

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of	)	
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	)	
	)	
Astranis Projects USA LLC	)	File No. ____
	)	
Application for Authority to Launch and	)	
Operate the ASTRANIS 131W GSO System	)	
at the Nominal 131° W.L. Orbital Location in	)	
Ku-band and Ka-band Frequencies	)	

APPLICATION

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Dated: January 14, 2025

TABLE OF CONTENTS

	Page
I. BACKGROUND	3
II. DISCUSSION	4
A. LEGAL QUALIFICATIONS	4
B. TECHNICAL QUALIFICATIONS	4
C. SPECTRUM COMPATIBILITY	4
D. INTERNATIONAL TELECOMMUNICATION UNION COST RECOVERY	5
E. WAIVER REQUESTS	5
1. SURETY BOND (47 C.F.R. § 25.165(a))	6
2. 47 C.F.R. § 25.264	8
3. U.S. Table of Frequency Allocations (47 C.F.R. § 2.106)	8
4. Discharge of Stored Energy Sources (47 C.F.R. § 25.283(c))	10
F. PUBLIC INTEREST CONSIDERATIONS	12
III. CONCLUSION	13
Exhibit A – Ownership Exhibit	
Exhibit B – Technical Appendix	

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APPLICATION

Pursuant to Section 25.114 of the Federal Communications Commission’s (“FCC” or “Commission”) rules, 47 C.F.R § 25.114, Astranis Projects USA LLC (“Astranis”) respectfully requests authority to launch and operate a geostationary satellite orbit (“GSO”) fixed-satellite service (“FSS”) system, operating in the Ku-band frequencies and Ka-band frequencies, and located at the nominal 131° W.L. orbital location (the “ASTRANIS 131W GSO System”).

As demonstrated below, Astranis is legally and technically qualified to launch and operate the proposed system. Additionally, grant of the application will serve the public interest by allowing Astranis, a U.S. company, to provide high-speed Ku-band and Ka-band satellite connectivity to consumers, government institutions, and enterprises across the United States, Canada and Mexico.

As required by the Commission’s rules, this application has been filed electronically and includes a completed Form 312, Schedule S, ownership information (Exhibit A), and Technical Appendix (Exhibit B). Relevant International Telecommunication Union (“ITU”) filings for the system will be provided to the Commission under separate cover.

I. BACKGROUND

Astranis is a wholly owned subsidiary of Astranis Space Technologies Corp.,¹ an American satellite company with almost 500 employees in the United States, that designs, builds, and operates small satellites for geostationary orbits. Building satellites in its own factory in the United States, Astranis is revolutionizing the geostationary satellite market by drastically reducing the time to orbit for each satellite and enabling tailored spacecraft to meet each customer's needs. The company currently operates a fleet of five MicroGEO satellites.² In addition, Astranis has publicly announced a series of contracts for technology development, demonstration, and next-generation system design with the U.S. Space Force and other parts of the U.S. Government.³

The ASTRANIS 131W GSO system is designed to better meet customer needs through operational and cost efficiencies associated with a modular approach to orbital capacity. As discussed in more detail in the Technical Appendix, the ASTRANIS 131W GSO System will provide high-speed, Ku-band and Ka-band satellite connectivity to consumers, government institutions, and enterprises in the United States, Canada and Mexico.

¹ For ease of reference, the two companies are collectively referred to as "Astranis," except where context requires otherwise. More information regarding Astranis can be found at: <https://www.astranis.com/>.

² See Will Robinson-Smith, *SpaceX launches 4 Astranis satellites on Falcon 9 rocket from Cape Canaveral*, Space Flight Now (Dec. 29, 2024), <https://spaceflightnow.com/2024/12/29/live-coverage-spacex-to-launch-4-astranis-satellites-on-falcon-9-rocket-from-cape-canaveral/>.

³ John Gedmark, *Astranis Tapped as Prime Contractor for U.S. Space Force's Protected Tactical SATCOM Global (PTS-G) Program*, Astranis Blog (Aug. 28, 2025), <https://www.astranis.com/blog/astranis-tapped-as-prime-contractor-for-u-s-space-forces-protected-tactical-satcom-global-pts-g-program>.

II. DISCUSSION

A. LEGAL QUALIFICATIONS

Astranis is legally qualified to hold a space station license and to operate the ASTRANIS 131W GSO System. Specifically, its qualifications are set forth in the attached Form 312 and accompanying exhibits. Moreover, Astranis already holds a Commission space station license and market access authorizations, and thus, its legal qualifications are a matter of record before the Commission.⁴

B. TECHNICAL QUALIFICATIONS

In this narrative, the attached Form 312, Schedule S, and Technical Appendix, Astranis provides the technical information required by the FCC's rules and demonstrates that the proposed system will comply with applicable technical and operational requirements.⁵ Accordingly, Astranis is technically qualified to hold an FCC license.

C. SPECTRUM COMPATIBILITY

The ASTRANIS 131W GSO System will operate in the following Ku-band and Ka-band frequencies.⁶ As discussed in the Technical Appendix, the satellite will be located at the nominal 131° W.L. orbital location.

- Conventional Ku-band frequencies:
 - 11.7-12.2 GHz (space-to-Earth)

⁴ See Astranis Projects USA LLC, ICFS File No. SAT-LOA-20221019-00145 (granted-in-part/deferred-in-part December 6, 2022); Spacing Guild UK Limited, ICFS File No. SAT-PDR-20220823-00093 (granted June 5, 2025); Spacing Guild UK Limited, ICFS File No. SAT-PDR-20220823-00094 (granted June 5, 2025).

⁵ See, e.g., 47 C.F.R. § 25.116; see also *Space Innovation Mitigation of Orbital Debris in the New Space Age*, Second Report and Order, 37 FCC Rcd 11818 (2022); *Mitigation of Orbital Debris*, Second Report and Order, 35 FCC Rcd 4156 (2020); *Mitigation of Orbital Debris*, Second Report and Order, 19 FCC Rcd 11567 (2004).

⁶ The naming convention used herein for the various frequency bands follows the definitions in 47 C.F.R. § 25.103 of the Commission's rules, except for the Appendix 30B and additional FSS frequencies.

- 14.0-14.5 GHz (Earth-to-space)
- Extended Ku-band frequencies:
 - 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth)
 - 13.75-14 GHz (Earth-to-space)
- Conventional Ka-band frequencies:
 - 18.3-18.8 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth)
 - 28.35-28.6 GHz (Earth-to-space), 29.25-30 GHz (Earth-to-space)
- Extended Ka-band frequencies:
 - 17.3-18.3 GHz (space-to-Earth), 18.8-19.4 GHz (space-to-Earth), 19.6-19.7 GHz (space-to-Earth)
 - 27.5-28.35 GHz (Earth-to-space), 28.6-29.1 GHz (Earth-to-space)
- Appendix 30B frequencies:
 - 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth)
 - 12.75-13.25 GHz (Earth-to-space)
- Additional FSS frequencies:
 - 19.4-19.6 GHz (space-to-Earth)
 - 29.1-29.25 GHz (Earth-to-space)

In the Technical Appendix, Astranis discusses the status of GSO FSS systems in each of these frequency bands, addresses compatibility with other systems and services, and demonstrates its compliance with the FCC’s technical rules.

D. INTERNATIONAL TELECOMMUNICATION UNION COST RECOVERY

Astranis accepts responsibility for all ITU cost recovery fees associated with the ASTRANIS 131W GSO System. Astranis has already submitted a signed ITU cost recovery letter.

E. WAIVER REQUESTS

The Commission may waive any of its rules if there is “good cause” to do so.⁷ In general, waiver is appropriate if (1) special circumstances warrant a deviation from the general

⁷ See 47 C.F.R. § 1.3; *Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1164 (D.C. Cir. 1990); *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

rule; and (2) such deviation would better serve the public interest than would strict adherence to the rule.⁸ Generally, the Commission will grant a waiver of its rules in a particular case if the relief requested would not undermine the policy objective of the rule in question and would otherwise serve the public interest.⁹ Astranis submits that good causes exists to waive the rules identified below.

1. SURETY BOND (47 C.F.R. § 25.165(a))

The Commission may waive any of its rules if there is “good cause” to do so.¹⁰ In general, waiver is appropriate if (1) special circumstances warrant a deviation from the general rule; and (2) such deviation would better serve the public interest than would strict adherence to the rule.¹¹ Generally, the Commission will grant a waiver of its rules in a particular case if the relief requested would not undermine the policy objective of the rule in question and would otherwise serve the public interest.¹² Astranis submits that good causes exists to waive the surety bond requirement for the ASTRANIS 131W GSO System.

Under the Commission’s rules, space station licensees are required to post a surety bond within thirty days from the date of the license grant covering the potential payment liability to the U.S. Treasury in the event that the operator defaults on its deployment milestone obligations.¹³ The Commission has historically used the surety bond as a “market-based mechanism for ensuring that licensees are financially willing and able to proceed with satellite

⁸ See *Northeast Cellular*, 897 F.2d at 1166.

⁹ See *WAIT Radio*, 418 F.2d at 1157.

¹⁰ See 47 C.F.R. § 1.3; *Northeast Cellular Tel. Co. v. FCC*, 897 F.2d 1164 (D.C. Cir. 1990); *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

¹¹ See *Northeast Cellular*, 897 F.2d at 1166.

¹² See *WAIT Radio*, 418 F.2d at 1157.

¹³ 47 C.F.R. § 25.165(a).

construction and to discourage warehousing of scarce spectrum resources.”¹⁴ More recently, however, the Commission has determined that “GSO space stations . . . generally raise a lesser concern about spectrum warehousing” and has proposed to eliminate the surety bond requirement for GSO space stations.¹⁵

Granting a waiver of the surety bond requirement for the ASTRANIS 131W GSO System would strongly support the public interest and the Commission’s goals in its Space Modernization proceeding. The surety bond is crippling to space innovation, and is particularly burdensome for smaller American companies like Astranis. Obtaining and maintaining a space station license is generally more expensive in the United States than other licensing jurisdictions—especially as the Commission now applies its substantial, annual regulatory fees to all authorized satellites, even if not yet operational—and the surety bond is yet another cost that operators must bear when seeking to operate in the United States. Further, because the bond requirement is uniform for all GSO satellite operators, it imposes a disproportionate, capital-constraining burden on new market entrants compared to established entities. Companies without long-term banking relationships or large balance sheets must not only pay fees to a bank to issue the bond but also set aside substantial collateral to maintain the bond—capital that could otherwise support productive U.S.-based business activities, such as hiring engineers, expanding

¹⁴ *Space Modernization for the 21st Century*, Notice of Proposed Rulemaking, FCC 25-69, ¶ 175 (rel. Oct. 29, 2025) (“NPRM”); see, e.g., *Comprehensive Review of Licensing and Operating Rules for Satellite Services*, Second Report and Order, 30 FCC Rcd 14713, 14735 ¶ 53 (2015) (citing, e.g., *TMI Communications and Company, Limited Partnership and TerreStar Networks Inc., Application for Review and Request for Stay*, Memorandum Opinion and Order, 19 FCC Rcd 12603, 12604 ¶ 2 (2004); *PanAmSat Licensee Corp., Application for Authority to Construct, Launch, and Operate a Ka-Band Communications Satellite System in the Fixed-Satellite Service at Orbital Locations 58° W.L. and 125° W.L.*, Memorandum Opinion and Order, 16 FCC Rcd 11534, 11537 ¶ 12 (2001)).

¹⁵ NPRM ¶ 176.

manufacturing capacity, or manufacturing satellites. For all these reasons there is good cause to grant a waiver in the present case.

Waiver would also not undermine the purpose of the rule. The Commission has already determined that the surety bond is not necessary for GSO operations. Requiring Astranis to comply with a burdensome rule that has already been slated for elimination would be nonsensical and penalizes American companies that seek to license their satellites in the United States, jeopardizing U.S. leadership in space.¹⁶

2. 47 C.F.R. § 25.264

This rule requires that applicants for a space station transmitting in the 17.3-17.8 GHz band to provide predicted and measured off-axis antenna gain data.¹⁷ As demonstrated in the Technical Appendix, downlinks from the ASTRANIS 131W GSO System in the 17.3-17.8 GHz band would not cause harmful interference into adjacent DBS satellites as there are no nearby U.S. Appendix 30A Plan assignments or proposed modifications to the Plan.¹⁸ Accordingly, a waiver would not undermine the purpose of the rule to protect such operations.

3. U.S. Table of Frequency Allocations (47 C.F.R. § 2.106)

a. 10.7-11.7 GHz and 12.75-13.25 GHz

¹⁶ While Astranis recognizes that this proceeding remains pending, the Commission has a longstanding practice of granting waivers of its rules pending the outcome of rulemaking proceedings where doing so promoted the public interest. *See, e.g., WorldVu Satellites Limited*, Order and Declaratory Ruling, 32 FCC Rcd 5366, 5374-75 ¶ 18 (2018).

¹⁷ See Amendment of Parts 2 and 25 of the Commission's Rules to Enable GSO Fixed-Satellite Service (Space-to-Earth) Operations in the 17.3-17.8 GHz Band, to Modernize Certain Rules Applicable to 17/24 GHz BSS Space Stations, and to Establish Off-Axis Uplink Power Limits for Extended Ka Band FSS Operations. Amendment of Parts 2 and 25 of the Commission's Rules to Enable NGSO Fixed-Satellite Service (Space-to-Earth) Operations in the 17.3-17.8 GHz Band, Report and Order and Notice of Proposed Rulemaking, IB Docket Nos. 20-330, 22-273, FCC 22-63 at 50, Appendix A (rel. Aug. 3, 2022); see also 87 Fed. Reg. 72388 (November 25, 2022).

¹⁸ See Technical Appendix at B-4.

With respect to operations in the 10.7-11.7 GHz and 12.75-13.25 GHz frequency bands, Astranis hereby requests a waiver of Footnote NG52 to the U.S. Table of Frequency Allocations.¹⁹ Adherence to this limitation in this case would frustrate the underlying policy objective of the rule and is not necessary to prevent harmful interference. Footnote NG52 has long been understood as intending to limit constraints to deployment of terrestrial services in this spectrum. In the 10.7-11.7 GHz band, the requested waiver is justified given the fact that Astranis will operate in this band on an unprotected, non-harmful interference basis with respect to terrestrial services. In the 12.75-13.25 GHz band, the requested waiver is justified as Astranis will limit its operations to aeronautical and maritime operations, where there is limited possibility of interference to terrestrial systems.²⁰ For any fixed earth stations in 12.75-13.25 GHz where NG52 is not met, Astranis will seek a waiver through an associated earth station application. As a result, these operations will not constrain deployment of terrestrial stations. Further, the operation of the ASTRANIS 131W GSO System serves the public interest by providing reliable satellite communications and promoting efficient use of spectrum resources. Thus, granting this waiver aligns with the intent of Footnote NG52 and serves the public interest.

b. 19.4-19.6 GHz

The 19.4-19.6 GHz band is allocated on a co-primary basis to the FS and the FSS (space-to-Earth) limited to feeder links for NGSO systems in the MSS. Astranis requests a waiver of these limitations to permit non-conforming GSO FSS space-to-Earth user terminals on an unprotected, non-harmful-interference basis. As demonstrated in the Technical Appendix, the

¹⁹ See 47 C.F.R. § 2.106, U.S. Table of Frequency Allocations at 47, <http://www.fcc.gov/sites/default/files/fcctable.pdf>.

²⁰ WRC-23 enabled aeronautical and maritime earth stations in this frequency band. See, e.g., Resolution 121 (WRC-23) of the ITU Radio Regulations.

ASTRANIS 131W GSO System will meet the Commission's PFD limits to protect terrestrial FS throughout the 17.7-19.7 GHz band. Astranis will accept interference from any existing and future FS transmissions in the 19.4-19.6 GHz frequencies. Additionally, Astranis will coordinate with authorized NGSO MSS systems and expects that techniques, such as geographic separation among earth stations, will enable successful coordination and protection of those networks from harmful interference. Astranis will accept interference from existing and future NGSO MSS operations in 19.4-19.6 GHz frequencies.

c. 29.1-29.25 GHz

The 29.1-29.25 GHz band is allocated on a co-primary basis to FS and MSS feeder links. Astranis requests a waiver of the Table of Frequency allocations to permit non-conforming GSO FSS Earth-to-space operations on an unprotected, non-harmful-interference basis. Astranis will operate on a non-interference basis with respect to both authorized FS and MSS operations in the band (current or future), as well as employ interference mitigation techniques as needed. Astranis will also coordinate with such relevant operators. Additionally, as a non-conforming user of this band, Astranis would cease operations in the band in the event of any harmful interference and would accept interference from any FS or MSS feeder link operations in this band.

4. Discharge of Stored Energy Sources (47 C.F.R. § 25.283(c))

Section 25.283(c) requires that after the completion of a satellite mission "stored energy sources on board the satellite are discharged, by venting excess propellant, discharging batteries, relieving pressure vessels, and other appropriate measures."²¹

Astranis requests waiver of this rule to the extent necessary to grant this Petition. Out of an

²¹ 47 C.F.R. § 25.283(c).

abundance of caution, Astranis seeks a waiver of the “relieving pressure vessels” provision because residual monopropellant and pressurant will not be fully evacuated at end-of-life.

The ASTRANIS 131W GSO System includes a hydrazine monopropellant propulsion system. The monopropellant system tank is a 22-inch flight-heritage titanium tank from Northrop Grumman (formerly ATK), which uses a rubber diaphragm in blowdown configuration with helium pressurant. The tank has capacity for 77 kg of Hydrazine with 91 liter total volume, and a burst pressure of 49.3 bar.

During end-of-life deorbiting, the hydrazine monopropellant is effectively entirely consumed with small amount residuals of less than 1 kg contained by dual-seat solenoid valves, which close upon passivation. Although virtually all monopropellant is consumed or vented to the extent possible, some residuals remain and the helium pressurant used in the monopropellant propulsion system will remain contained by the rubber diaphragm and is thus not ventable.

Multiple factors ensure that ASTRANIS 131W GSO System’s design, including retention of residual helium, is consistent with a safe flight profile and end-of-life passivation, and thus will not pose a risk of creating orbital debris. As noted in the ASTRANIS 131W GSO System Orbital Debris Mitigation Assessment, the tank has been validated against MIL-STD-1522A specifications.²² Furthermore, the amount of helium in the tank at end of life will be minimal (approximately 0.1 kg) and at a pressure (approximately 5 bar at the expected disposal temperature of -50C) well below the burst rating of the tank. Therefore, the risk of break-up from such residuals is negligible.

²² See Technical Appendix, Annex B, at B-15 and B-16.

The Commission has granted a waiver in analogous circumstances, such as for Anik F3, AMAZONAS-3, Arcturus and the AstranisAero/NuView satellites.²³ Astranis respectfully submits that a similar waiver is justified in this circumstance. A grant of the requested waiver would be consistent with Commission policy and precedent, would serve the public interest by enabling new commercial operations at the nominal 131° W.L. orbital location, and would not undermine the purposes of the Commission’s rule.

F. PUBLIC INTEREST CONSIDERATIONS

Grant of this application will enable Astranis to provide high-speed, Ka-band satellite connectivity to government institutions and enterprises across the United States, Canada and Mexico, as discussed above. Such services will also facilitate the commercial development of Astranis, a U.S.-based company, and further enhance U.S. leadership in the global space economy. As this Commission and the new Administration have recognized, ensuring that the FCC is promoting the growth and development of the U.S. space industry and that America maintains its leadership in this field is vital for this country’s future.²⁴ Accordingly, grant of this application would serve the public interest, convenience, and necessity.

²³ See, e.g., Telesat Canada Petition for Partial Waiver of Section 25.283(c), File No. SAT-APL-20111117-00222, Call Sign S2703 (granted April 11, 2012); Hispamar Satélites, S.A. Petition for Declaratory Ruling to Add Amazonas-3 Satellite to the Permitted Space Station List, File No. SAT-PPL-20121018-00183, Call Sign S2886 (granted March 14, 2013); Astranis Bermuda Ltd. Petition for Declaratory Ruling for the Arcturus Satellite to Access the U.S. Market and to Be Added to the Permitted Space Station List at the 163° W.L. Orbital Location in Ka-band Frequencies, File Nos. SAT-PPL-20210607-00075 and SAT-APL-20210921-00125, Call Sign S3092 (granted February 3, 2022); Spacing Guild UK Ltd. Petition for Declaratory Ruling for the AstranisAero East Satellite to Serve the U.S. Market and To Be Added to the Permitted Space Station List at the Nominal 83° W.L. Orbital Location in Ku-band Frequencies, File No. SAT-PDR-20220823-00093, Call Sign S3150 (granted June 5, 2025) .

²⁴ See, e.g., *Transcript of President Donald Trump’s Speech to a Joint Session of Congress*, AP (2025), <https://apnews.com/article/trump-speech-congress-transcript-751b5891a3265ff1e5c1409c391fef7c> (“We are going to conquer the vast frontiers of science, and we are going to lead humanity into space”); *Assessment and Collection of Space and Earth Station Regulatory Fees for Fiscal Year 2024, Further Notice of Proposed Rulemaking*, MD Docket No. 24-85, FCC 25-11, at Statement of Chairman Brendan

III. CONCLUSION

For the reasons stated above, Astranis respectfully requests that the Commission grant this application.

Respectfully submitted,

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Carr (rel. Feb. 25, 2025) (“[I]t is important that the FCC put the right regulatory framework in place—one that will further fuel the space industry’s growth.”).