

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554**

In the Matter of)	
)	
Amendment of Parts 1, 21, 73, 74 and 101 of the Commission’s Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands)	WT Docket No. 03-66 RM-10586
)	
Part 1 of the Commission's Rules - Further Competitive Bidding Procedures)	WT Docket No. 03-67
)	
Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and the Instructional Television Fixed Service Amendment of Parts 21 and 74 to Engage in Fixed Two-Way Transmissions)	MM Docket No. 97-217
)	
Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico)	WT Docket No. 02-68 RM-9718

REPLY COMMENTS

Grand MMDS Alliance New York F/P Partnership (“Grand Alliance”), by its attorneys, hereby files these Reply Comments in the above-captioned rulemaking proceeding.¹ Any effort to revise the Instructional Television Fixed Service (“ITFS”) and Multichannel Multipoint Distribution Service (“MMDS”) spectrum will require that the Commission resolve the

¹ See *In the Matter of Amendment of Parts 1, 21, 73, 74 and 101 of the Commission’s Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, Notice of Proposed Rulemaking and Memorandum Opinion and Order, 18 FCC Rcd 6722 (2003) (“*NPRM*”).

competing spectrum rights of grandfathered E and F group ITFS licensees and co-channel MMDS licensees. Grand Alliance proposes that the Commission relocate grandfathered E and F group ITFS licensees to the I group channels, at the expense of co-channel MMDS licensees, and permit high-power, digital, video/data operations on those channels. This proposal, which is consistent with Commission policy, provides an immediate and compelling solution to the deadlock that has characterized the E and F group channels in most major markets for over 15 years. The proposal is also a fair compromise that permits ITFS licensees to continue to provide current levels of instructional programming broadcasts. Because the I group channels are largely unused and lessees of grandfathered spectrum have no rights to continued operations on the E and F group channels, no party will be significantly or unfairly affected by the relocation. Accordingly, the Commission should adopt this proposal as part of its effort to better manage valuable and underutilized ITFS and MMDS spectrum.

Background

In its Comments in this proceeding, Grand Alliance supported the proposal to permit only low-power operations in the ITFS and MMDS spectrum and advocated a mandatory and rapid transition for all licensees to any new technical rules by a date certain – within no more than two to five years.² Grand Alliance also emphasized that any new rules must be consistent with the Commission’s 1983 *Reallocation Order*, in which the Commission redesignated the E and F group channels from ITFS to MMDS and placed a freeze on ITFS operations on those channels.³

² See generally, Grand MMDS Alliance New York F/P Partnership, Comments (September 8, 2003).

³ See *In the Matter of Amendment of Parts 2, 21, 74 and 94 of the Commission’s Rules and Regulations in Regard to Frequency Allocation to the Instructional Television Fixed Service, the Multipoint Distribution Service and the Private Operational Fixed Microwave Service*, Report and Order, 94 FCC 2d 1209 (1983) (“*Reallocation Order*”), *aff’d on reconsideration*,

Stanford University and Northeastern University jointly provided the only other comments addressing the competing spectrum rights of grandfathered E and F group ITFS licensees and co-channel MMDS licensees.⁴ The commenters contended that grandfathered E and F group ITFS licensees should have the same spectrum rights under any new band plan as other ITFS licensees because co-channel MMDS licensees must protect grandfathered operations. Implicitly, under the proposal, co-channel MMDS licensees would have no rights to any spectrum under a revised plan.

Discussion

Grand Alliance proposes that the Commission redesignate the I group channels to ITFS and relocate grandfathered E and F group ITFS licensees to that spectrum.⁵ The Commission should modify its rules to permit high-power, digital, video/data operations in that spectrum on a co-primary basis with existing users. With digital compression, as discussed below, the I group channels provide sufficient capacity to satisfy the instructional programming needs of grandfathered E and F group ITFS licensees. The respective co-channel MMDS licensee would be required to assume the costs of rechannelizing the ITFS licensee's existing transmitters and receivers to provide high-power, digital, video/data service to the licensee's registered receive

Memorandum Opinion and Order on Reconsideration, 98 FCC 2d 129 (1984) ("*Reallocation Order on Reconsideration*").

⁴ See Joint Comments of Stanford University and Northeastern University, at pp. 20-21.

⁵ In those markets in which there are no grandfathered ITFS licensees the I group channels could be auctioned.

sites.⁶ The co-channel MMDS licensee would remain on the E and F group channels subject to any relocation as a result of a new band plan.⁷

The proposal is fully consistent with Commission precedent concluding that the public interest is better served by allocating more spectrum to MMDS, rather than to ITFS.⁸ In the 1983 *Reallocation Order*, the Commission redesignated the E and F group channels from ITFS to MMDS and grandfathered existing ITFS operations.⁹ In the order, the Commission required that MMDS operators protect then-existing grandfathered ITFS operations¹⁰ but stated that it expected grandfathered ITFS licensees to negotiate in good faith with MMDS permittees¹¹ and to come to an agreement to make channels available for MMDS.¹² The Commission prohibited

⁶ Consistent with 47 C.F.R. § 74.902(d), only those sites registered prior to May 25, 1983 will be included. If there is no co-channel, incumbent MMDS licensee, a grandfathered E and F group ITFS licensee could remain on those channels subject to any relocation as a result of a new band plan.

⁷ The Grand Alliance proposal is not contingent on the presence of a “Proponent” for a given market, as required by the Coalition Proposal. See “A Proposal for Revising the MDS and ITFS Regulatory Regime,” RM-10586 (October 7, 2002) (“Coalition Proposal”). In fact, the Grand Alliance proposal could be implemented independently of the Coalition Proposal.

⁸ See, e.g., *In the Matter of Trans Video Communications, Inc.*, DA 03-2942, at ¶ 9 (September 25, 2003) (“[T]he Commission determined that it would be in the public interest to allow MDS operators to use [the E and F group] channels, as opposed to allowing ITFS operators to modify or expand their systems.”).

⁹ See generally, *Reallocation Order*, 94 FCC 2d 1209 (1983), *aff’d on reconsideration Reallocation Order on Reconsideration*, 98 FCC 2d 129 (1984).

¹⁰ See *Reallocation Order*, at ¶ 151.

¹¹ See *id.* at ¶ 110.

¹² See *id.* at ¶ 151.

new ITFS applications on the E and F group channels and placed a significant limitation on modifications to grandfathered ITFS facilities, essentially freezing such operations as of 1983.¹³

The proposal provides an immediate and compelling solution to the deadlock that has characterized the E and F group channels in most major markets for over 15 years. As Grand Alliance has experienced first-hand (and documented in other proceedings), despite the Commission's effort in 1983 to reallocate the E and F group channels, grandfathered ITFS licensees have proved unwilling to accommodate MMDS operators. The "proposal" by Stanford University and Northeastern University, which urges full spectrum rights for grandfathered ITFS licensees under any new band plan and, correspondingly, none for co-channel MMDS licensees, is a prime example. As a result, growth in this spectrum has been impeded. In fact, it took Grand Alliance over ten years to begin even limited operations because of difficulties in negotiating with the incumbent ITFS licensee.¹⁴

The proposal is a fair compromise that resolves competing spectrum rights between grandfathered E and F group ITFS licensees and co-channel MMDS licensees. Grandfathered E and F group ITFS licensees will maintain the ability to provide the current level of instructional programming broadcasts, and co-channel MMDS licensees will assume the costs for the relocation. ITFS commenters have acknowledged that the majority of ITFS spectrum is no longer used for instructional programming and is leased to MMDS operators.¹⁵ One ITFS

¹³ *Reallocation Order on Reconsideration*, at ¶ 12 (1984).

¹⁴ Grand Alliance operates an MMDS station from the Empire State Building in New York City, providing west-facing service on the F group channels. *See* Letter to Grand MMDS Alliance New York F/P Partnership from Charles E. Dziejcz, Assistant Chief, Video Services Division, Reference No. 1800E6, File No. 5455-CM-P-83, at 4 (May 6, 1997).

¹⁵ *See, e.g.*, Letter to Marlene H. Dortch from the Archdiocese of Los Angeles, at p. 1 (September 8, 2003) (leases 75% of digitized spectrum); Letter to Marlene H. Dortch from the

commenter stated that ITFS lease agreements on file with the Commission suggest that most ITFS licensees reserve only 25% of their spectrum, or one programming channel, for instructional programming.¹⁶ Given the industry-estimated current level of instructional programming broadcasts, grandfathered E and F group ITFS licensees, altogether, require only the functional equivalent of 12 MHz of spectrum, or two programming channels.

Digitizing the I group channels will permit E and F group ITFS licensees to provide 6 to 8 programming channels, which is 3 to 4 times as much effective spectrum as appears to be needed for instructional programming. The I group is comprised of thirty-two 125 kHz “response” channels, totaling 4 MHz of spectrum.¹⁷ Seven years ago, the Commission stated that a digital compression ratio of 6:1 was feasible.¹⁸ Using current technology, Grand Alliance estimates that a compression ratio of 9:1 up to 12:1 is now achievable.¹⁹ Most classroom programming material can be satisfied with a data rate of 3 Mbps (VHS quality). The Commission’s current rules support a maximum QAM density of 64-QAM, which provides

Diocese of Brooklyn, at p. 2 (September 8, 2003) (leases 57% of its spectrum during the school year).

¹⁶ See Comments of Illinois Institute of Technology, at p. 11 (September 8, 2003).

¹⁷ One channel is not allocated, seven channels are not licensed, and the other twenty-four channels are each licensed to an associated ITFS/MMDS main channel licensee. See 47 C.F.R. § 74.939; see also *Amendment of Parts 21, 43, 74, 78, and 94 of the Commission’s Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands*, 6 FCC Rcd 6792 (1991).

¹⁸ See, e.g., *In the Matter of Request for Declaratory Ruling on the Use of Digital Modulation by Multipoint Distribution Service and Instructional Television Fixed Services Stations*, 11 FCC Rcd 18839 (1996).

¹⁹ See also *Policies and Rules for the Direct Broadcast Satellite Service*, 17 FCC Rcd 11331, at ¶ 6 n. 32 (2002) (noting that digital satellite transmissions achieve better than a 10:1 compression ratio); Comments of Sprint Corporation, at 19 (September 8, 2003) (current digital technology permit compression ratios of 8:1, 10:1 or higher).

approximately 28 Mbps within a 6-MHz bandwidth, or a compression ratio of 9:1, with a desired-to-undesired (“D/U”) ratio of approximately 32 dB.²⁰ Using a higher density modulation of 256-QAM provides approximately 37 Mbps within a 6-MHz bandwidth, or a compression ratio of 12:1, with a D/U ratio of approximately 38 dB.

For 4 MHz of contiguous spectrum, these compression ratios translate into 6 programming streams and 8 programming streams, respectively, for 64-QAM modulation and 256-QAM modulation. That amount of effective spectrum is far in excess of the estimated, two programming streams required by E and F group ITFS licensees. In fact, employing 256-QAM modulation will permit licensees to provide, on the I channels, 100% of the programming provided on all eight grandfathered E and F ITFS channels.²¹ Moreover, because the D/U ratio for both QAM modulations are less than the D/U ratio of 45 dB for analog television broadcasts, the quality of service for each compressed programming stream is better than standard analog television.

Relocating grandfathered E and F group ITFS licensees will not significantly affect the legitimate rights or expectations of any other party. Because of the narrow bandwidth and interleaved spectrum, the I channels have remained largely unused, serving basically as a *de facto* guard band between ITFS/MMDS spectrum and the Earth Exploration Satellite (passive), Radio Astronomy, and Space Research (passive) allocations (2690 MHz to 2700 MHz) (“Radio

²⁰ See Coalition Proposal, at p. 36 n. 95.

²¹ Several commenters have stated that they have been able to attain only a 5:1 compression ratio. See Comments of Illinois Institute of Technology, at 10 n. 12 (September 8, 2003); Joint Comments of Stanford University and Northeastern University, at 8 (September 8, 2003). This is seemingly based on a desire to achieve a reliability that is well in excess of what is currently necessary for analog operation. In any event, a 5:1 ratio provides the functional equivalent of 20 MHz of spectrum, which still exceeds the projected spectrum need for grandfathered E and F group ITFS licensees.

Astronomy Band”) and the Air Traffic Control (“ATC”) allocation (2700 MHz to 2900 MHz).

Thus, co-channel interference to and from current users will be minimal or non-existent.²²

Additionally, lessees of E and F group ITFS spectrum have always operated subject to the rights of MMDS operators,²³ and accordingly, they have no right to continued operations on the E or F group channels.²⁴

The proposal is technically feasible. The current spectral mask for digital operation on the I channels require 35 dB of attenuation at the channel edges, and 60 dB of attenuation at 125 kHz and beyond the channel edges.²⁵ In order to prevent interference to adjacent ITFS channels, including especially the G4 channel, Grand Alliance proposes that the spectral mask for the I group channels be changed to require 60 dB of attenuation at and beyond the channel edges. Using typical convention, the proposed spectral mask would be at least $60 + 10 \log(P)$ dB at and beyond the channel edges.²⁶ This additional degree of attenuation for the spectral mask will ensure, without the need for a guardband, that interference will not occur to adjacent ITFS

²² The protection criteria proposed by the Coalition for high-powered spectrum operations in the MBS can be applied to the I group channels. *See* Coalition Proposal, at pp. 35-39.

²³ In 1983, when the Commission granted all ITFS licensees the right to lease excess capacity, it stated expressly that co-channel MMDS licensees were not required to protect lessees of grandfathered E or F group channels. *See Reallocation Order*, at ¶ 152 n. 44.

²⁴ Moreover, Grand Alliance questions whether it is sound Commission policy to perpetuate a system whereby MMDS operators, in essence, bear the full burden of an implicit educational subsidy. *See* Comments of Ad Hoc MMDS Licensee Consortium, at pp. 9-13 (leasing is a “hidden” subsidy that is inconsistent with the Telecommunications Act of 1996).

²⁵ *See* 47 C.F.R. §§ 21.909(j) and 74.939(k).

²⁶ The Coalition proposes an extremely tight spectrum mask for the I channels of at least 80 dB of attenuation at and beyond the channel edges. This amount of attenuation appears to be quite extreme and the need for such a tight spectral mask is not supported by any technical showing by the Coalition. *See* Coalition Proposal, at p. 30.

channels, even if those channels are restricted to low-power use.²⁷ This spectral mask will also protect the adjacent Radio Astronomy Band.²⁸ Furthermore, potential interference from ATC service to high-powered video/data use on the I channels is not predicted to exist.²⁹ For these reasons, there is no reason to permit only secondary operations on the I group channels, as proposed by the Coalition,³⁰ and operations on the I channels should be co-primary with other users in the ITFS/MMDS spectrum.

²⁷ Moving the 60 dB attenuation requirement to the channel's edge (instead of its current point at 125 kHz from the channel's edge) will not unduly restrict the use of the I group channels. At most, it will require that one or two 125 kHz I channels located near the current G4 channel be unused and act as a *de facto* guardband in certain instances where low-powered operations on the G4 channel exist in the same market.

²⁸ See Comments of the Coalition, at p. 24 (September 8, 2003) ("The rules adopted in MM Docket No. 97-217 without objection from the earth exploration, radio astronomy or space research communities allow the 125 kHz I channels to be used in a manner almost identical to the other channels in the band, without any limitations.").

²⁹ In its comments, the Coalition demonstrates that low-power use at the current G4 channel (the UBS, immediately adjacent to the current I1 channel) will be minimally impacted by ATC service. See Comments of the Coalition, at pp. 22-23 (September 8, 2003). The proposed higher-powered, I-channel downstream video/data use (with its lower signal-to-noise characteristics) will be less susceptible to interference from ATC service than low-power use.

³⁰ See Coalition Proposal, at p. 31.

Conclusion

For the aforementioned reasons, Grand Alliance respectfully requests that the Commission adopt new rules relocating grandfathered E and F group ITFS licensees to the I group channels.

Respectfully submitted,

By: _____ /s/ _____

Bruce D. Jacobs
Tony Lin
Shaw Pittman LLP
2300 N St. NW
Washington, DC 20037-1128

*Counsel for Grand MMDS Alliance New York F/P
Partnership*

Dated: October 23, 2003