

AT&T has been a leader in providing services to individuals with hearing disabilities and shares the Commission's goal in the instant proceeding of ensuring that the hearing-impaired have access to digital programming. AT&T is concerned, however, that adoption of the Commission's proposed rules would slow or undermine this important effort by disabling a system that already delivers closed captioning services to millions of hearing-impaired Americans. In particular, AT&T supports those comments in this proceeding which point out that the sole adoption of EIA-708 (either section 9, or the standard in its entirety) would render obsolete the substantial deployed base of closed captioning encoding and decoding equipment currently used by cable programmers and cable operators, and would cause significant disruption in closed captioning service. Accordingly, the Commission must ensure that any rules and closed captioning standards it adopts in this proceeding are backwardly compatible with the substantial base of captioning equipment deployed by the cable industry and cable consumers.

Finally, as AT&T points out in Section III below, there are numerous technical issues surrounding EIA-708 that have yet to be addressed, much less resolved. For example, an end-to-end system design that implements the encoding, transport, and decoding of EIA-708 closed captions in a manner that is compatible with satellite, terrestrial, and cable digital television distribution systems has not even been conceived, let alone demonstrated. It will take a significant amount of time to design and implement such a compatible end-to-end system. Accordingly, if the Commission requires adoption of the EIA-708 standard going forward, AT&T respectfully urges the Commission to establish the effective date of the new rules as four years after adoption of the rules.

II. ADOPTION OF EIA-708 AS THE SOLE AND EXCLUSIVE FORMAT WOULD DISRUPT EXISTING CLOSED CAPTIONING SERVICES UNLESS THE COMMISSION'S RULES ENSURE COMPATIBILITY WITH THE SUBSTANTIAL DEPLOYED BASE OF DIGITAL TELEVISION SYSTEMS, EXISTING ANALOG RECEIVERS, AND NEW DTV RECEIVERS USED TO DELIVER THESE SERVICES.

The cable industry relies on the EIA-608 standard for the delivery of closed captioning in analog and digital programming, as do most video distributors.² Cable programmers and cable operators that provide digital programming to millions of American consumers deliver this captioning data using the SCTE-DVS-157 format, a well-established SCTE and ANSI recognized standard. Cable set-top converters -- both deployed and currently contracted for purchase -- that receive digital cable programming are designed to process closed captioning data using this standard.

AT&T is concerned that the rules proposed in the Notice would render obsolete the substantial deployed base of encoding and decoding equipment used by the cable industry to deliver closed captions within digital video programming. The Notice proposes that future digital receivers be required to support a new closed captioning transport method planned for use by digital terrestrial broadcasters, namely section 9 of the EIA-708 standard. As correctly noted in the initial comment filings, however,³ EIA-708 is incompatible with closed captioning

² The EIA-608 standard is widely used across the video industry to deliver closed captioning to American consumers. As the Commission knows, analog television programmers carry closed captioning data within Line 21 of the television signal's vertical blanking interval ("VBI") as defined in the EIA-608 standard. Other programmers utilize the EIA-608 standard, as well. For example, digital programming broadcasters currently use a combination of proprietary and open standards to transport analog EIA-608 captioning data embedded in the original digital programming content. Similarly, satellite broadcasters use proprietary systems to encode EIA-608 captioning data within the picture user data extensions of the MPEG-2 video streams.

³ See NCTA Comments at 5-7; GI Comments at 5-8.

encoding and decoding equipment utilized in the cable industry today. For example, AT&T alone already has deployed over 500 digital television channels passing tens of millions of homes, as well as 3 million digital set-top converters, to transport, interpret, and display EIA-608 caption information. In addition, AT&T already has commitments to purchase, and plans to deploy, many more such digital set-top converters over the next two years. However, this substantial base of closed captioning encoding and decoding equipment is designed to process only EIA-608 captions carried in the DVS-157 format and not the ATSC A/53 format specified in EIA-708. Consequently, a digital terrestrial broadcast which carries only EIA-708 captioning information cannot be processed and reconstructed by AT&T's headend equipment or set-top converters.

As a result, a Commission rule requiring the exclusive carriage of closed captions pursuant to the EIA-708 standard would impose substantial costs on the cable industry.⁴ For example, AT&T estimates that adoption of the Commission's proposed rules would require AT&T to modify its encoding equipment for carriage of EIA-708 captions at a cost of over \$25 million.⁵ In addition, such modification efforts would take at least one year to complete -- after development and commercial availability of necessary equipment -- and would risk substantial service disruptions. And this does not even consider those risks, additional costs, and delays that

⁴ While AT&T recognizes that the focus of the Notice is on establishing closed captioning decoding requirements for digital receivers, any such requirements will necessarily cause programmers to transmit closed captions using a compatible standard, and this, in turn, will produce the incompatibility with existing digital cable encoding and decoding equipment that cannot process or decode the new standard.

⁵ Other commenters also noted that adoption of the EIA-708 standard would impose substantial costs on cable programmers and cable operators. See NCTA Comments, at 2-3, 5-7; HBO Comments, at 6-7; GI Comments at 5-6, 9.

would be associated with the unavailability or proprietary nature of on-line and off-line EIA-708 captioning software, as noted by other commenters.⁶ Additionally, exclusive adoption of the EIA-708 standard would force AT&T to swap out its deployed base of converter boxes at considerable expense to AT&T. The foregoing costs and burdens would be incurred by numerous cable operators and cable programmers alike.

In effect, exclusive adoption of EIA-708 would severely penalize the cable industry for leading the early development and deployment of digital video programming and digital closed captioning equipment.

More importantly, exclusive adoption of EIA-708 would leave millions of hearing-impaired individuals and other consumers who currently use deployed cable converters to decode closed captions for their analog TVs with equipment that no longer works merely as a result of a regulatory change in the standard used to transmit closed captioning information.

Accordingly, AT&T supports the comments of NCTA that "the Commission should consider these issues prior to forging ahead with a new standard for digital television set manufacturers that by default imposes these potentially significant burdens on the cable industry" and "should ensure that any rules it adopts here take into account issues of backward compatibility with existing equipment."⁷ For example, in addition to whatever other rules are

⁶ See, e.g., Media Captioning Services Comments at 2 (noting the critical lack of available closed captioning software in the marketplace that can enable captioners to create on-line and off-line captioned data that is consistent with the EIA-708 standard); HBO Comments at 6 ("Just as it will take time to manufacture receivers with EIA-708 technology, so too will production equipment manufacturers need at least a similar amount of time to design, test and produce equipment capable of creating captioning consistent with the EIA-708 standard.").

⁷ See NCTA Comments at 6-7.

adopted in this proceeding, the Commission could require the continued use of the SCTE-DVS-157 format in order to avoid rendering obsolete the substantial base of captioning equipment deployed in the cable industry.⁸ In this regard, AT&T notes that the cable and consumer electronics industries have already been working together to address this backward compatibility problem. Specifically, as part of their joint initiative to define digital "cable ready" TVs, OpenCable™ specifications have been released as interim drafts for industry review and would require DTV receivers to include the capability to process closed captioning information that is distributed in the SCTE-DVS-157 format.

III. GIVEN THE SIGNIFICANT TECHNICAL DIFFICULTIES ASSOCIATED WITH EIA-708 IMPLEMENTATION, A LONGER PHASE-IN PERIOD WOULD BE REQUIRED IF THE COMMISSION ADOPTS THE EIA-708 STANDARD.

AT&T supports the Commission's proposal to apply new rules only to equipment manufactured after a phase-in period. However, as several commenters in this proceeding have noted, the Commission's proposal to make those rules effective after one year is unrealistic and unworkable.⁹ This is particularly true if the Commission adopts the EIA-708 standard.

⁸ AT&T notes that a closed captioning transcoder is an impractical approach to solving the backward compatibility problem for several reasons. Most importantly, a device which could transcode EIA-708 and EIA-608 closed caption streams carried in the A/53 format to the DVS-157 format necessary to support legacy set-top converters does not exist. The development time and costs associated with pursuing this approach would be comparable to those for modifying AT&T encoders for carriage of EIA-708 captions as discussed above. Moreover, transcoders would be required at every cable headend for each broadcast digital channel to be carried on that local cable system. Finally, as the EIA-708 standard correctly notes in section 9.23, the DTV closed captioning command set is not necessarily transcodable to NTSC captions (i.e., many DTV EIA-708 captions have no NTSC EIA-608 equivalent).

⁹ See CEMA Comments at 13-14 (urging the FCC to delay the effective date to provide for the completion of testing and chip design relevant to the EIA-708-B standard); HBO Comments, at 6-7 (supporting a 10 year phase-in for EIA-708 captioning); NAB Comments, at 9-10 (favoring longer phase-in period); NCTA Comments, at 4-5 (urging longer phase-in period);
(footnote continued ...)

While it may not even be necessary for the Commission to adopt EIA-708 in order to provide consumers with more advanced captioning functionality,¹⁰ if it does so, AT&T stresses that there are numerous technical issues surrounding EIA-708 that have yet to be addressed, much less resolved, which will require a longer phase-in period. For example, an end-to-end system design that implements the encoding, transport, and decoding of EIA-708 closed captions in a manner that is compatible with satellite, terrestrial, and cable digital television distribution systems has not even been conceived, let alone demonstrated. As a natural consequence, for instance, there is no standard method for commercial DTV equipment (such as that located at AT&T's HITS facilities) to decode closed captioning information so that it can be distributed with the digital video and audio components to headend routing, signal processing, re-encoding, or other commercial equipment.¹¹ In addition, there is no standard means for synchronizing EIA-708 closed captioning information with digital video and audio for recording and playback.¹² It will take a significant amount of time to design and implement such a compatible end-to-end system.

(... footnote continued)

Comments of Thomson Consumer Electronics, at 3-6 (favoring 2-year transition); Comments of Media Captioning Services, at 2 (noting the lack of captioning software to support the EIA-708 standard).

¹⁰ See, e.g., GI Comments at 8-13 (pointing out that advanced captioning functionality can be achieved in a more cost-effective manner by relying on EIA-608 captions and the graphics processing functionality of DTV receivers to manipulate the look and feel of captions locally).

¹¹ This issue is acknowledged in section 10 of EIA-708.

¹² There are also other problems with EIA-708 that call into question the appropriateness of mandating it as a government standard. However, since AT&T believes that commenters have already extensively described these shortcomings, it will not reiterate them here.

Accordingly, if the Commission requires adoption of the EIA-708 standard going forward, AT&T respectfully urges the Commission to establish the effective date of the new rules as four years after adoption of the rules. This phase-in period will afford manufacturers, software developers, video distributors, captioners, and the numerous standards bodies that will have to be involved sufficient time to design and implement this new end-to-end system.

IV. CONCLUSION

Based on the foregoing, AT&T respectfully urges the Commission to adopt closed captioning requirements consistent with the reply comments set forth herein.

Respectfully submitted,

Michael H. Hammer
Francis M. Buono
Willkie Farr & Gallagher
1155 21st Street, N.W.
Suite 600
Washington, D.C. 20036
(202) 328-8000

/s/ Mark C. Rosenblum
Mark C. Rosenblum
AT&T Corp.
Room 1146M2
295 North Maple Avenue
Basking Ridge, NJ 07920

Douglas G. Garrett
AT&T Broadband & Internet Services
9197 South Peoria
Englewood, CO 80112

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