spectrum also captures the value and scarcity of spectrum considering that there is generally more spectrum available in higher frequencies. The fees for earth stations should be charged based on the spectrum licence for each individual site-specific earth station rather than the spectrum covered by the entire band.

27. We do not agree with the base rate proposal of \$20/MHz for C-Band⁶. The Department mentions in paragraph 90 of the Consultation that this proposed fee "aligns with the average annual fee on a per-MHz basis currently paid by licensees in that band". However, our calculations indicate that the proposed rate results in significantly higher fees for C-Band earth stations that we operate in the remote areas of the country. The Department acknowledges in paragraph 90 of the Consultation that C-Band is "predominantly used for remote telecommunications". An increase in fees for C-Band licences will have a direct impact on service providers in the remote areas of the country as it would adversely affect the cost of telecommunication services in those areas. Based on our calculations, the base rate for C-Band should be in the \$10/MHz - \$15/MHz range rather than the proposed \$20/MHz.

28. We agree with the proposal for a \$5/MHz fee for generic licences. These fees should be charged for the full range of spectrum in the band that the generic authorization is provided for rather than the spectrum being used by earth stations. We believe that the interim authorizations issued for identical receive-only earth stations in the C-Band as a result of the 3800 MHz Decision should not be subject to these fees. The authorizations for the 3700-4000 MHz part of the C-Band should be valid until the transition deadline of 31 March 2025 as per the Department's 3800 MHz Decision. Considering that the authorizations are a result of a policy change, and many of the licensees will transition out of the 3700-4000 MHz band before the transition deadline, it would be reasonable to not charge any fees for this specific authorization. However, we support charging the proposed fee for the generic authorization for existing and new identical receive-only earth stations in 4000-4200 MHz that are part of an Enterprise Network from the date of the transition deadline as per the 3800 MHz Decision.

⁶ The Consultation, paragraph 90 <https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11723.html>.

3.2 Space station spectrum licences

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**

4.0 DEVELOPMENTAL SPECTRUM LICENCES FOR EARTH STATIONS AND SPACE STATIONS

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.

29. We agree with the Department's proposals in Q21, Q22 and Q23. With regard to eligibility requirements in Q24 for developmental licences, we believe that it should be restricted to bands that already have a FSS or BSS allocation and have established co-existence rules for sharing the band with other services. In addition, developmental licences should be issued on a no-interference, no-protection basis.

5.0 OTHER ADMINISTRATIVE ASPECTS

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

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 1/12th of the total annual fee per month, with the lowest fee possible being \$160 for earth stations and \$300 for space stations**

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**

30. We agree with the Department's proposals in Q25, Q26 and Q27.

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