

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

In the Matter of	)	
	)	
<b>SWARM TECHNOLOGIES INC.</b>	)	File No. SAT-PDR-20200228-00021
	)	
Petition for Declaratory Ruling to	)	Call Sign S3064
Access the U.S. Market using	)	
NVNG UHF MSS Spectrum	)	

**PETITION TO DEFER AND COMMENTS  
OF MYRIOTA PTY. LTD.**

Myriota Pty. Ltd. (“Myriota”) respectfully requests that the Commission defer consideration of the above-captioned petition filed by Swarm Technologies Inc. (“Swarm”).<sup>1</sup> Swarm sought and obtained a license to operate a non-voice, non-geostationary (“NVNG”) system of 150 satellites in the 137-138 MHz (space-to-Earth) and 148-149.95 MHz (Earth-to-space) bands<sup>2</sup> during the same period the Commission announced a non-geostationary orbit (“NGSO”) application processing round in ultra-high frequency (“UHF”) mobile-satellite service (“MSS”) spectrum bands.<sup>3</sup> In the instant petition, filed four and a half months after the cut-off date for the NVNG UHF processing round, Swarm asks the Commission to waive the filing date requirement for comparative consideration of NGSO applications set forth in Section 25.155(b) of the Commission’s Rules and allow Swarm to access the U.S. market using a separately licensed NGSO system of 450 satellites operating in this spectrum. Although Swarm suggests it

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<sup>1</sup> Swarm Technologies, Inc., *Petition for Declaratory Ruling to Access the U.S. Market using NVNG UHF MSS Spectrum*, Call Sign S3064, IBFS File No. SAT-PDR-20200228-00021 (filed Feb. 28, 2020) (“*Swarm Petition*”).

<sup>2</sup> See Swarm Technologies, Inc., *Application for Authority to Deploy and Operate a Non-Voice, Non-Geostationary Lower Earth Orbit Satellite System in the Mobile-Satellite Services*, Memorandum Opinion, Order and Authorization (rel. Oct. 17, 2019) (“*Swarm Order*”).

<sup>3</sup> Satellite Policy Branch Information, Myriota Pty. Ltd. Petition Accepted for Filing, IBFS File No. SAT-PDR20190328-00020, 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 (Aug. 15, 2019) (“*Processing Round Public Notice*”).

“is willing to operate on a non-interference basis with other users of the spectrum,”<sup>4</sup> the *Swarm Petition* does not establish a basis for the requested rule waiver or that Swarm’s newly proposed operations can fully protect systems authorized as part of the NVNG UHF processing round.

The Commission should give effect to its processing round rules and defer consideration of the *Swarm Petition*. Only after systems authorized in the NVNG UHF processing round have completed coordination, or in the absence of coordination are assigned spectrum in accordance with the Commission’s rules, can the spectrum environment be sufficiently defined to enable Swarm to establish that it can operate on an unprotected, non-interference basis with respect to other NVNG UHF systems. In the meantime, Myriota looks forward to reviewing additional information from Swarm during the pleading cycle of this proceeding to enable the Commission and other interested parties to better assess its waiver request, as well as the interference and operational impacts of Swarm’s proposed operations.

## **I. INTRODUCTION**

The NVNG UHF processing round was announced by the International Bureau (“Bureau”) on August 15, 2019, with an application cut-off date of October 15, 2019.<sup>5</sup> The processing round was initiated in response to a petition filed by Myriota in March 2019 for U.S. market access to provide Internet of Things (“IoT”) services in NVNG UHF spectrum<sup>6</sup> and included the previously filed petition of Hiber Inc. for U.S. market access.<sup>7</sup> In response to the Bureau’s public notice announcing the processing round, only one additional party timely filed a

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<sup>4</sup> *Swarm Petition* at 34.

<sup>5</sup> See *Processing Round Public Notice*.

<sup>6</sup> Myriota Pty. Ltd., *Petition for Declaratory Ruling Granting Access to the U.S. Market for Non-Voice, Non-Geostationary Satellite System*, IBFS File No. SAT-PDR-20190328-00020 (filed Mar. 28, 2019) (“*Myriota Petition*”).

<sup>7</sup> See *Processing Round Public Notice* at 1.

request for authority to operate in NVNG UHF spectrum.<sup>8</sup> During the same time period, Swarm was pursuing a Commission license to operate an NGSO system in NVNG very high frequency (“VHF”) spectrum, which was granted on October 17, 2019,<sup>9</sup> shortly after the cut-off date for applications in the NVNG UHF processing round.<sup>10</sup> Swarm did not file an application in the NVNG UHF processing round by the cut-off date.<sup>11</sup>

The Commission’s NGSO application processing round regime is intended to “ensure orderliness, expedition and finality in the licensing process” while also achieving “fairness among applicants and permit[ting] the rapid dispatch of Commission business.”<sup>12</sup> In establishing these rules, the Commission stated its twin goals of establishing “satellite licensees’ operating rights clearly and quickly” and ensuring “that there is the most efficient use of the satellite spectrum and orbit resources.”<sup>13</sup> These fundamental public interest objectives are furthered by adherence to the Commission’s processing round rules in this proceeding.

The *Swarm Petition* neither establishes a sufficient basis for the Commission to waive its NGSO application processing rules nor explains why Swarm did not participate in the NVNG

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<sup>8</sup> 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 (filed Oct. 11, 2019).

<sup>9</sup> See generally *Swarm Order*.

<sup>10</sup> See *Swarm Petition* at 33-34, n.59 (citing *Processing Round Public Notice* and acknowledging that “[t]he Commission established a cut-off date of October 15, 2019 for additional applications”).

<sup>11</sup> See *id.*; see also 47 CFR 25.155(b) (“A license application for NGSO-like satellite operation, as defined in §25.157(a), will be entitled to comparative consideration with one or more mutually exclusive applications only if the application is received by the Commission in a condition acceptable for filing by the “cut-off” date specified in a public notice.”).

<sup>12</sup> EchoStar Satellite Corp., *For Modification of Ka-Band Authorization*, Memorandum Opinion and Order, 16 FCC Rcd. 14300, ¶ 5 (IB 2001) (“*Echostar Waiver Order*”), recon. denied, 17 FCC Rcd. 8305 (IB 2002).

<sup>13</sup> *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, ¶ 7 (2003) (“*Space Station Reform Order*”).

UHF processing round. The *Swarm Petition* also lacks persuasive information regarding Swarm’s ability to protect other NVNG UHF operations. Moreover, the Commission has already commenced the authorization process in the current round and applicable conditions contemplate that processing-round participants will coordinate their operations or the available spectrum will be split among them.<sup>14</sup> In these circumstances, considering Swarm’s late-filed request for scarce NVNG UHF spectrum before authorization and coordination of all systems proposed in the processing round would not serve the public interest.

Accordingly, the Commission should defer consideration of the *Swarm Petition* until after it has ruled on the petitions of NVNG UHF processing-round participants and authorized operations have been coordinated or, to the extent such coordination is not successful, available spectrum has been divided among them. In this way, processing-round participants will have the spectrum access rights afforded to them by the Commission’s rules and policies, and Swarm will have the opportunity to supplement its request for waiver and establish that its proposed operations will not adversely affect other NVNG UHF systems.

## **II. CONSIDERATION OF THE *SWARM PETITION* SHOULD BE DEFERRED**

Authorization of the *Swarm Petition* should be deferred until after systems authorized in the processing round have completed coordination or received spectrum assignments in accordance with the Commission’s rules, as applicable, and Swarm has supplemented the record to meet the high standard for waiver of the processing round rules and to establish that it can fully protect other NVNG UHF operations.

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<sup>14</sup> See Hiber Inc., *Petition for Declaratory Ruling to Access U.S. Market Using the Hiberband Low-Earth Orbit System*, Order and Declaratory Ruling, IBFS File No. SAT-PDR-20180910-00069 (rel. May 6, 2020) at ¶ 24 (“*Hiber Authorization*”) (“in the absence of a coordination agreement among the operators ... available spectrum will be divided equally among these systems”).

**A. The NVNG UHF Processing Round Has Made Substantial Progress and Should Not Be Disrupted.**

Participants in the NVNG UHF processing round have made substantial progress since filing their petitions for U.S. market access last year. For example, active coordination discussions among Myriota, Hiber, and Kinéis have progressed in reliance on the Commission’s processing round rules and in anticipation of near-term grant, and the processing-round participants expect to reach an agreement in due course. Furthermore, the Commission recently authorized one of the three processing-round participants and imposed a condition requiring coordination or spectrum splitting among the participants.<sup>15</sup>

It would be inappropriate to disrupt a processing round that has been underway for many months in which the Commission has already granted an authorization and where ongoing coordination discussions are based on established participation in the NVNG UHF processing round. Were the Commission to grant the *Swarm Petition*, all parties would have to start over again from scratch in a far more challenging operational environment. Entry of a new applicant at this late stage will be prejudicial to participants who are already coordinating a vanishingly small amount of allocated uplink spectrum.<sup>16</sup>

**B. The *Swarm Petition* Fails to Meet the High Bar for a Waiver of the Commission’s Rules.**

The *Swarm Petition* does not satisfy the high standard for waiver of the Commission’s rules and does not explain why Swarm did not timely participate in the NVNG UHF processing

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<sup>15</sup> See generally *id.*

<sup>16</sup> The small (150 kHz) NVNG UHF uplink band at 399.9-400.05 MHz is subject to significant spectrum access constraints which would be exacerbated by the introduction of another system in the current processing round. The band is further constrained given the outcome of WRC-19, which enabled use of the upper 30 kHz for telemetry, tracking, and control (“TT&C”) operations, making it more difficult for service links in that portion of the band. See World Radiocommunication Conference-19 Final Acts, Art. 5, at 16 (adding in-band power limits for earth stations operating in the mobile-satellite service 399.9-400.05 MHz) (“*WRC-19 Final Acts*”).

round. The Commission may grant waivers of its rules if good cause is shown.<sup>17</sup> A request for waiver may meet this standard by demonstrating that: (i) application of the rule would be inconsistent with the public interest; and (ii) the requested relief will not undermine the policy objective of the rule.<sup>18</sup> Swarm has not met either of these requirements.

First, although it notes the usual public interest considerations in support of granting its petition, Swarm has not provided public interest benefit to justify a waiver of the NGSO processing round cut-off date requirement. The *Swarm Petition* describes no extenuating circumstances justifying failure to participate in the NVNG UHF processing round.<sup>19</sup> Swarm simply suggests it “is willing to operate on a non-interference basis with other users of the spectrum,”<sup>20</sup> but this assertion is unclear and unsupported by detailed interference analysis.

Second, the relief requested by Swarm may well undermine the policy objective of the Commission’s processing round rules. As Swarm notes, the processing round framework is designed to “establish a sharing environment and to provide certainty in lieu of adopting an open-ended requirement to accommodate all future applicants.”<sup>21</sup> However, Swarm did not explain why a waiver in this instance would not undermine the purpose of the rule. A waiver in such circumstances would simply invite additional late-filed system proposals after the cut-off date, undermining if not eliminating regulatory certainty for processing-round participants.

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<sup>17</sup> 47 C.F.R. § 1.3.

<sup>18</sup> See *WAIT Radio v. FCC*, 418 F.2d 1153 (D.C. Cir. 1969).

<sup>19</sup> The Commission has stated it “will waive deadlines only in extreme cases involving extraordinary circumstances.” *Echostar Waiver Order* at ¶ 5.

<sup>20</sup> *Swarm Petition* at 34.

<sup>21</sup> *Swarm Petition* at 36 (citing Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters, FCC 17-122 (rel. Sep. 27, 2017) at ¶ 61 (“*NGSO Order*”).

**C. Swarm Should Clarify its Ability to Operate on an Unprotected, Non-Interference Basis Vis-à-Vis Other NVNG UHF Systems.**

Swarm notes that it uses a protocol with Carrier Sense Multiple Access and Collision Avoidance (“CSMA/CA”) in order to avoid interference.<sup>22</sup> The CSMA/CA “listen-before-talk” protocol may be applicable when sharing spectrum with terrestrial services in close proximity, but it is not clear how it can be applied to avoid uplink interference in the 399.9-400.05 MHz (Earth-to-space) band. According to the *Swarm Petition*, “[a] Swarm transmitter, using a carrier-sensing mechanism, determines whether another transmission is in progress before initiating a transmission. If a carrier is sensed, the transmitter waits for the transmission in progress to end before initiating its own transmission.”<sup>23</sup>

There is no channelization plan or transmit timing requirements imposed on NVNG UHF systems so it is not certain how CSMA/CA can avoid interference from Swarm’s proposed system into other NVNG UHF systems. The apparent inconsistency between Swarm’s commitment “to coordinating with all planned and operational satellite systems in the NVNG UHF band” and its system “designed to coexist with other users and avoid interference to existing operations in its assigned uplink and downlink bands” may also be telling.<sup>24</sup> Thus, Swarm should clarify how its proposed system may operate on an unprotected, non-interference basis vis-à-vis systems authorized as part of the current NVNG UHF processing round.

**D. Additional Information May Cure the Deficiencies in the *Swarm Petition*.**

Myriota has identified several issues of concern with respect to the *Swarm Petition*. Although Myriota believes the Commission’s rules and policies permit consideration of the

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<sup>22</sup> *Swarm Petition* at 35.

<sup>23</sup> *Id.*

<sup>24</sup> Compare *id.* at 25 with *id.* at 35.

*Swarm Petition* only after the petitions of current NVNG UHF processing-round participants have been addressed, it may be possible for Swarm to provide sufficient additional information to justify a waiver of the NGSO processing round rules and establish that its proposed system will not adversely affect other NVNG UHF systems.

### **III. CONCLUSION**

For the foregoing reasons, the Commission should defer consideration of the *Swarm Petition* until the NVNG UHF operational environment can be sufficiently defined to enable Swarm to establish that it can operate on an unprotected, non-interference basis with respect to other users of the spectrum. In the meantime, Swarm may supplement the record during the pleading cycle of this proceeding to enable the Commission and other interested parties to better assess its waiver request, as well as the interference and operational impacts of Swarm's newly proposed system.

Respectfully submitted,

**MYRIOTA PTY. LTD.**



Carlos Nalda  
Jonathan Bair  
LMI Advisors, LLC  
2550 M Street, NW, Suite 300  
Washington, DC 20037

*On behalf of MYRIOTA PTY. LTD.*

Janek Kaucz  
Spectrum & Regulatory Specialist  
Myriota Pty. Ltd.  
Eleanor Harrald Building  
Frome Road, Adelaide  
South Australia 5000

May 18, 2020



## CERTIFICATE OF SERVICE

I, Jennifer White, do hereby certify that on May 18, 2020, I served a true and correct copy of this Petition to Defer and Comments of Myriota Pty. Ltd. by first-class and electronic mail on the following:

Tim Bransford  
Morgan, Lewis & Bockius LLP  
1111 Pennsylvania Avenue, NW  
Washington, DC 20004



Jennifer White  
LMI Advisors, LLC