

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

In the Matter of)
)
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) **IB Docket No. 06-123**
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)

To: The Commission

COMMENTS OF SES AMERICOM, INC.

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SES Americom, Inc. (“SES Americom”), by its attorneys and pursuant to Section 1.415 of the Commission’s Rules, 47 C.F.R. § 1.415, hereby submits its comments in response to the Further Notice of Proposed Rulemaking in the above-captioned proceeding, FCC 07-76, 22 FCC Rcd 8842 (2007) (“*Further Notice*”). SES Americom proposes coordination procedures and standards to facilitate reverse-band operation and to promote efficient use of 17/24 GHz spectrum.

INTRODUCTION AND SUMMARY

SES Americom has participated actively in this proceeding because we have a strong interest in the expedited adoption of a regulatory framework that will permit the use of 17/24 GHz capacity to increase the video service delivery options for U.S. consumers. In our comments and reply comments in response to the initial Notice of Proposed Rulemaking in this proceeding, SES Americom has emphasized that its business plans include the deployment of

17/24 GHz spacecraft to serve the U.S. and has urged the Commission to ensure that new entrants can compete with DBS incumbents on a level playing field.¹

United States customers will benefit from another competitive platform for the direct-to-premise distribution of video and other services. Once the freeze is lifted, SES Americom plans to request U.S. market access for 17/24 GHz satellites authorized by another Administration. SES Americom understands that Ciel, a Canadian company in which SES Americom has an interest, also will request U.S. market access for 17/24 GHz satellites. These new satellites will materially increase direct-to-premise satellite competition in this country. However, such competition depends upon the adoption of rules that reasonably balance the interests of both incumbents and new entrants.

The *Further Notice* seeks additional input with respect to the technical aspects of reverse-band operations, including measures to mitigate ground-path interference from DBS feeder links into 17/24 GHz subscriber terminals and space-path interference between DBS and 17/24 GHz satellites. SES Americom addresses these matters below.

We agree that existing DBS feeder link earth stations should be allowed to continue to operate in accordance with their current licenses and suggest that modifications to those facilities be permitted within reasonable limits. For new DBS feeder link sites, we support the use of Table 9b as suggested by the Commission as a trigger for coordination and propose that the specific coordination methodology be agreed on between the parties. SES Americom believes that the procedures developed to facilitate coordination for MVDDS systems are

¹ Comments of SES Americom, Inc., IB Dkt No. 06-123 (filed Oct. 16, 2006) (“SES Americom Comments”) at 2, 5-9; Reply Comments of SES Americom, Inc., IB Dkt No. 06-123 (filed Nov. 15, 2006) (“SES Americom Reply Comments”) at 6, 12-14.

appropriate for coordinating new DBS feeder links, and we agree that technical information to support coordination should be exchanged via a third-party frequency coordinator.

SES Americom believes that either an orbital spacing standard or an off-axis PFD threshold would be appropriate to address potential space-path interference. The most critical matter is to ensure that this issue is handled in a competitively-neutral fashion.

I. THE COMMISSION SHOULD GRANDFATHER EXISTING DBS FEEDER LINK SITES AND ALLOW MODIFICATIONS OF THOSE FACILITIES SUBJECT TO REASONABLE LIMITS

In the *Further Notice*, the Commission seeks comment on a number of issues relating to ground-path interference issues associated with existing DBS feeder link antennas. The Commission tentatively concludes that “existing DBS feeder link earth stations should not be subject to new interference-mitigation requirements imposed as a result of this rulemaking.” *Further Notice* at ¶ 151. In order to evaluate whether changes in existing stations should be permitted, the Commission proposes to define protection zones around current DBS feeder link sites and seeks comment on how such zones should be calculated. *Id.* at ¶¶ 151-55. The Commission also requests comment regarding EchoStar’s proposal that grandfathered status should extend to new DBS feeder link antennas located within one mile of any current site. *Id.* at ¶¶ 156-57.

As SES Americom has previously made clear, we agree that licensees of existing DBS feeder link facilities should not be obligated to alter their operations in order to prevent interference to 17/24 GHz subscriber terminals. *See* SES Americom Reply Comments at 15. These feeder links were deployed consistent with Commission rules then in effect, and it would be unreasonably burdensome to subject them to new interference mitigation requirements. Instead, it should be the responsibility of 17/24 GHz network operators to take into account

current DBS feeder link deployments in determining whether robust service can be provided to subscribers in the surrounding area. The separation distance needed between a new 17/24 GHz receiver and an existing DBS feeder link station will depend on a number of factors, including terrain characteristics, the type of forward error correction used, acceptable carrier-to-interference ratios for the 17 GHz carriers, and shielding of the 17 GHz receive antenna. The 17/24 GHz network provider is in the best position to evaluate these factors and decide where it can feasibly offer reliable service.

SES Americom does not believe it is necessary or efficient, however, to adopt protection zones around grandfathered feeder link sites. Pursuant to the grandfathering approach discussed above, all 17/24 GHz receivers must accept interference caused by existing DBS feeder links operating consistently with their current licenses, so protection zones are not needed to define interference protection rights with respect to existing feeder links.

The Commission suggests that the protection zones could be used to determine if a modification at an existing DBS feeder link site should be permitted based on whether it results in increased interference to a 17/24 GHz subscriber terminal located outside the zone. *Further Notice* at ¶ 152. In SES Americom's view, the Commission should specify the types of modifications to current feeder link facilities that are acceptable rather than attempt to plot protection zones around the existing sites. Specifically, SES Americom proposes that the Commission allow existing DBS feeder link licensees to make changes provided the following two conditions are met: (1) the power density radiated by any new or modified antenna in the direction of the horizon does not exceed the levels currently specified in the license for the existing facility; and (2) any new antenna is located within 2,000 feet of an existing antenna.

Changes that do not meet these conditions should be subject to the coordination procedures for new DBS feeder link stations discussed below.

These conditions provide regulatory certainty and fairly balance the interests of incumbent DBS providers and 17/24 GHz systems. Current DBS feeder link operators are accorded a reasonable degree of flexibility to modify their networks in the ordinary course. Meanwhile, 17/24 GHz network operators have the assurance that permissible changes at or near existing DBS feeder link sites will not significantly increase the threat of interference to 17/24 GHz receive terminals.

EchoStar suggests that DBS feeder link licensees be allowed to add new antennas anywhere within one mile of an existing station. *See Further Notice* at ¶ 156. SES Americom views that distance as excessive. SES Americom has a number of significant multi-antenna earth station facilities, and we believe it is unlikely that an operator would need the flexibility to add an antenna more than 2,000 feet away from its current operations. Furthermore, allowing a one-mile expansion of existing feeder link sites as proposed by EchoStar could significantly increase the number of 17/24 GHz receive terminals subject to harmful interference from the feeder links.

SES Americom believes that its proposal has significant advantages over alternative measures. Defining an area surrounding a feeder link site for interference protection purposes, as suggested by the Commission, presents significant challenges. The Commission observes that one option for defining a protection zone is to use a fixed radius from the feeder link site coordinates, resulting in a circular zone. *See id.* at ¶ 153. However, the comments in

this proceeding provide a wide range of estimates with respect to the separation distance needed between a DBS feeder link station and a 17/24 GHz subscriber terminal.²

Even if these varying views could be reconciled, the Commission acknowledges that using a fixed distance to plot a protection zone is inherently inaccurate:

[T]he DBS feeder link earth station's transmissions will not be equal in all directions, but will vary in part as a function of azimuth and elevation angle, and this picture may be complicated by the presence of multiple transmitting antennas at a particular site. In addition, we recognize that different areas of the country will have differing climate, rainfall and terrain conditions that will also mitigate groundpath interference. *Id.* at ¶ 154.

Accordingly, the Commission raises as an alternative the use of a more detailed methodology relying on the site-specific characteristics of each existing feeder link facility. *Id.* Although this approach would result in more realistic protection zone boundaries, it would require significant data and analysis. In SES Americom's view, investing the resources needed to develop tailored protection zones for each feeder link location is unwarranted. The framework proposed by SES Americom, allowing changes within the power levels currently authorized and addition of antennas within 2000 feet of the existing site, provides a simple and straightforward way to determine whether an upgrade or modification to an existing feeder link site is likely to materially adversely affect nearby 17/24 GHz receive terminals.

² See *id.*, noting that SES Americom predicted the possibility of harmful interference if the distance between a DBS feeder link station and a 17/24 GHz subscriber terminal is 12.5-18.6 miles, DirecTV presented an analysis suggesting that the appropriate distance is 22 miles, and EchoStar suggested that required separation distances to mitigate ground-path interference are on the order of 10 to 60 miles.

II. THE COMMISSION SHOULD REQUIRE NEW DBS FEEDER LINK STATIONS TO BE COORDINATED WITH 17/24 GHZ OPERATIONS WITHIN A DEFINED GEOGRAPHIC ZONE

The *Further Notice* recognizes that procedures must be adopted to protect 17/24 GHz consumer receivers from interference that would be caused by deployment of new DBS feeder link earth stations. The Commission asks whether it should define a zone surrounding a proposed new DBS feeder link site within which coordination would be required with any existing 17/24 GHz receive terminal. *Further Notice* at ¶ 159. The Commission tentatively concludes that Table 9b, found in Annex 3 of Appendix 7 of the ITU Radio Regulations, should be used to establish the boundaries of the coordination zone, and seeks comment on specific proposed values for the Table 9b parameters. *Id.* at ¶¶ 159-61.

The *Further Notice* also solicits input regarding the methodology for coordination between new DBS feeder link sites and 17/24 GHz receivers within the coordination zone. In particular, the Commission seeks comment on whether the notification and information exchange procedures used in the MVDDS arena are suitable for application here, and whether a third-party frequency coordinator should be used to preserve confidentiality of customer information. *Id.* at ¶¶ 166-69. Finally, the Commission asks whether other types of measures, such as power limits and siting restrictions, should be used to protect 17/24 GHz receivers from interference. *Id.* at ¶¶ 170-179.

SES Americom agrees that applicants for new DBS feeder links must be required to first complete coordination with respect to potentially affected existing and planned 17/24 GHz operations, and we support the general framework proposed by the Commission. First, we concur that Table 9b is a reasonable way to define the coordination zone surrounding a prospective new DBS feeder link antenna location and support the Commission's proposed parameters for Table 9b. We believe that specifying the use of Table 9b to define the

coordination zone is preferable to EchoStar's suggestion that the coordination distance be determined by the concerned operators because the Commission's approach provides greater regulatory certainty to affected parties.

SES Americom also endorses the Commission's proposal to employ the procedures adopted in the MVDDS proceeding to identify 17/24 GHz subscriber sites that might be affected by a new DBS feeder link station and facilitate the sharing of information needed to complete coordination. We agree that a neutral third-party frequency coordinator should be used as an intermediary in order to protect the confidentiality of information relating to specific 17/24 GHz subscriber locations. In order to facilitate coordination, the DBS feeder link applicant should be required to supply to the frequency coordinator the twelve data items identified in paragraph 169 of the *Further Notice*, and we agree with the Commission's proposal to use 1 MHz as the reference bandwidth in items (x) and (xi).

Once coordination is triggered between a DBS feeder link applicant and a 17/24 GHz network operator, the parties should have flexibility with respect to how potential interference is evaluated and resolved. SES Americom does not believe it is necessary for the Commission to mandate the terms of coordination or the measures to be used to mitigate interference. Instead, the Commission should adopt procedures similar to Section 25.203(c), which governs coordination between earth stations and terrestrial services in shared spectrum. That provision sets forth the procedures for sharing information among parties when coordination is required but does not identify any specific steps that must be taken to address potential interference.

Under this approach, a DBS operator and an affected 17/24 GHz provider would enter into negotiations once it was determined that one or more of the 17/24 GHz system's

subscribers was within the coordination zone surrounding the proposed new feeder link site. In the course of that discussion, it would be up to the DBS operator to convince the 17/24 GHz provider to agree to the new site. The DBS operator might commission a technical analysis to show that because of natural and manmade obstacles, the actual interference to the 17/24 GHz subscriber would be less than that predicted by the coordination zone formula. Alternatively, the DBS operator might propose to mitigate the interference by lowering the feeder link station's power density or installing shielding at the feeder link site and/or at the 17/24 GHz receive terminal. In cases where interference to 17/24 GHz subscriber terminals cannot be feasibly addressed by technical solutions and results in termination of service to some customers, the DBS provider might need to compensate the 17/24 GHz system operator and its subscribers for their resulting lost revenue and out-of-pocket costs.

SES Americom does not support adoption of across-the-board power level limits, location restrictions, or shielding requirements for new DBS feeder link earth stations. These are all elements that will affect whether a new feeder link station can be successfully coordinated, but it should be up to the applicant to determine how to design its facility in order to achieve coordination.

For example, in choosing a site for a new feeder link earth station, a DBS operator will certainly consider population density because a remote area is less likely to have 17/24 GHz subscriber terminals that may experience interference. However, as the Commission observes, choosing a remote site will not necessarily guarantee that the DBS operator can avoid the need for coordination, as there will be some 17/24 GHz deployments in rural areas. *Further Notice* at ¶ 175. Furthermore, the DBS operator will also need to take into account other relevant factors, such as the availability of an adequate and reliable power supply and proximity to fiber optic

transmission facilities. If these factors weigh heavily in favor of locating a new feeder link station in a more densely populated area, the DBS operator might decide to pursue the site and rely on methods such as shielding to protect any potentially affected 17/24 GHz subscriber installations. The Commission should allow the DBS operator to balance these issues in choosing a site, rather than limiting new feeder link deployments to areas of low population density.

Similarly, SES Americom does not believe that adoption of limits on EIRP density towards the horizon can substitute for mandatory coordination of new DBS earth stations. As with placement of a DBS feeder link site in a rural area, compliance with the EIRP density limits in Section 25.204(b) would not guarantee that no 17/24 GHz subscribers are affected by a new feeder link station, as numerous other factors affect the interference situation.

Likewise, adoption of a shielding requirement for either DBS feeder link stations or 17/24 GHz subscriber stations is unwarranted. As discussed herein, shielding is an important tool available to resolve interference issues. However, shielding will neither be necessary in every case or sufficient in every case to achieve coordination. Accordingly, rather than imposing a uniform shielding requirement, the Commission should permit the parties to a coordination to determine whether and how to use shielding to facilitate resolution of interference.

III. THE COMMISSION SHOULD ESTABLISH A COMPETITIVELY-NEUTRAL PROCESS TO ADDRESS SPACE-PATH INTERFERENCE

The *Further Notice* also seeks comment on appropriate measures to protect DBS satellites from interference resulting from transmissions from nearby 17/24 GHz satellites. The Commission notes that the incumbent DBS providers have suggested that in order to reduce the risk of such interference, 17/24 GHz orbital locations that are close to U.S. DBS satellite clusters should be available only to the DBS operators. *Further Notice* at ¶ 181. SES Americom and

Intelsat both opposed such preferences, and the Commission categorically rejected them, holding that restricting the eligibility for 17/24 GHz licenses at DBS orbital locations “would hinder competition” and “is not necessary to prevent harmful interference between DBS and 17/24 GHz BSS satellites.”³ The *Further Notice* instead asks commenters to address whether the Commission should adopt an off-axis PFD threshold that would trigger coordination between a 17/24 GHz satellite and nearby DBS spacecraft, and whether a minimum orbital separation should also be imposed. *Further Notice* at ¶¶ 183-86.

SES Americom assumes it is clear that the Commission’s mention in the *Further Notice* of proposals by the DBS incumbents for licensing preferences in the 17/24 GHz band is not intended to reopen the issue. As noted above, the *Report & Order* squarely rejected such proposals, and no party has challenged that holding. SES Americom and others have conclusively demonstrated that restricting 17/24 GHz licensing at DBS clusters to the two existing DBS operators would create barriers to new video services entry that cannot be justified on technical grounds, and the Commission has agreed. *See, e.g.*, SES Americom Reply Comments at 13-14. The Commission should categorically reject any attempts to revive this misguided idea in the context of the *Further Notice*.

Instead, the Commission should adopt a technical standard to address potential space-path interference. SES Americom has previously expressed the view that an orbital separation of .2-.3 degrees should be adequate to prevent space-path interference between 17/24 GHz and DBS spacecraft. *See* SES Americom Comments at 19-20; SES Americom Reply

³ *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 & Order, FCC 07-76, 22 FCC Rcd 8842 (2007) (“*Report & Order*”) at ¶ 25.

Comments at 13-14. The Commission could adopt an orbital spacing minimum, subject to waiver if a 17/24 GHz operator proposes to operate at a smaller separation distance.

Alternatively, SES Americom has no objection to the Commission's proposal to use an off-axis PFD limit as a coordination trigger, as recommended by EchoStar, although the *Further Notice* recognizes that the power density level that can be tolerated by a DBS system depends on the specific satellite characteristics. *Further Notice* at ¶ 184. In SES Americom's view, the critical factor is that the potential for space-path interference be addressed in a competitively-neutral manner.

CONCLUSION

The Commission should expeditiously resolve the technical issues raised in the *Further Notice* consistent with the recommendations herein so that the 17/24 GHz band can be put to use to provide expanded video service delivery options to U.S. consumers.

Respectfully submitted,

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