

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

In the Matter of )
)
The Establishment of Policies and Service Rules for ) IB Docket No. 06-123
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

Adopted: September 28, 2007

Released: September 28, 2007

By the Commission:

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## I. INTRODUCTION

1. In this *Order on Reconsideration*, we reconsider, in part, *sua sponte*, our *Report and Order* in this proceeding<sup>1</sup> in which we adopted processing and service rules for the 17/24 GHz Broadcasting-Satellite Service (BSS).<sup>2</sup> This service will introduce a new generation of broadband services to the public, providing a mix of local and domestic video, audio, data, video-on-demand, and multi-media services to U.S. consumers. In the *Report and Order*, we adopted a framework in which 17/24 GHz BSS space stations would operate at orbital locations spaced at four degree intervals, as set forth in Appendix F.<sup>3</sup> In this *Reconsideration Order*, we provide additional flexibility to 17/24 GHz BSS space station operators by allowing them to operate their space stations, upon request, at locations other than those specified in Appendix F. Specifically, we will assign space stations to orbital locations that are offset from the Appendix F locations by up to one degree, without requiring them to reduce power or accept additional interference, if there are no licensed or prior-filed applications for 17/24 GHz BSS space stations less than four degrees away from the proposed offset space station.<sup>4</sup>

## II. BACKGROUND

2. In the *Report and Order*, we adopted a four-degree orbital spacing framework and a grid, in Appendix F to the *Report and Order*, specifying the locations that could be assigned to 17/24 GHz BSS satellites.<sup>5</sup> We recognized, however, that it may not be possible to locate a 17/24 GHz BSS space station precisely at some of the orbital locations specified in Appendix F. For example, due to stationkeeping concerns, it may not be possible to locate a 17/24 GHz BSS satellite at an Appendix F orbital location already occupied by other satellites operating in different frequency bands. Further, because of potential interference, it may not be possible to operate a 17/24 GHz BSS space station at or near locations where another satellite, such as a U.S.-licensed Direct Broadcast Service (DBS) space station, is receiving feeder-link signals in the 17.3-17.8 GHz band. Thus, in the *Report and Order*, we stated that we would not require that

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<sup>1</sup> The 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*, IB Docket No. 06-123, FCC 07-76 (2007) (“*Report and Order*.”).

<sup>2</sup> BSS is the international term used for a radiocommunication service in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public. *See, e.g.*, 47 C.F.R. § 2.1. In this item, the term “17/24 GHz BSS” generally refers to the broadcasting-satellite service operating on space-to-Earth (downlink) frequencies in the 17.3-17.8 GHz band and the corresponding Earth-to-space (uplink) frequencies in the 24.75-25.25 GHz band.

<sup>3</sup> *Report and Order* at Appendix F. For ease of reference, we will refer to these orbital locations as “Appendix F” locations in this *Reconsideration Order*. We have included “Appendix F” as Appendix B of this *Order*.

<sup>4</sup> For example, we would consider assigning a full-power 17/24 GHz BSS satellite to the 100° W.L. orbital location if the Appendix F locations at 99° W.L. and 103° W.L. are unassigned and there is no prior-filed application seeking authority to operate a satellite at either of those locations.

<sup>5</sup> Appendix F.

17/24 GHz BSS space stations be located precisely at the orbital locations specified in Appendix F.<sup>6</sup> Nevertheless, we required applicants seeking to operate a 17/24 GHz BSS space station at a location offset from an Appendix F location to make a technical showing that the proposed satellite will not cause any more interference to a 17/24 GHz BSS space station operating at an Appendix F location than would be caused if the proposed offset space station were positioned precisely at an Appendix F location. Further, we stated that applicants seeking to operate at an offset location must agree to accept any increased interference that may result from operating at that location.<sup>7</sup>

3. Following release of the *Report and Order*, we received a number of *ex parte* filings commenting on the four-degree orbital spacing framework. Specifically, EchoStar Satellite L.L.C. (EchoStar) requests that the Commission provide additional flexibility by allowing 17/24 GHz BSS space station operators to operate at locations that are offset from the Appendix F locations by up to one degree, without reducing power or accepting any additional interference, if the adjacent Appendix F location is unassigned.<sup>8</sup> EchoStar also requests that we require future applicants seeking to operate at an Appendix F location adjacent to an offset location to protect the offset licensee from harmful interference.<sup>9</sup> EchoStar states that this additional flexibility is necessary to compensate for the technical limitations of a small-dish satellite service such as the 17/24 GHz BSS.<sup>10</sup> Specifically, EchoStar states that a uniform four-degree spacing framework will not allow certain operators, particularly those with in-orbit DBS space stations, to utilize a small, single subscriber antenna that will allow customers to receive service in both the DBS and 17/24 GHz BSS frequency bands.<sup>11</sup> EchoStar states that a second consumer dish would be required to receive signals from two direct-to-home (DTH)<sup>12</sup> satellites located between 0.7 and 1.8 degrees apart, which would be the case for the 110° W.L. DBS orbital location and the 111° W.L. 17/24 GHz BSS Appendix F location, as well as the 61.5° W.L. DBS orbital location and 63° W.L. 17/24 GHz BSS Appendix F location.<sup>13</sup> As such, EchoStar claims that it would be required to implement a “two-dish”

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<sup>6</sup> *Report and Order* at para. 74.

<sup>7</sup> *Id.*

<sup>8</sup> Letter from Linda Kinney, Vice President, Law and Regulation, EchoStar Satellite L.L.C. to Marlene Dortch, Secretary, Federal Communications Commission (May 25, 2007).

<sup>9</sup> *Id.* at 3.

<sup>10</sup> *Id.* at 1.

<sup>11</sup> *Id.* at 1-2.

<sup>12</sup> In the United States, a variety of frequency bands are used to deliver satellite video services directly to subscriber homes. Direct-to-home (DTH) services may be provided in bands internationally and domestically allocated to the fixed-satellite service, such as the Ka-band, or in bands allocated for higher-power broadcast satellite service (BSS) satellites, such as the 17/24 GHz BSS bands. The term “direct broadcast satellite” or “DBS satellite” is a domestic term that refers to BSS satellites operating in the 12 GHz frequency band. DBS satellites are subject to different domestic licensing frameworks and different international assignment and coordination frameworks than are other DTH satellites.

<sup>13</sup> Letter from Linda Kinney, Vice President, Law and Regulation, EchoStar Satellite L.L.C. to Marlene Dortch, Secretary, Federal Communications Commission (May 25, 2007) at 1.

solution or a larger dish at added expense and complexity to dish design, manufacturing, and installation. EchoStar asserts this would disparately impact its subscriber base.<sup>14</sup>

4. DIRECTV, Inc. (DIRECTV) filed an *ex parte* letter stating that it supports EchoStar's proposal in cases where the adjacent Appendix F location remains unassigned.<sup>15</sup> DIRECTV contends that the Commission should not require future operators assigned to Appendix F locations to protect operators at offset locations.<sup>16</sup> DIRECTV does not claim that EchoStar's proposal would harm its current plans to align its 17/24 GHz BSS space stations with its Ka-band fixed-satellite service (FSS)-DTH space stations. Rather, DIRECTV focuses on future applications, asserting that EchoStar's proposal would technically compromise a number of orbital locations by rendering them less than optimally functional.<sup>17</sup> DIRECTV proposes a modified approach whereby a licensee operating at an offset location would be allowed to operate at full power only until a 17/24 GHz BSS operator is licensed at the adjacent Appendix F location, at which time the offset operator would have to modify its operations so that it will not cause harmful interference to the licensee operating at the Appendix F location.<sup>18</sup> In response to DIRECTV's modified approach, EchoStar asserts that DIRECTV's proposal does not provide sufficient certainty that full-power offset operators will be able to continue to provide quality service using single subscriber antennas.<sup>19</sup> EchoStar contends that DIRECTV's modified approach is essentially a reversion back to our *Report and Order* with respect to how we would treat space stations operating at offset locations.<sup>20</sup> Furthermore, EchoStar asserts that its own proposal would not adversely affect DIRECTV's planned use of the 17/24 GHz BSS band.<sup>21</sup>

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<sup>14</sup> *Id.* at 1 -2.

<sup>15</sup> Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (June 15, 2007).

<sup>16</sup> Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (June 15, 2007) at 2; Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (July 2, 2007); and Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 19, 2007) .

<sup>17</sup> Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (June 15, 2007) at 2; Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (July 2, 2007); and Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 19, 2007).

<sup>18</sup> *Id.*

<sup>19</sup> Letter from Linda Kinney, Vice President, Law and Regulation, EchoStar Satellite L.L.C. to Marlene Dortch, Secretary, Federal Communications Commission (June 21, 2007) at 2.

<sup>20</sup> *Id.*

<sup>21</sup> Letter from Linda Kinney, Vice President, Law and Regulation, EchoStar Satellite L.L.C. to Marlene Dortch, Secretary, Federal Communications Commission (July 20, 2007), at Attachment at 5.

5. Further, SES Americom, Inc. (SES Americom) filed an *ex parte* letter opposing EchoStar's proposal.<sup>22</sup> SES Americom states that EchoStar has exaggerated the technical challenges inherent in a uniform four-degree orbital spacing framework, and asserts that, with relatively simple system design modifications, the framework can accommodate single subscriber antennas with dual-band receivers.<sup>23</sup> In addition, SES Americom agrees with DIRECTV that adopting EchoStar's request would render a number of Appendix F locations unusable for DTH video service.<sup>24</sup> Finally, SES Americom states that it would not object to a one-degree shift to the east for Appendix F locations in the orbital arc from 43° W.L. to 63° W.L. SES Americom further states that this shift would allow for utilization of a single-feed subscriber antenna for DBS operations at the 61.5° W.L. orbital location and 17/24 GHz BSS operations at 62° W.L.<sup>25</sup> In response, EchoStar claims that SES Americom underestimates the technical concerns EchoStar has with the four-degree orbital spacing framework adopted in the *Report and Order*.<sup>26</sup> EchoStar also notes that the shift proposed by SES Americom would not address all of EchoStar's concerns at the 110° W.L. and 61.5° W.L. orbital locations.<sup>27</sup>

6. On July 20, 2007, EchoStar filed an *ex parte* letter in which it reiterated that the Commission should afford both current and future applicants the flexibility to operate at offset locations at full power.<sup>28</sup> EchoStar asserts that this flexibility may be important for future applicants that are seeking to co-locate existing or planned satellites with 17/24 GHz BSS space stations.<sup>29</sup> EchoStar states that its approach would level the playing field for all current and future applicants.<sup>30</sup> In addition, EchoStar contends that its proposal may provide satellite operators with authorizations from other countries the flexibility to integrate 17/24 GHz BSS service with facilities operating from orbital locations that do not conform with those in Appendix F.<sup>31</sup>

7. On September 12, 2007, Telesat Canada filed an *ex parte* letter urging the Commission to include two conditions for each 17/24 GHz BSS authorization.<sup>32</sup> The first

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<sup>22</sup> Letter from Peter A. Rohrbach and Karis A. Hastings, Counsel to SES Americom, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (July 10, 2007).

<sup>23</sup> *Id.* at 2.

<sup>24</sup> *Id.* at 2.

<sup>25</sup> *Id.* at 3.

<sup>26</sup> Letter from Linda Kinney, Vice President, Law and Regulation, EchoStar Satellite L.L.C. to Marlene Dortch, Secretary, Federal Communications Commission (July 20, 2007) at Attachment at 7.

<sup>27</sup> *Id.* at Attachment at 6.

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

<sup>29</sup> *Id.* at 2.

<sup>30</sup> *Id.* at 1-2.

<sup>31</sup> *Id.* at 2.

<sup>32</sup> Letter from Paul D. Bush, Telesat Canada, to Marlene H. Dortch, Secretary, Federal Communications Commission (September 26, 2007) at 2.

condition would make the grant subject to the licensee coordinating with satellite operators having International Telecommunication Union (ITU) date priority. The second condition Telesat requests would make the orbital location specified in the grant subject to modification to an offset location if necessary to facilitate coordination with a satellite operator having ITU date priority.<sup>33</sup>

8. On September 14, 2007, EchoStar filed an *ex parte* letter reiterating that licensees should have the flexibility to operate up to one degree offset from Appendix F locations on a permanent basis at full power and with full interference protection.<sup>34</sup> EchoStar also reiterates that “all satellite providers should be on a level playing field for new spectrum,” and that “all satellite providers need this spectrum as soon as possible.”<sup>35</sup>

9. On September 19, 2007, DIRECTV filed an *ex parte* letter<sup>36</sup> restating its earlier argument that a number of Appendix F locations would suffer reduced usefulness and claiming that these locations would experience a 90% reduction in received signal quality, thus requiring an antenna diameter of 1.1 meter to compensate for this loss.<sup>37</sup> DIRECTV also restates its claim that operators will have increased incentive to apply for offset locations due to the likelihood of wider orbital separation,<sup>38</sup> and that the worst case scenario would produce a 33% decrease in orbital capacity relative to the current Appendix F plan.<sup>39</sup> DIRECTV also takes issue with EchoStar’s need for a one-degree offset to remedy its problem, and proposed several alternative solutions including: operation at smaller offsets; operation from nearby orbital locations with use of an

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<sup>33</sup> Letter from Paul D. Bush, Telesat Canada, to Marlene H. Dortch, Secretary, Federal Communications Commission (September 26, 2007) at 2.

<sup>34</sup> Letter from Bradley K. Gillen, Counsel for EchoStar Satellite L.L.C., to Marlene Dortch, Secretary, Federal Communications Commission (September 14, 2007) at Attachment at 6. Letter from Bradley K. Gillen, Counsel for EchoStar Satellite L.L.C., to Marlene Dortch, Secretary, Federal Communications Commission (September 20, 2007).

<sup>35</sup> Letter from Bradley K. Gillen, Counsel for EchoStar Satellite L.L.C., to Marlene Dortch, Secretary, Federal Communications Commission (September 14, 2007) at Attachment at 6.

<sup>36</sup> Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 19, 2007). DIRECTV submitted multiple copies of this *ex parte* letter, reflecting its presentations to International Bureau staff and the offices of Chairman Martin, Commissioner Copps, Commissioner McDowell, and Commissioner Adelstein. On September 24 and 25, 2007, DIRECTV submitted *ex parte* filings which were similar to its September 19 filings. DIRECTV submitted three copies of this *ex parte* letter (two dated September 24, 2007 and one dated September 25, 2007) reflecting its presentations to International Bureau staff and the offices of Commissioner Tate and Commissioner Adelstein. Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 24, 2007); Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 25, 2007).

<sup>37</sup> Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 19, 2007) at 4.

<sup>38</sup> Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 19, 2007) at 5.

<sup>39</sup> Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 19, 2007) at 5.

additional feed on one of EchoStar's current antennas; or the use of case-by-case waivers.<sup>40</sup>

10. On September 21, 2007, SES Americom filed an *ex parte* letter reiterating its opposition to EchoStar's request for revisions to the orbital spacing plan adopted in this proceeding and explains "that grant of the flexibility requested by EchoStar would fundamentally undermine the four-degree spacing adopted in the Order."<sup>41</sup> SES Americom also notes "that [its] affiliate, Ciel Satellite LP, was selected by Industry Canada to operate in 17/24 GHz spectrum and is expected to seek U.S. market access once the current application freeze has been lifted."<sup>42</sup>

11. On September 25, 2007, SES Americom filed an *ex parte* letter opposing EchoStar's proposal, arguing that it would undermine the certainty established by the Commission's Appendix F plan, and proposing alternative solutions including small offsets, alternate locations or the use of waivers.<sup>43</sup>

12. On September 26, 2007, Telesat filed an *ex parte* letter stating that it generally supports EchoStar's proposal, because the resulting additional flexibility potentially could resolve international coordination issues at orbital locations that are of concern to Telesat.<sup>44</sup> Telesat asserts that a one degree change may be insufficient for international coordination purposes. Telesat states that one of the four 17/24 GHz BSS orbital locations for which it has been authorized, at 72.5° W.L., will be 1.5° away from the nearest Appendix F location. Telesat asserts that in the event that EchoStar's proposal is adopted, departures from Appendix F locations of more than one degree should be permitted if needed to facilitate international coordination.<sup>45</sup>

13. On September 26, 2007, EchoStar filed an *ex parte* letter stating that the current rules frustrate video competition, harm consumers, and jeopardize delivery of HD services.<sup>46</sup> EchoStar also states that "DIRECTV's waiver proposal is not a viable solution"<sup>47</sup> and that a uniform four degree spacing plan will lead to higher prices, delays

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<sup>40</sup> Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 19, 2007) at 8-10.

<sup>41</sup> Letter from Peter A. Rohrbach and Karis A. Hastings, Counsel to SES Americom, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 21, 2007).

<sup>42</sup> Letter from Peter A. Rohrbach and Karis A. Hastings, Counsel to SES Americom, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 21, 2007).

<sup>43</sup> Letter from Peter A. Rohrbach and Karis A. Hastings, Counsel to SES Americom, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 25, 2007) at Attachment at 3-4.

<sup>44</sup> Letter from Paul D. Bush, Telesat Canada, to Marlene H. Dortch, Secretary, Federal Communications Commission (September 26, 2007) at 2.

<sup>45</sup> Letter from Paul D. Bush, Telesat Canada, to Marlene H. Dortch, Secretary, Federal Communications Commission (September 26, 2007) at 2.

<sup>46</sup> Letter from Linda Kinney, Vice President, Law and Regulation, EchoStar Satellite L.L.C. to Marlene Dortch, Secretary, Federal Communications Commission (September 26, 2007) at Attachment at 2 (EchoStar September 26<sup>th</sup> *Ex Parte* Letter).

<sup>47</sup> EchoStar September 26<sup>th</sup> *Ex Parte* Letter at Attachment at 8.

in the provision of new services, and will force “consumers to acquire a second dish.”<sup>48</sup> EchoStar also contends that DIRECTV’s DBS orbital location line up with the Appendix F locations and EchoStar’s do not.<sup>49</sup>

14. In response, on September 27, 2007, DIRECTV filed an *ex parte* letter stating that only three of its five full contiguous United States (CONUS) orbital locations align with the Appendix F locations.<sup>50</sup> DIRECTV also argues that the fact that international coordination presents a challenge in this band “is all the more reason not to allow operators to compromise DTH orbital locations that could otherwise be used in the coordination process to the benefit of all U.S. licensees.”<sup>51</sup> DIRECTV also notes that “EchoStar’s own analysis shows that consumers will *not* need a second dish to receive signals from a reverse band satellite that is slightly offset from a DBS orbital location.”<sup>52</sup>

### III. DISCUSSION

#### A. Basis for Reconsideration

15. As we explain below, we find, upon reconsideration, that it is in the public interest to provide additional flexibility in the orbital spacing framework adopted in the *Report and Order*.<sup>53</sup> In adopting the four-degree framework, our primary consideration was to balance the dual goals of maximizing orbital capacity while minimizing interference into small-diameter receive antennas. Based on the *ex parte* presentations we have received, however, we are persuaded that this balance would not be disrupted by permitting applicants to operate at certain locations offset from the Appendix F locations by up to one degree without being required to reduce power and accept additional interference.

16. *Sour Spot*. In the *ex parte* filings received on this issue, there is uniform agreement that fundamental principles of antenna design make it difficult for a small subscriber antenna to receive signals from two space stations if those space stations are located between 0.7 and 1.8 degrees apart. We will call this 0.7 to 1.8 range a “sour spot.” The parties that filed *ex partes*, however, draw different conclusions regarding how to compensate for these sour spots. EchoStar requests the flexibility to offset future 17/24 GHz BSS space stations at up to 1 degree while still retaining the ability to transmit at full power and to receive full interference protection. DIRECTV and SES Americom both argue that EchoStar’s concerns could be addressed by an offset of less than 1 degree

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<sup>48</sup> EchoStar September 26<sup>th</sup> *Ex Parte* Letter at Attachment at 9.

<sup>49</sup> EchoStar September 26<sup>th</sup> *Ex Parte* Letter at Attachment at 3. *See* Letter from Linda Kinney, Vice President, Law and Regulation, EchoStar Satellite L.L.C. to Marlene Dortch, Secretary, Federal Communications Commission (September 27, 2007)

<sup>50</sup> Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 27, 2007) at 1.

<sup>51</sup> Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 27, 2007) at 2.

<sup>52</sup> Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 27, 2007) at 2.

<sup>53</sup> *See* 47 C.F.R. § 1.108.



and typically of between 0.3 to 0.5 degrees.<sup>54</sup> DIRECTV argues further that such offsets would require the offset operator to make only small reductions in power and would have minimal impact on operations.<sup>55</sup>

17. Assuming DIRECTV's assertion that small offsets would only require small reductions in power is correct, we find that any reduction in power to protect a later authorized Appendix F licensee would unfairly penalize applicants whose existing infrastructure does not comport with a uniform four-degree spacing framework. Allowing applicants whose infrastructure is not compatible with the four-degree spacing framework to use the flexibility we adopt here to operate at full power will provide consumer with the most competitive service options. We recognize that all offset operators may not need to take advantage of full one-degree offsets. Nevertheless, providing the flexibility for up to a one-degree offset should accommodate the operating needs of most prospective applicants, such as antenna/dish configuration, while maintaining the number of orbital slots and minimizing the impact on satellite capability.<sup>56</sup>

18. *Orbital Efficiency.* DIRECTV argues that up to a 33% reduction of spectrum efficiency could result from allowing 17/24 GHz BSS space station operators to locate their space stations up to one degree from Appendix F locations at full power and with full interference protection. DIRECTV bases this assertion on a highly unlikely scenario that assumes for every three Appendix F locations, a space station is offset by one degree, another location eight degrees away has a space station at the Appendix F location, and no operator files for the location in between. DIRECTV's scenario repeats this pattern across the Appendix F grid of four-degree locations. In light of the *ex partes* received and the interest expressed by operators, we do not expect this scenario to occur. In addition, as discussed above, we do not believe that many 17/24 GHz BSS space station operators will need for technical reasons to avail themselves of the full one-degree offset. Further, as a practical matter, because an applicant can only utilize this flexibility if there are no licensed or prior-filed applications for 17/24 GHz BSS space stations less than four degrees away from the proposed offset space station, use of this flexibility is less likely. Finally, we note that in the scenario DIRECTV describes, the operator at the location between the offset satellite and the satellite at the precise Appendix F location

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<sup>54</sup> See Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 19, 2007) at Attachment at 7-8 and Letter from Peter A. Rohrbach and Karis A. Hastings, Counsel to SES Americom, Inc., to Marlene Dortch, Secretary, Federal Communications Commission (September 25, 2007) at Attachment at 3. For example, DIRECTV and SES Americom assert that signals from EchoStar's DBS satellites at 110.0° W.L. and 110.2° W.L. as well as signals from a 17/24 GHz BSS satellite located between 110.5° W.L. and 110.7° W.L. could be received on a single consumer antenna.

<sup>55</sup> Letter from William M. Wiltshire, Counsel for DIRECTV, Inc., to Marlene H. Dortch, Secretary, Federal Communications Commission (September 19, 2007) at Attachment at 7.

<sup>56</sup> We recognize that at least one party supports offsets of greater than one-degree. Letter from Paul. D. Bush, Telesat Canada to Marlene H. Dortch, Secretary, Federal Communications Commission (September 26, 2007) at 2 ("...departures from the 17/24 GHz BSS grid of more than 1 degree should be permitted if needed to facilitate international coordination."). We decline to expand the flexibility adopted here to that extent.

could offset its satellite half a degree away from the offset satellite and thus achieve 3.5-degree spacing relative to the other two space stations. Based upon DIRECTV's analysis of a 0.5 offset, such a 3.5-degree spacing should have minimal impact on any satellite operations.<sup>57</sup>

19. *10 dB Reduction.* DIRECTV argues that allowing a one-degree offset at full power and with full interference protection results in a 10 dB reduction in carrier-to-interference ratio (C/I) for the 17/24 GHz BSS space station that is required to protect the offset space station. DIRECTV asserts that operators at the Appendix F orbital locations closest to a one-degree offset satellite would be so compromised in performance that these locations would be unlikely to be used. DIRECTV, however, did not present an analysis of the reduction in carrier-to-noise-plus-interference ratio (C/(N+I)), which is the more appropriate signal quality metric that determines the satellite link performance.

20. *Waiver.* Finally, both DIRECTV and SES Americom suggest that where the existing flexibility adopted in our *Report and Order* is insufficient, EchoStar and other applicants should avail themselves of the waiver process under Section 1.3 of our Rules.<sup>58</sup> As we have concluded, adopting the flexibility proposed by EchoStar best serves the public interest. There is no public policy benefit from resolving this issue in a piecemeal fashion through individual waiver requests. Acting here, rather than through individual waiver requests, provides regulatory certainty now to all parties.

21. Consequently, we conclude that adopting the additional flexibility best addresses concerns regarding the compatibility of 17/24 GHz BSS orbital locations with the existing DBS infrastructure. This additional flexibility will allow for an orbital assignment framework that is better aligned with applicants' existing infrastructure and plans for launching satellite systems in this band. Providing both current and future applicants the flexibility to locate their 17/24 GHz BSS satellites at preferred orbital locations relative to their existing infrastructure will enable them to serve subscribers with one small multiple-feed antenna. While we acknowledge that this flexibility may reduce the number of orbital locations capable of operating at full power, we conclude that, on balance, the public interest is best served by affording operators the greatest opportunity to provide expanded DTH service to customers using a small single antenna.

## **B. Changes to Technical Rules**

22. Under our revised orbital spacing framework, we will assign 17/24 GHz BSS space stations to orbital locations offset from Appendix F locations by up to one degree, and allow them to operate at full power and with full interference protection, if there is no 17/24 GHz BSS space station assigned to, or a prior-filed application requesting assignment to, an orbital location less than four degrees from the applicant's proposed offset location. Thus, a full-power offset space station operator may operate at the maximum power flux density levels specified in Sections 25.208(c) and (w) of our

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<sup>57</sup> See Letter from William M. Wiltshire, Counsel for DIRECTV, Inc. to Marlene H. Dortch, Secretary, Federal Communications Commission (September 19, 2007) at Attachment at 7 (stating that an "offset of 0.3 to 0.5 degrees requires only 0.8-1.5dB reduction in EIRP, and therefore has minimal impact on operations of R[everse] B[and] satellite.").

<sup>58</sup> 47 C.F.R. § 1.3.

rules, and will be accorded the same interference protection that it would receive if the space station were located precisely at an Appendix F location. Further, once we have authorized a full-power offset space station, subsequently licensed space stations operating less than four degrees away from the offset space station will be required to reduce transmitted power levels to protect the offset space station from excessive interference. Moreover, the newly licensed reduced-power space station must accept any interference from the full-power offset space station that results from the reduced orbital spacing. This will be the case regardless of whether the new space station is operating at an Appendix F location or an offset location. To accommodate this more flexible framework, we must make several changes to the technical rules we adopted in the *Report and Order*. We discuss these changes below.

23. *Section 25.262.* We make a number of changes to Section 25.262 of the rules,<sup>59</sup> which governs domestic coordination requirements for space stations operating in the 17/24 GHz BSS. First, we redesignate Section 25.262(a) as Section 25.262(f). Further, we add new Sections 25.262(a) and (b) to recognize the classes of 17/24 GHz BSS space stations that may operate at the maximum power flux density levels permitted by our rules, and with full interference protection. This includes both space stations operating at Appendix F locations and full-power offset space stations. In addition, we add Section 25.262(c) to govern power levels on replacement space stations and space stations authorized at orbital locations previously assigned to 17/24 GHz BSS space stations that have become available for reassignment.

24. We also add Section 25.262(d) to our rules, which provides that space stations located less than four degrees away from a space station authorized to operate at full power under Section 25.262(b) may not cause any more interference to the full-power network than would be caused if the proposed space station was four degrees away. The rule also requires the reduced-power space station to accept any increased interference from the full-power Appendix F or full-power offset space station than would be caused if the proposed reduced-power space station were located four degrees away. Finally, we also add Section 25.262(e), which requires reduced-power satellites to accept any increased interference from 17/24 GHz BSS space stations operating in conformance with our rules.

25. *Section 25.140(b).* Section 25.140(b) of our rules<sup>60</sup> addresses the interference analysis that must be submitted with each 17/24 GHz BSS application. As with all FSS space station applications, 17/24 GHz BSS applicants are required to submit an interference analysis demonstrating the compatibility of their proposed system with satellite networks operating at the two nearest adjacent orbital locations. Under the uniform four-degree spacing framework adopted in the *Report and Order*, we presumed that the nearest adjacent orbital positions would be no closer than four degrees away.<sup>61</sup>

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<sup>59</sup> 47 C.F.R. § 25.262.

<sup>60</sup> See *Report and Order* at Appendix B, 47 C.F.R. § 25.140(b).

<sup>61</sup> See *Report and Order* at paras. 70-73. Although offset operations were permitted, the operator choosing to locate at the offset position bore the burden of both reducing its power to avoid causing interference, and accepting any additional interference that resulted from its decision to operate at a separation of less than four degrees from its nearest neighbor. See *Report and Order* at para. 74.

As a consequence of the more flexible licensing framework adopted in this Order, this assumption is no longer valid and the interference coordination scenario for 17/24 GHz BSS space stations becomes more complex. Specifically, the coordination requirements and operating burdens will vary, depending upon a combination of factors including: (1) whether, and to what extent, the applicant seeks to operate at an offset orbital location; and (2) the location and authorized power levels of other licensed and proposed 17/24 GHz BSS space stations. To provide 17/24 GHz BSS space station applicants with guidance when filing their applications, we modify Section 25.140(b) to codify the multiple interference scenarios and associated filing requirements.

26. The first scenarios arise where an applicant proposes to operate at an Appendix F location. In most of these cases, the applicant will be required to submit an interference analysis demonstrating its compatibility with current or future 17/24 GHz BSS space stations at least four degrees away. However, an applicant proposing to operate at an Appendix F orbital location that is less than four degrees away from an operator authorized pursuant to Section 25.262(b) of our rules, will be required to reduce its power to protect the full-power offset operator's network, and will be required to accept the additional interference that results from the full-power operation at the adjacent offset location. Thus, in such cases, the applicant must demonstrate that it will cause no more interference to the full-power offset operator's 17/24 GHz BSS network than if the offset operator's space station were located four degrees away. We amend Section 25.140(b)(3) of our rules, and add Sections 25.140(b)(5), and (b)(6), to reflect these scenarios.

27. Applicants that propose to operate 17/24 GHz BSS space stations at offset locations fall under one of three scenarios. We adopt Section 25.140(b)(4)(i) to cover the situation where there is no other previously authorized or proposed 17/24 GHz BSS space station located less than four degrees away from the proposed offset space station and the applicant proposes to operate the offset space station at full-power and with full interference protection. In this case, we require the applicant to provide an interference analysis demonstrating the compatibility of its proposed offset network with other 17/24 GHz BSS space stations at least four degrees away from its proposed location.

28. Section 25.140(b)(4)(ii) reflects the situation where the applicant proposes to operate its space station at an offset location, but there is a licensed or a prior-filed application for a space station within four degrees of the proposed offset location.<sup>62</sup> In this case, the applicant must provide an interference analysis demonstrating that its proposed space station will not cause any more interference to adjacent 17/24 GHz BSS satellite networks than if it were located at the Appendix F location from which it is offset.

29. Finally, Section 25.140(b)(4)(iii) reflects the situation where an applicant proposes to operate an offset space station but does not seek to take advantage of the full-power, full interference protection option in Section 25.262(b). In this case, we require the applicant to provide an interference analysis demonstrating that its proposed space

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<sup>62</sup> The situation in which the adjacent satellite is authorized pursuant to Section 25.262(b) is addressed in Section 25.140(b)(5).

station will not cause any more interference to adjacent 17/24 GHz BSS satellite networks than if it were at the Appendix F location from which it is offset.

30. *Section 25.140(c)*. Section 25.140(c) of our rules<sup>63</sup> requires 17/24 GHz BSS space stations to be designed to be compatible with other 17/24 GHz BSS space stations as close as four degrees away. As discussed above, however, full-power offset satellites are entitled to interference protection from adjacent space stations operating less than four degrees away. Accordingly, we modify Section 25.140(c) of our rules to reflect this. We also modify this rule to clarify that operators seeking to operate at offset orbital locations, but at reduced powers and without full interference protection, must design their systems to be compatible with adjacent space stations at reduced orbital separations.

31. *Section 25.114(d)(17)*. To facilitate processing, we adopt a new rule, Section 25.114(d)(17), that requires applicants to indicate, in the narrative to their application, whether they propose to operate pursuant to Section 25.262(b) of our rules. Given the different classes of 17/24 GHz BSS space stations, *e.g.*, full-power Appendix F space station, full-power offset space station, reduced-power Appendix F space station, and reduced-power offset space station, requiring applicants to state explicitly that they seek to operate a full-power space station with full interference protection will expedite staff review of the application.

32. *Other rule changes*. We make a number of other rule changes to correct cross-references to rule sections changed by this *Reconsideration Order* and to add cross-references to new rules, as appropriate. Accordingly, we revise the application filing requirements in Section 25.114(d)(7) to require applicants to include the interference analysis described in new rule Sections 25.140(b)(3), (4), (5), or (6), as appropriate for their circumstances. We also remove the version of Section 25.114(d)(15)(iii) that was adopted in the *Report and Order* as the showing that was required by that rule is now incorporated into Section 25.140 of the rules.

### C. Revised Processing Procedure for Pending Applications

33. In the *Report and Order*, we decided to treat all pending applications as simultaneously filed under Section 25.158(d) of our rules.<sup>64</sup> We also recognized that all applicants will need to amend their pending applications to comply with the new 17/24 GHz BSS rules. Thus, we directed the International Bureau to release a Public Notice after the effective date of the new rules, inviting applicants to file conforming amendments and to consider those applications that are accepted for filing together. The Bureau would then process and grant those applications, provided that the applicant was otherwise qualified. In the event two or more applicants requested authority to operate at the same orbital location, we directed the Bureau to consider the applications concurrently and, if the applicants were qualified, to license them to operate in an equal portion of the spectrum. We will continue to follow this approach. Nevertheless, as the result of the modifications to the orbital spacing framework we adopt here, we implement an additional processing step under which we will permit certain applicants an opportunity to amend their applications for a second time. Adding this additional step

<sup>63</sup> See *Report and Order* at Appendix B, 47 C.F.R. § 25.140(c).

<sup>64</sup> *Report and Order* at paras. 143-144.

does not change our decision to treat the pending applications as simultaneously filed under Section 25.158(d).

34. Specifically, we recognize that some current applicants may wish to take advantage of the flexibility to operate full-power offset satellites. These applicants will not know, however, when filing their initial amendments, whether another existing applicant will request authority to operate a satellite at an adjacent Appendix F location. If we grant the Appendix F request, we will not be in a position to grant the application to operate at full power at the offset location. In these situations, denying the application for the offset location or requiring the licensee to operate at reduced powers would unfairly penalize the applicant for not correctly anticipating another applicant's filings. Consequently, in cases where an application for authority to operate at an offset location at full power conflicts with an application for an Appendix F location, we will permit the offset applicant a second opportunity to amend its application. The full-power offset applicant may change the orbital location to the Appendix F orbital location from which it was offset or may remain at the offset location at reduced power and with reduced interference protection.<sup>65</sup>

35. To implement this decision, we direct the Bureau to release a Public Notice shortly after these rules become effective, inviting current applicants to amend the applications pending as of the date of this Order consistent with the rules we adopt today. We further direct the Bureau to dismiss, as defective, any application that is not amended by the date specified in the Public Notice.<sup>66</sup> These applicants can amend their choice of orbital locations consistent with the modifications adopted today. Applicants must specify in the narrative portion of their application the type of authorization being sought, *e.g.*, an authorization to operate at an Appendix F location, an authorization to operate at a full-power offset location, or an authorization to operate at an offset location at reduced power and without full interference protection. Applicants seeking to operate at an offset location must specify the Appendix F location from which they propose to be offset.<sup>67</sup> Applicants must provide the appropriate technical showing to support the request.<sup>68</sup>

36. Any applicant proposing a full-power offset space station that conflicts with an application for an adjacent Appendix F space station will have thirty days after the deadline for amended applications discussed in the preceding paragraph to amend its application as discussed above. No other applicants will be permitted to file second amendments. In this regard, each applicant bears the burden of discerning, through the

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<sup>65</sup> For example, if Applicant A files for the 79° W.L. Appendix F orbital location and Applicant B files for a full-power offset space station at 76° W.L., Applicant B will have an additional opportunity to amend its application. In the amendment, Applicant B may either request assignment to the 75° W.L. Appendix F orbital location from which it sought to be offset or may remain at 76° W.L. with reduced power and reduced interference protection.

<sup>66</sup> 47 C.F.R. § 25.112(a)(2).

<sup>67</sup> In the unlikely event an applicant seeks to operate at an offset orbital location exactly halfway between two Appendix F locations, it must designate the Appendix F location from which it seeks to offset. Thus, if Applicant A seeks to operate at 77° W.L., it must specify whether it is offset from the 75° W.L. or 79° W.L. Appendix F locations.

<sup>68</sup> *See* 47 C.F.R. § 25.140.

Bureau's electronic filing system, other potentially conflicting applications after the first deadline for amended applications.

37. Once the two deadlines for filing amendments have passed, the Bureau will review the amended applications to determine whether they are substantially complete and acceptable for filing. The Bureau will place acceptable applications on public notice. The Bureau will dismiss as defective any amended applications that are not substantially complete.<sup>69</sup> In the event that two or more amended applications are filed at a single Appendix F location or its associated offsets, we direct the Bureau to consider the applications together and, if the applicants are qualified, to license them to operate in an equal portion of the spectrum.<sup>70</sup> For example, if Applicant A requests authority to operate at the Appendix F location of 91° W.L. and Applicant B seeks authority to operate either a full-power offset or reduced-power offset from 91° W.L. at 92° W.L., the Bureau would consider these applications together. In this example, if the applications are substantially complete and the applicants are qualified, the Bureau would license each applicant in an equal portion of spectrum. Thus, for purposes of determining whether the spectrum should be split, the Appendix F location and any offset from a particular Appendix F location are considered the same orbital location.

#### D. Processing Procedures for Future Applications

38. In the *Report and Order*, we decided to treat future applications for 17/24 GHz BSS space stations under a first-come, first-served procedure.<sup>71</sup> We will continue to follow this approach. Given our decision in this *Report and Order* to award licenses for offset space stations with full power and interference protection, we provide further clarification here as to how the first-come, first-served procedure will work.

39. Initially, we note that the freeze on new applications established in the *Report and Order* remains in effect.<sup>72</sup> Once we lift the freeze, applicants may file applications for new 17/24 GHz BSS space stations.<sup>73</sup> We will consider these

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<sup>69</sup> See *First Space Station Licensing Reform Order*, 18 FCC Rcd at 10852, para. 244. Applications of PanAmSat Licensee Corp. For Authority to Construct, Launch, and Operate a Hybrid Satellite System in its Separate International Communications Satellite System, *Order on Reconsideration*, 18 FCC Rcd 23916 (2003). We note that the Commission reserves the right to return an application which has been placed on Public Notice as acceptable for filing if, upon further examination, it is determined that the application is not in conformance with the Commission's rules. See, e.g., Policy Branch Information, Satellite Space Applications Accepted for Filing, *Public Notice*, Report No. SAT-00418 (Feb. 2, 2007).

<sup>70</sup> In these cases, licensees will be allowed to select the particular band segment they wish to use no earlier than 60 days before they plan to launch the satellite. 47 C.F.R. § 25.158(d)(5).

<sup>71</sup> *Report and Order* at paras. 8-11.

<sup>72</sup> See *Report and Order* at para. 147. The freeze applies to any application for authority to provide service to the United States using the 17.3-17.7 GHz (space-to-Earth) and 24.75-25.25 GHz (Earth-to-space) frequency bands or to provide international satellite service using the 17.7-17.8 GHz (space-to-Earth) frequency band. This freeze is limited to applications for licenses for new space stations or for new requests for market access by foreign-licensed space stations.

<sup>73</sup> Once the freeze is lifted, current applicants may also file applications to amend their pending applications. If the amendment requests a new orbital location or makes other "major" changes, it will be considered a newly filed application and will lose its status relative to later-filed applications in the processing queue. See 47 C.F.R. § 25.116(d).

applications on a first-come, first-served basis. This means that we will grant the application if the applicant is qualified and the proposed space station is not technically incompatible with any licensed space station or a space station proposed in a previously-filed application. For example, if we have authorized a full-power offset space station to a particular offset location, we will deny, as technically incompatible, an application for authority to operate a full-power space station at the adjacent Appendix F location. We would, however, grant the Appendix F application if the applicant is otherwise qualified, proposes to operate the Appendix F space station at reduced power, and demonstrates that the proposed operations will not interfere with those of the full-power offset space station. Further, we would consider granting an application for a full-power space station at an Appendix F location if the adjacent offset operator is authorized to operate at reduced power only and without interference protection.<sup>74</sup>

40. We also recognize that additional 17/24 GHz BSS orbital locations may become available as licensees decide to surrender licenses or lose their licenses for failure to meet the required implementation milestones. Where we do not issue an Order cancelling the license, we will announce the cancellation through a Public Notice. As is our custom, once the Order or Public Notice has been issued, applicants may file applications for new space stations, modification applications for licensed space stations, or amendments to pending applications that take the cancellation into account.<sup>75</sup> Thus, if a license for a space station at an Appendix F location is cancelled, the licensee of an adjacent offset location space station authorized to operate at reduced power and without full interference protection may file a modification application to increase the power and receive full interference protection. Similarly, another applicant may apply for a license for a new space station at the Appendix F location. As with all applications processed under a first-come, first-served framework, processing will be governed by the applicant's position in the processing queue. Thus, if the modification request to increase power on an offset space station is filed first, and the applicant is qualified, we will grant it; if the application for a new space station at the Appendix F location is filed first, and the applicant is qualified, we will grant that application. In this manner, we will maintain an interference-free operating environment for 17/24 GHz BSS space stations, while still providing licensees the opportunity to design their satellite networks to best serve their customers.<sup>76</sup>

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<sup>74</sup> For example, if we have authorized a full-power space station at the 75° W.L. Appendix F location, the Appendix F location at 79° W.L. is unassigned, and a party files an application for a full-power offset satellite at 78°, we would deny that application. If the proposed space station at 78° W.L. seeks to operate at reduced power and with reduced interference protection, we would grant it providing the applicant is otherwise qualified.

<sup>75</sup> See Amendment of the Commission's Space Station Licensing Rules and Policies, *First Report and Order and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 10760, 10852 at para. 113 (2003).

<sup>76</sup> In cases where there are three 17/24 GHz BSS satellites licensed to operate within four degrees of each other, at least two of those licensees will be required to operate at reduced power and with limited interference protection. If one of those licensees loses or surrenders its license for any reason, each of the two remaining licensees will have an opportunity to file a modification application to increase its satellite to full power and full interference protection. We will place any such modification applications in the processing queue and consider them on a first-come, first-served basis. We amend Section 25.117 of the Commission's rules governing license modifications as set forth in Appendix A to make this clear.



#### IV. CONCLUSION

41. With this Order, we provide additional flexibility to 17/24 GHz BSS space station operators by allowing them, under certain circumstances, to operate their space stations at full power and with full interference protection at locations other than those specified in Appendix F to the *Report and Order*. We find that this approach best addresses applicants' concerns regarding the compatibility of 17/24 GHz BSS orbital locations with the existing DBS infrastructure. We emphasize that this approach provides the same advantages to both current and future 17/24 GHz BSS applicants. This additional flexibility will also allow for an orbital assignment framework that is better aligned with applicants' business plans and existing infrastructure and will thus afford operators the greatest opportunity to provide expanded DTH service using a single multiple-feed antenna.

42. As required by the Regulatory Flexibility Act ("RFA"),<sup>77</sup> the Commission issued a Final Regulatory Flexibility Analysis ("FRFA") in the *Report and Order* in this proceeding.<sup>78</sup> None of the rule revisions adopted by the Commission in this *Sua Sponte* Reconsideration Order affect the analysis in the *Report and Order*. We therefore incorporate by reference the Commission's prior regulatory flexibility analysis. The Commission will provide a copy of this certification to the Chief Counsel for Advocacy of the SBA, and include it in the report to Congress pursuant to the SBREFA.<sup>79</sup>

#### V. ORDERING CLAUSES

43. Accordingly, IT IS ORDERED that, pursuant to the authority contained in Sections 1, 4(i), 4(j), 7(a), 301, 303(c), 303(f), 303(g), 303(r), 303(y), and 308 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 154(j), 157(a), 301, 303(c), 303(f), 303(g), 303(r), 303(y), 308, this *Order on Reconsideration* IS ADOPTED.

44. IT IS FURTHER ORDERED that Part 25 of the Commission's rules IS AMENDED as set forth in Appendix A. An announcement of the effective date of these rule revisions will be published in the Federal Register.

45. IT IS FURTHER ORDERED that the International Bureau is delegated authority to issue Public Notices consistent with this *Order on Reconsideration*.

46. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center shall send a copy of this *Order on Reconsideration*, including the final regulatory flexibility act certification, to the Chief Counsel for Advocacy of the Small Business Administration, in accordance with Section 603(a) of the Regulatory Flexibility Act, 5 U.S.C. § 601, *et seq.* (1981).

47. IT IS FURTHER ORDERED that the Commission SHALL SEND a copy of this *Order on Reconsideration* in a report to be sent to Congress and the General

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<sup>77</sup> See 5 U.S.C. § 604. The RFA, *see* 5 U.S.C. § 601 *et seq.*, has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) ("CWAAA"). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 ("SBREFA").

<sup>78</sup> *Report and Order* at Appendix A.

<sup>79</sup> 5 U.S.C. § 801(a)(1)(A).

Accountability Office pursuant to the Congressional Review Act, see 5 U.S.C. § 801(a)(1)(A).

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch  
Secretary

## APPENDIX A

## Final Rules

1. Amend Section 25.114 by revising paragraphs (d)(7) and (d)(15), and by adding paragraph (d)(17) to read as follows:

**§ 25.114 Applications for space station authorizations.**

\* \* \* \* \*

**(d)** \* \* \*

\* \* \*

(7) Applicants for authorizations for space stations in the fixed-satellite service must also include the information specified in §§ 25.140(b)(1) and (2) of this Part. Applicants for authorizations for space stations in the 17/24 GHz broadcasting-satellite service must also include the information specified in § 25.140(b)(1) and §§ 25.140(b)(3), (4), (5), or (6) of this Part.

\* \* \*

(15) Each applicant for a space station license in the 17/24 GHz broadcasting-satellite service shall include the following information as an attachment to its application:

(i) Except as set forth in paragraph (d)(15)(ii) of this Section, an applicant proposing to operate in the 17.3-17.7 GHz frequency band, must provide a demonstration that the proposed space station will comply with the power flux density limits set forth in § 25.208(w) of this Part.

(ii) In cases where the proposed space station will not comply with the power flux density limits set forth in § 25.208(w) of this Part, the applicant will be required to provide a certification that all potentially affected parties acknowledge and do not object to the use of the applicant's higher power flux densities. The affected parties with whom the applicant must coordinate are those GSO 17/24 GHz BSS satellite networks located up to  $\pm 6^\circ$  away for excesses of up to 3 dB above the power flux-density levels specified in § 25.208(w) of this Part, and up to  $\pm 10^\circ$  away greater for excesses greater than 3 dB above those levels.

(iii) An applicant proposing to provide international service in the 17.7-17.8 GHz band must demonstrate that it will meet the power flux density limits set forth in § 25.208(c) of this Part.

\* \* \*

(17) An applicant seeking to operate a space-station in the 17/24 GHz broadcasting-satellite service pursuant to the provisions of § 25.262(b) of this Part, at an offset location no greater than one degree offset from at an orbital location specified in Appendix F of the Report and Order, adopted May 2, 2007, IB Docket No. 06-123, FCC 07-76, must submit a written request to that effect as part of the narrative portion of its application.

2. Amend § 25.117 by adding paragraph (d)(2)(v) to read as follows:

§ 25.117 Modification of station license.

\* \* \*

(d) \* \* \*

(2) \* \* \*

(v) Any 17/24 GHz BSS space station operator whose license is conditioned to operate at less than the power level otherwise permitted by §§ 25.208(c) and/or (w) of this Part, and is conditioned to accept interference from a neighboring 17/24 GHz BSS space station, may file a modification application to remove those two conditions in the event that the license for that neighboring space station is cancelled or surrendered. In the event that two or more such modification applications are filed, and those applications are mutually exclusive, the modification applications will be considered on a first-come, first-served basis pursuant to the procedure set forth in § 25.158 of this Part.

\* \* \* \* \*

3. Amend Section 25.140 by revising paragraphs (b)(2) and (b)(3), adding paragraphs (b)(4), (b)(5), and (b)(6), and revising paragraph (c), to read as follows:

**§ 25.140 Qualifications of fixed-satellite space station licensees.**

\* \* \* \* \*

(b) \* \* \*

(2) Except as set forth in paragraphs (b)(3), (4), (5), and (6) of this section, all applicants must provide an interference analysis to demonstrate the compatibility of their proposed system two degrees from any authorized space station. An applicant should provide details of its proposed r.f. carriers which it believes should be taken into account in this analysis. At a minimum, the applicant must include, for each type of r.f. carrier, the link noise budget, modulation parameters, and overall link performance analysis. (*See, e.g.*, appendices B and C to Licensing of Space Stations in the Domestic Fixed-Satellite Service (available at address in Sec. 0.445)).

(3) Except as described in paragraph (b)(5) below, an applicant for a license to operate a 17/24 GHz BSS space station that will be located precisely at one of the 17/24 GHz BSS orbital locations specified in Appendix F of the Report and Order, adopted May 2, 2007, IB Docket No. 06-123, FCC 07-76, must provide an interference analysis of the kind

described in paragraph (b)(2) of this Section, except that the applicant must demonstrate the compatibility of its proposed network with any current or future authorized space station in the 17/24 GHz BSS that complies with the technical rules in this Part and that will be located at least four degrees from the proposed space station.

(4) Except as described in paragraph (b)(5) below, an applicant for a license to operate a 17/24 GHz BSS space station that will not be located precisely at one of the nominal 17/24 GHz BSS orbital locations specified in Appendix F of the Report and Order, adopted May 2, 2007, IB Docket No. 06-123, FCC 07-76, must make one of the following showings:

(i) In cases where there is no previously licensed or proposed space station to be located closer than four degrees from the applicant's space station, and the applicant seeks to operate pursuant to § 25.262(b) of this Part, the applicant must provide an interference analysis of the kind described in paragraph (b)(2) of this Section, except that the applicant must demonstrate the compatibility of its proposed network with any current or future authorized space stations in the 17/24 GHz BSS that are operating in compliance with the technical rules of this Part and that will be located at least four degrees from the applicant's proposed space station.

(ii) In cases where there is a previously licensed or proposed 17/24 GHz BSS space station to be located within four degrees of the applicant's proposed space station, the applicant must provide an interference analysis of the kind described in paragraph (b)(2) of this Section, except that the applicant must demonstrate that its proposed network will not cause more interference to the adjacent 17/24 GHz BSS satellite networks operating in compliance with the technical requirements of this Part, than if the applicant were located at the precise Appendix F orbital location from which it seeks to offset.

(iii) In cases where there is no previously licensed or proposed 17/24 GHz BSS space station to be located within four degrees of the applicant's proposed space station, and the applicant does *not* seek to operate pursuant to § 25.262(b) of this Part, the applicant must provide an interference analysis of the kind described in paragraph (b)(2) of this Section, except that the applicant must demonstrate that its proposed operations will not cause more interference to any current or future 17/24 GHz BSS satellite networks operating in compliance with the technical requirements of this Part, than if the applicant were located at the precise Appendix F orbital location from which it seeks to offset.

(5) An applicant for a license to operate a 17/24 GHz BSS space station, in cases where there is a previously licensed or proposed space station operating pursuant to § 25.262(b) of this Part located within four degrees of the applicant's proposed 17/24 GHz BSS space station, must provide an interference analysis of the kind described in paragraph (b)(2) of this Section, except that the applicant must demonstrate that its proposed operations will not cause more interference to the adjacent 17/24 GHz BSS satellite network than if the adjacent space station were located four degrees from the applicant's space station.

(6) In addition to the requirements of paragraph (b)(3), (b)(4), and (b)(5) of this Section, the link budget for any satellite in the 17/24 GHz BSS must take into account longitudinal stationkeeping tolerances and, where appropriate, any existing orbital location offsets from the 17/24 GHz BSS orbital locations of the adjacent prior-authorized 17/24 GHz BSS space stations. In addition, any 17/24 GHz BSS satellite applicant that has reached a coordination agreement with an operator of another 17/24 GHz BSS satellite to allow that operator to exceed the pfd levels specified in the rules for this service, must use those higher pfd levels for the purposes of this showing.

(c) Operators of satellite networks using 17/24 GHz BSS space stations must design their satellite networks to be capable of operating with another 17/24 GHz BSS space station as follows:

(1) Except as described in paragraphs (ii) and (iii) of this Section, all satellite network operators using 17/24 GHz BSS space stations must design their satellite networks to be capable of operating with another 17/24 GHz BSS space station as close as four degrees away.

(2) Satellite network operators located less than four degrees away from a space station to be operated pursuant to Section 25.262(b) of this Part must design their satellite networks to be capable of operating with that adjacent 17/24 GHz BSS space station.

(3) Satellite network operators using 17/24 GHz BSS space stations located at an orbital location other than those specified in Appendix F of the Report and Order, adopted May 2, 2007, IB Docket No. 06-123, FCC 07-76, and that are not operating pursuant to Section 25.262(b) of this Part, must design their satellite networks to be capable of operating with another 17/24 GHz BSS space station closer than four degrees away, as a result of the operator's offset position.

4. Amend Section 25.262 by modifying paragraphs (a) and (b), and by adding paragraphs (c), (d), (e), and (f) to read as follows:

**§ 25.262 Licensing and domestic coordination requirements for 17/24 GHz BSS space stations.**

(a) Except as described in paragraphs (b), (c) or (e) of this Section, applicants seeking to operate a space station in the 17/24 GHz BSS must locate that space station at one of the orbital positions described in Appendix F of the Report and Order, adopted May 2, 2007, IB Docket No. 06-123, FCC 07-76.

(b) An applicant may be authorized to operate a 17/24 GHz BSS space station at an orbital location described in Appendix F as set forth in paragraph (a) of this Section, or at a location with a geocentric angular separation of one degree or less from an Appendix F location, and may operate at the maximum power flux density limits defined in §§

25.208(c) and (w) of this Part, without coordinating its power flux density levels with adjacent licensed or permitted operators, only if there is no licensed 17/24 GHz BSS space station or prior-filed application at a location less than four degrees from the offset orbital location at which the applicant proposes to operate.

(c)(1) Notwithstanding the provisions of this Section, licensees and permittees will be allowed to apply for a license or authorization for a replacement satellite that will be operated at the same power level and interference protection as the satellite to be replaced.

(2) In addition, applicants for licenses or authority for a satellite to be operated at an orbit location that was made available after a previous 17/24 GHz BSS license was cancelled or surrendered will be permitted to apply for authority to operate a satellite at the same power level and interference protection as the previous licensee at that orbit location, to the extent that their proposed operations are consistent with the provisions of this Part. Such applications will be considered pursuant to the first-come, first-served procedures set forth in § 25.158 of this Part.

(d) Any U.S. licensee or permittee using a 17/24 GHz BSS space station that is located less than four degrees away from a prior-authorized 17/24 GHz BSS space station that is authorized to operate in accordance with paragraph (b) of this Section:

(1) may not cause any more interference to the adjacent satellite network than would be caused if the adjacent 17/24 GHz BSS space station were located four degrees away from the proposed space station; and

(2) must accept any increased interference that results from the adjacent space station network operating at the offset orbital location less than four degrees away.

(e) Any 17/24 GHz BSS U.S. licensee or permittee that is required to provide information in its application pursuant to §§ 25.140(b)(4)(ii) or (b)(4)(iii) of this Part must accept any increased interference that may result from adjacent 17/24 GHz BSS space stations that are operating in compliance with the rules for this service.

(f) Any 17/24 GHz BSS U.S. licensee or permittee that does not comply with the power flux density limits set forth in § 25.208(w) of this Part shall bear the burden of coordinating with any future co-frequency licensees and permittees of a 17/24 GHz BSS network under the following circumstances:

(1) If the operator's space-to-Earth power flux-density levels exceed the power flux-density limits set forth in § 25.208(w) of this Part by 3 dB or less, the operator shall bear the burden of coordinating with any future operators proposing a 17/24 GHz BSS space station in compliance with power flux-density limits set forth in § 25.208(w) of this Part and located within  $\pm 6$  degrees of the operator's 17/24 GHz BSS space station.

(2) If the operator's space-to-Earth power flux-density levels exceed the power flux-density limits set forth in § 25.208(w) of this Part by more than 3 dB, the operator shall bear the burden of coordinating with any future operators proposing a 17/24 GHz BSS space station in compliance with power flux-density limits set forth in § 25.208(w) of this Part and located within  $\pm 10$  degrees of the operator's 17/24 GHz BSS space station.

(3) If no good faith agreement can be reached, the operator of the 17/24 GHz BSS satellite network that does not comply with § 25.208(w) of this Part shall reduce its space-to-Earth power flux-density levels to be compliant with those specified in § 25.208(w) of this Part.



**APPENDIX B****“APPENDIX F of 17/24 GHz BSS Report and Order”****Orbital Assignments – All W.L.**

43.00°	63.00°	83.00°	103.00°	123.00°	143.00°	163.00°
47.00°	67.00°	87.00°	107.00°	127.00°	147.00°	167.00°
51.00°	71.00°	91.00°	111.00°	131.00°	151.00°	171.00°
55.00°	75.00°	95.00°	115.00°	135.00°	155.00°	175.00°
59.00°	79.00°	99.00°	119.00°	139.00°	159.00°	179.00°