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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	RECEIVED
Virtual Geosatellite, LLC	)	
	)	JUL 27 1999
Petition for Rule Making to Make Available C-Band Spectrum for Non-Geostationary Fixed-Satellite Service Gateway Operations in the United States	)	RM-9650
	)	FEDERAL COMMUNICATIONS COMMISSION OFFICE OF THE SECRETARY

REPLY COMMENTS OF THE BOEING COMPANY

The Boeing Company ("Boeing"), by its attorneys and pursuant to Section 1.405(b) of the Commission's Rules, 47 C.F.R. § 1.405(b), hereby submits reply comments on the above-captioned Petition for Rule Making of Virtual Geosatellite, LLC.

In its petition, Virtual Geosatellite requests a rule making proceeding to make spectrum available for gateway links for non-geostationary ("NGSO") fixed satellite service ("FSS") systems in the 5825-6725 MHz and 3.7-4.2 GHz bands ("C-band").[1] Virtual Geosatellite notes that the Commission has already commenced a rule making proceeding to permit NGSO FSS operations in the Ku-band. Virtual

[1] *See Petition for Rule Making of Virtual Geosatellite, LLC*, RM-9650, at 1 (April 27, 1999).

Geosatellite observes that it would also be appropriate to consider changes in the Commission's rules to permit NGSO FSS gateway operations in C-band frequencies in order to compliment planned Ku-band NGSO FSS operations.[2]

In response, several parties filed comments or oppositions on Virtual Geosatellite's proposal expressing concern about potential spectrum sharing issues and arguing that technical studies would need to be completed before any spectrum sharing rules could be adopted.[3] Comsat acknowledged in its comments that Virtual Geosatellite's "requested rulemaking process could be a vehicle for initiating needed studies."[4] Comsat also expressed support for using the International Telecommunication Union Radiocommunications Bureau ("ITU-R") Working Group process to consider the spectrum sharing issues involved.[5]

In contrast, PanAmSat filed comments indicating that it had already completed a preliminary analysis and has concluded that Virtual Geosatellite's proposal has technical merit as long as it is limited to high elliptical "quasi-geostationary" satellite systems.[6]

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[2] *See id.* at 3-4.

[3] *See generally*, Comments of Comsat Corporation, RM-9650 (July 13, 1999); Pathnet Inc.'s Opposition to Petition for Rule Making, RM-9650 (July 12, 1999); Statement in Opposition to Petition for Rule Making of the American Petroleum Institute, RM-9650 (July 12, 1999).

[4] *Comsat Comments* at 2.

[5] *See id.*

[6] *See Comments and Conditional Opposition of PanAmSat*, RM 9650, at 1 (July 12, 1999).

PanAmSat argued that permitting other types of NGSO constellations to operate in the C-band would raise "countless, and probably intractable, sharing problems."[7]

Boeing acknowledges that significant technical studies will need to be completed before NGSO FSS networks can operate in the C-band on a shared basis with existing satellite-based and terrestrial spectrum users. Boeing also agrees that ITU-R Working Groups would provide a useful forum for addressing many of the technical and spectrum sharing issues involved.

The Commission should not place complete reliance on ITU-R Working Groups, however, to determine appropriate sharing mechanisms for NGSO FSS networks in the C-band. As the Commission observed in its Notice of Proposed Rule Making ("*NPRM*") on NGSO FSS operations in the Ku-band, it is "essential" for the Commission to develop "an independent record regarding the possibility of implementing NGSO FSS in the U.S.," given the unique and extensive domestic use of the Ku-band.[8] The Commission's observation is equally valid with respect to NGSO FSS operations in the C-band. In order to consider adequately whether NGSO FSS operations would be appropriate in the C-band, the Commission must address spectrum sharing rules for such operations as a part of a notice and comment proceeding in order to develop a complete administrative record.

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[7] *Id.*

[8] *Amendment of Parts 2 and 25 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range*, ET Docket No. 98-206, ¶11 (Nov. 24, 1998).

In this regard, Boeing finds it encouraging that PanAmSat has already completed preliminary studies on NGSO FSS spectrum sharing in the C-band. PanAmSat's display of diligence could expedite significantly the development of spectrum sharing rules for NGSO FSS operations in the C-band. In contrast, it has taken nearly two years to conduct similar studies involving the Ku-band, a few of which are still ongoing at PanAmSat's behest.

Boeing does not agree, however, with PanAmSat's conclusion that NGSO FSS operations should be limited in the C-band to quasi-geostationary constellations. Boeing believes that PanAmSat is premature in reaching this view, particular since PanAmSat included none of its analysis in its comments in this proceeding. Boeing notes that other types of NGSO FSS constellations have been demonstrated to be remarkably well suited for NGSO/GSO co-frequency operations, such as Boeing's proposed medium earth orbit satellite system.[9] Thus, Boeing believes that it would be entirely inappropriate to rule out any particular type of NGSO constellation design in advance of a Commission rule making on technical and services rules for NGSO FSS operations in the C-band. Instead, the Commission should develop a complete record on this matter before reaching any decisions.

In this same respect, it would also be premature for the Commission to limit its consideration of NGSO FSS operations in the C-band solely to gateway links. A significant possibility exists that NGSO FSS service links could also be accommodated in

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[9] See *The Boeing Company Application for Authority to Launch and Operate a Non-Geostationary Medium Earth Orbit Satellite System in the Fixed Satellite* Service, IBFS File No. SAT-LOA-19990108-00006 (Jan. 8, 1999).

the C-band on a shared basis with satellite-based and terrestrial networks. Such services could provide an additional means to provide competitive broadband telecommunication services to populations on a truly global basis. In light of the significant public interest benefits that would potentially be available and in order to develop a complete record in the proceeding, the Commission should release a *NPRM* on NGSO FSS operations in the C-band. Furthermore, the Commission's *NPRM* should consider all the potential issues implicated by such services, including the potential use of various types of NGSO satellite constellations and the operation of both gateway and service links in the band.

Respectfully submitted,

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Certificate of Service

I, Shenita Fauntleroy, do hereby certify that on this 27th day of July, 1999 I have caused a copy of the foregoing "Reply Comments of The Boeing Company" to be served upon the persons listed below.

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