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Federal Communications Commission
Office of the Secretary

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
ADVANCED TELEVISION SYSTEMS AND)
THEIR IMPACT ON THE EXISTING)
TELEVISION BROADCAST SERVICE)

MM Docket No. 87-268

AT&T REPLY COMMENTS

Pursuant to the Commission's November 8, 1991 Order,* American Telephone and Telegraph Company ("AT&T") hereby replies to the comments on the Commission's Notice of Proposed Rulemaking ("NPRM") on the selection of an advanced television system ("ATV").

The NPRM seeks comment on, among other things, the extent to which the Commission can or should encourage compatibility of a terrestrial broadcast ATV system with other transmission media (e.g., cable or satellite) or with other applications (e.g., computer applications). The Commission concluded that "ATV compatibility with other forms of transmission and applications would appear

* Advanced Television Systems and Their Impact on the Existing Television Broadcast Service, MM Docket No. 87-268, FCC 91-337 (released November 8, 1991).

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to be a desirable policy objective, provided that it does not unduly compromise other goals in this proceeding.**

In its comments, AT&T supported the Commission's position and demonstrated that formal Commission action with respect to technological compatibility is not necessary, particularly in light of the fact that the Systems Subcommittee of the Commission's Advisory Committee has already included technological compatibility characteristics as two of the ten criteria to be used in selecting an ATV system.** AT&T's comments also demonstrated that, although compatibility is important,*** the Commission should not elevate compatibility selection criteria above the other criteria considered in the selection process, because additional compatibility may be achievable only at the expense of other important Commission objectives.

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- * NPRM, ¶ 47 (emphasis added). Those goals include: prompt, non-disruptive implementation of a new generation of affordable, higher quality television; coverage comparable to or better than today's NTSC coverage; and use of 6 MHz channels. NPRM, ¶ 2.
- ** AT&T Comments, p. 5. In addition, the Alternative Media Technology and Broadcast Interface Working Group of the Advisory Committee's Planning Subcommittee is specifically examining compatibility issues in detail.
- *** Indeed, achieving high levels of compatibility was an important consideration in the design of the Zenith/AT&T system.

I. THE COMMENTS CONFIRM THAT NO ADDITIONAL COMMISSION ACTION IS NECESSARY CONCERNING THE TECHNOLOGICAL COMPATIBILITY OF ATV WITH OTHER MEDIA.

The commenters generally agree that the Commission's Advisory Committee process is addressing and resolving compatibility issues and that no additional Commission action concerning compatibility is necessary or appropriate at this time.* A broad cross-section of interested parties -- system proponents, broadcasters, equipment manufacturers and academics -- support the Commission's treatment of technological compatibility issues. The Joint Broadcasters note (at 38), for example, that the "Advisory Committee has taken the appropriate steps." NCTA similarly observes (at 7) that "the ATV standards-setting process has been marked by consensus-building" among affected industries.**

The commenters further recognize that the Commission's approach strikes the right balance by proposing to implement technological compatibility, but only to the extent feasible without jeopardizing the Commission's fundamental goals in this proceeding. The Commission's approach is appropriate because technological

* A list of the parties that submitted comments in response to the NPRM is attached as Appendix A.

** See also Zenith, pp. 1, 16-17; EIA/CEG, p. 14; Future Images, pp. 6-7; Digital, p. 1; ATSC, p. 9; Solomon, p. 1; General Instrument, p. 5; North American Philips, p. 17, Liebhold, p. 1.

compatibility is not an "all or nothing" concept.*
Rather, there is a range of achievable compatibility levels against which the Commission's other goals must be balanced. For example, compatibility must consider cost and performance penalties associated with achieving the goal of an easy interchange among transmission media.**

Despite the general support for the Commission's balanced approach to technological compatibility, a few parties suggest that an ATV system must achieve the highest possible level of compatibility with all other media. Lippman, for example, argues that an ATV system

* See AT&T, p. 3 ("[c]ompatibility questions involve trade-offs because implementing greater levels of compatibility could result in the loss of other technical features or in increased costs"); Zenith, pp. 1, 16-17 ("computer compatibility should not delay the process of initiating HDTV television service"); General Instrument, p. 5 ("[t]here may be tradeoffs between achieving the goals of interoperability, extensibility and scalability and achieving other important goals"); North American Philips, p. 17 (there will not be "complete compatibility"); EIA/CEG, p. 14; Future Images, pp. 6-7; Digital, p. 1; ATSC, p. 9; Solomon, p. 1.

** Significantly, as a general matter, most commenters agreed that an all-digital ATV system largely resolves the compatibility problem. AT&T Comments, pp. 6-7; Children's Television Workshop, p. 3; Liberty, p. 2; General Instrument, pp. 4-5; McAdams, p. 1; Lippman, p. 1; Phillips, p. 3; Staelin, pp. 1-2; Westinghouse, p. 7. For example, the comments submitted by Kleiner Perkins and by Schreiber noted that an all-digital ATV system with square pixels and non-interlaced scanning would facilitate development of computational and multimedia technologies. Kleiner Perkins, p. 3 (realize full potential through "square [pixels], non-interlaced" scanning); Schreiber, App., p. 8 ("Square pixels and progressive scan . . . are preferred"). The Zenith/AT&T Digital Spectrum Compatible system has these characteristics.

should be "equally suitable" for all transmission media and uses. Schreiber claims that no current system proponent offers adequate compatibility and asserts that, although better television service is "desirable," such goal is not a primary reason for implementing an ATV service.*

These suggestions should be rejected. First, requiring an ATV system to offer total technological compatibility would result in significant delays in the public availability of ATV. The Commission or its Advisory Committee would have to solicit and evaluate wholly new proposals for offering total compatibility regardless of the impact on television features or costs.** This would require a substantial period of time. Moreover, as the comments of AT&T and most other parties demonstrate, total compatibility -- if attainable at all -- could be achieved only at the cost of sacrificing other important goals. The Commission has

* Schreiber, pp. 2, 3. See also Kleiner Perkins, pp. 1-2 (an ATV standard must "allow for scalability in every possible way" and "be oriented towards computational technologies and computer standards").

** Complete interoperability cannot currently be achieved by 3-dimensional ("3D") frequency components, as proposed by Schreiber. Compression achieved by a 3D frequency representation was the subject of much study in the 1970's under the name "3D-transform coding." Those approaches to compression were unsuccessful due to low compression efficiency and very high costs. Moreover, the technology advocated by Schreiber at this time cannot achieve acceptable quality levels. For example, in recent tests of 3D subband coding, a variant of 3D transform coding, all subband coding proposals finished last in terms of picture quality.

identified its principal goals in this proceeding as including: (i) prompt implementation of ATV; (ii) no disruption of television service due to ATV implementation; and (iii) affordable ATV service.* The delays, costs and confusion which would result from a total-compatibility requirement would endanger all of these goals.

Lippman also argues that the ATV system should offer universal digital channels that can be used either for high definition television ("HDTV") or for any "non-television services."** Lippman urges the Commission to "broaden the inquiry to examine the use of the digital channels for data unrelated to HDTV or even television at all"***

The Commission, appropriately, is choosing a standard for broadcast television service, not for an all-purpose communications system. The Commission has identified the need for an orderly, non-disruptive introduction of an improved television service which builds on the present television broadcasting structure.**** An abrupt policy change to implement a

* NPRM, ¶ 2.

** Lippman, p. 1.

*** Id., p. 7

**** NPRM, ¶ 5. As a general matter, AT&T supports proposals whereby the marketplace rather than

general-purpose digital communications service could fragment television markets and disrupt the delivery of television services to the public.* For example, a market currently receiving television service on a channel could be deprived of that service under Lippman's proposal if the ATV channels were deployed for digital communications services rather than television service.

A few commenters also suggest that the Commission should require the Advisory Committee to conduct particular types of tests during the system-selection process. For example, Comsat proposes that the Commission require the Committee to test each system with respect to compatibility with satellite transmission.** Satellite compatibility is important, but a Commission order

(footnote continued from previous page)

regulatory fiat determines the appropriate use of spectrum. Indeed, AT&T has advocated such an approach to spectrum allocation for personal communication services in Gen. Docket No. 90-314. Here, however, the Commission has already determined that the spectrum is to be used solely for ATV services. The Commission at a later date could consider marketplace approaches with respect to the allocation of spectrum which becomes available when NTSC television broadcasts are terminated.

* In addition, creation of general-purpose digital channels to replace today's television channels would require comparative hearings, lotteries or some other means for the assignment of such channels, which would cause significant delays.

** Comsat, p. 3.

concerning testing is not necessary. The Advisory Committee is examining whether satellite testing is necessary to evaluate system compatibility. In this regard, the Satellite Broadcasting and Communication Association has joined the Advisory Committee's compatibility working group, and is evaluating whether satellite transmission tests are necessary. Accordingly, the issue of satellite compatibility is being addressed actively and no Commission action is required.

II. THE SYSTEM PROPONENTS HAVE ALREADY AGREED TO FOLLOW REASONABLE PATENT LICENSING PRACTICES.

In response to the Commission's inquiry (¶ 46) regarding patent licensing practices, AT&T noted that the Advisory Committee has required all system proponents to follow the patent policy of the American National Standards Institute ("ANSI"), which mandates reasonable licensing practices.* Several other parties concur in the position that the ANSI licensing commitments address the Commission's concern.** Only one commenter, Future Images, advocates that the Commission order system proponents to follow reasonable licensing practices.***

* AT&T Comments, p. 9.

** EIA/CEG, p. 13; ATSC, pp. 8-9; AT&T, pp. 8-9; Zenith, pp. 13-14; General Instrument, pp. 2-3.

*** Future Images, pp. 5-6.

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Because all system proponents are already bound to implement reasonable licensing practices, as set forth in the ANSI policy, no Commission action is necessary.

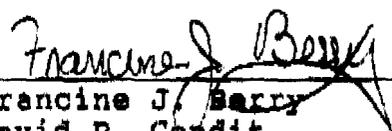
CONCLUSION

For the reasons stated herein and in AT&T's Comments, the Commission should continue to permit the Advisory Committee to analyze technological compatibility issues in order to ensure that such issues are adequately addressed and to evaluate the competing ATV proposals in terms of these important criteria.

Respectfully submitted,

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Balcones Broadcasting Limited

Bradenton Broadcast Television Company, Ltd.

Daniel Brady and Matthew Arrot, National Center for
Supercomputing Applications

Brooks Broadcasting

Brunson Communications, Inc.

Capital Cities/ABC, Inc.

Children's Television Workshop

Cohen, Dippell & Everist

Communicasting Corporation

Comsat Video Enterprises, Inc.

Hugh Carter Donahue, Ph.D.

du Treil, Ludin & Rackley, Inc.

Spacelabs

Consumer Electronics Group of the Electronic Industries
Association

Fox, Inc.

Future Images Today

General Instrument Corporation

Digital Equipment Corporation

Golden Orange Broadcasting Co., Inc.

Great American Television and Radio Company, Inc.

Institute for Alternative Futures

Johnson Graduate School of Management of Cornell University

Joint Broadcasters

Kleiner Perkins Caufield & Byers

Apple Computer, Inc.

Michael N. Liebhold, Apple Computer, Inc.

Andrew Lippman, Massachusetts Institute of Technology

Motorola

The National Cable Television Association, Inc.

North American Philips Corporation

Liberty Television Inc.

The National Captioning Institute, Inc.

Third Coast Broadcasting, Inc.

Prof. Kenneth L. Phillips

Polar Broadcasting, Inc.

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