entity is unable to clear another channel.[103]

65. Discussion. Based on the comments, we are adopting the TIA industry standards and our proposal to apply the same coordination procedures and interference standards to both common carrier and private operational fixed users. Common procedures and standards will simplify the rules and lead to economies of scale in microwave equipment and thus lower equipment costs. We have revised the language of Section 101.103(a) to identify clearly when the coordination procedures and standards apply.

66. We concur with those commenters that argue reserve growth channels should be made available to another applicant upon a demonstration of need. With the requirement to accommodate displaced licensees in many of the bands governed by Part 101, it is paramount that we provide an environment where spectrum will not remain idle, particularly when a legitimate communications requirement exists. Accordingly, we are revising Section 101.103(d)(2)(xii) so that any party needing to hold growth channels for longer than six months must demonstrate a need for them in the event that another entity is unable to clear another channel.

67. Antenna Standards. The Notice proposed to consolidate all antenna standards into one rule section (Section 101.115) without proposing any significant changes to the standards.

68. Comments. Some commenters indicate that there is an inconsistency between Subsections 101.115 (b) and (c) regarding applicable antenna standards for antennas used in the bands 932.5 MHz and 2500 MHz.[104] They point out that proposed Subsection 101.115(c) only applies the more stringent standard from 1850 MHz to 1990 MHz, while the looser standard of Subsection 101.115(b) would apply to the band 1990 MHz to 2500 MHz. To preclude the use of inefficient antennas in the bands above 1990 MHz, commenters suggest that the more stringent requirement of Subsection 101.115(c) become the operative standard for spectrum above 1990 MHz.[105]

69. TIA/NSMA argue that the key components for making the proposed antenna standards effective, are having a definition of congested area,[106] and guidelines for when a

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[103] See, e.g., AT&T Comments at 5; Pacific Bell, Nevada Bell & Pacific Bell Mobile Service Comments at 5-6; SBC Communications, Inc. Comments at 11-12.

[104] See, e.g., AT&T Comments at 6; Digital Microwave Corporation Comments at 7.

[105] Id.

[106] Conceptually, a congested area may be viewed as one with an extremely high use of spectrum warranting the use of the most discriminating equipment to facilitate the introduction of new transmission paths.

category A or B antenna should be used.[107] They contend that the Commission should redefine congested areas.[108] They also request that certain types of antenna polarizations, e.g., circular polarization, be prohibited.

70. Discussion. As requested, we are revising Subsections 101.115(b) and (c) to eliminate the inconsistency in the proposed antenna standards. Revised Subsection 101.115(b) sets forth standards for antennas for stations operating below 932.5 MHz and Subsection 101.115(c) applies to station antennas operating at 932.5 MHz and above.

71. The record in this proceeding is insufficient to revise the term "congested areas." To redefine this term, a number of parameters must be considered, e.g, density of microwave paths per area, the size of such area, and the economic impact of requiring category A antennas solely on the basis of a station being located in a congested area. These issues were not sufficiently addressed in the record. Accordingly, we are taking no action on this matter at this time.

72. System designers frequently take advantage of signal polarization properties to minimize frequency conflicts and increase bandwidth capacity. Permitting the use of other types of polarization could reduce frequency reuse and ultimately the capacity of microwave systems. Accordingly, we are amending Section 101.117 to specify only horizontal and vertical polarization.

73. Channel Loading. The Notice proposed to carry forward into Part 101 the current Parts 21 and 94 transmitter capacity and loading requirements for point-to-point microwave radio systems operating in the 3700-4200 MHz, 5925-6425 MHz , 6525-6875 MHz, 10550-10680 MHz and 10700-11700 MHz bands.

74. Comments. API asserts that the minimum traffic loading payload capacities for bandwidths greater than 10 MHz contained in proposed Section 101.141(a)(3) are excessive and inflexible, especially as they apply to private operational fixed service systems.[109] API states that private operational fixed systems channel loading often will vary from path to path. Under the proposed rule, therefore, these systems would require a mix of facilities to comply. It argues that this mix of equipment imposes additional cost for personnel training and spare part inventories. Additionally, according to API, the required loading percentage should be low enough so that licensees' channel needs do not fall between standard equipment channel

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[107] TIA/NSMA Comments at 35.

[108] BellSouth also urges the Commission to redefine "congested areas". BellSouth Comments at 9. On the other hand, DMC notes that this is not the appropriate proceeding to address this issue. DMC Comments at 7.

[109] Section 101.141(a)(3) requires licensees to use 50% of a system loading capacity within 30 months of licensing.

sizes.[110] Finally, TIA/NSMA and WMC suggest the proposed rule section also include loading standards for analog radio systems.[111]

75. In reply comments, TIA/NSMA agree with API about the inflexibility of the loading standards. TIA/NSMA propose language they believe will allay API's concerns and recommend that all loading standards be reduced to 25 percent of pay load capacity.[112]

76. Discussion. In the Second Report and Order in ET Docket No. 92-9, we addressed the issue of minimum channel loading and data rate requirements for channels of 10 MHz or greater.[113] There we stated:

> We concur with the consensus of the commenters that many existing 2 GHz licensees may not easily meet the existing and proposed loading standards, ... However, we also want to ensure the channels are used efficiently as possible in a timely manner. Therefore, we are maintaining our existing voice channel loading requirements and are adopting our proposed digital loading standards for channels of 10 MHz and greater bandwidth, but will liberally waive loading requirements in accommodating displaced 2 GHz licensees in the bands above 3 GHz. (Emphasis added.)

We also adopted various bandwidth channelization plans, expecting that most channel loading requirements could be satisfied under one of the choices.

77. These actions were intended to promote efficient utilization of the spectrum and to accommodate those licensees displaced by future PCS licensees. Reducing the minimum loading requirements to 25 percent of pay load capacity as suggested, potentially could result in a significant amount of spectrum going unused because some licensees would be unable to sufficiently load the facilities. This is unacceptable given the anticipated expanded use of Part 101 spectrum. Therefore, we are not modifying our channel loading requirements. Consistent with API, TIA/NSMA and WMC requests, however, we have modified Section 101.141 to include minimum analog channel loading standards.

D. Developmental Authorizations

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[110] To illustrate, API states "if an initial requirement is for 3 DS1's (a DS1 = 24 equivalent voice channels), and one expects to subsequently expand to 5 DS1's, and radios only come in 4 DS1's and 8 DS1's, a licensee would want the flexibility to purchase an 8 DS1 radio." API Comments at 15.

[111] TIA/NSMA Comments at 26; WMC Comments at 4-5.

[112] See TIA/NSMA Reply Comments at 23-25.

[113] Emerging Technologies Second Report and Order at para. 52.

78. In the Notice, we proposed to eliminate the requirement that applicants report any patents applied for as a result of a developmental authorization. We also noted that Part 101 would continue the prohibition against commercial operation under a developmental grant for common carriers, and would extend the prohibition to private radio operators.

79. Comments. Generally, the commenters support the elimination of the requirement to file patent information.[114] There was opposition, however, to the prohibition against providing commercial operations under developmental authorizations. Digital Microwave Corporation (DMC), for example, argues that developmental licensees under the Part 101 rules should be permitted to engage in commercial service operations, similar to the authority granted pursuant to Section 5.202(j).[115]

80. Discussion. The filing of patent information as it applies to developmental authorizations, is duplicative and unnecessary. Any patent resulting from a developmental operation would require approval of the U.S. Patent and Trademark Office and information related thereto becomes a part of the public record and would be available for public inspection. Further, such patent information generally is not germane to our deliberations. The rules require holders of development authorizations to submit reports regarding their developmental operations. From these submissions, we can ascertain whether the authorizations are being properly used and the utility of the subject operations. Therefore, we are eliminating the patent filing requirement. With respect to allowing commercial operations under developmental grants, DMC's example does not convince us that we should allow a commercial operation, for market studies or otherwise, under developmental authorizations. We continue to believe the purpose of developmental authorizations should be for the development of engineering and operational data or techniques, not for commercial purposes.

E. Transition Period

81. As described above, there are substantive differences between the new Part 101 application and licensing guidelines, operational requirements, and technical rules, and the corresponding Part 21 and 94 rules. In order to provide sufficient time for the public to review and implement the changes in the fixed microwave services rules adopted herein, the new Part 101 will become effective August 1, 1996. All subject microwave systems authorized prior to that date, and applications filed prior to that date will be grandfathered indefinitely and will be afforded co-primary status with all subsequent systems authorized pursuant to the provisions of the new Part 101. This means that licensees of these systems will not be required to conform their operations to the new interference protection criteria.

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[114] See, e.g., E.F. Johnson Comments at 5.

[115] DMC Comments at 8. Section 5.202 provides, in part, that stations operating in the Experimental Radio Service will be permitted to conduct operations for limited market studies.

channel loading requirements, and antenna performance standards. New systems authorized pursuant to Part 101 and these grandfathered operations are afforded equal interference protection under these revised rules.[116]

F. Thirty-Day Public Notice Requirement

82. Additionally, Section 403(j) of the Telecommunications Act of 1996[117] eliminates the thirty-day public notice and comment period for private fixed point-to-point microwave applications contained in Section 309(b)(2)(A) of the Act, 47 U.S.C. § 309(b)(2)(A), in order to provide expedited licensing for this service. Accordingly, we are amending Section 1.962(a) of the rules, 47 C.F.R. § 1.962(a), to implement this provision of the Telecommunications Act of 1996 and to increase the efficiency of our licensing process for the subject applications.

IV. CONCLUSION

83. In this Report and Order, we consolidate the rules for the common carrier and private operational fixed services contained in Parts 21 and 94 into a new Part 101. These new rules reflect a comprehensive restructuring in the regulatory requirements and policies of the fixed microwave services. Part 101 streamlines and simplifies the rules, reduces regulatory burdens, encourages more efficient use of the microwave spectrum, and fosters economies of scale in microwave equipment production. In addition, these rules allow licensees to compete more on price and quality of service rather than on regulatory gamesmanship.

V. ADMINISTRATIVE MATTERS

Final Regulatory Flexibility Analysis

84. **Need and purpose of this action.** This Report and Order simplifies the rules for the common carrier and private operational fixed services, currently contained respectively in Parts 21 and 94 of the Commission's rules, and consolidates those rules into a new Part 101. These new rules eliminate unnecessary information collection requirements, eliminate redundancy, remove obsolete language, and promote the public interest.

85. **Summary of issues raised by the public.** Several commenters suggested modifications to some of the Commission's proposals. As a result of these comments, we have made modifications to the proposed rules as appropriate. The specific suggestions and modifications are discussed in the paragraphs above.

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[116] See Section 101.4 of the rules.

[117] The Telecommunications Act of 1996, P.L. 104-104. 110 Stat. 56 (1996).

86. **Significant alternatives considered.** The Notices of Proposed Rule Making in the two subject proceedings offered numerous proposals. The commenters overwhelmingly supported the majority of the proposed rule changes. Several commenters suggested modifications to some of the Commission's proposals. Many of the suggested modifications are incorporated in the final rules. The regulatory burdens which we have retained are necessary to fulfill our duties under the Communications Act of 1934, as amended. We will continue to examine alternatives in the future with the objective of eliminating unnecessary regulations and minimizing economic impact on small business entities.

VI. ORDERING CLAUSES

87. Authority for issuance of this Report and Order is contained in Sections 4(i) and 303(r) of the Communications Act of 1934, as amended. 47 U.S.C. Sections 154(i) and 303(r).

88. Accordingly, IT IS ORDERED that Part 21 of the Commission's Rules IS HEREBY AMENDED, Part 94 IS HEREBY REMOVED AND RESERVED FOR FUTURE USE, and Part 101 IS HEREBY ADOPTED as specified in Appendix A.

89. IT IS FURTHER ORDERED that the Part 101 of the Commission's Rules and Regulations as shown in Appendix A will become effective August 1, 1996.

90. IT IS FURTHER ORDERED that the rule making proceedings in WT Docket No. 94-148, CC Docket No. 93-2 ARE HEREBY TERMINATED and the McCaw Petition for Rulemaking, RM-7861, IS HEREBY DENIED.

91. IT IS FURTHER ORDERED that following coordination with the National Telecommunications and Information Agency, the Chiefs of the Wireless Telecommunications Bureau and Office of Engineering and Technology are delegated authority to issue orders modifying the limitations noted in paragraph 28 above, and Section 101.31(e) of the rules, regarding the use of conditional licensing in certain frequency bands.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton

William F. Caton
Acting Secretary

APPENDIX A

I. PART 1 of Chapter 1 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

PART 1 - PRACTICE AND PROCEDURE

1. The authority citation for Part 1 continues to read as follows:

Authority: Secs. 4, 303, 48 Stat. 1066, 1082, as amended; 47 U.S.C. 154, 303; Implement, 5 U.S.C. 552 and 21 U.S.C. 853a, unless otherwise noted.

2. Section 1.77 is amended by adding a new paragraph (i) to read as follows:

§ 1.77 Detailed application procedures; cross references

* * * * *

(i) Rules governing applications for authorizations in the Common Carrier and Private Radio terrestrial microwave services are set out in Part 101.

* * * * *

3. Section 1.741 is amended by revising it to read as follows:

§ 1.741 Scope

The general rules relating to applications contained in §§ 1.742 through 1.748 apply to all applications filed by carriers except those filed by public correspondence radio stations pursuant to Parts 80, 87, and 101 of this chapter, and those filed by common carriers pursuant to Part 25 of this chapter. Parts 21 and 101 contain general rules applicable to applications filed pursuant to these Parts. For general rules applicable to applications filed pursuant to Parts 80 and 87, see such parts and Subpart F of this part. For rules applicable to applications filed pursuant to Part 25, see said part.

4. Section 1.743 is amended by revising paragraph (a) and adding a new paragraph (e) to read as follows:

§ 1.743 Who may sign applications.

(a) Except as provided in paragraph (b) of this section, applications, amendments thereto, and

related statements of fact required by the Commission must be signed by the applicant, if the applicant is an individual; by one of the partners, if the applicant is a partnership; by an officer or duly authorized employee, if the applicant is a corporation; or by a member who is an officer, if the applicant is an unincorporated association. Applicants, amendments, and related statements of fact filed on behalf of eligible government entities, such as states and territories of the United States and political subdivisions thereof, the District of Columbia, and units of local government, including incorporated municipalities, must be signed by such duly elected or appointed officials as may be competent to do so under the laws of the applicable jurisdiction.

* * * * *

(e) "Signed," as used in this section, means an original hand-written signature, except that by public notice in the *Federal Register* the Commission may allow signature by any symbol executed or adopted by the applicant with the intent that such symbol be a signature, including symbols formed by computer-generated electronic impulses.

5. Section 1.761 is amended by revising it to read as follows:

§ 1.761 Cross reference

Specific types of applications under Title III of the Communications Act involving public correspondence radio stations are specified in Parts 23, 80, 87, and 101 of this chapter.

* * * * *

6. Section 1.825 is amended by revising paragraph (b) to read as follows:

§ 1.825 Random selection procedures for Digital Electronic Message Service.

* * * * *

(b) Petitions to deny applications for digital electronic message service authorizations, and responsive pleadings, shall be filed prior to conducting the random selection, pursuant to the requirements of § 101.43. Following the random selection, petitions against tentative selectee's applications shall be resolved by the Commission.

7. Section 1.901 is amended by revising it to read as follows:

§ 1.901 Scope.

In the case of any conflict between the rules set forth in this subpart and the rules set forth in part 13 or the rules set forth for specific services in parts 80 through 101, the rules in this subpart shall govern.

8. Section 1.924 is amended by revising paragraph (b)(2)(ii) to read as follows:

§ 1.924 Assignment or transfer of control, voluntary and involuntary.

(b)(2)(i) * * *

(ii) *FCC Form 402.* For assignment of station authorizations in the Private Operational Fixed Microwave Service (Part 101 of this chapter). Attached thereto shall be an executed Form 1046 or a signed letter from proposed assignor stating the assignor's desire to assign the current authorization in accordance with the rules governing the particular service involved.

(iii) * * *

9. Section 1.926 is amended by revising paragraph (a)(6) to read as follows:

§ 1.926 Application for renewal of license.

* * * * *

(a) * * *

(6) Renewal of station authorizations in the Private Operational Fixed Microwave Service (Part 101 of this chapter) shall be submitted on such form as the Commission may designate by the public notice in accordance with the provisions of § 101.13 of this chapter.

* * * * *

10. Section 1.962 is amended by deleting paragraph (a)(1) and redesignating paragraphs (a)(2) through (a)(7) as (a)(1) through (a)(6) to read as follows.

§ 1.962 Public notice of acceptance for filing; petitions to deny applications of specific categories

(a) * * *

(1) Industrial radiopositioning stations for which frequencies are assigned on an exclusive basis.

(2) Aeronautical enroute stations.

(3) Aeronautical advisory stations.

(4) Airport control tower stations.

(5) Aeronautical fixed stations.

(6) Public coast stations, excluding those located in Alaska which will not render service for hire.

* * * * *

11. Section 1.972 is amended by revising paragraphs (a)(1) and (c) to read as follows:

§ 1.972 Grants by random selection.

(a) * * *

(1) For stations in the following Private Radio Services:
Part 80--Stations in the Maritime Services
Part 87--Aviation Services
Part 90--Private Land Mobile Services
Part 95--Subpart F--Personal Radio Services
Part 101--Subpart H--Private Operational Fixed Point-to-Point Microwave Service.

(b) * * *

(c) If there are mutually exclusive applications for an initial license for stations subject to Part 80 or Part 87, or if there are more applications for an initial license in Part 90, Part 95-Subpart F, or Part 101- Subpart H, than can be accommodated on available frequencies, the Commission may process the applications pursuant to a system of random selection. Each such random selection shall be conducted pursuant to an order issued by the Wireless Telecommunications Bureau and under the direction of the Chief of the Bureau.

* * * * *

II. Part 2 of Chapter 1 of Title 47 of the Code of Federal Regulations is amended as follows:

PART 2 - Frequency Allocations and Radio Treaty Matters; General Rules and Regulations

1. The authority citation for Part 2 continues to read as follows:

Authority: Sec. 4, 302, 303, and 307 of the Communications Act of 1934, as amended, 47 U.S.C Sections 154, 302, 303, and 307, unless otherwise noted.

2. Section 2.995 is amended by revising paragraph (a)(2) to read as follows:

§ 2.995 Measurements required: Frequency stability.

* * * * *

(a) * * *

(2) From -20° to +50° centigrade for equipment to be licensed for use in the Maritime Services under Part 80 of this chapter, except Class A, B, and S Emergency Position Indicating Radiobeacons (EPIRBS), and equipment to be licensed for use above 952 MHz at operational fixed stations in all services, stations in the Local Television Transmission Service and Point-to-Point Microwave Radio Service under Part 101 of this chapter, and equipment licensed for use aboard aircraft in the Aviation Services under Part 87 of this chapter.

* * * * *

III. Part 21 of Chapter 1 of Title 47 of the Code of Federal Regulations is amended as follows:

PART 21 - DOMESTIC PUBLIC FIXED RADIO SERVICES

1. The authority citation for Part 21 continues to read as follows:

AUTHORITY Secs. 1, 2, 4, 201-205, 208, 215, 218, 303, 307, 313, 314, 403, 404, 410, 602; 48 Stat. as amended, 1064, 1066, 1070-1073, 1076, 1077, 1080, 1082, 1083, 1087, 1094, 1098, 1102; 47 U.S.C. 151, 154, 201-205, 208, 215, 218, 303, 307, 313, 314, 403, 404, 602; 47 U.S.C. 552, 554.

2. Section 21.2 is amended to read as follows:

§ 21.2 Definitions.

As used in this part:

Antenna power gain. The square of the ratio of the root-mean-square free space field intensity produced at one mile in the horizontal plane, in millivolts per meter for one kilowatt antenna input power to 137.6 mV/m. This ratio should be expressed in decibels (dB). (If specified for a particular direction, antenna power gain is based on the field strength in that direction only.)

Antenna power input. The radio frequency peak or RMS power, as the case may be,

supplied to the antenna from the antenna transmission line and its associated impedance matching network.

Antenna structures. The antenna, its supporting structure and anything attached to it.

Assigned frequency. The centre of the frequency band assigned to a station.

Authorized bandwidth. The maximum width of the band of frequencies permitted to be used by a station. This is normally considered to be the necessary or occupied bandwidth, whichever is greater.

Authorized frequency. The frequency, or frequency range, assigned to a station by the Commission and specified in the instrument of authorization.

Authorized power. The maximum power a station is permitted to use. This power is specified by the Commission in the station's authorization.

Bandwidth occupied by an emission. The band of frequencies comprising 99 percent of the total radiated power extended to include any discrete frequency on which the power is at least 0.25 percent of the total radiated power.

Basic Trading Area (BTA). The geographic areas by which the Multipoint Distribution Service is licensed. BTA boundaries are based on the Rand McNally 1992 Commercial Atlas and Marketing Guide, 123rd Edition, pp. 36-39, and include six additional BTA-like areas as specified in § 21.924(b).

Bit rate. The rate of transmission of information in binary (two state) form in bits per unit time.

BTA authorization holder. The individual or entity authorized by the Commission to provide Multipoint Distribution Service to the population of a BTA.

BTA service area. The area within the boundaries of a BTA to which a BTA authorization holder may provide Multipoint Distribution Service. This area excludes the protected service areas of incumbent MDS stations and previously proposed and authorized ITFS facilities, including registered receive sites.

Carrier. In a frequency stabilized system, the sinusoidal component of a modulated wave whose frequency is independent of the modulating wave; or the output of a transmitter when the modulating wave is made zero; or a wave generated at a point in the transmitting system and subsequently modulated by the signal; or a wave generated locally at the receiving terminal which when combined with the side bands in a suitable detector, produces the modulating wave.

Carrier frequency. The output of a transmitter when the modulating wave is made zero.

Communication common carrier. Any person engaged in rendering communication service for hire to the public.

Control point. A control point is an operating position at which an operator responsible for the operation of the transmitter is stationed and which is under the control and supervision of the licensee.

Control station. A fixed station whose transmissions are used to control automatically the emissions or operations of another radio station at a specified location, or to transmit automatically to an alarm center telemetering information relative to the operation of such station.

Coordination distance. For the purpose of this part, the expression

"coordination distance" means the distance from an earth station, within which there is a possibility of the use of a given transmitting frequency at this earth station causing harmful interference to stations in the fixed or mobile service, sharing the same band, or of the use of a given frequency for reception at this earth station receiving harmful interference from such stations in the fixed or mobile service.

Digital modulation. The process by which some characteristic (frequency, phase, amplitude or combinations thereof) of a carrier frequency is varied in accordance with a digital signal, e.g. one consisting of coded pulses or states.

Domestic fixed public service. A fixed service, the stations of which are open to public correspondence, for radiocommunications originating and terminating solely at points all of which lie within: (a) the State of Alaska, or (b) the State of Hawaii, or (c) the contiguous 48 States and the District of Columbia, or (d) a single possession of the United States. Generally, in cases where service is afforded on frequencies above 72 MHz, radio-communications between the contiguous 48 States (including the District of Columbia) and Canada or Mexico, or radiocommunications between the State of Alaska and Canada, are deemed to be in the domestic fixed public service.

Domestic public radio services. The land mobile and domestic fixed public services the stations which are open to public correspondence.

Note: Part 80 of this chapter is applicable to the maritime services and fixed stations associated with the maritime services; Part 87 is applicable to aeronautical services.

Earth station. A station located either on the earth's surface or within the major portion of the earth's atmosphere and intended for communications: (1) With one or more space stations; or (2) With one or more stations of the same kind by means of one or more reflecting satellites or other objects in space.

Effective radiated power (ERP). The product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction.

Equivalent Isotropically Radiated Power (EIRP). The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna. This product may be expressed in watts or dB above 1 watt (dBW).

Facsimile. A form of telegraphy for the transmission of fixed images, with or without half-tones, with a view to their reproduction in a permanent form.

Fixed earth station. An earth station intended to be used at a specified fixed point.

Fixed station. A station in the fixed service.

Frequency tolerance. The maximum permissible departure by the centre frequency of the frequency band occupied by an emission from the assigned frequency or, by the characteristic frequency of an emission from the reference frequency. The frequency tolerance is expressed as a percentage or in Hertz.

Harmful interference. Interference which endangers the functioning of a radionavigation service or of other safety services or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service.

Incumbent. An MDS station that was authorized or proposed before September 15, 1995, including those stations that are subsequently modified, renewed or reinstated.

Landing area. A landing area means any locality, either of land or water, including airports and intermediate landing fields, which is used, or approved for use for the landing

and take-off of aircraft, whether or not facilities are provided for the shelter, servicing, or repair of aircraft, or for receiving or discharging passengers or cargo.

Microwave frequencies. As used in this part, this term refers to frequencies of 890 MHz and above.

Multichannel multipoint distribution service. Those multipoint distribution service channels that use the frequency band 2596 MHz to 2644 MHz and associated response channels.

Multipoint distribution service. A one-way domestic public radio service rendered on microwave frequencies from a fixed station transmitting (usually in an omnidirectional pattern) to multiple receiving facilities located at fixed points.

Multipoint distribution service response station. A fixed station operated at an MDS receive location to provide communications with the associated station in the Multipoint Distribution Service.

Necessary bandwidth of emission. For a given class of emission, the width of the frequency band that is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions.

Note: The necessary bandwidth for an emission may be calculated using the formulas in § 2.202 of this chapter.

Partitioned service area authorization holder. The individual or entity authorized by the Commission to provide Multipoint Distribution Service to the population of a partitioned service area.

Partitioned service area (PSA). The area within the coterminous boundaries of one of more counties or other geopolitical subdivisions, drawn from a BTA, to which an authorization holder may provide Multipoint Distribution Service or the area remaining in a BTA upon partitioning any portion of that BTA. This area excludes the protected service areas of incumbent MDS stations and previously proposed and authorized ITFS stations, including registered receive sites.

Private line service. A service whereby facilities for communication between two or more designated points are set aside for the exclusive use or availability for use of a particular customer and authorized users during stated periods of time.

Public correspondence. Any telecommunication which the offices and stations, by reason of their being at the disposal of the public, must accept for transmission.

Radio station. A separate transmitter or a group of transmitters under simultaneous common control, including the accessory equipment required for carrying on a radiocommunication service.

Radiocommunication. Telecommunication by means of radio waves.

Rated power output. The term "rated power output" of a transmitter means the normal radio frequency power output capability (Peak or Average Power) of a transmitter, under optimum conditions of adjustment and operation, specified by its manufacturer.

Record communication. Any transmission of intelligence which is reduced to visual record form at the point of reception.

Reference frequency. A frequency having a fixed and specified position with respect

to the assigned frequency. The displacement of this frequency with respect to the assigned frequency has the same absolute value and sign that the displacement of the characteristic frequency has with respect to the centre of the frequency band occupied by the emission.

Relay station. A fixed station used for the reception and retransmission of the signals of another station or stations.

Repeater station. A fixed station established for the automatic retransmission of radiocommunications received from one or more stations and directed to a specified receiver site.

Signal booster station. 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.

Standby transmitter. A transmitter installed and maintained for use in lieu of the main transmitter only during periods when the main transmitter is out of service for maintenance or repair.

Symbol rate. Modulation rate in bauds. This rate may be higher than the transmitted bit rate as in the case of coded pulses or lower as in the case of multilevel transmission.

Television. A form of telecommunication for transmission of transient images of fixed or moving objects.

Television STL station (studio transmitter link). A fixed station used for the transmission of television program material and related communications from a studio to the transmitter of a television broadcast station.

3. Section 21.3 is amended by deleting paragraph (b), and redesignating paragraph (c) as (b).

4. Section 21.6 is amended by revising paragraphs (b) and (c) to read as follows:

§ 21.6 Filing of applications, fees, and numbers of copies.

* * * * *

(b) Applications requiring fees as set forth at part 1, subpart G of this chapter must be filed in accordance with § 0.401(b) of this chapter. Applications not requiring fees shall be submitted to: Federal Communications Commission, Washington, DC 20554.

(c) All correspondence or amendments concerning a submitted application shall clearly identify the radio service, the name of the applicant, station location, and the Commission file number (if known) or station call sign of the application involved. All correspondence or amendments concerning a submitted application may be sent directly to the Mass Media Bureau.

* * * * *

5. Section 21.13 is amended by deleting paragraph (f), redesignating paragraph (g) as

(f), and revising paragraphs (a)(6) and (b) to read as follows:

§ 21.13 General application requirements.

(a) * * *

(6) Show compliance with the special requirements applicable to each radio service and make all special showings that may be applicable (e.g., those required by Secs. 21.900, 21.912 and 21.913 of this part, etc.).

(b) Applications filed in the Multipoint Distribution Service shall not cross-reference previously filed material.

* * * * *

6. Section 21.15 is amended by revising the introductory paragraph, and paragraphs (c), (d), and (g) to read as follows:

§ 21.15 Technical content of applications.

Applications shall contain all technical information required by the application form and any additional information necessary to fully describe the proposed facilities and to demonstrate compliance with all technical requirements of the rules governing the radio service involved (see Subparts C, F and K as appropriate). The following paragraphs describe a number of technical requirements.

(a) * * *

(b) * * *

(c) Each application involving a new or modified transmitting antenna supporting structure, passive facility, or the addition or removal of a transmitting antenna, or the repositioning of an authorized antenna for a station must be accompanied by a vertical profile sketch of the total structure depicting its structural nature and clearly indicating the ground elevation (above sea level) at the structure site, the overall height of the structure above ground (including obstruction lights when required, lightning rods, etc.) and, if mounted on a building, its overall height above the building. The proposed antenna on the structure must be clearly identified and its height above-ground (measured to the center of radiation) clearly indicated. Alternatively, applicants in the Multipoint Distribution Service who filed applications on or after September 15, 1995, may provide this information in the MDS long-form application.

(d) Each application proposing a new or modified antenna structure for a station (including a passive repeater or signal booster station) so as to change its overall height shall indicate whether any necessary notification of the FAA has been made. Complete information as to rules concerning the construction, marking and lighting of antenna structures is contained in

Part 17 of this chapter. See also § 21.111 if the structure is used by more than one station.

(e) * * *

(f) * * *

(g) Applications in the Multipoint Distribution Service filed before September 15, 1995, proposing a new or replacement antenna (excluding omni-directional antennas) shall include an antenna radiation pattern showing the antenna power gain distribution in the horizontal plane expressed in decibels, unless such pattern is known to be on file with the Commission in which case the applicant may reference in its application the FCC-ID number that indicates that the pattern is on file with the Commission. Multipoint Distribution Service applicants who filed applications on or after September 15, 1995 must provide related information in completing an MDS long-form application.

7. Section 21.20 is amended by revising (b)(5) to read as follows:

§ 21.20 Defective applications.

* * * * *

(b) * * *

(5) The application does not certify the availability of the proposed station site.

* * * * *

8. Section 21.23 is amended by deleting paragraphs (c)(1) and (d), redesignating (c)(2) through (c)(7) as (c)(1) through (c)(6), redesignating (e) through (g) as (d) through (f), and revising the newly redesignated paragraphs (c)(1) and (d)(1) to read as follows:

§ 21.23 Amendment of applications.

* * * * *

(c) * * *

(1) If in the Multipoint Distribution Service, the amendment results in a substantial modification of the engineering proposal such as (but not necessarily limited to):

* * * * *

(d) * * *

(1) Any applicant whose application appears on its face to be mutually exclusive with the application being amended, including those applicants originally served under § 21.902;

* * * * *

9. Section 21.27 is amended by deleting paragraph (d).

* * * * *

10. Section 21.31 is amended by deleting paragraph (f).

* * * * *

11. Section 21.33 is amended by deleting paragraph (a), and redesignating paragraph (b) through (d) as (a) through (c).

12. Section 21.39 is amended by revising paragraph (d)(3) to read as follows:

§ 21.39 Considerations involving transfer or assignment applications.

* * * * *

(d) * * *

(3) The median date of the applicable commencement dates (determined pursuant to paragraphs (c) (1) and (2) of this section) if the transaction involves two or more stations. (The median date is that date so selected such that fifty percent of the commencement dates of the total number of stations, when arranged in chronological order, lie below it and fifty percent lie above it. When the number of stations is an even number, the median date will be a value half way between the two dates closest to the theoretical median).

* * * * *

13. Section 21.41 is amended by revising paragraphs (b) and (c) to read as follows:

§ 21.41 Special processing of applications for minor facility modifications.

* * * * *

(b) An application may be considered under the procedures of this section only if:

(1) It is in the Multipoint Distribution Service;

(2) The cumulative effect of all such applications made within any 60 days period does not exceed the appropriate values prescribed by paragraph (c) of this section;

(3) The facilities to be modified are not located within 56.3 kilometers (35 miles) of the Canadian or Mexican border;

(4) It is acceptable for filing, is consistent with all of the Commission's rules, and does not involve a waiver request;

(5) It specifically requests consideration pursuant to this section; and

(6) Frequency notification procedures are complied with and a copy of the application has been served on those who also were served under § 21.902.

(7) In the Multipoint Distribution Service, the modified facility would not produce a power flux density that exceeds - 73 dBW/m^2, pursuant to §§ 21.902 and 21.939 of this subpart, at locations on the boundaries of protected service areas to which there is an unobstructed signal path.

(c) The modifications that may be authorized under the procedures of this section are:

(1) Changes in a transmitter and existing transmitter operating characteristics, or protective configuration of transmitter, provided that:

(i) In the Multipoint Distribution Service, any increase in EIRP is one and one-half dB or less over the previously-authorized power value.

(ii) The necessary bandwidth is not increased by more than 10% of the previously authorized necessary bandwidth;

(2) Changes in the height of an antenna, provided that:

(i) In Multipoint Distribution Service, any increase in antenna height is less than 3.0 meters above the previously authorized height; and

(ii) The overall height of the antenna structure is not increased as a result of the antenna extending above the height of the previously authorized structure, except when the new height of the antenna structure is 6.1 meters or less (above ground or man-made structure, as appropriate) after the change is made.

(3) Change in the geographical coordinates of a transmit station by ten seconds or less of latitude, longitude or both, provided that when notice to the FAA of proposed construction is required by Part 17 of the rules for antenna structure at the previously authorized coordinates (or will be required at the new location) the applicant must comply with the provisions of § 21.15(d).

* * * * *

14. Section 21.42 is amended by deleting paragraph (c)(7), redesignating paragraph (c)(8) as (c)(7), and revising paragraphs (a), (b), and (c)(3) to read as follows:

§ 21.42 Certain modifications not requiring prior authorization.

(a) Equipment in an authorized radio station may be replaced without prior authorization or notification if:

(1) The replacement equipment is identical (i.e., same manufacturer and model number) with the replacement equipment; or

(2) The replacement transmitter, transmitting antenna, transmission line loss and/or devices between the transmitter and antenna, or combinations of the above, do not change the EIRP of a station in any direction.

(b) Licensees of fixed stations in the Multipoint Distribution Service may make the facility changes listed in paragraph (c) of this section without obtaining prior Commission authorization, if:

(1) The Multipoint Distribution Service licensee serves a copy of the notification described in (b)(3) on those who were served under § 21.902, and

(2) * * *

(3) * * *

(4) In the Multipoint Distribution Service, the modified facility would not produce a power flux density at the protected service area boundary that exceeds - 73 dBW/m^2, pursuant to §§ 21.902 and 21.939 of this subpart.

(c) * * *

(3) Change to an antenna when the new antenna conforms with § 21.906 and the EIRP resulting from the new antenna does not exceed that resulting from the previously authorized antenna by more than one dB in any direction.

* * * * *

15. Section 21.43 is amended by revising paragraph (a) to read as follows:

§ 21.43 Period of construction; certification of completion of construction.

(a) Except for Multipoint Distribution Service station licenses granted to BTA and PSA authorization holders, each license for a radio station for the services included in this Part shall specify as a condition therein the period during which construction of facilities will be completed and the station made ready for operation. Construction may not commence until the grant of a license, and must be completed by the date specified in the license as the

termination date of the construction period. Except as may be limited by § 21.45(b) or otherwise determined by the Commission for any particular application, the maximum construction period for all stations licensed under this Part shall be a maximum of 12 months from the date of the license grant.

* * * * *

16. Section 21.45 is amended by revising paragraphs (a) and (c) to read as follows:

§ 21.45 License period.

(a) Licenses for stations in the Multipoint Distribution Service will be issued for a period not to exceed 10 years, except that licenses for developmental stations will be issued for a period not to exceed one year. The expiration date of developmental licenses shall be one year from the date of the grant thereof. Unless otherwise specified by the Commission, the expiration of regular licenses shall be on the following date in the year of expiration.

Multipoint Distribution Service--May 1.

When a license is granted subsequent to the last renewal date of the class of license involved, the license shall be issued only for the unexpired period of the current license term of such class.

(b) * * *

(c) Upon the expiration or termination of any station license, any related conditional authorization, which bears a later expiration date, shall be automatically terminated concurrently with the related station license, unless it shall have been determined by the Commission that the public interest, convenience or necessity would be served by continuing in effect said conditional authorization.

17. Section 21.100 is amended by deleting paragraphs (b) through (e), deleting the "(a)" designation from the beginning of paragraph (a), and revising the paragraph to read as follows:

§ 21.100 Frequencies.

The frequencies available for use in the service covered by this part of the rules are listed in Subpart K. Assignment of frequencies will be made only in such a manner as to facilitate the rendition of communication service on an interference-free basis in each service area. Unless otherwise indicated, each frequency available for use by stations in this service will be assigned exclusively to a single applicant in any service area. All applicants for, and licensees of, stations in this service shall cooperate in the selection and use of the frequencies assigned in order to minimize interference and thereby obtain the most effective use of the authorized

facilities. In the event harmful interference occurs or appears likely to occur between two or more radio systems and such interference cannot be resolved between the licensees thereof, the Commission may, after notice and opportunity for hearing, require the licensees to make such changes in operating techniques or equipment as it may deem necessary to avoid such interference.

18. Section 21.101 is amended by deleting paragraph (b), redesignating paragraph (c) as (b), and revising paragraph (a) to read as follows:

§ 21.101 Frequency tolerance.

(a) The carrier frequency of each transmitter authorized in these services shall be maintained within the following percentage of the reference frequency except as otherwise provided in paragraph (b) of this section or in the applicable subpart of this part (unless otherwise specified in the instrument of station authorization the reference frequency shall be deemed to be the assigned frequency):

Frequency range (MHz)	Frequency tolerance for fixed stations (percent)
2,150 to 2,162 /1/ /2/	0.001
2,596 to 2,680 /2/	0.005

/1/ Beginning Aug. 9, 1975, this tolerance will govern the marketing of equipment pursuant to §§ 2.803 and 2.805 of this chapter and the issuance of all authorizations for new radio equipment. Until that date new equipment may be authorized with a frequency tolerance of 0.03 percent in the frequency range 2,200 to 10,500 MHz and equipment so authorized may continue to be used for its life provided that it does not cause interference to the operation of any other licensee. Equipment authorized in the frequency range 2,450 to 10,500 MHz prior to June 23, 1969, at a tolerance of 0.05 percent may continue to be used until February 1, 1976 provided it does not cause interference to the operation of any other licensee.

/2/ Beginning 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.

* * * * *

19. Section 21.106 is amended by deleting paragraphs (a)(2)(ii), (a)(3), and (a)(4).

20. Section 21.107 is amended by deleting paragraph (c) and revising paragraph (b) to read as follows:

§ 21.107 Transmitter power.

* * * * *

(b) The EIRP of a transmitter station employed in this radio service shall not exceed the values shown in the following tabulation:

Frequency Band (MHz)	Maximum allowable EIRP for a fixed station (Watts)
2,150 to 2,162	2000/1/
2,596 to 2,680	2000/1/

/1/ When a Multipoint Distribution Service station uses a non-omnidirectional antenna EIRP up to 7943 Watts may be authorized pursuant to § 21.904(b) of this Part.

* * * * *

21. Section 21.108 is amended by deleting the title and text, and designating the Section "[Reserved]" as follows:

§ 21.108 [Reserved].

22. Section 21.109 is amended by revising paragraph (b) to read as follows:

§ 21.109 Antenna and antenna structures.

* * * * *

(b) The Commission may require the replacement, at the licensee's expense, of any antenna system of a permanent fixed station operating at 2500 MHz or higher upon a showing that said antenna causes or is likely to cause interference to any other authorized or proposed station.

23. Section 21.114 is amended by deleting the title and text, and designating the Section "[Reserved]" as follows:

§ 21.114 [Reserved]

24. Section 21.119 is amended by deleting the title and text, and designating the Section "[Reserved]" as follows:

§ 21.119 [Reserved]

25. Section 21.120 is amended by deleting paragraphs (d) and (e), and revising paragraph (a) to read as follows:

§ 21.120 Authorization of transmitters.

(a) Except for transmitters used at developmental stations, each transmitter shall be a type which has been type accepted by the Commission for use under the applicable rules of this part.

* * * * *

26. Section 21.122 is amended by deleting paragraphs (a)(2) through (a)(5), (d) and (e), and revising paragraph (a) to read as follows:

§ 21.122 Microwave digital modulation.

(a) Microwave transmitters employing digital modulation techniques and operating below 15 GHz shall, with appropriate multiplex equipment, comply with the following additional requirement: The bit rate, in bits per second, shall be equal to or greater than the bandwidth specified by the emission designator in Hertz (e.g., to be acceptable, equipment transmitting at a 6 Mb/s rate must not require a bandwidth of greater than 6 MHz), except the bandwidth used to calculate the minimum rate shall not include any authorized guard band.

* * * * *

27. Sections 21.212 through 21.214 are deleted.

28. Section 21.303 is amended by revising paragraphs (a) through (c) and (d)(1) to read as follows:

§ 21.303 Discontinuance, reduction or impairment of service.

(a) If the public communication service provided by a station subject to this rule part is involuntarily discontinued, reduced or impaired for a period exceeding 48 hours, the station licensee shall promptly give notification thereof in writing to the Mass Media Bureau at Washington, DC 20554. In every such case, the licensee shall furnish full particulars as to the reasons for such discontinuance, reduction or impairment of service, including a statement as to when normal service is expected to be resumed. When normal service is resumed, prompt notification thereof shall be given in writing to the Mass Media Bureau at Washington, DC 20554.

(b) No station licensee subject to title II of the Communications Act of 1934, as amended.

shall voluntarily discontinue, reduce or impair public communication service to a community or part of a community without obtaining prior authorization from the Commission pursuant to the procedures set forth in part 63 of this chapter or complying with the requirements set forth at § 21.910. In the event that permanent discontinuance of service is authorized by the Commission, the station licensee shall promptly send the station license for cancellation to the Mass Media Bureau at Washington, DC 20554, except that station licenses need not be surrendered for cancellation if the discontinuance is a result of a change of status by a Multipoint Distribution Service licensee from common carrier to non-common carrier pursuant to §§ 21.910.

(c) Any station licensee, not subject to title II of the Communications Act of 1934, as amended, who voluntarily discontinues, reduces or impairs public communication service to a community or a part of a community shall give written notification to the Commission within 7 days thereof. In the event of permanent discontinuance of service, the station licensee shall promptly send the station license for cancellation to the Mass Media Bureau at Washington, DC 20554, except that Multipoint Distribution Service station licenses need not be surrendered for cancellation if the discontinuance is a result of a change of status by a Multipoint Distribution Service licensee from non-common carrier to common carrier.

(d) * * *

(1) Submit for cancellation the station license (or licenses) to the Commission at Washington, DC 20554.

* * * * *

29. Subpart G of Part 21 is revised by deleting the title, deleting Sections 21.500 through 21.512, and designating the Subpart "[Reserved]" as follows:

Subpart G - [Reserved]

30. Subpart I of Part 21 is revised by deleting the title, deleting Sections 21.700 through 21.713, and designating the Subpart "[Reserved]" as follows:

Subpart I - [Reserved]

31. Subpart J of Part 21 is revised by deleting the title, deleting Sections 21.800 through 21.809, and designating the Subpart "[Reserved]" as follows:

Subpart J - [Reserved]

32. Section 21.901 is amended by revising paragraph (e) to read as follows: