THE CANADIAN SPACE AGENCY

COMMENTS REGARDING

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

Submitted by

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October 4, 2021

ISED Consultation on Updates to the Licensing and Fee Framework for Earth Stations and Space Stations in Canada
(SMSE-009-21, Dated August 2021)

Innovation Science and Economic Development (ISED) issued a public consultation in August 2021 to update the licensing and fee framework for earth stations and space stations in Canada. Comments are due on October 4, 2021. The Canadian Space Agency (CSA) is pleased to have the opportunity to comment on this Consultation.

CSA is supportive of the intent of this Consultation which is to increase spectrum efficiency, use and flexibility, taking into account the evolving radiocommunication industry, advancements in technology, and marketplace demands. As the title of the Consultation suggests, it addresses the licensing and fee regime for space stations and earth stations.

Please see below CSA's comments on those questions in the Consultation that are considered of relevance to CSA.

6.1 Introduction of spectrum licensing for earth stations

In summary, the proposal is to replace radio licenses with spectrum licenses for all earth stations. It proposes that multiple earth stations to be authorized under a single spectrum license, replacing individual station licensing. The licence would be issued annually, subject to the annual renewal cycle.

Question #1

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.

Comment to Q1a:

CSA supports the proposal since it will simplify securing licences within the Canadian territories and will reduce regulatory and administrative burden on both operators and ISED/the Department. A well step by step procedure for the submission of applications to secure license for earth stations is needed to reduce possible administrative burden on both operators and the Department and expedite the licensing process.

Comment re Q1b:

CSA supports the proposal. The proposal provides Tier 1 licensing option for all earth stations. However, CSA kindly requests the Department to consider granting licenses for other Tiers and, therefore a lower fee, in case Tier 1 license is not required by an operator (e.g., TTAC earth stations) and pay a smaller annual license fee.

Comment re Q1c:

CSA notes it. Appropriate comments, if needed, will be provided when addressing Annex A.

6.2 Earth station spectrum licences requiring site approval

Briefly stated, it is proposed to issue spectrum licenses for:

- earth stations that operate in bands where coordination is required
- transportable earth stations
- large earth stations
- for earth stations such as gateways, where ISED spectrum policies have limited their deployment
- stations in frequency bands where deployments are otherwise limited through spectrum policies, such as gateway earth stations, and
- those earth stations that conduct telemetry, telecommand and control (TT&C) functions

ISED requires that each individual station and the associated site under the spectrum license be approved, noting that site approval is generally needed.

Question # 2

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 SRSP.s

Comment to Q2a:

CSA supports the proposal noting that CSA does not currently use transportable earth stations.

Comment to Q2b:

CSA notes it. Appropriate comments, if needed, will be provided when addressing Annex B.

Comment to Q2c:

CSA is of the view that some earth stations such as TTAC earth stations use rather very small amount of spectrum and, thus, a lower probability of interference to other services. The Department should consider the special needs and characteristics of TTAC in its policy. In addition, the special characteristics of TTAC earth stations also further demonstrate the reason why the Department should consider other Tiers with lower licensing fee in granting licenses.

Question #3

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.

Comment re Q3:

CSA does not believe any additional information should be required. However, if needed, CSA's comment would be included in response to the information provided in Annex B.

Question #4

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.

Comment re Q4:

CSA has no comments regarding Q4 at this time.

6.3 Spectrum licences for generic earth stations

In this Section, the Department proposes to make permanent an interim process that it developed in 2015. The process is related to the frequency bands that are not used by the Agency at this time. "*ISED is also proposing to adopt this process for authorizing systems of identical ESIMs.*"

Question #5

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

Comment re Q5:

CSA has no comments regarding Q5 at this time.

6.3.1 Frequency bands where generic spectrum licences will be available

In summary, the Department proposes to include generic licensing in a number of frequency bands that are not used by the CSA.

Question #6

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.

Comment re Q6:

CSA has no comments regarding Q6 at this time.

Question #7

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.

Comment re Q7:

CSA has no comments regarding Q7 at this time.

6.3.2 Additional conditions of licence for generic spectrum licences for ESIMs and for earth stations installed by consumers

Briefly, this part addresses the requirements for earth stations in motion (ESIMs) and earth stations installed directly by consumers and other end-users.

Question # 8

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**.

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.

Comment re Q8:

CSA supports ISED's proposal.

Question # 9

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

Comment re Q9:

Although it is not directly related to CSA at this time, CSA is of the view that Radio Standards Specification (RSS) should be developed for for self-installation earth stations in general and for ESIM operation in particular so that these earth stations would be subject to certification in order to enter the Canadian market (CSA notes that spectrum licences for ESIMs are based on a no-interference, no-protection basis).

6.4 MSS earth stations

CSA has no comments re MSS earth stations.

6.5.1 Non-communications satellites

In summary, ISED proposes that the same arguments in favour of spectrum licensing for communications satellites also apply to satellites operating in other services, such as the EESS, the SRS, and the meteorological satellite service. ISED therefore proposes to introduce spectrum licences to authorize all other satellite services. Licences would be issued immediately upon a favourable licensing decision. The fee would apply once the satellites are in operation and would be payable on an annual basis. It also proposes set the license term on a case-by-case basis for the EESS, the SRS, and the meteorological satellite service.

Question #10

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.

Comment re Q10:

CSA supports ISED's proposal. Noting that a good number of the scientific satellites are NGSO networks/systems, the Department may wish to clarify it further in its Policy.

6.5.2 FSS feeder link spectrum used by space stations in the MSS

Comment re Q11 and Q12:

CSA has no comments re Q11 and Q12.

6.5.3 Changes to spectrum licences for MSS space stations

Comment re Q13:

CSA has no comments re Q13.

6.6 Types of licences required

In this section, ISED proposes that the three different types of spectrum licences for a satellite network (generic earth stations, site-approved earth stations, and space stations) be issued separately each having a separate fee. Licences would be requested and granted on the basis of the applicant's particular system. For example, a satellite operator, would hold a spectrum licence for the spectrum used by the satellite and a site-approved spectrum licence for associated TTAC, gateway and/or feeder link stations. If the satellite operator also requires a generic spectrum licence for user terminals, that would be issued separately.

Question #14

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.

Comment re Q14:

CSA supports the Department's proposal.

7. Fee regime

7.2.1 Spectrum licences for earth stations requiring site approvals

In summary, ISED proposes different rates for different frequency bands used in the licence.

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..

Comments re Q15 and Q16

CSA can support the Department's approach for license fees, using consumption-based approach rather than the current capacity-based approach since it rewards an operator who uses the spectrum efficiently. However, CSA would appreciate very much if ISED could clarify how the rates have been derived and if the rates are comparable with rates of other administrations for similar services.

7.3 MSS earth station spectrum licences

CSA has no comments.

7.4 Space station spectrum licences

Briefly, satellites that are currently authorized through radio licences are subject to the fees which are traffic-based. Noting ISED's proposed approach of new spectrum licence for satellites, a new spectrum licence fee must also be introduced for satellite spectrum used by EESS and other scientific satellites. Noting the convergence of services and technologies, and the increasing commercialization of non-communications satellite services (e.g., EESS), ISED is proposing to establish a fee for the use of all frequencies allocated to satellite services and used by satellites at the fee of $124.84/MHz, regardless of frequency band.

Question #19

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.

Comment re Q19

CSA supports the Department's approach on the understanding that the proposal will not increase the fee that CSA already pays for its current licensing requirements.

7.4.1 Spectrum licences for NGSO systems

In summary, ISED is proposing to apply its proposed fee to NGSO constellation. ISED proposes to introduce a two-step fee for NGSO spectrum licences in any satellite service that are subject to phased deployment milestones. The first step, at a rate of $62.42/MHz, would apply once the licensee launches a satellite and would apply up until the time the licence states the first domestic deployment milestone must be met, regardless of the number of satellites operating.

Question # 20

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.

Comment re Q20

CSA does not have any comments re Q20 at this time.

7.5 Minimum spectrum licence fees

Briefly, ISED proposes to use minimum fees if it is below a reasonable threshold.

ISED proposes to apply a minimum annual spectrum licence fee for earth stations of $160 per licence for a fixed earth station (one transmit and one receive channel). This fee would be applied whenever the use of the consumption-based model in the relevant frequency band would result in an annual fee lower than $160.

For space stations minimum annual fee for a radio licence, ISED proposes a minimum annual spectrum licence fee of $300 per licence. This fee would also be applied whenever using the consumption-based model would result in an annual fee lower than $300.

Question #21

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 that those amounts.

Question #22

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

Comments re Q21:

CSA supports the Department's proposal in Q 21. It may also be responsive to CSA's comment regarding the use of the radio frequency bands for the purpose of TTAC functions only.

Comments re Q22:

The Agency has no comments re Q22.

Question #23

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.

Comment re Q23:

CSA supports the Department's proposal on the understanding that it would be on a no-protection, no-interference basis.

8. Developmental spectrum licences for earth stations and space stations

Briefly, for example due to increased use of Cubesats, ISED proposes to issue developmental earth station and space spectrum licences and to establish a flat fee that is equivalent to the minimum fee in the amount of $160/year and $300/year, respectively, typically issued on a no-interference, no-protection basis. ISED proposes to authorize student-led projects through developmental spectrum licences. However, ISED will issue standard earth station and space station spectrum licences for all TTAC frequencies.

Question #24

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.

Comment re Question # 24

CSA supports the Department's proposal for developmental spectrum licences; however CSA expects they would be based on "no-protection, no-interference" condition.

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9.2 Prorated fees for new and amended licences

In summary, ISED proposes that the annual fee be prorated based on the month the licence is issued. Specifically, the prorated fee would be 1/12th of the total annual fee for each calendar month until March 31 of the current fiscal year, rather than using a set, monthly fee in the calculation (the minimum fees given in **Section 7.5** above are not covered by this proposal).

Question #25

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.

Comments re Q25:

CSA supports the Department's proposal in Q25.

9.4 Short-duration licences

ISED proposes to define a short-duration licence as a licence issued for less than one year. ISED proposes that the applicable fee be set at 1/12th of the total annual fee per month, and that the lowest applicable fee corresponds to the minimum fee of $160 for earth stations or $300 for space station spectrum licences.

Question #26

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

Comment on Q26:

CSA supports ISED's proposal re short duration licences.

9.5 Service standards and remissions

ISED has set service standards for each fee.

Question #27

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

Comments re Q27

CSA supports the Department's proposal re Q27. For TTAC earth stations, however, ISED may wish to consider a quicker mechanism.

Annex A: Typical conditions of licence for earth stations

CSA has no comments re Annex A at this time.

Annex B: Technical information required for earth station spectrum licences

CSA has no comments re Annex B at this time.