

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

In the Matter of)
)
Mangata Networks)
)
Petition for a Declaratory Ruling) File No. SAT-PDR-20200526-00054
Granting Access to the U.S. Market)
For the Mangata Networks System)
)

COMMENTS OF KUIPER SYSTEMS LLC

Kuiper Systems LLC, a wholly owned subsidiary of Amazon.com Services LLC (collectively, “Amazon”), submits the following comments on the above-referenced application of Mangata Networks (“Mangata”) seeking U.S. market access for its proposed non-geostationary satellite orbit (“NGSO”) fixed-satellite service (“FSS”) constellation (the “Application”).¹

I. INTRODUCTION AND SUMMARY.

On May 26, 2020, Mangata submitted a request for U.S. market access for a planned NGSO FSS system comprised of 791 satellites in medium earth orbit (“MEO”) and highly elliptical orbit (“HEO”) that would communicate using Ka-band and V-band frequencies.² Mangata’s Application seeks waiver of the default band-splitting requirements for NGSO FSS systems set forth in Sections 25.261(c), 25.157(c), and 25.157(e),³ and describes several modes of telemetry, tracking, and control (“TT&C”) beams.

¹ Mangata Networks, Petition for a Declaratory Ruling Granting Access to the U.S. Market For the Mangata Networks System, IBFS File No. SAT-PDR-20200526-00054 (filed May 26, 2020) (“*Application*”).

² *See id.*

³ *See id.* at 16.

Mangata's request for waiver of the Commission's default band-splitting requirements is not in the public interest and would create uncertainty in the coordination process with other NGSO FSS operators, and should therefore be denied. Furthermore, before the Commission can fully consider the Application, it must require Mangata to submit additional information regarding the characteristics and operation of its TT&C beams to allow the Commission and other operators to fully analyze Mangata's impact to other Ka-band systems. In addition to Ka-band frequencies, the Application also includes a request to use V-band frequencies, specifically the 37.5-42.5 GHz, 47.2-50.2 GHz, and 50.4-51.4 GHz bands.⁴ As a newly submitted application, the portions of the Application that include these frequencies should be considered within a new V-band processing round to maintain regulatory certainty while allowing for the possibility of new entrants.

II. THE COMMISSION SHOULD DENY MANGATA'S REQUEST FOR WAIVER OF THE DEFAULT BAND-SPLITTING REQUIREMENT IN SECTION 25.261(C).

Mangata requests a waiver of Section 25.261(c) of the Commission's rules, stating that "[b]and segmentation would not serve the public interest" and is unnecessary due to "[g]ood faith coordination and the deployment of today's most advanced NGSO FSS technology" and the fact that "co-frequency sharing between NGSO FSS systems is desirable and achievable."⁵ However, this request misunderstands the nature of Section 25.261(c), which applies only when coordination is incomplete and the increase in system noise temperature of an earth station receiver, or a space station receiver for a satellite with on-board processing, of either system, $\Delta T/T$, exceeds 6 percent

⁴ *See id.* at 2.

⁵ *Id.*

due to interference from emissions originating in the other system in a commonly authorized frequency band.⁶

The Commission may waive any of its rules “for good cause shown.”⁷ The Commission has further clarified that “[w]aiver is therefore appropriate if special circumstances warrant a deviation from the general rule, such deviation will serve the public interest, and the waiver does not undermine the validity of the general rule.”⁸ Mangata does not meet that standard here.

Grant of the proposed waiver would subvert the validity of the rule by undermining both the incentive for Mangata to engage in coordination and the application of the rule to other systems authorized in the NGSO FSS processing round initiated on March 24, 2020 (the “2020 Processing Round”).⁹ As noted by the Commission, Section 25.261(c) serves as a “default sharing solution [that] sets all applicants in a processing round on an equal basis,” which “will form the basis of the necessary coordination discussions.”¹⁰ While Mangata argues that “band-splitting among multiple NGSO-like constellation applicants does not provide enough spectrum to enable commercial viability for any of the individual applicants,” it is unclear what Mangata believes the alternative would be in the event that coordination failed.¹¹ Mangata describes no special

⁶ See 47 C.F.R. § 25.261(c) (“Absent coordination between two or more satellite systems, . . . such frequency band will be divided among the affected satellite networks in accordance with the following procedure.”).

⁷ 47 C.F.R. § 1.3.

⁸ *Kuiper Systems LLC Application for Authorization to Deploy & Operate A Ka-Band Non-Geostationary Satellite Orbit System*, Order and Authorization, FCC 20-102, IBFS File No. SAT-LOA-20190704-00057 (rel. July 30, 2020).

⁹ See *Satellite Policy Branch Information, Cut-Off Established for Additional NGSO FSS Applications or Petitions for Operations in the 10.7-12.7 GHz, 12.75-13.25 GHz, 13.8-14.5 GHz, 17.7-18.6 GHz, 18.8-20.2 GHz, and 27.5-30 GHz Bands*, Public Notice, 35 FCC Rcd 2881 (2020).

¹⁰ *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, ¶ 50 (2017) (“*NGSO FSS Order*”).

¹¹ *Application*, at 16.

circumstances that would warrant a deviation from the default spectrum-splitting rule and does not establish that such a deviation would serve the public interest.

Grant of Mangata’s request for waiver of Section 25.261(c) is not in the public interest.

Therefore, the Commission should deny Mangata’s request.¹²

III. MANGATA’S PRESENTATION OF THE PROPOSED TT&C BEAMS IS INCOMPLETE.

Mangata indicated in its Technical Narrative that it plans to operate spacecraft TT&C antennas in two modes. One configuration consists of a “high coverage” mode that would be used “during early operations and contingencies that enable operations under multiple satellite orientations,” and the other is an “earth coverage” mode that would be in use “during nominal operations in which the gain pattern is optimized for a nadir orientation.”¹³ The technical characteristics listed in the Schedule S application appear to be for the “earth coverage” configuration.¹⁴

Mangata has not disclosed the technical characteristics (e.g., contour, PFD, EIRP) of the proposed “high coverage” mode. In the interests of transparency, and to allow stakeholders to

¹² To the extent necessary, the Commission should also deny Mangata’s request to waive the band-splitting requirements in Sections 25.157(c) and (e). *See Application*, at 16. Pursuant to Section 25.157(b)(2), the band-splitting requirements of Section 25.157(e) do not apply to applications granted with a condition to share spectrum pursuant to Section 25.261. As explained above, the public interest requires that Mangata comply with Section 25.261(c)’s spectrum sharing obligations and thus there is no need to waive the non-applicable band-segmentation provision set forth in Section 25.157(e). Mangata’s further request for “waiver of the band segmentation requirements in Section §25.157(c)” is unclear. *Application*, at 16. That section requires the Commission to determine if an NGSO application is a lead application or a competing application. It does not address band segmentation. Further, Mangata’s application was filed in response to the FCC’s public notice initiating the 2020 Processing Round and thus is properly treated as a competing application. With regard to V-band frequencies, see the discussion of why these portions of the Application should be included in a new V-band processing round, Part IV, *infra*.

¹³ *Application*, at Technical Narrative, 15-16.

¹⁴ In Mangata’s Schedule S, the TT&C beam identifiers “RTR2,” “RTL2,” “ETR2,” and “ETL2” appear to collectively represent dual polarization operation in both the downlink and uplink directions for the “earth coverage” configuration. *Application*, at Schedule S, 77-79, 98-100.

accurately assess the interference impact to other Ka-band systems, the Commission should require Mangata to disclose such technical information for “high coverage” mode TT&C operations and offer clarification as to the anticipated frequency and duration of “early operations.”

IV. THE V-BAND PORTIONS OF THE APPLICATION MUST BE CONSIDERED WITHIN A NEW V-BAND PROCESSING ROUND.

On November 1, 2016, the Commission initiated a processing round for NGSO FSS service using V-band frequencies (the “V-band Processing Round”).¹⁵ The cut-off for applications to be included in that V-band Processing Round was March 1, 2017, more than three years before Mangata filed the Application, which includes requests to use certain V-band frequencies.¹⁶ As the Commission has explained, “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.”¹⁷ As such, the public interest in the certainty of the interference environment and the possibility for the entry of new systems¹⁸ would be best served by considering the V-band portion of the Application in a new V-band processing round.

V. CONCLUSION.

The Commission should deny Mangata’s request for waiver of the Commission’s band-segmentation requirement and require Mangata to provide the above-referenced information regarding its TT&C beams before the Commission fully considers the Application. The

¹⁵ See *Boeing Application Accepted For Filing In Part; Cut-Off Established For Additional NGSO-Like Satellite Applications Or Petitions For Operations In The 37.5-40.0 GHz, 40.0-42.40 GHz, 47.2-50.2 GHz And 50.4-51.4 GHz Bands*, Public Notice, 31 FCC Rcd 11957 (2016).

¹⁶ *Id.*; *Application*, at 2.

¹⁷ *NGSO FSS Order*, at ¶ 61.

¹⁸ See *id.* (“[T]reatment of later applicants to approved systems must necessarily be case-by-case based on the situation at the time, and considering both the need to protect existing expectations and investments and provide for additional entry as well as any comments filed by incumbent operators and reasoning presented by the new applicant.”).

Commission should also defer consideration of the V-band portions of the Application to a future V-band processing round.

Respectfully submitted,

/s/ Mariah Dodson Shuman

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September 8, 2020

CERTIFICATE OF SERVICE

I hereby certify that, on this 8th day of September 2020, a copy of the foregoing pleading was served via First Class mail upon:

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