

October 6, 2008

**BY HAND DELIVERY**

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Office of the Secretary  
Federal Communications Commission  
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**FILED/ACCEPTED**

**OCT - 6 2008**

Federal Communications Commission  
Office of the Secretary

Re: *DIRECTV Enterprises, LLC*  
*FCC File No. SAT-AMD-20080908-00166 (Call Sign S2244)*

Dear Ms. Dortch:

In a recent *ex parte* submission,<sup>1</sup> Pegasus Development DBS Corporation (“Pegasus”) challenged the methodology used by DIRECTV Enterprises, LLC (“DIRECTV”) to demonstrate that its proposed 17/24 GHz BSS system at the 118.4° W.L. orbital location would cause no more interference to Pegasus’s proposed system at 115° W.L. than if the DIRECTV system were located at the 119° W.L. “on grid” slot. Pegasus’s challenge arises from a critique of the methodology used by DIRECTV to determine the effect of its system. However, the methodology used by DIRECTV reflects the industry standard used in countless applications before the Commission – including applications submitted by Pegasus itself. Pegasus’s individual preference for its approach is no basis for denying an application that reflects standard practice in the industry.

In light of Pegasus’s application at 115° W.L., DIRECTV recently amended its application to reduce the peak EIRP of its system at 118.4° W.L. by 0.1 dB (from 63.0 dBW to 62.9 dBW) to maintain the interference environment for Pegasus, and agreed to accept any increased interference that results from Pegasus’s operations less than four degrees away – as required under Section 25.262(d) of the Commission’s rules.<sup>2</sup> Pegasus contends that DIRECTV would need to reduce the EIRP of its proposed satellite by up to

<sup>1</sup> See Letter from Bruce Jacobs to Marlene H. Dortch, FCC File Nos. SAT-AMD-20080908-00166 et al. (dated Sept. 26, 2008) (“Pegasus Letter”).

<sup>2</sup> See Application Narrative, FCC File No. SAT-AMD-20080908-00166, at 2-3 (filed Sept. 8, 2008).

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2.5 dB in order to ensure that interference to Pegasus’s system is no greater than that which would be caused by a system operating at the “on grid” location of 119° W.L.<sup>3</sup>

Although Pegasus agrees with most of DIRECTV’s analysis, a footnote in its submission reveals that the 2.5 dB disparity arises from two aspects of the methodology for calculating the power flux-density (“PFD”) on the Earth’s surface on which DIRECTV and Pegasus differ.<sup>4</sup> Specifically, Pegasus contends that (1) the calculation should use the noise bandwidth of the satellite signal (30 MHz) rather than the transponder bandwidth corresponding to the emission designator (36 MHz); and (2) the calculation should not include atmospheric losses. While a PFD value certainly could be calculated in this way, such a methodology is by no means required – and in fact would be inconsistent with both industry norms and Pegasus’s own past practices.

On the first point, for example, in three applications for Ka-band space station authorizations, Pegasus used the emission designator bandwidth in demonstrating that its system would comply with the PFD limits in Section 25.138 for blanket earth station licensing in the band.<sup>5</sup> Specifically, the narrative of each application includes a listing of emission designators in Table 7 and a PFD calculation in Table 4, which are reproduced below.

TABLE 4. Typical Downlink Emission Parameters For Various Services  
 (The worst-case southeast area is based on Crane Model rain estimates for subscriber links. All links assume adjacent satellite interference at the approximate level of -118 dBW/m<sup>2</sup>/MHz.)

	Forward CONUS Service	Forward Spot Beam Service	Return Spot Beam Service	Return Service (Spot or CONUS)
Frequency, GHz	19.8	19.3	19.8	19.8
Access Method	TDM	TDM	TDM/FDMA	CDMA/FDMA
Power into Antenna, dBW	30.1	15.2	-8.5	7.7
Satellite Antenna Gain, peak, dBi	32.6	49.4	49.4	49.4
EIRP Density, peak, dBW/Hz	-17.0	-23.1	-17.3	-18.1
Bandwidth, MHz	237	237	0.666	33.0
PFD, dBW/MHz/m <sup>2</sup>	-119.3	-121.3	-119.5	-120.3
Receiving Antenna, meters	0.66	0.66	3.5	3.5
Max EIRP, dBW	66.7	64.6	40.9	57.1
ES Temp., K	140	140	140	140
G/T, dBi/K	15.1	16.0	33.8	32.6

<sup>3</sup> Pegasus Letter at 3.

<sup>4</sup> *Id.*, n.10.

<sup>5</sup> See FCC File Nos. SAT-LOA-20031119-00336, -00337, and -00338.

TABLE 7. List Of Emission Designators

Bandwidth	Designator
237 MHz	237MG1T
237	237MG1W
33	33MOG7C
512 KHz	512KG1W
0 MHz	H000X0N
1 MHz	1M00F9D
150 KHz	150KG2D

The bandwidths used in the PFD calculations are 237 MHz and 33 MHz – which correspond precisely to the emission designator bandwidths for 237MG1T/237MG1W and 33MOG7C, respectively, found in Table 7. In a cursory review of space station applications filed with the Commission over just the last five years, DIRECTV also found the emission designator bandwidth used as the normalizing bandwidth to derive power density in applications filed by such well-established operators as SES Americom, EchoStar, ICO, and Hughes.<sup>6</sup> Thus, it is clear that the methodology used by DIRECTV in this case is well accepted by the satellite industry – including Pegasus.

On the second point, Pegasus asserts that “the FCC’s rules require the assumption of free-space propagation conditions in calculating PFD limits.”<sup>7</sup> Tellingly, Pegasus cites no specific Commission rule in support of its assertion. Indeed, the reason for this becomes apparent as Pegasus later admits that “the FCC’s rules do not expressly require the assumption of free space conditions for the 17.3-17.7 GHz band” which is the subject of this application.<sup>8</sup> Pegasus fails to recognize the critical importance of assessing atmospheric losses in evaluating satellite system performance, as reflected by the adoption of a series of International Telecommunication Union Recommendations on the subject.<sup>9</sup> As highlighted in these ITU-R Recommendations, accounting for propagation impairments is particularly important for systems operating at frequencies above 10 GHz, which are more susceptible to such impairments. DIRECTV calculated atmospheric losses according to Rec. ITU-R P.618-8.<sup>10</sup> DIRECTV stands by the atmospheric calculation used in its amended application.

<sup>6</sup> See FCC File Nos. SAT-LOA-20031218-00358, Technical Appendix, Section 6.1 and Annex 8, Section 1 (SES Americom); SAT-LOA-20040803-00154, Technical Description, Sections A.11 and A.15 (EchoStar); SAT-MOD-20050110-00004, Appendix A, Sections A.11 and A.15 (ICO); and SAT-LOI-20080603-00118, Attachment A at 7 and Table A.10-2 (Hughes).

<sup>7</sup> Pegasus Letter at 3 n.10.

<sup>8</sup> *Id.*

<sup>9</sup> See, e.g., Rec. ITU-R P.618-8 (“Propagation data and prediction methods required for the design of Earth-space telecommunication systems”) (citing related and supporting ITU-R Recommendations).

<sup>10</sup> This methodology yielded a total atmospheric loss of 1.598 dB for Miami at 99.7% availability.

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Thus, the additional reduction in DIRECTV's peak EIRP that Pegasus claims must be made arises directly and solely from Pegasus's preference for using the noise bandwidth for the PFD calculation and for ignoring atmospheric losses. Far from being required under the Commission's rules, neither of these approaches is consistent with industry practice – including Pegasus's own past applications. Accordingly, the Commission should reject Pegasus's assertions on these two points and grant DIRECTV application as amended.

Sincerely yours,




William M. Wiltshire  
*Counsel for DIRECTV Enterprises, LLC*

**CERTIFICATE OF SERVICE**

I hereby certify that, on this 6th day of October, 2008, a copy of the foregoing was served by first class mail, postage prepaid, upon:

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