

THE PETITIONERS

ADC Telecommunications Corp.	George Mason University Instructional Foundation, Inc.
Aims Community College	Humanities Instructional Television
Alamosa Public Schools	Hybrid Networks, Inc.
Alda Wireless Holdings, Inc.	Indiana Higher Education Telecommunication System
American Communications Services, Inc.	Indio Wireless Partnership
American Foundation for Instructional TV	Instructional Media Center, California State University, Chico
American Telecasting, Inc.	ITS Corporation
Aquinas and St. Mary's Catholic Schools	Ivy Tech State College
Archdiocese of Chicago	Kessler and Gehman Associates, Inc.
Augustina College	Lance Industries
Barnesville Public School	Lucas County Educational Service Center
Broadband Networks Inc.	Magellan University
Broadcast Cable, Inc.	Malcolm Public Schools
Bruning Public School	McConnell Communications, Inc.
C.D.V., Incorporated	Microwave Filter Company, Inc.
CAI Wireless Systems, Inc.	Milwaukee Regional Medical ITS, Inc.
California Amplifier	Missouri Baptist College, ITFS
California Human Development Corporation	Montrose School District
California State University, Stanislaus	MultiMedia Development Corporation
Center for Economic & Social Justice	National Digital Network, Inc.
Central Community College Foundation	National Wireless Holdings Inc.
Central Oregon Community College	Northern Arizona University
CFW Cable, Inc.	Oklahoma City University
Clarendon Foundation	Oklahoma Educational Television Authority
Communications & Energy Corp., Inc.	Omni Microwave
Community School of Naples	Oregon Public Broadcasting
Comwave	Pacific Telesis Group
Concord Community Schools	Pacific Monolithics, Inc.
Concordia College	PCTV Gold, Inc.
Conifer Corporation	Pecatonica Community School District #321
Cooperative Educational Services Agency #7	People's Choice TV Corp.
Cornerstone Christian School System, Inc.	Pikes Peak Community College
Cross Country Wireless, Inc.	Polk Community College
CS Wireless Systems, Inc.	Portland Community College
DeLawder Communications, Inc.	Preferred Entertainment, Inc.
Delta-Montrose Area Vocational Technical Center	Pueblo Community College
Denver Public Schools	Pueblo School District 60
Digital & Wireless Television	Purdue University
Diocese of Orlando, Florida	Raymond Central School
DiviCom Inc.	School District of Oakfield
Durand Community Unit School District #322	
EMCEE Broadcast Products	
First Assembly of God, Kahului, Maui, Inc.	

South Florida Television, Inc.
Specchio Developers Ltd
Springfield Board of Education
St. Norbert College
Stanford Telecommunications, Inc.
Suncoast Wireless Communications Corporation
Superchannels of Las Vegas, Inc.
Tennessee Wireless
Teton Wireless Television
The Knowledge Network of Greater Omaha
University of Colorado at Colorado Springs
University of Northern Colorado, Academic
 Technology Services
University of South Dakota
University of Southern Colorado/KTSC-TV
University of South Florida
Valley Lutheran High School
Views on Learning, Inc.
Virginia Communications, Inc.
W.A.T.C.H. TV Company
Weld County School District RE-1
Winnebago Community Unit District 323
Wireless Cable Association
 International, Inc.
Wireless Cable Digital Alliance
Wireless Cable of Indianapolis
Wireless Holdings, Inc. (Videotron USA)
Wireless One, Inc
Wireless One of North Carolina, LLC
Yellowstone Education Center
Yuba Community College
Zenith Digital Media Group

PROPOSED RULE CHANGES AND EXPLANATORY NOTES

1. Section 21.2 is amended by revising the definitions of “Multipoint distribution service,” “Multipoint distribution service response station” and “Signal Booster Station” and by adding a definition for “Response Station Hub” as follows:

Multipoint distribution service (MDS). A ~~one-way~~ domestic public radio service rendered on microwave frequencies from one or more a fixed stations transmitting (~~usually in an omnidirectional pattern~~) to multiple receiving facilities located at fixed points and/or from multiple Multipoint distribution service response stations transmitting to response station hubs.

Multipoint distribution service response station. A fixed station operated by an MDS licensee, the lessee of MDS channel capacity or a subscriber of either to communicate with a response station hub at an MDS receive location to provide communications with the ~~associated station in the Multipoint Distribution Service~~. A response station licensed under this part may share facilities with other MDS response stations and/or one or more Instructional Television Fixed Service (ITFS) response stations authorized pursuant to §74.939.

Signal Booster Station. An MDS station licensed for use in accordance with §21.913 that operates on one or more MDS channels. Signal booster stations are intended to augment service as part of a distributed transmission system where signal booster stations retransmit the signals of one or more MDS stations and/or originate transmissions on MDS channels. A signal booster station licensed under this part may share facilities with other MDS signal booster stations and/or one or more ITFS signal booster stations authorized pursuant to §74.985. ~~A low-power repeater station automatically retransmitting on the same frequency as the received signal, and located within the protected service area of a Multipoint Distribution Service station.~~

Response Station Hub. A fixed facility licensed for use in accordance with §21.909 that is operated by an MDS licensee or the lessee of an MDS facility for the reception of information transmitted by one or more MDS response stations. A response station hub licensed under this part may share facilities with other MDS response station hubs and/or ITFS response station hubs authorized pursuant to §74.939.

EXPLANATORY NOTE — The accompanying Petition proposes three fundamental changes to the Commission’s regulatory regime for MDS and ITFS -- permitting cellularizing of transmission facilities, permitting the use of 6 MHz channels for return communications, and permitting the use of transmission techniques that require bandwidths narrower and/or wider than the 6 MHz and 125 kHz channels allocated to the MDS and the ITFS. In order to minimize the disruption to the current rules, it is proposed (i) that the current response station concept of §21.909 and §74.939 be expanded to govern all return paths, not just those using the 125 kHz channels associated with the ITFS channels and MDS channels E1, E2, F1 and F2, and (ii) that the current booster station

concept of §§21.913 and 74.985 be expanded to provide for origination of communications.

The proposed revisions to §21.2 advance these objectives in several ways. The current definition of "Multipoint distribution service" is clarified to reflect that MDS licensees currently can provide a two-way service through the use of 125 kHz channels. While high volume commercial two-way service using those 125 kHz channels is not today viable, two-way service will increase upon the authorization of MDS licensees and their lessees to "turn around" some or all of their frequency allocation for use in transmissions from subscribers. The phrase "(usually in an omnidirectional pattern)" is eliminated from that definition because a substantial number of MDS booster stations and all MDS response stations will employ directional transmission antennas for frequency reuse and spectral efficiency. In addition, the concept of "response station hubs" is introduced to Part 21 for the first time in the definition of "multipoint distribution service" and with a separate definition. As discussed in more detail in the Explanatory Note to §21.909, these will be the reception points for the transmission of information from MDS and ITFS response stations, and will be entitled under proposed rules to protection against harmful electromagnetic interference.

The definition of a "Multipoint distribution service response station" is revised to reflect the proposal that licensees be permitted to turn around all or part of a 6 MHz MDS or ITFS channel for communications to response station hubs. The phrase "to provide communications with the associated station" is a vestige of the current rule limiting MDS response stations to the 125 kHz channels associated with channels E1, E2, F1 and F2. It is not applicable where a response station is operating on a 6 MHz channel that has been turned around in whole or in part, and should be eliminated. In addition, the proposed revisions to the current definition eliminate any suggestion that the response station must communicate directly with the MDS transmitter site. The Commission has previously recognized that return links used in connection with MDS services should not be required to terminate at the headend site. See Establishment of a spectrum utilization policy for the fixed and mobile services' use of certain bands between 947 MHz and 40 GHz and Amendment of Parts 2, 21, 74 and 94 of the Commission's Rules to Allocate Spectrum at 18 GHz for, and to Establish other Rules and Policies Pertaining to, the Use of Radio in Digital Termination Systems and in Point-to-Point Microwave Radio Systems, 56 R.R.2d 1171, 1181 (P&F 1984)[hereinafter cited as "Spectrum Utilization Policy"]. As is explained in "Rationale for Two-Way & Distributed Transmission Operations of Wireless Cable Systems," (the "Two-Way Report"), the Petitioners are proposing the use of response station hubs as an alternative that will permit MDS response stations to operate at lower power (since the response station hubs will generally be located closer to subscriber premises than the current primary transmitter site), that will improve service reliability, and that will permit greater frequency reuse than if each subscriber were required to communicate directly with the current primary transmitter site.

The Petitioners contemplate that response station hub authorizations generally will be issued to the holder of an existing point-to- multipoint authorization. Particularly since the Petitioners anticipate that adjacent channels (which are usually assigned to different licensees as a result of the interleaved channel allocation pattern in the 2.5 GHz band) will be reserved for response station transmissions, it is likely that most hubs and associated response stations will be facilities shared by multiple licensees. In other words, a response station hub and associated response stations will operate under multiple authorizations, which will be identical in all respects other than in the name of the licensee and the authorized channels of operation.

The definition of "Signal Booster Station" is revised to reflect the proposal that such stations be authorized to originate transmissions, as well as relay transmissions from other stations. The location restriction on signal booster stations contained in the current definition is removed, as it unnecessarily duplicates a restriction already contained in §21.913 that is retained essentially intact. The Petitioners contemplate that authorizations for booster stations that originate and/or that operate with an EIRP of greater than -9 dBW will be issued to the holder of an existing point-to-multipoint authorization, while the authorization for a low-power repeater can be issued simply to the wireless cable system operator in order to minimize unnecessary paperwork from multiple notifications. The details of the proposed licensing system are set forth in the explanatory notes to proposed §21.913 and §74.985.

2. Section 21.27 is revised by adding a new subsection (d) as follows:

(d) Effective as of [date of adoption of new rules], there shall be one one-week window at such time as the Commission shall announce by public notice for the filing of applications for booster stations and response station hub authorizations, during which all applications shall be deemed to have been filed as of the same day for purposes of §§21.909 and 21.913. Following the publication of a public notice announcing the tendering for filing of applications submitted during that window, applicants shall have a period of sixty (60) days to amend their applications, provided such amendments do not result in any increase in interference to any previously proposed or authorized station (including facilities proposed during the window) absent consent of the applicant for or licensee of the station that would receive such interference. At the conclusion of that sixty (60) day period, the Commission shall publish a public notice announcing the acceptance for filing of all applications submitted during the initial window, including those amended during the sixty (60) day period. All petitions to deny applications filed during the one-week window must be filed within sixty (60) days of such second public notice. Each application submitted during the initial window shall be automatically granted on the sixty-first (61st) day after the Commission shall have given such public notice of its acceptance for filing, unless prior to such date either a party in interest timely files a formal petition to deny or for other relief pursuant to §21.30(a) or the Commission notifies the applicant that its application will not be automatically granted. On the sixty-first (61st) day after the publication of such second public notice, applications for new or modified response station hub and booster station authorizations may be filed and will be processed in accordance with the provisions of §§ 21.909 and 21.913.

EXPLANATORY NOTE — As is discussed in more detail in the explanatory notes to §§21.909 and 21.913, the Petitioners are proposing a series of rules designed to expedite the processing of applications for booster stations and response station hubs. Those rules generally provide for a rolling one-day cut-off period, with applications filed on the same day being granted without regard to electrical mutual exclusivity. This approach eliminates a need for the Commission's staff to determine whether applications filed on the same day are mutually exclusive and reflects an anticipation that where electrically mutually exclusive applications are filed, the parties are best positioned to work out a mutually-acceptable accommodation. Although the Petitioners believe that the proposed rules will generally accomplish their objective, they believe that special procedures are necessary when the rules go into effect for the first time.

Because of the great number of applications that are likely to be filed and the burden that will be placed on the industry, consulting engineers, attorneys and others, the Petitioners believe that the usual one-day filing period should be extended to one week on a one-time basis once the new rules become effective. This will provide a more orderly process for the filing of the many applications that would otherwise be filed on the first day that the new rules become effective. The Petitioners also propose that a coordinated, simultaneous approach be adopted for ITFS booster stations and response stations so as to minimize the possibility for inter-service conflicts.

The Petitioners believe that many of the applications submitted during this initial window will conflict with others filed during the same window. In order to provide a mechanism for the orderly resolution of such conflicts, the Petitioners are proposing a brief moratorium on further filings. Under the proposed rule, the Commission would announce those applications tendered during the one-week period, and the applicants would have a 60-day opportunity to resolve conflicts and amend their proposals, so long as they complied with the interference protection rules and did not increase interference to any facility proposed during the one-week window. The advantage of this 60 day period is that it allows conflict resolution without the fear that some third party will file a new application while settlement discussions are underway that will then have to be protected in crafting a settlement. At the close of this 60-day amendment period, there would be a second public notice, and an opportunity for petitions to deny against all of the applications filed during the one-week filing window, as amended. Once the petition to deny period has closed, it is contemplated that the Commission can return to the one-day rolling cut-off approach set out in §§21.909 and 21.913, as the Petitioners anticipate that after the initial filing period, the volume of applications will be substantially reduced.

There is ample precedent for this approach. Indeed, former §21.27(d) (which was deleted with the creation of Part 101) provided for the same sort of special one-time processing when the 932.5-935/941.5-944 MHz band first became available. See Amendment of Parts 1, 21, 22, 74 and 94 of the Commission's Rules to Establish Service and Technical Rules for Government and Non-government Fixed Service Usage of the Frequency Bands 932-935 MHz and 941-944 MHz, 4 FCC Rcd 2012, 2014 (1989).

Although not addressed in the proposed rule, prior to the opening of the one-week window, the Commission should provide a suitable opportunity to those few licensees that are currently operating authorized response and booster stations to apply for and secure response station hub and booster authorizations under the new rules. In this fashion, those few existing users will be grandfathered, and their response station hubs and booster service areas will be entitled to interference protection from those who file during the one-week window and thereafter.

3. Section 21.30(a)(4) is revised as follows:

(4) except as provided in §21.901(d)(1) regarding Instructional Television Fixed Service licensees, in ~~§21.909~~ regarding MDS response station hubs and in §21.913 regarding MDS booster stations, be filed within thirty (30) days after the date of public notice announcing the acceptance for filing of any such application or major amendment thereto, or identifying the tentative selectee of a random selection proceeding in the Multichannel Multipoint Distribution Service or for Multipoint Distribution Service H-channel stations (unless the Commission otherwise extends the filing deadline); and

EXPLANATORY NOTE — As is discussed in more detail in the explanatory notes to §§21.909 and 21.913, the Petitioners are proposing an application processing system that is designed to expedite the authorization of MDS response station hubs and booster stations by eliminating the need for detailed Commission staff review of complex interference studies. Instead, the proposed rules call for the automatic grant of applications for MDS response station hubs and booster stations if no petition to deny is filed after an application has been properly served and appeared on public notice. In other words, the burden will shift to the industry to assure that the interference analyses accompanying applications for new MDS response station hubs and booster stations are correct. Particularly given the complexity of the proposed new interference protection rules, the Petitioners believe that it may be impractical to expect interested parties to review applications within the 30-day period provided under the current rules for the filing of petitions to deny. Therefore, the Petitioners are proposing that §§21.909 and 21.913 be amended to afford interested parties 60 days to petition to deny any application for a new or modified MDS response station hub or booster station.

4. Section 21.42(c) is revised as follows:

(c) Modifications that may be made without prior authorization under paragraph (b) of this section are:

* * *

(9) A change to a sectorized antenna system comprising an array of directional antennas, provided that such system does not change polarization or result in an increase in radiated power by more than one dB in any direction.

EXPLANATORY NOTE — Particularly as channels are employed in the future for the distribution of specific data to receive locations (rather than the broadcast of the same information to all receive locations), licensees are likely to desire to employ sectorized antenna systems in order to maximize spectral reuse. By employing an array of directional antennas, the licensee can simultaneously transmit different information to different locations within its service area using the same frequency band. Provided that there is no change in polarization or significant increase in radiated power in any direction, the change to a sectorized antenna system poses no threat of increased interference to cochannel or adjacent channel operations. Thus, in order to expedite the use of sectorized antenna systems, the Petitioners are proposing that MDS licensees be permitted to employ sectorized systems without seeking and securing prior Commission authority where the change in antenna systems does not increase the risk of interference. As is reflected in current §21.42(c)(3)(iii), an increase in EIRP of one dB is not significant and can be permitted to occur without prior Commission analysis and consent.

5. Section 21.101(a), note 2, is revised as follows:

²Beginning November 1, 1991, equipment authorized to be operated in the frequency bands 2150-2162 MHz, 2596-2644 MHz, 2650-2656 MHz, 2662-2668 MHz, and 2674-2680 MHz for use in the Multipoint Distribution Service shall maintain a frequency tolerance within ± 1 kHz of the assigned frequency. MDS

booster stations authorized pursuant to §21.913(b) shall maintain a frequency tolerance within ± 1 kHz of the assigned frequencies. MDS booster stations authorized pursuant to §21.913(e) and MDS response stations authorized pursuant to §21.909 shall employ transmitters with sufficient frequency stability to ensure that the emission stays within the authorized frequency block.

EXPLANATORY NOTE — Under the proposed rule, high power boosters will be required to meet the same frequency tolerance requirements as full power stations. However, it is proposed that for low power booster stations and response stations, the only restriction on frequency stability be that the fundamental emission stays within the authorized frequency block. This is precisely the same standard that the Commission has imposed on broadband Personal Communications Services (“PCS”) and General Wireless Communications Service (“GWCS”) licensees. See 47 C.F.R. §24.935 (“The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.”); 47 C.F.R. §26.54 (“The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.”). This proposed standard is not only based on the PCS and GWCS precedent, it is also based on practical economic considerations. Were the Commission to require low power boosters and response station transmitters to meet the tight frequency tolerance standards imposed on traditional MDS transmitters, the costs of compliance would be prohibitive. However, as is discussed in the Two-Way Report, because these devices are required to meet the limitations on out-of-band emissions set forth in §§21.908 and 21.909(j), protection against interference is provided for.

6. Section 21.118(c) is revised as follows:

(c) Each transmitter employed in these services shall be equipped with an appropriately labeled pilot lamp or meter which will provide continuous visual indication at the transmitter when its control circuits have been placed in a condition to activate the transmitter. Such requirement will not be applicable to MDS response stations or MDS booster stations authorized pursuant to § 21.913(e). In addition, facilities shall be provided at each transmitter to permit the transmitter to be turned on and off independently of any remote control circuits associated therewith.

EXPLANATORY NOTE — Because MDS response stations will generally be mounted at an inaccessible location at the subscriber’s residence or place of business and are not intended to be visually monitored by the subscriber, there is no benefit to imposing the cost of pilot lamps or meters on response stations. Similarly, low power MDS booster stations authorized pursuant to §21.913(e) are designed to fill in small areas in which coverage cannot otherwise be obtained, and will generally be mounted where they are not readily accessible for monitoring (such as atop tall masts). Thus, there is no benefit to imposing the cost of pilot lamps or meters on these very low powered transmitters.

7. Section 21.201 is amended as follows:

§21.201 Posting of station authorization information. - Each licensee shall post at the station, the booster station authorized pursuant to §21.913(b) or the MDS response station hub the name, address and telephone number of the custodian of the station license or other authorization if such license or authorization is not maintained at the station or

response station hub. Each authorized operator of an MDS booster station authorized pursuant to §21.913(e) shall post at the booster station the name, address and telephone number of the custodian of the notification filed pursuant to §21.913(e) if such notification is not maintained at the station.

EXPLANATORY NOTE — The proposed revision provides clarity regarding the posting of station licenses for MDS response station hubs (rather than at the subscribers' response stations) and provides for the maintenance of notifications submitted pursuant to §21.913(e) in connection with the use of very low power MDS booster stations.

8. Section 21.901 is amended by adding new subsection (g) as follows:

(g) Frequencies in the bands 2150-2162 MHz, 2596-2644 MHz, 2650-2656 MHz, 2662-2668 MHz and 2674-2680 MHz are available for point-to-multipoint use and/or for communications between MDS response stations and response station hubs when authorized in accordance with the provisions of §21.909, provided that such frequencies may be employed for MDS response stations only when transmitting using digital modulation.

EXPLANATORY NOTE — Subsection (g) is added to reflect the proposal that licensees of MDS channels have the flexibility to turn those channels around in whole or in part for subscriber-to-hub communications. Because the rules proposed by the Petitioners are designed to maximize flexibility with respect to the different delivered data rates and/or video and audio performance levels (which in turn is intended to meet the demands of various applications while simultaneously allowing system designers to optimize the trade-off between signal robustness and bandwidth), it is necessary to limit those 6 MHz channels that are turned around to the use of digital modulation. To achieve the desired flexibility with a single interference criterion requires the use of signals having a substantially uniform maximum power spectral density no matter what the bandwidth and hence a noise-like behavior. This can only be accomplished using digital signals; thus the limitation included in the proposal.

9. Section §21.902 is amended by adding a new subsection (l) as follows:

(l) Special rules relating to response station hubs and booster service areas are set forth in §§21.909, 21.913, 74.939 and 74.985. To the extent those specific rules are inconsistent with any rules set forth above, those specific rules shall control.

EXPLANATORY NOTE — The additional subsection is being added to assure that applicants for new or modified MDS facilities are aware that proposed §§21.909, 21.913, 74.939 and 74.985 impose upon them special interference protection requirements relative to MDS and ITFS response station hubs and booster stations. §21.902 is among the most complex rules currently enforced by the Commission. Rather than further complicate that section, Petitioners believe it is better to provide interference protection rules relative to MDS response stations and booster stations in the rule sections relating specifically to those facilities.

10. Section 21.903(a) is amended as follows:

§21.903 Purpose and permissible service.

(a) Multipoint Distribution Service channels are available for transmissions from MDS stations and associated MDS signal booster stations to receive locations, and from MDS response stations to response station hubs. ~~stations are generally intended to provide one-way radio transmission (usually in an omnidirectional pattern) from a stationary transmitter to multiple receiving facilities located at fixed points.~~ When service is provided on a common carrier basis, subscriber supplied information is transmitted to points designated by the subscriber. When service is provided on a non-common carrier basis, transmissions may include information originated by persons other than the licensee, licensee-manipulated information supplied by other persons, or information originated by the licensee. Point-to-point radio return links from a subscriber's location to a MDS operator's facilities may also be authorized in the 18,580 through 18,820 MHz and 18,920 through 19,160 MHz bands. Rules governing such operation are contained in Subpart I of Part 101 of this chapter, the Point-to-Point Microwave Radio Service.

EXPLANATORY NOTE — The proposed revisions reflect the proposal that each MDS channel be available in whole or in part for the transmission of communications from MDS stations and associated MDS signal booster stations to receive locations, and for the transmission of communications from MDS response stations to response station hubs.

11. Section 21.904(c) is revised as follows:

(c) An increase in station transmitter power, above currently-authorized or previously proposed values, to the maximum values provided in paragraphs (a) and (b) of this section, may be authorized, if the requested power increase would not cause harmful interference to any authorized or previously proposed co-channel or adjacent-channel station entitled to interference protection under the Commission's rules ~~with a transmitter site within 80.5 kilometers (50 miles) of the applicant's transmitter site,~~ or if an applicant demonstrates that:

(1) A station, that must be protected from interference, potentially could suffer interference that would be eliminated by increasing the power of the interfered-with station; and

(2) The interfered-with station may increase its own power consistent with the rules and without causing interference to any MDS booster station or response station hub which operates as part of the same coordinated system as the interfered-with station; and

(3) The applicant requesting authorization of a power increase agrees to pay all expenses associated with the increase in power to the interfered-with station.

EXPLANATORY NOTE — The proposed revision to subsection (c) is necessary to avoid inadvertently undercutting other rule provisions affording interference protection without regard

to the mileage separation between stations. The other proposed revisions are necessary to assure that a system's careful balance of station locations, antenna patterns and station EIRPs is not disrupted by a forced power upgrade to one portion of that system. Particularly as systems employ cellular transmission patterns and response stations, a forced increase in the operating power of any component of the system could result in internal harmful electromagnetic interference to other components of the same system. It should be noted, as an aside, that the provisions of subparagraph 21.904(c)(2) have been omitted from the most recent publication of the Code of Federal Regulations. Those provisions had been inadvertently deleted by the Commission in its Report and Order in Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service, 10 FCC Rcd 9589 (1995)[hereinafter cited as "MDS Auction Order"]. However, in Paragraph 85 of the Memorandum Opinion and Order on Reconsideration released on October 27, 1995 in that proceeding, the Commission acknowledged its error and agreed to restore those provisions. 1 C.R. 1, 24 (P&F 1995).

12. Section 21.905(b) is revised as follows:

(b) For purposes other than standard television transmission, different types of emissions may be authorized if the applicant describes fully the modulation and bandwidth desired, and demonstrates that the bandwidth desired is no wider than needed to provide the intended service. ~~However, in no event shall the necessary or occupied bandwidth, whichever is greater, exceed 6 MHz.~~ The licensee may subchannelize its authorized bandwidth, provided that digital modulation is employed and the aggregate power does not exceed the authorized power for the channel, and may utilize all or a portion of its authorized bandwidth for MDS response stations authorized pursuant to §21.909. The licensee may also, jointly with affected adjacent channel licensees, transmit utilizing bandwidth in excess of its authorized frequencies, provided that digital modulation is employed, all power spectral density requirements set forth in this Part are met and the out-of-band emissions restrictions set forth in §21.908 are met at the edges of the channels employed.

EXPLANATORY NOTE — The Petitioners contemplate that, for the reasons set forth in the Two-Way Report, MDS licensees in the future may desire to employ transmission systems that utilize less than 6 MHz for each channel of communications, particularly for communications between the MDS response station and the response station hub. The proposed revisions provide MDS licensees with the requested flexibility without seeking and securing specific Commission approval to subchannelize their 6 MHz bandwidth as necessary to provide an array of communications services (subject, of course, to restrictions on out-of-band emissions at the channel edges). As is explained in the Two-Way Report, if analog modulation of subchannels were permitted, Petitioners believe it would be necessary to adopt a myriad of additional interference protection standards. However, such additional standards are unnecessary where digital modulation is employed because of the noise-like behavior of digital signals. By requiring the use of digital modulation (and applying the uniform power dispersion requirements set forth in Paragraph 30 of the Digital Declaratory Ruling in Request for Declaratory Ruling on the Use of Digital Modulation by Multipoint Distribution Service and Instructional Television Fixed Service Stations, FCC 96-304 (rel. July 10, 1996)[hereinafter "Digital Declaratory Ruling"]), a single interference criterion can be employed

no matter what the bandwidth. The Petitioners believe it is unlikely that there is any demand for analog subchannelized service, so that the digital restriction should be of no moment; however, if such a demand materializes, the Petitioners would hope that the Commission would consider waiving the "digital only" requirement upon a showing of non-interference.

Similarly, the Petitioners believe that innovative transmission techniques can be promoted by allowing adjacent channel licensees to jointly transmit a signal with a bandwidth in excess of 6 MHz. For example, as described in the Two-Way Report, buried spread spectrum (which could make it possible to use the same spectrum for both upstream and downstream communications), may require the use of code division multiplexing, which in turn may require bandwidth in excess of 6 MHz if the data rate requirements of certain applications are to be met. The Petitioners believe that where adjacent channel licensees desire to jointly transmit a single signal over all or part of their combined bandwidth, they should be permitted to do so without seeking and securing specific Commission approval, subject to compliance with the out-of-band emissions restrictions set forth in §21.908(b) at the edges of the channels used. Of course, in order to avail themselves of this opportunity, the adjacent channel licensees will have to be authorized to operate facilities that are functionally identical, save for the authorized operating frequencies. There is ample precedent for not employing out-of-band emissions restrictions at the edges of adjacent channels operated as part of a single system. In the Third Report and Order in GN Docket No. 93-252, the Commission determined that it would only apply out-of-band emissions restrictions at the edges of the adjacent channels employed by Commercial Mobile Radio Service ("CMRS") systems that employed multiple channels. See Implementation of Sections 3(n) and 332 of the Communications Act: Regulatory Treatment of Mobile Services Implementation of Sections 3(n) and 332 of the Communications Act: Regulatory Treatment of Mobile Services; Amendment of Part 90 of the Commission's Rules To Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band Amendment of Parts 2 and 90 of the Commission's Rules To Provide for the Use of 200 Channels Outside the Designated Filing Areas in the 896-901 MHz and 935-940 MHz Band Allotted to the Specialized Mobile Radio Pool, 9 FCC Rcd 7988, 8066-8068 (1994) [hereinafter cited as "CMRS Third Report and Order"]. Again, however, it is proposed that only digital modulation be permitted when adjacent channels are jointly employed, so as to avoid the need for additional interference standards. Although the Petitioners believe it is unlikely that there is any demand for analog superchannel service, if such a demand materializes, the Petitioners would hope that the Commission would consider waiving the "digital only" requirement upon a showing of non-interference.

13. Section 21.906 is revised as follows:

(a) Transmitting antennas shall be omnidirectional, except that a directional antenna with a main beam sufficiently broad to provide adequate service may be used either to avoid possible interference with other users in the frequency band, or to provide coverage more consistent with distribution of potential receiving points. **In lieu of an omnidirectional antenna, a station may employ an array of directional antennas in order to reuse spectrum efficiently.** When an applicant proposes to employ a directional antenna, or a licensee notifies the Commission pursuant to §21.42 of the installation of a sectorized antenna system, the applicant shall provide the Commission with information regarding the orientation of the directional antenna(s), expressed in degree of azimuth, with respect to true north, and the make and model of such antenna(s).

* * *

(d) Directive receiving antennas shall be used at all points other than response station hubs and shall be elevated no higher than necessary to assure adequate service. Receiving antenna height shall not exceed the height criteria of Part 17 of this chapter, unless authorization for use of a specific maximum antenna height (above ground and above mean sea level) for each location has been obtained from the Commission prior to the erection of the antenna. Requests for such authorization shall show the inclusive dates of the proposed operation. (See Part 17 of this chapter concerning the construction, marking and lighting of antenna structures.)

EXPLANATORY NOTE — The proposed revision to subsection (a) reflects that, as is discussed in the explanatory note to §21.42, licensees may elect to employ sectorized antenna systems comprising an array of directional antennas in order to maximize spectral reuse.

The proposed revision to subsection (d) reflects that, depending upon the particular network design selected by the licensee, a response station hub may utilize either an omnidirectional reception antenna or an array of directional antennas in order to receive signals from MDS response stations located at multiple azimuths from the MDS response station hub. While mandating directive receiving antennas is an appropriate vehicle for minimizing interference without adversely impacting service in a point-to-multipoint system where the signal to be received is coming from a single fixed location, such a requirement is inappropriate in a multipoint-to-point system where response station hubs will be receiving signals from multiple locations and are likely to employ non-directional antennas in many cases.

14. Section 21.907 is deleted in its entirety.

EXPLANATORY NOTE — §21.907 is among the original rules adopted for MDS in 1974, when the Commission felt it necessary to assure that all MDS stations could transmit a standard NTSC television signal should other transmission standards prove lacking. Amendment of Parts 1, 2, 21, and 43 of the Commission's Rules and Regulations to Provide for Licensing and Regulation of Common Carrier Radio Stations in the Multipoint Distribution Service, 45 F.C.C.2d 616, 624 (1974). In its Digital Declaratory Ruling, the Commission "acknowledge[d] that the technology

*upon which the standards adopted in 1974 were based has changed substantially, and . . . that digital will likely be the primary transmission method for video programming for the foreseeable future.” Digital Declaratory Ruling at ¶44. The Commission further recognized that “compliance with Section 21.907 for licensees who transmit digitally places unnecessary burdens on such licensees.” *Id.* Clearly, requiring all stations to be equipped to transmit a standard NTSC television signal is no longer necessary and, indeed, imposes unnecessary economic and operational burdens on those who are employing MDS channels for purposes other than the transmission of analog television signals and have no need for the capability to transmit standard NTSC television signals. Retention of this requirement cannot be squared with the Commission’s efforts to endow licensees the flexibility to provide services in response to marketplace demand. Once the requirement that an MDS station be equipped to transmit standard NTSC television signals is eliminated, the remainder of §21.907 becomes superfluous.*

15. Section 21.908 is revised as follows:

§21.908 ~~Television~~ Transmitting equipment.

~~(a) Except as otherwise provided in this section, the requirements of paragraphs (a), (b), (c), (d) and (e) of §73.687 of this chapter shall apply to stations in this service transmitting standard television signals.~~

(ab) On or after November 1, 1991, the maximum out-of-band power of a transmitter or of a booster transmitting on a single channel with an effective isotropic radiated power in excess of -9 dBW employing analog modulation ~~operating in the frequency bands 2150-2162 MHz, 2596-2644 MHz, 2650-2656 MHz, 2662-2668 MHz, and 2674-2680 MHz~~ shall be attenuated 38 dB relative to the peak visual carrier at the channel edges and constant slope attenuation from this level to 60 dB relative to the peak visual carrier at 1 MHz below the lower band edge and 0.5 MHz above the upper band edge. All out-of-band emissions extending beyond these frequencies shall be attenuated at least 60 dB below the peak visual carrier power. The maximum out-of-band power of a transmitter or of a booster transmitting on a single channel or a portion thereof with an effective isotropic radiated power in excess of -9 dBW employing digital modulation shall be 38 dB attenuation relative to the licensed average power level (or, when subchannels are used, the appropriately adjusted value based upon the ratio of the channel-to-subchannel bandwidths) at the licensed channel edges, constant slope attenuation from that level to 60 dB attenuation at 3 MHz above the upper and below the lower licensed channel edges, and 60 dB attenuation below the licensed average power level (or, when subchannels are used, the appropriately adjusted value based upon the ratio of the channel-to-subchannel bandwidths) at all other frequencies. Notwithstanding the foregoing, in situations where a booster station transmits, or where adjacent channel licensees jointly transmit, a single signal over more than one channel utilizing digital modulation, the maximum out-of-band power shall be 38 dB attenuation relative to the licensed average power level of each channel at the channel edges of those combined channels, constant slope attenuation from that level to 60 dB attenuation at 3 MHz above the upper and below the lower edges of those combined channels, and 60 dB attenuation below the licensed average power level of each channel at all other frequencies. However, should harmful interference occur as a

result of emissions outside the assigned channel, additional attenuation may be required. A transmitter licensed prior to November 1, 1991, that remains at the station site initially licensed, and does not comply with this subsection, may continue to be used for its life if it does not cause harmful interference to the operation of any other licensee. Any non-conforming transmitter replaced after November 1, 1991, must be replaced by a transmitter meeting the requirements of this subsection.

(b) The maximum out-of-band power of a booster transmitting on multiple channels carrying separate signals (a "broadband" booster) with an effective isotropic radiated power in excess of -9 dBW, employing either analog or digital modulation, shall be attenuated 38 dB relative to the peak visual carrier at the channel edges of channels occupied by analog signals and relative to the licensed average power level at the edges of channels occupied by digital signals. Within unoccupied channels within the overall passband of the booster, the maximum out-of-band power shall be attenuated 50 dB at 3 MHz above the upper and below the lower edges of occupied channels. For boosters operating in the frequency range 2.150-2.160/2 GHz, the maximum out-of-band power shall be attenuated 60 dB at 3 MHz and beyond above the upper and below the lower of these frequencies. For boosters operating in the range 2.500-2.690 GHz, the maximum out-of-band power shall be attenuated 50 dB at 3 MHz above the upper and below the lower of these frequencies, constant slope attenuation to 60 dB at 20 MHz above the upper and below the lower of these frequencies, and 60 dB attenuation at all frequencies beyond. Boosters operating with an effective isotropic radiated power less than -9 dBW shall have no particular out-of-band power attenuation requirement, except that if they cause harmful interference, their operation shall be terminated within 2 hours of notification by the Commission until the interference can be cured.

(c) The maximum out-of-band power of a response station using all or part of a 6 MHz channel and employing digital modulation shall be 38 dB attenuation relative to the rated power level at the 6 MHz channel edges, constant slope attenuation from that level to 60 dB attenuation at 3 MHz above the upper and below the lower channel edge, and 60 dB attenuation below the rated power level at all other frequencies. Notwithstanding the foregoing, in situations where response stations transmit over more than one 6 MHz channel utilizing digital modulation, the maximum out-of-band power shall be 38 dB attenuation relative to the rated power level within each channel at the channel edges of those combined channels, constant slope attenuation from that level to 60 dB attenuation at 3 MHz above the upper and below the lower edges of those combined channels, and 60 dB attenuation below the rated power level of each channel at all other frequencies. Notwithstanding either of the two foregoing sentences, the out-of-band power for discrete spurious signals above the upper and below the lower channel edge shall not be less than 40 dB attenuation, provided that such signals occur no more frequently than once in any 10 MHz within 50 MHz of a channel edge and none occur more than 50 MHz from a channel edge). Notwithstanding any provision hereof, should harmful interference occur as a result of emissions outside the assigned channel, additional attenuation may be required.

~~(c) The requirements of §73.687(c)(2) will be considered to be satisfied insofar as measurements of operating power are concerned if the transmitter station is equipped with instruments for determining the combined visual and aural operating power. However,~~

~~licensees must maintain the operating powers within the limits specified in §21.904. Measurements of the separate visual and aural operating powers must be made at sufficiently frequent intervals to insure compliance with the rules, and in no event less than once a month.~~

~~(d) Television transmitting equipment designed for stations whose authorized bandwidth is 4 MHz or less for the visual and accompanying aural signal is subject to the provisions of §21.101 with respect to the frequency tolerance of the visual and aural carriers. Such equipment is also subject to paragraphs (a) and (b) of this section, except that the provisions of §73.687(a), (b) and (c)(1) of this chapter shall not apply.~~

~~(e) As a further exception to the other requirements of this section, transmitting equipment characteristics may vary from these requirements to the extent necessary to insure that transmitted information is not likely to be received in intelligible form by unauthorized subscribers or licensees, provided such variations permit recovery of the transmitted information without perceptible degradation as compared to the same information transmitted without such variations.~~

EXPLANATORY NOTE — The Petitioners are proposing the elimination of several subsections to §21.908 that were also adopted in 1974 when the Commission required all MDS stations to be capable of transmitting standard television pictures. Since there is no longer any reason for the Commission to mandate most transmission standards for wireless cable (particularly in light of the transition from NTSC video to a variety of digital modulation techniques), subsections (a) and (c) can readily be eliminated. With the elimination of those subsections, subsections (d) and (e), which provided exceptions to subsections (a) and (c), can also be eliminated. However, former subsection (b), which includes the spectral mask applicable for analog NTSC transmissions, is retained because the spectral mask continues to play a critical role in interference protection. See Rosston and Steinberg, "Using Market-Based Spectrum Policy to Promote the Public Interest," at 12-13 (January 1997) ("rules to limit interference should ordinarily be output-based (e.g., limitations on emissions outside the licensed spectrum band and geographic area or sharing criteria) rather than input-based (e.g., specifying permissible services or technologies). So long as a spectrum user's emissions comply with objective numerical standards, it should ordinarily be free to offer whatever services using whatever technologies it wishes.") The proposed revisions to former subsection (b), now subsection (a), have been drafted to be consistent with the proposed revisions to §21.905(b), which would authorize joint transmissions by adjacent channel licensees exceeding 6 MHz in bandwidth. The proposed revisions to subsection (a) also reflect that in the Digital Declaratory Ruling, the Commission partially waived the spectral mask requirement for digital transmissions on an interim basis — a waiver that would apply to the sorts of transmissions by transmitters and single channel boosters that are contemplated by this Petition. See Digital Declaratory Ruling, at ¶¶ 21-22. While the Petitioners generally believe that it is premature for the Petitioners to propose rules permanently incorporating the Digital Declaratory Ruling as further testing must be done to determine the most appropriate permanent interference protection rules to apply in a digital environment, it is necessary to incorporate the form of the description of the spectral mask so that other sections of the Rules that depend upon it and that are being treated now can be proposed appropriately. The values included are those of the Digital Declaratory Ruling which should, in any event, be continued in force until replacement values are proposed; it should be noted, however, that changes to those values may be proposed after the completion of testing.

Proposed new subsection (b) recognizes that the balance of interference protection and cost is different for broadband boosters than for other transmitters because of the very significant impact on the number of amplifying devices required to meet the same specifications as used for single-channel transmitting equipment. Consequently, a relaxed spectral mask is proposed for boosters operating with EIRP greater than -9 dBW and no spectral mask is proposed for lower power boosters. In the case of high power boosters, the testing done for the Digital Declaratory Ruling showed that CCIR Grade 4 performance could be achieved with a mask offering -57 dB attenuation from each of two adjacent channels, hence -54 dB total from the two channels, at a desired-to-undesired signal (D/U) ratio of -4 dB. Added together, this indicates that Grade 4 performance can be achieved at an attenuation level of -50 dB, as proposed for high power broadband boosters. The elimination of a spectral mask for low power boosters is justified by the very low cost for which such equipment must be built if it is to be used at all, the very small geographic area in which such a device can cause harmful interference, and the great technical challenge that will be associated with measuring very low interference levels from such low power devices. It should also be noted that the noise produced in unoccupied channels will be limited by the need to keep it relatively low in the channels that are carried by the booster, since the same noise appears in both, and this will result in a natural limiting of the noise produced in unoccupied channels in order to achieve proper operation of the occupied channels.

Proposed new subsection (c) addresses out-of-band emissions by response stations. The proposed language is intended to provide a basis for the type-acceptance of response station transmitters, and is further explained in the Two-Way Report. The Petitioners contemplate that in order to produce economical response station transmission equipment, it may be necessary to employ guardbands in order to meet the proposed spectral mask. It is anticipated that when a response station manufacturer seeks type acceptance, it will identify any necessary guardband between the nearest edge of a subchannel and the nearest edge of the 6 MHz channel (which likely will be a function of the subchannel bandwidth), that type acceptance will be subject to maintaining the appropriate guardband for the subchannel bandwidth employed, and that purchasers of the response station equipment will be advised of the necessary guardbands.

16. Section 21.909 is revised as follows:

§21.909 MDS response stations.

(a) An MDS response station is authorized to provide communication by voice, video and/or data signals with its associated MDS response station hubstation. An MDS response station may be operated only by the licensee of the MDS response station hub, by any lessee of the MDS response station hub, or by a its subscriber of either and only at a receiving location of the MDS station with which it is communicating. More than one response station may be operated at the same or different receiving locations. All MDS response stations communicating with a single MDS station shall operate within the same frequency channel. When a 125 kHz channel is employed for communications to a response station hub, the specified frequency channel which may be used by the response station is determined by the channel assigned to the MDS station with which it communicates, as shown in the table in §74.939. Operation on other 125 kHz response channels is prohibited. The specified frequency channel may be subdivided to provide a distinct operating frequency for each of more than one response station. An MDS response station may also

transmit utilizing bandwidth in excess of that authorized to the licensee jointly with affected adjacent channel licensees, provided that digital modulation is employed, all power spectral density requirements set forth in this Part are met and the out-of-band emissions restrictions set forth in §21.908(b) are met at the edges of the channels employed.

(b) MDS response stations that utilize the bands 2150-2162 MHz, 2596-2644 MHz, 2650-2656 MHz, 2662-2668 MHz and 2674-2680 MHz or the 125 kHz channels may be installed and operated without an individual license to communicate with a response station hub authorized under a response station hub authorization, provided that the conditions set forth in §21.909(f) are complied with and that MDS response stations operating in the bands 2150-2162 MHz, 2596-2644 MHz, 2650-2656 MHz, 2662-2668 MHz and 2674-2680 MHz employ only digital modulation.

(c) An application for a response station hub authorization shall be filed on FCC Form 304 and shall in addition to the requirements of that form, include the following:

(1) The geographic coordinates, street address, and the height of the center line of the reception antenna(s) above mean sea level for the proposed response station hub; and

(2) A specification of:

(A) the response service area in which the applicant or its lessee proposes to install MDS response stations to communicate with the response station hub, any regions into which the response service area will be subdivided for purposes of interference analysis, and any regional classes of response station characteristics which will be used to define the operating parameters of groups of response stations within each region for purposes of interference analysis, including:

(i) the maximum height above ground level of the transmission antenna that will be employed by any response station in the regional class and that will be used in interference analyses without the receipt of additional, site-specific authorization; and

(ii) the maximum equivalent isotropic radiated power (EIRP) that will be employed by any response station in the regional class and that will be used in interference analyses; and

(iii) any sectorization that will be employed, including the polarization to be employed by response stations in each sector and the geographic orientation of the sector boundaries, and that will be used in interference analyses; and

(iv) the combined worst-case outer envelope plot of the patterns of all models of response station transmission antennas that will be employed by any response station in the regional class to be used in interference analyses; and

(v) the maximum number of response stations that will be

operated simultaneously in each region using the characteristics of each regional class applicable to each region.

(B) the channel plan (including any guardbands at the edges of the channel) to be used by MDS response stations in communicating with each response station hub, including a statement as to whether the applicant will employ the same frequencies on which response stations will transmit to also transmit on a point-to-multipoint basis from an MDS station or MDS booster station; and

(C) the minimum received signal level that the proposed response station hub can actually utilize in the provision of service, specified in dBW/m²/Hz; and

(3) A demonstration that:

(A) The proposed response station hub is within a protected service area to which the applicant is entitled either (i) by virtue of its being the licensee of an incumbent MDS station whose channels are being converted for MDS response station use, or (ii) by virtue of its holding a Basic Trading Area or Partitioned Service Area authorization. In the case of an application for response stations to utilize one or more of the 125 kHz response channels, such demonstration shall establish that the response service area is within the protected service area of the station authorized to utilize the associated channel E1, E2, F1 or F2; and

(B) The entire proposed response service area is within a protected service area to which the applicant is entitled either (i) by virtue of its being the licensee of an incumbent MDS station whose channels are being converted for MDS response station use, or (ii) by virtue of its holding a Basic Trading Area or Partitioned Service Area authorization. In the alternative, the applicant may demonstrate that the licensee entitled to any protected service area which is overlapped by the proposed response service area has consented to such overlap. In the case of an application for response stations to utilize one or more of the 125 kHz response channels, such demonstration shall establish that the response service area is entirely within the protected service area of the station authorized to utilize the associated channel E1, E2, F1 or F2, or, in the alternative, that the licensee entitled to any cochannel protected service area which is overlapped by the proposed response service area has consented to such overlap; and

(C) The combined signals of all MDS response stations within all response service areas and oriented to transmit towards their respective response station hubs will not generate a power flux density in excess of -73 dBW/m² (or the pro rata power spectral density equivalent based on the bandwidth actually employed in those cases where less than a 6 MHz channel is to be employed (e.g., -89.8 dBW/m² for 125 kHz channels or subchannels)) outside the boundaries of the applicant's protected service area, except to the extent that consents have been granted pursuant to §21.909(b)(3)(B) to an extension of the response service area beyond the boundaries of the protected service area; and

(D) The combined signals of all MDS response stations within all response service areas and oriented to transmit towards their respective response station

hubs will result in a desired to undesired signal ratio of at least 45 dB (or the appropriately adjusted value based upon the ratio of the channel-to-subchannel bandwidths) (i) within the protected service area of any authorized or previously proposed cochannel incumbent MDS or ITFS station with a 56.33 km (35 miles) protected service area with center coordinates located within 160.94 km (100 miles) of the proposed response station hub, (ii) within the booster service area of any cochannel booster station entitled to such protection pursuant to §§21.913(f) or 74.985(f) and located within 160.94 km (100 miles) of the proposed response station hub, or (iii) at any cochannel response station hub entitled to such protection pursuant to §§21.909(h) or 74.939(g) and located within 160.94 km (100 miles) of the proposed response station hub, or, in the alternative, that the licensee of or applicant for such cochannel station or hub consents to the application; and

(E) The combined signals of all MDS response stations within all response service areas and oriented to transmit towards their respective response station hubs will result in a desired to undesired signal ratio of at least 0 dB (or the appropriately adjusted value based upon the ratio of the channel to subchannel bandwidths) (i) within the protected service area of any authorized or previously proposed adjacent channel incumbent MDS or ITFS station with a 56.33 km (35 miles) protected service area with center coordinates located within 160.94 km (100 miles) of the proposed response station hub, (ii) within the booster service area of any adjacent channel booster station entitled to such protection pursuant to §§21.913(f) or 74.985(f) and located within 160.94 km (100 miles) of the proposed response station hub, or (iii) at any adjacent channel response station hub entitled to such protection pursuant to §§21.909(h) or 74.939(g) and located within 160.94 km (100 miles) of the proposed response station hub, or, in the alternative, that the licensee of or applicant for such adjacent channel station or hub consents to the application; and

(F) The combined signals of all MDS response stations within all response service areas and oriented to transmit towards their respective response station hubs will result in a desired to undesired signal ratio of at least 45 dB (or the appropriately adjusted value based upon the ratio of the channel to subchannel bandwidths) at any registered receive site of any authorized or previously-proposed cochannel ITFS station or booster station, or at any ITFS response station hub, located within 80 km (50 miles) of the proposed response station hub, or, in the alternative, that the licensee of or applicant for such cochannel station or hub consents to the application; and

(G) The combined signals of all MDS response stations within all response service areas and oriented to transmit towards their respective response station hubs will result in a desired to undesired signal ratio of at least 0 dB (or the appropriately adjusted value based upon the ratio of the channel to subchannel bandwidths) at any registered receive site of any authorized or previously-proposed adjacent channel ITFS station or booster station, or at any ITFS response station hub, located within 80 km (50 miles) of the proposed response station hub, or, in the alternative, that the licensee of or applicant for such adjacent channel station or hub consents to the application; and

(H) The proposed response station hub can receive transmissions from the response service area without interference.

(4) A certification that the application has been served upon (i) the licensee of any station (including any booster station or response station hub) with a protected service area which is overlapped by the proposed response service area; (ii) the holder of any authorization (including any booster station or response station hub authorization) with a protected service area that adjoins the applicant's protected service area; (iii) every licensee of or applicant for (a) any authorized or previously proposed incumbent MDS or ITFS station with a 56.33 km (35 miles) protected service area with center coordinates located within 160.94 km (100 miles) of the proposed response station hub, or (b) any associated booster station or response station hub authorized to the holder of a license for a facility described in (a); and (iv) every licensee of or applicant for any authorized or previously proposed ITFS station (including any booster station or response station hub) located within 80 km (50 miles) of the proposed response station hub.

(d) Notwithstanding the provisions of §21.901(d)(4) and except as set forth in §21.27(d), applications for response station hub authorizations may be filed at any time. Notwithstanding any other provision of Part 21 (including §21.31), applications for response station hub authorizations meeting the requirements of §21.909(c) shall be cut-off from applications for facilities that would cause harmful electromagnetic interference on the day of filing. A response station hub shall not be entitled to protection from interference caused by facilities proposed on or prior to the day the application for the response station hub authorization is filed. Response stations shall not be required to protect from interference facilities proposed on or after the day the application for the response station hub authorization is filed.

(e) Notwithstanding the provisions of §21.30(b)(4) and except as set forth in §21.27(d), any petition to deny an application for a response station hub authorization shall be filed no later than the sixtieth (60th) day after the date of public notice announcing the filing of such application or major amendment thereto. Notwithstanding any other provision of this Part 21, an application for a response station hub authorization that meets the requirements of §21.909(c) shall automatically be granted on the sixty-first (61st) day after the Commission shall have given public notice of its acceptance for filing, unless prior to such date either a party in interest timely files a formal petition to deny or for other relief pursuant to §21.30(a) or the Commission notifies the applicant that its application will not be automatically granted. Where an application is automatically granted pursuant to the provisions of this subsection, the licensee shall maintain a copy of the application at the response station hub until such time as the Commission issues a response station hub authorization.

(f) An MDS response station hub authorization shall be conditioned upon compliance with the following:

(1) No MDS response station shall be located beyond the response service area of the response station hub with which it communicates; and

(2) No MDS response station shall operate with an equivalent isotropic radiated power in excess of that specified in the application for the response station hub pursuant to §21.909(c)(2)(A) for the particular regional class of characteristics with which

the response station is associated; and

(3) Each MDS response station shall employ a transmission antenna oriented towards the response station hub with which the MDS response station communicates, and such antenna shall be no less directional than the worst case outer envelope pattern specified in the application for the response station hub pursuant to §21.909(c)(2)(D) for the regional class of characteristics with which the response station is associated; and

(4) The combined out-of-band emissions of all response stations using all or part of a 6 MHz channel and employing digital modulation shall comply with §21.908(b). The combined out-of-band emissions of all response stations using a 125 kHz channel shall comply with §21.909(j). However, should harmful interference occur as a result of emissions outside the assigned channel, additional attenuation may be required; and

(5) The response stations transmitting simultaneously at any time within any given region of the response service area utilized for purposes of analyzing the potential for interference by response stations shall conform to the numerical limits for each class of response station proposed in the application for the response station hub authorization. Notwithstanding the foregoing, the licensee of a response station hub authorization may alter the number of response stations of any class operated simultaneously in a given region without prior Commission authorization, provided that the licensee first notifies the Commission of the altered number of response stations of such class(es) to be operated simultaneously in such region, provides the Commission with an analysis establishing that such alteration will not result in any increase in electrical interference to any existing or proposed MDS or ITFS station, booster station or response station hub or to any MDS Basic Trading Area or Partitioned Service Area authorization holder entitled to protection pursuant to §21.909(c)(3), or that the applicant or licensee of such facility has consented to such interference, and serves a copy of such notification and analysis upon each party entitled to be served pursuant to §21.909(c)(4); and

~~(b) Authorization of an MDS response station is subject to the following terms and conditions:~~

~~(1) The response station shall not cause interference to any station operating beyond the service area of the MDS station with which it communicates.~~

(62) The height employed at any location shall not exceed the criteria set forth in §17.7 of this chapter.

(gc) The response channels associated with Channels E3, E4, F3, F4, H1, H2 and H3 are allocated to the private operational-fixed service (Part 101 94).

(h) Commencing upon the filing of an application for an MDS response station hub authorization and until such time as the application is dismissed or denied or, if the application is granted, a certificate of completion of construction is filed, the incumbent MDS station whose channels are being utilized shall be entitled both to interference

protection pursuant to §§21.902(b)(3) and (4) and 21.938(b)(2) and to protection of the response station hub pursuant to the following provisions of this subsection. Upon the filing of a certificate of completion of construction for an MDS response station hub where the channels of an incumbent MDS station are being utilized, unless the application for the response station hub authorization specifies that the same frequencies will be employed for point-to-multipoint transmissions by MDS stations or MDS booster stations, the incumbent MDS station whose channels are being utilized shall no longer be entitled to interference protection pursuant to §§21.902(b)(3) and (4) and 21.938(b)(2) within the response service area with regard to any portion of any 6 MHz channel employed solely for response station communications. In such situations, in lieu of the requirements set forth in §§21.902, 21.938(b)(2) and 74.903, an applicant for any new or modified MDS or ITFS station (including any response station or booster station) shall be required to demonstrate that the predicted desired to undesired signal ratio at each response station hub to which the proposed new or modified MDS or ITFS station has an unobstructed signal path will be at least 45 dB cochannel or 0 dB adjacent channel (or the appropriately adjusted values based upon the ratios of the channel-to-subchannel bandwidths) as a result of the new or modified MDS or ITFS station. In making such demonstration, the applicant shall assume installation of an omnidirectional unity gain plane-polarized receive antenna mounted with its centerline as specified in the application for the response station hub in lieu of the reference antenna specified in §§21.902 and 74.903. Upon the certification of completion of construction of an MDS response station hub where the channels of an incumbent MDS station are being utilized and the application for the response station hub authorization specifies that the same frequencies will be employed for point-to-multipoint transmissions, the incumbent MDS station whose channels are being utilized shall be entitled both to interference protection pursuant to §§21.902(b)(3) and (4) and 21.938(b)(2) and to protection of the response station hub pursuant to the preceding provisions of this subsection.

(i) For purposes of §21.11, §21.38, §21.39, §§21.43 - 21.45, and §21.303 of this Part, an MDS response station hub authorization shall be deemed a license and subject to the requirements of those sections as if such authorization were a license.

(j) 125 kHz wide response channels shall be subject to the following requirements: The 125 kHz wide channel shall be centered at the assigned frequency. If amplitude modulation is used, the carrier shall not be modulated in excess of 100%. If frequency modulation is used, the deviation shall not exceed ± 25 kHz. Any emissions outside the channel shall be attenuated at the channel edges at least 35 dB below peak output power when analog modulation is employed or 35 dB below average output power when digital modulation is employed (or, when subchannels are used, the appropriately adjusted value based upon the ratio of the channel-to-subchannel bandwidths). Any emissions more than 125 kHz from either channel edge, including harmonics, shall be attenuated at least 60 dB below peak output power when analog modulation is employed or 60 dB below average output power when digital modulation is employed (or, when subchannels are used, the appropriately adjusted value based upon the ratio of the channel-to-subchannel bandwidths). Notwithstanding the foregoing, in situations where adjacent channel licensees jointly transmit over more than one channel utilizing digital modulation, the maximum out-of-band power shall be 35 dB attenuation relative to the licensed average power level of each channel at the channel edges of those combined channels. Emissions more than 125 kHz

from either edge of the combined channels, including harmonics, shall be attenuated at least 60 dB below peak analog power or average digital power of each channel, as appropriate. Notwithstanding the foregoing, the out-of-band power for discrete spurious signals above the upper and below the lower channel edge shall not be less than 40 dB attenuation, provided that such signals occur no more frequently than once in any 10 MHz within 50 MHz of a channel edge and none occur more than 50 MHz from a channel edge). Different types of emissions may be authorized for use on 125 kHz wide channels if the applicant describes fully the modulation and bandwidth desired, and demonstrates that the modulation selected will cause no more interference than is permitted under this subsection. Greater attenuation may be required if interference is caused by out-of-channel emissions.

(k) The transmitter of a response station may be operated unattended. The overall performance of the response station transmitter shall be checked as often as necessary to ensure that it is functioning in accordance with the requirements of the Commission's rules. The licensee of a response station hub is responsible for the proper operation of associated response station transmitters at all times. The transmitters shall be installed and protected in such manner as to prevent tampering or operation by unauthorized persons.

(l) The transmitting apparatus employed at MDS response stations shall have received type acceptance.

(m) An MDS response station shall be operated only when engaged in communication with its associated MDS response station hub or for necessary equipment or system tests and adjustments. Radiation of an unmodulated carrier and other unnecessary transmissions are forbidden.

Note 1: Calculations required under this rule shall be performed in accordance with "Method For Predicting Accumulated Signal Power From a Multiplicity of Statistically-located Transmitters" as published as Attachment X to the [cite to the Report and Order adopting proposed rules].

EXPLANATORY NOTE — The proposed changes to current subsection (a) are necessary to provide MDS licensees with the proposed flexibility to turn around existing 6 MHz MDS channels for return paths, as well as to utilize the 125 kHz return paths that are available for use in conjunction with channels E1, E2, F1, and F2. The language being eliminated assumes the use of the 125 kHz channels that are associated with 6 MHz MDS channels, and is simply inapplicable where it is the 6 MHz channel that is being used for the return link. Additional language is added to provide greater consistency with §74.939, the ITFS response channel rule. The proposed rule changes also extend eligibility to operate an MDS response station from the licensee and its subscribers to also include a wireless cable system operator that leases the MDS channel and the subscribers of that wireless cable system operator.

Proposed subsection (b) establishes the fundamental regulatory scheme for response stations. Although the Commission allocated the 125 kHz channels for MDS use in 1983, it never established a mechanism for securing an authorization for their use. The proposed regulatory scheme contemplates that one or more response station hubs will be established to collect transmissions from MDS response stations. Although individual return links will not be licensed, each response station hub will be. It is envisioned that response stations will be freely established without