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**Further Response
To Northpoint *Ex Parte* Filings**

DIRECTV, Inc.

September, 2000

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I. Introduction

Northpoint Technology, Ltd. ("Northpoint") continues to feed the Commission distorted data, half-truths and hollow policy arguments in a quest to introduce a serious source of harmful interference into the 12.2-12.7 GHz band -- the "mission critical" frequency band used by Direct Broadcast Satellite ("DBS")¹ operators in the United States to downlink digital programming to U.S. consumers. The Northpoint misinformation campaign has manifested itself recently in two more *ex-parte* filings: the first filing, dated March 17, 2000,² purports to offer a technical response to DIRECTV's January 27, 2000 filing, "Conclusions to Date Regarding Harmful Interference From a Proposed Northpoint Technology Terrestrial System Operating in the DBS Downlink Band, 12.2-12.7 GHz,"³ which documented with extensive technical analyses the type and scope of harmful interference generated by a Northpoint system into DBS operations; the second filing, dated March 28, 2000,⁴ proffers an equivalent power flux density ("EPFD") mask that Northpoint claims will offer adequate protection to DBS subscribers in the event that a Northpoint system is deployed.

As the Commission considers these two Northpoint filings, it should also consider the following points, which are elaborated in more detail in the body of this submission:

- Although Northpoint concentrates its attacks on disputing the details of the observations and measurements made by DIRECTV, Northpoint misses the bigger picture. Both Northpoint and DIRECTV have in fact made similar analytical predictions of the effects of Northpoint interference on BSS signals. This interference is real, and has been measured by both parties. In fact, the harmful interference effects of Northpoint technology into DBS operations have most recently been documented in the joint DIRECTV/Echostar report of tests conducted by the DBS operators in Oxon Hill, Maryland.⁵

¹ DBS is known internationally as Broadcasting Satellite Service ("BSS"), and the terms are used herein interchangeably.

² Ex Part Submission of Northpoint Technology, "Response to DIRECTV" (Mar. 17, 2000) ("Northpoint March 17 Filing").

³ Ex Parte Submission of DIRECTV, Inc., "Conclusions to Date Regarding Harmful Interference From a Proposed Northpoint Technology Terrestrial System Operating in the DBS Downlink Band, 12.2-12.7 GHz" (Jan. 27, 2000) ("DIRECTV January 27 Filing").

⁴ Ex Parte Submission of Northpoint Technology, "The Northpoint EPFD Mask" (Mar. 28, 2000) ("Northpoint March 28 Filing").

⁵ DIRECTV, Inc. and Echostar Satellite Corp., "Report of Interference Impact on DBS Systems from Northpoint Transmitter Operating at Oxon Hill, MD, May 22 to June 7, 2000" (July 25, 2000) ("DBS Oxon Hill Report").

- Significant weakening of the ability of a BSS signal to withstand rain fades due to added interference must be classified as harmful interference. Signal availability is an important quantitative measure of service performance, and protecting this performance parameter has been recognized internationally. This point was established most recently in the protection of the BSS from NGSO-FSS systems at the International Telecommunications Union ("ITU").
- Despite its rhetoric to the contrary, by proposing protection criteria, Northpoint itself recognizes that some mechanism does indeed need to be established to avoid harmful interference into the DBS service from Northpoint operations. That is why Northpoint has proposed an epfd mask that on the surface appears to be similar to earlier epfd masks proposed by DIRECTV that were designed to protect the BSS from harmful interference from NGSO systems. However, Northpoint has attempted to manipulate these epfd protection masks by redefining their meaning in a manner that is seriously misleading and without technical merit. Plotting the proposed Northpoint mask against the same critical parameter earlier used by DIRECTV and the international regulatory community (*i.e.*, percent of time exceeded) reveals the extent of Northpoint's distortion of the NGSO protection masks, and the accompanying severe anticonsumer results.
- The impact of the proposed Northpoint protection mask on BSS service is unacceptable. Under Northpoint's proposal, a substantial number of subscribers would be subject to a degradation in DBS signal unavailability of 25 to 50%, whereas the international standard agreed to by the FCC for protection *from all NGSO-FSS systems taken together stands at 10%*. Thus, under the Northpoint analysis, a very large number of DBS subscribers will experience severe service problems that will extend far beyond the impact such subscribers can expect from the introduction of NGSO-FSS services into the 12 GHz band.
- To further highlight the impact that the Northpoint system will have on BSS subscribers, DIRECTV has analyzed Northpoint's proposed deployment plan for service to the greater Washington, DC area set forth in the Northpoint March 17 Filing. DIRECTV's calculations show that at least 62,444 people are within the 10% unavailability degradation contour in Washington, DC, meaning that these subscribers will experience more interference than that emitted by all NGSO systems taken together. Furthermore, more than 400,000 subscribers in the Washington, DC area will experience harmful interference that exceeds the permitted threshold for a single NGSO system. These numbers are clearly unacceptable. For DBS to remain successful as a mass-market consumer service, all DBS subscribers

must be equally and consistently protected from interference. There has been no evidence presented that this will be the case; to the contrary, DBS subscribers are not being consistently protected, and many hundreds of thousands are being subjected to harmful interference from the Northpoint system.

The following sections describe the above points in further detail, and the implication of these points should not be lost on the Commission. If the Northpoint system is authorized in the 12 GHz band, the Commission will be pointedly and needlessly undermining (i) literally billions of dollars of investment by the U.S. satellite industry, (ii) one of the nation's most vibrant, growing mass market consumer services, and (iii) the nation's number one competitive multichannel video distribution alternative to incumbent cable operators.

II. Discussion

A. *Northpoint's Attacks on DIRECTV's Observations Regarding Its Flawed Washington, DC Demonstration Miss the Big Picture*

Observations made by Northpoint, DIRECTV and Echostar have all shown an impact on BSS reception due to Northpoint transmitter interference. Each of these entities witnessed downward changes in the signal meters of various subscriber receiver models when the latter were exposed to Northpoint transmissions. DIRECTV has submitted irrefutable evidence, through its rain testing performed in Spring Creek, NY, that such changes harm the quality of a DBS signal.⁶ The interference is real, has been observed by many parties, and indicates the presence of interference zones, which have been calculated by both DIRECTV and Northpoint.

Compare, for example, Figures 5.5-1 and 5.5-2 on pages 47 and 49 of the DIRECTV January 17 Filing with Figures 2a and 2b in Attachment B of the Northpoint March 17 Filing. Both sets of figures show the same general shape and orientation of the interference zones with respect to the Northpoint transmitter location. The Northpoint calculated interference zones are smaller primarily because of some overly optimistic predictions by Northpoint. And, for some reason, Northpoint has drastically underestimated the affected populations. However, the important fact remains – *both parties are arriving at interference zones that are similar in shape*. Both parties recognize their existence.

Furthermore, DIRECTV's measurements during Northpoint's Washington, DC demonstration, and during DIRECTV's own testing at Oxon Hill, clearly showed that these interference zones exist in the real world, and not just in the analytical models. Section 5 of the DIRECTV January 27 Filing described

⁶ See DIRECTV January 27 Filing at 21-30.

DIRECTV's measurements taken during Northpoint demonstrations in detail, and will not be repeated here. The recent DIRECTV/EchoStar joint DBS Oxon Hill Report describes the results of testing conducted by the DBS operators at a Northpoint-proposed transmit site using a replicated Northpoint transmitter. These test results amplify and improve upon the earlier test results. In short, the existence of Northpoint interference zones has been firmly established.

One very important point must be made, however, concerning a significant and untrue allegation made by Northpoint concerning data taken by DIRECTV during Northpoint demonstrations. Northpoint has claimed that the Northpoint transmitter was OFF during DIRECTV's readings on 24 September 1999.⁷ This assertion is incorrect, and indicates a significant problem with Northpoint's data recording procedures.

Specifically, on page 11 of the Northpoint March 17 Filing, Northpoint claims that its transmitter was OFF when DIRECTV measured interference into DIRECTV receivers at the Iwo Jima Memorial on September 24, 1999. Northpoint states that the likely source of the change in signal meter reading documented by DIRECTV was a reduction of co-channel interference from other DBS satellites caused by the shield used by DIRECTV to block Northpoint transmissions. Both claims by Northpoint are without merit.

As described in DIRECTV's January 27 Filing, DIRECTV routinely measured the general characteristics of Northpoint's transmissions using a spectrum analyzer.⁸ Such measurements were made during the period that Northpoint claims its transmitter was OFF. Two dated spectrum analyzer traces showing that the Northpoint transmitters were in fact turned ON are presented in Figures 1 and 2 below. This data was recorded both before and after the measurements documenting harmful interference. Northpoint's transmitter operations log is incorrect.

⁷ Northpoint March 17 Filing at 5, 11-12, Attachment E.

⁸ DIRECTV January 27 Filing at 36.

CERTIFICATE OF SERVICE

I, James H. Barker, hereby certify that on this 20th day of September, 2000 that copies of the Further Response to Northpoint Ex Parte Filings were delivered by prepaid, first class U.S. mail or hand delivery (*) to the following:

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