

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

In the Matter of	)	
	)	WC Docket No. 09-197
Petition of Starlink Services, LLC	)	
for Designation as an Eligible	)	
Telecommunications Carrier	)	
	)	
	)	

**PARTIAL OPPOSITION OF DISH NETWORK CORPORATION**

DISH Network Corporation (“DISH”) submits this opposition to the Petition of Starlink Services, LLC (“SpaceX”) for designation as an eligible telecommunications carrier (“ETC”) for purposes of becoming eligible to receive funding from the Rural Digital Opportunity Fund (“RDOF”).<sup>1</sup> DISH only objects to SpaceX’s requested ETC status insofar as SpaceX proposes to use the 12.2-12.7 GHz band (“12 GHz band”) for its service; DISH does not object to ETC status for SpaceX based on its access to other frequency bands. But, to the extent that the requested ETC designation is based on the 12 GHz band, it should be denied or deferred, pending the resolution of the DBS interference concerns arising in that band from SpaceX’s proposed modification of its satellite system,<sup>2</sup> and the sharing questions presented in the Commission’s recently initiated 12 GHz rulemaking.<sup>3</sup>

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<sup>1</sup> Petition of Starlink Services, LLC for Designation as an Eligible Telecommunications Carrier, WC Docket No. 09-197 (Feb. 3, 2021) (“SpaceX Petition”). Space Exploration Technologies Corp. assigned its winning bid to SpaceX. *See* SpaceX Petition at 2.

<sup>2</sup> Application of Space Exploration Holdings, LLC for Modification of Authorization for the SpaceX NGSO Satellite System, IBFS File No. SAT-MOD-20200417-00037 (filed Apr. 17, 2020).

<sup>3</sup> *Expanding Flexible Use of the 12.2-12.7 GHz Band*, WT Docket No. 20-443, Notice of Proposed Rulemaking, FCC 21-13, ¶ 5 (Jan. 15, 2021) (“12 GHz NPRM”).

The reason for DISH’s request is simple: SpaceX originally proposed a system of thousands of satellites at orbital altitudes ranging from 1,100 km to 1,325 km, transmitting to the U.S. with a minimum elevation angle of 40 degrees.<sup>4</sup> The Commission granted a license for that system on the condition, among others, that it is “subject to modification to bring it into conformance with **any** rules or policies adopted by the Commission in the future.”<sup>5</sup>

SpaceX has now applied for authority to substantially modify its system. The modification is far from trivial. SpaceX wants to fly its satellites at less than half the altitude (540 km to 570 km) and transmit to the U.S. at close to half the elevation angle. That is problematic for the 12 GHz band because NGSO users can only operate in that band on a basis of not causing harmful interference into Direct Broadcast Satellite (“DBS”) systems,<sup>6</sup> including the 13 geostationary DBS satellites owned or leased by DISH. But, as demonstrated by a study recently commissioned by DISH using SpaceX’s own data, this proposed modification could imperil DBS transmissions in the 12 GHz band.

In addition, the Commission initiated a rulemaking to consider sharing the 12 GHz band among DBS, NGSO satellite, and terrestrial services.<sup>7</sup> As a result, SpaceX cannot credibly claim that it will have “sufficient access” to the 12 GHz band for 10 years (as required by the RDOF rules), and the Commission should not entertain such a showing. The Commission has faced this question before. In establishing the rules for the RDOF auction, the Commission decided against

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<sup>4</sup> See Space Exploration Holdings, LLC, File No. SAT-LOA-20161115-00118, Legal Narrative at 1-2, 6 (granted Mar. 29, 2018).

<sup>5</sup> Space Exploration Holdings, LLC *Application for Approval for Orbital Deployment and Operating Authority for the SpaceX NGSO Satellite System*, Memorandum Opinion Order and Authorization, 33 FCC Rcd. 3391, 3407 ¶ 40(r) (2018) (“SpaceX Order”) (emphasis added).

<sup>6</sup> See 12 GHz NPRM ¶ 5.

<sup>7</sup> See *id.* ¶ 20.

including the 5.9 GHz band as one of the bands through which the auction winners could discharge their obligations in light of a pending notice of proposed rulemaking involving that band.<sup>8</sup>

## **I. BACKGROUND**

To qualify for universal service funds, an entity must be granted ETC status,<sup>9</sup> either by the states where it aims to provide service, or by the Commission in the case of states that have disclaimed jurisdiction to grant such status.<sup>10</sup> Disbursements from the RDOF are no different. In setting up the rules for the RDOF reverse auctions, the Commission stated: “[w]e recognize the statutory role that Congress created for state commissions and the FCC with respect to ETC designations, and we do not disturb that framework . . . Therefore, we will continue to require service providers to obtain ETC status to qualify for universal service support.”<sup>11</sup>

To qualify for ETC status, an entity must show that its designation would be in the public interest.<sup>12</sup> Among other things, the petitioner must “certify that it will comply with the service requirements applicable to the support that it receives.”<sup>13</sup> For RDOF auction winners, these requirements include a certification from the petitioner “that it will retain such access [to its identified spectrum bands] for at least 10 years after the date on which it is authorized to receive

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<sup>8</sup> Rural Digital Opportunity Fund Phase 1 Auction Scheduled for October 29, 2020, Notice and Filing Requirements and Other Procedures for Auction 904, 35 FCC Rcd. 6077, 6108 ¶ 89 (June 11, 2020) (“Auction 904 Notice”).

<sup>9</sup> 47 U.S.C. § 214(e).

<sup>10</sup> 47 U.S.C. § 214(e)(6).

<sup>11</sup> Rural Digital Opportunity Fund, Report and Order, 35 FCC Rcd. 686, 727 ¶ 92 (Feb. 7, 2020) (“RDOF Order”).

<sup>12</sup> 47 C.F.R. § 54.202(b) (“Prior to designating an eligible telecommunications carrier pursuant to section 214(e)(6), the Commission determines that such designation is in the public interest.”).

<sup>13</sup> 47 C.F.R. § 54.202(a)(1)(i).

support.”<sup>14</sup> Crucially, the petitioner “must demonstrate that it currently has sufficient access to spectrum,” including by identifying the spectrum bands it will use, describing the total amount of uplink and downlink bandwidth that it has access to in each spectrum band for the last mile, and describing the authorizations (including leases) it has obtained to operate in the spectrum.<sup>15</sup>

SpaceX was one of the winners of the auction created by the Commission to distribute money from the RDOF.<sup>16</sup> SpaceX has thus requested that the Commission grant an ETC designation for several states that have disclaimed jurisdiction in favor of the Commission.<sup>17</sup>

## II. DISCUSSION

While information on the precise spectrum certifications that auction winners have made is normally part of the public record, the Commission is withholding it in this case pending the close of the quiet period for Auction 107, which involves the C-band.<sup>18</sup> Nevertheless, SpaceX indicates that it intends to rely on the 12 GHz band for its service. In its ETC Petition, SpaceX sets forth a network architecture diagram identifying “10.7-12.7 GHz Downlink” as connecting

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<sup>14</sup> Auction 904 Notice, 35 FCC Rcd. at 6175 ¶ 314.

<sup>15</sup> *Id.* at 6175 ¶ 313.

<sup>16</sup> *See* Rural Digital Opportunity Fund Phase I Auction (Auction 904) Closes; Winning Bidders Announced, Attachment A, 35 FCC Rcd. 13888, 13927-29 (Dec. 7, 2020) (“Auction 904 Winning Bidders Notice”).

<sup>17</sup> *See* 47 U.S.C. § 214(e)(6); SpaceX Petition at 1. SpaceX is seeking an ETC designation from the Commission in Alabama, Connecticut, New Hampshire, New York, Tennessee, Virginia and West Virginia. SpaceX indicated that additional states may be added in a future filing.

<sup>18</sup> Auction 904 Winning Bidders Notice, 35 FCC Rcd. at 13889 ¶ 62 n. 2 (“[T]o prevent possible public dissemination of information related to bids or bidding strategies in Auction 107 . . . the data fields in which applicants identified specific spectrum bands that they proposed to use and spectrum access attachments will continue to be withheld from routine public inspection until the prohibition of certain communications in Auction 107 concludes.”).

its space segment to the customer premises equipment.<sup>19</sup> SpaceX has also repeatedly claimed that the 12 GHz band is important to its service in other related proceedings.<sup>20</sup>

But SpaceX cannot certify that it will have access to the 12 GHz band for ten years—as required by Commission rules—in light of 1) its request for authority to radically change its system (changes that will cause greater interference to DBS users); and 2) the Commission’s pending rulemaking exploring sharing in that band.

With respect to SpaceX’s requested modification, DISH has submitted detailed engineering evidence showing both that the proposed modification would adversely affect reception at DBS consumer dishes and that the system as modified would exceed the applicable power limits under International Telecommunication Union and Commission rules.<sup>21</sup> In other words, SpaceX would not be able use the 12 GHz band to meet its RDOF obligations if such service interferes with DBS operations.

As for the 12 GHz rulemaking, the Commission is considering allowing two-way mobile 5G service in the band, which, depending on the final outcome, could limit SpaceX from using

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<sup>19</sup> See SpaceX Petition at 5. SpaceX’s long-form certification related to 12 GHz should be disclosed to representatives of 12 GHz band users, under a protective order that restricts the disclosure to outside counsel and their experts.

<sup>20</sup> See, e.g., Letter from David Goldman, SpaceX, to Marlene H. Dortch, FCC, RM-11768, at 1 (June 4, 2020) (“The 12 GHz Band is an essential component to delivering high-throughput, low-latency downlink connections to consumers from these next-generation satellite systems.”); SpaceX Opposition to Petition for Rulemaking, MVDDS 5G Coalition Petition for Rulemaking to Permit MVDDS Use of the 12.2-12.7 GHz Band for Two-Way Mobile Broadband Service, RM-11768, at 3 (June 8, 2016) (“[T]hese robust broadband services will only be possible if the existing allocation and accompanying protections remain in full force and effect for NGSO FSS operations, as the 12.2-12.7 GHz band is crucial for the consumer links for such NGSO networks.”).

<sup>21</sup> Letter from Jeffrey Blum, DISH, to Marlene Dortch, FCC, IBFS File No. SAT-MOD20200417-00037; WT Docket No. 20-443 (Feb. 15, 2021).

the band as SpaceX proposes.<sup>22</sup> In fact, SpaceX is opposed to the rulemaking, claiming that “because SpaceX is using the 12 GHz Band for downlinks from SpaceX satellites to consumer terminals, **any action** to degrade the utility of the 12 GHz Band will directly harm consumers in the near term.”<sup>23</sup> However, as SpaceX knows full well, the Commission explicitly conditioned SpaceX’s authorization on rules and policies the Commission may adopt in the future.<sup>24</sup>

Specifically, footnote 88 of SpaceX’s authorization provides that:

The MVDDS 5G Coalition expresses concerns regarding protection of current and potential future MVDDS operations in the 12.2-12.7 GHz band. *See* Letter from MVDDS 5G Coalition to Marlene H. Dortch, Secretary, FCC, (dated March 6, 2018). Such concerns are addressed in paragraphs 40(e) and 40(r) below, requiring SpaceX to comply with established pfd limits in this band and subjecting the authorization to modification to conform it to any future rules or policies adopted by the Commission in pending rulemaking proceedings. *See, e.g.*, Petition of MVDDS 5G Coalition for Rulemaking, RM-11768 (filed Apr. 26, 2016).<sup>25</sup>

Indeed, the Commission put *all* NGSO FSS systems operating in the 12 GHz band on notice that their authorizations were subject to material changes based on the outcome of the now pending 12 GHz rulemaking.<sup>26</sup>

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<sup>22</sup> 12 GHz NPRM ¶ 22.

<sup>23</sup> Letter from David Goldman, Space Exploration Technologies Corp., to Marlene H. Dortch, FCC, RM-11768, at 1, 3 (June 4, 2020) (emphasis added).

<sup>24</sup> Space Exploration Holdings, LLC, Request for Modification of the Authorization for the SpaceX NGSO Satellite System, Order and Authorization, 34 FCC Rcd. 2526, 2527 ¶ 4 (2018) (“Where appropriate, we defer matters of general applicability to ongoing or potential future rulemakings.”); Space Exploration Holdings, LLC, Request for Modification of the Authorization for the SpaceX NGSO Satellite System, Order and Authorization, 34 FCC Rcd. 12307, 12316 ¶ 19(r) (2019) (“This authorization is subject to modification to bring it into conformance with any rules or policies adopted by the Commission in the future.”).

<sup>25</sup> SpaceX Order, 33 FCC Rcd. at 3401 ¶ 26 n.88.

<sup>26</sup> Space Norway AS Petition for a Declaratory Ruling Granting Access to the U.S. Market for the Arctic Satellite Broadband Mission, Order and Declaratory Ruling, 32 FCC Rcd. 9649, 9655 ¶ 13 & n.48 (2017) (“As indicated above, we defer consideration of broadly applicable matters to . . . other future rulemakings, and we condition grant of the Space Norway Petition on the outcome of any rulemaking proceedings . . . We note that, as with the OneWeb Order, grant of the Space Norway Petition will not prejudice any decision, including a contrary action, in any

Significantly, the pendency of a rulemaking was precisely why the Commission did not include the 5.850-5.925 GHz band in the list of bands that could presumptively be used by bidders in the RDOF auction to meet RDOF performance obligations. In the Commission’s words:

[W]e decline to add the 5850-5925 MHz band to Appendix B. Last year, we initiated a Notice of Proposed Rulemaking to propose changes to the 5850-5925 MHz band rules, and this proceeding is ongoing. ***Accordingly, it is premature to address proposals made in that proceeding in the absence of any resolution of those issues.***<sup>27</sup>

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pending or future rulemaking proceeding. Rather, decisions of general applicability in such proceedings will be based on the totality of comments and proposals in those proceedings. In any event, Space Norway will not receive any special exemptions to determinations made in these rulemakings based solely on this grant, should Space Norway choose to accept it.”); Kepler Communications Inc. *Petition for Declaratory Ruling to Grant Access to the U.S. Market for Kepler’s NGSO FSS System*, Order, 33 FCC Rcd. 11453, 11455 ¶ 4 n.17 (2018) (“Although it did not file comments on the Kepler Application, the MVDDS 5G Coalition has expressed concern in other proceedings regarding protection of current and potential future MVDDS operations in the 12.2-12.7 GHz band . . . Such concerns are addressed in paragraphs 24(d) and 29 below, requiring Kepler to comply with established PFD limits in this band and subjecting the authorization to modification to conform it to any future rules or policies adopted by the Commission in pending rulemaking proceedings.”); Karousel Satellite LLC, *Application for Authority to Launch and Operate a Non-Geostationary Earth Orbit Satellite System in the Fixed Satellite Service*, Memorandum, Opinion, Order and Authorization, 33 FCC Rcd. 8485, 8486 ¶ 3 n.14 (2018) (“Although it did not file comments on the Karousel Application, the MVDDS 5G Coalition has expressed concern in other proceedings regarding protection of current and potential future MVDDS operations in the 12.2-12.7 GHz band. . . . Such concerns are addressed by paragraphs 24(e) and 24(v) below, requiring Karousel to comply with established PFD limits in this band and subjecting the authorization to modification to conform it to any future rules or policies adopted by the Commission in pending rulemaking proceedings.”); Theia Holdings A, Inc., *Request for Authority to Launch and Operate a Non-Geostationary Satellite Orbit System in the Fixed-Satellite Service, Mobile-Satellite Service, and Earth-Exploration Satellite Service*, Memorandum, Opinion, Order and Authorization, 34 FCC Rcd. 3526, 3527 ¶ 3 n.13 (2019) (“Although it did not file comments on the Theia Application, the MVDDS 5G Coalition has expressed concern in other proceedings regarding protection of current and potential future MVDDS operations in the 12.2-12.7 GHz band. . . . To the extent they would be applicable here, such concerns are addressed in paragraph 55f below, requiring Theia to comply with established PFD limits in this band and subjecting the authorization to modification to conform it to any future rules or policies adopted by the Commission in pending rulemaking proceedings.”).

<sup>27</sup> Auction 904 Notice, 35 FCC Rcd. at 6108 ¶ 89 (emphasis added) (citing *Use of the 5.850-5.925 GHz Band*, Notice of Proposed Rulemaking, 34 FCC Rcd. 12603 (2019)).

While the Commission did include the 12 GHz band in that list,<sup>28</sup> that was before the commencement of the 12 GHz rulemaking, which now places the 12 GHz band in exactly the same category as other spectrum subject to a pending rulemaking.<sup>29</sup>

In addition, SpaceX is already authorized to use *15,050 megahertz* of spectrum separate and apart from the 12 GHz band.<sup>30</sup> In fact, the spectrum identified in the network architecture diagram set forth in SpaceX's ETC Petition does not include a number of large frequency bands that SpaceX has already been authorized to use or to which it is requesting access. For one thing, SpaceX has received authority to use the 37.5-42 GHz portion of the V-band for user and gateway downlinks; of that, only operations in the 37.5-40 GHz portion are unprotected.<sup>31</sup> Also in the V-band, SpaceX is authorized to use the 47.2-50.2 GHz and 50.4-51.4 GHz segments for user and gateway uplinks.<sup>32</sup> All in all, the 12 GHz band represents only 3% of SpaceX's total authorized spectrum of 15,550 MHz.<sup>33</sup> In fact, SpaceX's application for its second generation

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<sup>28</sup> See Auction 904 Notice, 35 FCC Rcd. at 6188, Appendix B.

<sup>29</sup> Similarly, if an RDOF applicant was planning to use spectrum from a pending auction to meet its RDOF obligations, the applicant needed to "provide alternatives for if it does not ultimately obtain a license (if applicable) or is unable to operate in the spectrum in time to meet its interim service milestones." *Id.* at 6175 ¶ 313 n. 546. Importantly, "[s]uch an alternative may not include spectrum bands that are subject to pending spectrum processes," *id.*, presumably for the same reason why spectrum subject to a pending rulemaking was not included in Appendix B.

<sup>30</sup> See Letter from Jeffrey Blum, DISH, to Marlene Dortch, FCC, File No. SAT-MOD-20200417-00037, at 5 (July 14, 2020).

<sup>31</sup> See Space Exploration Holdings, LLC, *Application for Approval for Orbital Deployment and Operating Authority for the SpaceX V-band NGSO Satellite System*, Memorandum Opinion, Order and Authorization, 33 FCC Rcd. 11434, 11446 ¶ 32(b) (Nov. 19., 2018).

<sup>32</sup> *Id.* at 11437 ¶ 7; Space Exploration Holdings, LLC, File No. SAT-LOA-20170301-00027 (stamp grant June 9, 2020).

<sup>33</sup> Letter from Jeffrey Blum, DISH, to Marlene Dortch, FCC, File No. SAT-MOD-20200417-00037, at 7 (July 14, 2020).



system identified yet additional bands for user downlinks in the Ka-band and gateway downlinks in the E-band, as shown in the following chart from that application.<sup>34</sup>

Type of Link and Transmission Direction	Frequency Ranges
User Downlink Satellite-to-User Terminal	10.7 – 12.75 GHz <sup>17</sup> 17.8 – 18.6 GHz 18.8 – 19.3 GHz 19.7 – 20.2 GHz
Gateway Downlink Satellite to Gateway	17.8 – 18.6 GHz 18.8 – 19.3 GHz 71.0 – 76.0 GHz
User Uplink User Terminal to Satellite	12.75 – 13.25 GHz <sup>18</sup> 14.0 – 14.5 GHz 28.35 – 29.1 GHz 29.5 – 30.0 GHz
Gateway Uplink Gateway to Satellite	27.5 – 29.1 GHz 29.5 – 30.0 GHz 81.0 – 86.0 GHz
TT&C Downlink	12.15 – 12.25 GHz 18.55 – 18.60 GHz
TT&C Uplink	13.85 – 14.00 GHz

Thus, based on this ample endowment of already authorized and requested spectrum, SpaceX may well be able to discharge its RDOF obligations without relying on the 12 GHz band. If so, it can and should obtain ETC status on these other frequency bands. But SpaceX cannot credibly certify that it will have access to the 12 GHz band over the next decade.

Nor does SpaceX have a reliance interest that its ETC status would be rubber stamped simply because it was granted approval to bid in Auction 904. The Commission did not require

<sup>34</sup> Application of Space Exploration Holdings, LLC for Approval of Orbital Deployment and Operating Authority for the SpaceX Gen2 NGSO Satellite System, File No. SAT-LOA-20200526-00055, Legal Narrative at 11 (May 26, 2020).

applicants to obtain ETC status before bidding in the RDOF auction<sup>35</sup> and after the auction, it required winning bidders to “file more extensive information . . . demonstrating to the Commission that they are legally, technically and financially qualified to receive support.”<sup>36</sup> The Commission emphasized that “each potential bidder has the sole responsibility to perform its due diligence research and analysis before proceeding to participate in the Rural Digital Opportunity Fund auction.”<sup>37</sup> And, as noted above, SpaceX was of course on notice from the Commission that its authorization was “subject to modification to bring it into conformance with any rules or policies adopted by the Commission in the future” and that “*any investments made toward operations in the bands authorized in this order by SpaceX in the United States assume the risk that operations may be subject to additional conditions or requirements as a result of any future Commission actions.*”<sup>38</sup> As explained above, this condition was put in place specifically in light of concerns raised by DISH and MVDDS users of the 12 GHz band.<sup>39</sup>

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<sup>35</sup> RDOF Order, 35 FCC Rcd. at 723 ¶ 81, 727 ¶ 92.

<sup>36</sup> *Id.* at 717 ¶ 68. For example, as part of its post-auction showing, SpaceX “must provide a description of [its] spectrum access in the areas for which [it] seeks support and demonstrate that [it has] the required licenses to use that spectrum if applicable.” *Id.* at 726 ¶ 90.

<sup>37</sup> *Id.* at 717 ¶ 68.

<sup>38</sup> SpaceX Order, 33 FCC Rcd. at 3407 ¶ 40(r) (emphasis added).

<sup>39</sup> *Id.* at 3401 ¶ 26 n. 88.

