

May 11, 2017

VIA EMAIL

Mr. Martin Proulx
Director General
Engineering, Planning & Standards Branch
Innovation, Science & Economic Development Canada
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Dear Mr. Proulx:

Re: *Consultation on the Licensing Framework for Non-Geostationary Satellite Orbit (NGSO) Systems and Clarification of Application Procedures for All Satellite Licence Applications, Canada Gazette, Part I, March 4, 2017 and April 1, 2017, Notice No. SMSE-009-17 as amended*

I. Introduction

1. This letter represents the joint reply of the following Canadian satellite operators and industry stakeholders (hereinafter referred to as the “Coalition”) in the above-noted consultation (the “Consultation”):

- Ciel Satellite Limited Partnership
- Meridian Global Connection Inc.
- Northpoint Spectrum Development Inc.
- Parscom Management
- WorldVu Satellites Limited (d/b/a “OneWeb”)

2. Some of the foregoing members of the Coalition may also submit reply comments to the Department under separate cover in order to supplement or expand upon the positions reflected in this submission.

3. A total of 11 parties submitted comments in response to the Consultation document, including: The Boeing Company (“Boeing”), GHGSat Inc., (“GHGSat”), Kepler

Communications Inc. (“Kepler”), Microsat Systems Canada Inc. (“MSCI”), NorthStar Data (“NorthStar”), O3b Limited (“O3b”), Planet Labs Inc. (“Planet Labs”); Space Exploration Technologies Corp. (“SpaceX”), Telesat Canada (“Telesat”), and WorldVu Satellites Limited (“OneWeb”).

4. Many of these parties supported the type of open and flexible market-based approach that was advocated by the Coalition in its first round of comments in this proceeding, noting that this approach would encourage competition and innovation in the Canadian satellite and space industry sectors and create opportunities for the deployment of advanced systems that will serve a variety of customers and users in the consumer, business and government sectors.¹
5. These parties also noted that artificial barriers to market entry – such as a requirement for licensees to establish a “local presence” in Canada for TT&C, network operations and gateway earth station facilities or the establishment of outdated and unnecessary capacity and coverage requirements – would undermine the Department’s goals of promoting innovation and investment in Canada’s space industry and satellite sector, not to mention the government of Canada’s message that Canada is “open for business”. For example, Planet Labs observed that some of the proposals contained in the Consultation document will unnecessarily handicap Canadian licensed satellite operators and, indeed, place Canada at a competitive disadvantage:

*These proposed requirements will place Canada at a competitive disadvantage relative to other jurisdictions, such as the United States, and deprive Canada of the opportunity to become a leader in the development and deployment of commercial NGSO systems. While Planet is not directly affected by some of the proposed changes in the Consultation, Planet submits the following comments in furtherance of achieving a licensing policies and procedures that are fair and will promote investment and jobs in the space-satellite sector in Canada.*²

¹ See, generally, the comments of Kepler, Telesat, GHGSat, Planet Labs, O3b and SpaceX in SMSE-009-17.

² Planet Labs Comments, SMSE-009-17, 13 April 2017, para. 4

6. Likewise, Kepler noted that “limiting the number of systems that propose to use novel technology would result in a closed market, reducing competition and stagnating development.”³
7. This sentiment was also expressed by Telesat in a lengthy submission to the Department. As noted by Telesat:

Telesat submits that the policy imperative for the Department is clear: it must create conditions in which Canadian industry can thrive and compete in global markets. In the context of this Consultation, that means the Department must not burden a Canadian-licensed NGSO system with onerous regulatory conditions that will make their service offerings uncompetitive and economically unviable. Otherwise, there is a strong possibility that: (1) the Canadian space industry, and the Canadian economy more broadly, will lose the benefit of a Canadian licensee building a system, and (2) Canadians may not have access to the benefits that these next generation NGSO systems promise.⁴ [Emphasis in original]

8. The Coalition agrees entirely with these observations. In fact, in its 18 April 2017 comments, the Coalition emphasized the importance of Canada maintaining a spectrum development environment that is comparable to, and competitive with other administrations, and which does not inequitably burden Canadian operators and entrepreneurs through the imposition of artificial barriers to market entry that discourage investment and innovation and which are ultimately incompatible with the Government of Canada’s “open for business” strategy which is designed to promote international trade and investment in Canada. As noted by the Coalition:

...considering the deployment costs of commercial NGSO FSS constellations, typically in the billions of dollars, these constellations are not always going to be built, launched, and maintained by a single company, or even companies from a single country – such massive projects often require capital investment and expertise from multi-national firms, and partnerships that cross borders. Canadian licensing

³ Kepler Comments, SMSE-009-17, 10 March 2017, para. 5.

⁴ Telesat Comments, SMSE-009-17, 18 April 2017, p. iii.

rules should take into account that Canadian firms would benefit from rules that encourage foreign investment in and participation by these firms in such ventures.⁵

II. Replies to Comments Submitted in Response to Questions raised in the Consultation

9. In the sections below, the Coalition provides its responses to the comments that were submitted by other interested parties in this proceeding on the issues that were raised in the Consultation document. Any failure by the Coalition to respond to a specific comment or issue raised by another interested party should not be interpreted as agreement with or acceptance of such comment or issue where to do so would be contrary to the interests of the members of the Coalition.

A. ISED seeks views on the following:

- 1. Whether to impose a limit on the number of licences issued per band for commercial systems;**
- 2. If so, what would be an appropriate limit; and**
- 3. If a limit is imposed, whether to exclude systems whose purpose is data gathering and that transmit to a small number of fixed earth stations and non-commercial systems (i.e. academic, government and developmental) from this limit.**

10. The Coalition notes that most parties to this proceeding opposed the establishment of a limit on the number of licences issued for commercial NGSO systems. Included among these parties are the following GHGSat, Kepler, NorthStar, SpaceX, the Coalition and Telesat. Even parties that did not have a direct stake in this opposed the establishment of a limit on the number of licences. For example, GHGSat argued that:

While the limit under consideration is not expected to directly affect GHGSat's business, GHGSat nevertheless discourages the application of a limit even for NSGO FSS systems. Imposing any such limit may ultimately lead to an oligopoly in NGSO FSS systems, limiting free competition and innovation in a market where end customers should ultimately benefit from such market forces. Also, such a limit could motivate Canadian

⁵ Coalition Comments, SMSE-009-17, 18 April 2017, paras. 10-11.

*companies to seek other jurisdictions in which to innovate and launch new services.*⁶

11. The only party that endorsed a limit on the number of licensed systems was MSCI, which proposed a limit of 3-5 licences (for commercial systems only).⁷ However, no rationale was given by MSCI for this limit. It is therefore difficult to comment on MSCI's position apart from noting that the limit chosen (3-5 licensees) may have been selected based on an unspecified assumption that there is only so much spectrum sharing and coordination that can take place among NGSOs operating in a given band.
12. Whether or not this is true, the Coalition agrees that there is no benefit to establishing a limit, especially when technological developments are taken into account. As noted by NorthStar: "There are many variables that will define the number of systems which can share spectrum including but not limited to the specific orbits, the orbital architecture including the use of inter-satellite links (ISL), and the location of earth stations including feeder links."⁸

B. ISED seeks comments on the following proposals:

- 1. Primary TT&C and network operations centre for all NGSO systems must be located within Canadian territory;***
 - 2. A description and planned location of the facilities must be included in licence applications;***
 - 3. Confirmation of the final location of these facilities will be included in the second implementation milestone as part of the conditions of licence; and***
 - 4. Construction of the facilities will be included in the milestone associated with the first satellite(s) being in operation.***
13. In its comments of 18 April 2017, the Coalition urged the Department not to establish any local or "commercial presence" requirements as part of its NGSO licensing regime, such as the requirement to establish primary TT&C facilities and/or network operations centres in Canada. The Coalition took this position because:
 - It is inconsistent with the government of Canada's "open for business" policy;

⁶ GHGSat Comments, SMSE-009-17, 14 April 2017, p. 2.

⁷ MSCI Comments, SMSE-009-17, 20 March 2017, p.1.

⁸ NorthStar Comments, SMSE-009-17, 18 April 2017, p. 1.

- It is inconsistent with the Department’s own objective to “modify the licensing process for the FSS and BSS satellite spectrum in order to establish an attractive licensing framework, comparable with those of other satellite-licensing jurisdictions;”⁹
- Subsection 3(3) of the *Radiocommunication Act* does not require that TT&C or network operations facilities be physically located in Canada in order for a licensee to demonstrate that its satellite network is under its “direction or control”; and
- Commercial presence requirements, such as a rule requiring the establishment of TT&C, network operations and even gateway facilities in Canada, are essentially “protectionist” in nature, designed to insulate incumbent operators from competition, but ultimately .

14. Other parties to this proceeding noted that there are practical problems with the Department’s proposal. For example, Kepler observed that NGSO satellites have the capability of operating TT&C over their data links, which renders the “requirement” for a TT&C station fairly moot.¹⁰ According to Kepler, in current satellite systems, “the non-directional TT&C band/antenna would more typically be used to stabilize a satellite that has a directional data antenna.”¹¹ Therefore, once the satellite has “established a stable orbit, the omni-directional TT&C antenna is no longer required to operate the satellite unless in the event of a radio failure.”¹²

15. For its part, Telesat urges the Department to resist the temptation to be overly “prescriptive” with respect to the location of TT&C and network operations facilities. According to Telesat:

The range of potential NGSO constellations is enormous... Different system architectures will lead to different command and control requirements. Global systems are likely to need geographically distributed TT&C architectures that make it difficult to define a “primary” TT&C site. Similarly, geographically separated redundant NOC facilities may be desirable as means to ensure system resilience and efficiency. The

⁹ ISED, SMSE-021-14, *Fee proposal for fixed-satellite service (FSS) and broadcasting-satellite service (BSS) satellite spectrum in Canada*, *Canada Gazette*, Vol. 148, No. 50, p. 3007, emphasis added.

¹⁰ Kepler Comments, *supra*, para. 6.

¹¹ *Ibid.*

¹² *Ibid.*

*Department's approach to NGSO licensing should be flexible, functional, and results-driven. It should not be excessively prescriptive about technical details.*¹³

16. MSCI makes a related point, arguing that the Department's proposal is "not practical", especially for large NGSO networks providing telecom or Internet connectivity:

*In a typical scenario, service is being provided to a ground customer with an IP address link to a site located somewhere else in the world. Successive satellites passing overhead and between orbital planes must "pick up" then "handoff" the customer link without breaking the IP link. This requires international coordination.*¹⁴

17. Finally, Planet Labs notes that the requirement to have primary T&TC facilities in Canada does not have any appreciable bearing on coordination or interference issues:

*...it is unclear how requiring primary direction and control facilities, including the primary network operations centre, for large NGSO systems to be located within Canada will necessarily help to enhance coordination and limit interference issues internationally. ISED does not elaborate on its rationale in the Consultation. In Planet's experience, the sharing of ephemeris data with other operators is more suitable (and common) for facilitating coordination between systems and mitigating interference concerns, particularly given the international context of large NGSO systems.*¹⁵

18. In light of these considerations, as well as those discussed below regarding Canada's international trade obligations, the Coalition recommends that the Department adopt a flexible approach to the location of TT&C and NOC facilities which requires prospective licensees to demonstrate in their applications how they intend to exercise direction and control over their proposed NGSO networks, but does not require applicants to establish "primary" TT&C and NOC facilities in Canada.

¹³ Telesat Comments, *supra*, para. 41.

¹⁴ MSCI Comments, *id.*, p. 1.

¹⁵ Planet Labs Comments, *supra*, para. 8.

19. This demonstration could be made through a variety of permissible direction and control methods, including but not limited to the following (i) the physical location of TT&C facilities in Canada; (ii) contractual arrangements between the licensee and the TT&C operator which gives the licensee the ability to direct the third party to turn off transmissions in the event of harmful interference; and (iii) the location of a computer terminal in Canada which is connected to TT&C facilities in another jurisdiction which allows the licensee to turn off interference causing transmissions.
20. The Department should also bear in mind that it has the power to revoke licences if a licensee is not in compliance with its conditions, which will “incent” the licensee to remain in compliance with its obligation to ensure that the NGSO system remains under its direction and control.
21. As a final comment, the Coalition reiterates its observation that if the Department wishes to encourage licensees to establish earth station facilities in Canada, including those supporting TT&C and feederlink operations, it should focus on reducing the licence fees that it currently levies for these facilities which are many orders of magnitude greater than those charged by the Federal Communications Commission (“FCC”) in the United States. As noted by the Coalition in its 18 April 2017 comments in this proceeding “[I]f the Department is truly interested in attracting TT&C and related operations to Canada, it is vitally important to address this concern. Otherwise, Canada will lose facilities and jobs to nearby jurisdictions where the corresponding fees are significantly lower.”¹⁶

C. ISED seeks comments on the following proposals on Canadian coverage:

- 1. All commercial NGSO FSS/BSS satellites must cover 100% of Canadian territory on a 24/7 basis;***
- 2. There must be a sufficient number of gateway stations located in Canada to provide services throughout 100% of Canadian territory:***
 - a. Two for LEO systems without ISL;***
 - b. One for LEO systems with ISL; and***
 - c. One for MEO and HEO systems;***

¹⁶ Coalition Comments, *supra*, para. 22.

- 3. A description and planned location of the gateway stations must be included in the licence application;**
- 4. Confirmation of the final location of the gateway stations will be included in the second implementation milestone;**
- 5. The completion of the gateway stations will be included in the milestone associated with the first satellite(s) being in operation; and**
- 6. No waivers will be granted from the coverage requirement unless the applicant is already operating a constellation that provides coverage to 100% of Canadian territory.**

22. Like the Coalition, several parties to this proceeding, including GHGSat, Kepler, SpaceX, Planet Labs, NorthStar and even Telesat, expressed concerns regarding the 100% Canadian coverage requirement proposed in the Consultation document. Some of these parties noted that the proposed requirement was impractical. For example, SpaceX stated that while it understands ISSED's interest in ensuring the maximum possible coverage of Canada's population by NGSO systems licensed in Canada, "a mandate of 100% geographic coverage may result in a high barrier to entry or deterrent to innovation."¹⁷
23. Kepler and GHGSat expressed more specific concerns about the coverage requirement. According to Kepler, this proposal appears to be predicated on the "misguided" notion that all Canadian licensed operators of NGSO FSS networks would provide service on a real time basis, which is not the case with Kepler's store and forward service."¹⁸ Likewise, GHGSat noted that "a store-and-forward data transfer system (e.g. for local network cloud backups) could be served with a "sparse" NSGO FSS system that would not meet ISSED's proposed [coverage] definition."¹⁹ For this reason, GHGSat urged the Department to "consider a less stringent minimum Canadian coverage requirement for NGSO FSS/BSS systems" because the current proposal "will significantly limit opportunities for niche business cases which may better serve Canadians in some circumstances."²⁰

¹⁷ SpaceX Comments, SMSE-009-17, 18 April 2017, p. 4.

¹⁸ Kepler Comments, *supra*, para. 12.

¹⁹ GHGSat Comments, *supra*, p. 3.

²⁰ *Ibid.*

24. For its part, the Coalition questioned the need for the proposed coverage requirement given that there are currently multiple FSS networks that cover Canada in the C, Ku and Ka bands with even more networks planned in the very near future, including the GSO HTS networks of ViaSat and EchoStar and the NGSO FSS networks that are planned by the parties that participated in the FCC’s recent proceeding on the licensing rules for NGSO satellite networks.²¹ In light of this excess of capacity, the Coalition argued that the coverage requirement proposed in the Consultation document was unnecessary.
25. With respect to the proposed requirement to operate a minimum number of gateway facilities in Canada, the Coalition noted that this proposal disproportionately penalizes NGSOs (which will compete with GSOs that do not have similar obligations). Plus, it is antithetical to the Department’s objective of establishing a more open and attractive licensing regime, something which was identified as a goal of the Department a little over two years ago.²²
26. The importance of having an attractive licensing regime was noted by Planet Labs which argued that both the coverage and capacity requirements proposed in the Consultation document (see Consultation questions “C” and “D”) would place Canada at a competitive disadvantage relative to other licensing jurisdictions, particularly the United States which has not established these types of requirements:

*Planet notes that the strict coverage and capacity requirements proposed by ISED in the Consultation do not exist, nor have they been proposed by the FCC, in the United States. Accordingly, these requirements will serve to undermine the development of NGSO systems in Canada and place Canada at a competitive disadvantage relative to other jurisdictions.*²³

27. Telesat also expressed a concern regarding the coverage requirement, noting that “blanket signal coverage is the wrong metric because it does not align to the Department’s objective of maximizing the actual benefit to Canadians of the spectrum,

²¹ *Updates to Part 2 and Part 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, IB Docket No. 16-408 (the “NPRM proceeding”).

²² SMSE-021-14, *supra*.

²³ Planet Lab Comments, *supra*, para. 16.

and effectively constraints licensees to an inefficient system design.” According to Telesat, the solution is to adopt a requirement that “the satellite operator demonstrate that it will have the capability to actually provide service to any point in Canada on an uninterrupted basis.”²⁴

28. However, Telesat does not stop there. It also argues that this requirement should be imposed on all “competitors vying to serve the Canadian market, whether they are authorized by Canada or are seeking landing rights in Canada.”²⁵
29. The Coalition does not understand this proposal. In this proceeding, the Coalition has argued that the Department should not impose protectionist measures on licensed Canadian satellite operators (such the requirement to build TT&C, NOC and gateway facilities in Canada or to meet certain Canadian capacity and coverage requirements) because these requirements make it difficult for Canadian satellite operators to compete with foreign-licensed operators.
30. One of the reasons why the Coalition has taken this position is because it would be contrary to Canada’s commitments under the *General Agreement on Trade in Services* (“GATS”) to place limitations on market entry and access by foreign licensed FSS operators and their investors. Specifically, pursuant to the *Fourth Protocol to the GATS*²⁶ and the GATS negotiations on “basic telecommunications” which were concluded in 1997,²⁷ Canada adopted several specific commitments relating to “Market Access” by service suppliers from WTO member countries seeking to gain access to Canada’s telecommunications market.²⁸ These commitments are set out in Canada’s *Schedule of Specific Commitments* to the GATS (the “Schedule”)²⁹ and it is clear from that Schedule that, as of March 1, 2000, “fixed satellites owned and controlled up to a level of 100% by

²⁴ Telesat Comments, *supra*, para. 52.

²⁵ *Ibid*, para. 53.

²⁶ World Trade Organization, S/L/20, 96-1750, 30 April 1996.

²⁷ GATS, Annex on Negotiations on Basic Telecommunications.

²⁸ The Market Access provisions of the GATS are set out in Article XVI of the GATS.

²⁹ Canada, Schedule of Specific Commitments, GATS/SC/16/Suppl.3

foreign service providers may be used to provide services between points in Canada and between Canada and points in the United States.”³⁰

31. There were no restrictions or “limitations on market access” that were placed by Canada in its Schedule on the market access of these FSS operators. The Schedule makes it clear that foreign licensed FSS operators may provide service “between points in Canada and between Canada and points in the United States”.
32. If Canada had wanted to limit the market access of these satellite operators by, for example, requiring them to comply with certain Canadian coverage requirements, Canada would have had to expressly and specifically inscribe this type of limitation in its Schedule. However, a review of that Schedule and, in particular, the “Market Access” column reveals that Canada did not do so.
33. To put the matter in slightly different terms, if Canada were to now impose a geographic coverage requirement on foreign-licensed NGSO operators that wish to obtain landing rights in Canada, this would violate Canada’s international treaty obligations.
34. This is why the Coalition has recommended that the Department refrain from imposing artificial and unnecessary limitations on the services and operations of Canadian-licensed NGSO networks. Since it is not possible for the Department to impose these types of limitations on foreign-licensed satellite operators without raising concerns on the part of Canada’s international trading partners, it makes no sense to impose these limitations on Canadian-licensed operators. This would only serve to handicap Canadian-licensed operators and make it more difficult for them to compete with their foreign-licensed counterparts.
35. The same considerations hold true with respect to some of the other limitations on market access that are proposed in the Consultation document, although the analysis is slightly different because it must be viewed from the perspective of a satellite operator from another WTO member country that has applied for a Canadian space station

³⁰ *Ibid.*

authorization. For example, there are no limitations or other requirements that have been inscribed in Canada's Schedule of Specific Commitments to the GATS which would require a satellite operator from a WTO member country to build or operate TT&C, NOC or gateway earth station facilities in Canada as a condition of receiving a space station authorization from the Department.³¹ While some might argue that such a requirement does not result in "discrimination" against the foreign-backed satellite operator because it is imposed equally on Canadian-backed satellite operators, this is only relevant to an analysis under the "National Treatment" provisions of the GATS (GATS Article XVII). Insofar as the "Market Access" provisions of the GATS are concerned (GATS Article XVI), any limitations on market access which would require a foreign-backed satellite operator to establish a commercial presence in Canada through certain specified investments (e.g., TT&C, NOC and gateway facilities), to meet service-related quotas or satisfy domestic "economic needs" (e.g., Canadian coverage and capacity requirements) must be specifically inscribed in Canada's Schedule of Specific Commitments to the GATS.

36. Since there are no such inscriptions in Canada's Schedule to this effect, the adoption of these measures would constitute a limitation on the market access of satellite operators that are backed by investors from other WTO member states - something which potentially exposes Canada to a WTO challenge.³²
37. It is also worth noting that GATS Article VI sets out certain requirements relating to the domestic regulation of services and services providers in order to ensure that the Market Access and other commitments made by GATS signatories are not undermined through unfair or prejudicial application of domestic laws that result in unnecessary barriers to trade. In particular, paragraph 4 of Article VI provides as follows:

³¹ Although Canada's Schedule of Specific Commitments to the GATS does make reference to Canada's telecom foreign ownership rules, this is a limitation on foreign *investments* in facilities-based carriers. It is not a limitation on the manner in which service providers choose to conduct their operations and deliver their services.

³² It may also be a limitation on a Canadian-backed satellite operator, but this is not relevant to an analysis under the Market Access provisions of the GATS which is focused solely on limitations on market access by the service providers of other WTO members.

4. With a view to ensuring that measures relating to qualification requirements and procedures, technical standards and licensing requirements do not constitute unnecessary barriers to trade in services, the Council for Trade in Services shall, through appropriate bodies it may establish, develop any necessary disciplines. Such disciplines shall aim to ensure that such requirements are, inter alia:

(a) based on objective and transparent criteria, such as competence and the ability to supply the service;

*(b) **not more burdensome than necessary to ensure the quality of the service;***

(c) in the case of licensing procedures, not in themselves a restriction on the supply of the service. [Emphasis added]

38. Given these considerations, the solution to the concerns raised by Telesat is not to create disguised barriers to trade by saddling Canadian licensees with protectionist-era obligations, or to impose these obligations on foreign FSS operators seeking landing rights in Canada. Instead, Canadian licensees should be subject to rules - and a corresponding domestic licensing framework - that creates the conditions that will allow them to freely compete on the international stage with other global competitors.

39. The Coalition therefore urges the Department not to impose geographic coverage obligations on Canadian-licensed NGSO operators, or other questionable obligations such as the requirement to locate TT&C, NOC and gateway facilities in Canada.

D. ISED seeks comments on the following proposals related to capacity for Canadian users:

- 1. Licensees of LEO systems must reserve 100% of capacity for the Canadian market while the satellites are over Canada, as described in section 6.3.2;***
- 2. Such capacity must be reserved for the term of the licence;***
- 3. Licensees of MEO and HEO systems must reserve, for each satellite, capacity for use by Canadians that is equal to the proportion of the Canadian territory covered vis-à-vis the total territory covered by that individual satellite; and***
- 4. Such capacity must be reserved until time of launch.***

40. Four of the six parties that commented on the capacity reservation proposals contained in the Consultation document expressed several concerns regarding these proposals.

These parties include Telesat, Kepler, Planet Labs and the Coalition and, among the areas of concern that they raised in their submissions were the following:

Capacity Reservation Requirements are Not Economically Viable

41. Three parties, namely Telesat, Planet Labs and the Coalition, noted that the Department's proposal for LEO systems to reserve 100% of capacity for the Canadian market while the satellites are over Canada for the entire term of the licence was economically untenable. For example, Telesat noted that while it generally "agrees that Canadian-licensed NGSO systems should be marketed to Canadian users", it does not agree that "if an operator tries, but fails, to sell any pre-determined amount of system capacity in Canada on commercially reasonable terms, that it should then be prevented from making productive use of that capacity at all". In the view of Telesat, it would be "highly detrimental to the financial viability of the system to require any capacity to remain unused to serve Canadian demand that does not then exist, in the hopes that it eventually materializes."³³
42. Planet Labs made a similar observation regarding the economic viability of the capacity reservation requirement, noting that the Department's proposals were "not commercially reasonable" and do not recognize "the significant economic costs of maintaining coverage to all regions of Canada in the absence of market demand" – something that is acknowledged by the Department in RP-008, especially when there is no apparent intention on the part of the Government of Canada "to guarantee any level of service utilization by Canadian users."³⁴
43. The Coalition also expressed concerns regarding the commercial viability of the proposed capacity reservation requirement and noted that there may not be sufficient demand in Canada to reserve capacity on Canadian licensed NGSO satellites given the exponential increase in FSS capacity resulting from HTS satellites, such as EchoStar XIX, ViaSat-2 and ViaSat-3, not to mention the large number of GSO FSS systems that currently serve Canada and the next generation of NGSO FSS satellites that are poised for launch in the

³³ Telesat Comments, *supra*, para. 63.

³⁴ Planet Labs Comments, *supra*, para. 14.

next few years.³⁵ Given these developments, the Coalition noted that the proposed capacity reservation requirements would actually have the “perverse result of making licensed Canadian satellite operators less competitive than their non-Canadian counterparts who are not subject to these types of rules.”³⁶

The Technical Basis for the Capacity Reservation Proposal is Questionable

44. Each of Kepler, Telesat and the Coalition questioned the technical assumptions on which the capacity reservation proposal is based. Kepler noted that, from the perspective of a store and forward system, “the proposed regulation would not conform to be meaningful.” According to Kepler, “[C]apacity would be a function of power, storage and periods between downlinking” and therefore “A satellite could potentially pass over Canada with its storage already at capacity and thus not be able to pick up any further information.”³⁷

45. For its part, the Coalition noted that the concept of a LEO satellite “being over Canada” reveals a misunderstanding of how such networks operate:

*For example, a LEO satellite that is currently north of the Great Lakes is equally capable of serving Detroit and Windsor. However, under the Department’s proposal, the entire capacity of that satellite would have to be reserved for Canadian use for the entire term of the licence, even though there could be several more LEO satellites in the constellation capable of providing capacity over that area of Canada. Conversely, a few minutes later when that same satellite traverses the border, there would be no capacity reservation requirements.*³⁸

46. A similar concern was expressed by Telesat:

...the specific form of reservation proposed by the Department is operationally untenable. Some NGSO systems including Telesat’s planned system will incorporate steerable beam technology. It is possible for

³⁵ Coalition Comments, *supra*, paras. 34 and 35.

³⁶ *Ibid*, para. 36.

³⁷ Kepler Comments, *supra*, para. 23.

³⁸ Coalition Comments, *supra*, para. 37.

satellites to transmit and receive from Canadian territory while they are not vertically located “over Canada”. Similarly satellites that are in orbit “over Canada” could transmit to and receive from locations outside Canadian territory. Thus, the location “over Canada” of individual satellites at any point in time is largely irrelevant to the service that an NGSO network is capable of providing.

Capacity Reservations Should Not Apply for the Entire Term of the Licence

47. Three parties, namely Telesat, Planet Labs and the Coalition, noted that the Department’s proposal to require LEO systems to reserve capacity for the Canadian market for the entire term of the licence goes far beyond what is currently required under RP-008 and CPC-2-6-02, which only require that capacity be reserved until the time of launch. As noted by Planet Labs:

Planet supports ISED’s existing coverage and capacity requirements for NGSO systems as outlined in the RP-008 Policy. These are still reasonable and balanced measures that provide Canadians with a meaningful opportunity to acquire Canadian FSS capacity while providing Canadian-licensed NGSO satellite operators with the flexibility to pursue other markets if there is insufficient demand in Canada. ISED has presented no evidence that would support the view that current coverage and capacity requirements are not sufficient to ensure that Canadian satellite coverage and capacity needs are met.³⁹

Differential Treatment of LEO systems

48. Both Telesat and the Coalition point out that the capacity reservation requirements for LEO systems are more onerous than they are for HEO systems. Specifically, LEO systems must reserve 100% of capacity for the Canadian market while their satellites are over Canada, whereas MEO and HEO systems must reserve, for each satellite, capacity for use by Canadians that is equal to the proportion of the Canadian territory covered vis-à-vis the total territory covered by that individual satellite. This results in differential regulatory treatment of these systems, which is neither competitively nor technologically neutral. As noted by Telesat “there is no reason to distinguish HEO and MEO systems than LEO

³⁹ Planet Labs Comments, *supra*, para. 15.

constellations.” Therefore, while Telesat does not support the Department’s proposed capacity requirements, “either no such requirements should be imposed at all or the same requirements should apply across the board.”⁴⁰

49. The Coalition believes that the Department has been presented with a number of compelling arguments as to why it should not adopt capacity reservation requirements for commercial NGSO systems. However, if after considering these arguments, the Department concludes that it nonetheless wishes to impose capacity reservation requirements on these systems, the Coalition urges the Department to align this requirement with the approach adopted in RP-008 and CPC-2-6-02 which only imposes this obligation on commercial satellite operators until the time of launch.

E. ISED seeks comments on the proposal to no longer assess coexistence with authorized and approved Canadian NGSO systems as part of the licence application process.

50. A number of parties to this proceeding, including Boeing, Kepler, NorthStar, Planet Labs, Telesat and the Coalition, supported the Department’s proposal to no longer assess coexistence with authorized and approved Canadian NGSO systems as part of the licence application process. The most frequently cited reason that was given by these parties in support of the Department’s proposal is that the process for coordinating NGSO satellite systems is governed by the ITU *Radio Regulations* for operations internationally which could be readily adapted for use between Canadian-licensed operators, or between Canadian licensees and foreign systems seeking Canadian access. As noted by Telesat,

Under ITU procedures, details of how the two satellite systems will operate in order to prevent harmful interference would be included in a coordination agreement. In the event that no coordination agreement is reached, the operator having the lower ITU network priority would be required to avoid harmful interference to a network having higher ITU priority and to gain no protection from interference from such a network. This process should apply among networks licensed by the Department or

⁴⁰ Telesat Comments, *supra*, para.

*granted market access to Canada, whether they were filed concurrently or at different times.*⁴¹

51. The Coalition agrees with this approach and, therefore, reiterates its support for the Department's proposal to no longer assess coexistence with authorized and approved Canadian NGSO systems as part of the licence application process.

F. ISED seeks comments on the following proposals to modify the implementation milestones for large NGSO systems to require that:

- 1. One-third of the authorized constellation be deployed by Year 6; and***
- 2. The full constellation be deployed by Year 9.***

52. In its 18 April 2018 Comments in this proceeding, the Coalition raised several questions regarding the Department's proposed implementation milestones and noted, among other things, that greater precision is needed in defining these milestones as well as how they can be satisfied by Canadian-licensed NGSO systems.
53. The Coalition has reviewed the comments submitted by interested parties and has determined that it will not, itself, take a specific position on this matter. However, its individual members may make separate submissions to the Department on the questions posed in this section of the Consultation document.
54. Having said that, the Coalition submits that regardless of the milestones that are ultimately adopted for Canadian licensed NGSO systems, the Department should strive to make those milestones as clear as possible, by clearly describing and defining (i) how those milestones must be satisfied, (ii) the proof that must be provided by licensees to demonstrate compliance with the milestones; and (iii) the exact date on which each milestone must be satisfied. The Department should also provide details on how it intends to assess milestone compliance, including all factors that it may take into account in determining whether a given milestone has been satisfied.

⁴¹ Telesat Comments, *supra*, para. 79.

G. ISED seeks comments on the proposal to define large constellations as those with 30 or more satellites

55. In its 18 April 2017 comments, the Coalition took the position that using a number to differentiate between different sizes of constellations is an inherently arbitrary exercise and could create regulatory gaming opportunities.
56. Most parties to this proceeding agreed with this position. For example, each of MSCI, SpaceX and Kepler argued that using a number of 30 or more satellites to define a large constellation is “arbitrary” and ultimately an “insignificant” indicator of the size and capabilities of a given NGSO system.
57. Telesat echoed this concern and also noted that the “Department offers no reason why 30 is an appropriate or meaningful threshold for constellation size or why a constellation of 29 satellites presents substantially less logistical challenge than 30 satellites.”⁴²
58. Even NorthStar, which generally supported the concept of defining a large constellation, observed that the Department’s chosen number of 30 satellites “is somewhat arbitrary depending on the application of the NGSO satellites.”⁴³
59. Given the low level of support for the proposed definition of a large constellation, the Coalition submits that the Department should not adopt a numerical threshold or specific definition for these systems. Instead, it should focus on ensuring that all commercial NGSO FSS satellite constellations that are licensed by the Department are subject to, and comply with, a common set of licence conditions regardless of the size of their constellation.

H. ISED seeks views on the following mechanisms that could be implemented in the event of unsuccessful domestic coordination:

- 1. The imposition of spectrum sharing during in-line interference events;***
- 2. What would be an appropriate angle to define in-line events;***

⁴² Telesat Comments, *supra*, para. 93.

⁴³ NorthStar Comments, *supra*, p. 5.

- 3. Whether the spectrum should be split on an equal basis or reflect the regulatory status (authorization) of the systems involved;**
- 4. The mandated use of a third party dispute resolution process, prior to seeking the Department's assistance in resolving a coordination dispute; and**
- 5. Which of the two dispute resolution processes referenced in paragraph 46 should be adopted.**

60. With respect to the Department's proposed mechanisms for dealing with unsuccessful domestic coordination and in-line interference events, the Coalition generally supports the concept of an avoidance of in-line interference mechanism, based on some pre-defined criteria of what constitutes an in-line event.

61. While some of the members of the Coalition believe that the Department's FCC 10-degree angle may be suitable, other members feel that the angular separation required to avoid in-line events depends on the frequency band and other system-specific considerations. Therefore, the Coalition would urge the Department to conduct further discussions with the satellite industry before formulating a single angular number.

62. The Coalition does not support a third-party arbitration system and believes the Department is best equipped to find a compromise during disputes between operators.

I. ISED seeks comments on its proposal to continue approving the use of foreign-licensed NGSO systems in Canada if coordination has been completed with Canadian networks, without requiring international coordination to be completed.

63. Virtually all parties to this proceeding supported the Department's proposal to continue approving the use of foreign-licensed NGSO systems in Canada without the need to demonstrate that international coordination has been completed. However, there was a divergence of opinion on the Department's proposal to continue approving the use of foreign-licensed NGSO systems in Canada if coordination has not been completed with Canadian networks.

64. On this latter issue, several parties, including Boeing, O3b, SpaceX and the Coalition, noted that the Department's current practice is open to potential abuse by domestic

satellite operators, particularly those that do not have ITU date priority, as a means of blocking or delaying market entry by a foreign licensed system. As explained by O3b:

The current proposal also creates an incentive for Canadian licensees, rather than ISED, to act as the gatekeeper to the Canadian market. Should a Canadian licensee choose to not coordinate in good faith, a foreign operator would have limited ability to achieve an equitable result in coordination... ISED should not empower Canadian licensees to prevent foreign NGSO systems from having competitive access to the Canadian market to the detriment of Canadian customers.⁴⁴

65. A similar concern was expressed by SpaceX which noted that if it is required to coordinate with all Canadian licensees, regardless of their ITU date priority, as a precondition to offering NGSO services in Canada, there is a risk that the Canadian licensee will “not complete the coordination process” which would mean that “the foreign NGSO is prevented from entering the Canadian market until and unless the coordination process is completed.⁴⁵
66. A small number of parties to this proceeding, indicated a cursory level of support for the coordination proposal contained in the Department’s Consultation document,⁴⁶ but their submissions do not provide any real insights into the reasons why they support the proposal, nor do they appear to distinguish between satellite networks that have ITU date priority and those that do not have ITU date priority.
67. It was for these reasons, as well as the concerns noted above, that the Coalition recommended that the Department adopt certain coordination-related principles that can be applied to applications made by foreign-licensed NGSO systems seeking landing rights in Canada. These principles help to ensure that the decision as to whether a

⁴⁴ O3b Comments, SMSE-009-17, 18 April 2017, para. 9.

⁴⁵ SpaceX Comments, *supra*, p. 8.

⁴⁶ See the comments of GHGSat, MSCI and NorthStar.

foreign-licensed FSS operator is not inappropriately delegated to competitors in the market contrary to Canada's international obligations.⁴⁷

68. Having now reviewed the submissions of other parties to this proceeding, the Coalition continues to believe that these principles are appropriate. The Coalition has therefore reproduced these principles below along with a few additional clarifications:

- i. A foreign-licensed FSS operator should not be required, as a precondition to the Department's approval of its landing rights application, to coordinate with Canadian FSS operators that have later ITU date priority than the foreign-licensed network;
- ii. If a Canadian-licensed FSS network has ITU date priority over a foreign-licensed network, the operator of the foreign-licensed network should not be required to wait indefinitely for the Canadian-licensed network to "respond" to reasonable coordination requests that demonstrate adequate protection of Canadian satellite filings. Accordingly, if a Canadian-licensed network incumbent does not respond to a request for coordination from a foreign-licensed network within 30 days of receipt of that request, or if the parties to a given coordination negotiation are not able to successfully conclude coordination within 90 days from the date of the initial coordination request, then either operator may refer the matter to the Department for resolution; and
- iii. The receipt of the Department's approval to use a foreign-licensed system in Canada should not be predicated on the completion of international coordination.

69. With respect to Telesat's proposal that foreign licensees should not be permitted to "enter the Canadian market without serving all of Canada if that obligation is imposed on Canadian licensees" (which is how Telesat chose to respond to the question of

⁴⁷ As noted above, Canada's Schedule of Specific Commitments to the GATS provides foreign-licensed FSS operators with unqualified access to the Canadian market. As such, Canada cannot then delegate the decision as to whether, and on what terms and conditions, such access will be granted to entities in the private sector that are free to delay or refuse coordination requests from foreign-licensed operators or that will only provide market access to foreign-licensed operators on burdensome or effectively prohibitive terms. Such discretion, and the terms and conditions that may be imposed by these entities, amount to limitations on market access that are not inscribed in Canada's Schedule of Specific Commitments to the GATS.

coordination between Canadian and foreign-licensed NGSO systems),⁴⁸ the Coalition submits that this proposal should be rejected. It is based on an outdated, protectionist model which is inconsistent with Canada's commitments under the GATS.⁴⁹

70. Indeed, and as noted above, the best way to address Telesat's concerns is not to handicap Canadian satellite operators by requiring them to establish certain facilities in Canada or to provide certain specified levels of coverage or capacity over Canada, but to create conditions of licence, along with a corresponding licensing framework, that allows these service providers to compete on the same terms and conditions (including licence fees) as their international counterparts.

J. ISED seeks comments on the following proposals:

- 1. Spectrum that is returned to the Department will not be immediately available for re-assignment;***
- 2. ISED will publish a notice on its website indicating that spectrum has been returned; and***
- 3. ISED will begin to receive applications for the returned spectrum 30 calendar days after the notice has been published on ISED's Spectrum Management and Telecommunications website.***

71. Several parties to this proceeding, including NorthStar, GHGSat, Telesat, Boeing, MSCI and Kepler, supported the Department's proposal to improve upon the licensing process for returned spectrum by publishing a notice regarding the availability of returned spectrum on its website and establishing a fixed date on which it will begin accepting applications for this spectrum.

72. All of the parties that submitted comments on this issue, including the Coalition, supported the Department's proposal. Since no party has opposed the Department's proposal, the Coalition urges the Department to proceed with its proposed changes by posting a notice on its website regarding the availability of returned spectrum which specifies the date on which applications can be first submitted (ideally, 90 days from the

⁴⁸ Telesat Comments, *supra*, para.

⁴⁹ *Id.*

date of the Notice) as well as the exact time of day (including time zone) when the Department will begin receiving applications.

III. Conclusion

73. As noted above, the Coalition believes that the best way to promote Canadian licensed NGSO operators is to ensure that the regulatory and spectrum development environment in Canada is not only comparable to, and competitive with other administrations, but does not inequitably burden Canadian operators and entrepreneurs through the imposition of artificial barriers to market entry that discourage investment and innovation. These barriers to market entry are incompatible with Canada's international treaty obligations and the Government of Canada's "open for business" strategy which is intended to promote international trade and investment in Canada.
74. The Coalition therefore urges the Department to adopt the recommendations contained in Coalition's submissions in this proceeding.
75. The Coalition thanks the Department for the opportunity to participate in this proceeding and looks forward to the Department's decision.

Yours very truly,

[original signed by Scott Gibson]

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