

September 27, 2019

BY ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: *Space Exploration Holdings, LLC, IBFS File Nos. SAT-LOA-20161115-00118 and SAT-MOD-20181108-00083; WorldVu Satellites Limited, IBFS File No. SAT-LOI-20160428-00041; Telesat Canada, IBFS File No. SAT-PDR-20161115-00108; and Kepler Communications Inc., IBFS File No. SAT-PDR-20161115-00114*

Dear Ms. Dortch,

Space Exploration Holdings, LLC (“SpaceX”) files this letter in response to apparently coordinated letters from Kepler Communications Inc. (“Kepler”), Telesat Canada (“Telesat”), and WorldVu Satellites Limited (“OneWeb”, and together with Kepler and Telesat, the “Non-U.S. Operators”) reasserting their irreparably flawed views on the criteria for a non-geostationary orbit (“NGSO”) satellite system to be “first to operate” in the Ku band for purposes of Section 25.261(c), as well as an earlier letter from Telesat pointing out that these arguments are premature.¹ The Non-U.S. Operators continue their effort to eliminate the Commission’s explicit earth station requirement from the default frequency sharing rules. Perhaps not surprisingly, the inevitable result of their interpretation is an outcome that is not only unenforceable, but also would give non-U.S. operators an unfair advantage over American systems licensed by the Commission.

As an initial matter, SpaceX is encouraged that both Telesat and OneWeb have now joined SpaceX in recognizing the most efficient and effective path forward is good-faith coordination among NGSO operators.² SpaceX has sought to coordinate with all NGSO systems operating in the Ku band. By reaching reasonable and functional coordination agreements on how to share spectrum during in-line events, the NGSO operators

¹ See Letter from Nickolas G. Spina to Marlene H. Dortch, IBFS File Nos. SAT-LOA-20161115-00118, *et al.* (Aug. 15, 2019) (“Kepler Letter”); Letter from Henry Goldberg to Marlene H. Dortch, IBFS File Nos. SAT-LOA-20161115-00118, *et al.* (Aug. 15, 2019) (“Telesat Letter”); Letter from Brian D. Weimer to Marlene H. Dortch, IBFS File Nos. SAT-LOI-20160428-00041, *et al.* (Aug. 15, 2019) (“OneWeb Letter”); Letter from Henry Goldberg to Marlene H. Dortch, IBFS File No. SAT-PDR-20161115-00108 (July 26, 2019) (“Telesat July Letter”).

² See Telesat July Letter at 1; OneWeb Letter at 1.

themselves can render the default band-splitting discussion moot. It is difficult to coordinate, however, in those cases when one side refuses to engage.

Nonetheless, SpaceX is compelled to correct the record here to dispel certain issues, inaccuracies, and sometimes-conflicting contentions in the latest round of filings by the Non-U.S. Operators.

No NGSO Operator Can Claim “First to Operate” Status Before Satisfying the Conditions of its Authorization

SpaceX appreciates Telesat’s point that arguments about who was “first to operate” may be premature, and recognizes that this is particularly the case for Kepler and OneWeb. Specifically, one obvious criterion for any given NGSO operator to qualify as “first to operate” must be the ability to commence operations within the band in compliance with the conditions of its authority granted by the Commission. To this end, all the Ku-band authorizations granted to operators in the recent NGSO processing round reflect such conditions, including reference to footnote US131 of the Table of Frequency Allocations, which states that NGSO systems “shall coordinate” with the relevant radio astronomy observatories “*prior* to commencing operations.”³ The National Radio Astronomy Observatory (“NRAO”) recently filed comments indicating that neither Kepler nor OneWeb have completed the requisite coordination to protect the nation’s vital radio astronomy operations in the band. Accordingly, as the NRAO explains, if OneWeb and Kepler are following Commission rules, “neither OneWeb nor Kepler should be said to have commenced operations because neither has satisfied their obligation under US131.”⁴ For this reason alone, these companies are not “first to operate” relative to SpaceX.

Reading the Earth Station Requirement Out of the Commission’s Rules Would Advantage Non-U.S. Operators over Truly American Operators Like SpaceX

The Non-U.S. Operators continue to promote a flawed interpretation of Section 25.261(c) that would give foreign NGSO operators an undue advantage over truly American systems that cannot launch before they receive Commission authorization. In this scenario, those foreign operators may launch their satellites under foreign authority while comparable U.S. systems wait for the Commission to form a processing round and consider all applications to ensure they comply with U.S. laws and regulations. By the time that the Commission licenses American systems in the processing round, the foreign-licensed operators can immediately claim that they have already been operating well before the U.S. systems are even authorized to launch.

³ 47 C.F.R. § 2.106 n. US131 (emphasis added).

⁴ See Comments of the National Radio Astronomy Observatory, IBFS File No. SAT-LOI-20160428-00041, at 1 (Aug. 2, 2019) (“NRAO Comments”).

The Commission's earth station requirement levels the playing field. Kepler contends that receiving credit for a satellite that it launched in 2018, well before the Commission granted it access to the U.S. market, is the only approach that comports with its notion of “fairness.”⁵

But “fairness” is in fact best served by respecting the Commission’s earth station requirement that levels the playing field for all operators. While the Non-U.S. Operators criticize the Commission’s earth station requirement because it means they cannot get an advantage by launching under foreign authority before they have won access to the U.S. market, American operators like SpaceX are the ones constrained from deploying until the Commission completes licensing through a processing round. And as some of the Non-U.S. Operators have themselves demonstrated, a determined foreign competitor can attempt any number of administrative and political games in an effort to slow down approvals for American licensees. Unlike the interpretation put forward by Kepler and the other Non-U.S. Operators, the Commission’s earth station requirement treats all NGSO operators equitably. An NGSO operator simply has to meet the requirements of the rule by communicating with a U.S. earth station duly authorized by the Commission.

Confusingly, Kepler also argues that SpaceX should get no credit for launching and operating twice as many satellites at the beginning of 2018, even though they were launched and communicating with earth stations in the U.S. Kepler bases this contention on the fact that SpaceX launched those satellites before it received its license from the Commission.⁶ Ironically, this is exactly what Kepler is seeking to do for itself – count a satellite that it launched before the Commission granted its application.⁷ By Kepler’s own logic, SpaceX’s two satellites, launched and operated in 2018, should count just as much as those launched by Kepler.

Eliminating the earth station requirement runs counter to Commission priorities. More importantly, eliminating the earth station requirement would contravene the Commission’s goal of hastening deployment for *American* consumers. Giving a competitive advantage to some systems based solely on their launch of a satellite licensed by a foreign government to serve foreign consumers using foreign earth stations does nothing to achieve the Commission’s goals for promoting U.S. broadband connectivity. On the other hand, the earth station requirement still gives foreign operators credit for launching, even if under a foreign license prior to receiving U.S. market access, if they additionally take at least some notional step – having a U.S. earth station authorized by the Commission and communicating through it – to demonstrate a move towards serving American customers.

Kepler objects to this straightforward application of the rule because foreign operators cannot apply for earth station authorizations until they receive market access in

⁵ See Kepler Letter at 2-4.

⁶ See *id.* at 5 n.9.

⁷ See *id.* at 3.

the U.S. This complaint proves the leveling value of the earth station component of the Commission's rules. The requirement to acquire Commission approval to operate an earth station applies equally to all NGSO systems – no system can begin operation in the U.S. until it receives authorization from the Commission. This authorization requirement is the epitome of fairness and is a reasonable condition precedent to safe operations within the United States.

The Commission's earth station requirement mitigates foreign operators' ability to degrade service from American systems to American consumers. The Non-U.S. Operators bristle at SpaceX's point that their interpretation would allow a foreign operator to delay its entry into the U.S., only to come in later and degrade service already provided to American consumers. Kepler argues this ability to degrade service to American consumers is just a consequence of "spectrum sharing in general."⁸ In fact, SpaceX believes strongly in the virtues of efficient spectrum sharing, which is why it has invested heavily in space and ground technologies capable of sharing spectrum, such as its development of cutting-edge phased array antennas. SpaceX urges its NGSO compatriots to similarly invest in their systems' ability to operate compatibly with other space- and ground-based users of the bands.

Regardless of which systems are actually optimized to share spectrum efficiently, OneWeb handily counters Kepler's argument by pointing out that a foreign operator's ability to choose home spectrum first could cause increased degradation to American consumers beyond a simple spectrum split during in-line events. OneWeb notes that the "right to choose home spectrum first may confer certain operational advantages to NGSO FSS operators." OneWeb goes on to explain that this advantage results from the fact that "some portions of the Ku-band have more terrestrial incumbent users than other portions."⁹ In fact, these incumbent operators include the very radio astronomy observatories that have just weighed in on this issue. Thus, as OneWeb apparently contemplates, a foreign operator could indeed force a U.S. operator to limit service to American consumers beyond what would take place if spectrum were divided equitably. Once again, this outcome runs contrary to the Commission's stated intentions for a competitive NGSO market that contemplates robust broadband services to American consumers.

Reading the Earth Station Requirement Out of the Rule Would Render It Unenforceable

As SpaceX has previously explained, without a U.S. earth station requirement the Commission would not be able to ensure that space stations are actually capable of operating in the relevant frequency bands. Telesat attempts to dismiss the question of enforceability because it believes the rule does not apply "unless and until coordination between the parties has been attempted and failed." Telesat claims that this "coordination

⁸ See *id.* at 6.

⁹ OneWeb Letter at 2.

of necessity will have taken into account earth stations that fall within the jurisdictional ambit of Section 25.261(a).”¹⁰

Leaving aside whether disclosure to other parties in the course of coordination negotiations is equivalent to the Commission’s ability to enforce compliance with its rules, Telesat’s description of how Section 25.261(c) operates is simply not correct. The rule applies not only when coordination negotiation fail, but as OneWeb notes, it “governs spectrum sharing between NGSO FSS systems in the absence of an inter-operator coordination agreement.”¹¹ The Commission itself explained that the rule applies specifically “[s]hould coordination remain ongoing at the time both systems are operating.”¹² SpaceX appreciates Telesat’s optimistic view that all operators would share technical information before they commence operation, however, as described below, this has not always been SpaceX’s experience, nor that of the satellite sector as a whole.

While SpaceX has observed the industry practice of treating coordination discussions between operators as private, OneWeb has breached that trust in its most recent filing. To correct the record, SpaceX is compelled to provide further context. OneWeb correctly noted in its filing that two representatives from OneWeb did indeed have an initial conversation about coordination with SpaceX in February of this year. This informal conversation took place at the behest of SpaceX and, in keeping with common practice, touched upon only the initial respective views of how the two companies might approach coordination going forward. The companies had agreed to exchange standard technical data, a request that SpaceX explained was particularly necessary because OneWeb’s filings at the ITU are inconsistent with the system it describes in its filings with the Commission and different still than those it describes in public media. However, despite more than seven months of follow-up communications, OneWeb failed to provide even the most preliminary technical data needed for coordination analysis – the type described by Telesat. Only when prompted by government-to-government hosted coordination did OneWeb begin exchanging the basic technical information needed to commence the more in-depth analysis required for actual coordination negotiations.

Going forward, SpaceX is hopeful that OneWeb will engage even without such prompting by government entities. SpaceX continues to view operator-to-operator coordination as the most effective approach to spectrum sharing during in-line events. Unfortunately, this incomplete interaction also demonstrates the flaw in Telesat’s logic and how the band-splitting rule could be triggered without a full and complete exchange of technical detail.

¹⁰ Telesat Letter at 3.

¹¹ OneWeb Letter at 2.

¹² *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, 32 FCC Rcd. 7809, ¶ 49 (2017) (“NGSO Update Order”).

Nonetheless, the Non-U.S. Operators argue that the Commission will never actually need to confirm directly whether a system is actually capable of operating because it could seek indirect evidence, such as asking foreign governments what they think or consulting press articles.¹³ These indirect and catch-as-catch-can expectations cannot reasonably substitute for direct Commission enforcement of its own rules. The Commission should not need to consult a foreign government or scan trade press articles to determine how to enforce U.S. requirements governing service to American consumers. And press articles notoriously can be based on nothing more than a self-serving press release.¹⁴ Rather than being expected to piece together unreliable circumstantial evidence, the Commission should be able to make a compliance determination directly based on its own earth station requirement. That is, in fact, what the rule dictates.

The Non-U.S. Operators Ignore the Legislative History of the Earth Station Requirement

Finally, with regard to statutory interpretation, because the Non-U.S. Operators primarily rehash their earlier arguments, SpaceX refers back to its own prior explanation of the proper way to read Commission's rule.¹⁵ Suffice it to say, despite their best efforts to read the earth station requirement out of Section 25.261, the Non-U.S. Operators cannot undo several indisputable facts:

1. The Commission proposed in 2016 "to clarify that section 25.261 applies only to NGSO FSS systems communicating with earth stations with directional antennas."¹⁶
2. The Commission then adopted this proposal in 2017, clarifying "that section 25.261 applies only to NGSO FSS systems using directional earth station antennas, which are generally necessary for co-frequency operation."¹⁷ The Commission did not carve out any part of Section 25.261 from this jurisdictional requirement.

¹³ See, e.g., Kepler Letter at 6 n.12.

¹⁴ See, e.g., OneWeb Press Release, "OneWeb Secures Global Spectrum Further Enabling Global Connectivity Services" (Aug. 7, 2019) (incorrectly claiming that OneWeb somehow received "priority rights to operate in Ku-band spectrum" despite no ITU rules supporting this inaccurate assertion), <https://www.oneweb.world/media-center/oneweb-secures-global-spectrum-further-enabling-global-connectivity-services>.

¹⁵ See Letter from David Goldman to Marlene H. Dortch, IBFS File Nos. SAT-LOA-20161115-00118, *et al.*, at 2-5 (July 19, 2019).

¹⁶ *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, 31 FCC Rcd. 13651, ¶ 23 (2016).

¹⁷ *NGSO Update Order*, ¶ 52 n.118.

3. To implement this decision, the Commission changed the band-splitting rule to make clear it applied only to “NGSO FSS operation with earth stations with directional antennas anywhere in the world under a Commission license, or in the United States under a grant of U.S. market access.”¹⁸
4. The Commission made a corresponding change to the selection order portion of the rule to explain that a system must be “capable of operating in the frequency band under consideration,”¹⁹ which is only possible when a system has an earth station with which to communicate.

Rather than accept this inconvenient legislative and regulatory history, both OneWeb and Telesat repeatedly look to other sections of the Commission’s rules with different text and different history.²⁰ Whether or not their interpretation of those other rules is correct, they simply do not apply here. Those sections do not include the jurisdictional limitation that the Commission adopted for Section 25.261 in 2017. Those other rules demonstrate plainly that if the Commission did not intend to include an earth station requirement here, it would not have added that text. The fact that it did so clearly indicates the intent to achieve a different outcome.

As explained above, the Non-U.S. Operators continue to try to read the Commission’s earth station requirement in a way that gives them an advantage over American systems and is unenforceable. But the plain meaning of the rule and the policies that support it clearly contravene their attempts. Nonetheless, SpaceX once again notes that direct operator-to-operator coordination is the optimal path forward and encourages all other operators to push expeditiously and equitably towards that end.

Sincerely,

/s/ David Goldman

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¹⁸ 47 C.F.R. § 25.261(a).

¹⁹ Id. at § 25.261(c)(1).

²⁰ See, e.g., OneWeb Letter at 2-3; Telesat Letter at 3-4.

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cc: Jose Albuquerque
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