

June 25, 2021

Via IBFS

Marlene H. Dortch
Secretary, Federal Communications Commission
45 L Street, N.E.
Washington, DC 20554

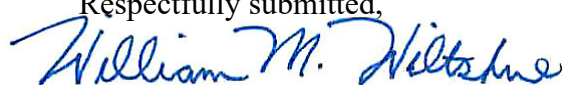
Re: SpaceX Request for a Show Cause Order; IBFS File Nos. SES-LIC-20170401-00357, SES-LIC-20190411-00503, SES-MOD-20191216-01737 (Call Signs E170088, E180006 & E190201)

Dear Ms. Dortch:

On September 18, 2020, Space Exploration Holdings, LLC (“SpaceX”) filed a request for an order to show cause to remedy Viasat, Inc’s unauthorized operation of ubiquitously deployed earth stations and repeated and willful violations of three blanket earth station licenses.¹ During that proceeding, SpaceX requested that the Commission investigate Viasat’s conduct and promptly enforce Viasat’s license conditions.²

Earlier today, SpaceX filed a complaint with the Enforcement Bureau urging it to commence the investigation sought. SpaceX hereby provides a copy of the complaint for inclusion in the record of this proceeding. The exhibits supporting the complaint draw primarily from pleadings previously submitted via IBFS. Such exhibits are thus already on file with the International Bureau and are not included herewith.

If you have any questions, please do not hesitate to contact me.

Respectfully submitted,

William M. Wiltshire
Counsel to SpaceX

Encl.

cc: Christopher Murphy, Associate General Counsel, Viasat, Inc.

¹ SpaceX Request for Order to Show Cause, Call Signs E170088, E180006 & E190201, IBFS File Nos. SES-LIC-20170401-00357, SES-LIC-20190411-00503 & SES-MOD-20191216-01737 (filed Sept. 18, 2020).

² *Id.* at 1, 8-9; *See* Reply of SpaceX to Show Cause Request, Call Signs E170088, E180006 & E190201, IBFS File Nos. SES-LIC-20170401-00357, SES-LIC-20190411-00503 & SES-MOD-20191216-01737, at 8-11 (filed Oct. 14, 2020).

June 25, 2021

Via Federal Express and Electronic Mail

Elizabeth Mumaw
Chief, Spectrum Enforcement Division, Enforcement Bureau

Jeffrey Gee
Chief, Investigations and Hearings Division, Enforcement Bureau

Federal Communications Commission
45 L Street, N.E.
Washington, DC 20554

Re: Viasat, Inc.’s Unauthorized Operation of Ubiquitously Deployed Earth Stations and Repeated and Willful Violations of Three Commission Licenses

Dear Ms. Mumaw and Mr. Gee:

On behalf of Space Exploration Technologies Corp. (“SpaceX”), we write to provide you with evidence that Viasat, Inc. (“Viasat”) has been knowingly operating a potentially large number of U.S. earth stations, including earth stations aboard aircraft, without Commission authorization across one gigahertz of spectrum in the Ka-band.

Viasat operates a GSO FSS network that is secondary to NGSO FSS systems in the 18.8-19.3 and 28.6-29.1 GHz bands (the “NGSO Ka-Bands”).¹ To protect priority NGSO systems, three blanket earth station licenses covering more than 4,000,000 deployable units nationwide prohibit Viasat from operating in these frequency bands unless and until it has (1) secured a coordination agreement from each NGSO FSS operator or (2) obtained appropriate relief from the Commission. Viasat has not met either pre-operating requirement. Yet according to Viasat’s own certifications to the Commission, and as corroborated by recent measurements taken at SpaceX gateway facilities, Viasat is operating earth stations in these bands to provide mass market residential and in-flight WiFi services in the United States. Indeed, Viasat has repeatedly declined to deny operating in the prohibited frequencies when given the opportunity.

Viasat’s conduct violates the statutory prohibition against operating U.S. earth stations without authorization and related Commission rules. It separately violates Title III license conditions that require Viasat to complete *advance* coordination and timely notify the Commission that coordination agreements have been reached *prior* to operating.² It thus dangerously transcends mere aggressive posturing during technical discussions over frequency coordination—and shows utter disregard for the law and the rights of primary users and their U.S. customers.

¹ As is customary when discussing satellite services at the Commission, we use “GSO,” “NGSO,” and “FSS” to mean “geostationary orbit,” “non-geostationary orbit,” and “fixed-satellite service,” respectively.

² We address this complaint to each of your respective divisions because, in addition to unauthorized operation, we allege Title III license violations that could be considered non-technical in nature.

We urge you to investigate this matter as soon as possible. As the Enforcement Bureau has found, “ensuring that satellite-to-ground services operate within their assigned frequencies is essential in preventing harmful interference,” and makes it “important for the Commission to ensure that the licensees who operate in these arenas do so in a manner compliant with their authorizations.”³ SpaceX has reason to believe that Viasat’s unauthorized transmissions are *already* causing interference into its U.S.-licensed facilities and expects such interference to increase as it expands the reach and utilization of its Starlink network. More fundamentally, the Commission’s efforts to ensure spectrum access for next-generation broadband services—efforts that have underwritten an unprecedented level of U.S.-led investment in innovative new satellite constellations—depend on compliance by all operators, including legacy operators like Viasat. The Commission must enforce its licenses and its rules to ensure that Americans fully benefit from competitive broadband networks—and to “send a strong signal that [it] will not tolerate unauthorized operation of satellites.”⁴

FACTUAL ALLEGATIONS⁵

A. Parties, Frequencies, and Call Signs

Viasat. Viasat is a publicly traded U.S. communications company headquartered in Carlsbad, California. It operates a fleet of GSO communications satellites in the FSS, including Viasat-1, Viasat-2, and WildBlue-1, and the Ka-band payload aboard Telesat’s ANIK F2. Viasat uses its fleet to provide voice services, internet access services, and in-flight WiFi services in various locations, including parts of the United States. It claims to compete directly with SpaceX.⁶

SpaceX. SpaceX is an American aerospace manufacturing, space transportation, and communications company headquartered in Hawthorne, California. Through its affiliates, SpaceX operates an FCC-licensed NGSO FSS constellation called Starlink. As of the date of this letter, more than 1,700 Starlink satellites are in orbit and operational. Using these satellites, SpaceX affiliates currently provide a beta version of broadband internet access service in 11 countries, including the United States.

Relevant frequencies. SpaceX alleges unauthorized operation throughout the 18.8-19.3 GHz and 28.6-29.1 GHz bands.

³ See *L3Harris Technologies, Inc.*, Order, 34 FCC Rcd. 12211, ¶ 1 (2019). In that proceeding, the Commission imposed a \$100,000 monetary forfeiture and ongoing compliance and reporting obligations upon a licensee for operation of an earth station on one unauthorized 1.25 MHz channel for 13 days before the licensee voluntarily ceased those transmissions and self-reported the violation to the Commission. The scope of violations at issue here is many magnitudes larger.

⁴ *Id.*

⁵ Please see Appendix B for a brief chronology of relevant events.

⁶ See, e.g., Viasat, Inc. (VSAT), Q2 2021 Earnings Call at 08:01-12:54 (Nov. 5, 2020), <https://edge-media-server.com/mmc/p/kouvcmkg>; Request for Stay of Viasat, Inc., IBFS File. SAT-MOD-20200417-00037, at 21 (filed May 21, 2021).

Relevant call signs. Please see Appendix A.

B. The Commission Imposed Pre-Operating Requirements That Remain Unmet

The Commission's rules and U.S. Table of Frequency Allocations designate the 18.8-19.3 GHz and 28.6-29.1 GHz bands for use by NGSO FSS systems (like Starlink) on a primary basis.⁷ GSO FSS systems (like Viasat's) are secondary and shall not cause harmful interference to, or claim protection from, NGSO FSS systems.⁸ But in many cases, primary rights would prove meaningless if secondary licensees were simply *trusted* not to cause harmful interference. Thus, to protect priority licensees, the Commission often imposes conditions on secondary licensees that must be met in *advance* of operation to ensure that no interference will occur. That is precisely the approach the Commission took when Viasat sought to deploy millions of terminals in these bands beginning in 2017.

1. 2017 VSAT License (Call Sign E170088)

In April 2017, Viasat sought blanket authority to operate up to four million very small aperture terminals ("VSATs") in the 18.8-19.3 and 28.6-29.1 GHz bands (among other frequencies). These VSATs are used to provide residential fixed voice and data services. They can be located virtually anywhere in the country and easily moved, creating complex interference dynamics for primary licensees. The Commission thus granted Viasat authority to operate VSATs in the NGSO Ka-Bands subject to the following condition:

*Additionally, no later than sixty days before the scheduled initial launch of each NGSO FSS satellite system licensed or granted market access in the United States to operate in the 18.8-19.3 GHz and 28.6-29.1 GHz frequency bands, the licensee must either: (1) notify the Commission in writing when an agreement has been reached with the NGSO satellite system operator, or (2) seek and obtain the Commission's approval of a modification of this license including detailed technical demonstrations of how the licensee will protect the NGSO FSS satellite system. If neither condition is met, the licensee must cease earth station operations in the 18.8-19.3 GHz and 28.6-29.1 GHz frequency bands pursuant to this license until such time as compliance is demonstrated.*⁹

Viasat has not met either pre-operating requirement. *First*, Viasat has not filed a single notification stating that it has reached a coordination agreement with an NGSO satellite system operator in the proceeding associated with this license.¹⁰ Yet SpaceX and several other NGSO

⁷ See 47 C.F.R. § 2.106 note NG165.

⁸ *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, Report & Order and Further Notice of Proposed Rulemaking, 32 FCC Rcd. 7809, ¶ 14 & Appendix B (2017). Prior to this 2017 decision, there was no designation for GSO FSS systems in the NGSO Ka-Bands.

⁹ See Radio Station Authorization, Call Sign E170088, Condition 90447 (issued Nov. 9, 2017) (emphasis added) ("2017 VSAT License"), attached as Exhibit A.

¹⁰ In one of the ESAA proceedings, Viasat reported that it has reached a coordination agreement covering these

FSS licensees authorized to operate in the NGSO Ka-Bands have not merely “scheduled” their “initial launch”—they have successfully completed multiple launches. SpaceX launched and began operating its first set of 60 satellites in these bands on November 11, 2019 and has since launched more than 1,600 satellites.¹¹ O3b Networks was first authorized in 2012; it launched and began operations of its first four satellites in June 2013 and continued to expand its constellation thereafter.¹² Telesat Canada was authorized in 2017 and launched its first satellite in 2018.¹³ SpaceX also can report that Viasat has not, in fact, signed a coordination agreement of any kind with SpaceX. O3b and Telesat said the same about their respective systems as recently as April 16, 2021.¹⁴

Second, Viasat has not sought *and obtained* a license modification—or any similar relief from the Commission. In December 2017, Viasat sought reconsideration of the 2017 VSAT License, requesting that the Commission delete the *pre*-operating requirements and replace them with a simple *post*-operating non-interference requirement.¹⁵ The Commission never granted this petition.¹⁶ On May 18, 2020, Viasat asked the Commission to deem its pre-operating conditions satisfied with respect to SpaceX.¹⁷ The Commission has not granted this request, either. In

frequencies with NGSO FSS operator OneWeb. *See* Application, IBFS File No. SES-MOD-20190212-00172, Attachment 1 at 5 (filed Feb. 12, 2019). It is possible that this agreement covers some or all of the VSAT terminals at issue in this license. But, even if it does, Viasat plainly has not met pre-operating requirements with respect to “each NGSO FSS satellite system.”

¹¹ *See, e.g.*, Letter from Patricia Cooper, Vice President, Satellite Government Affairs, SpaceX, to Marlene H. Dortch, Secretary, FCC, IBFS File Nos. SAT-LOA-20161115-00118 and SAT-MOD-20181108-00083 (filed June 12, 2019) (first Starlink satellite launched in Ku-band); SpaceX, Starlink Mission (Nov. 11, 2019), <https://www.spacex.com/updates/starlink-mission-11-11-2019/index.html> (providing a public update about the November 2019 Ka-band launch). Both are attached as Exhibit B.

¹² *See* Grant Stamp, IBFS File No. SAT-AMD-20150115-00004, nn. 1 and 2 (Jan. 22, 2015) (discussing O3b’s licensing and launch history), attached as Exhibit C.

¹³ *See Telesat Canada, Petition for Declaratory Ruling to Grant Access to the U.S. Market for Telesat’s NGSO Constellation*, Order and Declaratory Ruling, 32 FCC Red. 9663 (2017); Letter from Henry Goldberg and Joseph A. Godles, attorneys for Telesat Canada, to Marlene H. Dortch, Secretary, FCC, IBFS File No. SAT-PDR-20161115-00108 (filed July 26, 2019) (noting launch of first satellite on Jan. 12, 2018), attached as Exhibit D.

¹⁴ Comments of O3b Limited, Call Sign E170088, IBFS File No. SES-MOD-20200923-01031 (filed Apr. 16, 2021) (“Viasat has not yet completed coordination with the O3b Ka-band NGSO system, which has been operational since 2014”), attached as Exhibit E; Comments of Telesat Canada, Call Sign E170088, SES-MOD-20200923-01031 (filed Apr. 16, 2021) (“Telesat has no objection to Viasat’s operations so long as Viasat coordinates with Telesat’s NGSO FSS system”), attached as Exhibit F.

¹⁵ *See* Petition for Partial Reconsideration of Viasat, Inc., IBFS File No. SES-LIC-20170401-00357 (filed Dec. 11, 2017), attached as Exhibit G.

¹⁶ The terms of the earth station license – including the condition on Viasat’s use of the NGSO Ka-Bands – thus remain in full force. *See* 47 C.F.R. § 1.102(b)(1)-(2). Viasat did not request a stay of the order or the specific condition of interest, and the Commission did not grant a stay on its own prerogative.

¹⁷ *See* Letter from Christopher J. Murphy, Associate General Counsel, Regulatory Affairs, Viasat, Inc., to Marlene H. Dortch, Secretary, FCC (filed May 18, 2020) (“May 2020 Cure Request”), attached as exhibit C to Exhibit N. The letter was designated as confidential by Viasat. We will submit exhibits containing material designated as confidential under separate cover with a request for confidential treatment.

September 2020, Viasat applied for an actual license modification (after SpaceX sought a show cause order on this matter).¹⁸ That modification application remains pending, too.

2. 2018 and 2019 ESAA Licenses (Call Signs E180006 and E190201)

Viasat filed additional applications for authority to operate tens of thousands of ESAAs in the NGSO Ka-Bands (among other frequencies). ESAA terminals, which can be widely deployed and placed on moving platforms (*i.e.*, airplanes), also must be evaluated carefully to ensure non-interference into NGSO systems. The Commission thus imposed the following strict pre-operating requirements when granting each ESAA license:

ESAAs authorized herein must be in compliance with the terms of coordination agreements with operators of non-geostationary orbit Fixed Satellite Service space stations operating in the 18.8-19.3 and 28.6-29.1 GHz frequency band. 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.*¹⁹

Viasat has not met the pre-operating requirements for these ESAAs. *First*, Viasat has not completed coordination with SpaceX (nor, to SpaceX's knowledge, with Telesat or O3b).²⁰ *Second*, Viasat has not otherwise demonstrated that it will not cause harmful interference into these systems. The only interference demonstration Viasat has filed with respect to the ESAAs is the so-called analysis included with its initial applications. But the Commission never accepted these demonstrations. To the contrary, they were part of the record that resulted in the Commission imposing the pre-operating conditions outlined above.

Viasat later argued that it would not cause harmful interference in the VSAT Modification Application and the May 2020 Cure Request. But the modification application relates to the 2017 VSAT License, not the terminals authorized in the 2018 and 2019 ESAA Licenses. In any event, the Commission has not granted either request.

C. Viasat Nevertheless Appears To Be Operating

Even though Viasat has not met its pre-operating requirements for *any* of the three licenses, the evidence strongly suggests that Viasat is operating *all three* types of stations in the NGSO Ka-

¹⁸ Application, Call Sign E170088, IBFS File No. SES-MOD-20200923-01031 (filed Sept. 18, 2020) ("VSAT Modification Application").

¹⁹ See Radio Station Authorization, Call Sign E180006, Condition 90257 (issued Apr. 1, 2020) (emphasis added) ("2018 ESAA License"), attached as Exhibit H; Radio Station Authorization, Call Sign E190201, Condition 90257 (issued Nov. 15, 2019) (emphasis added) ("2019 ESAA License"), attached as Exhibit I. The 2018 ESAA License reflects the second modification of an initial license granted in April 2018 (and modified for the first time in November 2019). Previous versions of the license are included in Exhibit H and contain the same pre-operating condition quoted above.

²⁰ See Exhibits E & F.

Bands.

Viasat has certified that it is operating these terminals. The Commission’s rules require earth station licensees to timely certify commencement of operations or risk losing authority to operate in unused frequencies (if not the entire license).²¹ On November 9, 2018, Viasat certified to the Commission that it had commenced operation of the VSATs on November 9, 2017.²² Also on November 9, 2018, Viasat certified that ESAAs authorized by the 2018 ESAA License were placed into operation on or about June 6, 2018.²³ And on January 21, 2020, Viasat certified that ESAAs authorized by the 2019 ESAA License were placed into immediate operation on November 15, 2019.²⁴

In all three certifications, Viasat stated that its operations “will continue during the license period unless the license is submitted for cancellation.”²⁵ Viasat has not sought to cancel these licenses, or any portion thereof, indicating that its operations have been continuous across all frequencies included in the license.

SpaceX has detected interference from Viasat in these frequencies. As shown in an interference analysis provided to the International Bureau, SpaceX has actually detected interference at four of its U.S. gateways in Greenville, PA, Robertsdale, AL, Uinta County, WY, and Baxley, GA, emanating from two Viasat satellites with which the VSATs and ESAAs communicate.²⁶ The interference shows Viasat’s satellites transmitting *throughout* the prohibited downlink frequencies in the 18.8-19.3 GHz band. Given the way most GSO satellites operate—as large mirrors in the sky—this evidence also suggests that Viasat is operating in the corresponding 28.6-29.1 GHz uplink band.

Viasat has not denied operating in these bands. Finally, SpaceX raised the issue of Viasat’s improper operation in a request for a show cause order made to the International Bureau,²⁷ which drew a lengthy response from Viasat.²⁸ In its response, Viasat never disputed that it is operating

²¹ See 47 C.F.R. § 25.133.

²² Viasat, Inc. Certification of Commencement of Operation, Call Sign 170088, IBFS File No. SES-LIC-20170401-00357 (filed Nov. 9, 2018), attached as Exhibit J.

²³ Viasat, Inc. Certification of Commencement of Operation, Call Sign E180006, IBFS File No. SES-LIC-20180123-00055 (filed Nov. 9, 2018), attached as Exhibit K.

²⁴ See, e.g., Viasat, Inc. Certification of Commencement of Operation, Call Sign E190201, IBFS File No. SES-LIC-20190411-00503 (filed Jan. 21, 2020), attached as Exhibit L.

²⁵ See Exhibits J, K & L.

²⁶ See Petition to Deny of SpaceX, Call Sign E170088, IBFS File No. SES-MOD-20200923-01031, at Attachment A, pp. A-8 to A-12 (filed Apr. 26, 2021), attached as Exhibit Q.

²⁷ SpaceX Request for Order to Show Cause, Call Signs E170088, E180006 & E190201, IBFS File Nos. SES-LIC-20170401-00357, SES-LIC-20190411-00503 & SES-MOD-20191216-01737 (filed Sept. 18, 2020), attached as Exhibit M.

²⁸ Response of Viasat, Inc. to Show Cause Request, Call Signs E170088, E180006 & E190201, IBFS File Nos. SES-LIC-20170401-00357, SES-LIC-20190411-00503 & SES-MOD-20191216-01737 (filed Oct. 1, 2020), attached as Exhibit N.

these terminals in the NGSO Ka-Bands. Viasat instead claimed that it had sufficiently demonstrated its operations would not cause interference—but its licenses require more than that. Somewhat bizarrely, Viasat also falsely claimed in its response to have reached a coordination agreement with SpaceX.²⁹ But Viasat did not produce a signed coordination agreement with SpaceX to support this claim—and it could not have, because no such agreement exists. Instead, Viasat resorted to providing the International Bureau with an email exchange between Viasat and a SpaceX consultant from which Viasat had *deleted* a critical email.³⁰ The omitted email showed *Viasat's own belief* that the chain had not resulted in an agreement of any kind.³¹ Indeed, in its own May 2020 Cure Request, Viasat said it had not agreed on terms with SpaceX.³²

D. Related Proceedings Before the International Bureau

Several proceedings before the International Bureau relate to these issues. The first concerns SpaceX's effort to remedy the unauthorized operation. The remaining reflect Viasat's belated and insufficient efforts to cure its ongoing violation without ceasing operations as its licenses require. SpaceX is providing the Enforcement Bureau with a copy of relevant materials as exhibits to this complaint.

Request for Show Cause Order. As mentioned, SpaceX requested that the International Bureau issue an order to show cause why Viasat's licenses should not be revoked in part, why a cease and desist order should not be issued, and/or why monetary forfeitures should not be imposed in light of Viasat's impermissible operation in the NGSO Ka-Bands.³³ Viasat responded on October 1, 2020,³⁴ and SpaceX replied on October 14, 2020.³⁵ Viasat filed a further reply on October 26, 2020, followed by an errata thereto on November 1, 2020.³⁶

May 2020 Cure Request and VSAT Modification Application. In May 2020, well after Viasat began operating alongside primary NGSO systems, it filed a letter asking the Commission to “deem” the pre-operating conditions in the three licenses satisfied with respect to SpaceX.³⁷

²⁹ *Id.* at 6.

³⁰ See Reply of SpaceX to Show Cause Request, Call Signs E170088, E180006 & E190201, IBFS File Nos. SES-LIC-20170401-00357, SES-LIC-20190411-00503 & SES-MOD-20191216-01737, at 8-11 (filed Oct. 14, 2020), attached as Exhibit O.

³¹ See *id.* at 9-11. Compare *id.* at exhibit B (full chain provided by SpaceX) with Exhibit N at exhibit B (truncated chain provided by Viasat).

³² See Exhibit N at exhibit C. In a further response to the request for a show cause order, Viasat dwelled on its assessment of SpaceX's *motivations* for declining Viasat's proposed terms, effectively conceding the absence of an agreement. See Erratum, Reply of Viasat, Inc. to Show Cause Request, Call Signs E170088, E180006 & E190201, IBFS File Nos. SES-LIC-20170401-00357, SES-LIC-20190411-00503 & SES-MOD-20191216-01737, at 3-4 (filed Nov. 1, 2020), attached as Exhibit P.

³³ See Exhibit M.

³⁴ See Exhibit N.

³⁵ See Exhibit O.

³⁶ See Exhibit P.

³⁷ See Exhibit N at exhibit C.

SpaceX responded in June 2020,³⁸ and Viasat's request remains pending.

On September 18, 2020, Viasat finally filed an *actual* application to modify the 2017 VSAT License.³⁹ In that application, Viasat did *not* assert that it had reached a coordination agreement with SpaceX or that it had ceased operations in the NGSO Ka-Bands. Instead, Viasat simply resubmitted two technical showings previously filed in connection with its request for reconsideration of the condition in its underlying blanket license. SpaceX, O3b, and Telesat responded, each confirming that Viasat had not coordinated with them.⁴⁰ Viasat responded, and SpaceX replied.⁴¹ The modification application remains pending.

LEGAL ANALYSIS

In granting the 2017 VSAT License and 2018 and 2019 ESAA Licenses, the Commission took great care to explicitly condition Viasat's operations in a way that would ensure that the primary service in the NGSO Ka-Bands—NGSO FSS—would not suffer interference. The Commission did so by unequivocally requiring Viasat to meet verifiable *pre-operating* conditions that can only be satisfied with the consent of the NGSO operator or the Commission. As outlined in the factual allegations above, however, Viasat has failed to meet either of those necessary requirements and instead has engaged in impermissible “self-help.” Any instances of operation of the VSATs or ESAAs in the 18.8-19.3 or 28.6-29.1 GHz bands therefore would violate (1) prohibitions against the use of spectrum without authorization and (2) rules that require licensees to comply with the terms and conditions of their Commission authorizations. Even more concerning, Viasat's conduct dangerously undermines the Commission's framework for ensuring the efficient use of scarce spectrum, which cannot function if secondary operators who disagree with their licensed obligations are permitted simply to pretend those obligations do not exist.

A. Unauthorized spectrum operation

Section 301 of the Communications Act and Section 25.102(a) of the Commission's rules prohibit the use or operation of any apparatus for the transmission of energy or communications or signals by an earth station except under and in accordance with a Commission-granted authorization.⁴² As explained above, Viasat's licenses expressly require it to meet specific, clear, verifiable pre-operating conditions before using the 18.8-19.3 and 28.6-29.1 GHz bands. Viasat has not met those requirements. It has not reached a coordination agreement with SpaceX, let

³⁸ See Exhibit O at 6-7, exhibit A.

³⁹ See VSAT Modification Application.

⁴⁰ See Exhibits E & F.

⁴¹ See Consolidated Opposition to Petition and Response to Comments of Viasat, Call Sign E170088, IBFS File No. SES-MOD-20200923-01031 (filed Apr. 29, 2021); Reply of SpaceX, Call Sign E170088, IBFS File No. SES-MOD-20200923-01031 (filed May 11, 2021).

⁴² See 47 U.S.C. § 301; 47 C.F.R. § 25.102(a).

alone timely notified the Commission in writing of such an agreement, and the same appears to be true for O3b and Telesat.⁴³

Viasat also has not secured permitted alternatives to a coordination agreement. It has not obtained a license modification, which is the only alternative afforded to it under the 2017 VSAT License. And while the 2018 and 2019 ESAA Licenses allow Viasat to submit demonstrations of non-interference, none of Viasat's subsequent showings have been accepted by the Commission.⁴⁴ Specifically, the May 2020 Cure Request—which did not contain an interference analysis at all—remains pending before the Commission. So does the VSAT Modification Application, which does not even relate to the ESAA licenses.

Because Viasat has failed to meet pre-operating requirements, every instance of operation of the VSAT and ESAA terminals would be unauthorized and in violation of the Act and Part 25. And it appears that Viasat has been operating these terminals in these frequencies for years—and continues to do so. Critically, because Viasat has failed to satisfy pre-operating requirements with respect to not just SpaceX, but O3b and Telesat as well, the timeframe within which any operations would be unauthorized is expansive—reaching all the way back to the issuance date of the 2017 VSAT Grant.⁴⁵ For the same reason, while Viasat has falsely claimed to have reached a coordination agreement with SpaceX in June 2019, it would be engaging in unauthorized operation even if this false claim were true.

B. Repeated and willful Title III license violations

Sections 312(a) and 503(b) of the Act, and Section 25.160 of the Commission's rules, likewise prescribe penalties when a license willfully and repeatedly violates the terms and conditions of its Commission authorization.⁴⁶ Viasat's actions show that its conduct goes well beyond the bar for

⁴³ See Exhibits E & F.

⁴⁴ The mere filing of technical demonstrations is of course not enough. The full Commission has stated that to demonstrate GSO ESAs will not cause harmful interference to an NGSO system, the GSO operator “is expected to show, *to the NGSO system satisfaction*, that it is capable of protecting the NGSO's operation.” See *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 & Order, Report & Order, and Further Notice of Proposed Rulemaking, 35 FCC Rcd. 5137, ¶ 19 (2020). The NGSO operator's only obligation is to review proposals in “good faith.” *Id.* If the two operators are at loggerheads, the secondary licensee must approach the Commission to resolve the coordination dispute. The secondary licensee cannot engage in “self-help” by simply operating because it believes the interference it is causing is not harmful—which would defeat the entire purpose behind *pre-operating* conditions in the first place. Viasat knows this—which is why it *requested* that the Commission “deem” its conditions satisfied in the May 2020 Cure Request.

⁴⁵ O3b has been operational since 2013, Telesat since 2018, and SpaceX since 2019, according to public filings and announcements. See Exhibits B, C & D. And Viasat was required to coordinate its VSATs at least *60 days prior* to each of these operators' *scheduled* initial launch.

⁴⁶ See 47 U.S.C. §§ 312(a), 503(b); 47 C.F.R. § 25.160.

“willful” violations under the Communications Act⁴⁷ and merits a significant punitive response from the Commission:

- Viasat’s belated—and unsuccessful—efforts to cure its ongoing violations demonstrate that it knows it has been operating unlawfully:
 - The pending petition for reconsideration of the 2017 VSAT License shows that Viasat has always known it could not operate first and finalize coordination later.⁴⁸ Viasat has been acting as if the petition has been granted, but it never was.
 - Viasat’s May 2020 Cure Request likewise asked the Commission to deem the pre-operating requirements satisfied in all three licenses. That Viasat made such a belated request indicates that it knew it was not entitled to operate. That Viasat’s request remains pending shows no “cure” is in place.
 - Viasat’s pending VSAT Modification Application—filed hours after SpaceX’s request for a show cause order, and years after it started operating—underscores the point.
- Viasat cannot claim ignorance that other NGSO operators have launched and thus must be coordinated with. Such launch information is public and easily ascertainable.⁴⁹
- Viasat has a pattern of pretending to have secured coordination agreements that do not exist. It told the Commission that Viasat and SpaceX reached an agreement in June 2019, but misleadingly omitted a portion of the relevant email thread that showed no agreement was reached.⁵⁰ Viasat’s May 2020 Cure Request—its own filing—likewise shows that no agreement was reached.⁵¹ Similarly, Viasat privately tried to mislead SpaceX that it had secured an agreement with O3b in an effort to pressure SpaceX to accept the same terms. Subsequently, O3b stated on the record that no such agreement exists.⁵²
- Viasat has been on specific notice about this very issue since at least June 4, 2020, when SpaceX opposed the May 2020 Cure Request and explained why Viasat’s pre-operating conditions remained unsatisfied.⁵³ Since then, two additional operators, O3b and Telesat, have also stated that Viasat has not met the pre-operating conditions in its licenses.⁵⁴

⁴⁷ See 47 U.S.C. § 312(f) (“The term ‘willful,’ when used with reference to the commission or omission of any act, means the conscious and deliberate commission or omission of such act, irrespective of any intent to violate any provision of this chapter or any rule or regulation of the Commission authorized by this chapter or by a treaty ratified by the United States.”).

⁴⁸ See Exhibit G.

⁴⁹ See Exhibits B, C & D.

⁵⁰ See *supra* note 31 and accompanying text.

⁵¹ See Exhibit N at exhibit C, p.2.

⁵² See Exhibit E.

⁵³ See Exhibit O at 6-7, exhibit A.

⁵⁴ See Exhibits E & F.

Ms. Mumaw and Mr. Gee

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C. This is not a mere “coordination dispute.”

Before the International Bureau, Viasat has attempted to frame the dispute as a technical disagreement about whether its system will cause harmful interference. While SpaceX disagrees strenuously with Viasat’s technical analysis, the technical merits of its interference demonstration are not what is at issue here. Regardless of whether Viasat and SpaceX (and Viasat and other NGSO operators) are ultimately able to reach coordination agreements, Viasat jumped the gun and has for years knowingly and willfully violated the Communications Act and the Commission’s rules by impermissibly operating as many as 4,000,000+ terminals in violation of its licenses. That is what this matter is about.

The Commission expressly imposed pre-operating conditions to ensure that Viasat does not operate first and coordinate, or litigate coordination, later. But that is exactly what Viasat appears to have done. If it succeeds with this strategy, the conditions placed on secondary licensees would be virtually meaningless, and primary licensees that rely on the advance coordination process could go years without the protection to which they are entitled.

* * *

We thank you for considering the evidence we have presented to you and are available to discuss it in more depth at your convenience.

Respectfully submitted,



William M. Wiltshire

Paul Caritj

Shiva Goel

Counsel to SpaceX

Encls.

cc: Christopher J. Murphy, Associate General Counsel, Viasat, Inc. (via email and FedEx)

APPENDIX A

List of Relevant Stations

As shown in Exhibit Q,¹ SpaceX has detected interference from transmissions emanating from Viasat-1 (call sign S2747) and Viasat-2 (S2902). These satellites communicate with Viasat's VSAT and ESAA terminals, call signs E17088, E190201, and E180006, that SpaceX alleges to be operating unlawfully.

The example victim stations at which such interference was detected are SpaceX's gateway earth stations located in Greenville, PA (call sign E190724), Robertsdale, AL (call sign E202115), Uinta County, WY (call sign E201370), and Baxley, GA (call sign E202112). The call signs associated with the SpaceX Starlink Ku/Ka-band constellation are S2983 and S3018.

There may be other interfering and victim stations given the scope of Viasat's licenses and SpaceX's operations. For completeness, SpaceX lists the following potential interfering and victim stations below.

Potentially interfering stations

Name	Call Sign	Description
Blank earth station	E170088	Up to 4 million .75m and 10,000 1.8m fixed earth stations (VSATs)
Blank earth station	E180006	Earth stations aboard aircraft (ESAA)
Blank earth station	E190201	Earth stations aboard aircraft (ESAA)
Viasat-1	S2747	GSO satellite located at 115.1° W.L. Listed as a point of communication with the earth stations above.
Viasat-2	S2902	GSO satellite located at 69.9° W.L. Listed as a point of communication with the earth stations above.
WildBlue-1	S2355	GSO satellite located at 111.1° W.L. (collocated with ANIK-F2). Listed as a point of communication with the earth stations above.
ANIK-F2	S2742	GSO satellite located at 111.1° W.L. (collocated with WildBlue-1). Listed as a point of communication with the earth stations above.

¹ See Exhibit Q at attachment A, pages A-8 to A-12.

Potential victim stations

Name	Call Sign	Description
SpaceX Starlink	S2983/S3018	NGSO FSS satellite constellation
Gateway earth station	E190649	Loring, ME
Gateway earth station	E190676	Redmond, WA
Gateway earth station	E190724	Greenville, PA
Gateway earth station	E190725	Merrillan, WI
Gateway earth station	E200455	Hawthorne, CA
Gateway earth station	E201193	Arbuckle, CA
Gateway earth station	E201369	Charleston, OR
Gateway earth station	E201414	McGregor, TX
Gateway earth station	E201415	Boca Chica, TX
Gateway earth station	E201763	Nemaha, NE
Gateway earth station	E201981	Warren, MO
Gateway earth station	E201989	Slope County, ND
Gateway earth station	E201993	Los Angeles, CA
Gateway earth station	E201995	Cass County, ND
Gateway earth station	E201998	Sanderson, TX
Gateway earth station	E202007	Springer, OK
Gateway earth station	E202111	Tionesta, CA
Gateway earth station	E202112	Baxley, GA
Gateway earth station	E202114	Hitterdal, MN
Gateway earth station	E202115	Robertsdale, AL
Gateway earth station	E202116	Butte, MT
Gateway earth station	E201370	Uinta, Evanston, WY

Appendix B

TIMELINE OF EVENTS

June 2013: O3b Limited begins to operate its NGSO FSS network after obtaining U.S. market access the year prior. *See Exhibit C.*

April 1, 2017: Viasat applies for blanket authority to operate up to four million VSATs using the 18.8-19.3 GHz and 28.6-29.1 GHz bands (IBFS File No. SES-LIC-20170401-00357).

November 9, 2017: The Commission grants the 2017 VSAT License (Call Sign E170088), imposing Condition 90447 below. *See Exhibit A.*

Additionally, *no later than sixty days before the scheduled initial launch of each NGSO FSS satellite system* licensed or granted market access in the United States to operate in the 18.8-19.3 GHz and 28.6-29.1 GHz frequency bands, the licensee must either: (1) *notify the Commission in writing* when an agreement has been reached with the NGSO satellite system operator, or (2) seek and *obtain* the Commission's approval of a modification of this license including detailed technical demonstrations of how the licensee will protect the NGSO FSS satellite system. *If neither condition is met, the licensee must cease earth station operations in the 18.8-19.3 GHz and 28.6-29.1 GHz frequency bands pursuant to this license until such time as compliance is demonstrated.*

November 9, 2017: Viasat begins operating the VSATs authorized in the 2017 VSAT License. *See Exhibit J.* No notification of coordination with O3b appears on the record, and O3b later confirms no agreement exists. *See Exhibit E.* No license modification is sought or obtained.

December 11, 2017: Viasat seeks reconsideration of the 2017 VSAT License, requesting that the Commission delete Condition 90447 and replace it with a simple non-interference requirement. *See Exhibit G.* The petition remains pending, leaving the condition in force.

January 12, 2018: Telesat launches its NGSO FSS network after obtaining U.S. market access. *See Exhibit D.* No notification of coordination with Telesat appears on the record, even though such notification was due 60 days prior to Telesat's scheduled launch. Telesat later confirms no agreement exists. *See Exhibit F.*

January 23, 2018: Viasat applies for blanket authority to operate tens of thousands of ESAs (IBFS File No. SES-LIC-20180123-00055).

April 17, 2018: The Commission grants the 2018 ESAA License (Call Sign E180006), which was subsequently modified to include the NGSO Ka-Bands on November 25, 2019 and for other reasons on April 1, 2020. *See Exhibit H.* Viasat does not seek reconsideration of the license. Each iteration of the license contains the following Condition 90257:

ESAs authorized herein must be in compliance with the terms of coordination agreements with operators of non-geostationary orbit Fixed Satellite Service space stations operating in the 18.8-19.3 and 28.6-29.1 GHz frequency band. 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.*

June 6, 2018: Viasat begins operating the ESAAs authorized by the 2018 ESAA License, *see* Exhibit K, without coordinating with O3b or Telesat, or otherwise demonstrating that such operation will not cause harmful interference. *See* Exhibits E & F.

April 11, 2019: Viasat applies for blanket authority to operate tens of thousands of additional ESAAs (IBFS File No. SES-LIC-20190411-00503).

June 2019: SpaceX and Viasat initiate coordination discussions. SpaceX specifically strikes a provision proposed by Viasat from the draft agreement, and Viasat opposes the revision. No deal is reached and no agreement is signed. *See* Exhibit O at pp. 9-11 & exhibit B. In a letter to the Commission, Viasat later admits that no deal was reached. *See* Exhibit N at exhibit C.

November 11, 2019: SpaceX launches and begins to operate its first set of 60 satellites in the NGSO Ka-bands. *See* Exhibit B. No notification of coordination with SpaceX appears on the record, even though such notification was due 60 days prior to SpaceX's scheduled launch under the 2017 VSAT License. No coordination agreement with SpaceX exists.

November 15, 2019: The Commission issues the 2019 ESAA License (Call Sign E190201), imposing the same Condition 90257 above. *See* Exhibit I. Viasat does not seek reconsideration of the license.

November 15, 2019: Viasat begins operating the ESAAs authorized by the 2019 ESAA License, *see* Exhibit L, without coordinating with SpaceX, O3b, or Telesat, or otherwise demonstrating that such operation will not cause harmful interference. *See* Exhibits E & F.

May 18, 2020: Viasat attempts to cure its ongoing violation by requesting that the Commission "deem" the pre-operating conditions in the three licenses satisfied with respect to SpaceX. *See* Exhibit N at exhibit C. In the request, Viasat admits it does not have a coordination agreement with SpaceX. *Id.* at 2. The request remains pending and thus no "cure" is in place.

June 4, 2020: SpaceX replies to Viasat's request explaining that the pre-operating conditions remain unsatisfied and no operation should be taking place. *See* Exhibit O at exhibit A.

September 18, 2020: SpaceX requests that the International Bureau issue an order to show cause. *See* Exhibit M.

September 18, 2020: Hours later, Viasat files the VSAT Modification Application in another attempt to "cure" its violation of the 2017 VSAT License. The application remains pending, and thus no "cure" is in place. No application is filed concerning the 2018 or 2019 ESAA Licenses. No claim is made that Viasat and SpaceX have completed coordination.

October 4, 2020: Viasat opposes (and moves to strike) the request for a show cause order. *See* Exhibit N. It does not deny operating the VSATs and ESAAs in the NGSO Ka-Bands. For the first time, it claims that it secured a coordination agreement with SpaceX in June 2019, in contradiction to its own statements to the Commission in the May 18, 2020 letter. To substantiate this claim, Viasat submits an altered email thread that omits a communication from its own engineer confirming no deal was reached. *Compare* Exhibit N at exhibit B (Viasat-provided chain) *with* Exhibit O at exhibit B (full chain provided by SpaceX).

October 14, 2020: SpaceX replies in support of the order to show cause. *See* Exhibit O.

October 26, 2020: Viasat files a further reply opposing the issuance of an order to show cause. *See* Exhibit P.

April 16, 2021: SpaceX, Telesat, and O3b respond to the VSAT Modification Application that Viasat filed in September 2020. Each operator confirms that Viasat has not completed coordination or otherwise satisfied its pre-operating conditions. *See* Exhibits Q (SpaceX), F (Telesat), and E (O3b). SpaceX includes technical measurements and analysis showing ongoing interference at four of its gateway earth stations. *See* Exhibit Q at Attachment A, pp. A-8 to A-12.