Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Astranis Projects USA LLC	)	
	)	File No.:
Application for Authority to Launch	)	
And Operate the Arcturus Satellite	)	Call Sign:
at the 163° W.L. Orbital Location	)	
in Ka-band Frequencies	)	

APPLICATION OF ASTRANIS PROJECTS USA LLC

Astranis Projects USA LLC ("Astranis USA") respectfully files this application pursuant to Section 25.114 of the Federal Communications Commission's ("FCC" or "Commission") rules, 47 C.F.R § 25.114, for authority to launch and operate the Arcturus satellite.[1] Arcturus is a small geostationary orbit ("GSO") fixed-satellite service ("FSS") satellite manufactured by Astranis Space Technologies Corp. ("Astranis"). Arcturus will be operated by Astranis USA, an indirect wholly owned subsidiary of Astranis,[2] to provide satellite-based broadband connectivity to Alaska and the surrounding region in Ka-band frequencies from the 163° W.L. orbital location. Arcturus will be launched as a secondary payload on a SpaceX Falcon Heavy mission at year end 2022 and will begin providing high-speed connectivity to the Alaska region by early 2023.

[1] The Arcturus satellite is also known as Aurora 4A.

[2] For ease of reference, Astranis and Astranis USA will be collectively referred to as "Astranis," except where context requires otherwise.

I. INTRODUCTION

From the 163°W.L. orbital location,[3] Arcturus is ideally positioned to provide high-speed, Ka-band satellite connectivity to consumers, businesses, and government customers throughout Alaska, western Canada, and the surrounding Pacific Ocean regions. Astranis has partnered with Pacific Dataport, Inc. ("PDI")[4] to offer this dedicated satellite broadband connectivity. PDI will be the exclusive distributor of broadband capacity and services provided by the Arcturus satellite.

Arcturus initially was to be operated by Astranis Bermuda Ltd. ("Astranis Bermuda"), another wholly owned subsidiary of Astranis, pursuant to authority from Bermuda and under an International Telecommunication Union ("ITU") satellite network filing submitted by the United Kingdom. Astranis Bermuda filed a petition for declaratory ruling with the Commission seeking U.S. market access for the Arcturus satellite, which was granted in part and deferred in part.[5] As a result of intervening developments and other factors, however, Astranis has concluded that a Commission space station license would be more appropriate to support Arcturus operations.

Astranis is seeking to operate the Arcturus satellite with precisely the same technical characteristics authorized in the Arcturus Market Access Grant and described in the underlying documentation supporting that grant, as amended. Thus, Astranis seeks authority for satellite operations that have already been found to be consistent with the Commission's rules and

[3] Astranis will maintain the Arcturus space station at the 163.0º W.L. orbital location with an east/west longitudinal station-keeping tolerance of ±0.05 degrees of the 163.0 º W.L. orbital location. *See* Arcturus Market Access Grant at 1 (Condition 4).

[4] PDI, a Delaware corporation headquartered in Alaska, was established to provide satellite broadband connectivity to Alaska and the surrounding region. The principal investor in PDI is Microcom, the largest provider of satellite systems and services in Alaska.

[5] *See* Astranis Bermuda Ltd., Petition for Declaratory Ruling, File Nos. SAT-PPL-20210607-00075 and SAT-APL-20210921-00125, Call Sign S3092 (granted February 3, 2022) ("Arcturus Market Access Grant"). Astranis Bermuda's request to operate in Ka-band NGSO FSS primary spectrum at 18.8-19.3 GHz and 28.6-29.1 GHz was deferred subject to completion of coordination or a detailed technical demonstration of non-interference vis-à-vis NGSO FSS systems authorized to operate in these bands. *See id.* at 2-3 (Condition 11).

policies, as well as the public interest. Granting Astranis a space station license for Arcturus satellite operations would even more strongly serve the public interest and Astranis respectfully seeks grant of this authorization at the earliest practicable time.

The Arcturus satellite will operate in the 18.2-19.3 GHz, 19.3-19.4 GHz, 19.6-19.7 GHz, and 19.7-20.2 GHz (space-to-Earth) bands and 28.0-29.1 GHz, 29.25-29.3 GHz, and 29.3-30.0 GHz (Earth-to-space) bands. Arcturus will employ Astranis' MicroGEO bus, an efficient, small-GSO satellite design (approximately 400 kg) that supports regional and gap-filler satellite missions at a fraction of the cost of traditional GSO satellites.[6] The Arcturus satellite represents a quantum leap in satellite broadband services in Alaska:

- Up to 10 Gbps of capacity available anywhere in Alaska and beyond, including western Canada and adjacent Pacific Ocean areas;
- Earth station elevation angles of 10°+ to the 163° W.L. orbital location;
- Ka-band fixed and mobility (earth stations in motion or "ESIM") terminals for consumer, commercial, and government use;
- A dedicated Ka-band gateway located in Utah that provides gateway and on-station TT&C communications;[7] and
- Reliable, cost-effective satellite-based broadband connectivity at a fraction of the cost per bit of existing connectivity offerings.

Consistent with the Commission's broadband access initiatives, the Arcturus satellite will bring high-speed Ka-band satellite connectivity to unserved and underserved areas of Alaska and will allow rural and remote communities to enjoy the same benefits of broadband access available in most other regions of the United States. This application demonstrates that Astranis is legally, technically, and otherwise qualified to hold the requested authority and that the Arcturus satellite

[6] *See* https://www.astranis.com/microgeo.

[7] *See* Pacific Dataport Inc., File No. SES-LIC-20200925-01038, Call Sign E202162 (granted Nov. 16, 2020); *see also* File No. SES-MFS-20211013-01714, Call Sign E202162 (pending).

will operate in accordance with the Commission's rules and policies. Accordingly, expeditious grant of this application will further the public interest, convenience, and necessity.

II. DISCUSSION

A. Legal Qualifications

The legal qualifications of an Astranis subsidiary to serve the U.S. market using the Arcturus satellite and the involvement of Astranis in the proposed operations have been accepted by the Commission.[8] Astranis USA establishes its legal qualifications in the materials supporting this application[9] and the involvement of Astranis in Arcturus operations will be the same as contemplated in the Arcturus Market Access Grant. Out of an abundance of caution and as discussed below, to facilitate consideration of this satellite license application Astranis requests limited waivers of (i) the Commission's first-come, first-served GSO satellite licensing procedures, given that Astranis Bermuda has already been authorized to serve the U.S. market from this orbital location; and (ii) surety bond rule, given that Astranis has already posted a bond to support operation of the Arcturus satellite.

In addition, Astranis hereby confirms that it will (i) maintain a surety bond as required under Section 25.165, to the extent necessary;[10] (ii) comply with the Commission's milestone requirements;[11] (iii) comply with applicable Commission reporting requirements related to the

[8] *See generally* Arcturus Market Access Grant.

[9] *See, e.g.*, FCC Form 312; *see also* Attachment B, Ownership Exhibit.

[10] *See* 47 C.F.R. § 25.165(a)(2); *see also* Arcturus Market Access Grant at 3 (Condition 18a). Astranis Bermuda has already posted a surety bond for the Arcturus satellite. Astranis understands that the Arcturus Market Access Grant and the associated surety bond will remain in force until grant of the requested space station authorization. Astranis will work with its surety bond company to ensure that the Arcturus bond can be appropriately transferred or replaced. To the extent necessary, Astranis requests a limited waiver of Section 25.165 or an appropriate license condition to facilitate this surety bond transition.

[11] Astranis will launch the Arcturus satellite, place it in the assigned orbit, and operate it in accordance with its authorization in early 2023. *See* 47 C.F.R. § 25.164(a); *see also* Arcturus Market Access Grant at 3 (Condition 18b, c).

satellite;[12] (iv) comply with all rules applicable to operation of the Arcturus satellite; and (v) comply with relevant operational conditions included in the Arcturus Market Access Grant.

B. Technical Qualifications

Pursuant to Section 25.114 of the Commission's rules, Astranis demonstrates in this application that the proposed operations of the Arcturus satellite comply with applicable Commission rules and policies. Astranis provides the attached Technical Description, Schedule S, and associated materials containing information relating to the technical and operational characteristics of the Arcturus satellite.

1. Spectrum Compatibility

The Arcturus satellite will support Ka-band user terminal operations using the 18.2-19.3 GHz and 19.7-20.2 GHz (space-to-Earth) bands and 28.0-29.1 and 29.3-30.0 GHz bands (Earth-to-space) in Alaska, western Canada, and the adjacent Pacific Ocean region. Astranis will operate gateway links with a single Utah teleport facility using the 18.2-19.3 GHz, 19.3-19.4 GHz, 19.6-19.7 GHz, and 19.7-20.2 GHz (space-to-Earth) bands and 28.0-29.1 and 29.25-30.0 GHz (Earth-to-space) bands. Given the large geographic separation between user beams and gateway beams, virtually all subject Ka-band uplink and downlink spectrum will be used for both user terminal and gateway operations.[13]

[12] Prior to commencing operations, Astranis will file with the Commission the information required by Section 25.172 of the Commission's rules. *See* 47 C.F.R. §§ 25.171, 25.172; *see also* Arcturus Market Access Grant at 3 (Condition 17).

[13] Specifically, although most spectrum identified in this application will be used for both user terminal and gateway earth station operations, the 19.3-19.4 GHz, 19.6-19.7 GHz, and 29.25-29.3 GHz bands will be used for gateway links only.

In these frequency ranges, the 18.3-18.8 GHz, 19.7-20.2 GHz, 28.35-28.6 GHz, and 29.3-30.0 GHz bands are included in the Ka-band frequencies eligible for Permitted List authority.[14] Earth station operators seeking to communicate with Arcturus satellite in other bands must add the satellite as an authorized point of communication.[15]

The United States Table of Frequency Allocations ("U.S. Table of Allocations"), 47 C.F.R. § 2.106, identifies allocations and conditions for spectrum use by FSS networks in the relevant frequency bands. Astranis summarizes below material issues associated with compliance with the U.S. Table of Allocations and related Commission rules.

a. 18.2-18.3 GHz Band Segment

Arcturus gateway and user downlink operations will be conducted in the 18.2-18.3 GHz band. Federal uses and fixed services are primary in that band and FSS is considered secondary.[16] Stations operating in a secondary service cannot cause harmful interference to or claim protection from harmful interference from stations of a primary service.

Astranis affirms that it will accept interference from, and not cause harmful interference to Federal systems and authorized fixed service operations in the 18.2-18.3 GHz band.[17] In addition, as demonstrated in the Technical Description, Astranis will comply with applicable power limits in the Commission's rules to protect co-frequency systems and services from harmful interference.

[14] *See* 47 C.F.R. § 25.103 (defining "Permitted Space Station List" and eligible Ka-band frequencies as the 18.3-18.8 GHz, 19.7-20.2 GHz, 28.35-28.6 GHz, and 29.25-30.0 GHz bands).

[15] *See* Arcturus Market Access Grant at 1 (Condition 5).

[16] *See* 47 C.F.R. §2.106 at footnote US334 ("Federal space stations in both geostationary (GSO) … and associated earth stations in the fixed-satellite service (FSS) (space-to-Earth) may be authorized on a primary basis.")

[17] *See* Arcturus Market Access Grant at 2 (Condition 7).

b. 18.3-18.6 GHz

In the 18.3-18.6 GHz band, GSO FSS downlink operations are considered primary and access to the band has been permitted for terrestrial fixed operations under certain conditions, as well as certain Federal uses on a primary basis.[18] Because Arcturus gateway and user downlink operations will be consistent with applicable operational requirements and power limits, they can be conducted under Permitted List authority.

As demonstrated in the Technical Description, Astranis will comply with applicable power limits in the Commission's rules to protect co-frequency systems and services from harmful interference.[19] Astranis also will coordinate with Federal users, as necessary or appropriate. [20]

c. 18.6-18.8 GHz

FSS operations in the 18.6-18.8 GHz band are considered co-primary with both the Earth exploration-satellite service ("EESS") and the space research service ("SRS") and are subject to certain technical limits.[21] Astranis will comply with these limits.[22] Astranis will coordinate with EESS and SRS operations as necessary or appropriate.

---

[18] *See* 47 C.F.R. §2.106, footnotes US 139 ("Fixed stations authorized in the band 18.3-19.3 GHz under the provisions of 47 CFR 74.502(c), 74.602(g), 78.18(a)(4), and 101.147(r) may continue operations consistent with the provisions of those sections"), US 334, and NG527A ("In the bands…18.3-18.8 GHz…ESIMs may be authorized to communicate with geostationary satellites on a primary basis").

[19] *See* Attachment A, Technical Description; *see also* Arcturus Market Access Grant at 2 (Condition 9).

[20] *See* Arcturus Market Access Grant at 2 (Condition 10). Astranis acknowledges this condition requires coordination with Federal users throughout the 18.2-20.2 GHz band and Astranis will conduct such coordination throughout this entire frequency range as required.

[21] *See* 47 C.F.R. §2.106, footnotes US 254 ("fixed and mobile services shall be limited to a maximum [EIRP] of +35 dBW and the power delivered to the antenna shall not exceed -3 dBW."), and US255 (the PFD "across…18.6-18.8 GHz produced at the surface of the Earth by emissions from a space station under assumed free-space propagation conditions shall not exceed -95 dB(W/m²) for all angles of arrival.").

[22] *See also* Arcturus Market Access Grant at 2 (Condition 9).

d. 18.8-19.3 GHz and 28.6-29.1 GHz

Arcturus user terminal and gateway downlinks and uplinks will operate in the 18.8-19.3 GHz and 28.6-29.1 GHz bands, respectively. In these bands, NGSO FSS operations are considered primary and GSO FSS operations are considered secondary.[23] Astranis will protect existing and future co-frequency NGSO FSS systems and services from harmful interference.

Astranis's commitment to protect U.S. operations of existing and future NGSO FSS systems in the 18.8-19.3 GHz and 28.6-29.1 GHz frequency bands is consistent with Commission rules and with other GSO FSS applications for approval to operate in the bands and allows GSO and NGSO operators to co-exist.[24] In the Arcturus Market Access Grant, the request to operate in the 18.8-19.3 GHz and 28.6-29.1 GHz bands was deferred pending completion of coordination or a demonstration of non-interference vis-à-vis co-frequency NGSO systems.[25] Astranis accepts that it will be subject to a similar deferral and similar conditions regarding potential access to these bands and Astranis will coordinate with NGSO FSS operators authorized to utilize these bands or otherwise demonstrate that will not interfere with NGSO FSS operations.

---

[23] *See* 47 C.F.R. §2.106., footnote NG62, NG165. (In the band 28.6-29.1 GHz, geostationary-satellite networks in the fixed satellite service shall not cause harmful interference to, or claim protection from, non-geostationary-satellite systems in the fixed-satellite service). *See also* Arcturus Market Access Grant at 3 (Condition 13).

[24] *See* In the Matter of Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed Satellite Service Systems and Related Matters, *Report and Order and Further Notice of Proposed Rulemaking*, 32 FCC Rcd 7809, ¶ 14 (2017); *see also* In the Matter of Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters, *Notice of Proposed Rulemaking*, 31 FCC Rcd 13651, ¶ 11 (2016).

[25] Arcturus Market Access Grant at 2-3 (Condition 11).

e. 19.3-19.4 GHz and 19.6-19.7 GHz

Arcturus gateway downlinks will operate in the 19.3-19.4 GHz and 19.6-19.7 GHz bands, which are allocated for FSS and terrestrial fixed services on a co-primary basis. Astranis will comply with applicable PFD limits in the band. In addition, Astranis will coordinate with Federal operations in these and other relevant bands.

f. 19.7-20.2 GHz and 29.5-30.0 GHz

In the 19.7-20.2 GHz and 29.5-30.0 GHz bands, FSS operations are co-primary with mobile-satellite service ("MSS") operations.[26] Arcturus' gateway and user downlink and uplink operations, respectively, will be conducted in these bands consistent with applicable operational requirements and power limits.

The Arcturus satellite will comply with the Commission's two-degree spacing policies, including downlink PDF levels and earth station uplink EIRP levels and antenna performance, so the need for coordination with co-frequency FSS and ESIM operations is not anticipated. Furthermore, there are no co-frequency GSO satellites operating within +/- 6° of the satellite's planned location. Nonetheless, Astranis will coordinate, as necessary or appropriate, with FSS and MSS operations in these bands.

g. 28.0-28.35 GHz Band

Astranis also seeks to operate in the 28.0-28.35 GHz band to support gateway and user uplink operations. The 28.0-28.35 GHz band is allocated to the FSS, fixed, and mobile terrestrial services on a co-primary basis, and the Commission has designated FSS as secondary to Upper Microwave Flexible Use Service ("UMFUS"), but with protection for FSS earth station

[26] 47 C.F.R. §2.106, footnote 5.529. Networks that are in both the FSS and MSS may provide MSS services in the 19.7-20.1 GHz and 29.5-29.9 GHz bands.

operations in accordance with the conditions set forth in Section 25.136(a).[27] If an earth station applicant can meet the criteria under Section 25.136, then it can operate without providing interference protection to UMFUS stations.[28] Alternatively, other approaches may be considered by the Commission in licensing earth station operations in this band.

The gateway earth station seeking to communicate with Arcturus will meet these requirements, as they will demonstrate in their corresponding applications, or it will otherwise seek to protect UMFUS operations under the rule. Astranis and the gateway earth station operator will coordinate with fixed and mobile terrestrial services as required. User terminal operations in Alaska will be addressed, as appropriate, by blanket earth station applicants.[29]

h. 28.35-28.6 GHz and 29.25-29.5 GHz

In the 28.35-28.6 GHz and 29.25-29.5 GHz bands, FSS is primary under the Commission's rules.[30] Nevertheless, between 28.5-28.6 GHz and 29.25-29.5 GHz, the U.S. Table of Allocations prohibits FSS systems from causing harmful interference to, or claiming protection from, fixed operations under the call signs listed in footnote NG62 in the U.S Table of Allocations.[31] Astranis affirms that it will protect the listed terrestrial fixed call signs as contemplated by the Commission's rules.

---

[27] *Id.*, §§ 25.202(a)(1); 25.136(a).

[28] *Id.*, § 25.136(a).

[29] *See, e.g.*, File No. SES-LIC-20220907-00947, Callsign E220136. The Commission has not yet approved any earth station blanket license applications for Astranis; thus, the authorization to operate in the 27.5-28.35 GHz frequency band would be conditioned upon Commission grant of any relevant future earth station blanket license application. *See* Arcturus Market Access Grant at 3 (Condition 12).

[30] *See* 47 C.F.R. § 2.106, footnote NG527A ("In the bands … 29.25-30.0 GHz (Earth-to-space), ESIMs may be authorized to communicate with geostationary satellites on a primary basis"). To the extent such systems are authorized, Astranis shall seek to coordinate appropriately.

[31] *Id.*, footnote NG62 (prohibiting FSS systems from causing harmful interference to, or claiming protection from, fixed service stations operating under the following Call Signs: KEB35, KGB72, KGC79,

Astranis notes that the 29.25-29.5 GHz band is allocated for MSS feeder links, although it is not presently used in Alaska or the surrounding region for such operations. Astranis will utilize the 29.25-29.3 GHz sub-band for gateway operations only and will coordinate all operations, as necessary or appropriate, with future MSS feeder link operations. It will also comply with other applicable rules in both bands included in the Commission's rules.[32]

2. Two-Degree Spacing

Arcturus's operations will be fully compliant with the Commission's two-degree spacing policies including operating consistent with the power flux-density limit of -118 dBW/m^2/MHz and associated EIRP density envelopes in §25.218(i).[33] Arcturus's operations will not cause harmful interference to any other authorized user of the spectrum, and otherwise will be consistent with Commission precedent.[34] Arcturus will also be operated consistent with applicable existing and future coordination agreements. For these reasons, this application fully complies with the technical and operational requirements articulated in the Space Station Licensing Reform Order regarding processing of applications for GSO-like spacecraft.[35]

KIL20, KME49, KQG58, KQH74, KSA96, KSE73, KVH83, KYJ33, KZS88, WAX78, WLT380, WMK817, WML443, WMP367, and WSL69). *See* Arcturus Market Access Grant at 3 (Condition 13).

[32] *Id.*, footnotes NG527A, NG535A. *See also* Arcturus Market Access Grant at 3 (Condition 14). The operations of the Arcturus space station in the 29.25-29.5 GHz frequency band will comply with section 25.258 of the Commission's rules, 47 C.F.R. §25.258.

[33] *See* Attachment A, Technical Description, § A.8.

[34] *See* 47 C.F.R. § 25.103 ("A GSO FSS space station operating in the … conventional or extended Ku-bands, or the conventional Ka-band within the limits on downlink EIRP density or PFD specified in §25.140(a)(3) and communicating only with earth stations operating in conformance with routine uplink parameters specified in §25.211(d), §25.212(c), (d), (e), or (f), or §25.218").

[35] *See* Amendment of the Commission's Space Station Licensing Rules and Policies, 18 FCC Rcd 10760, ¶ 113 (2003).

3. Space Debris Mitigation

The Arcturus satellite will operate at the 163°W.L. orbital location and Astranis anticipates the satellite's end-of-life to be no earlier than 2031. Astranis has provided an Orbital Debris Mitigation Plan to demonstrate compliance with the Commission's orbital debris mitigation and satellite end-of-life rules and policies.[36]

C. 47 U.S.C. § 304 Waiver

Astranis hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise.

D. Waiver Requests

Astranis hereby requests limited waivers of (i) the Commission's first-come, first-served GSO satellite licensing procedures, 47 C.F.R.§25.158, to the extent necessary to facilitate consideration of this satellite license application because Astranis Bermuda has already been granted authority to serve the U.S. market from the subject orbital location; and (ii) the Commission's surety bond rule, 47 C.F.R.§25.165, or inclusion of an appropriate license condition given that Astranis Bermuda has already posted a bond to support operation of the Arcturus satellite.

The Commission has authority to grant waivers of its rules for "good cause shown."[37] In general, good cause exists if grant of a waiver would not undermine the purposes of the rule and

[36] *See* Attachment C, Astranis Orbital Debris Mitigation Plan ("ODMP"). Out of an abundance of caution, Astranis Bermuda's original petition for U.S. market access requested a waiver of Section 25.283(c) of the Commission's rules that requires that stored energy sources onboard a satellite are discharged after the completion of the satellite mission. In the Arcturus Market Access Grant, the Commission found that the Arcturus satellite can satisfy this requirement and a waiver is not required. Accordingly, so no such waiver request is included here. *See* Arcturus Market Access Grant at 3-4 (Condition 15).

[37] *See* 47 C.F.R. § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

would otherwise serve the public interest.[38] As discussed below, compelling reasons exist to grant the requested limited waivers in connection with this application.

The Commission's first-come, first-served GSO satellite licensing procedures, along with its authorization modification rules, do not contemplate the unique circumstances presented here. Astranis Bermuda, a foreign subsidiary of Astranis, was granted authority to serve the U.S. market using the Arcturus satellite. That authority cannot be transferred to Astranis USA, which seeks a U.S. space station license to operate the Arcturus satellite. Astranis requests that the Commission process this license application even though Astranis Bermuda holds U.S. market access authority for the Arcturus satellite. If not otherwise cancelled or voided by the Commission, Astranis Bermuda will surrender the market access grant upon grant of a satellite license to Astranis USA.

Compelling reasons support grant of the requested waiver. Astranis seeks a license to launch and operate a satellite that has already been authorized to serve the U.S. market. In addition, the application is essentially a *pro forma* assignment of authority from one Astranis subsidiary to another but cannot be effected as such because a market access grant generally cannot be "transformed" into a satellite license. The underlying purposes of the rule will not be undermined by the requested waiver because the same satellite, Arcturus, and the same control group, Astranis, are involved.

The Commission's surety bond requirements are also implicated by this unique situation. Astranis Bermuda has already posted a surety bond for the Arcturus satellite. Astranis understands that the Arcturus Market Access Grant and the associated surety bond will remain in full force until grant of the requested satellite license. Astranis will work with its surety bond company to

[38] *WAIT Radio*, 418 F.2d at 1157; *Intelsat North America LLC*, 22 FCC Rcd 11989 ¶ 6 (2007).

ensure that the Arcturus bond can be appropriately transferred or replaced. To the extent necessary, Astranis requests a limited waiver of Section 25.165 or an appropriate license condition to facilitate this surety bond transition.

Again, compelling reasons support grant of the requested waiver. Astranis seeks a license to launch and operate a satellite for which a bond has already been posted. Astranis seeks to ensure that there is no gap in surety bond coverage and also no duplicative surety bond requirement, particularly given the high costs of a bond to small satellite operators. Astranis anticipates that it will be able to transfer or replace the surety bond but grant of the requested satellite license should appropriately consider the existence of the bond posted by Astranis Bermuda and accommodate such potential transfer, replacement, or other approach that ensures that the underlying objectives of the Commission's bond requirement are achieved without undue burden. Such a waiver or other appropriate approach would further the public interest and not undermine the purposes of the rule in the unique circumstances presented here.

E. Public Interest Considerations

The Commission has recognized the strong interests of the United States in serving as a licensing administration for satellite operators.[39] Among other benefits, a strong U.S. licensing presence in satellite communications helps to promote U.S. pro-competitive policy objectives, to ensure the availability of satellite services with global reach to U.S. commercial and Federal government customers, and to achieve scale efficiencies in coordination among U.S.-licensed satellite operators without resorting to the formal ITU negotiation process.[40] Granting a U.S.

[39] *See, e.g.*, Intelsat LLC, Memorandum Opinion Order and Authorization, FCC 00-287, 15 FCC Rcd 15460 (2000), at ¶ 31.

[40] *Id.*, ¶¶ 31-33.

license to operate the Arcturus satellite will more completely satisfy the Commission's public interest objectives.

In addition, authorizing a new, purpose-built broadband satellite system to serve Alaska would greatly enhance competition and consumer choices. Currently, approximately 39 percent of Alaskans have little or no Internet access—the largest unserved or underserved population of any U.S. state. Launch and operation of the Arcturus satellite will bring more reliable broadband Internet access to the entire state and surrounding regions, resulting in increased connectivity and lower prices.[41] It is expected that aggregate Internet access throughput in Alaska will triple and costs will be reduced by two-thirds.

Introduction of new Ka-band satellite services will help bridge the digital divide, bringing modern, high-speed Internet to Alaska's predominantly rural and remote populations, while improving the local economies and enhancing all aspects of community life. The proposed operation of the Arcturus satellite will provide an essential piece of the solution to ensure that underserved communities in Alaska have adequate broadband connectivity.

Astranis has demonstrated that it has the ability to share spectrum with other space and terrestrial systems while mitigating harmful interference, that it is legally eligible and qualified to operate the Arcturus satellite, and that the proposed operations comply with the Commission's operational requirements. Given all of the foregoing, grant of this application would be consistent with the Commission's rules and policies, and would further the public interest.

[41] The Commission has previously taken note of the unusual case of the Alaska Bush, where terrestrial connectivity is more expensive than equivalent satellite bandwidth. *See* Promoting Telehealth in Rural America, WC Docket No. 17-310, *Report & Order*, FCC 19-78 (rel. Aug 20, 2019), at ¶ 96 ("[I]n Alaska for funding year 2017, health care providers reported, on the FCC Form 466, rural rates ranging from $30,000 to $40,500 for a 10 Mbps satellite service per month. In comparison, rural rates for a terrestrial-based 10 Mbps MPLS service in Alaska, in many instances, were between $60,000 and $75,000 per month." (available at: https://ecfsapi.fcc.gov/file/0820192610299/FCC-19-78A1.pdf).

III. CONCLUSION

Astranis seeks authority for the Arcturus satellite to operate in the 18.2-19.3 GHz, 19.3-19.4 GHz, 19.6-19.7 GHz, and 19.7-20.2 GHz bands (space-to-Earth) and 28.0-29.1 GHz, 29.25-29.3 GHz, and 29.3-30.0 GHz bands (Earth-to-space) from the 163°W.L. orbital location. The operations are the same as previously authorized in the Arcturus Market Access Grant.

The Arcturus satellite will bring broadband Internet connectivity to Alaska to meet the needs of underserved U.S. consumers, as well as corporate and government customers. Grant of the application will help bridge the digital divide and allow users in rural and remote areas of Alaska to enjoy the same benefits of broadband access already available in most of the country.

For these and other reasons set forth herein, grant of the application would strongly serve the public interest and Astranis respectfully requests the Commission grant it a space station license to launch and operate the Arcturus satellite at the earliest practicable time.