

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

In the Matter of )
)
DIRECTV Enterprises, LLC ) File Nos. SAT-LOA-20060908-00100
Application for Authorization to Launch and ) SAT-AMD-20080114-00014
Operate DIRECTV RB-2, a Satellite in the ) SAT-AMD-20080321-00077
17/24 GHz Broadcasting Satellite Service ) Call Sign: S2712
at the 102.825° W.L. Orbital Location )
)
Spectrum Five LLC ) File Nos. SAT-LOI-20081119-00217
Petition for Declaratory Ruling to Serve the U.S. ) SAT-AMD-20120314-00044
Market from the 103.15° W.L. Orbital Location in ) Call Sign: S2778
the 17/24 GHz Broadcasting Satellite Service )

MEMORANDUM OPINION AND ORDER

Adopted: March 1, 2018

Released: March 6, 2018

By the Commission:

I. INTRODUCTION

1. In 2012, Spectrum Five LLC (Spectrum Five) filed an Application for Review arising from the International Bureau’s decision to grant DIRECTV Enterprises, LLC (DIRECTV) authority to construct, launch, and operate a satellite space station in the 17 and 24 GHz spectrum bands. With this Memorandum Opinion and Order, we deny Spectrum Five LLC’s (Spectrum Five) Application for Review.<sup>1</sup>

2. Specifically, we deny Spectrum Five’s requests to: (1) reverse the order approving DIRECTV’s application, (2) return DIRECTV’s application as unacceptable for filing, and (3) reinstate Spectrum Five’s request to access the U.S. market from a Netherlands-authorized space station at the 103.15° West Longitude (W.L.) orbital location.<sup>2</sup> Spectrum Five’s claims with respect to DIRECTV’s application are without merit, and we affirm the Bureau’s licensing and reconsideration orders in this proceeding.

II. BACKGROUND

3. DIRECTV RB-2 Application. On September 8, 2006, DIRECTV filed its application for the DIRECTV RB-2 space station at the 103° W.L. orbital location. Subsequently, in 2007, the Commission adopted a first-come, first-served licensing framework for processing 17/24 GHz BSS applications and market access requests.<sup>3</sup> Specifically, the framework allowed 17/24 GHz BSS space stations to operate at

<sup>1</sup> Spectrum Five LLC Application for Review (filed July 2, 2012) (Spectrum Five AFR).

<sup>2</sup> Spectrum Five AFR at 2.

<sup>3</sup> Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band and at the 17.7-17.8 GHz Frequency Band Internationally, and at the 24.75-25.25 GHz Frequency Band for Fixed Satellite Services Providing Feeder Links to the Broadcasting-Satellite Service and for the Satellite Services Operating Bi-directionally in the 17.3-17.8 GHz Frequency Band, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd 8842, 8847, para. 8 (2007) (17/24 GHz BSS Report and Order). Under this framework,

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orbital locations spaced at four-degree intervals, as set forth in Appendix F to the *17/24 GHz BSS Report and Order* (Appendix F locations). The Commission also allowed operators the flexibility to operate at orbital locations offset<sup>4</sup> from Appendix F locations if the offset operations would not increase interference to satellites at adjacent Appendix F locations.<sup>5</sup> The *17/24 GHz BSS Report and Order* also froze any 17/24 GHz BSS applications that were not pending as of May 4, 2007.<sup>6</sup> Finally, the Commission directed the Bureau to establish procedures for applicants to amend pending applications to conform to the new rules.<sup>7</sup> Pursuant to these procedures, DIRECTV filed a conforming amendment, seeking to operate DIRECTV RB-2 at the 102.825° W.L. orbital location, which is offset 0.175 degrees from the 103° W.L. Appendix F orbital location. On July 2, 2008, the Bureau placed DIRECTV's application on public notice as acceptable for filing.<sup>8</sup> Spectrum Five did not comment on DIRECTV's application during the 30-day public notice period.

4. The Bureau lifted the freeze on new 17/24 GHz BSS applications on September 10, 2008.<sup>9</sup> On November 19, 2008, Spectrum Five filed a request to serve the U.S. market through a 17/24 GHz BSS Netherlands-authorized space station at the 103.15° W.L. orbital location.<sup>10</sup> Section 25.137(c) of the Commission's rules provides that parties seeking to use non-U.S.-licensed GSO-like space stations to serve the United States can file applications that will be processed under the Commission's first-come, first-served framework, pursuant to Section 25.158 of the Commission's rules.<sup>11</sup> In Spectrum Five's Market Access Request, Spectrum Five raised concerns about DIRECTV's application for the DIRECTV RB-2 space station.<sup>12</sup> Consistent with Section 25.154 of the Commission's rules, the Bureau placed Spectrum Five's comments in the record for the DIRECTV RB-2 application, and provided both Spectrum Five and DIRECTV an opportunity to file further pleadings, which they did.<sup>13</sup> As described in the

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the Commission considers applications in the order in which they are filed and will grant an application if the applicant meets basic qualification standards set forth in Section 25.156(a), and if the proposed space station will not cause harmful interference to a previously licensed space station. 47 CFR §§ 25.156(a), 25.158(b)(3)(ii).

<sup>4</sup> In this context, offset means that the satellite is not operating at the precise Appendix F location. For example, DIRECTV proposed to operate its space station at 102.825° W.L., *i.e.*, offset by .175 degrees from the 103.0° W.L. Appendix F location. When positioned at an offset location, a satellite will be operating at a distance closer to an Appendix F location (and, consequently, closer to any satellite operating there).

<sup>5</sup> *Establishment of Policies and Service Rules for the Broadcasting-Satellite Service at the 17.3-17.7 GHz Frequency Band and at the 17.7-17.8 GHz Frequency Band Internationally, and at the 24.75-25.25 GHz Frequency Band for Fixed Satellite Services Providing Feeder Links to the Broadcasting-Satellite Service and for the Satellite Services Operating Bi-directionally in the 17.3-17.8 GHz Frequency Band*, Order on Reconsideration, 22 FCC Rcd 17951, 17960, para. 22 (2007).

<sup>6</sup> *17/24 GHz BSS Report and Order*, 22 FCC Rcd at 8902, para. 147.

<sup>7</sup> *Id.* at 8901, para. 145.

<sup>8</sup> *Policy Branch Information, Space Station Application Accepted for Filing*, Public Notice, Report No. SAT-00535 (July 2, 2008); *Policy Branch Information, Space Station Application Accepted for Filing*, Public Notice, Report No. SAT-00537 (IB July 11, 2008) (corrections).

<sup>9</sup> *International Bureau Lifts Freeze on Filing 17/24 GHz BSS Applications*, Public Notice, DA 08-1887 (IB 2008); *International Bureau Reschedules Date that Freeze on Filing of 17/24 GHz BSS Applications Is Lifted*, Public Notice, 23 FCC Rcd 12140 (IB 2008).

<sup>10</sup> Spectrum Five LLC Petition for Declaratory Ruling to Serve the U.S. Market from the 103.15° W.L. Orbital Location in the 17/24 Broadcasting Satellite Service Band, IBFS File No. SAT-LOI-20081119-00217, Call Sign: S2778 (Spectrum Five Market Access Request).

<sup>11</sup> 47 CFR §§ 25.137(c), 25.158.

<sup>12</sup> See Spectrum Five Market Access Request.

<sup>13</sup> 47 CFR § 25.154 (specifying requirements for filing oppositions to applications and other pleadings).

*DIRECTV RB-2 Order*, the Bureau initially issued a declaratory ruling dismissing the DIRECTV application as defective.<sup>14</sup> Several weeks later, on its own motion, the Bureau set aside the declaratory ruling in order to develop a more detailed record and to consider DIRECTV's application more fully.<sup>15</sup> In both proceedings, Spectrum Five argued that the Commission should dismiss or deny DIRECTV's application, claiming that the application was substantially incomplete, and therefore unacceptable for filing. Spectrum Five also argued that DIRECTV's proposed power flux-density (PFD) exceeded the limits in the Commission's rules.<sup>16</sup> Spectrum Five asserted that once the Bureau dismissed or denied DIRECTV's application, the Bureau would be in a position to grant Spectrum Five's second-in-line Market Access Request.<sup>17</sup> The DIRECTV and Spectrum Five applications are mutually exclusive because the proposed satellites would be located less than one-half degree apart at their requested orbital locations and thus could not operate simultaneously without causing harmful interference into each other's system. As was the case with DIRECTV's application, Spectrum Five's proposed orbital location was offset from the 103° W.L. Appendix F location, but was second in line to the DIRECTV RB-2 application.<sup>18</sup>

5. *DIRECTV RB-2 Order*. The Bureau authorized DIRECTV to construct, launch and operate the proposed space station at the 102.825° W.L. offset orbital location at reduced power in July 2009.<sup>19</sup> In the *DIRECTV RB-2 Order*, the Bureau discussed the power flux-density (PFD) limits for the 17/24 GHz BSS, as well as the requirement to demonstrate compliance with those limits,<sup>20</sup> and found that, contrary to Spectrum Five's assertions, DIRECTV's application was substantially complete, and the proposed PFD met the limits in Section 25.208(w) of the Commission's rules.<sup>21</sup> In addition, to ensure that DIRECTV's offset operations would not cause any additional interference to a satellite operating at the adjacent Appendix F location, the Bureau imposed a license condition limiting DIRECTV RB-2's operating power to between 0.47 dB and 0.51 dB less than full power, the precise amount depending on the location on the surface of the Earth of a given measurement point.<sup>22</sup>

6. On August 27, 2009, Spectrum Five filed a petition for reconsideration of the *DIRECTV RB-2 Order*.<sup>23</sup> In its petition, Spectrum Five argued that the Bureau inappropriately licensed DIRECTV to operate an overpowered space station, that DIRECTV improperly used inputs from its link budget calculations in its PFD demonstration, and that the Bureau should have therefore dismissed DIRECTV's application as incomplete. Spectrum Five also claimed that the grant gave DIRECTV an unfair

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<sup>14</sup> *DIRECTV Enterprises, LLC Application for 17/24 GHz BSS Satellite at 102.825° W.L.*, Declaratory Ruling, 24 FCC Rcd 423 (IB 2009).

<sup>15</sup> *DIRECTV Enterprises, LLC Application for 17/24 GHz BSS Satellite at 102.825° W.L.*, Order, 24 FCC Rcd 1343, para. 3 n.2 (IB 2009) (*Set Aside Order*) (treating Spectrum Five's comments as an informal objection, placing them in the record pursuant to Section 25.154(b), and permitting the filing of further comments by DIRECTV and Spectrum Five, pursuant to Sections 25.154(c) and (d)).

<sup>16</sup> Spectrum Five Market Access Request, Legal Narrative at 3-11. *See also ex parte* filings by Spectrum Five cited in the *DIRECTV RB-2 Order*, 24 FCC Rcd at 9395, para. 5 n.13.

<sup>17</sup> Spectrum Five Market Access Request, Legal Narrative at 4.

<sup>18</sup> The *DIRECTV RB-2 Order* contains a detailed history of DIRECTV's application, the Spectrum Five Market Access Request, and each filing made by the parties. *DIRECTV RB-2 Order*, 24 FCC Rcd at 9394-96, paras. 4-6.

<sup>19</sup> *Id.* at 9393.

<sup>20</sup> *Id.* at 9397-98, paras. 10-12.

<sup>21</sup> *Id.* at 9403-05, paras. 26-31.

<sup>22</sup> *Id.* at 9404-05, para. 31.

<sup>23</sup> Petition for Reconsideration of Spectrum Five (filed Aug. 27, 2009) (Spectrum Five Petition for Reconsideration).

competitive advantage over other licensees by allowing it to operate at power higher than the limits in the Commission's rules.<sup>24</sup>

7. *DIRECTV RB-2 Reconsideration Order.* The Bureau denied Spectrum Five's petition for reconsideration of the *DIRECTV RB-2 Order*.<sup>25</sup> The Bureau disagreed with Spectrum Five's arguments that the Bureau granted DIRECTV authority to launch and operate a satellite with power levels that exceed those permitted by the Commission's rules. In particular, the Bureau found that Spectrum Five's arguments were based on an erroneous reading of Section 25.208(w), which contains PFD limits for 17/24 GHz BSS space stations in specified regions, and Section 25.140(b)(4)(iii), which requires 17/24 GHz applicants proposing space stations at offset locations to demonstrate that their operations will not cause more interference to any current or future 17/24 GHz BSS space station that is in compliance with Part 25 than would be caused if the operations, instead of being offset, were located at the precise Appendix F orbital location.<sup>26</sup> The Bureau stated that Spectrum Five incorrectly concluded that applicants proposing to operate at offset locations must demonstrate they meet PFD limits lower than the ones set out in Section 25.208(w).<sup>27</sup> The Bureau further stated that Spectrum Five overlooked both DIRECTV's interference analysis, which demonstrates that DIRECTV RB-2 can operate compatibly with a space station closer than four degrees away by reducing power, and the condition in the *DIRECTV RB-2 Order* imposing maximum PFD limits on DIRECTV RB-2 that are well below those in Section 25.208(w).<sup>28</sup>

8. *Spectrum Five Application for Review.* On July 2, 2012, Spectrum Five filed an application for review (AFR) of the *DIRECTV RB-2 Reconsideration Order*.<sup>29</sup> On July 17, 2012, DIRECTV filed an opposition.<sup>30</sup> No other comments were filed.

### III. DISCUSSION

#### A. Spectrum Five Application for Review

9. *Spectrum Five AFR.* Spectrum Five identifies three main points on which it seeks review of the *DIRECTV RB-2 Reconsideration Order*. First, it argues that the Bureau made erroneous conclusions as to material questions of fact in finding that DIRECTV's conforming amendment "proposed to reduce its power to result in lower PFD" in order to comply with Section 25.140(b)(4)(iii). Specifically, Spectrum Five alleges that DIRECTV did not make the required technical showing nor explicitly propose to reduce its power, but instead assumed that extreme atmospheric losses would reduce the power levels on the earth's surface to the point that the maximum PFD created there by transmissions from the RB-2 satellite operating at the designated offset location would not exceed the maximum PFD of -116.1 dBW/m<sup>2</sup>/MHz that DIRECTV specified in its conforming application.<sup>31</sup>

10. Second, Spectrum Five argues that the Bureau's imposition of a condition, based on Section 24.140(b)(4)(iii), that DIRECTV reduce its maximum power to a level 0.5 dB lower than that specified in Section 25.208(w) did not rectify the defect in DIRECTV's application, because the Bureau, for purposes of determining compliance with the condition, accepted DIRECTV's methodology for calculating the satellite's PFD – a methodology that Spectrum Five asserts is erroneously based on the

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<sup>24</sup> *Id.*

<sup>25</sup> *DIRECTV RB-2 Reconsideration Order*, 27 FCC Rcd 5932.

<sup>26</sup> *Id.* at 5937, para. 14.

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

<sup>29</sup> Spectrum Five AFR.

<sup>30</sup> DIRECTV Opposition to Application for Review (filed July 17, 2012) (DIRECTV Opposition).

<sup>31</sup> Spectrum Five AFR at 7-11.

aforementioned assumptions about the effects of atmospheric losses.<sup>32</sup> Thus, Spectrum Five argues, the Bureau made erroneous conclusions as to these material questions of fact and consequently granted to DIRECTV the authority to operate a satellite that fails to comply with the Commission's technical rules.<sup>33</sup>

11. Third, Spectrum Five argues that the Bureau should have dismissed DIRECTV's application as originally filed for violating the Commission's first-come, first-served procedural requirement that an applicant provide all information necessary to demonstrate compliance with the Commission's rules at the time the application is filed.<sup>34</sup> Further, Spectrum Five argues that even if the condition that the Bureau subsequently imposed is assumed to have remedied the technical defects of DIRECTV's application as originally filed, the application should not have been given priority over later-filed, mutually exclusive applications. In essence, Spectrum Five's position is that the Bureau's correction of the application's technical defects failed to remedy DIRECTV's fatal procedural error of submitting an application that was not substantially complete at the time of filing, and the Bureau's decision to ignore this error gave DIRECTV an unfair procedural advantage over the other applicants.<sup>35</sup> Thus, Spectrum Five concludes that the Commission's failure to reverse the Bureau's grant of DIRECTV's application would undermine the policies of the Commission's first-come, first-served procedures.<sup>36</sup>

12. *DIRECTV Opposition.* DIRECTV argues that the Bureau correctly concluded that DIRECTV's application was substantially complete and complied with the Commission's rules in every respect, that Spectrum Five's dispute with a single parameter, atmospheric loss, in one aspect of that application does not warrant dismissal, and that the approach advocated by Spectrum Five would improperly conflate the standard for accepting an application with an evaluation on the merits.<sup>37</sup> DIRECTV disputes Spectrum Five's contention that because the Bureau did not address the alleged methodological error in DIRECTV's PFD calculation, it "has effectively authorized DIRECTV to operate a full-power satellite at an offset location, in direct violation of the Commission's rules" giving DIRECTV an "unfair advantage" over all other 17/24 GHz BSS operators by allowing it to use a satellite with "excess transmit power" that could also result in harmful interference to adjacent systems.<sup>38</sup> DIRECTV argues that Spectrum Five's assertions are erroneous because the license condition imposed by the Bureau restricts DIRECTV RB-2's operational power to levels below the PFD maximums specified in Section 25.208(w) in order to ensure that the satellite's transmissions would have no more potential for causing interference to an adjacent satellite than the transmissions of a satellite operating without the offset, as required by Section 25.140(b)(4)(iii), and the Bureau carefully specified a methodology for calculating PFD to determine compliance with that condition.<sup>39</sup> Furthermore, DIRECTV asserts that Spectrum Five fails to cite the portion of the DIRECTV RB-2 license condition requiring DIRECTV RB-

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<sup>32</sup> *Id.* at 11-12.

<sup>33</sup> *Id.*

<sup>34</sup> *Id.* at 12-14.

<sup>35</sup> *Id.* at 13-14.

<sup>36</sup> *Id.* at 14.

<sup>37</sup> DIRECTV Opposition at 7-8. DIRECTV outlines the rationale behind the substantial completeness requirement: (1) to discourage speculation and ensure that licensees are ready and willing to proceed with their construction plans, which DIRECTV argues it has demonstrated by its participation in the development of the 17/24 GHz BSS service; and (2) to allow for public comment on the merits and provide the Commission with sufficient information to make a decision on the merits, which DIRECTV did by stating that its PFD showing included a 1.1 dB reduction based on atmospheric effects, which precipitated Spectrum Five's late-filed comments. DIRECTV also states that Spectrum Five used atmospheric loss as a factor in its own application. *Id.* at 15, n.50.

<sup>38</sup> *Id.* at 13.

<sup>39</sup> *Id.* at 13-15.

2 to “meet the reduced PFD limits under all atmospheric conditions,” which ensures that DIRECTV RB-2’s operations will be limited to the same interference potential as any other 17/24 GHz system located at a non-offset, Appendix F orbital location and operated within the higher PFD levels specified in Section 25.208(w).<sup>40</sup> DIRECTV concludes that the Bureau correctly found the application substantially complete and processed it in accordance with the Commission’s first-come, first-serve procedures.<sup>41</sup>

13. *Discussion.* We disagree with Spectrum Five’s assertions and find that the Bureau ruled correctly in this case. First, we are not persuaded that the Bureau made erroneous conclusions as to material questions of fact in finding that DIRECTV proposed to “reduce its power” to ensure that the PFD levels resulting from the operation of its offset satellite would not exceed the maximum allowed by the rules. The bottom line issue is whether DIRECTV’s proposed operations of RB-2—when the satellite is transmitting at its proposed maximum Equivalent Isotropically Radiated Power (EIRP)—will cause PFD levels in excess of those allowed by the rules, based on accepted methodologies for calculating such levels. The only component of DIRECTV’s calculation that Spectrum Five contests is the subtraction for atmospheric attenuation; Spectrum Five alleges that DIRECTV assumed that extreme atmospheric losses would reduce power levels on the earth’s surface, and that “when properly calculated,” RB-2’s operations “will not, in fact, produce the maximum PFD of -116.1 dBW/m<sup>2</sup>/MHz” stated in DIRECTV’s application.<sup>42</sup> While Spectrum Five rightly points out that compliance with the PFD limits cannot be shown by relying on the maximum degree of atmospheric attenuation that can ameliorate interference, the Bureau correctly observed that “the Commission intended that the 17/24 GHz BSS PFD demonstrations include some degree of atmospheric loss.”<sup>43</sup> As the Bureau indicated in the *DIRECTV RB-2 Order*, DIRECTV made an acceptable decision to take such loss into account by premising operations on “clear sky” conditions for its calculations of the 17/24 GHz BSS system’s compliance with the baseline Section 25.208(w) PFD limits, and such calculations yielded a reasonable prediction that, “for all conditions,” the system would not cause PFD levels to exceed those limits.<sup>44</sup> To account for the operation of its proposed

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<sup>40</sup> *Id.* at 14. DIRECTV also indicates that its modification of authority for RB-2 included a reduction in maximum EIRP of 5 dB – offsetting by many times the 0.44 dB advantage that Spectrum Five believes DIRECTV would otherwise enjoy – and that, in this case, the adjacent satellite location potentially affected by DIRECTV’s offset operations is also licensed to DIRECTV, so any “harmful interference” would be borne by DIRECTV alone. DIRECTV goes on to compare another set of adjacent 17/24 GHz systems – one proposed by Pegasus Development and one proposed by Spectrum Five – which have, respectively, a 3dB and 2dB PFD advantage over the other in different areas within their systems’ footprints. Accordingly, DIRECTV argues, if this power differential is insufficient to raise concerns about the adjacent operations of Spectrum Five and Pegasus, then Spectrum Five’s concern over a much lower 0.44 dB differential should be regarded as “patently frivolous.” *Id.* at 16-17.

<sup>41</sup> *Id.* at 11.

<sup>42</sup> Spectrum Five AFR at 8-9.

<sup>43</sup> *DIRECTV RB-2 Order*, 24 FCC Rcd at 9400, para. 17. Moreover, as the Bureau observed in the *DIRECTV RB-2 Order*, Spectrum Five has not been consistent in its arguments regarding whether atmospheric attenuation may be considered, and has appeared to concede that consideration of at least some atmospheric effects is permissible. *See id.*

<sup>44</sup> *Id.* As the Bureau pointed out, at the time DIRECTV filed its application for RB-2, Section 25.208(w) did not mandate the use of a “free-space” propagation model for calculating PFD levels that meet interference concerns. *Id.* A “free-space” model assumes no atmospheric attenuation, while a “clear sky” model assumes atmospheric attenuation that depends *inter alia* on the temperature and humidity of the atmosphere, which may vary according to location and time. The free-space model would thus require the space station to transmit less power in order to meet the same PFD limits. *See id.* (“Free-space conditions are those in which electromagnetic waves do not encounter any attenuation due to atmospheric effects.”); *Establishment of Policies and Service Rules for the Broadcast Satellite Service at the 17.3-17.7 GHz Frequency Band et al.*, Notice of Proposed Rulemaking, 21 FCC Rcd 7426, 7450, para. 49 n. 126 (2006) (“The clear-sky value is taken to be the condition when the intrinsic atmospheric attenuation due to gasses and water vapor are applicable, without additional attenuation due to tropospheric precipitation, such as rain or snow. *See* Recommendation ITU-R P.676-1”). We note that in 2013 the Commission amended Section 25.208(w) to include a note stating that “[t]hese limits pertain to the power flux-density that would

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system under clear skies conditions, as the rules at the time permitted, DIRECTV thus applied an atmospheric attenuation factor of 0.74 dB, thereby determining that the PFD levels that the system would generate would not exceed -116.1 dBW/m<sup>2</sup>/MHz.<sup>45</sup> Since this determination not only satisfied DIRECTV's obligation to demonstrate that it met the applicable Section 25.208(w) PFD limit of -115 dBW/m<sup>2</sup>/MHz but also the additional showing required under Section 25.140(b)(4)(iii) for offset satellites like RB-2,<sup>46</sup> the Bureau correctly ruled that DIRECTV's application satisfied the interference requirements of these rules.<sup>47</sup>

14. Second, we reject Spectrum Five's assertion that the grant of the DIRECTV application should be overturned because the Bureau based it on erroneous conclusions about the efficacy of the license condition to ensure compliance with the rules' interference requirements. Spectrum Five's assertion rests on the faulty premises that DIRECTV's demonstration of compliance with these requirements was defective, and that DIRECTV inaccurately calculated its proposed system's PFD levels because it took into account the ameliorative effects of atmospheric attenuation under clear skies conditions. For the reasons discussed above, however, DIRECTV's inclusion of an atmospheric attenuation factor based on clear skies conditions did not invalidate its interference demonstration. Similarly, the Bureau's use of that factor as part of the methodology that will be used for applying the license condition was valid and therefore did not undermine the efficacy of that condition.<sup>48</sup> This is not a

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be obtained under assumed free-space propagation conditions." 47 CFR § 25.208 Note to Paragraph (w). In amending the rule in this manner, the Commission sought to eliminate any uncertainty that could result from the differences between the two models. See *Comprehensive Review of Licensing and Operating Rules for Satellite Services*, Report and Order, 28 FCC Rcd 12403, 12456-57 para. 176 (2013). Thus, from the time the Note to Paragraph (w) became effective, the rules have required that the power flux density limits applicable to DIRECTV's operations at 102.825° W.L. be calculated pursuant to the free-space propagation model. This development, however, does not negate the propriety of the Bureau's decision to accept DIRECTV's use of a clear-sky propagation methodology at the time of the initial authorization grant, prior to the rule change requiring use of the free-space model. Nor does this rule change suggest that the Bureau, in granting the initial authorization prior to the change, made any analytical mistakes in evaluating the accuracy of DIRECTV's calculations under the clear-sky model.

<sup>45</sup> Although DIRECTV's initially filed interference demonstration employed an atmospheric attenuation factor of 1.1 dB for calculating the maximum PFD level that the system would create under clear skies conditions, DIRECTV later acknowledged that the 1.1 dB figure was derived by incorrectly taking into account the presence of clouds. DIRECTV corrected this error in its December 8, 2008 letter, which informed the Commission that with the omission of clouds, the revised atmospheric attenuation factor would be 0.74 dB, yielding a predicted PFD maximum level for RB-2 of -115.67 dBW/m<sup>2</sup>/MHz. See Letter from William M. Wiltshire, Counsel for DIRECTV Enterprises, LLC to Marlene H. Dortch, Secretary, FCC at 3 (December 8, 2008) (December 8 Letter) (referencing IBFS files associated with Call Sign 2712). The Bureau correctly accepted the December 8 Letter as a timely-filed part of the record in this proceeding. Cf., *Boeing Co.*, Order and Authorization, 16 FCC Rcd 22645, 22649-50 (IB/OET 2001) (granting authority based, in part, on technical submissions to the record filed after the close of the applicable public comment period).

<sup>46</sup> As explained in the *DIRECTV RB-2 Order*, in order to ensure that the interference potential of DIRECTV's offset satellite system would not be any greater than a non-offset 17/24 GHz system (as required by Section 25.140(b)(4)(iii)), the Bureau compared antenna gains between offset (102.825° W.L.) and adjacent (99° W.L.) satellites vs. antenna gains between non-offset (103° W.L.) and adjacent (99° W.L.) satellites. Based on that comparison, the Bureau determined that, for RB-2, the maximum PFD levels would have to be 0.47 dB to 0.51 dB less than those specified in Section 25.208(w), to mirror the interference potential reflected by the antenna calculations for a non-offset satellite. See *DIRECTV RB-2 Order*, 24 FCC Rcd at 9404-05, para. 31.

<sup>47</sup> Since the license grant and in keeping with the rules currently in effect, DIRECTV has modified its authorization to reduce the maximum power levels by 5 dB, which is an order of magnitude more than the 0.5 dB at issue in this proceeding. *DIRECTV Opposition* at 13.

<sup>48</sup> Notably, the grant imposed the condition that RB-2 must "meet the reduced PFD limits under all atmospheric conditions." *DIRECTV RB-2 Order*, 24 FCC Rcd at 9404-06, para. 34; see also IBFS File No. SAT-MOD-

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case, as Spectrum Five implies, where the Bureau imposes a license condition to rehabilitate an application that has an otherwise disqualifying defect. Rather, the condition was imposed as a reasonable way to ensure that DIRECTV complies with the PFD limits imposed by the rules.

15. Third, the Bureau appropriately accepted DIRECTV's application as "substantially complete," given that DIRECTV provided the information required by the Commission's rules, including a PFD calculation showing compliance with applicable limits. As the Bureau discussed in the *DIRECTV RB-2 Order*, the requirement that applications be "substantially complete" is meant to ensure that a full and complete application was filed both to allow for meaningful public comment and to provide Commission staff with sufficient information to make a decision on the application's merits.<sup>49</sup> We agree with the Bureau that Spectrum Five improperly conflates the standard for accepting an application as substantially complete with the separate standard for the evaluation of an application on its merits. According to Spectrum Five, the problem with the DIRECTV application as originally filed was that the interference showing required by Section 25.140(b)(4)(iii) relied on an erroneous assumption about the ameliorative effects of the atmosphere on station-to-station interference. As a general matter, however, the evaluation of the sufficiency of an application's required showings (such as the interference showing at issue here) is part of the broader evaluation of the application on its merits – a process in which the applicant and the agency can work through and correct potential problems that may be revealed upon a careful examination of a particular showing that the application may require. In contrast, the initial review of an application for substantial completeness – which is done when the application is first submitted for filing in order to determine whether it can be accepted for filing under first-come-first-served procedures (not whether it will be granted) – is a more cursory review designed to weed out those applications that are deficient on their face and which fail to include sufficient basic information to enable an independent analysis by Commission staff. DIRECTV's application passed this initial review, and, accordingly, the Bureau properly accepted it for filing notwithstanding any 25.140(b)(4)(iii) issues that may have arisen upon closer evaluation of the application during the Bureau's later, more substantive review stage.

16. The Bureau's treatment of the DIRECTV application was consistent with the way the agency has conducted this two-stage evaluative process in other cases. For example, in *Intelsat North America, LLC, Order and Authorization*, 24 FCC Rcd 7058 (Sat. Div., IB 2009) (*Intelsat Order*), the Bureau accepted an Intelsat 17/24 BSS space station application for filing and subsequently granted it (with an appropriate condition) even though the post-filing evaluation by staff revealed that a change was needed in the applicant's methodology for calculating its power levels. More specifically, after accepting the application for filing, the Bureau, in its subsequent evaluation of the application on the merits, found that the required PFD reduction should have been based on topocentric, rather than geocentric, angular separations.<sup>50</sup> Because Intelsat had provided, in its application as originally filed, the required technical information in sufficient detail to enable Commission staff, when evaluating the application on its merits, to perform an independent PFD analysis, the application was deemed to have been substantially complete when filed.<sup>51</sup> The fact that the Bureau then determined, at the merits-based stage of its consideration of the application, that Intelsat's methodology for calculating the limiting power levels for the space station was problematic did not invalidate the initial assessment that the application was acceptable for filing. Rather, the subsequently discovered problem was resolved in an appropriate manner by conditioning the grant of Intelsat's license on a reduction in PFD corresponding to the result of the methodology developed

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20140612-00066 (granted May 14, 2015) (modifying the RB-2 license but retaining the reduced PFD limit condition).

<sup>49</sup> *DIRECTV RB-2 Order*, 24 FCC Rcd at 9403-04, para. 23.

<sup>50</sup> *Intelsat Order*, 24 FCC Rcd at 7062, para. 11.

<sup>51</sup> *Id.* at 7062, para. 10.



by the Commission.<sup>52</sup>

17. Spectrum Five attempts to distinguish the *Intelsat Order* on the ground that the condition the Bureau imposed on Intelsat's license was only intended to ensure that its operations complied with the limits for offset operations imposed by Commission rules, whereas here the Bureau adopted a condition wrongly intended to cure defects in DIRECTV's proposal.<sup>53</sup> According to Spectrum Five, while the Bureau made only minor adjustments to Intelsat's methodology to correct its PFD values by 0.01 dB (approximately 0.05%), absent the Bureau's intervention DIRECTV's methodology for PFD calculation "would substantially exceed applicable limits by approximately 11% and cause objectionable interference to adjacent satellites."<sup>54</sup> As explained above, however, the Bureau accepted DIRECTV's own correction of its application as originally filed, where DIRECTV in its December 8 Letter, much as the Bureau did in the *Intelsat Order*, made a minor adjustment in its methodology for calculating the PFD level – by eliminating clouds as a consideration, thereby reducing the atmospheric attenuation factor used for such calculations from 1.1 dB to 0.74 dB – resulting in an adjustment of the predicted maximum PFD level from -116.1 dBW/m<sup>2</sup>/MHz to -115.67 dBW/m<sup>2</sup>/MHz. Thus, both of the PFD levels proffered by DIRECTV fell within the maximum PFD level permitted under the rules (*i.e.*, the -115 dBW/m<sup>2</sup>/MHz maximum specified in Section 208(w)(1), reduced by the 0.47 dB to 0.51 dB that the Bureau deemed necessary under Section 25.140(b)(4)(iii) to account for RB-2's offset location). And as we also explain above, the Bureau did not impose the license condition to correct an application that specified a predicted PFD level that exceeded the maximum allowed by the rules, but rather to ensure that DIRECTV's system, once deployed, would operate as predicted (whether predicted by the representations in the application as originally filed or by those in the December 8 Letter) by limiting PFD levels to levels below the maximum permitted under the rules.

18. In sum, we find that DIRECTV included sufficient information in its application for Commission staff to have found it substantially complete and ripe for consideration on its merits. As discussed above, although changes were made to the application as originally filed as a result of DIRECTV's December 8 Letter that reduced the atmospheric attenuation factor from 1.1 dB to 0.74 dB, the Bureau correctly treated the application as substantially complete. The post-filing changes to DIRECTV's application did not alter the fundamentals of the proposed operations and these changes were based on information that was already contained in the application. Because DIRECTV supplied sufficient information to meet the substantial completeness requirement, the Bureau was able to complete its analysis of DIRECTV's application on its merits.

#### IV. CONCLUSION

19. Pursuant to the first-come, first-served licensing framework, the Commission places applications for new satellites at new orbital locations and market access requests for non-U.S.-licensed satellites at new orbital locations in a processing "queue" and considers them in the order in which they are filed. If the proposed satellite will not cause harmful interference to a licensed satellite and all other applicable rules are met, the Commission will grant the application. For the reasons stated above, and as outlined in the *DIRECTV RB-2 Reconsideration Order*,<sup>55</sup> the Bureau properly granted DIRECTV's first-in-line application for a 17/24 GHz BSS space station at the nominal 103° W.L. orbital location. With the grant of this application, the Bureau was precluded from granting Spectrum Five's later-filed petition to access the U.S. market from a Netherlands-authorized space station at the 103.15° W.L. orbital location because that proposed space station could not provide service to the United States without causing interference to the operation of the previously licensed DIRECTV RB-2 space station, which is less than

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<sup>52</sup> *Id.* at 7062, para. 11.

<sup>53</sup> See Spectrum Five AFR at 14 n.35.

<sup>54</sup> *Id.*

<sup>55</sup> *DIRECTV RB-2 Reconsideration Order*, 27 FCC Rcd at 5936-37.

half a degree away.<sup>56</sup> Rather than undermining the first-come, first served procedures, as Spectrum Five asserts, the Bureau's decision properly followed those procedures and granted DIRECTV's RB-2 application. Accordingly, we affirm the Bureau's denial of Spectrum Five's market access petition, deny Spectrum Five's request to reinstate said petition, and deny Spectrum Five's Application for Review of the *DIRECTV RB-2 Reconsideration Order* issued by the International Bureau that denied Spectrum Five's Petition for Reconsideration of the Order granting DIRECTV Enterprises LLC authority to construct, launch, and operate a 17/24 GHz Broadcasting Satellite Service space station at the 102.825° W.L. orbital location.

#### V. ORDERING CLAUSES

20. Accordingly, IT IS ORDERED that, pursuant to Section 5(c)(5) of the Communications Act of 1934, as amended, 47 U.S.C. § 155(c)(5), and Section 1.115 of the Commission's rules, 47 CFR § 1.115, the Application for Review of the *DIRECTV RB-2 Reconsideration Order* filed by Spectrum Five LLC on July 2, 2012, IS DENIED.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch  
Secretary

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<sup>56</sup> The DIRECTV RB-2 space station was launched on May 27, 2015, and began providing commercial service on August 25, 2015. See Letter from Jennifer D. Hindin, Counsel for DIRECTV Enterprises, LLC to Marlene H. Dortch, Secretary, FCC (Aug. 25, 2015).