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December 20, 1999

Mr. Donald Abelson
Chief, International Bureau
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

**Re: *Ex parte* Presentations of Northpoint Technology, Ltd.
ET Docket No. 98-206
RM-9147
RM-9245**

Dear Mr. Abelson:

The Boeing Company ("Boeing"), by its attorneys, hereby submits this written *ex parte* presentation in order to assist the Federal Communications Commission ("FCC" or "Commission") in compiling a complete record in the foregoing proceedings. In particular, Boeing believes it necessary to bring to the Commission's attention the factual inconsistencies and misrepresentations that are contained in *ex parte* presentations of Northpoint Technology, Ltd. ("Northpoint") to the Commission and its staff.

First, Northpoint misrepresents the ability of its proposed system to operate without harmful interference to Boeing's non-geostationary orbit fixed-satellite service ("NGSO FSS") system. In its December 3 *ex parte* presentation to Commission staff, Northpoint states that it can operate on a co-frequency basis with Boeing without the need for coordination between the two systems.¹ Not only is this representation wrong from a technical standpoint, but it also constitutes an unsubstantiated reversal from its previous assertions.

Up to now, Northpoint has always argued that it could share spectrum with NGSO FSS networks in the 12.2-12.7 GHz band only by imposing "exclusion zones" around its transmitters. Although Northpoint has claimed that such exclusion zones would be very small,² this claim is contradicted by Northpoint's own technical disclosures. Northpoint calculated its exclusion zone

¹ See Letter from Brian Weimer, Counsel for Northpoint Technology, Inc. to Magalie Roman Salas, Secretary, Federal Communications Commission (Dec. 6, 1999) (notifying Commission of Northpoint *ex parte* presentation to FCC staff on December 3 and attaching a copy of handouts distributed at that meeting to FCC staff).

² Northpoint euphemistically calls its exclusion areas "mitigation zones" and estimates that exclusion zones of between 200 meters and 19.46 square kilometers will result where NGSO FSS receivers will be subject to unacceptable interference. See *Comments of Northpoint Technology, Ltd.*, ET Docket No. 98-206, at 28 & Technical Annex at 32 (Mar. 2, 1999) ("Northpoint Comments").

estimates using a transmitter EIRP of -17.5 dBW.³ In contrast, Northpoint's "Broadwave Tampa" license application lists a maximum transmit EIRP of 45 dBm (that is, 15 dBW).⁴ This EIRP is 32.5 dB, or almost 1800 times greater than the EIRP used for Northpoint's testing. The higher level of transmitted power would increase the linear dimensions of the exclusion zones by more than 40 times over Northpoint's estimates.⁵

In other words, if authorized, each and every Northpoint transmitter could impose an exclusion zone of between 230 and 246 square kilometers and Northpoint would still be operating within the limits of its requested license.⁶ Thus, the use of different EIRP for its exclusion zones and for its licensees is clearly contradictory and misleading. Although Boeing has raised this contradiction on numerous occasions,⁷ Northpoint has never refuted Boeing's arguments.

Boeing has consistently stated that it is entirely unacceptable to require global NGSO FSS networks to operate utilizing exclusion zones in service link frequency assignments.⁸ Although the use of 12.2-12.7 GHz for NGSO FSS has Primary status worldwide, the imposition of exclusion zones would oblige NGSO FSS networks to operate on a *de facto* secondary status, and would effectively eliminate NGSO FSS operations in most of any city in which Northpoint is permitted to operate. Because of the necessity of exclusion zones, Boeing has consistently stated that Northpoint's system cannot operate on a co-frequency basis with NGSO FSS systems. Any representation by Northpoint to the contrary is clearly misleading.

Second, although invited to do so, Northpoint has never satisfactorily addressed how it will cope with rain fades without increasing interference to DBS and NGSO FSS receivers.⁹ In its petition for rulemaking, Northpoint indicated that in order to accommodate a C/N reduction of a DBS signal at a user terminal due to heavy rainfall, it would adjust its transmitter output

³ See *Northpoint Comments*, Exhibit 1, Table 3 (listing HPA power of -25 dBW, antenna gain of 10 dB, and 2.5 dB of line losses).

⁴ See *Application of Broadwave Tampa, LLC for License to Provide a New Terrestrial Transport Service in the 12.2-12.7 GHz Band*, Exhibit 2 (Engineering/Technical Parameters Exhibit) (Jan. 8, 1999).

⁵ Depending on the shape of Northpoint's transmitting antenna radiation pattern, the increase in exclusion zone area could be a factor of almost 1,800. See *Reply Comments of the Boeing Company*, ET Docket No. 98-206, at 45 n.76 (Apr. 4, 1999) ("Boeing Reply Comments").

⁶ See *Boeing Reply Comments* at 46.

⁷ See, e.g., *Boeing Reply Comments* at 45-46; *Consolidated Reply of the Boeing Company, In the Matter of SkyBridge, L.L.C., et al.*, SAT-AMD-19980630-00056 S2241, at 32-34 (Aug. 16, 1999) ("Boeing Consolidated Reply")

⁸ See, e.g., *Boeing Reply Comments* at 46; *Boeing Consolidated Reply* at 34.

⁹ See *Boeing Reply Comments* at 46-49.

power.¹⁰ However, such a rain fade mitigation approach will not be effective, because it does not take into account the small-cell nature of high rainfall events.¹¹ Northpoint's approach assumes that rain rates will be uniform over the intended service areas, when in reality, rain rates can vary significantly within a single coverage area of the Northpoint system. For example, when there is modest rain over the Northpoint rain sensor and a high rate in a rain cell in another part of the coverage area, the Northpoint sensor will not cause the Northpoint signal to be reduced while the satellite signal will significantly fade. As a result, the Northpoint signal will cause much more interference to the satellite receiver than under clear sky conditions.¹²

Again, although invited to do so, Northpoint has failed to respond to these critical shortcomings in its operational design. The absence of an effective method of mitigating the impact on rain-faded satellite receivers will, under most heavy rain circumstances, lead to further increases in the size of exclusion zones.¹³ As noted above, such exclusion zones are unacceptable to NGSO FSS system operators such as Boeing.

Finally, Boeing strenuously objects to the concept of assigning Northpoint any spectrum for the delivery of one-way broadband data. The Commission has spent much of the last decade allocating spectrum for point-to-multipoint broadband data services such as Local Multipoint Distribution Service ("LMDS"). These allocations were the result of carefully crafted compromises between LMDS proponents and the commercial satellite industry. The Commission should not allow Northpoint to circumvent these agreements (and avoid participating in the Commission's recent LMDS auction) by constructing what would essentially amount to a one-way LMDS service using incumbent satellite spectrum.

¹⁰ See *Northpoint Technology, Ltd.*, Petition for Rulemaking, RM-9245, at 15, 16 (Mar. 6, 1998). Specifically, Northpoint asserts that, "if there is 3dB of fade affecting the DBS link in a given areas, Northpoint can decrease the power of its transmission by 3dB to avoid harmful interference." See *id.*

¹¹ See *Boeing Reply Comments* at 47.

¹² See *id.* at 48.

¹³ See *id.* at 49.

In light of the above, Boeing urges the Commission to dismiss Northpoint's petition for rulemaking and its associated license applications as being inconsistent with the Commission's goal of licensing NGSO FSS systems in the 12.2-12.7 GHz band.

Respectfully submitted,

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