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

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In the Matter of the Petition of	)	
DIRECTV ENTERPRISES, INC.	)	RM No. 9118
To Amend Parts 2, 25 and 100 of the Commission's Rules To Allocate Spectrum for the Fixed-Satellite Service and the Broadcasting-Satellite Service	)	

REPLY COMMENTS OF DIRECTV ENTERPRISES, INC.

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REPLY OF DIRECTV ENTERPRISES, INC.

DIRECTV Enterprises, Inc. ("DIRECTV") hereby files its reply to the satellite industry comments and DEMS joint opposition filed in response to DIRECTV's above-captioned request for the Commission to institute a rulemaking proceeding to amend Part 2 of its Rules to allocate spectrum for the fixed-satellite service ("FSS") and the broadcasting-satellite service ("BSS"), and to make conforming changes to the satellite service rules contained in Parts 25 and 100.

I. INTRODUCTION AND SUMMARY

DIRECTV has petitioned the Commission to (i) amend the Table of Frequency Allocations contained in Section 2.106 of the Commission's Rules; (ii) amend the service rules contained in Sections 25.202(a), 100.1(b), and 100.21 to provide for use of the 24.75-25.25 GHz band for FSS in the Earth-to-space direction for "feeder links" for the BSS, and also to provide for use of the 17.3-17.8 GHz band in the space-to-Earth direction for BSS; and (iii) adopt a 4.5° orbital spacing policy for the use of these bands in these directions to provide

BSS service.[1] In its Petition, DIRECTV demonstrated how its request is consistent with the Region 2 WARC-92 allocations for these bands that the U.S., Canada and other Region 2 countries supported internationally only 5 years ago. DIRECTV also showed that by increasing the potential capacity of BSS systems, these allocation changes will benefit U.S. consumers by allowing U.S. licensed BSS operators an ability to offer a wider variety of "next generation" BSS program and service offerings, and thereby facilitating greater competition with the cable television industry.

Significantly, DIRECTV's rulemaking petition has been broadly supported by the U.S. satellite industry.[2] To the extent that any of these parties takes issue with aspects of DIRECTV's proposals, it acknowledges that such issues can and should be raised and addressed in the requested rulemaking proceeding.[3] Furthermore, these parties acknowledge

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1 Petition for Rulemaking of DIRECTV Enterprises, Inc., RM No. 9118 (June 5, 1997) ("Petition").

2 *See* Comments of Echostar Communications Corporation at 4 ("welcom[ing]" the prospect of additional BSS capacity raised by the Petition, provided that adequate rules are adopted to protect existing feeder link operations at 17.3-17.8 GHz); Comments of GE American Communications, Inc. at 1 (generally supporting "the allocation of BSS spectrum at 17.3-17.8 GHz and the associated FSS feeder link spectrum at 24.75-25.25 GHz"); Lockheed Martin Corporation, Statement of Support of DIRECTV Enterprises, Inc.'s Petition for Rulemaking at 1 (Lockheed "concurs with DIRECTV's request for a rulemaking proceeding to allocate additional spectrum for BSS and BSS feeder links"); Comments of Loral Space & Communications, Ltd. at 1-2 (stating that the "concepts advanced in DIRECTV's Petition for Rulemaking would foster competition and promote the public interest if, upon sufficient study, they prove capable of implementation").

3 Several parties, for example, have requested further investigation of -- but have not opposed -- DIRECTV's proposal for 4.5° spacing. *See, e.g.,* Comments of GE Americom at 2 (urging "further study" of the spacing issue); Lockheed Statement of Support at 4 (Commission should proceed with requested rulemaking so that interested parties "will be able to fully address" spacing and "other relevant issues").

the tremendous public interest benefits that will be realized from the satellite spectrum allocations requested in the Petition.

The only opposition to DIRECTV's rulemaking request arises from two sources, neither of which is persuasive.[4] First, Teligent, L.L.C., Microwave Services, Inc., and Digital Services Corporation (collectively, "the DEMS Licensees") have filed a "shotgun" attack on every conceivable aspect of the Petition, designed primarily to protect these parties' asserted interests in the 24 GHz band,[5] to which they have recently been relocated.[6] As the Commission and the DEMS Licensees are well aware, numerous parties have filed petitions demonstrating that the DEMS Licensees have no legitimate interests in that frequency band to protect because the Commission's *DEMS Order* is legally unsustainable.[7] In any event, however, the DEMS Licensee's chief objection to the Petition is a theoretical interference concern that can be addressed in the context of a rulemaking proceeding.

The same is true of the objections of SkyBridge, a company that has submitted an application to construct, launch and operate a proposed global network of nongeostationary

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4 DIRECTV's Petition and expansion system application were also opposed by a subscriber using this proceeding as a vehicle to express certain difficulties experienced with DIRECTV service. *See* Opposition to Allotment and Petition to Deny of Bradford D. Carey, RM No. 9118 (July 18, 1997). DIRECTV is deeply committed to customer service, takes these allegations very seriously, is investigating the customer's alleged service problems, and will respond according. In any event, however, that subscriber's unfortunate experience is not grounds for denying either the Petition or DIRECTV's system application. The filing should be dismissed.

5 Joint Opposition to Petition for Rulemaking of DIRECTV Enterprises, Inc., RM No. 9118 (July 31, 1997) ("DEMS Licensee Opposition").

6 *Amendment of the Commission's Rules to Relocate the Digital Electronic Message Service*, 62 Fed Reg. 24,576 (May 6, 1997) ("DEMS Order").

7 *See, e.g.*, Petition for Reconsideration of DIRECTV Enterprises, Inc., ET 97-99 (June 5, 1997); Consolidated Reply of DIRECTV Enterprises, Inc., ET 97-99 (July 23, 1997).

orbit ("NGSO") Ku-band satellites.[8] SkyBridge's chief objection to initiating a rulemaking proceeding appears to be that DIRECTV's proposed uses of expansion BSS capacity at 17.3-17.8 GHz would be incompatible with SkyBridge's proposed system operations. However, as a threshold matter, SkyBridge's own system and rulemaking proposals only recently have been placed on public notice for comment by other interested parties,[9] and SkyBridge thus has established no priority in the 17 GHz band that can or should preclude initiation of a proceeding to permit BSS reverse band working use of 17 GHz frequencies. Furthermore, as with the DEMS Licensees, the SkyBridge interference concerns suggest no obstacle that cannot reasonably be addressed in a rulemaking proceeding.

In the final analysis, neither the DEMS Licensees nor SkyBridge has raised any material issue that has not been anticipated in DIRECTV's Petition, nor have these parties shown any reason why the Commission cannot and should not commence a rulemaking proceeding to fully address the issues that the Petition has raised. Given that (1) the DEMS Licensees' claim to the 24 GHz band has been challenged by numerous parties who have raised serious questions about the lawfulness of Commission action relocating the DEMS Licensees to that frequency band, and (2) SkyBridge has established no priority to the use of the 17 GHz band, these entities' competitive self-interests should not be allowed to preclude an entire industry sector from obtaining necessary capacity for the offering of innovative next-generation BSS services to the American public.

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8 Comments of SkyBridge, L.L.C., RM No. 9118 (July 31, 1997); *see* In the Matter of the Application of SkyBridge L.L.C. for Authority to Launch and Operate a Global Network of Low Earth Orbit Communications Satellites Providing Broadband Services in the Fixed Satellite Service, File No. 48-SAT-P/LA-97 (Feb. 28, 1997), *amended*, July 3, 1997.

9 *See* Public Notice, Report No. 2213 (July 28, 1997).

II. THE ALLOCATION OF ADDITIONAL SPECTRUM FOR BSS USE CLEARLY IS IN THE PUBLIC INTEREST

A. The Need For Additional BSS Capacity Is Apparent

In the Petition, DIRECTV urged the Commission to institute the requested rulemaking and to amend its Rules to allocate the 24.75-25.25 GHz band for FSS uplinks and the 17.3-17.8 GHz band for BSS downlinks in order to correct a recognized shortage of spectrum that is available for the provision of BSS service in the United States. DIRECTV's call for additional BSS spectrum has been echoed by every other satellite licensee that has offered comment on the issue. Lockheed, for example, notes that there "is simply insufficient capacity available for use in the United States in the Planned BSS bands to support the development and expansion of new BSS businesses."[10] GE Americom similarly acknowledges that "[a]dditional spectrum is needed to permit providers to respond to increasing demand for BSS capacity,"[11] while Echostar notes that existing DBS operators are "spectrum-constrained" and require additional capacity to compete against cable operators.[12] Loral observes that spectrum scarcity "is magnified in the 12.2-12.7 GHz band due to the limitations in the BSS Plan for Region 2 which limit full-CONUS spectrum," and that "[e]nhanced services and expanded choices for the U.S. consumer can only be provided through additional spectrum that will allow the introduction of new technology and innovative applications."[13]

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10 Lockheed Statement of Support at 1.

11 Comments of GE Americom at 1.

12 Comments of Echostar at 3.

13 Comments of Loral at 3.

In the wake of such pronouncements by the entities whose businesses are directly affected by the current lack of available BSS expansion capacity, the suggestions of the DEMS Licensees and SkyBridge that there is no need for additional BSS spectrum ring hollow. The DEMS Licensees and SkyBridge simply ignore the incontrovertible facts that (1) due to the inherent limitations in the ITU's BSS Plan for Region 2, only three orbital locations are available to the U.S. in the 12.2-12.7 GHz band (the "Planned BSS Band") for full-CONUS BSS service, and (2) that all of the available channels at those three locations are already licensed by the Commission, with U.S.-licensed BSS systems now operating at two of the three locations.[14] Indeed, these parties' claims that additional proof is required of the lack of U.S. BSS capacity are particularly misplaced, [15] given that the Commission already has *expressly taken notice* of the "scarcity of full-CONUS DBS spectrum" in auctioning the full-CONUS BSS orbital location now occupied by MCI.[16]

Furthermore, neither SkyBridge nor the DEMS Licensees addresses the fact that the U.S. has only a limited amount of BSS spectrum available to it under the existing ITU BSS plan for 12 GHz. Neighboring countries, including Mexico, Canada and Argentina, have proposed, or notified the Commission of an intention to propose, to modify their BSS assignments to allow coverage of the U.S., which will further constrain the ability of the U.S.

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14 DIRECTV is the licensee of 27 of the 32 channels at 101° W.L.; United States Satellite Broadcasting Co., Inc. ("USSB") is the licensee of the remaining 5 channels there. Echostar and its affiliates are operating from 119° W.L. SkyBridge's statement that USSB's DBS system is "yet to be constructed," Comments of SkyBridge at 7, is obviously in error.

15 DEMS Licensee Opposition at 5-9; Comments of SkyBridge at 7.

16 In the Matter of Revision of Rules and Policies for the Direct Broadcast Satellite Service, 11 FCC Rcd 9712, 9723, ¶ 28.

to attempt to obtain additional BSS capacity at 12 GHz in Region 2.[17] In stark contrast, as DIRECTV's Petition has noted, the fact that the 17.3-17.8 GHz bands have not been "planned" internationally will provide the Commission with an important opportunity to afford U.S. satellite operators greater flexibility and capacity in their BSS operations.[18]

Contrary to the claims of the DEMS Licensees, DIRECTV has more than met the legal and public policy thresholds necessary for the Commission to initiate the requested rulemaking proceeding.[19] The Petition clearly states the "facts, views, arguments and data deemed to support the action requested" by DIRECTV, and clearly indicates how DIRECTV's interests will be affected.[20] Furthermore, the Commission's rules for initiating a rulemaking proceeding do not, as the DEMS Licensees suggest, require the petitioner to inundate the Commission with a litany of marketplace "demand studies" and other extraneous information of which the Commission is obviously already aware and can take judicial notice in any

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17 The Commission has acknowledged the difficulty of modifying the BSS plan to accommodate additional U.S. Systems. *See Revision of Rules and Policies for the Direct Broadcast Satellite Service*, 11 FCC Rcd at 9727, ¶ 38. The DEMS Licensees' suggestion that the BSS industry should try that avenue first to meet its needs for expansion spectrum is simply untenable. *See* DEMS Licensee Opposition at 18.

Likewise, their proposals that BSS systems use reverse band working at 12 GHz or spectrum at 24.65-24.75 GHz are untenable because, in contrast to the 24 and 17 GHz bands, no allocations exist to support and to provide interference protection to such BSS uses. *See* DEMS Licensee Opposition at 23, 25.

18 Use of the 17.3-17.8 GHz band for BSS is not constrained by the orbital spacing or other technical limitations of the ITU's Region 2 plan. As noted in its Petition, DIRECTV believes that it will be possible to use orbital spacing in this band as close as 4.5° and still provide service to antennas 18 inches in diameter without the need for breakthroughs in ground antenna technology. *See* Petition at 7-8. DIRECTV expects that the issue of an appropriate orbital spacing policy will be more fully addressed in the requested rulemaking proceeding.

19 DEMS Licensee Opposition at 5.

20 47 C.F.R. § 1.401(c).

event.[21] No such studies or information were required, for example, before the Commission initiated its proceeding to open the 13.75-14.0 GHz band for FSS uplinks.[22]

Although DIRECTV would be pleased to supplement this rulemaking record in any way that the Commission deems useful and appropriate, the Commission has already found:

- that available spectrum for offering additional full-CONUS BSS/DBS service is scarce;[23]
- that DBS systems in just two years have achieved a higher combined subscribership than any other multichannel video programming alternative to incumbent cable television monopolists;[24]
- that in terms of service demand, most industry observers "project continued strong growth for the DBS industry through the end of the decade";[25]
- that also as an indicator of service demand, DBS receiving equipment to date has been "one of the most successful new consumer product introductions in history in terms of units sold";[26]

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21 *See* DEMS Licensee Opposition at 7-8.

22 *See Amendment of Parts 2, 15 and 90 of the Commission's Rules to Allocate the 13.75-14.0 GHz Band to the Fixed-Satellite Service,* ET Docket No. 96-20, RM-8648, Report and Order (released Sept. 26, 1996). The DEMS Licensees' citation of the Commission's Order in *Amendment of C-Band Satellite Orbital Spacing Policies to Increase Satellite Video Service to the Home*, 7 FCC Rcd 456 (1992), is misplaced. In that proceeding, the Commission refused to grant the petition for rulemaking of K-Sat Broadcasting based upon its determination that K-Sat's requested change to 3° satellite spacing would impose significant "costs and disruption" to the satellite industry overall. 7 FCC Rcd at 457. In this case, by contrast, DIRECTV's rulemaking proposal enjoys the universal support of every satellite operator that has commented on it.

23 *In the Matter of Revision of Rules and Policies for the Direct Broadcast Satellite Service*, 11 FCC Rcd 9712, 9723, ¶ 28.

24 *In the Matter of Annual Assessment of Competition in the Market for Delivery of Video Programming*, CS Docket No. 96-133 (Jan. 2, 1997), at ¶ 38 ("1996 Cable Report").

25 *Id.*

26 *Id. at* ¶ 40.

- that DBS systems are capacity constrained relative to terrestrial cable systems, which presently are upgrading their systems with fiber and coaxial cable such that they will be capable of offering hundreds of programming channels and broadband offerings; [27] and

- that, in spite of DBS' successes, as the cable industry adopts digital compression many cable systems "will be able to offer substantially more programming than can be offered on DBS systems."[28]

Such findings amply support the Commission's initiating a proceeding to allocate expansion spectrum for BSS use.

Indeed, in 1986, the Commission allocated additional spectrum for cellular telephone service after initiating a rulemaking proceeding to consider whether such additional spectrum was required for cellular to "expand and develop to its full potential."[29] The Commission concluded that "cellular radio does need additional spectrum to meet its immediate needs":

> Based on the record, we anticipate that cellular radio systems will continue to have substantial rates of growth. We believe that significant near-term growth will continue with the introduction of additional competition by second carriers in many markets. We also foresee strong long-term growth with the introduction of new, less costly cellular equipment and technology. In addition, we find existing cellular systems have made substantial efforts to introduce more efficient technology and operational improvements to make better use of the existing available spectrum.[30]

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27 *See id.* at ¶¶ 171-172.

28 *Id.* at ¶ 38. The DEMS Licensees misquote DIRECTV when they contend that the increased demand for digital services by educational and business users identified by DIRECTV can be met through low data rate FSS systems. DEMS Licensee Opposition at 8. DIRECTV's Petition was not referring to "non-video applications" for these users, but to their digital video needs, such as business information and distance learning. *See* Petition at 9.

29 *Amendment of Parts 2 and 22 of the Commission's Rules Relative to Cellular Communications Systems*, Report and Order, 1986 LEXIS 2651 (released Sept. 26, 1986), at ¶ 8.

30 *Id.* at ¶ 10.

These justifications for allocating additional spectrum to cellular telephony translate well to the state of the U.S. BSS industry today. DBS growth remains robust, and has been projected to serve 13-15 million households by the year 2000.[31] Furthermore, the DBS industry has clearly made "substantial efforts" to introduce more spectrally efficient technology into the marketplace -- DIRECTV and other DBS providers in fact were the first MVPDs to implement digital compression technology on a wide scale.[32] Yet, as with cellular technology, although DBS operators have been "diligent in implementing efficiencies possible with existing technology," practical limitations on DBS system designs "will begin to constrain" DBS capacity in the coming years.[33]

The Commission can adopt DIRECTV's allocation proposals based solely on the Commission's existing findings with respect to DBS service. However, to the extent that the Commission desires to make or freshen the record on any issue, it should allow the parties to do so in the course of the requested proceeding.

B. DIRECTV's Requested Allocations For "Next Generation" BSS Services Are Consistent With International Allocations At 24.75-25.25 And 17.3-17.8 GHz

The DEMS Licensees chide DIRECTV for providing "no analysis of why other frequency bands cannot be used for BSS."[34] Indeed, to read the DEMS Licensees' filing, one would think that the Petition was crafted from "whole cloth," and that "next generation" BSS systems were never contemplated by either the Commission or the international community in the requested frequency bands at 17 GHz and 24 GHz.

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31 1996 Cable Report at ¶ 38.

32 *Id.* at ¶ 177, n. 498.

33 *Cellular Communications Systems*, 1986 LEXIS 2651 at ¶ 20.

34 *Id.* at 6.

Of course, this is not the case. WARC-92 allocated spectrum internationally at 17 GHz and 24 GHz for BSS expansion use -- allocations that were *expressly agreed to* by the United States at that conference. DIRECTV designed and applied for a system that is intended to make use of those 5-year-old allocations, and has petitioned the Commission simply to implement this portion of the WARC-92 allocations domestically. To argue, as the DEMS Licensees do, that DIRECTV must provide further analysis of other candidate BSS spectrum when that effort has already been conducted both domestically and internationally as part of the WARC-92 process is merely a transparent effort by the DEMS Licensees to obstruct the implementation of new satellite systems that will use the 24 GHz spectrum.

The DEMS Licensees' attempt to obfuscate the nature of the WARC-92 allocations are similarly misguided. In preparing for WARC-92, the U.S. recognized that additional bandwidth might be needed in the future for "next generation" BSS satellite services whose needs could not be met in the Planned BSS Band at 12.2-12.7 GHz.[35] The U.S. considered a number of different bands that might be able to accommodate these additional needs, and ultimately proposed at WARC-92 to accommodate at 24.65-25.25 GHz any next generation BSS needs that could not be met at 12 GHz.[36] As an alternative, Mexico, Canada, Brazil and Venezuela proposed to make the 17.3-17.8 GHz band available as an additional BSS allocation. As a compromise, the U.S. agreed to the 17.3-17.8 GHz solution, which was

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35 *Preparation for the International Telecommunication Union World Administrative Radio Conference*, 6 FCC Rcd 3900, 3910, ¶¶ 75-77 (1991) ("*WARC-92 Report*"). It was not clear then whether such next generation BSS service could be provided in the existing 12 GHz band, or whether a separate band was required. Now that the 12 GHz band is becoming congested, the 17 GHz band provides a means to accommodate the additional digital BSS needs that cannot be met at 12 GHz.

36 *Id.*

endorsed for all of Region 2.[37] The 24.75-25.25 GHz band (which the U.S. originally proposed for downlinks) was allocated as the corresponding uplink (or "feeder link") band for the new BSS downlink allocation at 17.3-17.8 GHz.[38]

Given these facts, the DEMS Licensees' argument that DIRECTV's Petition "would directly contradict the U.S. position at WARC-92"[39] is a complete red herring. The DEMS Licensees strategically reference the United States' "going-in" position at the conference without acknowledging the fact that a World Radio Conference by its very nature is a negotiation, in which the U.S. position on spectrum issues often changes before the conference ends. At the end of the day, the U.S. agreed to a compromise, "reverse band," 17 GHz allocation for expansion BSS use -- one that is dispositively embodied in the text of the Radio Regulations. The "preparation history" cited by the DEMS Licensees is utterly irrelevant and ignores the ultimate results of WARC-92.

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37 The entire rationale for the United States' initial reluctance to endorse use of the 17.3-17.8 GHz band on a reverse band basis -- the anticipated difficulty of BSS receive stations sharing the band with existing and future BSS feeder links that might employ "'widespread use of mobile or transportable stations to cover news or sporting events,'" DEMS Licensee Opposition at 15 (*quoting* 1992 WARC Report at 3910) -- was grounded on fears that never materialized. Because of new technology that supports multiple TV and audio signals in a single transponder, the uplinking of single video or audio feeds from mobile or transportable stations is inefficient and has not been implemented. These types of program sources are typically sent via backhaul FSS channels to the BSS uplink site.

38 To provide for the possibility that bi-directional use of the 17.3-17.8 GHz band proved infeasible, WARC-92 also allocated the 17.8-18.4 GHz band for the possible migration from 17.3-17.8 GHz of feeder links for 12 GHz BSS systems. As noted in the Petition, DIRECTV does not anticipate significant problems with a bi-directional use of the 17.3-17.8 GHz band that would warrant such a relocation. In any event, the system characteristics and downlink spectrum needs of GSO FSS systems that are licensed by the Commission in the Ka-band would severely constrain use of the 17.8-18.4 GHz band for BSS feeder links.

39 DEMS Licensee Opposition at 15.

Nor has DIRECTV "misconstrued" the WARC-92 17 GHz allocation, as the DEMS Licensees suggest. These parties argue that the 17 GHz spectrum allocation is limited internationally to "HDTV BSS" only, and that DIRECTV's Petition therefore is inconsistent with the international allocation insofar as it proposes "a BSS allocation for something other than *HDTV* BSS."[40]

Significantly, the DEMS Licensees point to nothing in the Radio Regulations that limits satellite use of this band to any particular type of BSS service, any particular modulation scheme, or any particular channel size (wide or narrow band). Nor can they. In stark contrast to the constraints imposed by the Region 2 Plan on BSS service at 12 GHz, the Radio Regulations governing use of the 24 and 17 GHz bands impose no such limits on BSS service in these bands.[41]

Moreover, the term "HDTV BSS" is nowhere defined in the Radio Regulations, and, standing alone, can have many different meanings. Indeed, relative to the state of technology during the preparations for WARC-92, DIRECTV's current digital service could be considered "HDTV" within the meaning of the term. In any event, however, that question of interpretation is irrelevant, because the text of the Radio Regulations *nowhere* mandates that a specific type of BSS service must be offered in the 17 GHz band.[42] The DEMS Licensee

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40 *Id.* at 14 (emphasis in original).

41 Resolution 526, cited by the DEMS Licensees, *see* DEMS Licensee Opposition at 14, simply urges administrations to "study the development of future regulatory provisions for BSS (HDTV)" and indicates that such matters may be addressed at a future WRC. In no way does it limit use of the 17 and 24 GHz bands to "HDTV."

42 In Region 2, the 17.3-17.7 GHz band is allocated internationally on a co-primary basis to the FSS (Earth-to-space) for feeder links to BSS systems, and also for the provision of BSS to end users. *See* International Telecommunication Union, Final Acts of the World Radiocommunication Conference (WRC-95) (*"WRC-95 Final Acts"*), Part 1 at 180. Internationally, the 17.7-17.8 GHz band is allocated in Region 2, on a co-

theories on the uses to which this expansion BSS capacity must be put simply have no basis in the dispositive text of the Radio Regulations.[43]

Finally, DIRECTV's proposed allocations are not "premature."[44] First, the DEMS Licensee assertion that the Petition provides "no justification" for implementing the 17.3-17.8 GHz allocation 10 years early"[45] is nonsensical, given that DIRECTV has filed the Petition in conjunction with a satellite system application that would make immediate use of the allocation to offer an expanded panoply of innovative BSS services. Moreover, although international footnote S5.517 provides that the allocation for BSS at 17.3-17.8 GHz does not come into effect until April 1, 2007, neither the DEMS Licensees nor SkyBridge has shown any reason to constrain use of that band for BSS prior to that date. Indeed, as long as BSS downlinks do not cause harmful interference to any other co-primary service in the band, there is no conceivable reason not to permit use of this band in the U.S. before 2007. In any event, the U.S. has supported advancing the availability dates for spectrum allocations where, as here, demonstrated need exists before the allocation is scheduled to be effective.[46]

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primary basis, to the FSS (Earth-to-space) for feeder links to BSS systems, the FSS (space-to Earth), the BSS, the terrestrial fixed service, and, until March 31, 2007, the terrestrial mobile service.

43 Nor are those theories consistent with U.S. policy to advocate the broadest and most flexible uses of existing spectrum allocations. Thus, there is no basis for the DEMS Licensees' claim that multimedia services must be delivered by the FSS instead of at BSS. *See* DEMS Licensee Opposition at 9.

44 DEMS Licensee Opposition at 13; Comments of SkyBridge at 6.

45 DEMS Licensee Opposition at 13.

46 *See generally In the Matter of Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile-Satellite Service*, ET Docket No. 95-18, RM-7927, PP-28, First Report and Order and Further Notice of Proposed Rulemaking (released Mar. 14, 1997), at ¶ 8 n. 19. Furthermore, as noted below, the DEMS Licensees have no interest in the 17 GHz band, and any interference potential

III. ANY POTENTIAL INTERFERENCE ISSUES CAN AND SHOULD BE RAISED AND ADDRESSED BY INTERESTED PARTIES IN A RULEMAKING PROCEEDING

In the Petition, DIRECTV expressed its firm belief that its proposed changes to the Table of Frequency Allocations are fully consistent with existing uses of the 24.75-25.25 GHz and 17.3-17.8 GHz bands, and that interference concerns of various potentially affected constituencies can be reasonably resolved through the rulemaking process. Nothing in the DEMS Licensee Opposition or the SkyBridge comments contradicts DIRECTV's view. To the extent that these parties have raised interference issues that differ in scope -- though not in kind -- from the issues that the Petition has raised, they can be readily addressed in a rulemaking proceeding. They are not grounds for refusing to initiate the proceeding in the first instance.

A. BSS Systems

The DEMS Licensees curiously have decided to champion the concerns of BSS licensees in a frequency band in which they admittedly have no interest at all. Specifically, they allege that DIRECTV's proposal for reverse band working at 17 GHz will interfere with existing BSS operations.[47]

Significantly, no BSS licensee shares the DEMS Licensee view. Apart from DIRECTV, the only BSS licensee offering comment on the Petition is Echostar, which does not oppose the institution of the requested rulemaking proceeding, provided that adequate rules are adopted that will avoid interference into existing BSS feeder link operations at 17.3-17.8 GHz.[48]

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with the SkyBridge system, to the extent that system should be considered at all, can be addressed in SkyBridge's requested rulemaking.

47 DEMS Licensee Opposition at 19.

48 Comments of Echostar at 1.

As DIRECTV observed in the Petition, use of the 17 GHz band in the reverse direction (space-to-Earth) will not result in interference into existing BSS space stations, as long as all BSS systems at the same orbital location coordinate the implementation of the "reverse band" system. Although DIRECTV acknowledges that there will be very limited areas around BSS feeder link earth stations where reception in the 17.3-17.8 GHz band will be impaired, this is a well understood consequence of "reverse band" operation and a small price to pay for the inherent efficiencies of this type of bi-directional band use. DIRECTV anticipates that BSS operators will cooperate in mitigating these interference issues in the areas surrounding the relatively small number of 17.3-17.8 GHz BSS uplink stations. There simply is no potential for interference from DIRECTV's proposed use of 17.3-17.8 GHz for satellites into existing BSS feeder links in this band.

In any event, there certainly is no evidence that coordination will not be feasible among existing BSS feeder link uplinks and new BSS antennas, as the DEMS Licensees suggest, and DIRECTV has requested that the Commission's rulemaking seek comment on the types of measures that can or should be taken in order to minimize this interference potential.[49] The DEMS Licensees have shown no reason why the Commission should not proceed with this inquiry.

B. SkyBridge

SkyBridge opposes the allocation and assignment of the 17.3-17.8 GHz band for BSS use, primarily based on the assertion that sharing between its proposed NGSO system and

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[49] *See* Petition at 9. Likewise, such a rulemaking could address DEMS proposals for alternative means of frequency reuse and bandwidth utilization by satellites. *See* DEMS Licensee Opposition at 23-24.

DIRECTV's expansion system "may be quite problematic."[50] Yet SkyBridge has no greater rights than DIRECTV in applying to use the 17 GHz band, and its objections should not halt the Commission's initiation of the requested rulemaking proceeding. If anything, equity and public policy considerations argue in favor of dismissing the SkyBridge application, given that (i) the 17.3-17.8 GHz band is allocated today for BSS uplink operations domestically and internationally, (ii) the allocation for 17.3-17.8 GHz BSS downlink operations will become effective in 2007, and (iii) 17.3-17.8 *may not be used* today for the NGSO operations that SkyBridge has proposed.[51]

Furthermore, SkyBridge has no basis for objecting to DIRECTV's proposed reverse-band operations at 17.3-17.8 GHz until it has been established that SkyBridge can co-exist on a non-interference basis with existing BSS operations in that band. Based upon DIRECTV's preliminary analysis, SkyBridge's proposed NGSO operations may impose limitations upon, and create interference problems with, existing BSS operators such as DIRECTV that have spent billions of dollars to construct, launch and operate their systems. Until SkyBridge's proposed system is shown definitively not to pose interference problems for those satellite service providers that already are licensed and operate at 17.3-17.8 GHz, SkyBridge's objections to reverse-band operations in those frequencies merit no consideration.

In any event, based upon DIRECTV's preliminary analysis, SkyBridge's assertions that its proposed system will have difficulty sharing the spectrum with BSS reverse-band operations are overly pessimistic. DIRECTV believes that, for most of the United States, SkyBridge gateway interference into BSS receivers would be no more significant than

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50 Comments of SkyBridge at 5.

51 *See* Radio Regulations, Resolution No. 506.

interference from BSS feeder links into BSS receivers. DIRECTV is continuing to study this issue and would be pleased to submit additional analysis on this point should the Commission desire it.

C. Terrestrial Licensees

The DEMS Licensees, again functioning as the self-appointed guardians for spectrum bands that they do not occupy, allege that the Petition's proposed 17 GHz allocation is "incompatible with existing microwave operations" at 17.7-17.8 GHz. Yet, once again, *not a single microwave licensee* has weighed in to oppose DIRECTV's Petition.

Furthermore, the DEMS Licensees' interference concerns are based on a faulty premise. The DEMS Licensees argue that "[17.7-17.8] microwave networks must be presumed to cause interference into BSS receivers, since microwave operations in the 12.2-12.7 GHz band were found to be 'likely to cause interference into the DBS home receiver.'"[52] The entity best able to assess the preclusive effect of existing microwave use on BSS systems, however, is DIRECTV, which has spent billions of dollars establishing its existing business in the 12 GHz band. And while DIRECTV initially had concerns with respect to microwave interference at 12 GHz, DIRECTV has been successful in mitigating this problem, and has been able to manage its operations with terrestrial users of the 12.2-12.7 GHz band without requiring the displacement of those users.

DIRECTV thus does not anticipate a significant interference problem from incumbent 17.7-17.8 GHz terrestrial users into BSS antennas. However, as noted in the Petition, in order to develop a commercially reasonable and operationally practical coordination process for satellite receive antennas in this part of the band, additional

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[52] DEMS Licensee Opposition at 20 (citation omitted).

information and analysis may be needed with respect to any current terrestrial or mobile uses of this band. Such information can and should be provided in the requested rulemaking proceeding.

D. DEMS Licensees

Most outrageous of all are the DEMS Licensee allegations that DIRECTV's Petition should be denied because "BSS service uplinks are not compatible with terrestrial DEMS systems," and "would undermine DEMS licensees' ability to provide facilities-based telecommunications."[53] The DEMS Licensees argue that DIRECTV's rulemaking proposals are untenable, given "DIRECTV's failure to conduct an interference analysis on the feasibility for DEMS and BSS services to coexist in the same band."[54] Contrary to the DEMS Licensee statements, DIRECTV did not "admit" that BSS service links are incompatible with DEMS systems. Rather, DIRECTV explained why it was unable to definitively address this issue and identified the need for further analysis.

As the Commission and the DEMS Licensees are well aware, DIRECTV and various other parties have filed Petitions for Reconsideration of the *DEMS Order*, demonstrating, among other things, that the Commission improperly failed to consider the impact of DEMS on the deployment of BSS uplinks at 24.75-25.25 GHz when it allocated that band for DEMS service. Because the Commission did not consider the impact on BSS uplinks, and there was no public notice or opportunity to comment before that Order was released, DIRECTV and other parties were unable to determine the extent of any alleged incompatibility between DEMS and BSS uplinks.

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53 *Id.* at 11.

54 *Id.* at 11-12.

While DIRECTV and others were able to glean some data on 18 GHz DEMS systems from previous public filings (including newly released *ex parte* material introduced by the Commission into the DEMS docket two days before petitions for reconsideration were due and the Petition was filed), DIRECTV was unable to obtain *any* information on 24 GHz DEMS systems until some information regarding DEMS 24 GHz system parameters was introduced into the record *for the first time on July 31, 1997.*[55] For the DEMS Licensees now to contend that this information has been previously available from any source -- or that it is DIRECTV's burden to establish non-interference with DEMS operations -- is simply disingenuous.[56]

The Administrative Procedure Act requires the Commission to conduct a rulemaking to address the consequences of relocating DEMS to 24 GHz. That is the proceeding in which the impact of BSS operations on DEMS should be considered. DIRECTV is still reviewing the new technology information just presented by the DEMS Licensees and will submit a technical response in the next few days. DIRECTV will show that the DEMS analysis is fundamentally flawed because, among other things, it ignores the use of interference mitigation techniques and significantly overstates the scope of the problem.

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55 The DIRECTV Petition noted this absence of relevant information and the need for additional data. Petition at 11 n. 27.

56 Technical information necessary for an interference study on 24 GHz DEMS operations -- the relevant inquiry for purposes of the Petition -- has not been "long available to the public in the Commission's public reference files" as asserted by the DEMS Licensees, DEMS Licensee Opposition at 12 n. 25, and indeed, could not be, since the DEMS Licensees were relocated to the 24 GHz band just a few months ago. Moreover, without providing any explanation, the DEMS Licensees themselves have maintained that the technical parameters of their operations at 18 GHz are not relevant to their proposed 24 GHz businesses.

While there ultimately may be interference issues to resolve between BSS operators and DEMS Licensees, those issues will turn on a number of factors that can and should be resolved in a rulemaking proceeding. The DEMS Licensees' repeated attempts to evade such a proceeding should no longer be countenanced.

IV. CONCLUSION

The Commission should grant DIRECTV's petition for rulemaking, and it further should amend the Table of Frequency Allocations contained in Section 2.106 of the Commission's Rules, and also amend Parts 25 and 100 of the Rules, to allow use of the 24.75-25.25 GHz for FSS feeder links for the BSS, and use of 17.3-17.8 GHz for BSS.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, James H. Barker, hereby certify that on this 15th day of August, 1997, true and correct copies of the foregoing Reply of DIRECTV Enterprises, Inc. were served by hand-delivery or by Federal Express (*) on the following parties:

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