

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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

**REPLY COMMENTS OF
THE BOEING COMPANY**

The Boeing Company (“Boeing”), through its counsel, provides these reply comments on the petition of WorldVu Satellites Limited (“OneWeb”) for a declaratory ruling granting access to the U.S. market for its non-geostationary satellite orbit (“NGSO”) fixed-satellite service (“FSS”) system operating in Ku-band and Ka-band frequencies.¹

In its opposition and response, WorldVu acknowledges the need to address the plans of both itself and Boeing to operate NGSO FSS constellations at a nominal 1,200 kilometer orbital altitude and WorldVu indicates that it will “engage in good faith discussions with Boeing” on this issue.² WorldVu, however, then indicates that its system orbital design “has been locked for years,” and suggests that any changes in its planned altitude, apparently no matter how slight, “would have significant repercussions for deployment of OneWeb’s system.”³ In Boeing’s

¹ See Satellite Policy Branch Information, OneWeb Petition Accepted for Filing, IBFS File No. SAT-LOI-20160428-00041, DA 16-804 (July 15, 2016).

² See Opposition and Response of WorldVu Satellites Limited, File No. SAT-LOI-20160428-00041, at 19 (Aug. 25, 2016) (“*WorldVu Response*”).

³ *Id.* at 20.

experience, NGSO satellites and systems are usually designed with some tolerance for altitude adjustments in the range of 20 to 25 kilometers and Boeing can work with WorldVu to explore the range of its flexibility.

Potentially of greater concern, WorldVu did not address Boeing's argument that large NGSO FSS systems should be required to adhere closely to their chosen (and authorized) orbital altitude to facilitate the operation of multiple NGSO constellations in relatively close proximity. Ironically, WorldVu's suggestion that its system design cannot tolerate adjustments in altitude is potentially encouraging – if WorldVu's system is exceedingly intolerant to altitude changes then WorldVu must be employing significant measures to ensure very precise adherence to its desired orbit.

Nevertheless, this is an issue that requires further consideration by the Commission. Boeing recommends that, just as the Commission requires of its own licensees, the Commission should require WorldVu to disclose the accuracy to which its NGSO space station orbital parameters will be maintained, including apogee, perigee, inclination, orbital altitude, and right ascension of the ascending node(s).⁴ WorldVu should also disclose details regarding its satellite transition plans, including its plans for orbital insertion and the transit of satellites to and from their mission orbit.⁵

In seeking this information, Boeing acknowledges that the Commission usually defers to the licensing administration of a non-U.S.-licensed satellite system with respect to the design and

⁴ 47 C.F.R. § 25.114(d)(14)(iii).

⁵ *See* Letter from Jose P. Albuquerque, Chief, Satellite Division, International Bureau, to Bruce A. Olcott, Jones Day, IBFS File No. SAT-LOA-20160622-00058, at 4 (Aug. 16, 2016) (requesting substantially similar information regarding Boeing's proposed NGSO FSS system).

operational strategies that will be employed to minimize orbital debris risk.⁶ Boeing seeks this information, however, not to assess WorldVu’s adherence with orbital debris requirements, but to facilitate sharing among multiple NGSO FSS systems, which is a core consideration in the Commission’s public interest analysis. As WorldVu explains, “[s]pace sustainability is critically important to the commercial satellite industry, and operating as safely as possible ensures limited and precious resources remain available for present and future satellite operators.”⁷

WorldVu should therefore welcome the disclosure of this information about the planned operation of its NGSO system. WorldVu already disclosed other information intended to facilitate sharing with other satellite systems, explaining that “OneWeb has provided its system details to allow other NGSO aspirants to develop their own systems with non-interfering technologies.”⁸ WorldVu has volunteered that it would be “pleased to answer any additional questions posed by the Commission.”⁹ The information identified above regarding WorldVu’s management of its constellation is critical to the ability of other NGSO systems to coordinate their operations with OneWeb in a safe and efficient manner. Therefore, either voluntarily or at

⁶ 47 C.F.R. § 25.114(d)(14)(v).

⁷ *WorldVu Response* at 19.

⁸ *Id.* at 6.

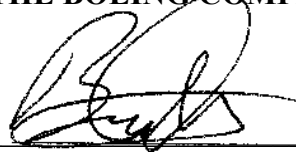
⁹ *Id.* at 13.

the request of the Commission, this information should be added to the public record of this proceeding.

Respectfully submitted,

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By: _____



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