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March 17, 2000

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

Re: ***Ex Parte Presentation of The Boeing Company***  
**ET Docket No. 98-206**  
**RM-9147**  
**RM-9245**

Dear Chairman Kennard:

The Boeing Company ("Boeing") and SkyBridge LLC ("SkyBridge") submit this written *ex parte* presentation to address a letter submitted to you recently by Virtual Geosatellite, LLC ("Virtual Geo") and Northpoint Technology, Ltd. ("Northpoint").<sup>1</sup> In the letter, Virtual Geo contradicts virtually every pleading that it has previously filed with the Commission with respect to its ability to operate compatibly with Northpoint's proposed terrestrial communication service. Moreover, as a consequence of its reversal of position *vis-à-vis* Northpoint, Virtual Geo has raised serious questions about its intent and ability to provide access to advanced telecommunications services on a nationwide (let alone global) basis.

As the Commission is aware, Virtual Geo filed one of the eight applications pending before the Commission to operate non-geostationary orbit fixed satellite service ("NGSO FSS") systems in the Ku-band. Unlike most of the other applicants, Virtual Geo proposed to use a satellite constellation employing a highly elliptical orbit ("HEO"), rather than a more common circular orbit. Because its system appears to have been designed without regard for its ability to co-exist with other types of NGSO systems, Virtual Geo has long acknowledged

<sup>1</sup> See Letter to Hon. William E. Kennard, Chairman, Federal Communications Commission, from David Castiel, President, Virtual Geosatellite, LLC and Sophia Collier, President, Northpoint Technology, Ltd. ((March 9, 2000) ("*Castiel Letter*").

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that it would be, at best, “challenging” for its system to share spectrum with any one of the six circular orbit NGSO FSS systems proposed in this proceeding.<sup>2</sup> Virtual Geo has repeatedly made plain its unwillingness to make any effort to accommodate these other NGSO systems, and the Castiel Letter is nothing but a continuation of that position.

Virtual Geo’s ill-conceived attempts to undermine non-HEO NGSO systems are well documented. For example, while all other NGSO and geostationary orbit (“GSO”) proponents worked diligently to achieve a technical consensus, Virtual Geo repeatedly, and incorrectly, claimed that it was “very unlikely” that the international community would be able to reach agreement on NGSO FSS operating limits that would be adequate to protect GSO networks.<sup>3</sup> Indeed, Virtual Geo repeated this prediction on the same day that essentially the entire U.S. GSO community acknowledged the legitimate prospects for progress in the development of NGSO/GSO spectrum sharing criteria,<sup>4</sup> a conclusion that the Commission had reached more than six months earlier.<sup>5</sup>

Virtual Geo’s nay-saying has continued, even in the face of the international consensus reached on NGSO FSS interference limits at the International Telecommunication Union (“ITU”), Conference Preparatory Meeting in November 1999. Virtual Geo claimed to be “pleased” with the agreement, but argued that it is not “a true, final agreement” because, as the text of the agreement acknowledges, several regulatory provisions still needed to be drafted.<sup>6</sup> In addition, Virtual Geo suggested that some ITU member countries that did not participate in

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<sup>2</sup> *Reply Comments of Virtual Geosatellite, LLC*, ET Docket No. 98-206, at 14 n.21 (April 14, 1999) (“*Virtual Geo Reply Comments*”). Virtual Geo has argued that it could share with the other NGSO FSS systems only if the other systems were effectively given secondary status and Virtual Geo was given primary status. See *Comments of Virtual Geosatellite, LLC*, ET Docket No. 98-206, at 8 n.6 & 20 (March 2, 1999) (“*Virtual Geo Comments*”).

<sup>3</sup> *Consolidated Petition to Deny of Virtual Geosatellite, L.L.C.*, File Nos. SAT-LOA-19970926-00149, *et al.*, at 7 (June 30, 1999) (“*Virtual Geo Petition to Deny*”).

<sup>4</sup> *Petition to Defer Consideration of, or Hold in Abeyance, and Comments of DirecTV, Inc.*, File Nos. SAT-LOA-19980630-00054, *et al.*, at 2 (June 30, 1999); see also *Petition to Defer Processing of the Satellite Coalition*, File Nos. SAT-LOA-19980318-00021, *et al.* (June 30, 1999) (urging the Commission to delay the grant of licenses for NGSO FSS systems until the remaining spectrum sharing issues are resolved, but refraining from suggesting that resolution could not be achieved); *PanAmSat Corporation Petition to Defer Processing*, File Nos. SAT-LOA-19980318-00021, *et al.* (June 30, 1999) (same).

<sup>5</sup> See *Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-band Frequency Range and Subsidiary Terrestrial Use of the 12.2-12.7 GHz Band by Direct Broadcast Satellite Licensees and Their Affiliates*, Notice of Proposed Rulemaking, FCC 98-310, ¶ 7 (Nov. 24, 1998) (“*NGSO FSS NPRM*”) (acknowledging that significant progress has been made by the ITU-R in resolving NGSO/GSO spectrum sharing issues).

<sup>6</sup> *Comments of Virtual Geosatellite, LLC*, ET Docket No. 98-206, at 3-4 (Dec. 20, 1999).

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the negotiations might not accept the agreement during WRC-2000, even though the agreement has been widely circulated among ITU member countries with satellite interests.<sup>7</sup>

In spite of its obvious animus toward non-HEO NGSO systems, however, there has been one point on which Virtual Geo has previously found itself in agreement with the other NGSO FSS applicants: the interference concerns raised by Northpoint's application for a terrestrial communication service in the 12.2-12.7 GHz band. Virtual Geo has repeatedly urged the Commission to reject Northpoint's proposal because, *inter alia*, "[t]he breadth of opposition to the proposal – including opponents representing the diverse interests of NGSO FSS, GSO FSS and GSO BSS – provides clear support for Virtual Geo's position that the Northpoint proposal will harm existing and future service in the 12.2-12.7 GHz band."<sup>8</sup>

Virtual Geo has ample technical justification for concluding that Northpoint's service would interfere with user terminals operating with Virtual Geo's system.<sup>9</sup> As Virtual Geo pointed out, Northpoint's own technical analysis concluded that Northpoint transmitters would create exclusion zones for Virtual Geo's consumer receivers that would be nearly as large as the exclusion zones suffered by Boeing's and SkyBridge's respective NGSO FSS systems.<sup>10</sup> Boeing and SkyBridge have shown that such exclusion zones would prevent consumers from receiving services from their respective NGSO FSS networks in areas from seven to 13,070 square kilometers around each Northpoint transmitter, depending on the power level used by Northpoint.<sup>11</sup>

Virtual Geo has also previously recognized that it will be unable to adequately mitigate the interference caused by Northpoint's system.<sup>12</sup> In fact, it would be especially difficult for

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<sup>7</sup> See *id.* at 4 n.2. Virtual Geo's motivations for suggesting foreign opposition to the spectrum sharing agreement are questionable and should be taken into consideration by the United States government when assessing Virtual Geo's contributions to the U.S. Delegation to the World Radiocommunication Conference ("WRC-2000").

<sup>8</sup> *Virtual Geo Reply Comments* at ii, 3, 15-18; see also *Opposition of Virtual Geosatellite, LLC to Waiver Requests*, DA 99-494, at 8 (April 12, 1999); *Virtual Geo Comments*, at iv, 26-27.

<sup>9</sup> See *Virtual Geo Reply Comments* at 16-18 ("[i]t is beyond dispute that sharing between point-to-multipoint fixed services, such as those proposed by Northpoint, and NGSO FSS ubiquitous user terminals is not feasible, as the former would interfere with the later"); *Virtual Geo Comments* at iv, 26-27 (same).

<sup>10</sup> See *Virtual Geo Reply Comments* at 16 (citing *Comments of Northpoint Technology, Ltd.*, ET Docket No. 98-206, at 28 & 28 n.64 (March 2, 1999)).

<sup>11</sup> See, e.g., Letter to Hon. William E. Kennard, Chairman, Federal Communications Commission, from David A. Nall, Counsel for The Boeing Company, Attachment 1 at 9 (Feb. 16, 2000) ("*Boeing Interference Analysis*"); Letter to Magalie Roman Salas, Secretary, FCC, from Phillip L. Spector, Counsel for SkyBridge LLC, Annex at 22-28 (Feb. 18, 2000); Letter to Magalie Roman Salas, Secretary, FCC, from Jeffrey H. Olson, Counsel for SkyBridge LLC, Slides 7-16 (Feb. 10, 2000) (collectively, "*SkyBridge Interference Analysis*").

<sup>12</sup> See *Virtual Geo Reply Comments* at 17.

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Virtual Geo to mitigate Northpoint's interference, because Virtual Geo's satellites are designed to transmit solely from high latitudes, requiring Virtual Geo's consumer receivers in the U.S. to be pointed north, directly in line with interference from Northpoint transmitters.

Suddenly, however, Northpoint's documented impact on Virtual Geo's system appears no longer to be a serious concern. Instead, "where it is not possible" for Virtual Geo and Northpoint to share spectrum, Virtual Geo "will avail itself of the frequencies it has requested outside those proposed for Northpoint."<sup>13</sup>

Not only is this about-face not explained by Virtual Geo, its abandonment of its prior position illuminates yet another of Virtual Geo's contradictory positions. The non-HEO NGSO FSS applicants have been uniform in documenting their respective need for access to approximately one gigahertz ("GHz") of space-to-Earth service link spectrum. This spectrum is required to enable these systems to comply with the substantial technical constraints imposed on them by the need to protect GSO networks, existing terrestrial systems and co-frequency NGSO licensees, while still having sufficient capacity to achieve the economies needed to ensure affordable consumer rates. Virtual Geo, however, has always argued that, because of the asynchronous nature of two-way networks, its system will need access to 1.5 GHz of space-to-Earth service link spectrum,<sup>14</sup> approximately 50% more downlink service spectrum than generally requested by the other NGSO FSS applicants.

Now Virtual Geo states that it is ready effectively to abandon 1/3 of its requested downlink capacity – the 12.2-12.7 GHz band – without explanation. Virtual Geo's reversal is especially astonishing in light of its earlier recognition that Northpoint's exclusion zones will "take away spectrum in areas where the NGSO FSS systems need it the most . . . in major urban areas – exactly where the NGSO FSS systems will require the full use of allocated spectrum."<sup>15</sup> In practical terms, Virtual Geo's inconsistent and unreliable statements on its need for spectrum require that, despite the commitment that it may have made to provide nationwide advanced telecommunications services, that commitment must now be seriously questioned.

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<sup>13</sup> *Castiel Letter at 2.*

<sup>14</sup> See *Virtual Geo Reply Comments at 17 & 17 n.31* (arguing that Northpoint's proposal would inhibit Virtual Geo's need for a full 1.5 GHz of space-to-Earth service link spectrum); *Consolidated Opposition to Petitions to Deny and Response to Comments of Virtual Geosatellite, L.L.C.*, FCC File Nos. SAT-LOA-19970926-000149, *et al.* at 11-12 (Aug. 4, 1999) (indicating a need for use of a full 1.5 GHz of space-to-Earth service link spectrum); *Application of Virtual Geosatellite, L.L.C.*, SAT-LOA-19990108-00007 S2366, at 27 (Jan. 8, 1999) (same).

<sup>15</sup> *Virtual Geo Reply Comments at 17.*

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Most importantly, though, Virtual Geo's about-face does not alter the technical facts in this proceeding – Northpoint's proposed system will still cause widespread harmful interference into NGSO FSS receivers, and NGSO FSS operators such as Boeing and SkyBridge will be unable to mitigate that interference. Rather than dispute this fact, Virtual Geo and Northpoint implicitly acknowledge it in their letter.<sup>16</sup>

As Boeing and SkyBridge have previously demonstrated, their respective NGSO FSS systems must have access to a full gigahertz of space-to-Earth service link spectrum in order to co-exist with other services at Ku-band and ensure the financial viability of their global satellite networks. The Commission has recognized that NGSO FSS networks in the Ku-band “could increase competition and provide new advanced services to the public.”<sup>17</sup> The Commission should not jeopardize these innovative and competitive new consumer services – services that will do much to bridge the “digital divide” -- by authorizing Northpoint to construct a terrestrial communications service in the 12.2-12.7 GHz band.

As Boeing and SkyBridge – and Virtual Geo – repeatedly have demonstrated, authorizing Northpoint's service in the Ku-band would be particularly unfortunate, and unnecessary. The Commission has already allocated an abundance of spectrum for point-to-multipoint services and, as Virtual Geo put it, “[t]here can be no public interest justification – and certainly Northpoint has not offered any – to set aside still more spectrum for Northpoint's point-to-multipoint fixed service, especially in a portion of the spectrum that has long been used so successfully to provide satellite services directly to consumers.”<sup>18</sup>

Nothing in the Castiel Letter changes that fact. Neither Virtual Geo nor Northpoint have demonstrated that they are technically capable of making any substantial contribution to closing the digital divide, and their respective operations could substantially constrain Boeing's

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<sup>16</sup> See *Castiel Letter* at 2 (acknowledging that in some situations “it is not possible” for spectrum sharing).

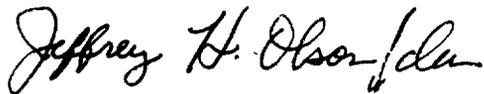
<sup>17</sup> *NGSO FSS NPRM* at ¶ 9.

<sup>18</sup> *Virtual Geo Reply Comments* at 18.

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and SkyBridge's ability to expedite the delivery of affordable advanced telecommunications services to all Americans.

Respectfully submitted,



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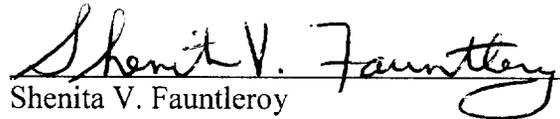


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Certificate of Service

I, Shenita V. Fauntleroy, do hereby certify that on this 17th day of March, 2000, I have caused a copy of the foregoing "Ex Parte Presentation of The Boeing Company" in ET Docket No. 98-206 to be served either by hand delivery or First Class U.S. Mail upon the persons listed below.

  
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