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

In the Matter of)
WorldVu Satellites Limited)
Modification to OneWeb) File No. SAT-MOD-2018
U.S. Market Access Grant for the)
OneWeb Ku- and Ka-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 and 25.137(f) of the Commission's rules, hereby requests authority to modify its current Market Access Grant for its low-earth orbit ("LEO"), non-geostationary satellite orbit ("NGSO"), fixed-satellite service ("FSS") constellation (the "LEO Constellation").

The OneWeb Market Access Grant permits OneWeb to access the U.S. market through its constellation of 720 LEO satellites authorized by the United Kingdom.²

Through this Modification, OneWeb seeks only to increase the number of active satellites in its LEO Constellation from 720 to 1,980 to align it with its ITU L5 filings.³

¹ See In the Matter of WorldVu Satellites Limited; Petition for a Declaratory Ruling Granting Access to the U.S. Market for the OneWeb NGSO FSS System, Order and Declaratory Ruling, 32 FCC Rcd 5366 (2017) ("OneWeb Market Access Grant"). See also 47 C.F.R. §§ 25.117, 25.137(f).

² OneWeb Market Access Grant at ¶ 1.

³ See ITU IFIC 2862 CR/C/3413 MOD-8 published on January 23, 2018.

The instant Modification is a result of the Commission's changed milestone rules. OneWeb designed its market-leading LEO Constellation to strictly comply with the Commission's milestone rules in place at the time. (Other companies took a different approach, designing vast satellite constellations with no apparent intention of satisfying the Commission's milestone requirements.) The Commission's dramatic relaxation of the milestone rules shortly after issuance of the OneWeb Market Access Grant compelled OneWeb to reassess what it can achieve under the newly expanded milestone timeframe. ⁴ This has naturally resulted in an increase in the number of satellites in its LEO Constellation.⁵

This Legal Narrative identifies all changes to OneWeb's Market Access Grant that are requested by this Modification. Concurrently, OneWeb is submitting a Schedule S, FCC Form 312, and updated Technical Annex to account for the

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⁴ See In the Matter of Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters, Report and Order and Further Notice of Proposed Rulemaking, 32 FCC Rcd 7809, ¶ 66-67 (2017) ("NGSO R&O"). Although the amendments to Sections 25.114, 25.115, 25.146, and 25.164 of the Commission's rules are not yet effective because of certain information collection requirements that must be approved by the Office of Management and Budget, OneWeb nonetheless assumes the effectiveness of the entire NGSO R&O throughout this Modification given the timing of this submission.

⁵ The change in milestone rules also led OneWeb's amendment of its original request for U.S. market access in the V-Band, IBFS File No. SAT-LOA-20170301-00031 (filed Mar. 1, 2017), requesting to add satellites and certain frequencies to its MEO constellation. See WorldVu Satellites Limited, Amendment to Petition for Declaratory Ruling Granting Access to the U.S. Market for the OneWeb V-Band System, IBFS File No. SAT-AMD-20180104-00004 (filed Jan. 4, 2018) (the "V-Band Petition").

requested changes to its Market Access Grant. OneWeb certifies that all other information provided in its original Ku-/Ka-Band Petition remains unchanged.⁶

I. INTRODUCTION AND PUBLIC INTEREST STATEMENT

In the last year, OneWeb has made remarkable progress toward achieving its mission: providing low-latency, fiber-comparable broadband connectivity to unserved and underserved communities worldwide. In March 2017, OneWeb broke ground on its state-of-the-art satellite manufacturing facility in Exploration Park, Florida. In June 2017, OneWeb inaugurated its assembly line in Toulouse, France for the production of its first ten satellites. In November 2017, OneWeb announced a \$190 million contract with Hughes Network Systems for the production of its global ground network system. OneWeb remains on track to launch its first satellites in 2018. The instant Modification reflects another logical step in the development of OneWeb's innovative LEO Constellation and OneWeb's goal to bridge the digital divide by 2027.

⁶ See WorldVu Satellites Limited, Petition for a Declaratory Ruling Granting Access to the U.S. Market for the OneWeb System, IBFS File No. SAT-LOI-20160428-00041 (filed Apr. 28, 2016) ("Ku-/Ka-Band Petition"); see also 47 C.F.R. § 25.117(c).

⁷ See Press Release, OneWeb Satellites Breaks Ground On The World's First State-Of-The-Art High-Volume Satellite Manufacturing Facility (Mar. 16, 2017), available at http://oneweb.world/press-releases/2017/oneweb-satellites-breaks-ground-on-the-worlds-first-state-of-the-art-high-volume-satellite-manufacturing-facility.

⁸ See Press Release, OneWeb Satellites inaugurates serial production line for the assembly, integration, and test of OneWeb's first satellites (June 27, 2017), available at http://www.airbus.com/newsroom/press-releases/en/2017/06/one-web-satellites-serial-production-line-inauguration.html.

⁹ See Jonathan Shieber, OneWeb is a step closer to bringing its global, satellite-based internet services to Earth, TECHCRUNCH (Nov. 7, 2017), available at https://techcrunch.com/2017/11/07/oneweb-is-a-step-closer-to-bringing-its-global-satellite-based-internet-services-to-earth/.

OneWeb fully supports the Commission's goal of extending broadband to unserved and underserved areas and agrees that private-sector networks must play a key role in that effort. OneWeb's LEO Constellation is poised to bring affordable broadband access to disadvantaged communities across the United States and the world. Therefore, grant of the instant Modification will bring OneWeb one step closer to making this bold vision a reality, by authorizing OneWeb to expand its current system design within the deployment schedule now allowed under the revised NGSO rules.

II. THE MODIFIED ONEWEB LEO CONSTELLATION 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.¹² As the OneWeb LEO Constellation will be licensed by the United

¹⁰ See Remarks of Ajit Pai, Chairman, Federal Communications Commission, Washington, D.C. (Jan. 24, 2017), available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0124/DOC-343184A1.pdf; Statement of Chairman Ajit Pai re Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters, Report and Order and Further Notice of Proposed Rulemaking, IB Docket No. 16-408, FCC 17-122 (rel. Sept. 27, 2017) ("As we strive to close the digital divide, we must be open to any and every technology that could connect consumers across the country. That's why we once again look to the skies for inspiration—and in particular, to new satellite constellations that offer potential for bridging this gap.").

¹¹ The LEO Constellation will operate in conjunction with OneWeb's proposed MEO constellation. *See* V-Band Petition.

¹² 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, 12 FCC Rcd 24094, at ¶ 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 (footnote continued)

Kingdom, the *DISCO II* framework applies to the Ku-/Ka-Band Petition and to this Modification.¹³ 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.¹⁴

As demonstrated in its Ku-/Ka-Band Petition and confirmed by the OneWeb Market Access Grant, OneWeb's LEO Constellation satisfies the *DISCO II* criteria for U.S. market access. ¹⁵ The increase in the number of satellites in OneWeb's LEO Constellation will in no way alter the *DISCO II* analysis contained in the Ku-/Ka-Band Petition.

A. Effect on Competition in the United States

Grant of the Modification will facilitate OneWeb's ability to offer next-generation, NGSO-based connectivity that will enhance broadband competition in the United States. Where a non-U.S. satellite licensed by a World Trade Organization ("WTO") member country seeks authority to provide a satellite service covered by the WTO Basic Telecommunications Agreement ("WTO Agreement"), the Commission

States, 15 FCC Rcd 7207, at ¶ 5 (1999); 47 C.F.R. § 25.137. OneWeb respectfully submits that its proposed Modification would serve the public interest, convenience, and necessity, and should therefore be granted on this basis alone. See 47 C.F.R. § 25.117(d)(2). However, as the modified LEO Constellation of 1,980 satellites will continue to meet the Commission's requirements for U.S. market access, OneWeb details its compliance with those requirements here.

¹³ See 47 C.F.R. §§ 25.137(f), 25.117(d)(1).

¹⁴ 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* at ¶ 26.

¹⁵ See Ku-/Ka-Band Petition at 9-13; OneWeb Market Access Grant at ¶ 5.

presumes that foreign entry will promote competition in the United States.¹⁶ As noted above, the United Kingdom's telecommunications regulatory authority will issue OneWeb's satellite license. The United Kingdom is a WTO member. Thus, the presumption in favor of entry applies to the instant Modification.¹⁷

B. Spectrum Availability

The Commission considers spectrum availability as a factor in determining whether to allow a foreign-licensed satellite to serve the U.S. market. ¹⁸ In doing so, the Commission evaluates whether grant of U.S. market access would create the potential for harmful interference with U.S.-licensed satellites and terrestrial systems. Via the instant Modification, OneWeb seeks market access in the same Ku-band and Ka-band spectrum as in its original Ku-/Ka-Band Petition, but for additional satellites. ¹⁹ The Commission has already granted OneWeb access to these frequency bands. ²⁰ The addition of these new satellites will not increase the potential for interference to satellite or terrestrial operations and does not alter the *DISCO II* analysis set forth in the Ku-/Ka-Band Petition.

 $^{^{16}}$ DISCO II Order at ¶ 39.

¹⁷ The United States' satellite commitments under the WTO Agreement cover FSS and mobile satellite services ("MSS," and collectively with FSS, the "WTO Covered Services"). OneWeb seeks authority to provide only WTO Covered Services in the U.S. using the LEO Constellation.

¹⁸ See DISCO II Order at ¶¶ 149-50.

¹⁹ See Ku-/Ka-Band Petition at 8. OneWeb notes that its planned ground segment remains the same as described in the Ku-/Ka-Band Petition.

 $^{^{20}}$ See OneWeb Market Access Grant at ¶ 1.

Specifically, the addition of more satellites will provide more possibilities for protection against interference and service interruptions from and to other satellite operators by increasing OneWeb's ability to employ limited satellite diversity in the event of in-line interference events. As explained in the Technical Annex, OneWeb expects the additional LEO satellites to enhance the ability to resolve frequency conflicts. Interference to terrestrial operators will not increase, as OneWeb still plans to construct the same small number of gateway earth station sites in the Ka-band and coordinate their operation with terrestrial operators in compliance with all Commission and ITU rules. In addition, OneWeb will still comply with the downlink PFD limits that exist to protect terrestrial services from interference from satellite downlink transmissions.

OneWeb and other willing NGSO operators are already expending substantial effort to coordinate their respective operations in the Ku- and Ka-bands, and OneWeb will continue to engage in good faith coordination with other NGSO operators with respect to its additional LEO satellites.

²¹ As the Commission recognizes, satellite diversity has the potential to enable NGSO operators to better protect other systems. *See* Letter from Jose P. Albuquerque, Chief, Satellite Division, FCC, to Jocelyn Read, Vice President, Regulatory Affairs, O3b Limited, *Earth Stations on Non-U.S. Registered Maritime Vessels Using the 28.6-29.1 GHz and the 18.8-19.3 GHz Frequency Bands*, 29 FCC Rcd 5057, 5066 (May 13, 2014).

²² See Technical Annex at 12.

²³ *See id.* at 12-13.

1. Ongoing Processing Round in the Ku- and Ka-Bands

OneWeb acknowledges that there is an ongoing processing round for the Kuand Ka- frequency bands requested in the instant Modification.²⁴ Good cause exists to
consider OneWeb's request to add satellites to its LEO Constellation utilizing Ku- and
Ka-band spectrum as part of this existing processing round. As an initial matter, the
Commission already granted OneWeb market access during this processing round.²⁵
OneWeb's request to add satellites will not increase interference to other NGSO
operators or otherwise change their operations, as discussed above. OneWeb
respectfully requests that the Commission act on its request to deploy additional
satellites in its LEO Constellation without initiating any further NGSO processing
rounds.

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.²⁶ The Commission further noted that it would accord deference to the expertise of the Executive Branch in identifying and interpreting issues of this nature.²⁷ The Commission identified no national security, law enforcement, foreign

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²⁴ See Satellite Policy Branch Information; 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, 17.8-18.6 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 (2016).

²⁵ OneWeb Market Access Grant at \P 1.

²⁶ DISCO II Order at \P 180.

²⁷ *Id*.

policy, or trade issues in the OneWeb Market Access Grant,²⁸ and the instant Modification raises no additional issues in these areas. Hence, this element of the *DISCO II Order* analysis remains unchanged.

D. Eligibility and Operational Requirements

Pursuant to Sections 25.117 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 25.114.²⁹

1. Legal and Technical Qualifications

To the extent necessary, OneWeb incorporates by reference all of the technical information set forth in the Technical Annex attached to the Ku-/Ka-Band Petition and all updated technical information set forth in the Technical Annex filed with this Modification.³⁰ That information, and information in the associated Schedule S, FCC Form 312, and all associated 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 Narrative and in the updated Technical Annex and associated documents, no other information has changed since the initial Ku-/Ka-Band Petition.³¹ Specifically, OneWeb reiterates its compliance with specific Part 25 rules:

³¹ 47 C.F.R. § 25.117(c)-(d)(1).

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²⁸ OneWeb Market Access Grant at ¶ 5.

²⁹ See 47 C.F.R. §§ 25.117(d)(1), 25.137(f).

³⁰ See Ku-/Ka-Band Petition.

- Section 25.145(e);³²
- Sections 25.137(d)(1) & 25.164(b), as amended by the recent NGSO
 R&O;³³
- Sections 25.137(d)(4) & 25.165;³⁴ and
- Section 25.114(d)(14).³⁵

2. Waiver Request

Pursuant to Sections 1.3 and 25.112(b)(1) of the Commission's rules,³⁶

OneWeb requests a waiver of Section 25.157(c) of the Commission's rules, to the

³² 47 C.F.R. § 25.145(e). This rule precludes the Commission from granting an FSS space station license to any applicant if that applicant, or any affiliate of that applicant, "shall acquire or enjoy any right, for the purpose of handling traffic to or from the United States, its territories or possessions, to construct or operate space segment or earth stations, or to interchange traffic, which is denied to any other United States company by reason of any concession, contract, understanding, or working arrangement" to which the applicant or any of its affiliates are parties. OneWeb enjoys no such exclusive right.

³³ 47 C.F.R. §§ 25.137(d)(1), 25.164(b). These rules require a market access grantee to launch its NGSO constellation within a designated period of time. The Commission recently amended its milestone rules to require deployment of 50% of an NGSO constellation within six years of a market access grant, and 100% deployment within nine years. *See* NGSO R&O at ¶¶ 66-67.

³⁴ 47 C.F.R. §§ 25.137(d)(4), 25.165. These rules require a market access grantee to post an initial bond amount of \$1 million 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 initial bond and will escalate its bond amount as required.

³⁵ 47 C.F.R. § 25.114(d)(14). This rule requires a market access grantee to demonstrate that its plans for orbital debris mitigation are subject to the direct and effective regulatory oversight of a national licensing authority. In OneWeb's case, this is the United Kingdom's Office of Communications (Ofcom), which will also have regulatory oversight of OneWeb's expanded LEO Constellation envisioned by this Modification.

extent necessary. 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.³⁷ However, the waiver should not undermine the policy objective of the rule and should otherwise serve the public interest.³⁸

The Commission should grant OneWeb's requested waiver because "special circumstances"—most importantly, the Commission's decision to change its milestone rules shortly after issuance of the OneWeb Market Access Grant—warrant a deviation from the Commission's general rules. As demonstrated below, granting OneWeb's requested waiver will not undermine the policy objectives of that rule and such waiver will allow OneWeb to "serve[] the public interest" by providing low-latency, high-speed broadband.³⁹

Section 25.157(c) of the Commission's rules provides that NGSO system "lead applications"—*i.e.*, applications for operation of an NGSO satellite system not filed in response to a Public Notice initiating a processing round—will be placed on Public Notice. The Public Notice establishes a cut-off date for competing NGSO applications and initiates a new processing round. As this Modification seeks only to expand the number of satellites authorized by the OneWeb Market Access Grant and

³⁶ 47 C.F.R. §§ 1.3, 25.112(b)(1).

³⁷ Northeast Cellular Telephone Co. v. FCC, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

³⁸ WAIT Radio v. FCC, 418 F.2d 1153, 1157 (D.C. Cir. 1969).

³⁹ Northeast Cellular, 897 F.2d at 1166.

⁴⁰ See 47 C.F.R. § 25.157(c).

not to apply for operation of a new NGSO satellite system, Section 25.157(c) does not apply to this Modification on its face. Nevertheless, out of an abundance of caution, OneWeb respectfully requests a waiver of this rule to the extent necessary.

The Commission traditionally waives the requirement for a processing round when an applicant demonstrates that its authorization would not "preclude additional entry" into the subject frequency bands. 41 OneWeb's request to access Ku- and Kaband frequencies included in the current processing round for additional LEO satellites will not preclude additional entry into those bands by other NGSO operators. As described above, and in greater detail in the updated Technical Annex filed with this Modification, adding satellites to the LEO Constellation will not increase the risk of interference to any existing or future operator; instead, the additional satellites will allow OneWeb and others to better employ limited satellite diversity to avoid instances of harmful interference to other NGSO systems. Thus, OneWeb requests a waiver of the processing round requirement in Section 25.157(c) for the instant Modification.

Furthermore, the Commission should recognize the significant impact of its decision to revise the NGSO milestone regime to require the launch and operation of only 50 percent—instead of 100 percent—of an NGSO constellation within six years of authorization.⁴² OneWeb responsibly designed its LEO Constellation on the basis

⁴¹ See In the Matter of Northrop Grumman Space & Mission Systems Corporation; Applications for Authority to Operate a Global Satellite System Employing Geostationary Satellite Orbit and Non-Geostationary Satellite Orbit Satellites in the Fixed-Satellite Service in the Ka-band and V-band, Order and Authorization, 24 FCC Rcd 2330, 2341-43, ¶ 29, 34 (Int'l Bur. 2009) ("Northrop Grumman Order").

⁴² See NGSO R&O at ¶ 67.

of a milestone regime that required launch and operation of the *entire* constellation within a six-year time frame. OneWeb did not request a waiver of the Commission's milestone requirement.

If the current milestone regime had been in effect when OneWeb began planning its constellation and network architecture, OneWeb would have proposed a much more expansive LEO Constellation. By contrast, multiple other applicants planned and proposed large constellations which obviously could not be launched and operated within the required six-year time frame *while that rule was still in effect*.⁴³ OneWeb designed its LEO Constellation for full milestone compliance at the outset.

Were the Commission to deny OneWeb's waiver request, it would result in a situation where the Commission would process the applications of other NGSO proponents who plainly did not intend to satisfy milestone requirements while declining to process OneWeb's Modification concurrently. Such an outcome would be deeply inequitable, would reward regulatory non-compliance, and would penalize OneWeb for designing its LEO Constellation in conformance with the rules then in effect. This approach would also be inconsistent with the Commission's own precedent.⁴⁴ Therefore, OneWeb respectfully requests a waiver of Section 25.157(c)

⁴³ See, e.g., The Boeing Company, Application for Authority to Launch and Operate a Non-Geostationary Low Earth Orbit Satellite System in the Fixed Satellite Service, IBFS File No. SAT-LOA-20160622-00058 (filed Jun. 22, 2016); Space Exploration Holdings, LLC, Application For Approval for Orbital Deployment and Operating Authority for the SpaceX NGSO Satellite System, IBFS File No. SAT-LOA-20161115-00118 (Call Sign S2983) (filed Nov. 15, 2016).

⁴⁴ When the Commission amends service rules that directly impact how licensees can use the subject spectrum, it generally affords applicants an opportunity to amend their applications "to bring them into conformity with the requirements and policies adopted." *In re Establishment of Policies and Service Rules for the Mobile Satellite* (footnote continued)

of the Commission's rules, such that this Modification does not initiate one or more new NGSO processing rounds, and requests the Commission to instead consider this Modification within the context of the existing processing round discussed above.⁴⁵

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Service in the 2 GHz Band, Report & Order, 15 FCC Rcd 16127, 16149 ¶ 45 (Int'l Bur. 2000); see also Northrop Order, 24 FCC Rcd at 2336-37 ¶ 14 (applicants permitted to amend pending applications in V-band and Ka-band processing rounds to comply with updated service rules involving orbital debris and casualty risk assessment showings); In re Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band..., Order on Reconsideration, 22 FCC Rcd 17951, 17962-63, ¶ 33 (Int'l Bur. 2007) (applicants were given two opportunities to amend, in response to each set of changes to the relevant service rules).

⁴⁵ OneWeb notes that the Commission has concluded that Sections 25.159(b) and 25.137(d)(5) of the Commission's rules do not apply to modification applications. *See Amendment of the Commission's Space Station Licensing Rules and Policies; Mitigation of Orbital Debris*, 18 FCC Rcd 10760, 10848 ¶ 233 (2003) ("[the pending application and unbuilt system] limits do not apply to applications for . . . modifications"). Nevertheless, out of an abundance of caution, OneWeb respectfully requests a waiver of this rule, if necessary, for the reasons stated above concerning the request to waive section 25.157(c) of the Commission's rules.

III. CONCLUSION

As demonstrated herein and in all the materials with which this Legal Narrative is associated, OneWeb's modified LEO Constellation will continue to fully satisfy the Commission's requirements under the *DISCO II Order* for U.S. market access. Moreover, subject to a limited number of waiver requests, OneWeb fully complies with the Commission's Part 25 rules. Thus, grant of the instant Modification will serve the public interest, convenience, and necessity. OneWeb respectfully requests the Commission to expeditiously grant the Modification in its entirety to facilitate OneWeb's deployment of the next generation of broadband connectivity and thereby close the digital divide in the United States.

Respectfully submitted,

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