

66. Now, however, we have the ATSC DTV Standard before us. In Annex E, it indicates that our current TV rules should be appropriate for the digital TV service with respect to tuner performance, direct pickup and closed captioning.⁷¹ It notes that a 10 dB "noise figure" was used for spectrum planning purposes and it expects that value to be appropriate. Additionally, the ATSC DTV Standard indicates that any decoder interface standards we adopt for NTSC "cable-ready" receivers in ET Docket No. 93-7 will almost certainly provide a basis for rules concerning this aspect of digital TV receivers.⁷² In its Final Report, the Technical Subgroup of ACATS recommended that the Commission require that receivers (and set-top boxes designed to receive ATV broadcasts for display on NTSC sets) be able to receive adequately all DTV formats.⁷³ In response to the Fourth Further Notice, some commenters expressed concern that such a requirement might have a large effect on either reception quality or receiver costs.⁷⁴ We request comment on the importance of this requirement for compatibility between receivers and broadcast signals. What level of reception performance should be considered adequate? Given our proposal that licensees must use the ATSC DTV Standard, is such a requirement necessary? We seek comment on necessary adjustments to the existing TV receiver rules so that they cover digital TV receivers and also invite commenters who believe that the recommendation of the ATSC DTV Standard has led them to change their views with regard to receiver standards to supply further comment on this issue.

67. Licensing Technology. Low-cost licensing of DTV technology will increase the supply and lower the cost of DTV equipment by lowering barriers to entry for competing manufacturers. This practice could contribute to an expeditious and orderly implementation of digital broadcast television. We have previously stated that in order for DTV implementation to be fully realized, the patents on a DTV standard would have to be licensed to other manufacturing companies on reasonable and nondiscriminatory terms.⁷⁵ In response,

⁷¹ ATSC DTV Standard at 61-64. Note that it describes "appropriate" as meaning that the existing rules for NTSC which are referenced contain most elements of future rules for digital television and, further, the rules may be expanded to cover digital television.

⁷² First Report and Order in ET Docket No. 93-7, supra. Although the Commission adopted requirements for television receivers to be marketed as "cable-ready," an open issue in that proceeding is a standard for a decoder interface

⁷³ ACATS Report at 20

⁷⁴ See, e.g., Comments of the Electronic Industries Association and the Advanced Television Committee at 16. See also Comments of Zenith Electronics Corporation at 4.

⁷⁵ Notice of Proposed Rule Making in MM Docket No. 87-268, 6 FCC Rcd 7024, 7035 (1991); Second Report and Order/Third Further Notice of Proposed Rule Making in MM Docket No. 87-268, 7 FCC Rcd 3340, 3358 (1992); Memorandum Opinion and Order/Third Report

the Advisory Committee's testing procedures have required proponents of any DTV system to follow American National Standards Institute patent policies which require assurance that: (1) a license will be made available without compensation to applicants desiring to utilize the license for the purpose of implementing the standard; or (2) a license will be made available to applicants under reasonable terms and conditions that are demonstrably free of any unfair discrimination.⁷⁶ While we believe that adherence to the patent policies of the American National Standards Institute will enhance competition and protect consumers, we seek comment on whether we should require more detailed information on the specific terms, if any, for patenting and licensing the ATSC DTV Standard. We note that the patent policies of the American National Standards Institute do not cover pending patents. How will pending patents be licensed? Are there any intellectual property, patenting, or licensing concerns we are not aware of which need further consideration?

68. International Trade. It is clear that the introduction of digital terrestrial broadcasting is not limited to the United States. Indeed, it is a global phenomenon. We believe that the ATSC DTV Standard is an excellent digital television transmission system, and, as stated earlier, there are no competing systems on the horizon. Nevertheless, we recognize that other countries may choose other systems that they feel more appropriately meet their needs, expectations or national priorities. Their systems may well be incompatible with the ATSC DTV Standard. Would our proposal here serve to enhance competitiveness of a U.S. system worldwide and what are the benefits associated with such a result? Additionally, the use of incompatible standards might erect barriers for U.S.-produced films and television programs by making them more difficult for foreign purchasers to buy or display. Will a requirement to use the ATSC DTV Standard as the sole authorized system exacerbate or enhance the opportunities of US based content providers, equipment manufacturers or other parties? In response to such concerns the Advisory Committee included compatibility with relevant international standards, or commitments to this objective, in the list of characteristics critical to interoperability. Subsequently, as noted above, to increase international compatibility, the Grand Alliance adopted the MPEG-2 video stream syntax for encoding of video and the MPEG-2 transport stream syntax for the packetization and multiplexing of video, audio and data signals. Should we pursue additional measures to facilitate international compatibility?

69. Captioning. Section 305 of the Telecommunications Act of 1996⁷⁷ requires the Commission, within 18 months after the date of enactment of the Telecom Act, to prescribe regulations to assure that video programming is fully accessible through the provision of closed captions. The issue of captioning and video descriptions is currently being examined

and Order/Third Further Notice of Proposed Rule Making in MM Docket 87-268, 7 FCC Rcd 6924, 6982 (1992)

⁷⁶ Advisory Committee ATV Test Procedures Test Management Plan at § 2.1.

⁷⁷ Pub. L. No. 104-104, 110 Stat. 56 (1996)

by the Commission in MM Docket No. 95-176.⁷⁸ In that proceeding, we specifically asked a number of questions concerning DTV and captioning.⁷⁹

70. The ATSC DTV Standard reserves a fixed 9600 bits-per-second data rate for closed captioning.⁸⁰ We understand that EIA's R4.3 Subcommittee on TV Data Systems is considering a standard to define the syntax for the data, as well as the issue of how to include closed captioning information for multichannel SDTV transmissions. Any further comments parties may have concerning the ability of DTV to include captioning and how the Commission should implement captioning requirements for DTV in the event it does not adopt a mandatory DTV standard may be filed in response to this Further Notice.

VIII. Conclusion.

71. With this Fifth Further Notice, we explore a number of issues concerning the introduction of the ATSC DTV Standard for digital television broadcasting. We applaud ACATS and the Grand Alliance, as well as the other organizations and individuals listed in the ACATS Report, for their tireless efforts in arriving at and agreeing on a DTV standard. We solicit comments on our proposal described herein. We ask commenters to provide us their detailed and well-supported comments upon our proposal, as well as the other issues raised in this Notice, so that we may have a complete and current record upon which to base our final conclusions and bring the benefits of digital broadcast technology to the American people.

ADMINISTRATIVE MATTERS

72. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. Sections 1.415 and 1.419, interested parties may file comments on or before July 11, 1996, and reply comments on or before August 12, 1996. To file formally in this proceeding, you must file an original plus six copies of all comments, reply comments, and supporting comments. If you want each Commissioner to receive a personal copy of your comments, you must file an original plus eleven copies. You should send comments and reply comments to Office of the Secretary, Federal Communications Commission, 1919 M Street, N.W., Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center (Room 239), 1919 M Street, N.W., Washington, D.C. 20554.

73. This is a non-restricted notice and comment rulemaking proceeding. Ex parte

⁷⁸ Notice of Inquiry (MM Docket No. 95-176), FCC 95-484 (Adopted December 1, 1995).

⁷⁹ Id. at para. 17.

⁸⁰ ATSC DTV Standard at 26.

presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in the Commission Rules. See generally 47 C.F.R. Sections 1.1202, 1.1203, and 1.1206(a)

INITIAL REGULATORY FLEXIBILITY ACT STATEMENT

I. Reason for Action

The Commission seeks comment on a variety of issues concerning whether to adopt a technical standard for digital television and, if so, whether that standard should be the one reported to the Commission by the Advisory Committee on Advanced Television Systems.

II. Objectives of the Action

The Fifth Further Notice of Proposed Rule Making solicits comment on a variety of issues, in order to establish an accurate, comprehensive, reliable record on which to base the Commission's ultimate decisions in this proceeding. The record established from comments filed in response to this decision, as well as other Commission decisions, and the combined efforts of the Commission, the affected industries, the Advisory Committee on Advanced Television Service, and the DTV testing process, will lead to implementation of DTV in the most harmonious fashion and to selection of the most desirable DTV system.

III. Legal Basis

Authority for this action may be found at 47 U.S.C. §§154 and 303.

IV. Reporting, recordkeeping and other compliance requirements

Such requirements are not proposed in this phase of the proceeding, but may be raised and comment sought in future decisions in this proceeding.

V. Federal rules which overlap, duplicate or conflict with these rules.

There are no rules which would overlap, duplicate, or conflict with these rules.

VI. Description, potential impact and number of small entities involved.

There are approximately 1,546 UHF and VHF, commercial and educational television stations, 2,587 UHF translator stations, 2,275 VHF translator stations, and 1,825 UHF and VHF low power television stations which would be affected by decisions reached in this proceeding. The impact of actions taken in this proceeding on small entities would ultimately depend on the final decisions taken by the Commission. However, the Commission, in taking future action will continue to balance the need to provide the public with affordable, flexible, accessible digital broadcast television service with the economic and administrative interests

of the affected industries.

VII. Any significant alternatives minimizing the impact on small entities consistent with stated objectives.

This Fifth Further Notice of Proposed Rule Making is intended to examine the issue of what, if any, transmission standard for digital television should be adopted by the Commission. In so doing, we are soliciting comments and suggestions that hopefully will represent the views of all of the industries concerned, and thus the Commission will be better able to minimize whatever negative impact might face small entities as a result of our decisions.

Ordering Clause

74. Accordingly, IT IS ORDERED that pursuant to the authority contained in Sections 4 and 303 of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154 and 303, this Fifth Further Notice of Proposed Rule Making IS ADOPTED.

75. Additional Information: For additional information regarding this proceeding, contact Saul Shapiro (202-418-2600) or Roger Holberg (202-418-2134), Mass Media Bureau.

76. As required by Section 603 of the Regulatory Flexibility Act, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the expected impact on small entities of the proposals suggested in this document. The IRFA is set forth above. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments on the rest of the Notice, but they must have a separate and distinct heading designating them as responses to the Initial Regulatory Flexibility Analysis. The Secretary shall send a copy of this Fifth Further Notice of Proposed Rule Making, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with paragraph 603(a) of the Regulatory Flexibility Act. Pub. L. No. 96-354, 94 Stat. 1164, 5 U.S.C. Section 601 et seq. (1981).

FEDERAL COMMUNICATIONS COMMISSION


William F. Caton
Acting Secretary

APPENDIX A

Additional procedural or general broadcast rules that may be modified or adapted for DTV.

Section

- 73.607 Availability of channels.
- 73.611 Reference points and distance computations.
- 73.612 Protection from interference.
- 73.615 Administrative changes in authorizations.
- 73.621 Noncommercial educational TV stations.
- 73.635 Use of common antenna site.
- 73.684 Prediction of coverage.
- 73.685 Transmitter location and antenna system.
- 73.686 Field strength measurements.
- 73.688 Indicating instruments.
- 73.1010 Cross reference to rules in other parts.
- 73.1015 Truthful written statements and responses to Commission inquiries and correspondence.
- 73.1030 Notifications concerning interference to radio astronomy, research and receiving installations.
- 73.1120 Station location.
- 73.1125 Station main studio location.
- 73.1201 Station identification.
- 73.1202 Retention of letters received from the public.
- 73.1206 Broadcast of telephone conversations.
- 73.1207 Rebroadcasts.
- 73.1208 Broadcast of taped, filmed, or recorded material.
- 73.1209 References to time.
- 73.1211 Broadcast of lottery information.
- 73.1212 Sponsorship identification; list retention; related requirements.
- 73.1213 Antenna structure, marking and lighting.
- 73.1216 Licensee-conducted contests.
- 73.1217 Broadcast hoaxes.
- 73.1225 Station inspections by FCC.
- 73.1226 Availability to FCC of station logs and records.
- 73.1230 Posting of station and operator licenses.
- 73.1250 Broadcasting emergency information.
- 73.1510 Experimental authorizations.
- 73.1515 Special field test authorizations
- 73.1520 Operation for tests and maintenance
- 73.1580 Transmission system inspections
- 73.1590 Equipment performance measurements.
- 73.1610 Equipment tests.

- 73.1615 Operation during modification of facilities.
- 73.1620 Program tests.
- 73.1635 Special temporary authorizations (STA).
- 73.1660 Acceptability of broadcast transmitters.
- 73.1665 Main transmitters.
- 73.1670 Auxiliary transmitters.
- 73.1675 Auxiliary antennas.

APPENDIX B

Advisory Committee on Advanced Television Service

Chairman

Richard E. Wiley, Wiley, Rein & Fielding

Members

Frank Biondi, Viacom International, Inc.
Joel Chaseman, Chaseman Enterprises International
Joseph Collins, American T.V. & Comm. Corp.
William Connolly
Martin Davis, Wellspring Associates, Inc.
Irwin Dorros
James C. Dowdle, Tribune Broadcasting Co.
Ervin S. Duggan, PBS
Joseph Flaherty, CBS, Inc.
Samuel Fuller, Digital Equipment Corporation
Stanley S. Hubbard, Hubbard Broadcasting
James Kennedy, Cox Enterprises
James C. McKinney, Advanced Television Systems Committee
Craig Mundie, Microsoft Corporation
Thomas S. Murphy, Capital Cities/ABC Inc.
Rupert Murdoch, Fox, Inc.
Jerry K. Pearlman, Zenith Electronics Corporation
F. Jack Pluckhan, Quasar
Ward Quaal, The Ward L. Quaal Company
Richard D. Roberts, TeleCable Corporation
Burton Staniar, The Knoll Group
James Tietjen, SRI International
Laurence Tisch, CBS, Inc.
Robert Wright, NBC

Ex officio (non-voting) Members

Peter Bingham, Philips Laboratories
Wendell Bailey, National Cable Television Association
Henry L. Baumann, National Association of Broadcasters
Joseph Donahue, Thomson Consumer Electronics, Inc.
Brenda L. Fox, Dow, Lohnes & Albertson
Richard Friedland, General Instrument Corporation

Robert Graves, R.K. Graves Associates
Larry Irving, U.S. Department of Commerce. NTIA
Keiichi Kubota, NHK Science & Technical Research Labs
Jae Lim, Massachusetts Institute of Technology
Vonya B. McCann, U.S. Department of State
George Vradenburg III, Latham & Watkins
Margita White, MSTV

APPENDIX C

Advanced Television Systems Committee

AT&T
AT&T Laboratories
Baylor University
Bell Communications Research
CBS
Cable Television Laboratories
Capital Cities/ABC
David Sarnoff Research Center
Dolby Laboratories
Eastman Kodak Company
Electronic Industries Association
Florida Atlantic University
Twentieth Century Fox
GTE
General Instrument Corporation
Grass Valley Group
Hitachi America
Home Box Office
Association of Independent TV Stations
Ikegami Electronics USA
Institute of Electrical and Electronics Engineers
Koichi Sadashige & Associates
Massachusetts Institute of Technology
Association for Maximum Service Television
Mitsubishi Consumer Electronics America
Motion Picture Association of America
National Association of Broadcasters
National Broadcasting Company
National Cable TV Association
Panasonic Advanced TV Laboratories
Panasonic Broadcast Systems Company
Philips Electronics North America
Pioneer New Media Technologies
Public Broadcasting Service
Satellite Broadcasting and Communications Association
Sanyo Manufacturing Corporation
Scientific Atlanta

Sharp Electronics Corporation
Snell & Wilcox
Society of Motion Picture and Television Engineers
Sony Advanced Systems Company
Sony Pictures Entertainment
TV/COM International
Tele-Communications Incorporated
Texas Instruments
Thomson Consumer Electronics
Titan Information Systems
Toshiba America Consumer Products
Tribune Broadcasting Company
Universal City Studios
VLSI Technology
Viacom International
Westinghouse Broadcasting Company
Zenith Electronics Corporation

SEPARATE STATEMENT OF
CHAIRMAN REED E. HUNDT

Re: *Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service*, Fifth Further Notice of Proposed Rule Making, MM Docket No. 87-268

When this process began the Commission hoped for a new broadcasting standard that would mark the next evolution in broadcast television. The standard we have before us, however, amounts to nothing less than a revolution.

Instead of a standard that would simply transmit better picture and sound, we have a standard that transmits more picture and sound -- and more than just picture and sound. We have a flexible, dynamic, digital standard that permits broadcasters to provide not only "high definition" pictures but also two, three, four or five simultaneous programs with higher resolution than the current analog standard. It is a standard that potentially converts a town with six over-the-air channels into a town with 30, and a city with a dozen over-the-air channels into one with 60. And in addition to multiple TV channels, the standard allows broadcasters to transmit text and data --- the local newspaper or brand new software -- directly to the next generation of computer-powered TVs. The standard creates opportunities for new revenue streams that can be channeled to even higher quality programming, enhancing broadcasters' ability to compete in the evolving video market.

I heartily congratulate our Advisory Committee and the Grand Alliance for their extraordinary achievement -- and for gathering a broad consensus behind the single Advanced Television Systems Committee (ATSC) Digital Standard. They have worked long and hard, and the American people should be grateful for what they have given us.

To be sure, while we have broad industry consensus we do not have unanimity. Concerns have been raised about specific elements of the ATSC Standard. Segments of the computer industry, including Microsoft Corporation and Apple Computer, object to the presence of interlaced scanning formats in the proposed standard. And many moviemakers and other artists, including the members of the American Society of Cinematographers, object to inclusion of a 16:9 aspect ratio.

Each of these groups raises concerns that cannot be dismissed out of hand. We ought to have a standard that guarantees interoperability between TVs and computers. And we ought to have a standard that promotes artistic creativity. Proponents of the ATSC Standard maintain that it accommodates the concerns of the computer and entertainment industries, and I know personally that the Advisory

Committee worked diligently to try to do so. We need thorough comments and full participation on these important issues.

That aside, no one is more pleased than I am that broadcasters will ultimately use the flexible, dynamic, digital ATSC Standard.

I remain skeptical, however, about whether the government should be in the business of mandating standards at all.

Why is it in the public interest to adopt rules freezing the current state of technology?

Given the rapid pace of technological change, isn't it inevitable that there will be innovations that even the flexible ATSC Standard cannot accommodate?

Why should broadcasters be required to submit to potentially costly and time-consuming Commission procedures in order to experiment with new technologies that do not interfere with other broadcasters using the ATSC Standard?

Shouldn't we be concerned that erecting a regulatory barrier to the use of new technologies may discourage the research and development necessary for innovation -- whether by members of the Grand Alliance or by new entrants?

How is it consistent with the deregulatory spirit of the new Telecommunications Act to codify (directly or indirectly) the 200-plus pages of technical details that constitute the ATSC Standard?

I recognize that there are serious arguments in favor of a government-required standard in a service that we desire to be free and universally available and in which different industries are responsible for transmission and reception. A required standard can erase uncertainty and give broadcasters, manufacturers and consumers the confidence they need to transmit digital signals and to build and buy digital TV sets.

But in view of the broad industry consensus behind the ATSC Standard and the absence of any alternative, why should we doubt that manufacturers will build, consumers will buy and broadcasters will transmit to TV sets based on the only available and tested standard?

I also recognize that the ATSC Standard has room for innovation built into it, reducing the costs of a government-mandated standard in the near term. But doesn't that make it more likely that industry would adopt the standard voluntarily? And how does it respond to the criticisms of an indefinite requirement to use the standard?

In short, I have seen nothing yet that persuades me that the Commission was wrong in 1988 to express skepticism about government-mandated television standards because such requirements "may reduce consumer choice and prevent the timely introduction of new technology." Tentative Decision and Further Notice of Inquiry in MM Docket No. 87-268, 3 FCC Rcd 6520, 6534 (1988).

Nevertheless, I have joined with my colleagues in issuing a Notice that proposes requiring a standard for several reasons. For one, codifying a flexible standard like the one before us is significantly less problematic than codifying an inflexible standard.

In addition, the Notice recognizes that compulsory standards may have costs, and it proposes to adopt rules that encourage innovation and competition and that regulate no more and no longer than necessary. The Notice specifically raises the possibility of adopting a sunset provision making adherence to the ATSC DTV Standard voluntary after an established period of time. A sunset strikes me as perhaps a sensible way to capture the benefits of a government-mandated standard (which are generally near term) while avoiding much of the costs of a mandate (which are generally longer term).

The Notice also seeks comment on alternatives to mandating each element of the ATSC Standard. It asks whether we should require use of some layers of the ATSC Standard but not others (for example, requiring use of the layer involving radio frequency transmission but not the layer involving digital coding and compression), or whether we should simply authorize the ATSC Standard and protecting it against interference but not require use of the Standard.

Comment from all corners on this and the other issues raised in the Notice is critical.

I join this NPRM, finally, because I strongly wish to continue the steady progress the Commission has made toward introducing digital television.

Digital broadcast television -- including, specifically, the dynamic and supple ATSC Digital Standard -- creates opportunities for enormous public benefits. Freeing broadcast television from the straightjacket of analog technology will increase competition in the market for video programming. It will strengthen and preserve the public good of free over-the-air television. And it will permit broadcasters to provide an abundance of eagerly desired public interest programming, from a rich diet of programs that help nourish our children's minds, to electronic town squares that would include ample free time for substantive public debate.

Statement of Commissioner James H. Quello

RE: In the Matter of Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service

One of the advantages of my twenty-two year tenure at the Commission has been the opportunity to be an integral part of the development of new and exciting technology. However, because of my fundamental belief in the vital importance of our **only** universal, free, over-the-air broadcast system, seeing the development, and now the reality, of digital television has been perhaps the most rewarding. I enthusiastically applaud the efforts of ACATS, the Grand Alliance and the Advanced Television Test Center for the time and effort they have devoted over the last eight years to developing a digital television system.

Highlighting my optimism on HDTV, just two days ago noncommercial educational station WETA, the PBS flagship station in the Washington, D.C. area, filed an application for authority to operate an experimental ATV station. This experimental application proposes to make available to the public a wide variety of ATV services, will allow WETA to ascertain how best to respond to public needs and perceptions, and promises to enhance the station's ability to bring public interest programming to the public. Should this application be granted, we will all be able to see, firsthand, the development of a digital television system on one of the premier public television stations in the country.

Why is the development of digital television so important? It promises more than dramatically improved picture quality; it promises to provide "television plus" the ability to provide multiple channels of video programming on one 6 MHz channel, the ability to become interoperable with computers, and a wide array of other new services that we cannot even foresee at this time. The key to the strength of the proposed digital standard before us today is that it is flexible enough to allow applications of the technology that are both predictable and unpredictable.

For these reasons, I strongly support the Notice of Proposed Rule Making before us today and express my strong inclination at this point to adopt the digital standard proposed. Mandating a standard that has been developed and embraced by industry is necessary to ensure that manufacturers, broadcasters, and the public do not waste valuable resources in pursuing technology that does not ultimately prevail in the marketplace. I understand that there is concern in some quarters about mandating a standard; however, under the circumstances, anything short of such a requirement could threaten the future of digital television, America's international place as the leader of this technological movement, and the public interest. While I am a supporter of minimizing regulatory burdens, our past experience with AM stereo shows that, in matters like this one, "minimal regulation where necessary" is a more sound governmental approach than blanket deregulation.

SEPARATE STATEMENT
OF
COMMISSIONER SUSAN NESS

Re: Adoption of a Digital Broadcasting Standard

Digital broadcasting offers a future that is full of promise. The transition of our television broadcasting industry from an analog to a digital system is perhaps the most challenging issue facing the Commission today.

This proceeding -- one of a package of three on digital broadcasting -- is about the future of universal, free, over-the-air television. It is not just about watching super-sharp pictures with great audio.

Free, over-the-air broadcasting provides an invaluable service to the American public. It serves us all, any time any place, rich or poor, urban or rural. It educates, informs and entertains. When broadcast ownership is widely held, its diversity of voices strengthens the political debate essential to our democracy.

Millions of consumers depend upon broadcasting for their news and entertainment. Yet consumers are mostly unaware that, in a decade or so, their analog television sets and VCRs may become obsolete. That is why the transition to digital broadcasting must be undertaken in a manner that ensures continued service to all, including those who cannot -- or choose not to -- subscribe to pay services.

Of all the video competitors, only broadcasting must receive this Commission's blessing before it can upgrade its service to digital. Cable can be digital without FCC permission. DBS already is digital and can provide high definition if it so chooses. Wireless cable, LMDS and telephone company-delivered video services are all planning to go digital.

If the universality of free, over-the-air TV is to continue and broadcasters are to compete in this digital world, broadcasters, investors, and manufacturers must have confidence that the transition to digital technology will be smooth. Adoption of the ATSC DTV transmission standard in an expeditious fashion will provide the specificity and certainty needed to manufacture the equipment and make the investments necessary to launch digital TV.

The ATSC DTV Standard

The ATSC DTV standard was carefully crafted through a very public process. It was designed, developed, and paid for by private industry, not by government. The broadcasters, both commercial and public, as well as the cable, computer, manufacturing, and film industries, invested their time and their talents. Extraordinary efforts were made to accommodate every sector without sacrificing the goals of digital broadcasting.

The process was impressively open and impartial. Throughout, anyone could join any of the Advisory Committee working groups to offer expertise. Hundreds did. Testing was conducted by private parties under designs developed by the Committee to ensure that the testing was fair and accurate.

During the proceeding, General Instrument did what others said couldn't be done -- it developed a digital video transmission system, leapfrogging international competitors. Parties then consolidated efforts to produce a single standard. That action eliminated the need for the FCC to choose from among several standards or to approve all minimally acceptable standards, as was the case in the AM Stereo proceeding.

The ATSC DTV standard offers:

- A stunningly clear, high definition picture with an aspect ratio ideal for delivery of film and sports entertainment.
- The ability for broadcasters dynamically to vary the amount of capacity used per program stream to maximize spectrum efficiency
- Flexibility to provide not only video programming, but also data and other services.
- The ability to connect with computers.
- Technological headroom to implement future improvements and entrepreneurial innovations without making digital receivers obsolete.

The standard already has been endorsed by a subgroup of the Federal Information Infrastructure Task Force, the 1994 NIST/ARPA Workshop on Advanced Digital Video, and the Information Technology Industry Council.

Given the openness of the process and years of consideration, including previous Commission decisions, I believe that the burden of showing why we should not adopt the standard or why the standard has significant flaws lies with the proponents of that view.

Need for a Single Standard

There may be those who argue that the Commission should not mandate one standard, but rather should authorize the use of multiple standards. My preference for a single standard at this time is to provide for the speedy rollout of digital broadcasting, to minimize confusion, and to recover more rapidly substantial amounts of spectrum that can be used for other valuable services. Neither I nor the industries involved have any desire to freeze technology.

There is theory and there is reality. In real life, investment decisions have to be made. Broadcasters must decide whether to invest billions of dollars in new equipment without new revenue streams to cover capital costs and without assurance that their audiences will follow. Investors need a reasonable expectation that there will be a critical mass of viewers before they will commit their dollars.

Manufacturers need certainty before they can begin producing advanced television receivers. There is no room for fits and starts. Absent a standard, investment and manufacturing decisions could be stalled, thwarting the ability to convert rapidly and smoothly to digital broadcasting. Once the technology matures, the authorization of alternative standards may be appropriate. But not at its birth.

Most importantly, consumers need certainty. They need to know that the television set they buy in Louisville will work when they move to Lincoln or Little Rock or Lubbock. They need to be assured that their new set will continue to work for years into the future. The adoption of a single standard should result in the manufacture and purchase of a large volume of digital television receivers, leading to lower costs and a rapid decrease in prices.

We have a limited window of opportunity for global leadership in this highly desirable, high technology sector. We must not let our lead slip away in search of the perfect solution.

Conclusion

The Commission made some very sensible choices very early in this process -- choices that have withstood the test of time. The ATSC DTV standard provides great flexibility, is computer friendly, and is homegrown. It has the potential to expand domestic jobs and grow industries.

Although I remain open to arguments that it has major flaws, advocates of other systems have a high burden to show that their standards are not theoretical but have passed the same rigorous testing as the ATSC standard.

SEPARATE STATEMENT OF
COMMISSIONER RACHELLE B. CHONG

Re: Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service, MM Docket No. 87-268, Fifth Further Notice of Proposed Rulemaking

In today's Notice, we take another positive step toward making broadcast digital technology a reality for the American public. We have proposed to adopt the digital broadcasting standard developed by the Advisory Committee on Advanced Television Service (ACATS) and require its use. I agree that this step is necessary to provide certainty and confidence to the industry as it takes this important and inevitable step into the digital age.

The Advanced Television System Committee (ATSC) DTV Standard represents more than eight years of unprecedented cooperative effort by the entire video industry, including broadcasters, networks, TV and film producers, manufacturers, trade associations, and the academic community. The designers of the system believe that the ATSC DTV Standard represents a state-of-the-art, dynamic, flexible, high quality system that may accommodate the needs of many different users. I congratulate and thank all those individuals and companies who participated in this process and worked so hard and so cooperatively to bring this remarkably capable and flexible standard to us.

I do not underestimate the impact of the new digital broadcasting standard that we advance today. Its introduction will be an even more significant development than the move from the 1940s black and white analog television standard to the color television analog standard developed in the early 1950s. Offering more than just a "pretty picture," this move to digital technology will give Americans new choices and options.

When I review the comments in this proceeding, I intend to keep several fundamental principles in mind. First, I will be considering how adoption of a digital broadcast standard will help to preserve a free, universal over-the-air television service for all Americans. I believe that free over-the-air broadcasting is fundamental to the well being of a democratic society. Without question, television is an important and even unique part of our American culture. It gives us shared national experiences, entertains us, inspires us and informs us.

The second fundamental principle that I will consider is that the transition to digital broadcasting must be accomplished in an orderly manner with the critical aspect being the needs of consumers. As we move into the digital era, consumers ought to be able to afford to buy a digital television set and know that the set they purchase will work anywhere in the United States. The transition ought to take place as quickly as is reasonable, with the key consideration being consumer acceptance. After all, nearly all Americans rely on television as an important part of their daily life; television for them is not a discretionary service.

Finally, it is also important to me that any advanced television system put in place should provide enough flexibility and "headroom" that it will accommodate future technological innovations. Proponents of the ATSC DTV Standard contend that the Standard was designed to provide this kind of flexibility. They state that it was designed to be flexible enough to incorporate future technological improvements, even those resulting in higher resolution. The Advanced Television Systems Committee also assures me that it will review the Standard on its own motion at intervals to ensure it keeps pace with innovation. I will be looking closely at this issue, because I seek to ensure that our regulations do not inhibit future advancements that may benefit the American people.