

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)
)
Telesat LEO Inc.) File No. _____
)
Petition for Declaratory Ruling to Grant)
Access to the U.S. Market for Telesat's)
V-Band NGSO Constellation)

PETITION FOR DECLARATORY RULING

Elisabeth Neasmith
Director, ITU and Regulatory
160 Elgin Street, Suite 2100
Ottawa, ON
Canada, K2P 2P7
(613) 748-0123

OF COUNSEL:

Henry Goldberg
Joseph A. Godles
GOLDBERG, GODLES, WIENER
& WRIGHT, LLP
1025 Connecticut Avenue, N.W.
Suite 1000
Washington, DC 20036
(202) 429-4900

November 4, 2021

TABLE OF CONTENTS

I.	INTRODUCTION AND SUMMARY	1
II.	DESCRIPTION OF THE SECOND ROUND V-BAND LEO CONSTELLATION	5
	A. System Overview	6
	B. Space and Ground Segment	10
	C. Technical Advantages for the User Community	11
III.	THE SECOND ROUND V-BAND LEO CONSTELLATION SATISFIES THE FCC'S REQUIREMENTS FOR SERVING THE UNITED STATES	13
	A. Legal and Technical Qualifications	14
	1. Submission to the ITU	14
	2. Milestones	15
	3. Posting of Bond	15
	4. Mitigation of Orbital Debris	15
	B. Other Public Interest Factors	17
	1. Effect on competition in the United States	17
	2. Spectrum availability	18
	3. National security, law enforcement, foreign policy, and trade issues	19
	4. Protection of first round V-band systems	20
IV.	CONCLUSION	21

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Telesat LEO Inc.)	File No. _____
)	
Petition for Declaratory Ruling to Grant)	
Access to the U.S. Market for Telesat’s)	
V-Band NGSO Constellation)	

PETITION FOR DECLARATORY RULING

I. INTRODUCTION AND SUMMARY

Pursuant to Section 25.137 of the Commission’s rules and the Commission’s *Public Notice* initiating a processing round for additional non-geostationary-satellite orbit (“NGSO”)-like satellite applications in bands that include the V-band,¹ Telesat LEO Inc., an indirect wholly-owned subsidiary of Telesat Canada (together referenced herein as “Telesat”)² hereby petitions for a declaratory ruling (“Petition”) authorizing a

¹ *Cut-Off Established for Additional NGSO-Like Satellite Systems in the 37.5-40.0 GHz, 40.0-42.0 GHz, 47.2-50.2 GHz and 50.4-51.4 GHz Bands, Public Notice, DA 21-941 (rel. Aug 4, 2021) (“V-Band Public Notice”).*

² The Commission has granted its consent to the transfer of control of authorizations held by Telesat Canada and subsidiaries and affiliates of Telesat Canada to Telesat Corporation, *see* FCC File Nos. SES-T/C-20201215-01389, SES-T/C-20201215-01390, SES-T/C-20201216-01411, SES-T/C-20201216-01412, SES-T/C-20201216-01413, SAT-T/C-20201215-00145, SES-T/C-20201215-01391, ITC-T/C-20201215-00208. Telesat’s applications included a request that any Commission approval of the application include authority for [Telesat Corporation] to acquire control of: “any applications that are pending at the time of consummation.” *See, e.g.,* Application of Skynet Corporation for Transfer of Control, Callsign S2357, IBFS File No. SAT-T/C-20201215-00145, Schedule A, Exhibit F, p. 8. (filed Dec 15, 2020) *citations omitted*. Once the referenced transaction is consummated, Telesat will file an amendment to this Petition reporting that event.

second round NGSO low earth orbit (“LEO”) constellation system (the “Second Round V-band LEO Constellation”) to serve the U.S. market using V-band frequencies.

Telesat is authorized to provide service in the United States from, and has proposed modifications to, an NGSO low earth orbit (“LEO”) Ka-band constellation system (the “Ka-band LEO Constellation”).³ Telesat seeks permission herein to serve the United States from a constellation of new NGSO low earth orbit satellites that will operate on V-band frequencies in the same orbital planes as its Ka-band LEO Constellation and will supplement the capacity of its Ka-band LEO Constellation.⁴

As Telesat pointed out in its PDR for its Ka-band LEO Constellation, innovative and spectrally-efficient NGSO constellations can serve currently unserved and underserved areas as well as providing additional differentiated and competitive broadband offerings in areas now served by terrestrial means and GSO-based networks. The same is true for Telesat’s technically advanced Second Round V-band LEO Constellation.

³ *Telesat Canada Petition for Declaratory Ruling to Grant Access to the U.S. Market for Telesat's NGSO Constellation*, IBFS File No. SAT-PDR-20161115-00108, Order and Declaratory Ruling, 32 FCC Rcd 9663 (2017) (“Telesat Ka-band LEO Constellation PDR Grant”); *Application to Modify Petition for Declaratory Ruling to Grant Access to the U.S. Market for Telesat's Ka-band NGSO Constellation*, IBFS File No. SAT-MPL-20200526-00053.

⁴ This PDR is for a new second round V-band constellation. Telesat previously was granted U.S. market access in the first NGSO V-band processing round. See *Telesat Canada Petition for Declaratory Ruling to Grant Access to the U.S. Market for Telesat's V-Band NGSO Constellation*, IBFS File No. SAT-PDR-20170301-00023, Order and Declaratory Ruling, 33 FCC Rcd 11469 (2018), as modified by grant stamp on June 9, 2020 (adding authority for 50.4-51.4 GHz). Telesat will surrender its first round U.S. market access V-band grant as soon as technical issues with IBFS that Telesat has been discussing with the FCC’s staff have been resolved.

The Telesat Second Round V-band LEO Constellation will provide significant benefits including:

- High speed – Gigabits-per-second (Gbps) links;
- High capacity – Terabits-per-second (Tbps) of total capacity;
- Significantly lower latency than GSO – equivalent to, and in some cases even lower than, terrestrial networks;
- Global broadband coverage, including coverage of unserved and underserved areas, giving the ability to connect any two points on the globe;
- Highly secure – ability to avoid traversing any third-party networks, thereby minimizing risk to user information;
- High resiliency – no single point of failure;
- Seamless extension of today’s advanced terrestrial telecom networks – provision of Carrier Ethernet service which allows users to access the constellation data capacity as they would access any other network; and
- Efficiency - efficient use of spectrum and orbital resources.

The Second Round V-band LEO Constellation will follow closely the design of the Ka-band LEO Constellation. It is designed as an overlay for the Telesat’s NGSO system (“Telesat’s Lightspeed System”).⁵ Telesat provides in Section II below a

⁵ The Second Round V-band satellites will be separate from the Ka-band satellites in the Ka-band LEO Constellation. The Ka-band and V-band constellations are designed to be interoperable, with interface capability via Inter-Satellite Links.

summary description of Telesat's Second Round V-band LEO Constellation, which is presented in detail in the associated Technical Exhibit and Schedule S.

In order to operate the Second Round V-band LEO Constellation without causing harmful interference into other radio services or receiving harmful interference from them, Telesat will conduct frequency coordination with the relevant federal and non-federal radio services — including terrestrial services (fixed, mobile, and broadcasting), geostationary and non-geostationary satellite services (fixed-satellite, mobile-satellite, broadcasting-satellite, space-research, and earth exploration-satellite services), and radio astronomy services — in accordance with the relevant provisions of the FCC Rules and the ITU Radio Regulations.

Grant of Telesat's Petition is in the public interest. A grant will afford the public the benefits of access to an innovative and technologically advanced V-band NGSO broadband service. Further, a grant will enhance competition with existing and future GSO and NGSO systems, thereby expanding the options available to customers in the United States.

Telesat demonstrated in its Petition for Declaratory Ruling for its Ka-band LEO Constellation that it has the experience, technical qualifications and expertise necessary to design, develop, and successfully implement and commercialize its highly innovative, technologically advanced LEO constellation for providing new and vastly

needed broadband services to the public.⁶ That showing is incorporated herein by reference.

Telesat further demonstrates herein that it is technically and legally qualified to serve the U.S. market via its Second Round V-band LEO Constellation. This Petition, the Technical Exhibit, and Schedule S show compliance with the Commission's technical requirements, including appropriate protections for fixed-satellite services using GSO and NGSO satellites and for other services. Telesat's Form 312 submission in combination with this Petition shows its legal qualifications. Telesat also shows that serving the United States via its Second Round V-band LEO Constellation is presumed to enhance competition because the authorizing country, Canada, is a member of the World Trade Organization. Telesat further shows that no national security, law enforcement, foreign policy, or trade concerns are implicated by the proposed use of the Second Round V-band LEO Constellation to serve the United States. Accordingly, the Commission's requirements for U.S. market access are satisfied.

II. DESCRIPTION OF THE SECOND ROUND V-BAND LEO CONSTELLATION

The design concept for the Second Round V-band LEO Constellation is consistent with the design for the Telesat's Ka-band LEO Constellation. As noted above, the V-band frequencies are implemented to augment the capacity of the Telesat Lightspeed system.

⁶ *Telesat Canada, Petition for Declaratory Ruling to Grant Access to the U.S. Market for Telesat's NGSO Constellation*, IBFS File No. SAT-PDR-20161115-00108, Petition Narrative at pp 8-18 (filed Nov. 15, 2016) ("Ka-band PDR").

A. System Overview

The Second Round V-band LEO Constellation will follow closely the design of the Ka-band LEO Constellation, for which it will be an overlay. The V-band Constellation provides layer-2 Carrier Ethernet connectivity using highly secure and resilient low-latency links and employs a unique hybrid design combining polar orbits for global coverage (the “Polar Sub-Constellation”) with inclined orbits for additional capacity over the highly populated mid-latitude areas (the “Inclined Sub-Constellation”).

The flexible satellite and network technologies efficiently provide power and spectrum only where and when needed. The network of satellites implements optical inter-satellite links (“OISLs”) and connects to the terrestrial internet through strategically located gateway earth stations. Gateways will have access to every satellite in the constellation at all times either directly or through other satellites via OISLs.

Each satellite has four steerable spot beams to communicate with the gateway earth stations, and a set of Direct Radiating Array (“DRA”) antennas providing up to 48 fully independent, shapeable and steerable user beams. One of the user beams is dedicated to the network entry process for users. A Network Entry User Beam is activated periodically and steered to cover the field of view of a satellite over a certain period of time. An integrated Constellation Network Operating System (“CNOS”) allocates resources (power, bandwidth, beam size, etc.).

Deployment will occur in phases. The first phase will provide global coverage with 298 satellites (the “Global Constellation”); and the second phase will be deployed to meet capacity demand and over time will add 1373 satellites to the Global Constellation to bring the total to 1671 satellites (the “Augmented Constellation”).

Table 1 provides a summary of the orbital parameters of the Global Constellation and the Augmented Constellation.

Table 1 - Summary of orbit parameters for the constellations

Parameter		Global Constellation (298)	Augmented Constellation (1671)
Polar Sub-Constellation	Orbital planes	6	27
	Satellites per plane	13	13
	Inclination (deg)	98.98	98.98
	Altitude (km)	1015	1015
	Total satellites	78	351
Inclined Sub-Constellation	Orbital planes	20	40
	Satellites per plane	11	33
	Inclination (deg)	50.88	50.88
	Altitude (km)	1325	1325
	Total satellites	220	1320
Total satellites		298	1671

Telesat proposes to use V-band frequencies, as indicated in Table 2 below, for gateway earth station links and user links. Selected gateways will also provide the necessary telemetry, tracking and command (TT&C) links to ensure redundant and reliable control of the constellation. The TT&C frequencies are provided in the Schedule S that accompanies the Technical Exhibit.

Table 2 - Frequency bands

Gateway and User Links		
Direction	Lower Frequency Limit (GHz)	Upper Frequency Limit (GHz)
Downlink	37.5	40.0
	40.0	42.0
Uplink	47.2	50.2
	50.4	51.4

As shown in the Technical Exhibit,⁷ Telesat will comply with Articles **22.5L** and **22.5M**, which were recently added to the Radio Regulations, and with Section 25.289 of the Commission’s rules, which implements Article **22.2** of the Radio Regulations.

The Second Round V-band LEO Constellation will employ on-board processing, including an IP router. As a result, the amount of bandwidth employed in the Earth-to-space and space-to-Earth directions does not need to be identical. Telesat proposes to operate its Second Round V-band LEO Constellation using 4.5 GHz of spectrum space-to-Earth and 4 GHz of spectrum Earth-to-space. The bands to be used are: 37.5 – 42.0 GHz in the space-to-Earth direction, and 47.2-50.2 GHz and 50.4-51.4 GHz in the Earth-

⁷ See Technical Information Supplement to Schedule S, Section A.4.2.

to-space direction. This spectrum will be used for both gateway and user links to the extent permitted by the Commission's Rules.

The band 37.5 – 42.0 GHz is allocated both internationally and in the FCC Table of Frequency Allocations to the fixed-satellite service (FSS) on a primary basis.

Other services, notably the fixed service (FS), are co-primary in segments of the 37.5 – 42.0 GHz band. Power-flux density (PFD) limits apply both internationally and domestically. In the portion of the band 40.0 – 42.0 GHz, the international and domestic PFD limits are the same.⁸ In the 37.5 – 40.0 GHz band, however, the Commission's Rules⁹ impose more stringent PFD limits than do those of the ITU Radio Regulations. As discussed in greater detail in Section A.5 of the Technical Appendix, Telesat will comply with the PFD limits contained in Sections 25.208(r), 25.208(s) and 25.208(t) of the Commission's Rules. Telesat's use of the 40.5 – 42.5 GHz band will also comply with footnote US211. Radio Astronomy observations in the 42.5 – 43.5 GHz band will be protected from harmful interference through stringent control of out-of-band interference from the satellite transmitters.

The band 47.2 – 50.2 GHz is allocated internationally and in the FCC Table of Allocations to the FSS on a primary basis, co-primary with both the fixed and mobile services. To the extent that there are any federal or non-federal terrestrial users in this band, Telesat will coordinate with co-primary services as required. Telesat's use of the 47.2 – 50.2 GHz band will also comply with footnote US342. Radio Astronomy

⁸ See 47 C.F.R. §§ 25.208(s) and 25.208(t) and Table 21-4 of the ITU Radio Regulations.

⁹ 47 C.F.R. § 25.208(r).

observations will be protected from harmful interference from earth station transmitters consistent with the relevant provisions of the ITU *Radio Regulations*.

The band 50.4 – 51.4 GHz is allocated internationally and in the FCC Table to the FSS on a primary basis, co-primary with the fixed, mobile, and mobile-satellite services.¹⁰

B. Space and Ground Segment

Each satellite in the constellation will be designed for maximum flexibility in terms of coverage, by means of shapeable and steerable beams and inter-satellite links, and in bandwidth and power assignment, by means of onboard processing.

Specifically:

- **Direct Radiating Array (DRA)** – Will provide independent agile beams, each with steering and forming capabilities allowing beams to be generated where and when required, based on traffic demand;
- **On-board Processing** – Will perform signal regeneration (*i.e.*, demodulation and re-modulation) and routing of traffic, thereby improving link performance and increasing capacity compared with a simple channelizer or bent-pipe payload;
- **Optical Inter-Satellite Links (OISL)** – Multiple OISL beams on each satellite will connect to other satellites in the Second Round V-band LEO Constellation. The OISLs will be able to communicate with satellites within

¹⁰ See 47 C.F.R. § 2.106

the same plane, within adjacent planes of the same orbit, and between the Polar Orbit and Inclined Orbit.

Satellite user beams will be formed using active array antennas with state-of-the-art beam-forming capability. The onboard processing and OISL capabilities will enable the constellation to route traffic flexibly and to make the most efficient use of gateways. The use of both polar and inclined NGSO orbits and satellites employing beam-forming technology connected through OISL links enable Telesat to perform continuous and seamless TT&C and collision-avoidance maneuvers.

A wide variety of user terminals, both electronically-steered and mechanically tracked, will access the Second Round V-band LEO Constellation. The system is capable of operating with both fixed terminals and mobile terminals. Since the FCC Rules do not authorize use of mobile terminals in the frequency bands that will be used in the Second Round V-band LEO Constellation, such terminals would be used in the U.S. only upon filing of the requisite waiver requests and their grant by the Commission. Telesat's system will provide a Carrier Ethernet Service, the *de facto* standard for networking.

C. Technical Advantages for the User Community

Telesat's V-band NGSO design and combination of space and ground assets will support a network with a number of important advantages for the user community:

- **Truly Global Coverage** – Ability to provide service anywhere on the globe, even to locations where the serving satellite cannot simultaneously see a gateway;
- **Low Latency** – Equal or superior to the latency of terrestrial networks;
- **High Speed and Capacity** – The design provides Gbps links, and a total system capacity in the Tbps range;
- **High Level of Security** – Ability to directly connect locations, bypassing third-party networks, and providing a heightened level of service integrity;
- **Seamless Extension of Today’s Advanced Terrestrial Telecom Networks** -
The Second Round V-band LEO Constellation satellite network will provide a Carrier Ethernet service. With a standard network interface, users will access the constellation data capacity as they would access any other network;
- **Highly Resilient**
 - No single point of failure - The use of in-orbit spares, the combination of polar orbits and inclined orbits, and inter-satellite links, provide multiple routes for user traffic to ensure no single point failure, even in the case of a satellite anomaly;
 - Network Auto Recovery/Routing – Since each satellite, gateway and terminal acts as a node in an IP network, traffic is automatically routed around a failure point similar to what occurs in a terrestrial network;

- **Efficient and Scalable** – Scarce spectrum and spacecraft resources are focused where there is customer demand. Capacity can readily be increased by adding relatively few satellites targeted at areas of greatest need;
- **Can Operate with a Variety of User Terminals** –Both electronically steered and mechanically tracked terminals may be used.

III. THE SECOND ROUND V-BAND LEO CONSTELLATION SATISFIES THE FCC’S REQUIREMENTS FOR SERVING THE UNITED STATES

The Commission has an established framework for considering requests for non-U.S. licensed space stations to access the U.S. market. In evaluating requests for such authority, the Commission considers the effect on competition in the United States, spectrum availability, eligibility and operational requirements, and concerns related to national security, law enforcement, foreign policy, and trade.¹¹

Operators seeking U.S. market access for non-U.S. licensed space stations need to provide the same information concerning legal and technical qualifications as must be provided by applicants for space station licenses issued by the FCC.¹²

The proposed operation of the Second Round V-band LEO Constellation to serve the United States satisfies all of these tests.

¹¹ See *Amendment of the Commission’s Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States*, 12 FCC Rcd 24094, ¶ 29 (1997) (“DISCO II Order”), on reconsideration, 15 FCC Rcd 7207, ¶ 5 (1999). See also Section 25.137 of the Commission rules, 47 C.F.R. § 25.137.

¹² See *In the Matter of Amendment of the Commission’s Space Station Licensing Rules and Policies; Mitigation of Orbital Debris*, First Report and Further Notice of Proposed Rulemaking in IB Docket No. 02-34, and First Report and Order in IB Docket No. 02-54, 18 FCC Rcd 10760, ¶ 288 (2003) (“Space Station Licensing Reform Order”). Some of the Commission’s application policies for authorizing non-U.S. licensed space stations are codified in Section 25.137 of the Commission’s rules, 47 C.F.R. § 25.137.

A. Legal and Technical Qualifications

The information set forth in this legal narrative, the attached Technical Exhibit and the Schedule S that is filed herewith establish that the proposed operation of the Second Round V-band LEO Constellation is consistent with the Commission's legal and technical requirements, including those specified in Section 25.114 of the Commission's rules. In addition, Telesat makes specific note below of its compliance with other applicable parts of the Commission's rules.

1. Submission to the ITU

With respect to the requirements of Section 25.137 for non-U.S.-licensed space stations, Telesat affirms that the ITU filing TELSTAR-LEO-V-2, which has been submitted by the Canadian licensing authority, Innovation, Science and Economic Development Canada ("ISED") (formerly Industry Canada) to the ITU, and is available on the ITU Satellite Network List (SNL) Part C "As Received" in accordance with Resolution 55, with ITU Radiocommunication Bureau (BR) registry date October 28, 2021, is associated with the Second Round V-band LEO Constellation, along with the ITU filings CANSAT-LEO-V and TELSTAR-LEO-V-1 that have already been published at the ITU. Telesat will seek registration by Canada of the Second Round V-band LEO

Constellation consistent with the Convention on the Registration of Objects Launched into Outer Space.

2. Milestones

Pursuant to Sections 25.137(d)(1) and 25.164(b) of the Commission's rules, recipients of U.S. market access grants are subject to Commission rules that require NGSO system licensees to launch and operate their NGSO constellations within six years of grant. Telesat will demonstrate compliance with the FCC requirement by submitting Section 25.164(f) information as and when required.

3. Posting of Bond

Pursuant to Sections 25.137(d)(4) and 25.165(a) of the Commission's rules, recipients of U.S. market access grants for non-U.S. licensed satellites that are not in orbit and operating are subject to the modified, escalating post-grant bond requirement. Telesat will post the required initial bond amount of \$1 million within 30 days of grant of this Petition, as required by the Commission's rules. Telesat will also increase the bond amount as necessary in order to comply with the Commission's escalating bond requirements.¹³

4. Mitigation of Orbital Debris

Section 25.114(d) (14) of the Commission's rules requires applicants for space station licenses to provide a description of the design and operational strategies that

¹³ See Public Notice, International Bureau Updates Procedures for Filing and Maintaining Surety Bonds Pursuant to Revised Milestone and Escalating Bond Requirements, DA 16-1157 Report No. SPB-266 (Oct. 7, 2016).

will be used to mitigate orbital debris. In lieu of the particular showings required of applicants for U.S.-licensed space stations, Section 25.114(d)(14)(v) provides “[f]or non-U.S.-licensed space stations, the requirement to describe the design and operational strategies to minimize orbital debris risk can be satisfied by demonstrating that debris mitigation plans for the space station(s) for which U.S. market access is requested are subject to direct and effective regulatory oversight by the national licensing authority.”

Telesat is subject to the direct regulatory oversight of its Canadian licensing authority, ISED, with regard to issues of orbital debris mitigation plans for the satellites that will comprise the Second Round V-band LEO Constellation. Those regulations require that space debris mitigation measures be implemented in accordance with best industry practices so as to minimize adverse effects on the orbital environment.¹⁴ It is anticipated that a license to be issued by ISED to Telesat for the Second Round V-band LEO Constellation will specify the same condition. Accordingly, no separate showing relative to the mitigation of orbital debris should be required under the Commission’s rules. Nevertheless, given the importance of the issue, Telesat makes a full orbital debris mitigation showing in Section A.9 of the Technical Exhibit.

The sheer number of spacecraft proposed for operation by Telesat and other would-be NGSO LEO constellation operators requires coordination among operators to avoid physical collision, which Telesat is committed to do.

¹⁴ Industry Canada RP-008 Issue 3, November 2013, “Policy Framework for Fixed-Satellite Service (FSS) and Broadcasting-Satellite Service (BSS), Section 3.2.6.

It is imperative that satellites be designed and operated with the technology, experience, and resources necessary to monitor, control, and take ongoing efforts to avoid collisions in space. As demonstrated in Telesat’s orbital debris mitigation showing, the operational and design features of the Second Round V-band LEO Constellation are geared toward mitigating the risk of orbital debris, including with maneuverability, shielding, and resiliency to protect against external influences that may be encountered and the ability to avoid collision with other spacecraft. Further, in addition to spacecraft design, Telesat is uniquely qualified to operate and manage complex satellite systems, as a satellite operator for almost 50 years and as the world’s leading satellite technical consultant and manager of satellite systems for other operators. Telesat has the ground resources around the world and extensive operational experience, both with GSO and NGSO satellites, which allow for greater confidence in its ability to prevent collisions or other events that might pose a risk.

B. Other Public Interest Factors

1. Effect on competition in the United States

The *DISCO II Order*, as implemented in Section 25.137(a) of the Commission’s rules, establishes a presumption that granting applications to provide service in the United States via satellites licensed by countries that are members of the World Trade Organization (“WTO”) will enhance competition and therefore is in the public

interest.¹⁵ All of the satellites that will comprise the Second Round V-band LEO Constellation will be operated under authority of Canada, which is a member of the WTO.

Telesat's Petition is limited to services covered by the WTO Basic Telecommunications Agreement. It does not seek authority to provide direct-to-home, Direct Broadcast Satellite, or Digital Audio Radio Service services in the United States. Accordingly, this Petition satisfies the requirements of Section 25.137, giving rise to a presumption that granting U.S. market entry to the Second Round V-band LEO Constellation is in the public interest.

2. Spectrum availability

The Commission considers under the "other public interest factors" element of *DISCO II* whether grant of an application would have an impact on spectrum availability.¹⁶ In so doing, the Commission evaluates whether grant of access would create the potential for harmful interference with U.S.-licensed satellite and terrestrial systems. As demonstrated in the Technical Exhibit, the Second Round V-band LEO Constellation satisfies this aspect of *DISCO II*.

As shown therein, the Second Round V-band LEO Constellation architecture is based on highly flexible payload and antenna technologies. Each

¹⁵ See *In re Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States*, Report and Order, 12 FCC Rcd. 24094, 24112 (1997) ("*DISCO II Order*"). See also *Loral Skynet do Brasil Petition for Declaratory Ruling to Add Estrela do Sul 1, a Ku-band Satellite, to the Permitted Space Station List*, DA 03-4095, at ¶ 5 (IB 2003).

¹⁶ See *DISCO II Order*, ¶¶ 146-182.

satellite will have the capability to steer and form independently a number of beams to focus on customer service areas where need exists. The ability to focus the beams in specific areas allows for a reduction in power for the same throughput or an increase in data rate. Beams are generated only when traffic is present, optimizing spectrum usage and on-board power management. The combination of polar orbits providing global coverage with inclined orbits providing increased capacity over mid-latitude regions allows users to have access to multiple LEO satellites within their field of view. The use of inter-satellite links provides further flexibility. These features promote an efficient use of the finite spectrum resource.

Interference management will be carried out through the operation of Telesat's Constellation Network Operating System (CNOS), which will manage the overall radio resource allocation of the entire constellation. The CNOS will plan traffic connectivity, beam power, and satellite handovers.

3. National security, law enforcement, foreign policy, and trade issues

The Commission also considers under the "other public interest factors" element of *DISCO II* whether grant of an application would implicate national security, law enforcement, foreign policy, or trade concerns.¹⁷ The Commission has found in similar circumstances involving affiliates of Telesat that using non-U.S. licensed satellites to serve the United States raises no national security, law enforcement, foreign policy, or

¹⁷ See *DISCO II Order*, ¶¶ 146-182.

trade concerns. The Commission made this finding, for example, in its grant of market access to Telesat International Limited for the Telstar 19 VANTAGE spacecraft.¹⁸ These findings apply with equal force to the Second Round V-band LEO Constellation.

4. Protection of first round V-band systems

In granting Kuiper’s application in the second NGSO FSS Ka-band processing round, the Commission held that “Kuiper must coordinate to prevent harmful interference to operational systems licensed or granted U.S. market access in the previous NGSO FSS processing rounds.”¹⁹ It also “fully anticipate[d] that all parties will negotiate in good faith, and Kuiper will be able to reach a coordination agreement with operators authorized in previous processing rounds.”²⁰ In keeping with this precedent, Telesat hereby commits to coordinating its Second Round V-band system with first round grantees.

¹⁸ See *Telesat International Limited Petition for Declaratory Ruling* FCC File No. SAT-PPL-20110112-00012 (granted Aug 31, 2016). See also *Telesat Brasil Capacidade de Satelites Ltda. Application for Space Station Authorization*, FCC File No. SAT-PPL-20110112-00012 (granted Apr. 4, 2011); *Telesat Canada Petition for Declaratory Ruling for Inclusion of ANIK F3 on the Permitted Space Station List*, FCC File No. SAT-PPL-20160225-00020 (granted 18, 2007); *Loral Orion Services, Inc., Order*, 15 FCC Rcd. 12419 (IB 2000).

¹⁹ *Kuiper Systems, LLC Application for Authority to Deploy and Operate a Ka-band Non-Geostationary Satellite Orbit System*, Order Authorization, 35 FCC Rcd 8324, 8335 ¶ 34 (2020).

²⁰ *Id.* ¶ 50.

IV. CONCLUSION

In view of the foregoing demonstration that Telesat's Petition is in the public interest, Telesat respectfully requests its expeditious grant.

Respectfully submitted,

/s/ Elisabeth Neasmith
Elisabeth Neasmith
Director, ITU and Regulatory
160 Elgin Street, Suite 2100
Ottawa, ON
Canada, K2P 2P7
(613) 748-8700

OF COUNSEL:

Henry Goldberg
Joseph A. Godles
GOLDBERG, GODLES, WIENER
& WRIGHT, LLP
1025 Connecticut Avenue, N.W.
Suite 1000
Washington, DC 20036
(202) 429-4900

November 4, 2021