

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

In the Matter of)	
)	
Intelsat Inflight Licenses LLC)	IBFS File No. SES-LIC-20201006-01096
)	
Application for Blanket License to Operate Ka- Band Transmit/Receive Earth Stations Aboard Aircraft)	

COMMENTS OF KUIPER SYSTEMS LLC

Kuiper Systems LLC, a wholly owned subsidiary of Amazon.com Services LLC (collectively, “Amazon”), requests that any grant of Intelsat Inflight Licenses LLC’s (“Intelsat’s”) geostationary orbit (“GSO”) fixed-satellite service (“FSS”) earth station aboard aircraft (“ESAA”) application in the frequency bands 18.8-19.3 GHz and 28.6-29.1 GHz (“NGSO FSS Primary Bands”)¹ occur on a non-interference, non-protected (“NINP”) basis and be conditioned upon Intelsat completing coordination with Amazon, or demonstrating with sufficient technical detail that it will not cause harmful interference to Amazon’s Kuiper System.² To this end, while Amazon does not oppose Intelsat being granted its requested GSO FSS ESAA license, the Commission should apply the same conditions to Intelsat’s license that it has previously applied to other GSO ESAA operators seeking to deploy in the NGSO FSS Primary Bands. Imposing

¹ In October 2020, Intelsat requested blanket earth station authority to operate 1,000 GSO FSS ESAA in the NGSO FSS Primary Bands, among others. *See generally* Application for Blanket License to Operate Ka-Band Transmit/Receive Earth Stations Aboard Aircraft, Intelsat Inflight Licenses LLC, File No. SES-LIC-20201006-01096 (filed Oct. 6, 2020) (“Application”).

² The Commission identified the Application as acceptable for filing in two public notices, dated Dec. 23, 2020 and Jan. 13, 2021, apparently due to a processing error. *See* Public Notice, Report No. SES-02328 (rel. Dec. 23, 2020); Public Notice, Report No. SES-02334 (rel. Jan. 13, 2021). The Commission may not act on an application earlier than 30 days following the date of the associated accepted-for-filing public notice. *See* 47 U.S.C. § 309(b). As a result, Amazon submits these comments on the Application thirty days after the latest public notice.

these authorization conditions will not only align with Commission precedent, but it will also preserve the expected rights of non-geostationary orbit (“NGSO”) FSS operators in the only Ka-band spectrum offering unfettered primary status while still allowing GSO FSS operators to access more spectrum and expand their broadband offerings.

As Commission precedent indicates, ESAAs may communicate with GSO FSS satellites in NGSO FSS Primary Bands, but they must do so on a NINP basis.³ The Commission correctly recognized that “with a high degree of coordination” earth stations in motion (“ESIMs”) in the NGSO FSS Primary Bands could communicate with GSO satellites without causing harmful interference to NGSO systems.⁴ Such coordination is achievable⁵ and, as explained below, essential to ensuring that GSO ESIMs do not cause harmful interference to NGSO systems in the NGSO FSS Primary Bands.

A GSO FSS licensee’s uncoordinated ESAA deployments in the NGSO FSS Primary Bands can be particularly disruptive for NGSO FSS licensees. Because NGSO systems must respect a GSO exclusion angle to comply with equivalent power-flux density limits, NGSO operators often rely on the NGSO FSS Primary Bands when operating toward the GSO arc. To preserve primary status for multiple NGSO FSS systems in the NGSO FSS Primary Bands and help ensure uninterrupted NGSO FSS service, GSO FSS ESAA transmission paths may also need

³ See 47 C.F.R. §§ 2.106 at n.NG527A(e) (“In the [NGSO FSS Primary Bands], ESIMs may be authorized to communicate with [GSO] satellites, subject to the condition that [GSO] networks may not cause unacceptable interference to, or claim protection from, [NGSO] systems in the [FSS].”), 25.202(a)(10)(i) (listing available frequencies for GSO FSS ESAA).

⁴ *Amendment of Parts 2 and 25 of the Commission’s Rules to Facilitate the Use of Earth Stations in Motion Communicating with Geostationary Orbit Space Stations in Frequency Bands Allocated to the Fixed Satellite Service*, Second Report and Order et al., 35 FCC Rcd 5137 ¶ 17 (2020) (“*ESIM Order*”).

⁵ See *id.* ¶ 18.

to automatically maintain some angular separation from NGSO FSS satellite and earth station communication paths and potentially implement other mitigation techniques. Only coordination or a detailed technical demonstration will ensure compatibility between GSO FSS ESAA and NGSO FSS deployments. As the Commission has recognized, requiring ESAA licensees to reach a coordination agreement or provide a detailed technical demonstration of the proposed interference-mitigation measures prior to commencing operations helps avoid costly, disruptive, time-consuming disputes between GSO FSS ESSA and NGSO FSS licensees in the future.⁶

Recent Commission actions support continued application of these interference-mitigation measures. Approximately five months before Intelsat submitted the Application, the Commission reminded operators that GSO FSS ESAA may use NGSO FSS Primary Bands only under limited circumstances:

[s]uch co-existence will necessitate a high degree of coordination between the GSO and NGSO systems to ensure interference does not result to NGSO FSS operations The GSO system, operating on a [NINP] basis, is expected to show, to the NGSO system satisfaction, that it is capable of protecting the NGSO's operation.⁷

The Commission has also incorporated these interference safeguards in recent ESAA blanket license grants. The Commission required Viasat, for example, to coordinate its GSO FSS ESAA operations in NGSO FSS Primary Bands with existing NGSO FSS operators before commencing operations.⁸ If a new NGSO FSS system employs the NGSO FSS Primary Bands after Viasat deploys ESAA, then Viasat must cease operation unless and until it coordinates operations with

⁶ *See id.* ¶¶ 17-18.

⁷ *Id.* ¶¶ 18-19. *See also id.* ¶ 19 (“The only burden on the NGSO system is to examine the GSO showing in good faith to determine its acceptability.”).

⁸ *See, e.g.,* Grant, Viasat, File No. SES-LIC-20190411-00503, at Condition 90257 (granted Nov. 15, 2019) (“ESAAs authorized herein must be in compliance with the terms of coordination agreements with operators of [NGSO FSS] space stations operating in the 18.8-19.3 and 28.6-29.1 GHz frequency band.”).

the new NGSO FSS operator or provides a detailed technical demonstration that the GSO FSS ESAA will not cause harmful interference to the new NGSO FSS system.⁹

Intelsat has satisfied neither interference mitigation threshold. First, Intelsat has not finalized, or even initiated, coordination with Amazon. Neither has the operator of the GSO FSS satellites partnering with Intelsat to use ESAA in the NGSO FSS Primary Bands (Hughes for Jupiter 1 and Jupiter 2).¹⁰ Second, the record lacks any technical demonstration of how Intelsat's ESAA operations will not cause harmful interference to Amazon's Kuiper System. As discussed earlier, coordinating GSO FSS ESAA with multiple NGSO FSS systems is both achievable and essential for the prevention of harmful interference because of the time- and location-varying operational schemes, among other factors. Intelsat offers statements about protecting NGSO FSS but fails to analyze specific compatibility scenarios and submit supporting models or assumptions.

⁹ *See id.* (“In the event another NGSO FSS system commences operation in the 18.8-19.3 and 28.6-29.1 GHz frequency bands, ESAAs operating pursuant to this authorization must cease operation unless and until such operation has been coordinated with the new NGSO system operator or the ESAA licensee demonstrates that such operation will not cause harmful interference to the new NGSO system.”).

¹⁰ *See* Application, Narrative at Annex 2. In both the Jupiter 1 and Jupiter 2 requests to use NGSO FSS Primary Bands, Hughes committed to operate on a non-interference, non-protected basis and not employ these frequencies during inline events with NGSO FSS systems. *See* Application of Hughes, File No. SAT-LOA-20120424-00075, Exhibit Q43 at 10 and n.23 (filed Apr. 24, 2012); Application of Hughes, File No. SAT-LOI-20110809-00148, Letter of Intent at 11 and n.19 (filed Aug. 9, 2011) (“Jupiter 2 Application”). Furthermore, Hughes stated that “*any* future NGSO systems with designs that operationally intersect with the GSO will be protected from harmful interference to the extent contemplated by the Commission’s rules and policies.” Jupiter 2 Application, Letter of Intent at n.19 (emphasis added). Because Amazon Kuiper System NGSO communication paths will intersect with Hughes GSO communication paths, Hughes must coordinate with Amazon or submit a detailed technical demonstration showing harmful interference will not occur consistent with established Commission rules and policies, as discussed above.

The Commission has noted these frequencies are “critical to the[] growth”¹¹ of NGSO FSS systems and will be the subject of “intensive use” by Amazon’s Kuiper System and other NGSO FSS licensees.¹² Safeguarding NGSO FSS licensees’ priority rights in the NGSO FSS Primary Bands remains an important means of ensuring NGSO FSS operators’ “greater flexibility in . . . deployment” because NGSO FSS systems must protect GSO FSS and broadcasting-satellite service networks in other frequency bands.¹³ As a result, Amazon’s request – supported by Commission rules, policy, and precedent – serves the public interest.

Any grant of the Application must direct Intelsat and the operator of the GSO FSS satellites communicating with Intelsat’s ESAA operations to coordinate with Amazon or demonstrate with sufficient technical detail that Amazon’s Kuiper System will not encounter harmful interference before Intelsat commences operations in essential – and scarce – NGSO FSS spectrum. Amazon looks forward to working with Intelsat and the Commission to preserve NGSO FSS spectrum while still permitting GSO FSS operators to accelerate consumer access to satellite-broadband systems.¹⁴

Respectfully submitted,

/s/ Will Lewis

Will Lewis
Corporate Counsel

Kuiper Systems LLC,
an Amazon subsidiary
410 Terry Avenue North
Seattle, WA 98109

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¹¹ *ESIM Order* ¶ 19.

¹² *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, Report and Order et al., 32 FCC Rcd 7809 ¶ 14 (2017).

¹³ *Id.*

¹⁴ *See ESIM Order* ¶ 16.

CERTIFICATE OF SERVICE

I, Cheryl Smith, hereby certify that on February 12, 2021, a true and correct copy of this pleading was served via First Class mail upon:

Karis A. Hastings
SatCom Law LLC
1317 F Street, NW, Suite 400
Washington, DC 20004

Counsel to Intelsat Inflight Licenses LLC

Saumil Mehta
Senior Vice President & Asst. General Counsel
Intelsat Inflight Licenses LLC
111 North Canal Street
Chicago, IL 60606

/s/ Cheryl Smith
Cheryl Smith