**Before the**

Federal Communications Commission

Washington, D.C. 20554

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| In the Matter ofMyriota Pty. Ltd. Petition for Declaratory Ruling GrantingAccess to the U.S. Market for Non-Voice, Non-Geostationary Satellite System  | **)****)****)****)****)****)**) | IBFS File No. SAT-PDR-20190328-00020Call Sign: S3047 |

Order and declaratory ruling

**Adopted: May 29, 2020 Released: May 29, 2020**

By the Chief, International Bureau:

# Introduction

1. In this Order and Declaratory Ruling, we grant the petition of Myriota Pty. Ltd. (Myriota) to access the U.S. market to provide non-voice, non-geostationary (NVNG) mobile-satellite services (MSS) using a constellation of 26 small, low-earth orbit (LEO) satellites authorized by Australia. We grant Myriota market access in the 399.9-400.05 MHz (Earth-to-space) and 400.15-401 MHz (space-to-Earth) bands, subject to conditions and other requirements specified herein. Myriota states that its proposed network of satellites will provide low cost communications for a new generation of Internet of Things (IoT) devices.[[1]](#footnote-3) Grant of this petition furthers the Commission’s mandate to “make available, so far as possible, to all the people of the United States . . . rapid, efficient, Nation-wide, and world-wide communication services.”[[2]](#footnote-4)

# Background

1. *Application*. On March 28, 2019, Myriota filed a Petition for Declaratory Ruling seeking access to the U.S. market for its NVNG MSS system using the 399.9-400.05 MHz (Earth-to-space) and 400.15-401 MHz (space-to-Earth) bands. Myriota’s satellites, comprised of a 3U form factor, will operate at an altitude of no greater than 600 kilometers with a minimum operational altitude of 400 kilometers, in 18 orbital planes with each plane containing one to two satellites.[[3]](#footnote-5) In its petition, Myriota requests a waiver of various Commission rules including rules governing the Commission’s processing round procedures, and of certain application filing requirements in the Schedule S form due to that form’s limitations.[[4]](#footnote-6)
2. *Processing Round*. For licensing and grants of U.S. market access for NGSO-like systems, the Commission employs a processing round procedure which includes a public notice announcing a cut-off date for applications to be considered concurrently. After review of each of the applications in the processing round and any pleadings filed in response to the applications, the Commission will grant the application if it finds the applicant is legally, technically, and otherwise qualified, and that grant of the application will serve the public interest.[[5]](#footnote-7) Also, except for NGSO FSS systems as provided by section 25.157(b)(2), if there is not enough spectrum to accommodate all qualified applicants, the Commission will divide the spectrum equally among the applicants, with a pre-set band splitting mechanism to assign spectrum among operators.[[6]](#footnote-8) Each licensee or grantee of U.S. market access will be allowed to choose its specific band assignment before it launches its first satellite.[[7]](#footnote-9) Licensees and grantees may also negotiate alternative agreements to redistribute bandwidth after authorizations have been issued.[[8]](#footnote-10) The purpose of the processing round procedure is to prevent one applicant from unreasonably precluding additional entry by other operators in the requested frequency band.[[9]](#footnote-11)
3. On August 15, 2019, the International Bureau (Bureau) released a public notice accepting for filing Myriota’s Petition.[[10]](#footnote-12) In this notice, the Bureau also initiated a processing round for NVNG MSS systems in the 399.9-400.05 MHz and 400.15-401 MHz bands, and stated that previously filed and pending applications for operations in these bands would be included in the processing round.[[11]](#footnote-13)

# DISCUSSION

1. After review of the record, we conclude that granting Myriota access to the U.S. market for its proposed NVNG MSS satellite system would increase connectivity to a new generation of IoT devices, and thereby serve the public interest, subject to the requirements and conditions specified herein. Below we address the various considerations and conditions for market access in specific frequency bands as well as coordination with Federal operations and other NVNG operations. We also address Myriota’s waiver requests.

## Spectrum Requested

### Operations in the 399.9-400.05 MHz band

1. For its service uplinks, Myriota states its satellites can vary channel bandwidth with on-board processing across the entire 399.9-400.05 MHz band and proposes to operate multiple channels within the requested band.[[12]](#footnote-14) Myriota’s proposed use is consistent with the U.S. Table of Frequency Allocations, which allocates the band to MSS (Earth-to-space) and Radionavigation-Satellite Service on a primary basis for both Federal and non-Federal use. MSS use of the band is limited to the NVNG MSS.[[13]](#footnote-15) Myriota, therefore, is granted market access for operations in this band subject to the conditions herein.
2. We also note that the International Telecommunication Union (ITU) Radio Regulations were recently revised to include a maximum equivalent isotropically radiated power (e.i.r.p.) of any emission of MSS earth stations for this band. Myriota must comply with this requirement that came into force on November 23, 2019.[[14]](#footnote-16)

### Operations in the 400.15-401 MHz band

1. For its service downlinks, Myriota proposes to use the 400.15-401 MHz band. This band is allocated for NVNG MSS and for the Space Operation Service, for both Federal and non-Federal use.[[15]](#footnote-17) Myriota’s proposed use is consistent with the U.S. Table of Frequency Allocation which allocates the band to MSS (space-to-Earth) and limits it to NVNG systems.[[16]](#footnote-18) For this band, Myriota again states it can vary channel bandwidth with on-board processing across the entire range. Myriota states that ideally it seeks access to operate downlink communications using 140 kHz bandwidth.[[17]](#footnote-19) Further, Myriota states it is prepared to operate consistent with the requirements of section 25.260 to protect Department of Defense (DoD) operations in the 400.15-401 MHz band.[[18]](#footnote-20)
2. In addition, as required by section 25.142(a)(2) of our rules, Myriota identified the power flux density (pfd) produced at the Earth’s surface by each space station in the 400.15-401 MHz band. This information is necessary to determine whether coordination with terrestrial services is required.[[19]](#footnote-21) Myriota represents that its pfd on the ground will be no more than -125.033 dB(W/m²/4 kHz) at the lowest altitude, which is below the coordination threshold.[[20]](#footnote-22) Because Myriota’s satellites do not exceed the pfd threshold for coordination with terrestrial services under the Commission’s rules, such coordination will not be required.[[21]](#footnote-23) Myriota also, as required by our rules, identified measures it would employ to protect the Radio Astronomy Service (RAS) in the 406.1-410 MHz band from harmful interference from unwanted emissions.[[22]](#footnote-24)

## Coordination with Federal Systems

1. As noted above, both the 399.9-400.05 MHz and 400.15-401 MHz bands are allocated for Federal and non-Federal use. Several Federal agencies operate in the 400.15-401 MHz band for meteorological operations. For example, the Department of Commerce/National Oceanic and Atmospheric Administration (NOAA) operates systems in this band to collect meteorological data for weather forecasting systems, including radiosondes, rocketsondes, and dropsondes.[[23]](#footnote-25) In addition, the National Aeronautics and Space Administration (NASA) uses the band for services involving the International Space Station, and the Department of Defense (DoD) uses the band for a variety of research, testing and training purposes. As Federal use is coordinated through the National Telecommunications and Information Administration (NTIA), Myriota may not commence operations in the U.S. market until it has completed coordination with NTIA.[[24]](#footnote-26)

## Coordination with NVNG MSS Systems

1. Section 25.142(b)(3), which addresses coordination among NVNG MSS systems, requires Myriota to demonstrate that its satellite system will not cause unacceptable interference to authorized NVNG MSS systems in the frequency bands where it proposes to operate. Under this rule, applicants for authority to operate NVNG MSS systems are “encouraged to coordinate their proposed frequency usage . . . and [a]ll affected applicants, permittees, and licensees shall, at the direction of the Commission, cooperate fully and make every reasonable effort to resolve technical problems and conflicts that may inhibit effective and efficient use of the radio spectrum . . . .”[[25]](#footnote-27) Orbcomm is currently authorized to operate in the 400.15-400.505 MHz and 400.645-401 MHz bands, and Myriota’s operations in these frequency bands must protect Orbcomm operations. The International Bureau also recently granted Hiber U.S. market access for its NVNG MSS system.[[26]](#footnote-28) Myriota notes that since Myriota and Hiber will only transmit for a small fraction of time, there is a low probability of interference between the two systems, even while sharing the same spectrum.[[27]](#footnote-29)
2. Finally, Myriota recognizes that Spire Global also has a pending request to operate in the 399.9-400.05 MHz band for back up transfer and control uplinks for its Earth Exploration Satellite Service system.[[28]](#footnote-30) Myriota notes Spire’s assertions that Spire’s use of this band will be infrequent, and that it is willing to turn off its earth station transmitter when a NVNG operator is in view and therefore Spire’s operations would not preclude use of this band by other NVNG users.[[29]](#footnote-31)
3. We also note that there are additional applicants in the 400 MHz Processing Round.[[30]](#footnote-32) Consequently, we encourage the parties to reach an agreement regarding shared use of the bands for their NVNG MSS systems. Myriota may commence operations in the 399.9-400.05 MHz and 400.15-401 MHz frequency bands under the conditions set forth in this grant.[[31]](#footnote-33)  Myriota also must coordinate with other entities in the 400 MHz Processing Round licensed or granted U.S. market access for this spectrum. Absent a coordination agreement, spectrum will be divided among licensees and grantees of U.S. market access pursuant to section 25.157 of the Commission’s rules.[[32]](#footnote-34)

## Orbital Debris Matters

1. Myriota submitted a description of its orbital debris mitigation plan covering its proposed satellites, noting that its mitigation statement was “forward looking” and that it would review orbit debris mitigation throughout the design of the spacecraft.[[33]](#footnote-35) Myriota’s plan accounts for its first generation of 26 3U satellites. This generation will rely on drag differential for collision avoidance and Myriota states it is working closely with the Joint Space Operations Center (JSpOC) to monitor the spacecraft for in-orbit collision risk.[[34]](#footnote-36) Myriota further states it may upgrade any additional satellites to the 6U form factor and when such a decision is made it will file the appropriate modification application.[[35]](#footnote-37) The Commission recently updated its orbital debris rules and initiated a Further Notice of Proposed Rulemaking.[[36]](#footnote-38) Myriota’s system will be subject to any applicable rules and policies adopted in this proceeding.

## Waiver Requests

1. *Processing Round Waiver*. Myriota requests a waiver of sections 25.156 and 25.157 of the Commission’s rules, which provide for the processing of applications for NGSO-like satellites under a modified processing round framework.[[37]](#footnote-39) As previously noted, the purpose of the processing round procedure under sections 25.156 and 25.157 of the Commission’s rules is to prevent one applicant from unreasonably precluding additional entry by other operators in the requested frequency band. As discussed earlier, there were already applications and petitions filed for these bands. Accordingly, in August 2019, the International Bureau opened the 400 MHz Processing Round and included Myriota’s Petition in this processing round along with other previously filed applications and petitions for market access. Myriota has since acknowledged that it is included in the 400 MHz Processing Round.[[38]](#footnote-40) Therefore, we no longer need to address Myriota’s waiver request as opening of the 400 MHz Processing Round (and Myriota’s acknowledgement that it is now included in this processing round) has mooted this issue.
2. *Schedule S Waiver*. As required by the Commission’s rules, Myriota submitted a Schedule S form for its application, which requires certain technical information in a prescribed format. Myriota states that it is not able to accurately describe its system in two respects due to limitations on the form. The first concerns section 25.114(c)(4)(v) which applies to saturation flux density values for bent pipe systems only. Because this entry is not applicable to Myriota’s system and it could not indicate such, Myriota states it entered values of “0” and “-0.1” for these parameters. The second concerns numerical values for antenna pointing and rotational error. Myriota anticipates that its antenna will have up to five degree pointing and rotational error, but Schedule S limits the value to two. Myriota states it entered this maximum value although it does not reflect the value that should have been entered.[[39]](#footnote-41)
3. In view of these limitations to fill in Schedule S and the fact that Myriota has explained its system’s parameters for these fields, we find that the requested relief would not undermine the policy objective of the rules in question and strict compliance with certain aspects of the Schedule S form would be inconsistent with the public interest.[[40]](#footnote-42) Accordingly, we grant Myriota’s request and find that a waiver of the requirement to complete certain aspects or fields of Schedule S is warranted in this case.

## Other Matters

1. In addition to complying with the applicable general provisions of part 25, the Commission adopted specific rules governing NVNG MSS systems. Myriota’s grant of U.S. market access is subject to compliance with these rules, set forth in section 25.142, and conditioned herein. These rules include the pfd requirement noted above, and compliance with the emission limitations set forth in section 25.202(f).[[41]](#footnote-43)

# ORDERING CLAUSES

1. Accordingly, IT IS ORDERED that Myriota’s Petition for Declaratory Ruling to access the U.S. market using 26 satellites capable of operating in the 399.9-400.05 MHz (Earth-to-space) and 400.15-401 MHz (space-to-Earth) bands is GRANTED pursuant to section 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. § 303(r), and sections 25.137(c) and 0.261 of the Commission’s rules, 47 CFR §§ 25.137(c), 0.261.
2. IT IS FURTHER ORDERED that Myriota must comply with all existing and future space station coordination agreements reached between Australia and other administrations. In the absence of a coordination agreement, such communications must comply with applicable provisions of the International Telecommunication Union (ITU) Radio Regulations as the Commission cannot guarantee the success of the required conditions.
3. IT IS FURTHER ORDERED that Myriota may not provide voice services, 47 CFR § 25.142(b)(1).
4. For operations in the 400.15-401 MHz (space-to-Earth) band, Myriota must comply with the applicable pfd limits established in Appendix 5, Annex 1 of the ITU Radio Regulations.
5. IT IS FURTHER ORDERED that Myriota’s grant of U.S. market access is subject to the following requirements and conditions:

a. Myriota must comply with time sharing requirements with Department of Defense satellites for its operations in the 400.15-401 MHz (space-to-Earth) band, 47 CFR § 25.260.

b. Myriota must establish a 24-hour per day contact person and telephone number so that claims of harmful interference into Department of Defense earth stations and other operational issues can be reported and resolved expeditiously. This contact information must be filed with the Commission within 14 days of the release of this Order.

1. IT IS FURTHER ORDERED that Myriota may not commence operations in the U.S. market until it has completed coordination with the National Telecommunications and Information Administration.
2. IT IS FURTHER ORDERED that prior to commencing operations in the U.S. market in the 400.15-401 MHz (space-to-earth) band, Myriota must certify that it has completed a coordination agreement with the Department of Commerce/National Oceanic and Atmospheric Administration for operations in this band.
3. IT IS FURTHER ORDERED that prior to commencing operations in the U.S. market in the 400.15-400.505 MHz (space-to-Earth) and 400.645-401 MHz (space-to-earth) bands, Myriota must certify that it has completed a coordination agreement with Orbcomm in these frequency bands. Absent a coordination agreement with Orbcomm, Myriota must file a modification application demonstrating that such operations will not interfere with Orbcomm, and it may not commence operations in these bands until grant of any modification application.
4. IT IS FURTHER ORDERED that, in the absence of a coordination agreement among the operators of systems in the 400 MHz Processing Round that have been licensed or granted access to the United States market, the available spectrum will be divided equally among these systems.
5. IT IS FURTHER ORDERED that, if a division of spectrum occurs, Myriota must comply with the requirements of section 25.157 for band selection and notification, 47 CFR § 25.157.
6. IT IS FURTHER ORDERED that Myriota must comply with ITU Radio Regulation 5.260, as modified by ITU-WRC 19, regarding the maximum e.i.r.p. of any emission of MSS earth stations in the 399.9-400.05 MHz band.
7. IT IS FURTHER ORDERED that this market access grant and any earth station licenses granted in the future are subject to modification to bring them into conformance with any applicable rules and policies adopted by the Commission in the future, including [*Mitigation of Orbital Debris in the New Space Age*](https://1.next.westlaw.com/Link/Document/FullText?findType=Y&serNum=2046066375&pubNum=0004493&originatingDoc=Ic12e37ecb8f511e9b8aeecdeb6661cf4&refType=CA&originationContext=document&transitionType=DocumentItem&contextData=(sc.Search)), Report and Order and Further Notice of Proposed Rulemaking, FCC 20-54 (rel. April 24, 2020).
8. IT IS FURTHER ORDERED that Myriota’s request for a waiver of sections 25.156 and 25.157 are dismissed as moot. 47 CFR §§ 25.156 and 25.157.
9. IT IS FURTHER ORDERED that Myriota’s request for waiver of certain filing requirements in the Schedule S form is granted.
10. IT IS FURTHER ORDERED that this market access grant IS SUBJECT to the following requirements:

a. Myriota must post a surety bond in satisfaction of 47 CFR §§ 25.165(a)(1) & (b) no later than June 29, 2020, and thereafter maintain on file a surety bond requiring payment in the event of a default in an amount, at minimum, determined according to the formula set forth in 47 CFR § 25.165(a)(1); and

 b. Myriota must launch 50 percent of the maximum number of proposed space stations, place them in the assigned orbits, and operate them in accordance with this grant no later than May 29, 2026, and must launch the remaining space stations necessary to complete its authorized service constellation, place them in their assigned orbits, and operate them in accordance with this grant no later than May 29, 2029. 47 CFR § 25.164(b).

c. Failure to post and maintain a surety bond will render this grant null and void automatically, without further Commission action. Failure to meet the milestone requirements of 47 CFR § 25.164(b) may result in Myriota’s grant being reduced to the number of satellites in use at the milestone date. Failure to comply with the milestone requirements of 47 CFR § 25.164(b) will also result in forfeiture of Myriota’s surety bond. By June 13, 2026, Myriota must either demonstrate compliance with this milestone requirement or notify the Commission in writing that the requirement was not met. 47 CFR § 25.164(f).

1. IT IS FURTHER ORDERED that Myriota is afforded 30 days from the date of release of this Order to decline this grant as conditioned. Failure to respond within that period will constitute formal acceptance of the authorization as conditioned.
2. IT IS FURTHER ORDERED that petitions for reconsideration under section 1.106 or applications for review under section 1.115 of the Commission's Rules, [47 CFR §§ 1.106](https://1.next.westlaw.com/Link/Document/FullText?findType=L&pubNum=1000547&cite=47CFRS1.106&originatingDoc=Ib64f5c852bde11dbbb4d83d7c3c3a165&refType=LQ&originationContext=document&transitionType=DocumentItem&contextData=(sc.Search)) and [1.115,](https://1.next.westlaw.com/Link/Document/FullText?findType=L&pubNum=1000547&cite=47CFRS1.115&originatingDoc=Ib64f5c852bde11dbbb4d83d7c3c3a165&refType=LQ&originationContext=document&transitionType=DocumentItem&contextData=(sc.Search)) may be filed within 30 days of the date of public notice of this Order.

 FEDERAL COMMUNICATIONS COMMISSION

 Thomas P. Sullivan

 Chief, International Bureau

1. Myriota Pty. Ltd., IBFS File No. SAT-PDR-20190328-00020, Narrative at 2 (Myriota Petition). [↑](#footnote-ref-3)
2. 47 U.S.C. § 151. [↑](#footnote-ref-4)
3. Myriota Petition, Attachment A at 1-2. Myriota’s telemetry, tracking, and control operations will be performed in the 2025-2110 MHz band for uplinks, and in the 2200-2290 MHz and 8025-8400 MHz bands for downlinks. Because these operations will be from locations outside of the United States Myriota does not request U.S. market access for these operations. *Id*. at 3. [↑](#footnote-ref-5)
4. Myriota Petition, Attachment – Waiver Requests at 1, 7. [↑](#footnote-ref-6)
5. 47 CFR §§ 25.156 and 25.157. [↑](#footnote-ref-7)
6. *Amendment of the Commission’s Space Station Licensing Rules and Policies*, First Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 10760, 10783, para. 48 (2003) (*Space Station Reform Order*). “NGSO-like” is a term used in the Commission's rules to describe systems which are either (1) NGSO satellite systems or (2) GSO mobile satellite service (MSS) satellite systems that communicate with earth stations using non-directional antennas. *See* [47 CFR § 25.157(a)](https://1.next.westlaw.com/Link/Document/FullText?findType=L&pubNum=1000547&cite=47CFRS25.157&originatingDoc=I17d675c5443b11e8a7a8babcb3077f93&refType=RB&originationContext=document&transitionType=DocumentItem&contextData=(sc.Search)#co_pp_8b3b0000958a4). [↑](#footnote-ref-8)
7. 47 CFR § 25.157(f). [↑](#footnote-ref-9)
8. *Space Station Reform Order*, 18 FCC Rcd at 10781, para 45. [↑](#footnote-ref-10)
9. *See* [*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, 7829, para 61 (2017)](https://1.next.westlaw.com/Link/Document/FullText?findType=Y&serNum=2042762251&pubNum=0004493&originatingDoc=I5684ffb7f4e711e9812e8c769f754212&refType=CA&fi=co_pp_sp_4493_7829&originationContext=document&transitionType=DocumentItem&contextData=(sc.Search)#co_pp_sp_4493_7829). (“The purpose of the recent processing rounds was to establish a sharing environment among NGSO systems, to provide a measure of certainty in lieu of adopting an open-ended requirement to accommodate all future applicants”). [↑](#footnote-ref-11)
10. Satellite Policy Branch Information, Myriota Pty. Ltd. Petition Accepted for Filing, IBFS File No. SAT-PDR-20190328-00020, Cut-Off Established for Additional NVNG MSS Applications or Petitions for Operations in the 399.9-400.05 MHz and 400.15-401 MHz Bands, DA 19-779, 34 FCC Rcd 7185 (2019) (Processing Round Public Notice). We refer to the processing round established by the Processing Round Public Notice as the “400 MHz Processing Round.” [↑](#footnote-ref-12)
11. *Id*. The Processing Round Public Notice also stated that petitions for U.S. market access filed by Hiber, Inc. and Spire Global, Inc. would be included in that processing round. Kinéis filed an application in response to the notice. Kinéis Petition for Declaratory Ruling Pursuant to Section 25.137 of the Commission’s Rules Requesting Access to the U.S. Market for a Non-Voice, Non-Geostationary Satellite Network, IBFS File No. **SAT-PDR-20191011-00113. In addition, the 400 MHz Band Processing Round includes Astro Digital, which was subject to a separate accepted for filing public notice that did not initiate a processing round and was granted in part and deferred in part.** **Astro Digital, IBFS File No. SAT-LOA-20170508-00071 (grant stamped Aug. 1, 2018).  Within the frequency ranges included in the 400 MHz Processing Round, Astro Digital was authorized to use a telemetry carrier (space-to-Earth) centered at 400.5 MHz (center frequency). Its request to use other portions of the 399.9-400.05 MHz and 400.15-401 MHz bands remains pending and is included in the 400 MHz Processing Round** for the pending portion of its application and any modification to its authorization resulting from consideration of the lead and competing applications in the 400 MHz Processing Round. ***See* Satellite Policy Branch Information, Public Notice, DA 20-184 (Feb. 21, 2020).** We also note that Swarm Technologies, Inc. filed a petition to serve the U.S. market using the 399.9-400.05 MHz and 400.5-401 MHz bands, and requested a waiver of 47 CFR § 25.155 to be included in the 400 MHz Processing Round. No determination has yet been made regarding Swarm’s petition or waiver request. *See* Swarm Technologies, Inc., IBFS File No. SAT-PDR-20200228-00021. [↑](#footnote-ref-13)
12. Myriota Petition, Attachment A at 2-3. [↑](#footnote-ref-14)
13. 47 CFR § 2.106, footnote US320. Federal use of NVNG MSS is pursuant to frequency assignment policies of the National Telecommunications and Information Administration (NTIA). [↑](#footnote-ref-15)
14. ITU-R Radio Regulations, footnote 5.260A (WRC-19). [↑](#footnote-ref-16)
15. Space Operation Service refers to the transmission of the satellite telemetry data from the satellite to receiving earth station(s) for the mobile satellite service and earth exploration satellite service operating in this band. [↑](#footnote-ref-17)
16. 47 CFR § 2.106, footnote US320. The band 400.15-401 MHz is also allocated to the space research service in the space-to-space direction for communications with manned space vehicles.  47 CFR § 2.106, footnote 5.263. [↑](#footnote-ref-18)
17. Myriota Petition, Attachment A at 8. [↑](#footnote-ref-19)
18. *Id*., at 17. [↑](#footnote-ref-20)
19. 47 CFR § 25.142(a)(2). These pfd limits are set forth in the ITU Radio Regulations at Appendix 5, Annex 1 (ITU-RR App. 5, Annex 1). [↑](#footnote-ref-21)
20. Myriota Petition, Attachment A at 12. [↑](#footnote-ref-22)
21. 47 CFR § 25.142(a)(2) referencing 2.106. *See* Footnote 5.264, which in turn references ITU Annex 1 of Appendix 5, requiring coordination of MSS space stations with terrestrial services if the pfd exceeds -125 dB (W/m²/4 kHz). 47 CFR § 2.106, footnote 5.264. [↑](#footnote-ref-23)
22. Myriota Petition, Attachment A at 13 and 47 CFR § 25.142(a)(2). [↑](#footnote-ref-24)
23. 47 CFR § 2.106. Radiosondes are battery operated sensor packages lifted through the atmosphere by a balloon and used to transmit data to a ground station receiver. Dropsondes, in turn, are sensor packages dropped from aircraft and data is transmitted to an aircraft receiver for processing. Rocketsondes are small rocket systems used to obtain high altitude temperature, density, and wind measurements. [↑](#footnote-ref-25)
24. 47 CFR § 25.142(b)(2)(ii). [↑](#footnote-ref-26)
25. 47 CFR § 25.142(b)(3). [↑](#footnote-ref-27)
26. *Hiber, Inc*., Order and Declaratory Ruling, DA 20-491 (Int’l Bur. May 6, 2020). [↑](#footnote-ref-28)
27. Myriota Petition, Attachment A at 9. [↑](#footnote-ref-29)
28. *Id*. at 10. [↑](#footnote-ref-30)
29. Spire requests use of the 399.9-400.05 MHz band for telemetry, tracking and control uplinks only, along with the 402-403 MHz band. Spire states it listed multiple uplink bands “to increase the flexibility it has to coordinate spectrum use with existing users and to operate in accordance with both the ITU and domestic … tables of frequency allocations.” Spire Global, Inc., IBFS File No. SAT-PDR-20190321-00018, Narrative at 15-16. Spire’s application was granted in part and deferred in part. *See* Spire Global, Inc., IBFS File No. SAT-PDR-20190321-00018, n. 2 (grant stamped Oct. 7, 2019). [↑](#footnote-ref-31)
30. *See* Kinéis, Public Notice, Satellite Policy Branch, Report No. SAT-01449 (Mar. 6, 2020), and Astro Digital, Public Notice, Satellite Policy Branch, Report No. SAT-01447 (Feb. 21, 2020). [↑](#footnote-ref-32)
31. *See* in particular conditions in paragraphs 26 and 27 below. [↑](#footnote-ref-33)
32. 47 CFR § 25.157(e). [↑](#footnote-ref-34)
33. Myriota Petition, Attachment A at 18. [↑](#footnote-ref-35)
34. Letter to Jose Albuquerque, Chief, Satellite Division, from William Wiltshire, Counsel to Myriota (July 19, 2019). [↑](#footnote-ref-36)
35. *Id*. at 2. [↑](#footnote-ref-37)
36. *See* *Mitigation of Orbital Debris in the New Space Age*, Report and Order and Further Notice of Proposed Rulemaking, FCC 20-54 (rel. April 24, 2020). [↑](#footnote-ref-38)
37. Myriota Petition, Attachment – Waivers at 1-6. [↑](#footnote-ref-39)
38. *See* Letter from William M. Wiltshire, Counsel for Myriota, to Marlene H. Dortch, Secretary, Federal Communications Commission (filed Dec. 20, 2019 in IBFS File Nos. SAT-PDR-20180910-00069 and SAT-PDR-20190328-00020); Letter from William M. Wiltshire, Counsel for Myriota, to Marlene H. Dortch, Secretary, Federal Communications Commission (filed Jan. 24, 2020 in IBFS File Nos. SAT-PDR-20180910-00069 and SAT-PDR-20190328-00020). [↑](#footnote-ref-40)
39. Myriota Petition, Attachment – Waivers at 7. [↑](#footnote-ref-41)
40. *See generally*, *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969), *cert. denied*, 409 U.S. 1027 (1972); *see also* [*Northeast Cellular Telephone Co. v*. *FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990)](https://1.next.westlaw.com/Link/Document/FullText?findType=Y&serNum=1990047144&pubNum=350&originatingDoc=I8a3ce031bfd911e28501bda794601919&refType=RP&fi=co_pp_sp_350_1166&originationContext=document&transitionType=DocumentItem&contextData=(sc.Search)#co_pp_sp_350_1166). [↑](#footnote-ref-42)
41. 47 CFR §§ 25.142(a)(2), (a)(3). [↑](#footnote-ref-43)