

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

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| In the Matter of |) | |
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| WorldVu Satellites Limited |) | |
| |) | |
| Modification to OneWeb |) | File No. SAT-MPL-20211104-_____ |
| U.S. Market Access Grant for the |) | |
| OneWeb V-Band System |) | |

APPLICATION FOR MODIFICATION

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APPLICATION FOR MODIFICATION

WorldVu Satellites Limited (“OneWeb”), by its attorneys and pursuant to Sections 25.117(d) and 25.137(f) of the Commission’s rules, hereby requests authority to modify the V-band Market Access Grant for its Low Earth Orbit (“LEO”), non-geostationary satellite orbit (“NGSO”), fixed-satellite service (“FSS”) constellation (the “OneWeb V-Band System”).¹ With this application (the “Modification Application”), OneWeb seeks Commission approval for the next two phases in the evolution of the OneWeb V-Band System, which parallel the pending modification of the OneWeb Ku/Ka-band system (Call Sign S2963, collectively with the OneWeb V-Band System, the “OneWeb System”).² In Phase 1, OneWeb will decrease the maximum number of authorized satellites in the OneWeb V-band System from 720 to 716 and undertake

¹ See *WorldVu Satellites Limited, Petition for a Declaratory Ruling Granting Access to the U.S. Market for the OneWeb NGSO FSS V-Band System*, Order and Declaratory Ruling, 35 FCC Rcd 10150 (IB 2020) (“V-Band Market Access” or “V-Band Market Access Grant”); see also 47 C.F.R. §§ 25.117(d) & 25.137(f).

² See *Modification Application of WorldVu Satellites Limited*, IBFS File No. SAT-MPL-20200526-00062, Call Sign S2963 (filed May 26, 2020) as amended by *Amendment to Modification Application for U.S. Market Access Grant for the OneWeb Ku- and Ka-Band System*, IBFS File No. SAT-APL-20210112-00007, Call Sign S2963 (filed Jan. 12, 2021) (“Ku/Ka Gen2 Application”).

certain adjustments to the orbital parameters of its constellation.³ In Phase 2, OneWeb will increase the number of authorized satellites in the OneWeb V-Band System from 716 to 6,372 satellites, add additional V- and E-band frequencies, and make other related changes to its orbital architecture and satellite payload designs.

In accordance with section 25.117 of the Commission’s rules, this Legal Narrative identifies all changes to OneWeb’s V-Band Market Access that are requested by this Modification Application.⁴ Concurrently, OneWeb is submitting an electronic FCC Form 312, a revised Schedule S and associated data files, as well as updated technical attachments to account for the requested changes to its V-Band Market Access. OneWeb certifies that all other information provided in its original petition for V-band market access remains unchanged and is incorporated by reference herein.⁵

I. GRANT OF THE MODIFICATION APPLICATION WOULD SERVE THE PUBLIC INTEREST BY INCREASING AVAILABLE SATELLITE-BASED CONNECTIVITY TO BRIDGE THE DIGITAL DIVIDE.

Since its inception, OneWeb has always been at the forefront of connectivity innovation. With its initial U.S. market access application, OneWeb heralded in a new era of NGSO-based connectivity services; initiating the Ku-/Ka-band processing round for modern NGSO systems in 2016⁶ and driving technological innovation through strategic partnerships with allied

³ The V-Band Market Access Grant included authorization for a 1,280 satellite Medium Earth Orbit (“MEO”) constellation operating at a nominal altitude of 8,500 km. *See* V-band Market Access. As part of the instant Modification Application, OneWeb no longer seeks authority for MEO operations and seeks to remove that portion of its initial V-band Market Access.

⁴ *See* 47 C.F.R. § 25.117.

⁵ *See WorldVu Satellites Limited, Petition for a Declaratory Ruling Granting Access to the U.S. Market for the OneWeb V-Band System*, IBFS File No. SAT-LOI-20170301-00031 (filed Mar. 1, 2017) (“V-Band Market Access Petition”); *see also* 47 C.F.R. § 25.117(c).

⁶ *See OneWeb Petition Accepted for Filing, Cut-Off Established for Additional NGSO-Like Satellite Applications or Petitions for Operations in the 10.7-12.7 GHz, 14.0-14.5 GHz, 17.8-*

governments, other satellite operators, equipment manufacturers, and mobile service providers.⁷ Recognizing the intensifying demand for broadband across the United States, OneWeb sought and obtained its V-Band Market Access in 2018, enabling the Company to significantly increase the available capacity on the OneWeb System and offer customers adaptable, targeted V-band connectivity in areas that require more comprehensive coverage.⁸

In October 2020, OneWeb was acquired by the U.K. Government and the Bharti Group.⁹ Since November 2020, OneWeb has secured \$2.7 billion in equity investment (with no debt issuance) and expanded its ownership group to include leading global satellite operator, Eutelsat, as well as secured significant equity investments from both SoftBank and Hughes Network Group (“Hughes”).¹⁰ OneWeb has also executed commercial agreements with several key technology

18.6 GHz, 18.8-19.3 GHz, 27.5-28.35 GHz, 28.35-29.1 GHz, and 29.5-30.0 GHz Bands, Public Notice, 31 FCC Rcd 7666 (IB 2016) (“2016 Ku/Ka-Band Processing Round”).

⁷ See, e.g., *NEOM Tech & Digital Holding Company and OneWeb sign \$200m JV for satellite network*, ONEWEB (Oct. 26, 2021), <https://oneweb.net/media-center/neom-tech-digital-holding-company-and-oneweb-sign-200m-jv-for-satellite-network>; *NSIL/ISRO and OneWeb to collaborate for taking Digital Connectivity to every Corner of the World*, ONEWEB (Oct. 11, 2021), <https://oneweb.net/media-center/nsil-isro-and-oneweb-to-collaborate-for-taking-digital-connectivity-to-every-corner-of-the-world>; *OneWeb completes TrustComm transaction, creating OneWeb Technologies*, ONEWEB (Sept. 21, 2021), <https://oneweb.net/media-center/oneweb-completes-trustcomm-transaction-creating-oneweb-technologies>; *Hughes and OneWeb announce Agreements for Low Earth Orbit Satellite Service in U.S. and India*, ONEWEB (Sept. 9, 2021), <https://oneweb.net/media-center/hughes-and-oneweb-announce-agreements-for-low-earth-orbit-satellite-service-in-u-s-and-india>; *Kymeta and OneWeb successfully test LEO-GEO capable Land and Maritime flat panel User Terminal*, ONEWEB (Sept. 7, 2021), <https://oneweb.net/media-center/kymeta-and-oneweb-successfully-test-leo-geo-capable-land-and-maritime-flat-panel-user-terminal>.

⁸ See generally V-Band Market Access.

⁹ See *OneWeb Successfully Emerges From Chapter 11, Announces New CEO and Recommences Satellite Launches*, ONEWEB (Nov. 20, 2020), <https://oneweb.net/media-center/oneweb-successfully-emerges-from-chapter-11-announces-new-ceo-and-recommences-satellite-launches>.

¹⁰ See *Eutelsat completes OneWeb equity investment*, EUTELSAT (Sept. 8, 2021), <https://www.eutelsat.com/en/news/press.html#/pressreleases/eutelsat-completes-oneweb-equity-investment-3126704>.

partners and commercial distributors, including Hughes, Peraton, Northwestel, AT&T, and BT. With this new funding and strong portfolio of commercial partners in place, OneWeb is well positioned to expeditiously complete the deployment of its first generation satellite constellation while continuing to invest in the development and advancement of its next generation system, thereby delivering much needed broadband capacity to U.S. consumers, particularly those in rural, remote, and underserved communities.

After pausing its launch campaign while undergoing the Chapter 11 restructuring process, OneWeb has now successfully deployed 358 satellites—nearly half of its first generation fleet.¹¹ OneWeb has begun service demonstrations in the upper Northern Hemisphere,¹² including in Alaska, where earlier this year the Company entered into distribution partnership agreements with Alaska Communications¹³ and Pacific Dataport¹⁴ to provide low-latency, high-speed service across the state, particularly in rural areas. By the end of 2021, OneWeb will provide coverage

¹¹ See *OneWeb Confirms Successful Launch of 36 Satellites from Vostochny*, ONEWEB (Oct. 14, 2021), <https://oneweb.net/media-center/oneweb-confirms-successful-launch-of-36-satellites-from-vostochny>.

¹² OneWeb launched the satellites required to enable service connectivity above 50° N in July 2021, with a service area that includes the United Kingdom, Alaska, Northern Europe, Greenland, Iceland, the Arctic Seas and Canada. See, e.g., Jonathan Amos, *OneWeb lays path to commercial broadband services*, BBC (July 1, 2021), <https://www.bbc.com/news/science-environment-57674882>; *OneWeb to Launch 36 Satellites to Deliver Connectivity Across the United Kingdom, Alaska, Canada and Arctic Region*, ONEWEB (June 23, 2021), <https://oneweb.net/media-center/oneweb-to-launch-36-satellites-to-deliver-connectivity-across-the-united-kingdom-alaska-canada-and-arctic-region>.

¹³ See *Alaska Communications Expands Connectivity Offerings With Low Earth Orbit Satellites*, ONEWEB (June 10, 2021), <https://oneweb.net/media-center/alaska-communications-expands-connectivity-offerings-with-low-earth-orbit-satellites>.

¹⁴ See *Pacific Dataport Inc. signs strategic distribution partnership with OneWeb*, ONEWEB (June 4, 2021), <https://oneweb.net/media-center/pacific-dataport-signs-strategic-distribution-partnership-with-oneweb>.

everywhere above 50° N.L. OneWeb expects to begin providing global connectivity services in 2022.

Notwithstanding this monumental achievement—OneWeb is on schedule to complete its first generation deployment well ahead of its milestone requirements—demand for broadband services has continued to accelerate over the last two years, intensifying the need for increased capacity to be added across all available and planned networks. Broadband usage increased 40% over the past year; the highest annual growth rate in nearly 10 years.¹⁵ What began as a response to a global pandemic—increased reliance on fast, reliable internet to work and learn remotely, video conference, stream, and simultaneously support multiple internet-enabled connected devices—is expected to continue as offices and schools reopen. The global pandemic has permanently shifted broadband connectivity from a “nice-to-have” commodity to a “need-to-have” utility.¹⁶

While there is now widespread recognition of broadband as critical infrastructure due to the COVID-19 pandemic, many communities still remain on the wrong side of a deepening digital divide. The pandemic laid bare the inequities faced by households who did not have access to, or have insufficient access to, broadband.¹⁷ According to the Pew Research Center, approximately

¹⁵ See *Broadband usage will keep growing post-pandemic*, AXIOS (May 4, 2021), https://www.axios.com/broadband-usage-post-pandemic-increase-32d0858b-9f54-4065-aa9b-b1716dcf6c2f.html?utm_campaign=organic&utm_medium=socialshare&utm_source=twitter.

¹⁶ See Marguerite Reardon, *FCC is laser-focused on erasing the digital divide and crushing robocalls*, CNET (Sept. 30, 2021), <https://www.cnet.com/home/internet/fcc-is-laser-focused-on-erasing-the-digital-divide-and-crushing-robocalls/> (quoting Acting Chairwoman Jessica Rosenworcel, who noted that “[w]ith this crisis, we've ended the days where we talk about broadband as a ‘nice-to-have.’ Policymakers everywhere now understand it's a ‘need-to-have’ for everyone across this country.”).

¹⁷ Brooke Auxier & Monica Anderson, *As schools close due to the coronavirus, some U.S. students face a digital ‘homework gap’*, PEW RESEARCH CENTER (Mar. 16, 2020), <https://www.pewresearch.org/fact-tank/2020/03/16/as-schools-close-due-to-the-coronavirus->

one quarter of American adults do not have access to broadband internet in their homes.¹⁸ The number of households without access is even greater for those living in tribal and rural areas (63%) and those earning less than \$30,000 a year (56%), not to mention the millions more who are “under-connected” or lack a stable connection.¹⁹ While the pandemic did not create the digital divide, it rapidly accelerated the digitization of society, amplifying the socioeconomic chasm between those with access to broadband and those who remain digitally excluded.

The Commission has long championed closing the digital divide as a “top priority,”²⁰ and the need to enable connectivity for all Americans, regardless of where they live, is more critical than ever. The next-generation OneWeb V-Band System will continue to build on OneWeb’s leading role in the on-going evolution of satellite-delivered broadband; bringing affordable, high-speed broadband to U.S. consumers, wherever they live and however they need it. The OneWeb V-Band System will refine and expand upon OneWeb’s ability to provide critical applications and services—including residential and enterprise broadband, cellular backhaul, mobility services, and health- and emergency-related communications—currently available over its first generation

[some-u-s-students-face-a-digital-homework-gap/](#) (illustrating that one-in-four teens in households with an annual income under \$30,000 lack access to a computer at home, compared with just 4% of those in households earning over \$75,000).

¹⁸ Emily Vogels et al., *53% of Americans Say the Internet has been Essential During the COVID-19 Outbreak*, PEW RESEARCH CENTER (Apr. 30, 2020), <https://www.pewresearch.org/internet/2020/04/30/53-of-americans-say-the-internet-has-been-essential-during-the-covid-19-outbreak/> (explaining that Americans with lower incomes are particularly likely to have concerns related to the digital divide and the digital “homework gap”).

¹⁹ *See id.*

²⁰ *See Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 2020 Broadband Deployment Report, 35 FCC Rcd 8986, ¶ 1 (rel. Apr. 24, 2020) (“FCC 2020 Broadband Deployment Report”). For example, the OneWeb V-Band System will offer the ability to deploy service to all of Alaska and many Arctic regions.

constellation, such as those that serve communities in traditionally harder-to-reach northern and polar communities.

The instant Modification Application represents the next step for OneWeb to expand on the unique role that NGSO FSS systems are poised to occupy amid the growing demand for broadband connectivity solutions. As explained in Section IV below, Phase 1 of OneWeb’s proposed modification primarily involves a small reduction in the number of authorized satellites, along with corresponding changes to the orbital parameters of the OneWeb V-Band System. These modest changes to the OneWeb V-Band System will not present any significant interference problems for other NGSO FSS systems authorized in the 2017 V-Band Processing Round,²¹ nor will they increase interference to geostationary satellite orbit (“GSO”) or terrestrial systems. In addition, authorization of OneWeb’s proposed Phase 1 operations will provide OneWeb with a more robust platform for competing in the growing market for NGSO-based broadband services, which the Commission has consistently observed are a critical component of its efforts to close the digital divide.²² Thus, consistent with Commission precedent, the FCC should process and grant Phase 1 of the Modification Application as a modification within the context of the 2017 V-

²¹ See *Space Exploration Holdings, LLC, Request for Modification of the Authorization for the SpaceX NGSO Satellite System*, Order and Authorization and Order on Reconsideration, 34 FCC Rcd 7995, 8007 ¶ 16 (IB 2021) (“SpaceX Third Modification Order”) (affirming that a processing round modification will be acceptable where it “will not present any significant interference problems,” as established in the *Teledesic Order*).

²² See, e.g., Commissioner Geoffrey Starks, *Can satellite broadband solve rural internet inequality?*, ORLANDO SENTINEL (July 25, 2019), <https://www.orlandosentinel.com/opinion/guest-commentary/os-op-broadband-internet-20190725-xdqcejglzvcoflsfja5ii7jz34-story.html> (“There are challenges to bringing service to the most remote areas of the U.S. where there is low population density and large amounts of land to cover... satellite providers can serve everyone, regardless of geography, once their satellites are operational. These services are often the only connection available in remote areas.”).

Band Processing Round, with all the continuing protections afforded to a 2017 V-Band Processing Round grantee.²³

In its proposed Phase 2 operations, OneWeb will expand upon Phase 1 of its constellation design and deployment to increase its authorized constellation size to 6,372 satellites and make corresponding adjustments to the number of orbital planes and deployment characteristics of the OneWeb V-Band System, as well as other enhancements to its satellite payload design. OneWeb respectfully requests that the Commission process this portion of its application as part of the new processing round initiated for NGSO FSS systems proposing to operate in the V-bands along with other similarly situated operators.²⁴

OneWeb also requests authorization to add the 42.5-43.5 GHz band (“43 GHz”), as well as the 71-76 GHz and 81-86 GHz band (“E-band”) frequencies to its Phase 2 authorization. While the Commission has not yet allocated the 43 GHz band for non-Federal FSS, nor adopted service rules or otherwise authorized satellite operations in the 43 GHz or E-band frequencies, OneWeb

²³ See *Space Exploration Holdings, LLC, Request for Modification of the Authorization for the SpaceX NGSO Satellite System*, Order and Authorization, 34 FCC Rcd 2526, 2530 ¶ 11 (IB 2019) (“SpaceX First Modification Order”) (concluding that a reduction in the number of satellites and resulting spatial configurations with the potential to generate interference constitute “a fundamental element in assessing whether there would be significant interference problems as a result of granting the proposed modification.”); see also *SpaceX Third Modification Order*, ¶ 16 (upholding the *Teledesic* standard that “[i]f the proposed modification does not present any significant interference problems and is otherwise consistent with Commission policies, it is generally granted[,]” but if the modification “presents significant interference problems, [the Bureau] would treat the modification as a newly filed application and would consider the modification application in a subsequent satellite processing round.”).

²⁴ See *Satellite Policy Branch Information, Cut-Off Established for Additional NGSO-Like Satellite Systems in the 37.5-40.0 GHz, 40.0-42.0 GHz, 47.2-50.2 GHz, AND 50.4-51.4 GHz Bands*, Public Notice, DA-21-941 (Aug. 4, 2021) (“2021 V-Band Processing Round” or “2021 V-Band Processing Round PN”) (provisionally concluding that applications from AST&Science LLC, Mangata Networks LLC and Viasat, Inc. (“Viasat”) should be included in the Second Processing Round).

respectfully requests a waiver, as described in Section III.B.2 below, to utilize these greenfield frequencies as critical gateway spectrum to help satisfy the ever-growing demand for broadband connectivity.

II. NETWORK ARCHITECTURE

The modified OneWeb V-Band System will be highly spectrum-efficient and well-equipped to share spectrum with other satellite and terrestrial users of the V- and E-bands. All capacity available on the OneWeb V-band System will be offered on a non-common carrier basis.

The modified NGSO constellation, gateway earth stations, and user terminals comprising the OneWeb V-band System are described below and in greater detail in the attached Technical Attachments and Schedule S. Unless expressly provided herein, the network architecture from the V-Band Market Access Petition remains valid, and is incorporated by reference.

A. Space Segment

The space segment of the OneWeb V-Band System will constitute a payload on OneWeb's modified second generation constellation.²⁵ The OneWeb V-Band System will consist of a 716-satellite LEO constellation in Phase 1, and will then be expanded to a 6,372-satellite LEO constellation in Phase 2.

In Phase 1, 716 satellites will contain V-band and Ku/Ka-band payloads operating on a common bus at an altitude of 1,200 km. The Phase 1 constellation will operate across two orbital shells: (i) 588 satellites in 12 orbital planes with 49 satellites each at an orbital inclination of 87.9° and (ii) 128 satellites in 8 orbital planes with 16 satellites each at an orbital inclination of 55°.

²⁵ Ku/Ka Gen2 Application, *supra* n. 2. The modification application for the second generation Ku/Ka system is currently pending before the Commission. *See also* V-Band Market Access Petition at 9 (describing the V-band component of the OneWeb V-Band System).

In Phase 2, 6,372 satellites will contain separate V/E-band and Ku/Ka-band payloads operating on a common bus. The Phase 2 constellation will operate across three orbital shells: (i) 1,764 satellites in 36 orbital planes with 49 satellites each at an orbital inclination of 87.9°, (ii) 2,304 satellites in 32 orbital planes with 72 satellites each at an orbital inclination of 55°, and (iii) 2,304 satellites in 32 orbital planes with 72 satellites each at an orbital inclination of 40°.

B. Ground Segment

Two categories of ground stations will operate with the OneWeb V-Band System: gateway earth stations and user terminals.

The OneWeb gateway stations will typically utilize 1.2m to 3.4m antennas depending on geographic and operational requirements. The V- and E-band gateway earth stations will transmit and receive communications traffic. All payload control and telemetry, tracking, and command (“TT&C”) functions will be performed using Ka-band frequencies that are part of the core OneWeb System.

Typically, up to 12 to 20 gateway earth station antennas will be collocated at a gateway site in order to access a number of visible satellites in the OneWeb V-Band System simultaneously from that location. Currently, five gateway earth station sites are expected to be deployed in the United States, including at sites in Hawaii and Alaska. OneWeb may also locate additional gateway earth stations in some U.S. Territories.

The user terminals will be small, low-cost antennas (typically in the 20-75 cm range) that will be deployed in high volumes. The user terminals may utilize mechanically steered parabolic reflectors and/or low-cost phased array designs or other beam steering technology currently being developed by OneWeb. A built-in optical solar array panel can also be added to battery-powered terminals. As a result, the user terminals are fully transportable and can be easily and quickly

deployed at any location, including those that otherwise lack traditional electric and telecommunications infrastructure.

III. THE MODIFIED ONEWEB V-BAND SYSTEM WILL CONTINUE TO SATISFY THE COMMISSION'S CRITERIA FOR U.S. MARKET ACCESS.

In the *DISCO II* Order, the Commission established a framework by which a non-U.S. licensed satellite operator can seek authorization to provide service in the United States.²⁶ As the OneWeb V-Band System is licensed by the United Kingdom,²⁷ the *DISCO II* framework applies to this application.²⁸ The *DISCO II* framework requires that a request for U.S. market access by a non-U.S. satellite system must serve the public interest.²⁹ As demonstrated in the V-Band Market Access Petition and confirmed by the V-Band Market Access Grant, the OneWeb V-Band System satisfies the *DISCO II* criteria for U.S. market access.³⁰

²⁶ See *Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States*, Report and Order, 12 FCC Rcd 24094, ¶ 188 (1997) (“*DISCO II* Order”); see also *Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States*, First Order on Reconsideration, 15 FCC Rcd 7207, ¶ 5 (1999); 47 C.F.R. § 25.137. OneWeb respectfully submits that the modified OneWeb V-Band System will continue to meet the Commission's requirements for U.S. market access.

²⁷ See Letter from Brian D. Weimer, Counsel to WorldVu Satellites Limited, to Marlene H. Dortch, Secretary, FCC, IBFS File No. SAT-LOI-20160428-00041, Call Sign S2963 (filed Mar. 1, 2019) (submitting a copy of the OneWeb U.K. Space Agency space activities license pursuant to the terms of its Ku/Ka-band market access authorization).

²⁸ See 47 C.F.R. §§ 25.137(f) & 25.117(d)(1).

²⁹ In reviewing such requests for market access, the Commission considers the effect on competition in the United States, spectrum availability, eligibility and operational requirements, and concerns related to national security, law enforcement, foreign policy, and trade issues. *DISCO II* Order, ¶ 7.

³⁰ See V-Band Market Access Petition at 10-31; V-Band Market Access Grant, ¶ 6.

A. Effect on Competition in the United States

Where a non-U.S. satellite system licensed by a World Trade Organization (“WTO”) member country seeks authority to provide a satellite services covered by the WTO Basic Telecommunications Agreement (“WTO Agreement”), the Commission presumes that foreign entry will promote competition in the United States.³¹ The United Kingdom is a WTO member. Its telecommunications regulatory authority—the U.K. Office of Communication (“Ofcom”)—previously approved OneWeb’s radiofrequency authorization in the V-band, and OneWeb is currently working with Ofcom to obtain authority for its modified V-Band System operations.³² Therefore, the presumption in favor of entry applies to the Modification Application.³³

Grant of the Modification Application will enhance OneWeb’s ability to offer next-generation connectivity services and compete more effectively to meet the ever-growing demand for broadband-enabled connectivity in the United States.³⁴ This increase in broadband competition in the U.S. market would provide U.S. consumers “additional choices among providers, reduce[d] prices, and increase[d]...quality and variety of services.”³⁵ By facilitating competition, the

³¹ *DISCO II* Order, ¶¶ 7 & 39.

³² OneWeb’s Phase 1 and Phase 2 operations will utilize a combination of V-band ITU filings through the United Kingdom and the Republic of France. OneWeb’s E-band ITU filings will be made through the United Kingdom.

³³ The United States’ satellite commitments under the WTO Agreement cover FSS and mobile satellite services (collectively, the “WTO Covered Services”). OneWeb seeks authority to provide only WTO Covered Services in the United States using the OneWeb V-Band System.

³⁴ According to one industry group, broadband use surged 30-40% during the COVID-19 pandemic, and even reached 60% in some areas of the United States. *See, e.g.*, Stephen Shankland, *Broadband use surged more than 30% during pandemic, industry group says*, CNET (Apr. 7, 2021), <https://www.cnet.com/tech/services-and-software/broadband-use-surged-more-than-30-during-pandemic-industry-group-says/>.

³⁵ *See DISCO II Order*, ¶ 30.

Commission can narrow, and ultimately eliminate, the digital divide and homework gaps which disproportionately impact rural and low-income households nationwide.³⁶ Granting the instant modification will facilitate the next generation of satellite-enabled services, delivering an innovative broadband service that vastly expands and improves connectivity options for U.S. consumers.

B. Spectrum Availability

The Commission considers spectrum availability as a factor in determining whether to allow a foreign-licensed satellite system to serve the U.S. market.³⁷ In doing so, the Commission evaluates whether grant of U.S. market access would create the potential for harmful interference with U.S.-licensed satellite or terrestrial systems. Through the instant Modification Application, OneWeb seeks market access in the same V-band spectrum as in its V-band Market Access Grant,³⁸ as well as additional portions of the V- and E-bands for its Phase 2 deployment identified below in bold (and included on the corresponding Schedule S) based on Sections 2.106 and 25.202(a)(1) of the Commission’s rules, applicable ITU Radio Regulations, and the Commission’s V-Band Plan:³⁹

³⁶ FCC 2020 Broadband Deployment Report, ¶ 1. For example, the OneWeb V-Band System will offer the ability to deploy adaptable, targeted connectivity services in Alaska and many Arctic regions.

³⁷ See *DISCO II* Order, ¶¶ 149-50.

³⁸ See V-Band Market Access Grant, ¶ 1.

³⁹ See 47 C.F.R. §§ 2.106 and 25.202(a)(1); see also *Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5- 38.5 GHz, 40.5-41.5 GHz and 48.2-50.2 GHz Frequency Bands*, First Report and Order, 13 FCC Rcd 24649 (1998); *Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz and 48.2-50.2 GHz Frequency Bands*, Second Report and Order, 18 FCC Rcd 25428 (2003) (“V-Band Plan”); *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, Fifth Report and Order, 34 FCC Rcd 2556 (2019).

| <u>Type of Link and Transmission Direction</u> | <u>Frequency Ranges</u> |
|---|--|
| Gateway-to-Satellite | 42.5-43.5 GHz 47.2-50.2 GHz 50.4-51.4 GHz 81.0-86.0 GHz |
| Satellite-to-Gateway | 37.5-42.0 GHz 71.0-76.0 GHz |
| User Terminal-to-Satellite | 48.2-50.2 GHz |
| Satellite-to-User Terminal | 40.0-42.0 GHz |

OneWeb will access this spectrum on either a primary, secondary, or non-conforming basis in accordance with the particular frequency band and the applicable Commission allocation.

1. Currently-Authorized V-Band Spectrum (37.5-42.0 GHz, 47.2-50.2 GHz, 50.4-51.4 GHz)

The Commission has already granted OneWeb access to utilize the 37.5-42.0 GHz, 47.2-50.2 GHz, 50.4-51.4 GHz (“V-band”) frequency bands in the United States.⁴⁰ In the V-Band Market Access Grant, the Commission concluded that the OneWeb V-Band System was capable of sharing this spectrum with other co-frequency satellite and terrestrial systems.⁴¹

To that end, OneWeb will coordinate its existing and planned operations with other NGSO FSS operators. In Technical Attachment A included with this application, OneWeb demonstrates

⁴⁰ See V-Band Market Access, ¶¶ 1 & 5. In November 2017, the Commission adopted the *Spectrum Frontiers Second Report and Order*, which, among other things, made or affirmed determinations that the 40-42 GHz and 48.2-50.2 GHz bands is to be reserved for FSS use and blanket licensing would be permitted in the bands. See *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services et. al.*, Second Report and Order, Second Further Notice of Proposed Rulemaking, Order on Reconsideration, and Memorandum Opinion and Order, 32 FCC Rcd 10988 (2017).

⁴¹ See V-Band Market Access, ¶ 30(m).

that the proposed reduction in the number of authorized satellites from 720 to 716 and the corresponding change in orbital architecture during the Phase 1 deployment will not present any significant interference problems for other satellite or terrestrial systems.⁴² As such, this portion of the Modification Application should be processed in accordance with Section 25.117(d)(2) of the Commission's rules, as explained further in Section IV below.

2. Additional Gateway Frequency Bands (42.5-43.5 GHz, 71.0-76.0 GHz, 81.0-86.0 GHz)

In addition to the previously authorized V-band frequencies, OneWeb intends to utilize the following frequency bands for critical gateway operations for its Phase 2 deployment: 42.5-43.5 GHz, 71.0-76.0 GHz, and 81.0-86.0 GHz. Access to these spectrum bands for gateway service links will significantly increase the volume of customers that can be served by the OneWeb V-Band System and significantly improve the quality of service each user will receive. OneWeb reasonably expects that its system can operate in these bands without causing harmful interference to or requiring protection from any other higher priority service duly licensed in these bands.

a. 42.5-43.5 GHz band

The non-Federal Table of Allocations currently limits the 42.5-43.5 GHz band to radio astronomy uses, while the Federal Table and all three ITU regions also allocate the band for FSS uplink on a co-primary basis.⁴³ OneWeb previously applied for authorization to utilize the 43 GHz band in the V-Band Market Access Petition, but its request was deferred on public notice.⁴⁴

⁴² See Technical Attachment A at A.7.2.

⁴³ 47 C.F.R. § 2.106.

⁴⁴ *Policy Branch Information: Applications Accepted for Filing*, Report No. SAT-01245, File No. SAT-LOI-20170301-00031 (June 16, 2017) (Public Notice) (deferring consideration of OneWeb's request for market access in the 42-43.5 GHz band "which is not allocated for non-Federal [FSS] in the United States.").

However, as the need for uplink spectrum grows with the increased demand for broadband connectivity across the United States, OneWeb herein requests a waiver of the U.S. Table of Frequency Allocations in order to operate its gateway earth station uplink channels on this spectrum, consistent with ITU frequency allocations.⁴⁵

Pursuant to Section 1.3 of the Commission’s rules, the Commission can waive its rules for good cause shown. In particular, the Commission may waive a rule “if special circumstances warrant a deviation from the general rule” and such deviation will “better serve[] the public interest” than strict application of the rule.⁴⁶ The waiver should not undermine the policy objective of the rule, and should otherwise serve the public interest.⁴⁷

Grant of the instant waiver request to allow OneWeb to access the 42.5-43.5 GHz band for limited gateway uplink operations is in the public interest. Access to this frequency band would provide OneWeb with critical gateway uplink capacity in a relatively greenfield spectrum, allowing OneWeb to deploy a more robust broadband network capable of providing broadband access to all U.S. consumers.

In deploying the OneWeb V-Band System, OneWeb will take all steps necessary to protect radio astronomy observations. OneWeb is confident that its limited number of individually-licensed, U.S. gateway facilities can be deployed in a manner that avoids any possibility of harmful interference to radio astronomy observation sites in the United States by maintaining a safe distance between the gateway sites and U.S. radio astronomy stations in the United States. This

⁴⁵ See Int’l Telecomm. Union, *Radio Regulations*, Vol. 1, Ch. II, Article 5.551 (RR5-132) (2016).

⁴⁶ *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

⁴⁷ *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969).

will be achieved in consultation with the radio astronomy community. OneWeb looks forward to working cooperatively with both the radio astronomy community and any future terrestrial users in this band in order to ensure compatible use of this band.

b. 71.0-76.0 GHz, and 81.0-86.0 GHz bands

The non-Federal Table of Allocations currently allocates the 71.0-76.0 GHz and 81.0-86.0 GHz bands for FSS on a co-primary basis. However, OneWeb recognizes that the Commission has not yet adopted service rules for FSS operations in these bands.⁴⁸ In accordance with section 25.217 of the Commission’s rules, OneWeb will comply with the applicable default rules until such time as the Commission adopts service rules for these bands, at which point OneWeb will conform its operations to those rules, as appropriate.⁴⁹

C. National Security, Law Enforcement, Foreign Policy, and Trade

The Commission noted in its *DISCO II* Order that issues of national security, law enforcement, foreign policy, and trade are likely to arise only in very rare circumstances.⁵⁰ The Commission further noted that it would accord deference to the expertise of the Executive Branch in identifying and interpreting issues of this nature.⁵¹ The Commission identified no national security, law enforcement, foreign policy, or trade issues in the V-Band Market Access Grant, and

⁴⁸ OneWeb acknowledges that there is an open proceeding considering “new and expanded commercial uses” of the 70/80/90 GHz bands. *See Modernizing and Expanding Access to the 70/80/90 GHz Bands*, Notice of Proposed Rulemaking and Order, 35 FCC Rcd 6039 (2020). The Commission has recently released a public notice seeking to refresh the record in the proceeding, which could result in the FCC adopting rules for sharing among co-primary services in the E-band. *Wireless Telecommunications Bureau Seeks to Supplement the Record on 70/80/90 GHz Bands Notice of Proposed Rulemaking*, Public Notice, DA 21-1263 (Oct. 8, 2021).

⁴⁹ 47 C.F.R. §§ 25.217(b), (e).

⁵⁰ *DISCO II Order*, ¶ 180.

⁵¹ *Id.*

OneWeb respectfully submits that the instant Modification Application raises no additional issues in these areas.⁵² Hence, this element of the *DISCO II* Order analysis remains unchanged.

D. Eligibility and Operational Requirements

Pursuant to Sections 25.117(d) and 25.137 of the Commission's rules, applicants seeking to modify their grants of market access for non-U.S. licensed space stations must provide the legal and technical information for the non-U.S. space stations required by Part 25 of the Commission's rules, including Section 25.114.⁵³

1. Legal and Technical Qualifications

To the extent necessary, OneWeb incorporates by reference all of the technical information set forth in the technical attachment included with the V-Band Market Access Petition, as modified by the updated technical information set forth in the technical attachments accompanying this Modification Application.⁵⁴ That information, and the associated electronic FCC Form 312, Schedule S, and attachments, demonstrates compliance with the requirements of Sections 25.117, 25.137, and the other applicable sections of Part 25 of the Commission's rules. OneWeb certifies that, apart from the updated information included in this Legal Narrative and in the updated technical attachments and associated documents, no other information has changed since the initial V-Band Market Access Petition.⁵⁵ In addition, OneWeb highlights here certain Part 25 rules that warrant special attention:

⁵² V-Band Market Access Grant, ¶ 6.

⁵³ See 47 C.F.R. §§ 25.117(d)(1) & 25.137(f).

⁵⁴ See generally V-Band Market Access Petition.

⁵⁵ An updated ownership exhibit is also included as an attachment to this application.

a. *Section 25.114(d)(14) – End of Life Disposal*

The Commission has long recognized that non-U.S. licensed space stations can satisfy the Commission’s orbital debris rules “by demonstrating that debris mitigation plans for the space station(s) for which U.S. market access is requested are subject to direct and effective regulatory oversight by the national licensing authority.”⁵⁶ The Commission recently reaffirmed this approach and continues to allow non-U.S. license space stations to satisfy the orbital debris disclosure requirements by demonstrating direct and effective regulatory oversight by a regulatory authority outside the United States.⁵⁷

As noted in the V-Band Market Access Grant, OneWeb’s orbital debris mitigation plans are subject to direct and effective regulatory oversight by the United Kingdom’s regulatory authorities—including the U.K. Space Agency—which will also have oversight of OneWeb’s proposed Phase 1 and Phase 2 operations.⁵⁸ OneWeb will provide orbital debris mitigation information to the extent requested by the FCC.

b. *Sections 25.137(d)(4) & 25.165 – Posting of Bond*

These rules require a market access grantee to post an initial surety bond to provide for payment in the event that such NGSO system licensee fails to meet the Commission’s milestone requirement, and to escalate the bond amount pro rata, up to \$5 million for an NGSO system, in proportion to the time that elapses after the market access grant. OneWeb has already posted its

⁵⁶ 47 C.F.R. § 25.114(d)(14)(v).

⁵⁷ *Mitigation of Orbital Debris in the New Space Age*, Report and Order and Further Notice of Proposed Rulemaking, 35 FCC Rcd 4156, 4222-23 , ¶ 144-45 (2020).

⁵⁸ *See* V-Band Market Access Grant, ¶ 30(o); *see also* letter from Brian D. Weimer, Counsel to WorldVu Satellites Limited, to Marlene H. Dortch, Secretary, FCC, IBFS File No. SAT-LOI-20170301-00031, Call Sign S2994 (filed Feb. 26, 2021) (demonstrating the United Kingdom’s effective regulatory oversight pursuant to condition 30(o) of the V-Band Market Access Grant).

initial surety bond for the OneWeb V-Band System and will escalate its bond amount as required under the Commission’s rules.⁵⁹

2. Waivers

In addition to the waiver of the U.S. Table of Frequency Allocations requested in Section III.B.2 *supra*, OneWeb, pursuant to Sections 1.3 and 25.112(b)(1) of the Commission’s rules, additionally requests waiver of Section 25.157(c) with regard to the additional V- and E-band frequencies that were not included in the 2021 V-Band Processing Round PN, as well as a limited waiver, to the extent necessary, of certain limitations in the Commission’s Schedule S software.

a. Section 25.157

Section 25.157(c) of the Commission’s rules provides that NGSO system “lead applications”—that is, applications not filed in response to a Public Notice initiating a processing round—will be placed on Public Notice.⁶⁰ The Public Notice will establish a cut-off date for competing NGSO applications and will initiate a new processing round. The Commission traditionally waives the requirement for a processing round when an applicant demonstrates that its authorization would not “preclude additional entry.”⁶¹

Although OneWeb is requesting access to all of the frequency bands that are subject to the 2021 V-Band Processing Round PN, it is also requesting access to additional frequency bands that

⁵⁹ See, e.g., Letter from Douglas Svor, Counsel for OneWeb, to Marlene Dortch, Secretary, FCC. IBFS File No. SAT-MPL-20210610-00078 (Aug. 20, 2021) (increasing the maximum penal amount of OneWeb’s surety bond).

⁶⁰ See 47 C.F.R. §§ 25.157(c), (e).

⁶¹ See *In re Northrop Grumman Space & Mission Systems Corporation, Order & Authorization*, 24 FCC Rcd 2330, 2343-44 ¶¶ 29 & 34 (2009) (“Northrop Order”).

are not included in the processing round.⁶² Thus, OneWeb requests a waiver of the processing round requirement in Section 25.157(c) for the frequency bands requested in this Modification Application that are not contained in the 2021 V-Band Processing Round PN.

The Commission has previously waived the processing round requirement for other NGSO constellations.⁶³ OneWeb respectfully submits that its ability to share the requested frequency bands not included in the current V-Band processing round will not preclude additional entrants in these bands. These bands will be used exclusively to provide gateway connectivity, making the number of ground stations that will require coordination small. As demonstrated in Section III.B.2 and the attached Technical Attachment B, OneWeb is confident that it can share this spectrum with existing and future users through the use of its innovative, sharing-enabling technologies, as well as traditional coordination methods.

Grant of this waiver request is in the public interest because it will enable OneWeb to access crucial spectrum for its gateway earth stations without causing harmful interference to or precluding use by other potential users of these bands.

b. *Schedule S*

Pursuant to the Commission's rules, OneWeb submits a completed Schedule S, containing certain technical information in a prescribed form, with this Modification Application. However, due to limitations in the Schedule S itself, OneWeb is unable to accurately describe both the OneWeb V-Band System and its proposed two-phase modification, in certain respects. To the

⁶² Specifically, the gateway frequencies in the 42.5-43.5 GHz, 71.0-76.0 GHz, and 81.0-86.0 GHz bands.

⁶³ See *Northrop Order*; see also *Application of O3b Limited to Operate a Gateway Earth Station with a Non-U.S. Licensed, Non-Geostationary Orbit Ka-band Space Station System*, IBFS File No. SES-LIC-20100723-00952, Radio Station Authorization, at 4, Condition 90043 (granted Sept. 25, 2012).

extent necessary, OneWeb requests that the Commission waive these aspects of Schedule S in light of these limitations.

First, due to the size of the OneWeb V-band System, it is impracticable to submit complete orbital parameter data for the constellation using the Schedule S web form. Accordingly, OneWeb will provide in Schedule S the 716 spacecraft in the Phase 1 deployment and deliver to the Commission a PDF file (in a similar format as the PDF generated by the Schedule S system) with the orbital information for the entire 6,372 satellites in the Phase 2 deployment, for inclusion in the record of this application.⁶⁴

Second, following discussions with Staff, a single Schedule S has been submitted to cover the entire Modification Application. As the Schedule S cannot be duplicated until after submission, the submitted Schedule S includes all frequency bands contemplated by both phases of deployment. Thus, the 43 GHz Band and E-Band frequencies that will only be utilized during the Phase 2 deployment are included in the Schedule S, even though they will not be utilized by the Phase 1 satellites. Separate technical attachments have been submitted along with this Modification Application for each deployment phase (Technical Attachments A and B), setting out how the information relayed in the Schedule S corresponds with each phase.

Finally, certain elements of the OneWeb V-Band System cannot be accurately conveyed as a result of limitations and default features in the FCC's online Schedule S software.⁶⁵ The

⁶⁴ As only a portion of the orbital parameter data will be provided in the Schedule S, not all aspects of the system will be accurately captured by the software and therefore the accompanying database should govern.

⁶⁵ To the extent necessary, OneWeb respectfully requests a waiver of Section 25.114 of the Commission's rules, 47 C.F.R. § 25.114, to address these issues inherent to the Schedule S form.

following notes are provided here, as well as in the accompanying Technical Attachments, to inform the review of data provided in the Schedule S:

(1) Orbit adjustments of the OneWeb V-Band System will be made to the orbit altitudes of the various orbital planes to ensure safe operation but cannot be not reflected in the Schedule S;

(2) The OneWeb V-Band System uses circular polarization for satellite transmitting and receiving beams, which has no polarization alignment angle. The Schedule S software uses a default value of 45° for the polarization angle when circular polarization is selected, which cannot be changed, and therefore it should be ignored for these purposes; and

(3) The Schedule S PDF printout software does not correctly list the satellite numbering and phase information that has been entered into the online system; therefore the FCC should refer to the numbering and phase information in the accompanying PDF generated by OneWeb.

IV. PHASE 1 OF THE MODIFICATION APPLICATION SHOULD BE PROCESSED PURSUANT TO SECTION 25.117(D)(2) AND AFFORDED THE CONTINUING PROTECTIONS OWED TO 2017 V-BAND PROCESSING ROUND GRANTEEES.

Pursuant to this Modification Application, OneWeb proposes a two-phased constellation deployment. *First*, in Phase 1, OneWeb will decrease slightly the number of satellites in the OneWeb System and make minor changes to the architecture of its system, including the orbital configuration of its constellation. *Second*, in Phase 2, OneWeb plans to operate an NGSO FSS constellation that includes up to 6,732 authorized satellites, with additional changes in gateway service links, orbital architecture, and deployment. These changes are reflected in the following chart:

| OneWeb System Architecture | Market Access Grant | Phase 1 | | Phase 2 | | |
|---------------------------------------|---|----------------|-----|---|-------|-------|
| Orbital Altitude (km) | 1200 | No change | | No change | | |
| Frequencies (GHz) | 37.5-42.0 GHz, 47.2-50.2 GHz, 50.4-51.4 GHz | No change | | 37.5-42.0 GHz, 42.5-43.5 GHz, 47.2-50.2 GHz, 50.4-51.4 GHz, 71.0-76.0 GHz, 81.0-86.0 GHz | | |
| Total Number of Satellites | 720 | 716 | | 6,372 | | |
| Number of Satellites per Shell | 720 | 588 | 128 | 1,764 | 2,304 | 2,304 |
| Number of Planes | 18 | 12 | 8 | 36 | 32 | 32 |
| Number of Satellites Per Plane | 40 | 49 | 16 | 49 | 72 | 72 |
| Orbital Inclination | 87.9° | 87.9° | 55° | 87.9° | 55° | 40° |

OneWeb respectfully requests the Commission process and grant the Phase 1 portion of the Modification Application as a modification of the OneWeb V-Band Market Access, with all the continuing protections afforded to a 2017 V-Band Processing Round grantee, and not as a newly filed application within the context of this additional V-band processing round.⁶⁶ Such a grant would be consistent with Commission precedent when considering similar modification requests for NGSO FSS systems granted authorization pursuant to a prior processing round proceeding.⁶⁷

In the normal course, Section 25.117(d)(2) of the Commission’s rules establishes that modifications of NGSO FSS system will be granted unless an applicant is seeking to “increase the

⁶⁶ To the extent necessary, OneWeb respectfully requests a waiver of Sections 25.155(b) and 25.157 of the Commission’s rules to allow for comparative consideration of the proposed Phase 1 modification with other applicants in the 2017 V-Band Processing Round.

⁶⁷ See n.23, *supra*.

authorized bandwidth” or where grant would “not serve the public interest, convenience, and necessity.”⁶⁸ In *Teledesic*, the Commission recognized that, “[i]f the proposed modification does not present any significant interference problems and is otherwise consistent with Commission policies, it is generally granted[,]” but if the modification “presents significant interference problems” the applications is to be treated “as a newly filed application and would [be] consider[ed...] in a subsequent satellite processing round.”⁶⁹

The Commission has repeatedly reaffirmed this standard in granting modification requests from numerous first-round NGSO systems, determining that applications that satisfy the requirements of Section 25.117(d)(2) do not require treatment as newly-filed applications for processing round purposes.⁷⁰ The Commission has already granted several amendment

⁶⁸ 47 C.F.R. §§ 25.117(d)(2)(ii), (iv).

⁶⁹ See, e.g., SpaceX Third Modification Order, ¶ 16 (reaffirming that while not binding, the *Teledesic Order*’s “focus on the public interest in avoiding significant radiofrequency interference is consistent with the purpose of the Commission’s processing round procedure”); *Teledesic LLC*, Order and Authorization, 14 FCC Rcd 2261, 2264 ¶ 5 (IB 1999) (quoting *GTE Spacenet Corp. Application to Modify Construction Permit and License for the GSTAR 4 Satellite*, 5 FCC Rcd. 4112, 4112 (1990).

⁷⁰ See, e.g., SpaceX Third Modification Order, ¶ 18 (“[S]imilar to the *Teledesic Order* determination, the SpaceX Third Modification will not present significant interference problems, since potential increased interference in some instances would be offset by diminished interference overall, and we grant the modification without need to treat the modification as a newly filed application.”); *ICO Satellite Services GP*, Memorandum Opinion and Order, 20 FCC Rcd. 9797, 9800 ¶ 11 (IB 2005) (“[T]he Commission has consistently granted applications for modification of systems in satellite services when the proposed modifications present no significant interference problem and are otherwise consistent with Commission policies.”); *The Boeing Company*, Order and Authorization, 18 FCC Rcd 12317, 12319 ¶ 7 (IB & OET 2003) (“[T]he Bureau has granted [modification applications] in cases where the proposed modification presents no significant interference problem and is otherwise consistent with Commission policies.”); *DigitalGlobe, Inc.*, Order and Authorization, 20 FCC Rcd 15696, 15700 ¶ 9 (2005) (reaffirming “[i]f a proposal will not cause interference to other licensed operations, the Commission generally authorizes it if it is otherwise in the public interest”).

applications filed by applicants in the 2017 V-Band Processing Round—dismissing challenges that these were newly filed applications—upon determining that those proposals presented no significant interference concerns.⁷¹

As demonstrated above, and as illustrated in the technical attachments to this Modification Application, OneWeb’s proposed Phase 1 LEO deployment will not present significant interference problems for the current NGSO FSS operating environment and is otherwise consistent with the amendment applications granted with respect to other 2017 V-Band Processing Round licensees and grantees. As an initial matter, OneWeb notes that its planned Phase 1 deployment will *decrease* the number of satellites in its authorized constellation. The Commission has emphasized that a reduction in the number of satellites in an authorized constellation will not change “the number of spatial configurations that have the potential for generating interference,” which is a “fundamental element” in the FCC’s public interest analysis.⁷² OneWeb’s Phase 1 deployment is squarely in line with this criteria.

In addition to reducing the number of satellites, the Phase 1 deployment of the modified OneWeb V-Band System will:

- Provide service across the *same frequencies* specified in the V-Band Market Access;
- Deploy spacecraft at the *same orbital altitude* specified in the V-Band Market Access;

⁷¹ See, e.g., *O3b Limited*, Order and Declaratory Ruling, 33 FCC Rcd 5508, 5524 ¶ 39 (IB 2018) (concluding that O3b’s amended modification application was not a “major amendment,” in part, because O3b’s proposed reduction in the number of satellites would “reduce the number of potential interference events”); *ViaSat, Inc.*, Order and Declaratory Ruling, FCC 20-56, ¶ 12 (rel. Apr. 23, 2020) (concluding that ViaSat’s amendment to its market access petition was not a “major amendment” because “the fact that the number of satellites proposed is reduced, the altitude of the proposed orbits remains the same, and the frequencies requested are unchanged mean that the number of potential interference events between ViaSat’s proposed satellites and other satellites being proposed in the same processing rounds is likely to be decreased...”).

⁷² SpaceX First Modification Order, ¶ 11.

- Employ the same *emission and reception parameters* as specified in the V-Band Market Access Petition;
- Utilize the same satellite *transmit power and power density levels* as specified in the V-Band Market Access Petition;
- Communicate only with user terminal earth stations that can see a satellite above a 45° elevation angle; and
- Continue to avoid the GSO arc with sufficient avoidance angle to comply with the ITU's Nos. 22.5L and 22.5M in the ITU Radio Regulations in frequency bands where that is required.

The detailed analysis contained in Technical Attachment A further confirms that the modest changes in OneWeb's proposed Phase 1 deployment will not present significant interference problems to the V-Band NGSO FSS operating environment. As demonstrated in Section A.7.2 of Technical Attachment A, the interference from the OneWeb V-Band System into other NGSO FSS constellations will *not* increase as a result of the modifications proposed herein.⁷³ Therefore, processing this portion of this Modification Application as a modification of the OneWeb V-Band Market Access pursuant to Section 25.117(d)(2), with all the continuing protections afforded to a 2017 V-Band Processing Round participant, would be entirely consistent with prior treatment of similarly-situated applications and would ensure regulatory parity in the increasingly competitive marketplace for NGSO-based connectivity services.

⁷³ OneWeb will similarly ensure protection of the GSO arc by continuing to comply with applicable EPFD limits. *See* Technical Attachment A at A.7.1; 47 C.F.R. §§ 25.289.

V. CONCLUSION

As demonstrated herein, the OneWeb System will continue to fully satisfy the Commission's requirements under the *DISCO II* Order for U.S. market access and applicable Part 25 rules. Accordingly, OneWeb respectfully requests the Commission to expeditiously grant the Modification Application to facilitate OneWeb's deployment of its next generation, satellite-based connectivity services.

Respectfully Submitted,

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