

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

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| _____                            | ) |                                  |
| <i>Application of</i>            | ) |                                  |
|                                  | ) |                                  |
| <b>DIRECTV ENTERPRISES, LLC</b>  | ) | File Nos. SAT-LOA-20130205-00016 |
|                                  | ) | SAT-AMD-20130716-00094           |
| For Authorization to Launch and  | ) |                                  |
| Operate DIRECTV KU-45W, a        | ) | Call Sign: 2893                  |
| Ku-Band Space Station, at 45° WL | ) |                                  |
| _____                            | ) |                                  |

**CONSOLIDATED RESPONSE OF DIRECTV ENTERPRISES, LLC**

DIRECTV Enterprises, LLC (“DIRECTV”) hereby responds to the Comments filed by SES Satellites (Gibraltar) Limited (“SES”) and the Petition to Deny or Defer filed by EchoStar Satellite Operating Corporation (“EchoStar”) in the above referenced proceedings.<sup>1</sup>

In its Petition, EchoStar continues to insist on conflating two different regulatory regimes, and thus reaches erroneous conclusions with respect to both. In this proceeding, DIRECTV seeks authority to operate at the nominal 45° W.L. orbital location in a portion of the unplanned Ku-band spectrum available for Fixed-Satellite Service. The interference environment in this band is established by the Commission’s two-degree spacing rules.<sup>2</sup> Accordingly, in support of this application, DIRECTV submitted an interference analysis consistent with those rules and the guidance for their

<sup>1</sup> See Comments of SES Satellites (Gibraltar) Limited, File No. SAT-AMD-20130716-00094 (Jun. 9, 2014) (“SES Comments”); Petition to Deny or Defer, File Nos. SAT-LOA-20130205-00016 and SAT-AMD-20130716-00094 (Jun. 9, 2014) (“EchoStar Petition”).

<sup>2</sup> See 47 C.F.R. 25.212(c) (stating rules for uplinks in the 14.0-14.5 GHz band).

implementation provided by the International Bureau.<sup>3</sup> As applied in this context, those rules effectively define the interference environment in which applied-for systems must be able to operate. Since the resulting downlink interference level is a direct consequence of the rules applicable to this band, there is no reason why DIRECTV should be “required to justify” the use of that level of interference in its analysis, as EchoStar asserts.<sup>4</sup>

By contrast, EchoStar has applied for authority to operate at the nominal 45° W.L. orbital location in the portion of the Ku-band that is subject to an international Plan under Appendix 30B of the ITU’s Radio Regulations – in which the Commission has *not* adopted operational parameters for a two-degree spacing environment.<sup>5</sup> In defense of its application, EchoStar has attempted to import the two-degree parameters applicable to the non-planned Ku-band into its analysis of interference in the planned Appendix 30B band. As DIRECTV has pointed out, that approach is supported by neither logic nor Commission precedent.<sup>6</sup> In this proceeding, EchoStar makes the mistake in the opposite direction by attempting to use DIRECTV’s arguments applicable to the Appendix 30B

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<sup>3</sup> See, e.g., *Public Notice*, International Bureau Satellite Division Information: Clarification of 47 C.F.R. § 25.140(b)(2), Space Station Application Interference Analysis, No. SPB-195, 18 FCC Rcd 25099 (2003) (“2003 Clarification Notice”); *Public Notice*, International Bureau Satellite Division Information: Clarification of 47 C.F.R. § 25.140(b)(2), Space Station Application Interference Analysis, No. SPB-207, 19 FCC Rcd 10652 (2004).

<sup>4</sup> See EchoStar Petition at 2.

<sup>5</sup> See IBFS File Nos. SAT-LOA-20120921-00152 and SAT-AMD-20130614-00085 (“ECHO-45W”).

<sup>6</sup> See, e.g., Letter from William M. Wiltshire to Marlene H. Dortch, IBFS File Nos. SAT-LOA-20120921-00152 and SAT-AMD-20130614-00085 (May 2, 2014) (“DIRECTV Two-Degree Spacing Letter”).

band as a basis for challenging DIRECTV's analysis of interference in a non-planned band. The Commission need not share in EchoStar's confusion on this point.<sup>7</sup>

There is, however, one area of confusion pointed out by both EchoStar and SES for which DIRECTV bears the blame. DIRECTV's analysis refers to a 65 cm receive antenna. Both EchoStar and SES argue that a receive dish of that size could not achieve the off-axis rejection characteristics of an antenna compliant with Section 25.209 of the Commission's rules, and argue that DIRECTV should be required to file a corrected analysis.<sup>8</sup> However, the antenna DIRECTV intends to use in conjunction with the new services that will be available from the DIRECTV KU-45W satellite is not round (as EchoStar and SES apparently assume) but actually elliptical, with dimension of about 49 cm x 89 cm. This antenna has a receive gain that is very close to that of a 65 cm round dish antenna but it has improved off-axis gain performance at 2° that is very close to that specified in Section 25.209. While DIRECTV regrets not making these facts clearer in its analysis, it does not believe that there is any need for submission of a revised analysis in these circumstances.<sup>9</sup>

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<sup>7</sup> Moreover, as EchoStar notes, DIRECTV's analysis shows "that the  $\Delta T/T$  level for a 1.2 meter receive antenna is below the 6 percent level specified in the ITU Radio Regulations" as a coordination trigger. EchoStar Petition at 3. This is one interference metric that DIRECTV has suggested might also be appropriate for an interference analysis in the Appendix 30B band where there is no Commission-established parameters for two-degree spacing. *See* DIRECTV Two-Degree Spacing Letter at 3-4.

<sup>8</sup> *See* EchoStar Petition at 2; SES Comments at 4-5.

<sup>9</sup> SES also notes that the Schedule S submitted with DIRECTV's amended application refers to a "TXV" beam identifier in item S7, but that there is no beam diagram or transponder information corresponding to that beam designation in items S8 and S10. *See* SES Comments at 5 n.8. This is the result of inadvertently carrying over that beam identifier from the original DIRECTV application. DIRECTV hereby confirms that this beam identifier should have been deleted from item S7 of the Schedule S of the amendment. In addition, SES noted that the Schedules S Item S7(m) lists a maximum EIRP of 53.5 dBW but the narrative at 6, Section 5.2.2, indicates a maximum of 53 dBW. DIRECTV confirms that it is requesting a maximum EIRP of 53.5 dBW.

Lastly, SES asserts that for purposes of the two-degree compatibility demonstration required under Section 25.140(b) of the Commission's rules, "a Ku-band satellite applicant must (among other things) 'provide an analysis demonstrating that the satellite's EIRP density and the earth station input power density values will not exceed and can operate at those levels listed in § 25.212(c).'"<sup>10</sup> However, while SES has correctly quoted the relevant public notice issued by the Commission on this topic, it has focused on the wrong portion of it. SES quotes the portion applicable to systems that will comply with all of the Commission's two-degree spacing requirements in the Ku-band. As SES notes, DIRECTV proposes to operate at slightly higher power than allowed under those rules. Accordingly, this application falls under the portion of the public notice applicable to "all other cases, including cases where the FSS satellite system operates at levels exceeding those in § 25.138 or § 25.212(c)."<sup>11</sup> The interference analysis supplied by DIRECTV is consistent with the requirements set forth under that portion of the public notice.

Nonetheless, DIRECTV recognizes that it proposes to operate at levels above those contemplated in the Commission's two-degree spacing rules. SES argues that, in such cases, the Commission has imposed a standard condition requiring coordination with neighboring satellites within six degrees on either side of the operational orbital location before operating at such levels.<sup>12</sup> Accordingly, it requests that the following condition language be included in any grant of the pending application:

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<sup>10</sup> SES Comments at 2 (quoting 2003 Clarification Notice at 2).

<sup>11</sup> 2003 Clarification Notice at 3.

<sup>12</sup> See SES Comments at 2-3.



## ENGINEERING CERTIFICATION

The undersigned hereby certifies to the Federal Communications Commission as follows:

- (i) I am the technically qualified person responsible for the engineering information contained in the foregoing Response,
- (ii) I am familiar with Part 25 of the Commission's Rules, and
- (iii) I have either prepared or reviewed the engineering information contained in the foregoing Response, and it is complete and accurate to the best of my knowledge and belief.

Signed:

/s/

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Jack Wengryniuk  
Senior Director  
DIRECTV Engineering

June 23, 2014

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Date

