

Northpoint Proposal

- Northpoint proposal:
- Adopt a power limit (called an EPFD) as an interference criterion.
 - 20 dB C/I ratio (23 dB for high powered DBS links) to all DBS customers.
 - Analysis shows that 20 dB will ensure that no DBS customer have greater than 10% increase in unavailability and most will have much higher protection as a result of free space loss.
 - 10% is same allowance afforded to NGSO systems in this proceeding.
- Consistent with current FCC proceeding:
 - Northpoint EPFD proposal meets “10 minutes in worst month” Commission proposal found in NFPRM.
 - NGSOs interference criterion is an EPFD based on a 10% increase in unavailability.

There Is Ample FCC Precedent and Other Support for the Northpoint Proposal

- Consistent with digital television rules:
 - DTV rules specify C/I ratios of 21 and 23 dB respectively for analog and digital co-channel operations.¹
- Consistent with MITRE:
 - Northpoint's criterion is equal to the 10% "increase in outages" standard recommended by MITRE.²
- Consistent with the way DBS treats itself and other DBS providers:
 - DBS to DBS interference uses a 20 dB C/I ratio.³

1. 47 CFR 73.623

2. MITRE Report at 6-6

3. FCC R&O Appendix G (20.7 dB C/I for DirecTV; 20 dB C/I for EchoStar)

Previous DBS Proposals Were Based on C/I Similar to that Proposed by Northpoint

- DirecTV used a C/I ratio of 19 dB (a 20% increase in unavailability) in “Terrestrial Interference in the DBS Downlink Band.” (DirecTV, April 11, 1994)
- “Tempo believes the TI DBS report by DirecTV, which specified a C/I ratio of 19 dB, causing a reduction of 20% availability in subscriber systems is more accurate [as a standard for protection].” (Comments of Tempo Satellite, Inc. in RM 9245, April 20, 1998, paragraph 5a)
- “Echostar estimates that a more acceptable Carrier-to-Interference level would be at least 20 dB (equal to the cross polarization isolation level of the Low Noise Block Down Converter with Integrated Feedhorn).” (Opposition of Echostar Communications Corporation, RM 9245, April 20, 1998, page 9)

What's Wrong With the DBS Proposal?

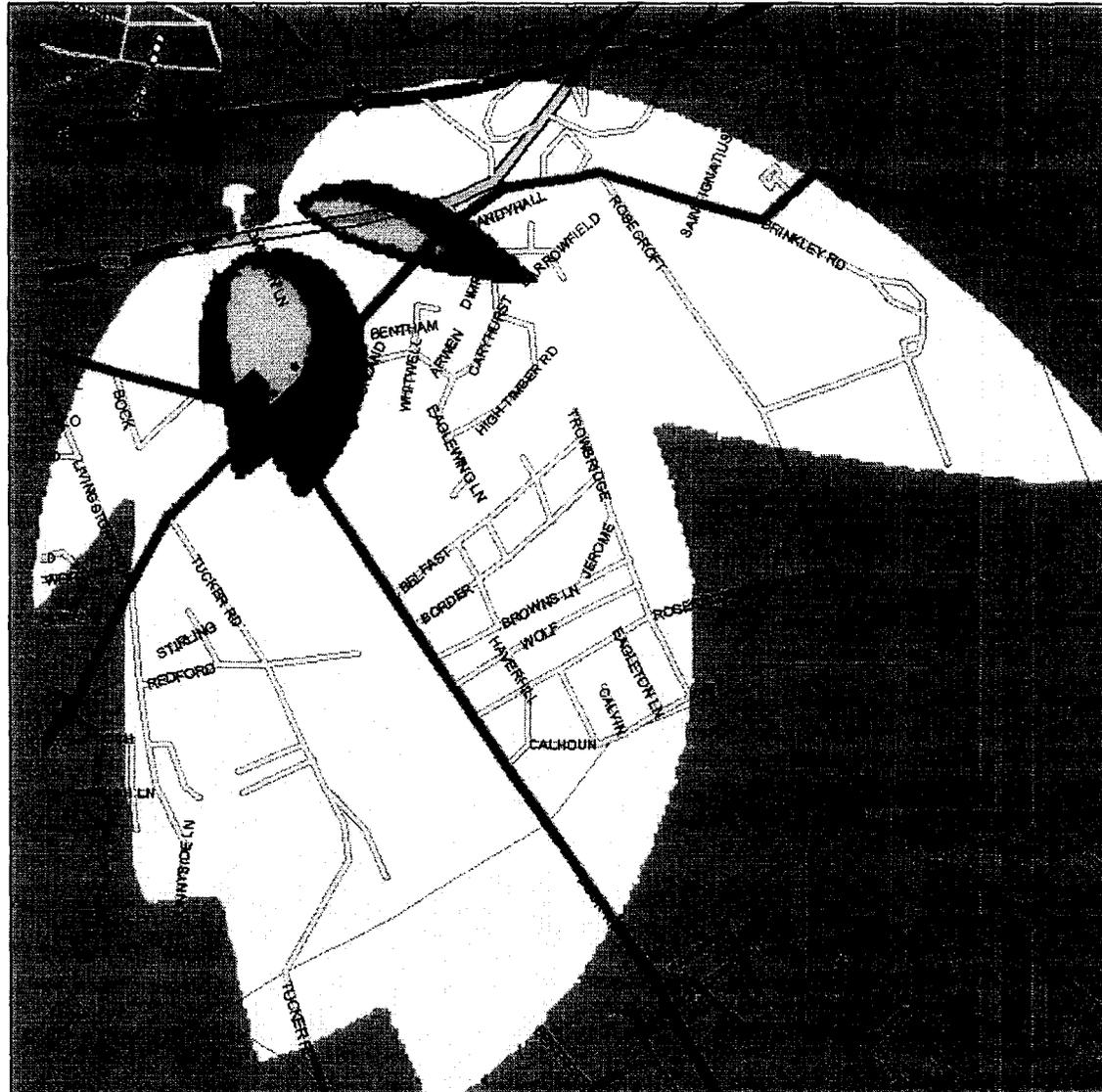
- DBS (DirecTV) latest proposal:
 - EPFD limit based 28 dB C/I
 - Equivalent to 2.86% “increase in unavailability” (DBS estimate)
- Why was 2.86% chosen?
 - Mathematical result of dividing 10% by 3.5!
 - 10% was the negotiated “increase in unavailability” that DBS offered NGSO systems
 - 3.5 was an arbitrary number of NGSOs
- Thus, the 2.86% was not even based on any real *satellite* systems - much less any analysis of the Northpoint *terrestrial* system.
- There is not a single statement in the record that provides any rationale for this specific criterion from a consumer perspective.

DBS Failed to Support 2.86% Proposal at Oxon Hill Tests

Location of DBS Oxon Hill Readings

Yellow region represents the incremental area where DBS proposes that Northpoint mitigate DBS consumers.

DBS did not take a single reading in this incremental area or document any consumer in this area (or in *any* area of Oxon Hill) that would have any impairment whatsoever from Northpoint operations.



The 2.86% DBS Proposal is Arbitrary and Without Precedent

- 2.86% was explicitly rejected by MITRE, the Congressionally mandated independent testing body charged with examining this very issue.
- As MITRE noted when it rejected the 2.86% DBS proposal, “2.86% is very small.”
- However, exactly how small bears examination: According to A.C. Nielsen, television is on in the home an average of 7 hours per day (153,300 minutes).

| Annual Television Minutes – Washington D.C. | | | | | |
|---|-------------|-----------------------------|--------------------------|------------------------|--------------------|
| Available | Unavailable | Current minutes unavailable | 2.86% of current minutes | 10% of current minutes | Minutes difference |
| 99.95% | 0.05% | 76.65 | 2.19 | 7.66 | 5.47 |

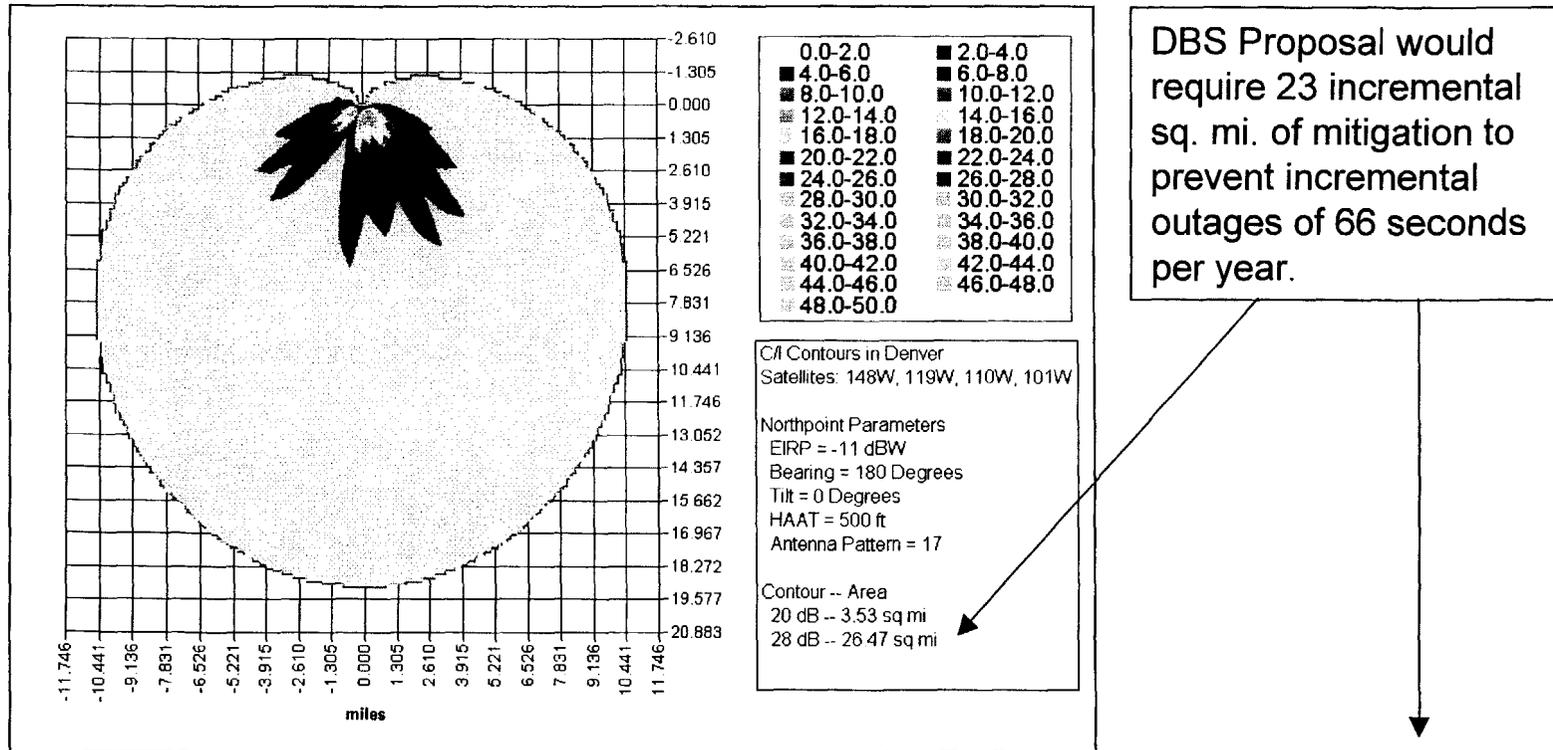
- Remember this amount is the *worst* case: for the few homes near the transmitter that do not have natural shielding. All other consumers have less or no impact.

Difference Between DBS and Northpoint Proposal

- Consumer television experience – no difference
 - No one can detect an incremental 5 minutes (or 1 minute!) out of 153,300 minutes of television viewing; It is certainly not harmful interference.
- Difference between the two is potentially enormous for Northpoint
 - 20 dB contour = 0.0 – 1.0% of service area
 - 28 dB contour = 5 - 10% of service area
 - 14 – 25K cells nationwide 28 dB = over 100,000 sq. mi of additional mitigation
- Increase the cost of every Northpoint deployment throughout the country
 - Northpoint's service would be more expensive for every consumer
 - In some rural areas (particularly in the Southwest) the costs of implementing the proposal could be so significant that deployment could be precluded.
- Northpoint believes the 2.86% proposal is an effort by an incumbent to burden a new competitor with unprecedented obligations that provide no consumer benefit.

* Mitigation estimate is based on 20K cells averaging 70 sq. mi each with an average of 6.5% additional mitigation area

Rural Areas in Southwest: Comparison of DBS and Northpoint Proposals



| Annual Television Minutes – Southwest | | | | | |
|---------------------------------------|-------------|-----------------------------|--------------------------|------------------------|--------------------|
| Available | Unavailable | Current minutes unavailable | 2.86% of current minutes | 10% of current minutes | Minutes difference |
| 99.99% | 0.01% | 15.3 | 0.4 | 1.5 | 1.1 |

Commission Proposals Supported by Northpoint

- The Commission has proposed and Northpoint supports:
 - Northpoint’s mitigation obligations (regardless of the interference criterion used) be limited to the first 18 months after deployment.
 - Required mitigation based on “consumer complaints” rather than house to house measurement or surveys.

Conclusion

- The 20 dB C/I interference criterion proposed by Northpoint:
 - Consistent with current Commission proposal (10 minutes in worst month option)
 - Provides sufficient protection to DBS customers
 - Does not require an excessively large mitigation region
 - Easily measurable and consistent with the FCC's rules for other services, including broadcast television, DBS and NGSOs.
 - Will enable Northpoint's Broadwave affiliates to deploy throughout the United States, including all of the Southwest.
- Deployment of Northpoint
 - Hasten new services to consumers, including local signals to subscribers of satellite television services and broadband to rural areas.
 - Provide cable competition where there presently is little or none.
- Northpoint is the only applicant to provide MVDDS service before the Commission that has passed the statutory independent testing – Northpoint is ready to go.

Before the
Federal Communications Commission
Washington, D.C. 20554

| | | |
|--|---|----------------------|
| In the Matter of |) | |
| |) | |
| 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 |) | ET Docket No. 98-206 |
| the Ku-Band Frequency Range; |) | RM-9147 |
| |) | RM-9245 |
| Amendment of the Commission's Rules to |) | |
| Authorize Subsidiary Terrestrial Use of the |) | |
| 12.2-12.7 GHz Band by Direct Broadcast Satellite |) | |
| Licensees and Their Affiliates; and |) | |
| |) | |
| Applications of Broadwave USA, |) | |
| PDC Broadband Corporation, and |) | |
| Satellite Receivers, Ltd. to Provide |) | |
| A Fixed Service in the 12.2-12.7 GHz Band |) | |

FIRST REPORT AND ORDER AND FURTHER NOTICE OF PROPOSED RULE MAKING

Adopted: November 29, 2000

Released: December 8, 2000

Comment Date: 45 days from date of publication in the Federal Register

Reply Comment Date: 60 days from date of publication in the Federal Register

By the Commission: Commissioner Furchtgott-Roth approving in part, dissenting in part, and issuing a statement; Commissioner Tristani issuing a statement.

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strength exceeds the level necessary for a subscriber to receive the DBS signal. This could lengthen an outage that would have occurred without the interfering signal being present or cause an outage if the receiver is already at the threshold without the interfering signal being present. However, in many cases the reflector dish, terrain, or various structures would shield the backlobes, thus mitigating or eliminating the interference from the MVDDS transmitter. Tests conducted in the 12.2-12.7 GHz band by Northpoint under an experimental authorization confirm that the MVDDS could operate without excessively impacting DBS subscribers.⁴⁶⁵ Northpoint has also filed extensive technical studies to demonstrate that any impact on DBS operations would be minimal and could be mitigated using existing engineering techniques.

215. As mentioned above, DIRECTV and EchoStar conducted their own joint experimental testing to determine whether DBS subscribers would suffer significant availability losses due to new MVDDS operations, and concluded that they would. For example, DIRECTV and EchoStar contend that the increase in unavailability due to a Northpoint transmitter located in Oxon Hill, MD would range from 7.2-122.4%.⁴⁶⁶ However, we note that throughout Northpoint's and DIRECTV/EchoStar's experimental tests, there were no reported DBS outages attributable to the tests. We would expect this result because the level of the potentially interfering terrestrial signal, as proposed by Northpoint, could result in loss-of-picture only if the DBS signal was exposed to a significant rain event sufficient to attenuate the DBS signal close to the threshold at any DBS receiver; i.e., the cliff-effect, and the receiver is aligned in such a fashion to be susceptible to the interfering signal. Further, our engineering staff has thoroughly analyzed the extensive *ex parte* filings, experimental reports, and technical showings filed in the proceeding and finds that harmful interference between MVDDS and DBS operations can be avoided through engineering techniques and regulatory safeguards. We do not find that further independent testing, as suggested by DIRECTV and EchoStar, would yield any further useful information and would only further delay a decision in this proceeding. We note that neither DIRECTV nor EchoStar has identified any specific additional tests that would produce relevant new data. The arguments concerning interference have instead centered on the proper application and interpretation of test results. We find that there is an ample record to analyze the interference scenario between MVDDS and DBS operations.

216. We note that the record in this proceeding demonstrates a variety of techniques that an MVDDS operator may use to protect DBS operations from harmful interference caused by MVDDS operations. Specifically, an MVDDS operator may employ all or some of the following techniques: 1) careful site selection of their transmitters to avoid large concentrations of DBS receive antennas within 1-3 kilometers of the transmitters; 2) beam shaping through customized MVDDS antennas or tilting the beams of their transmitters to avoid DBS receive antennas; 3) adjusting the height of their transmitters; 4) reducing the power of their transmitters during periods of DBS fading due to rain; 5) more accurately pointing DBS receive antennas toward the intended satellite at their expense and with the permission of the DBS subscriber; 6) relocating DBS receive antennas at their expense and with the permission of the DBS subscriber; 7) replacing smaller DBS receive antennas with larger DBS receive antennas at their expense and with the permission of the DBS subscriber; 8) shielding DBS receive antennas from their transmitters at their expense and with the permission of the DBS subscriber; 9) employing planar DBS antennas⁴⁶⁷ at their expense and with the permission of the DBS subscriber; and 10) using multiple

⁴⁶⁵ Northpoint was granted an experimental license under the name Diversified Communication Engineering, Inc. in July 1997. It has conducted tests of its technology in Texas and in the Washington, DC metropolitan area to demonstrate that its proposed service can operate without causing harmful interference to incumbent DBS operations.

⁴⁶⁶ See DIRECTV and EchoStar *ex parte* filing of July 25, 2000.

⁴⁶⁷ Planar antennas are flat antennas that eliminate backlobe interference.

CERTIFICATE OF SERVICE

I, Shannon Thrash, hereby certify that on this 10th day of October, 2001, copies of the foregoing were served by hand delivery* or first class United States mail, postage prepaid, on the following:

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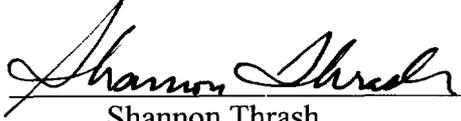
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