FOR FURTHER INFORMATION CONTACT: Pam Blumenthal, Mass Media Bureau, (202) 418–2180.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's Report and Order, MM Docket No. 96–167, adopted March 12, 1997, and released March 21, 1997. The full text of this Commission decision is available for inspection and copying during normal business hours in the FCC Reference Center (Room 239), 1919 M Street, NW, Washington, DC. The complete text of this decision may also be purchased from the Commission's copy contractor, ITS, Inc., (202) 857–3800, 2100 M Street, NW, Suite 140, Washington, DC 20037.

List of Subjects in 47 CFR Part 73

Radio broadcasting.

Part 73 of title 47 of the Code of Federal Regulations is amended as follows:

47 CFR PART 73—[AMENDED]

1. The authority citation for Part 73 continues to read as follows:

Authority: Secs. 303, 48 Stat., as amended, 1082; 47 U.S.C. 154, as amended.

§ 73.202 [Amended]

2. Section 73.202(b), the Table of FM Allotments under Virginia, is amended by adding Goochland, Channel 263A.

Federal Communications Commission.

John A. Karousos,

Chief, Allocations Branch, Policy and Rules Division, Mass Media Bureau.

[FR Doc. 97–7442 Filed 3–24–97; 8:45 am]

BILLING CODE 6712–01–P

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47 CFR Part 73

[MM Docket No. 87–268, FCC 96–493]

Broadcast Services; Television Broadcast Stations; TV Transmission Standards

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This document amends the Commission's Rules by adding a transmission standard for digital broadcast television signals. This action is necessary to ensure that the benefits of digital technology are available to terrestrial television broadcasting and to the American public. The intended effect of this action is to provide the certainty that many broadcasters, equipment manufacturers and consumers need to invest in new technology.

EFFECTIVE DATE: This regulation is effective May 27, 1997. The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of May 27, 1997.

FOR FURTHER INFORMATION CONTACT: Saul Shapiro, Mass Media Bureau, (202) 418–2600; Roger Holberg, Mass Media Bureau, Policy and Rules Division, Legal Branch, (202) 418–2130; Dan Bring, Mass Media Bureau, Policy and Rules Division, Policy Analysis Branch, (202) 418–2170; or Gordon Godfrey, Mass Media Bureau, Policy and Rules Division, Engineering Policy, (202) 418–2190.

SUPPLEMENTARY INFORMATION: This is a synopsis of the *Fourth Report and Order* in MM Docket No. 87–268, FCC 96–493, adopted December 24, 1996, and released December 27, 1996. The complete text of the *Fourth Report and Order* can be found on the internet at www.fcc.gov. It is available for inspection and copying during normal business hours in the FCC Reference Center (Room 239), 1919 M Street, NW., Washington, DC, and also may be purchased from the Commission's copy contractor, International Transcription Service, at (202) 857–3800, 2100 M Street, NW., Suite 140, Washington, DC 20037.

Synopsis of Fourth Report and Order

I. Introduction

1. In the *Fourth Report and Order* of the Commission's digital television (''DTV'') proceeding, the Commission adopts a transmission standard for digital broadcast television signals. This standard is a modification of the Advanced Television System Committee Digital Television Standard (''ATSC DTV Standard'') proposed in the *Fifth Further Notice of Proposed Rule Making* and is consistent with a consensus agreement voluntarily developed by a broad cross-section of parties, including the broadcasting, consumer equipment manufacturing and computer industries. Specifically, the Commission requires the use of all layers of the ATSC DTV Standard, except the video format layer, which will remain optional. The adopted transmission standard (''DTV Standard'') is intended to provide the certainty that many broadcasters, equipment manufacturers and consumers need to invest in new technology.

II. Background

2. The Commission issued a series of Notices and made a number of decisions since the proceeding began in 1987.[1] The Commission established the Advisory Committee on Advanced Television Service to provide recommendations concerning technical, economic and public policy issues associated with the introduction of advanced television service. As all-digital television systems were developed, advanced television became digital television. In February of 1993, the Advisory Committee reported that four competing digital systems would benefit from further development. In May of 1993, seven companies and institutions that had been proponents of the four digital systems, joined together in a ''Grand Alliance'' and developed the digital system documented in the ATSC DTV Standard. On November 28, 1995, the Advisory Committee voted to recommend the Commission's adoption of the ATSC DTV Standard.

3. The ATSC DTV Standard includes discrete subsystem descriptions, or ''layers,'' for video source coding and compression, audio source coding and compression, service multiplex and transport, and RF/transmission. In addition to being able to broadcast one, and under some circumstances two, high definition television programs, the Standard allows for multiple streams of standard definition television programming at a visual quality better than the current analog signal. The Standard also allows for broadcast of dozens of CD-quality audio signals and permits rapid delivery of large amounts of data.

4. On May 9, 1996, the Commission adopted the *Fifth Further Notice of Proposed Rule Making,* 61 FR 26864 (May 29, 1996), recommending adoption of the ATSC DTV Standard. The Commission also requested comment on alternative approaches to requiring a standard including: authorizing use of a

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[1] *Notice of Inquiry* in MM Docket No. 87–268, 2 FCC Rcd 5127 (1987) (''*First Inquiry*''). *See also Tentative Decision and Further Notice of Inquiry* in MM Docket No. 87–268, 3 FCC Rcd 6520 (1988) (''*Second Inquiry*''); *First Report and Order* in MM Docket No. 87–268, 5 FCC Rcd 5627 (1990)(''*First Order*''); *Notice of Proposed Rule Making* in MM Docket No. 87–268, 6 FCC Rcd 7024 (1991) (''*Notice*''); *Second Report and Order/Further Notice of Proposed Rule Making* in MM Docket No. 87–268, 7 FCC Rcd 3340 (1992) (''*Second Report/Further Notice*''); *Second Further Notice of Proposed Rule Making* in MM Docket No. 87–268, 7 FCC Rcd 5376 (1992) (''*Second Further Notice*''); *Memorandum Opinion and Order/Third Report and Order/Third Further Notice of Proposed Rule Making* in MM Docket 87–268, 7 FCC Rcd 6924 (1992)(''*Third Report/Further Notice*''); *Fourth Further Notice of Proposed Rule Making* in MM Docket No. 87–268, 10 FCC Rcd 10540 (1995) (''*Fourth Further Notice*''); *Fifth Further Notice, supra; Sixth Further Notice of Proposed Rule Making* in MM Docket No. 87–268, 11 FCC Rcd 10968 (1996)(''*Sixth Further Notice*'').

standard and prohibiting interference to it, but not requiring the use of that standard; and adopting a standard for allocation and assignment purposes only. In addition, the Commission sought comment on requiring use of some layers of the ATSC DTV Standard but making others optional.

5. Several commenters, including representatives of the computer industry and film makers, objected to adoption of the ATSC DTV Standard. After several efforts to reach consensus among the industry groups failed, the groups came together again. On November 25, 1996, representatives of a broad cross section of the broadcast, computer and receiver manufacturing industries reached an agreement that the FCC should adopt the ATSC DTV Standard, except for the video format layer. On November 27, 1996, the Commission released a *Public Notice* soliciting comment on the agreement.

III. Comments

6. *Technical Standards for DTV.* There is widespread agreement among commenters that selection of a DTV standard should be analyzed in terms of network effects, that is the indirect benefits that accrue to other DTV users when any particular user adopts DTV.[2] Broadcasters, computer interests and cable interests agree that broadcasting is a network product; that issues surrounding selection of a DTV standard are influenced by network effects; and that in order to evaluate the various alternatives, it is important to understand how network effects will operate. However, they disagreed on the relative severity of the startup, coordination and potential splintering problems facing digital broadcast television.[3] Startup refers to the situation where everyone would be better off adopting DTV technology but no one has the incentive to move first.[4] Coordination is the collaborative effort by broadcasters, consumer equipment manufacturers, and program producers that is necessary to introduce DTV. Splintering refers to the breakdown of the consensus or agreement to use the DTV Standard.

7. Commenters also disagreed on the availability and effectiveness of market-based mechanisms to solve these problems and to facilitate the goals and objectives established in this proceeding. Broadcasters, equipment manufacturers and some consumer groups contend that DTV has startup, coordination and splintering problems that are more severe than those of other network industries and that a DTV standard adopted by the Commission is needed to overcome these problems.[5] In contrast, cable and computer interests contend that all sectors of the broadcast industry have significant incentives to reach a consensus on transmission and reception standards without a government mandate.[6]

8. Broadcasters warn that a market-driven selection of a standard would result in barriers to the introduction of DTV if different incompatible systems develop.[7] They maintain that a government-mandated standard is essential to ensure a universally available, advertiser-supported over-the-air digital broadcast service in the future.[8] In contrast, cable interests do not agree that there are unique characteristics or public policy goals attendant to broadcast DTV, or that there would be a market failure unless a mandatory transmission standard is adopted.[9]

9. There is likewise a range of opinion on the merits of the ATSC DTV Standard. Broadcasters, equipment manufacturers, the Grand Alliance, and ATSC urge the Commission to adopt the complete ATSC DTV Standard.[10] They contend that only a Commission-adopted standard will supply the certainty needed by all parties to undertake the transition, the ATSC DTV Standard is the best DTV standard in the world,[11] and it has ''unprecedented and unmatched interoperability with computers and telecommunications.'' [12] (Footnotes added.)

10. Computer interests, lead by Computer Industry Coalition on Advanced Television Service (''CICATS''), urge us not to adopt a DTV standard but state that if we decide to the contrary we should only mandate a minimum base-line standard based exclusively on progressive scanning technology.[13] The National Telecommunications and Information Administration (''NTIA'') stresses the need for a single mandatory DTV standard, recommends limiting a standard to only those elements necessary to provide certainty, encourage adoption, ensure the opportunity for technological developments, and concludes that the best solution would be for interested parties to reach a consensus on disputed issues.[14]

11. While favoring a mandatory DTV standard, most commenting cinematographic and imaging interests (with the significant exception of the Motion Picture Association of America, Inc.[15]) oppose adoption of the ATSC DTV Standard in its current form because of its inclusion of interlaced scanning and other perceived deficiencies, particularly in its video and audio specifications.[16] MPAA, however, supports all aspects of the Standard including its use of both interlaced and progressive scanning and its 16:9 aspect ratio.[17] The National Cable Television Association (''NCTA'') is not critical of the specific ATSC DTV Standard, but questions whether any standard should be dictated by government.[18] Nevertheless, it recognizes the need for performance standards for controlling interference.[19]

12. Public interest groups generally favor adoption of a single mandatory standard although they differ on what

[2] In television broadcast systems, one user's adoption of DTV provides no direct benefit to other users, but may yield lagged, indirect benefits through the provision of new or improved programming. *See* comments of National Cable Television Association, ''Declaration of Bruce M. Owen in Response to the Fifth Further Notice of Proposed Rule Making,'' at 4–11; comments of Broadcasters at 16; reply comments of Strategic Policy Research (on behalf of Cap Cities/ABC Inc., CBS Inc., Fox Television Stations, Inc., Association for Maximum Service Television (''MSTV''), National Association of Broadcasters (''NAB''), and the National Broadcasting Co., Inc.) at 4–8; and comments of the Computer Industry Coalition on Advanced Television, Volume 2, Exhibit D, at 3–4. For a discussion of network effects in broadcast television see Bruce M. Owen and Steven S. Wildman, *Video Economics* (Harvard University Press, 1992): 260–313.

[3] *See,* comments of Broadcasters at 15–23, reply comments of Strategic Policy Research at 2–8, reply comments of National Cable Television Association at 10–17, and reply comments of Computer Industry Coalition on Advanced Television Service at 5–11.

[4] Startup is also referred to as the ''chicken and egg problem'' or ''wait and see behavior.''

[5] *See, e.g.,* comments of Mitsubishi Consumer Electronics America, Inc., (''MCEA'') at 2–3; Philips Electronics North America Corporation (''Philips'') at 4–8; comments of Broadcasters at 15–24.

[6] *See, e.g.,* comments of Tele-Communications, Inc. (''TCI'') at 6–8; comments of Compaq Computer Corporation at 6–14.

[7] *See* reply comments of Strategic Policy Research at 6.

[8] Id. at 14.

[9] *See* reply comments of National Cable Television Association, Inc., at 10–17.

[10] *See, e.g.,* comments of Broadcasters at 34; comments of ATSC at 9; comments of Zenith at 7; comments of Sony at 12; comments of Thomson Consumer Electronics (''Thomson'') at 6; comments of Grand Alliance at 9.

[11] *See, e.g.,* comments of Broadcasters at 18–19 and 34; comments of ATSC at 3, 6; Sony Electronics Inc. (''Sony'') at 8.

[12] Comments of HDTV Grand Alliance at 17–18. *See also* comments of ATSC at 3, and EIA at 9.

[13] Comments of CICATS at 31–37.7

[14] Reply comment of NTIA at 2.

[15] Motion Picture Association of America, Inc. (''MPAA'') is a trade association representing seven of the largest U.S. producers, distributors, and exporters of theatrical motion pictures, television programming, and home video entertainment.

[16] *See, e.g.,* Comments of Robert Primes, ASC, at 2 and 13; comments of the Coalition of Film Makers (''Film Makers'') at 2, 5–9, and 11; comments of Harold Becker.

[17] Comments of MPAA at 2–8.

[18] Comments of NCTA at 2.

[19] Reply Comments of NCTA at 6–7.

that standard should be.[20] For example, Consumer Federation of America/Media Access Project (''CFA/MAP'') believes that the public interest will be served if the Commission adopts a digital television standard that 1) reduces the cost of digital receivers and converters and (2) permits the convergence of video and computer technologies.[21] In contrast, National Consumers League urges adoption because it believes that in the absence of a standard, consumers will be confused, demand for DTV equipment will be reduced, and the price drops normally associated with consumer electronic equipment will not materialize.

13. *Alternatives to Standards.* Little comment was received concerning the two alternative approaches to standards specifically mentioned in the *Fifth Further Notice*: that we authorize use of and prohibit interference to users of the ATSC DTV Standard, or adopt the ATSC DTV Standard for allocation and assignment purposes only. Equipment manufacturer Harris argues for mandating at least the RF/transmission layer and basing allotment and assignment principles on it in order to provide protection from objectionable interference.[22] Some, such as the Benton Foundation, urge the Commission to adopt no more than the minimal rules needed to protect spectrum users from interference.[23] Also, NCTA opposes adoption of a design standard and suggests that we use performance standards to control interference.[24] The many parties that support adoption of the complete standard generally believe that these less inclusive options would not provide the certainty necessary for the successful launch of DTV and would not provide an adequate basis for either the design or the purchase of DTV receivers. In addition, the Advanced Television Technology Center (''ATTC'') asserts that a DTV table of allotments necessarily will depend on the extent to which DTV causes interference to itself and other signals and resists interference from other signals. Therefore, ATTC contends it is more realistic to mandate the Standard for actual operation than to attempt to predict the impact of hypothetical alternatives.[25] Zenith and others suggest that using the Standard only for allotment and assignment purposes would fail even to guarantee interference protection.[26]

14. *The ATSC DTV Standard.* Substantial comment was received concerning the merits of, and objections to, the ATSC DTV Standard. Broadcasters, equipment manufacturers, the Grand Alliance, ATSC, and the ATTC praise the Standard as representing the best digital television system in the world and one that is unmatched in terms of flexibility, extendibility, interoperability and headroom for growth.[27] They note it uses primarily progressive scan and square pixels, making it the most computer-compatible digital television system in the world. They argue that the Standard's inclusion of four interlaced formats will benefit broadcasters by allowing for the use of interlaced scan where broadcasters determine it desirable to do so, such as when broadcasting archived material that was filmed in interlaced scan or where interlaced scan may be superior, such as in low-light conditions often accompanying electronic news gathering (''ENG''). Additionally, they assert that the 16:9 wide-screen aspect ratio[28] is internationally recognized and accepted and with ''letterboxing''[29] will allow the display of motion pictures in their original aspect ratio far better than is permitted by the current 4:3 aspect ratio.

15. Commenters representing computer interests, cinematographers, and some public interest groups generally oppose the standard.[30] Computer interests object to discrete features of the Standard, including the presence of interlaced scanning and the use of non-square pixels in some formats, as well as the maximum frame (or ''refresh'') rate of 60 Hz.[31] These features, when taken together, assertedly hinder the compatibility of the system with computer applications, drive up the cost of receiving equipment, and delay the convergence of computer and television technologies. CICATS recommends that the Commission adopt a standard consisting of a single video format with 480 lines of progressive scanning, a broadcaster determined picture aspect ratio, and the utilization of only square pixel spacing. Such a standard would allow for an enhancement layer that would permit, but not require, the transmission of high definition television by stations equipped to do so. This approach, it contends, would enable all consumers to receive, at a minimum, an SDTV picture on their digital equipment, at equal or better quality and significantly lower costs than under the ATSC DTV Standard. As mentioned above, most cinematographic and imaging interests oppose the inclusion of interlaced scanning as well because of its perceived deficiencies. Public interest groups such as CFA and MAP believe that the ATSC DTV Standard uses too many formats and that the baseline CICATS system will be cheaper, promoting both a more rapid and orderly transition to DTV (and the return of spectrum) and convergence of computer and television technologies.[32] Film interests maintain that the Standard's specification of only two aspect ratios (4:3 and 16:9) will lead to ''pan and scan'' of wide screen films, cropping significant portions of the original image and damaging the film makers' artistic vision.[33]

16. Supporters of the Standard respond that it is far more computer friendly than any other digital television system in use anywhere in the world, that current technology prohibits the use of progressive scanning for images of more than 1000 lines in the 6 MHz channel, and that convergence will not be hampered because the Standard enables consumers to choose the display formats they prefer, as interlaced programs may be displayed on progressive receivers (and vice versa). They contend that there are already PC/TV products on the market using analog NTSC technology, which relies on interlace scanning, thus proving that

[20] Citizens for HDTV Coalition and the National Consumers League urge adoption of the ATSC DTV Standard while the Benton Foundation (''Benton''), Consumer Federation of America and Media Access Project (''CFA/ MAP'') recommend adoption of the CICATS standard. However, CFA/MAP contend that the public interest would be served by encouraging ATSC and CICATS to work out their technological differences.

[21] Comments of CFA/MAP at 1.

[22] Reply comment of Harris Corporation at 5.

[23] Comments of Benton Foundation at 3.

[24] Reply Comments of NCTA at 6–7.

[25] Comments of ATTC at 4.

[26] Comments of Zenith Electronics Corp. (''Zenith'') at 7.

[27] Comments of the Grand Alliance at 2–3; comments of ATSC at 3–4; comments of ATTC at 5–7; comments of Philips at 14–15; reply comments of Grand Alliance at 15–33; reply comments of ATSC at 15–32.

[28] ''Aspect ratio'' is the ratio of picture width to picture height.

[29] ''Letterboxing'' is a technique in which the aspect ratio of a film is preserved by blacking out portions of the screen, typically at the top and bottom. Material, however, is not cut from the frame. This is different than, so-called, ''pan-and-scan'' translation of widescreen movies to television in which moves and cuts never intended in the original are introduced to help make the action visible in a narrower frame. In pan-and-scan, less than the complete frame is transmitted and portions of the picture are left out.

[30] *See, e.g.,* comments of CICATS, Coalition of Film Makers, and Consumer Federation of America/ Media Access Project. While several film makers object to the Standard, the Motion Picture Association of America supports its adoption by the Commission.

[31] This is the number of frames transmitted per second.

[32] Comments of CFA/MAP at 1, 5 and 6.

[33] Comments of Film Makers Coalition at 5–7.

interlaced scanning is not incompatible with computers.[34]

17. Proponents of the Standard challenge as greatly overstated the cost estimates put forward by computer interests. With respect to opponents' complaints regarding the Standard's maximum frame rate, the Grand Alliance asserts that if the frame rate is increased to 72 Hz, as proposed by CICATS, trade-offs in picture quality would result.[35] Proponents also argue that the specified aspect ratios are appropriate because 16:9 is already accepted worldwide, and 80% of motion pictures are shot at 1.85:1, which readily fits a 16:9 screen with negligible use of letterboxing. Even the widest films can be accommodated by letterboxing only on the order of 25% of the screen height.[36] Adopting the film makers' proposed 2:1 aspect ratio would still require letterboxing for films made in aspect ratios different than 2:1, which today includes most films, and would result in displays, for a given picture height, 12.5% larger in picture area, 30–50% heavier and correspondingly more expensive for consumers. Use of the CICATS proposal, which emphasizes SDTV, would further diminish a film maker's product by foregoing consumer access to resolution comparable to that found in a theater.

18. *Review or Sunset of Standard.* Most commenters addressing the issue advocate either proceeding under our current processes for regulatory change or reviewing the Standard at some definite future time and oppose establishment of a specific review date or a sunset.[37] They argue that doing so would inject an element of uncertainty into the transition process, discourage consumers, broadcasters and manufacturers from making investments, and be arbitrary because the transition timetable, the timing of production of DTV sets, and the timing of consumer acceptance of DTV sets is unknown at the present time.[38] Sony and Schreiber propose that the Commission name an Advisory Committee, consisting of experts, who would examine the Standard and recommend changes in accordance with the Commission's existing procedures.[39] NTIA urges us to ensure that the industries involved develop a clearly defined plan to promote speedy migration to an all-progressive scan system that moves expeditiously and includes a target date for full transition[40] and suggests that we periodically review the migration to an all progressive system.

19. *Incorporation of Standard into Commission's Rules.* Little in the way of comment was submitted on this issue. The Grand Alliance believes that the Commission should incorporate the Standard by reference, as it did in 1995 with an ATSC standard for ghost canceling in NTSC. It asks that the Commission incorporate by reference ATSC Doc. A/53 (''ATSC Digital Television Standard, 16 Sep 95'') and ATSC Doc. A/52 (''ATSC Digital Audio Compression Standard (AC–3), 20 Dec. 95'') but only mention and not incorporate ATSC Doc. A/54 (''Guide to the Use of the ATSC Digital Television Standard, 4 Oct 95'').

20. *Audio Standard.* Audio system proponents Digital Theater Systems (''DTS'') and Dolby Laboratories sharply differ on which is the superior technology and whether the standard we adopt should specify an audio format. DTS argues that its audio system is superior to the Dolby system embodied in the ATSC DTV Standard and that the standard we adopt should exclude audio formats.[41] Dolby responds that DTS has not demonstrated that its system is superior to the Dolby AC–3 system.[42] Dolby points out that its system has been widely tested, evaluated and accepted by numerous standards setting organizations and for numerous consumer electronics products. Dolby argues that the multiple audio decoding system proposed by DTS would burden products with unnecessary cost and complexity and that, while creating the ATSC DTV Standard document, the ATSC Specialist Group on Digital Services (T3/S3) discussed and rejected the approach suggested by DTS.[43]

21. *Licensing Technology.* Generally, commenting parties that addressed this issue agree to the reasonable licensing of their relevant patents, including pending patents and intellectual property necessary for the successful construction of DTV equipment.[44] ATSC indicates that it sought and obtained from each member of the Grand Alliance and from Dolby a written commitment to abide by this requirement.[45] ATSC and the other commenting parties suggest that no further Commission action is required.

22. *Closed Captioning.* Comments that addressed this issue, such as those of the Grand Alliance, ATSC and Zenith, indicate that they have worked closely with the affected communities to provide for closed captioning in the ATSC DTV Standard. They each suggest that the ATSC DTV Standard provides all the capability necessary for broadcasters and receiver manufacturers to provide closed captioning.[46]

23. *November 26, 1996, Agreement.* Some of the commenters have altered their positions since the initial round of comments. The parties to the November 26, 1996, Agreement urge us to adopt the modified standard we are calling the DTV Standard. The Grand Alliance and ATSC view it as a way to resolve the controversy that has delayed adoption of a DTV standard.[47] They believe that reliance on voluntary industry standards for the formats to be used for digital television is preferable to the cost of the further delay that would result if we fail to act while the parties remain at an impasse.[48] Full service broadcasters endorse the Agreement for similar reasons. The Association for Maximum Service Television, Inc., (''MSTV'') believes the Agreement is a ''workable compromise'' that will permit the compatible development of progressive technologies.[49] One low power television broadcaster, International Broadcasting Network, objects to the process that resulted in the Agreement and contends that low power television broadcasters were excluded.[50]

24. Equipment manufacturers endorse the Agreement as ''an important step toward reducing reliance on

[34] *Id.*

[35] Reply comments of the Grand Alliance at 57; reply comments of ATSC at 55.

[36] Reply comments of the Grand Alliance at 59; reply comments of ATSC at 57–58.

[37] *See, e.g.,* comments of Broadcasters at 24; comments of Sony at 36.

[38] *See, e.g.,* comments of Broadcasters at 24; comments of Sony at 36; comments of MCEA at 4.

[39] Comments of Sony at 37 (''[T]he Commission could name an industry Advisory Committee comprised of the experts of that day who would examine the standard in light of the real imperatives of the future and, after thoughtful deliberation of the perceived need, recommend changes which would again be subject to public discourse and review.'') and Schreiber, Part II at 8 (''A small panel, appointed by the Commission, and composed exclusively of persons with no financial interest in the outcome, would seem appropriate.'').

[40] Comments of NTIA at 2–3.

[41] *See* comments of DTS at 6.

[42] *See* reply comments of Dolby at 3.

[43] *Id.* at 5.

[44] *See, e.g.,* comments of Grand Alliance at 29, Dolby at 4, Zenith at 15, Thomson at 16.

[45] *See, e.g.,* comments of ATSC at 29.

[46] *See, e.g.,* comments of Grand Alliance at 31, ATSC at 32, Zenith at 17.

[47] Further Comments of the Digital HDTV Grand Alliance at 2; Further Comments of the Advanced Television Systems Committee at 2.

[48] Further Comments of the Digital HDTV Grand Alliance at 2.

[49] Comments of the Association for Maximum Service Television, Inc. on the Digital Television Standard Agreement at 2.

[50] While not pointing to any specific prejudice it suffered, IBN contends that approval of a Standard during 1996, in accordance with the terms of the Agreement, could prejudice the outcome of issues raised in our Sixth Further Notice, reply comments on which are not due until January 10, 1997.

Government-mandated standards,'' that makes it likely that ''the industry standard becom[es] the vehicle around which the marketplace organizes.'' [51] They believe that the Agreement will provide sufficient certainty and that the video formats, although not mandated by the Commission, will remain viable nevertheless because there is a voluntary industry standard in place.[52]

25. Coalition of Film Makers objects to the Agreement for the same reasons it objected to the ATSC DTV Standard in its initial comments.[53] Most other commenters on this issue, except DemoGraFX and Venture, see the Agreement as addressing Film Maker's objections by dropping any constraints on formats.[54] Beyond that, they believe that the question of how a film is broadcast is not appropriately part of this proceeding, is a contractual matter, and should be left to film owners and broadcasters, bargaining at arm's length. DemoGraFX, while stating that it is pleased with some aspects of the Agreement, urges that the Standard require transmission of films in their original aspect ratio and objects to interlaced formats remaining in Table 3 of the ATSC DTV Standard. DemoGraFX urges measures to require receivers to display films in their original aspect ratios.[55] Venture Technologies Group wants the DemoGraFX system incorporated into the Standard [56] and Digital Imaging General opposes the Agreement which it contends was without the full participation and knowledge of the public.[57] Audio interests remain divided, as they were prior to the Agreement, for essentially the same reasons.[58]

26. William Schreiber opposes the Agreement on the ground that the process resulting in it may have violated the Federal Advisory Committee Act. He also believes that without mandated formats prospective purchasers will not know what they are buying and that the penetration of digital receivers will be slowed. In the public interest community, Benton Foundation urges quick adoption of the Agreement so that the Commission can turn to public interest standards [59] while the American Foundation for the Blind objects that the ATSC DTV Standard does not designate audio bandwidth capacity for delivering video descriptions, thereby depriving the blind of equal access to video programming.[60]

IV. The Digital Television Standard.

27. In the *Fourth Report and Order,* the Commission concludes that requiring the use of the ATSC DTV Standard, as modified, will fulfill four objectives listed in the *Fifth Further Notice of Proposed Rule Making*: (1) To ensure that all affected parties have sufficient confidence and certainty in order to promote the smooth introduction of a free and universally available digital broadcast television service; (2) to increase the availability of new products and services to consumers through the introduction of digital broadcasting; (3) to ensure that our rules encourage technological innovation and competition; and (4) to minimize regulation and assure that any regulations we do adopt remain in effect no longer than necessary.

28. The Commission is concerned that market solutions to transmission standards may result in more than one sustainable transmission standard. Such an outcome might result in compatibility problems and make it more difficult to preserve a universally available broadcast television service; could slow investment during the early stages of the transition to DTV and, thereby, slow the transition to DTV; and would make it more difficult to facilitate an efficient allotment of broadcast channels and protect against interference, which could complicate moving some licensees to new channels following the conversion to DTV and decrease the amount of spectrum recovered. Simply protecting a standard, or using a standard for allocation purposes would not address the Commission's concerns with ''wait-and-see'' behavior and preserving a universally available broadcast television service. The Commission also rejects the argument that the adopted transmission standard is too restrictive and still includes too many mandatory aspects of the ATSC DTV Standard. The Commission believes that the entire adopted standard is needed to achieve its goals.

29. The Commission concludes that adopting the DTV Standard will increase the availability of new products and services for consumers. The DTV Standard is flexible and extensible and permits data broadcasting as well as new services.

30. The Commission concludes that incorporating the DTV Standard into its Rules will encourage technological innovation and competition. The DTV Standard provides ''headroom'' for further development without requiring changes to the DTV Standard. In addition, the decision not to specify video formats will allow computer equipment and software firms more opportunity to compete by promoting interoperability.

31. Finally, the Commission concludes that adopting the DTV Standard provides for the minimum of regulation needed to provide for a smooth transition. A key point of contention throughout this proceeding has been the desirability of allowing both interlaced and progressive scanning. Adoption of the DTV Standard will allow video formats to be tested and decided by the market.

32. Support for the DTV Standard was not unanimous. In response to the Coalition of Film Maker's opposition to the DTV Standard because it does not require the display of films in the films' original aspect ratios, the Commission notes that the DTV Standard does not impose any impediment to the display of films in their original aspect ratios.

33. The Commission is not persuaded by those who contend that not specifying video formats in the DTV Standard will inject uncertainty into the transition process and delay implementation of digital television. The Commission believes that by adopting a transmission standard, it is providing the appropriate level of certainty that the digital television market will need to move forward. The Commission's belief is supported by the fact that the major industries affected by this decision have reached an agreement that video formats need not be part of the DTV Standard.

34. *Placing the ATSC DTV Standard in the Commission's Rules.* In the *Fifth Further Notice of Proposed Rule Making,* the Commission sought comment on whether it should place a digital broadcast television transmission standard into the Commission's Rules in

[51] Comment on the Agreement of General Instrument at 1; *see also* comments on the Agreement of EIA, Matsushita, Philips, Thomson and Zenith, all of which endorse the agreement.

[52] Comments on the Agreement of Philips Electronics North America Corporation and Thomson Consumer Electronics, Inc., at 2.

[53] Comments of the Coalition of Film Makers (in response to the *Public Notice*) at 4–6.

[54] *See, e.g.,* Comments on the Agreement of Zenith Electronics Corporation, Electronics Industries Association, CBS, Inc., and the Broadcasters Caucus' ''Response to Cinematographers' November 26 Fax to Vice President Gore Concerning DTV Standard.''

[55] Comments of DemoGraFX in Response to the Commission Seeking Comments on Digital TV Standards Agreement Released 27 November 1996 at 2–7.

[56] Venture Technologies Group's Comments on the Digital Television Standards Agreement at 3.

[57] Digital Imaging General, DIMAGE Inc, Comments on Fifth Notice of Proposed Rule Making (NPRM) and on Public Notice FCC 96–465 at 2.

[58] *See generally* Comments on the Agreement of Dolby Laboratories, The Academy for the Advancement of High End Audio, and Widescreen Review.

[59] Comments of Benton Foundation in response to the *Public Notice.*

[60] Comments of the American Foundation for the Blind—December 6, 1996 at 1.

its entirety, incorporate it by reference, or publish it as an OET technical bulletin. In the *Fourth Report and Order,* the Commission decides to incorporate the DTV Standard into the Commission's Rules, by reference. Incorporation by reference has been done before and is warranted given the 194-page length of the Standard and its easy availability.

35. *Review.* In the *Fifth Further Notice of Proposed Rule Making,* the Commission set forth three options to encourage innovation: (1) To proceed under current Commission processes which include consideration of requests from parties to amend the Commission's Rules or review of the Rules on the Commission's own initiative; (2) commit the Commission to conduct a proceeding to review the Standard at some future time; and (3) to establish a period of time after which the Standard no longer would be required or exclusive (i.e., ''sunsetting'' it). In the *Fourth Report and Order,* the Commission believes a sunset is not necessary. The Advanced Television System Committee has committed to continue to review the ATSC DTV Standard and the Commission has adopted a schedule of periodic reviews to monitor the progress of DTV.

36. *Audio Standard.* The Commission is adopting the audio portion of ATSC DTV Standard. In comments, some parties suggested that the audio standard should not be adopted as a required audio standard. An alternative standard was suggested but it did not go through extensive testing and evaluation. The Commission also notes that the suggested changes could delay implementation.

37. *Licensing Technology.* In earlier phases of this proceeding, the Commission indicated that patents on the technology would have to be licensed to other manufacturing companies on reasonable and nondiscriminatory terms. Those holding patents on the DTV Standard have submitted statements that they would comply with the American National Standards Institute patent policies. In the *Fifth Further Notice of Proposed Rule Making,* the Commission sought additional comment on whether more detailed information on the specific terms of patent licensing should be considered. It appears that licensing of the patents for DTV technology will not be an impediment to the development and deployment of DTV products for broadcasters and consumers.

38. *Closed Captioning.* In the *Fifth Further Notice of Proposed Rule Making,* the Commission noted that the ATSC DTV Standard reserves a fixed 9600 bits per second data rate for closed captioning. No comments suggested that this would be insufficient. In the *Fourth Report and Order,* the Commission concludes that adequate provision has been made to allow closed captioning information to be carried by DTV stations.

V. Administrative Matters

Final Regulatory Flexibility Analysis

39. As required by Section 603 of the Regulatory Flexibility Act, 5 U.S.C. § 603 (RFA), an Initial Regulatory Flexibility Analysis (''IRFA'') was incorporated in the *Fifth Further Notice of Proposed Rule Making* in this proceeding. The Commission sought written public comments on the proposals in the *Fifth Further Notice,* including on the IRFA. The Commission's Final Regulatory Flexibility Analysis (''FRFA'') in this *Fourth Report and Order* conforms to the RFA, as amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104–121, 110 Stat. 847 (1996) (''CWAAA'').[61]

I. Need for and Objectives of Action

40. The *Fourth Report and Order* adopts, in modified form, the Advanced Television Systems Committee (''ATSC'') digital television (''DTV'') standard. Our ratification of this industry-developed standard is intended to provide the certainty that some parties seek in order to undertake the wholesale replacement of our analog system of terrestrial broadcast television with DTV. At the same time, we seek to ensure that governmental involvement is neither more extensive than necessary nor inhibitory to innovation, experimentation, and entrepreneurship. In the *Fifth Further Notice* in this proceeding, we listed four objectives regarding the authorization and implementation of a DTV standard: (1) To ensure that all affected parties have sufficient confidence and certainty in order to promote the smooth introduction of a free and universally available digital broadcast television service; (2) to increase the availability of new products and services to consumers through the introduction of digital broadcasting; (3) to ensure that our rules encourage technological innovation and competition; and (4) to minimize regulation and assure that any regulations we do adopt remain in effect no longer than necessary. In addition to these objectives, we considered how adoption of the standard would affect other goals enumerated in this proceeding, including a rapid transition to DTV, ceasing broadcasting in NTSC, and recovering spectrum. The *Fourth Report and Order* adopts the standard, except for certain aspects as discussed in paragraphs 30–49, *supra,* based on a careful weighing and balancing of these various goals.

II. Significant Issues Raised by the Public in Response to the Initial Analysis

41. No comments were received specifically in response to the IRFA contained in the *Fifth Further Notice.* Further, while no comments were addressed specifically to small business issues, according to several Low Power Television (''LPTV'') commenters, including Third Coast Broadcasting, Inc. and Island Broadcasting Company, the Commission should minimize the impact on LPTV to prevent LPTV from being forced off the air by the transition to the new digital technology. Third Coast and Roger E. Harders contend that LPTV serves niches not covered by larger regional stations and should be able to provide this important service on digital channels in the future. Further, Blue Mountain Translator District argues that translators must be able to receive interactive signals to be full partners in DTV systems. In addition, not-for-profit and commercial translators must be treated equally. As discussed in Section V of this FRFA, we have considered these concerns. However, adoption of a standard for DTV will not implicate the concerns raised by LPTV and translator stations. The role of LPTV and translator stations in the transition to digital will be considered separately.

III. Description and Number of Small Entities to Which the Rule Will Apply

42. *Definition of a ''Small Business''.* Under the RFA, small entities may include small organizations, small businesses, and small governmental jurisdictions. 5 U.S.C. § 601(6). The RFA, 5 U.S.C. § 601(3), generally defines the term ''small business'' as having the same meaning as the term ''small business concern'' under the Small Business Act, 15 U.S.C. § 632. A small business concern is one which: (1) Is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (''SBA''). According to the SBA's regulations, entities engaged in television broadcasting Standard Industrial Classification (''SIC'') Code 4833—Television Broadcasting Stations, may have a maximum of $10.5 million

[61] Subtitle II of CWAAA is The Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), codified at 5 U.S.C. § 601 *et seq.*

in annual receipts in order to qualify as a small business concern. This standard also applies in determining whether an entity is a small business for purposes of the RFA.

43. Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies ''unless an agency after consultation with the Office of Advocacy of the SBA and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the **Federal Register**.'' While we tentatively believe that the foregoing definition of ''small business'' greatly overstates the number of television broadcast stations that are small businesses and is not suitable for purposes of determining the impact of the new rules on small television stations, we did not propose an alternative definition in the IRFA.[62] Accordingly, for purposes of this *Fourth Report and Order,* we utilize the SBA's definition in determining the number of small businesses to which the rules apply, but we reserve the right to adopt a more suitable definition of ''small business'' as applied to television broadcast stations and to consider further the issue of the number of small entities that are television broadcasters in the future. Further, in this FRFA, we will identify the different classes of small television stations that may be impacted by the rules adopted in this *Fourth Report and Order.*

44. *Issues in Applying the Definition of a ''Small Business''.* As discussed below, we could not precisely apply the foregoing definition of ''small business'' in developing our estimates of the number of small entities to which the rules will apply. Our estimates reflect our best judgments based on the data available to us.

45. An element of the definition of ''small business'' is that the entity not be dominant in its field of operation. We were unable at this time to define or quantify the criteria that would establish whether a specific television station is dominant in its field of operation. Accordingly, the following estimates of small businesses to which the new rules will apply do not exclude any television station from the definition of a small business on this basis and are therefore overinclusive to that extent. An additional element of the definition of ''small business'' is that the entity must be independently owned and operated. As discussed further below, we could not fully apply this criterion, and our estimates of small businesses to which the rules may apply may be overinclusive to this extent. The SBA's general size standards are developed taking into account these two statutory criteria. This does not preclude us from taking these factors into account in making our estimates of the numbers of small entities.

46. With respect to applying the revenue cap, the SBA has defined ''annual receipts'' specifically in 13 C.F.R 121.104, and its calculations include an averaging process. We do not currently require submission of financial data from licensees that we could use in applying the SBA's definition of a small business. Thus, for purposes of estimating the number of small entities to which the rules apply, we are limited to considering the revenue data that are publicly available, and the revenue data on which we rely may not correspond completely with the SBA definition of annual receipts.

47. Under SBA criteria for determining annual receipts, if a concern has acquired an affiliate or been acquired as an affiliate during the applicable averaging period for determining annual receipts, the annual receipts in determining size status include the receipts of both firms. 13 C.F.R. 121.104(d)(1). The SBA defines affiliation in 13 C.F.R. 121.103. In this context, the SBA's definition of affiliate is analogous to our attribution rules. Generally, under the SBA's definition, concerns are affiliates of each other when one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both. 13 C.F.R. 121.103(a)(1). The SBA considers factors such as ownership, management, previous relationships with or ties to another concern, and contractual relationships, in determining whether affiliation exists. 13 C.F.R. 121.103(a)(2). Instead of making an independent determination of whether television stations were affiliated based on SBA's definitions, we relied on the data bases available to us to provide us with that information.

48. *Television Station Estimates Based on Census Data.* The rules amended by this *Fourth Report and Order* will apply to full service television stations and may have an effect on TV translator facilities and low power TV stations (''LPTV''). The Small Business Administration defines a television broadcasting station that has no more than $10.5 million in annual receipts as a small business.[63] Television broadcasting stations consist of establishments primarily engaged in broadcasting visual programs by television to the public, except cable and other pay television services.[64] Included in this industry are commercial, religious, educational, and other television stations.[65] Also included are establishments primarily engaged in television broadcasting and which produce taped television program materials.[66] Separate establishments primarily engaged in producing taped television program materials are classified under another SIC number.[67]

49. There were 1,509 television stations operating in the nation in 1992.[68] That number has remained fairly constant as indicated by the approximately 1,550 operating television broadcasting stations in the

[62] We have pending proceedings seeking comment on the definition of and data relating to small businesses. In our *Notice of Inquiry* in GN Docket No. 96–113 (In the Matter of Section 257 Proceeding to Identify and Eliminate Market Entry Barriers for Small Businesses), FCC 96–216, released May 21, 1996, we requested commenters to provide profile data about small telecommunications businesses in particular services, including television, and the market entry barriers they encounter, and we also sought comment as to how to define small businesses for purposes of implementing Section 257 of the Telecommunications Act of 1996, which requires us to identify market entry barriers and to prescribe regulations to eliminate those barriers. Additionally, in our *Order and Notice of Proposed Rule Making* in MM Docket No. 96–16 (In the Matter of Streamlining Broadcast EEO Rule and Policies, Vacating the EEO Forfeiture Policy Statement and Amending Section 1.80 of the Commission's Rules to Include EEO Forfeiture Guidelines), 11 FCC Rcd 5154 (1996), we invited comment as to whether relief should be afforded to stations: (1) based on small staff and what size staff would be considered sufficient for relief, *e.g.,* 10 or fewer full-time employees; (2) based on operation in a small market; or (3) based on operation in a market with a small minority work force. We have not concluded the foregoing rule makings.

[63] 13 C.F.R. § 121.201, Standard Industrial Code (SIC) 4833 (1996).

[64] Economics and Statistics Administration, Bureau of Census, U.S. Department of Commerce, 1992 Census of Transportation, Communications and Utilities, Establishment and Firm Size, Series UC92–S–1, Appendix A–9 (1995).

[65] *Id. See* Executive Office of the President, Office of Management and Budget, Standard Industrial Classification Manual (1987), at 283, which describes ''Television Broadcasting Stations (SIC Code 4833) as:

Establishments primarily engaged in broadcasting visual programs by television to the public, except cable and other pay television services. Included in this industry are commercial, religious, educational and other television stations. Also included here are establishments primarily engaged in television broadcasting and which produce taped television program materials.

[66] Economics and Statistics Administration, Bureau of Census, U.S. Department of Commerce, 1992 Census of Transportation, Communications and Utilities, Establishment and Firm Size, Series UC92–S–1, Appendix A–9 (1995).

[67] *Id.*; SIC 7812 (Motion Picture and Video Tape Production); SIC 7922 (Theatrical Producers and Miscellaneous Theatrical Services (producers of live radio and television programs).

[68] FCC News Release No. 31327, Jan. 13, 1993; Economics and Statistics Administration, Bureau of Census, U.S. Department of Commerce, supra note 4, Appendix A–9.

nation as of August, 1996.[69] For 1992 [70] the number of television stations that produced less than $10.0 million in revenue was 1,155 establishments.[71] Thus, the proposed rules will affect approximately 1,550 television stations; approximately 1,194 of those stations are considered small businesses.[72] These estimates may overstate the number of small entities since the revenue figures on which they are based do not include or aggregate revenues from non-television affiliated companies. We recognize that the proposed rules may also impact minority and women owned stations, some of which may be small entities. In 1995, minorities owned and controlled 37 (3.0%) of 1,221 commercial television stations in the United States.[73] According to the U.S. Bureau of the Census, in 1987 women owned and controlled 27 (1.9%) of 1,342 commercial and non-commercial television stations in the United States.[74]

50. It should also be noted that the foregoing estimates do not distinguish between network-affiliated [75] stations and independent stations. As of April, 1996, the BIA Publications, Inc. Master Access Television Analyzer Database indicates that about 73 percent of all commercial television stations were affiliated with the ABC, CBS, NBC, Fox, UPN, or WB networks. Moreover, seven percent of those affiliates have secondary affiliations.[76]

51. There are currently 4926 TV translators, and 1,921 LPTV stations which may be affected by the new rules, if they decide to convert to digital television.[77] The FCC does not collect financial information of any broadcast facility and the Department of Commerce does not collect financial information on these broadcast facilities. We will assume for present purposes, however, that most, if not all, LPTV stations and translator stations, could be classified as small businesses, if considered by themselves. We also recognize that most, if not virtually all translators are owned by a parent station which is a full-service station. Thus, translator stations generally can be considered affiliates, as that term is defined in the SBA regulations, with full-service stations. Given this situation, these stations would likely have annual revenues that exceed the SBA maximum to be designated as small businesses.

52. *Alternative Classification of Small Television Stations.* An alternative way to classify small television stations is by the number of employees. The Commission currently applies a standard based on the number of employees in administering its Equal Employment Opportunity (''EEO'') rule for broadcasting.[78] Thus, radio or television stations with fewer than five full-time employees are exempted from certain EEO reporting and recordkeeping requirements.[79] We estimate that the total number of commercial television stations with 4 or fewer employees is 132 and that the total number of noncommercial educational television stations with 4 or fewer employees is 136.[80]

53. *Other Industry Groups. Television Equipment Manufacturers:* The Commission has not developed a definition of small entities applicable to manufacturers of television equipment. Therefore, we will utilize the SBA definition of manufacturers of Radio and Television Broadcasting and Communications Equipment.[81] According to the SBA's regulations, a TV equipment manufacturer must have 750 or fewer employees in order to qualify as a small business concern.[82] Census Bureau data indicates that there are 858 U.S. firms that manufacture radio and television broadcasting and communications equipment, and that 778 of these firms have fewer than 750 employees and would be classified as small entities.[83] The Census Bureau category is very broad, and specific figures are not available as to how many of these firms are exclusive manufacturers of television equipment or how many are independently owned and operated. We conclude that there are approximately 778 small

[69] FCC News Release No. 64958, Sept. 6, 1996.

[70] Census for Communications' establishments are performed every five years ending with a ''2'' or ''7''. *See* Economics and Statistics Administration, Bureau of Census, U.S. Department of Commerce, *supra* note 4, III.

[71] The amount of $10 million was used to estimate the number of small business establishments because the relevant Census categories stopped at $9,999,999 and began at $10,000,000. No category for $10.5 million existed. Thus, the number is as accurate as it is possible to calculate with the available information.

[72] We use the 77 percent figure of TV stations operating at less than $10 million for 1992 and apply it to the 1996 total of 1550 TV stations to arrive at 1,194 stations categorized as small businesses.

[73] *Minority Commercial Broadcast Ownership in the United States,* U.S. Dep't of Commerce, National Telecommunications and Information Administration, The Minority Telecommunications Development Program (''MTDP'') (April 1996). MTDP considers minority ownership as ownership of more than 50% of a broadcast corporation's stock, voting control in a broadcast partnership, or ownership of a broadcasting property as an individual proprietor. *Id.* The minority groups included in this report are Black, Hispanic, Asian, and Native American.

[74] *See* Comments of American Women in Radio and Television, Inc. in MM Docket No. 94–149 and MM Docket No. 91–140, at 4 n.4 (filed May 17, 1995), *citing* 1987 Economic Censuses, *Women-Owned Business,* WB87–1, U.S. Dep't of Commerce, Bureau of the Census, August 1990 (based on 1987 Census). After the 1987 Census report, the Census Bureau did not provide data by particular communications services (four-digit Standard Industrial Classification (SIC) Code), but rather by the general two-digit SIC Code for communications (#48). Consequently, since 1987, the U.S. Census Bureau has not updated data on ownership of broadcast facilities by women, nor does the FCC collect such data. However, we sought comment on whether the Annual Ownership Report Form 323 should be amended to include information on the gender and race of broadcast license owners. *Policies and Rules Regarding Minority and Female Ownership of Mass Media Facilities,* Notice of Proposed Rulemaking, 10 FCC Rcd 2788, 2797 (1995).

[75] In this context, ''affiliation'' refers to any local broadcast television station that has a contractual arrangement with a programming network to carry the network's signal. This definition of affiliated station includes both stations owned and operated by a network and stations owned by other entities.

[76] Secondary affiliations are secondary to the primary affiliation of the station and generally afford the affiliate additional choice of programming.

[77] FCC News Release, Broadcast Station Totals as of August 31, 1996.

[78] The Commission's definition of a small broadcast station for purposes of applying its EEO rule was adopted prior to the requirement of approval by the Small Business Administration pursuant to Section 3(a) of the Small Business Act, 15 U.S.C. § 632(a), as amended by Section 222 of the Small Business Credit and Business Opportunity Enhancement Act of 1992, Pub. L. No. 102–366, § 222(b)(1), 106 Stat. 999 (1992), as further amended by the Small Business Administration Reauthorization and Amendments Act of 1994, Pub. L. No. 103–403, § 301, 108 Stat. 4187 (1994). However, this definition was adopted after public notice and an opportunity for comment. *See Report and Order* in Docket No. 18244, 23 FCC 2d 430 (1970).

[79] *See, e.g.,* 47 C.F.R. 73.3612 (Requirement to file annual employment reports on Form 395–B applies to licensees with five or more full-time employees); *First Report and Order* in Docket No. 21474 (In the Matter of Amendment of Broadcast Equal Employment Opportunity Rules and FCC Form 395), 70 FCC 2d 1466 (1979). The Commission is currently considering how to decrease the administrative burdens imposed by the EEO rule on small stations while maintaining the effectiveness of our broadcast EEO enforcement. *Order and Notice of Proposed Rule Making* in MM Docket No. 96–16 (In the Matter of Streamlining Broadcast EEO Rule and Policies, Vacating the EEO Forfeiture Policy Statement and Amending Section 1.80 of the Commission's Rules to Include EEO Forfeiture Guidelines), 11 FCC Rcd 5154 (1996). One option under consideration is whether to define a small station for purposes of affording such relief as one with ten or fewer full-time employees. *Id.* at ¶ 21.

[80] We base this estimate on a compilation of 1995 Broadcast Station Annual Employment Reports (FCC Form 395–B), performed by staff of the Equal Opportunity Employment Branch, Mass Media Bureau, FCC.

[81] This category excludes establishments primarily engaged in the manufacturing of household audio and visual equipment which is categorized as SIC 3651. *See infra* for SIC 3651 data.

[82] 13 C.F.R. 121.201, (SIC) Code 3663.

[83] U.S. Dept. of Commerce, *1992 Census of Transportation, Communications and Utilities,* Table 1D (issued May 1995), SIC category 3663.

manufacturers of radio and television equipment.

54. *Household/Consumer Television Equipment:* The Commission has not developed a definition of small entities applicable to manufacturers of television equipment used by consumers, as compared to industrial use by television licensees and related businesses. Therefore, we will utilize the SBA definition applicable to manufacturers of Household Audio and Visual Equipment. According to the SBA's regulations, a household audio and visual equipment manufacturer must have 750 or fewer employees in order to qualify as a small business concern.[84] Census Bureau data indicates that there are 410 U.S. firms that manufacture radio and television broadcasting and communications equipment, and that 386 of these firms have fewer than 500 employees and would be classified as small entities.[85] The remaining 24 firms have 500 or more employees; however, we are unable to determine how many of those have fewer than 750 employees and therefore, also qualify as small entities under the SBA definition. Furthermore, the Census Bureau category is very broad, and specific figures are not available as to how many of these firms are exclusive manufacturers of television equipment for consumers or how many are independently owned and operated. We conclude that there are approximately 386 small manufacturers of television equipment for consumer/household use.

55. *Computer Manufacturers:* The Commission has not developed a definition of small entities applicable to computer manufacturers. Therefore, we will utilize the SBA definition. According to SBA regulations, a computer manufacturer must have 1,000 or fewer employees in order to qualify as a small entity.[86] Census Bureau data indicates that there are 716 firms that manufacture electronic computers and of those, 659 have fewer than 500 employees and qualify as small entities.[87] The remaining 57 firms have 500 or more employees; however, we are unable to determine how many of those have fewer than 1,000 employees and therefore also qualify as small entities under the SBA definition. We conclude that there are approximately 659 small computer manufacturers.

IV. Projected Compliance Requirements of the Rule

56. The *Fourth Report and Order* adopts a rule incorporating by reference the digital television broadcast standard (''Standard'') recommended to the Commission by its Advisory Committee on Advanced Television Service (''ACATS''), with the exception of the video formats. The *Fourth Report and Order* imposes no new reporting or recordkeeping requirements.

V. Significant Alternatives Considered Minimizing the Economic Impact on Small Entities and Consistent With the Stated Objectives

57. The *Fourth Report and Order* adopts a rule that requires transmission of DTV signals to comply with the Standard adopted except for the video format layer and incorporates that Standard, except for the video format layer, into the Commission's rules. We believe that adopting a standard is essential to the goal of universal television service and to facilitating the conversion to digital television service. Not requiring the use of the video format layer advances the goals of minimizing regulation and facilitating technological innovation. The alternatives considered, including authorizing use of the Standard and prohibiting interference to its users, and adopting the Standard for allocation and assignment purposes only, received no express support in the Comments. Moreover, careful evaluation of these alternatives showed that each failed to advance one or more of the important goals of this proceeding. The Commission determined that not mandating video formats sufficiently addressed its concerns with stifling innovation so that neither a sunset of the Standard nor formal periodic review of the Standard would be required. Instead, it indicated that its scheduled reviews of the progress of DTV implementation would be sufficient to keep the Commission abreast of technological developments and marketplace conditions. No additional action is taken on the issues of licensing of patents for DTV technology or provision for closed captioning information to be carried by DTV stations using the standard adopted.

58. Pursuant to the RFA, 5 U.S.C. § 603(c), we have considered whether there is a significant economic impact on a substantial number of small entities. The action taken does not impose additional burdens on small entities. The *Fourth Report and Order* in itself does not mandate a conversion to digital television, only requiring that digital television signals that are transmitted conform to certain standards. The details of requiring the conversion will be taken up in a future *Report and Order*, which will consider alternatives to minimize the economic impact of that conversion on small entities.

VI. Report to Congress

59. The Commission shall send a copy of this Final Regulatory Flexibility Analysis along with this *Fourth Report and Order* in a report to Congress pursuant to the Small Business Regulatory Enforcement Fairness Act of 1996, codified at 5 U.S.C. § 801(a)(1)(A). A copy of this FRFA will also be published in the **Federal Register**.

Paperwork Reduction Act. 60. No impact.

Contract With America Advancement Act. 61. Major rule.

Ordering Clauses. 62. Accordingly, it is ordered that, pursuant to Sections 4(i) & (j) and 303(r) of the Communications Act of 1934 as amended, 47 U.S.C. §§ 154(i), (j) 303(r), Part 73 of the Commission's Rules is amended as set forth in ''Rule Changes,'' below.

63. It is further ordered that, pursuant to the Contract with America Advancement Act of 1996, the rule amendments set forth in ''Rule Changes'' shall be effective [either 60 days after publication in the **Federal Register** or after the receipt by Congress and the General Accounting Office of a report] in compliance with the Contract with America Advancement Act of 1996, Pub. L. No. 104–121, whichever is later.

64. It is further ordered that the Secretary shall send a copy of this *Fourth Report and Order*, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with Section 603(a) of the Regulatory Flexibility Act, Pub. L. No. 96–354, 94 Stat. 1164, 5 U.S.C. § 601 *et. seq.*

List of Subjects in 47 CFR Part 73

Radio broadcast services.

Federal Communications Commission.

William F. Caton,

Acting Secretary.

Rule Changes

Part 73 of Title 47 of the Code of Federal Regulations is amended as follows:

[84] 13 C.F.R. 121.201, (SIC) Code 3651.

[85] U.S. Small Business Administration 1995 Economic Census Industry and Enterprise Report, Table 3, SIC Code 3651 (Bureau of the Census data adapted by the Office of Advocacy of the U.S. Small Business Administration).

[86] 13 CFR 121.201, (SIC) Code 3571.

[87] U.S. Small Business Administration 1995 Economic Census Industry and Enterprise Report, Table 3, SIC Code 3571, (Bureau of the Census data adapted by the Office of Advocacy of the U.S. Small Business Administration).

PART 73—RADIO BROADCAST SERVICES

1. The authority citation for Part 73 continues to read as follows:

Authority: Secs. 303, 48 Stat., as amended, 1082; 47 U.S.C. 154, as amended.

2. Section 73.682 is amended by adding paragraph (d) as follows:

§ 73.682 TV transmission standards.

* * * * *

(d) *Digital broadcast television transmission standard.* Transmission of digital broadcast television (DTV) signals shall comply with the standards for such transmissions set forth in Advanced Television Systems Committee (ATSC) Doc. A/52 (''ATSC Standard Digital Audio Compression (AC–3), 20 Dec 95'') and ATSC Doc A/53 (''ATSC Digital Television Standard, 16 Sep 95''), except for Section 5.1.2 (''Compression format constraints'') of Annex A (''Video Systems Characteristics'') and the phrase ''see Table 3'' in Section 5.1.1 Table 2 and Section 5.1.2 Table 4. Although not incorporated herein by reference, licensees may also consult ATSC Doc. A/54 (''Guide to the Use of the ATSC Digital Television Standard, 4 Oct 95'') for guidance. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected at the Federal Communications Commission, 1919 M Street, NW., Washington, DC 20554 or at the Office of the Federal Register, 800 N. Capitol Street, NW., Washington, DC. Copies of ATSC A/52, A/53, and A/54 can be obtained from the Commission's contract copier or from the Advanced Television Systems Committee, 1750 K Street, NW., Suite 800, Washington, DC 20006. They are also available in their entirety on the Internet at http://www.atsc.org.

[FR Doc. 97–7368 Filed 3–24–97; 8:45 am]

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47 CFR Part 101

[ET Docket No. 95–183; PP Docket No. 93–253; FCC 96–486]

37.0–38.6 GHz and 38.6–40.0 GHz Bands and Implementation of Section 309(j) of the Communications Act—Competitive Bidding

AGENCY: Federal Communications Commission.

ACTION: Final rule; petition for reconsideration.

SUMMARY: Upon reconsideration, the Commission has decided to lift the processing freeze on amendments of right filed on applications in the 38.6–40.0 GHz band (''the 39 GHz band'') before December 15, 1995.[1] By this action, all applications that were amended to resolve mutual exclusivity before this date will be processed, provided that the original applications had completed their 60-day public notice period as of November 13, 1995. In addition, the Commission clarifies that applications to modify existing 39 GHz licenses and amendments thereto will be processed regardless of when filed, provided they neither enlarge the service area nor change the assigned frequency blocks (except to delete them). In all other respects, previous decisions regarding the filing and processing of 39 GHz applications and amendments are unaffected by this *Memorandum Opinion and Order.*

EFFECTIVE DATE: January 17, 1997.

FOR FURTHER INFORMATION CONTACT: Susan Magnotti, Private Wireless Division, (202) 418–0871.

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's *Memorandum Opinion and Order,* FCC 96–486, adopted December 20, 1996 and released January 17, 1997. The complete text of this document is available for inspection and copying during normal business hours in the FCC Reference Center (Room 239), 1919 M Street, NW., Washington, DC 20554, and may be purchased from the Commission's copy contractor, International Transcription Service, (202) 857–3800, 2100 M Street, NW., Washington, DC 20037.

Summary of Order

1. By this action, the Commission resolves and provides clarification on the treatment it will afford pending applications in the 38.6–40.0 GHz band (''the 39 GHz band''). The 39 GHz band is used to support fixed point-to-point microwave communications.

2. On September 9, 1994, the Point-to-Point Microwave Section of the Telecommunications Industry Association (''TIA'') filed a Petition for Rule Making concerning use of the 39 GHz band and the 37.0–38.6 GHz (''37 GHz'') band, for which there are currently no licensing or service rules. On November 13, 1995, the Wireless Telecommunications Bureau (''Bureau'') issued a *Freeze Order,* 61 FR 8062 (March 1, 1996) announcing that the Commission would no longer accept for filing applications for new 39 GHz licenses in the Common Carrier or Operational Fixed Point-to-Point Microwave Radio Services, pending Commission action on TIA's Petition.

3. Thereafter, on December 15, 1995, the Commission issued an *NPRM and Order,* 61 FR 2452 (January 26, 1996) which expanded upon the November 13, 1995 *Freeze Order,* primarily by distinguishing between those pending 39 GHz applications that would be processed and those that would be held in abeyance pending the outcome of the rulemaking proceeding. As a result of the above Commission actions, several parties filed petitions for reconsideration of that portion of the Commission's December 15, 1995 *NPRM and Order* which imposed an interim processing freeze on certain 39 GHz band license applications and amendments. An Emergency Request for Stay of the freeze was also filed. In this *Memorandum Opinion and Order,* the Commission grants these petitions in part and denies them in part. In light of the Commission's decision regarding the petitions for reconsideration, the Emergency Request for Stay is moot.

4. The *NPRM and Order* provided that pending applications would be processed if (1) they were not mutually exclusive with other applications at the time of the Bureau's November 13, 1995 *Freeze Order,* and (2) the 60-day period for filing mutually exclusive applications had expired prior to November 13, 1995. The *NPRM and Order* further provided that those applications that were mutually exclusive with others as of November 13, 1995, or within the 60-day period for filing competing applications on or after November 13, 1995, would be held in abeyance. Amendments to these frozen applications received on or after November 13, 1995, would also be held in abeyance. Moreover, applications for modification of existing 39 GHz licenses filed on or after November 13, 1995, would be held in abeyance, as well as amendments to these modification applications filed on or after November 13, 1995. Finally, no new applications to modify existing licenses, or amendments to pending modification applications, would be accepted for filing on or after December 15, 1995. The foregoing restrictions on modification applications and amendments thereto were not intended to apply if the requested action would neither enlarge the service area nor change frequency blocks (except to delete them).

5. This *Memorandum Opinion and Order* gives some of the relief requested by petitioners by lifting the processing freeze on amendments of right filed before December 15, 1995. Thus, all applications that were amended to

[1] See 47 CFR 101.29 (addressing amendments of right).