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

In the Matter of	)	
	)	
WorldVu Satellites Limited	)	File No. SAT-LOI-20160428-00041
	)	
Petition for Declaratory Ruling Granting Access to the U.S. Market for the OneWeb System	)	

PETITION TO DENY OF TELESAT CANADA

In the above-referenced Petition for Declaratory Ruling ("Petition"), WorldVu Satellites Limited, doing business as OneWeb ("OneWeb"), seeks access to the U.S. market for OneWeb's planned low earth orbit ("LEO"), non-geostationary satellite orbit ("NGSO") satellite system.[1] Telesat Canada ("Telesat") hereby petitions to deny OneWeb's Petition.

In its Petition, OneWeb requests authority (among other things) to operate in the United States on Ka-band frequencies that overlap with frequencies Innovation, Science and Economic Development Canada ("ISED") has authorized Telesat to use for its NGSO network,[2] the first two satellites of which will be launched in 2017.[3] As discussed below, transmissions via OneWeb's large constellation of NGSO satellites

[1] *See Public Notice*, *OneWeb Petition Accepted for Filing*, DA 16-804, File No. SAT-LOI-20160428-00041 (July 15, 2016) ("*Public Notice*").
[2] Telesat Approvals in Principle, ISED file 3150-1 (557203 AT) dated June 26, 2015, and ISED file 3150-1 (565832 SS) dated June 26, 2015, for the 27.5 – 29.1, 29.5 – 30, 17.8 – 19.3, and 19.7 – 20.2 GHz bands.
[3] Telesat has ordered two NGSO satellites that are scheduled for launch next year. *See* Press Release, Telesat Procures Two Prototype Satellites for Global Ka-band Low Earth Orbit Constellation: Launches scheduled for 2017, Telesat, Ottawa, Canada (Apr. 27, 2016), available at https://www.telesat.com/news-events/telesat-procures-two-prototype-satellites-global-ka-band-low-earth-orbit-constellation.

would interfere with Telesat's NGSO operations on these frequencies. As also discussed below, the ITU filings associated with OneWeb's NGSO constellation have lower priority than the ITU filings associated with Telesat's NGSO constellation. Given the interference to Telesat's NGSO constellation and OneWeb's inferior ITU priority, Telesat is submitting this Petition to Deny.

Telesat recognizes that the Commission will be developing rules to address constellations of NGSO-like satellites and that OneWeb will be given an opportunity to amend its filing to conform to the new requirements.[4] If the rules the Commission adopts or a future OneWeb amendment address Telesat's concerns, it will withdraw its objection. If the rules that apply in this processing round take interference or ITU priority into account, however, then OneWeb's filing should be denied.

OneWeb's NGSO system would interfere with Telesat's NGSO operations because the two systems would operate in overlapping geographical areas on overlapping Ka-band frequencies. The interference to Telesat would be substantial. Based on the definition in Section 25.261(b) of the rules, and OneWeb[5] and Telesat[6] ITU filed parameters, Telesat has determined there would be thousands of in-line interference events every day that would last a minute or more on average and would subject Telesat's NGSO system to significant interference from OneWeb's NGSO system.

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[4] *See Public Notice* at 2.
[5] L5 network published as API/A/8111 MOD-3, CR/C/3413 MOD-6, and CR/C/3413 MOD-7.
[6] COMMSTELLATION network published as CR/C/3313, and CANPOL-2 network published as CR/C/3474 MOD-1.

Apart from general statements that comprise less than two pages of OneWeb's lengthy application,[7] OneWeb is silent on how it proposes to address interference to other NGSO satellite systems. OneWeb states it "is confident that it can achieve the necessary coordination with other NGSO satellite,"[8] but it never explains on what basis it believes co-frequency coordination would be possible. OneWeb's showing is facially inadequate.

Telesat agrees with OneWeb in one critical respect. OneWeb states that the rules the Commission develops for addressing interference between large NGSO constellations should not simply divide spectrum among applicants.[9] Telesat concurs. Band-splitting will provide too little spectrum to each of the applicants, resulting in no systems being launched.

If the Commission does not divide spectrum among NGSO applicants, it needs an alternative mechanism to address circumstances in which NGSO networks will interfere with each other. One option is to look to the ITU's rules for guidance. As OneWeb acknowledges, the ITU's rules require that systems with lower priority coordinate their operations with systems that have date priority: "According to ITU procedures (RR 9.12), for all of the Ku-band and Ka-band frequency ranges to be used by OneWeb, coordination amongst NGSO systems is on a first-come, first-served basis,

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[7] *Id*. at 35-36.
[8] *Id*. at 35.
[9] See Legal Narrative at 17-21.

depending on the ITU date priority of the relevant ITU filings."[10] Telesat believes the FCC's rules for NGSO systems should build upon the foundation of the ITU's procedures and require that systems with lower date priority coordinate their operations (and insure they do not interfere) with systems with higher date priority.

The Canadian ITU filings that are associated with Telesat's NGSO system have date priority over OneWeb's UK ITU filings. Although OneWeb identifies a number of UK publications as associated with its L5 network,[11] only a few of those publications[12] involve the Ka-band frequencies that overlap with Telesat's frequencies. These publications show the earliest ITU filing date priority for OneWeb is January 18, 2015. By contrast, the Canadian ITU filings associated with Telesat's Ka-band NGSO system[13] date back to 2012 and January 6, 2015, giving Telesat clear ITU priority.

As the later filer at the ITU, it is incumbent on OneWeb to coordinate with Telesat internationally, and Telesat believes ITU priority should be taken into account domestically, too. At a minimum, any grant of OneWeb's Petition should be conditioned on satisfying coordination requirements.

Although there is no physical overlap between OneWeb's NGSO orbital planes and Telesat's NGSO orbital planes, some of the orbital planes are in relatively close proximity. This proximity could give rise to an unacceptable risk of collision among the

[10] Technical Narrative at 35.
[11] See Technical Narrative at 44.
[12] L5 network published as API/A/8111 MOD-3, CR/C/3413 MOD-6, and CR/C/3413 MOD-7.
[13] COMMSTELLATION network published as CR/C/3313, and CANPOL-2 network published as CR/C/3474 MOD-1

parties' operating satellites. Given this potential, Telesat suggests that the Commission consider the extent to which the relative positions of NGSO orbital planes should be taken into account under its orbital debris mitigation policies.

Conclusion

OneWeb's NGSO system would interfere with Telesat's NGSO system, and the ITU filings associated with Telesat's system have date priority vis-à-vis the ITU filings associated with OneWeb's system. Accordingly, if the rules the Commission adopts for processing applications for NGSO-like satellites are based on avoiding interference and requiring coordination based on ITU priority, and Telesat believes the Commission needs to require coordination based on ITU priority (and not divide the available spectrum among qualified applicants), then OneWeb's application should be denied. At a minimum, OneWeb should be required to satisfy coordination requirements.

Respectfully submitted,

TELESAT CANADA

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CERTIFICATE OF SERVICE

I hereby certify that on this 15th day of August, 2016, a copy of the foregoing Comments of Telesat was sent by first-class, United States mail to the following:

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