

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

In the Matter of)
)
 Closed Captioning and Video Description)
 of Video Programming)
) MM Docket No. 95-176
 Implementation of Section 305 of the)
 Telecommunications Act of 1996)
)
 Video Programming Accessibility)

REPORT

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By the Commission:

Table of Contents

	<u>Paragraph</u>
I. Introduction	1
A. Statutory Requirements	2
B. Notice of Inquiry	5
II. Summary of this Report	8
A. Scope of this Report	8
B. Summary of Findings	11
III. Closed Captioning of Video Programming	25
A. Introduction	25
B. Audiences that Benefit from Closed Captioning	29
C. Methods of Closed Captioning	38
D. Cost of Closed Captioning	46
E. Current Availability of Programming with Closed Captioning	56
F. Funding of Closed Captioning	84
G. The Quality and Accuracy of Closed Captioning	87

IV.	Video Description of Video Programming	94
A.	Introduction	94
B.	Audiences that Benefit from Video Description	96
C.	Methods of Distribution of Video Description	100
D.	Cost of Video Description	106
E.	Funding for Video Description	110
F.	Current Availability of Video Description	112
G.	Obstacles to Video Description	119
H.	Statutory Considerations	127
I.	Conclusion	138
V.	Administrative Matters	143
Appendix: List of Commenters		

I. INTRODUCTION

1. Section 713 of the Communications Act of 1934 ("Act"), as amended by the Telecommunications Act of 1996 ("1996 Act"), directs the Commission to conduct inquiries into the accessibility of video programming to individuals with hearing and visual disabilities.¹ This report is issued in compliance with this statutory requirement. It is based on information submitted by commenters in response to a *Notice of Inquiry* ("*Notice*") in this docket and publicly available information.²

A. Statutory Requirements

2. Section 713(a) requires the Commission to complete an inquiry within 180 days of enactment of the 1996 Act to ascertain the level at which video programming is closed captioned. A report on the results of this inquiry shall be submitted to Congress. Specifically, Section 713(a) directs the Commission to examine the extent to which existing or previously published programming is closed captioned, the size of the video programming provider or programming owner providing closed captioning, the size of the market served, the relative audience shares achieved and any other related factors. The Commission also is required to establish regulations and implementation schedules to ensure that video programming is fully

¹ Section 305 of the 1996 Act, Pub. L. 104-104, 110 Stat. 56 (1996), adds a new Section 713, Video Programming Accessibility, to the Act, 47 U.S.C. § 613.

² See *Closed Captioning and Video Description of Video Programming, Notice of Inquiry*, MM Docket No. 95-176, FCC 95-484, 11 FCC Rcd 4912 (1996) ("*Notice*"). Commenters are listed in the Appendix. We also received numerous letters and informal filings in this proceeding.

accessible through closed captioning within 18 months of the enactment of the section.³ The Commission will initiate the rulemaking required by the Act with the issuance of a notice of proposed rulemaking in the next several months.

3. Section 713(f) requires the Commission to commence an inquiry within six months after the date of enactment of the 1996 Act "to examine the use of video descriptions of video programming in order to ensure the accessibility of video programming to persons with visual impairments."⁴ The Commission must report to Congress on its findings, including an assessment of the appropriate methods and schedules for phasing video descriptions into the marketplace, technical and quality standards for video descriptions, a definition of programming for which video descriptions would apply, and other technical and legal issues that the Commission deems appropriate.

4. Section 713 is "designed to ensure that video services are accessible to hearing impaired and visually impaired individuals."⁵ The legislative history of this section states that it is Congress' goal "to ensure that all Americans ultimately have access to video services and programs particularly as video programming becomes an increasingly important part of the home, school and workplace."⁶ The House Committee recognized that there has been a significant increase in the amount of video programming that includes closed captioning since the passage of the Television Decoder Circuitry Act of 1990 ("TDCA").⁷ Nevertheless, the House Committee expressed a concern that video programming through all delivery systems should be accessible to persons with disabilities.⁸

B. Notice of Inquiry

5. On December 1, 1995, prior to the enactment of the 1996 Act, the Commission adopted the *Notice* in this proceeding. It sought information consistent with the legislation that was pending at that time and comment on a wide variety of issues relating to closed captioning and video description of video programming. This inquiry was intended to gather the information needed to assess the current availability, cost and uses of closed captioning and video description. In the *Notice*, the Commission asked specific questions regarding the importance of closed

³ See Section 713(b)-(e), 47 U.S.C. § 613(b)-(e), which are specific provisions relating to the rules the Commission must adopt.

⁴ 47 U.S.C. § 613(f).

⁵ Conference Report, H.R. Report 104-458 (1996), at 182.

⁶ *Id.* at 183.

⁷ House Report, H.R. Report 104-204, Part 1 (1995) at 113. As enacted, Section 713 adopted the House provisions on video accessibility with modifications. Conference Report at 184.

⁸ House Report at 113-114.

captioning to persons with hearing disabilities and of video description to persons with visual disabilities and sought information on other population groups that could benefit from the availability of these services. We requested data on the availability of video programming, both new and previously published, with closed captioning and video description. In the *Notice*, we asked questions regarding the availability of suppliers of closed captioning and video description, the costs of including these services and how they are currently funded.

6. The *Notice* also sought comment on the appropriate means of promoting wider use of closed captioning and video description in programming delivered by broadcast television, cable television, and other video providers. In particular, we sought comment on the general form any mandatory closed captioning or video description rules should take, if they are deemed necessary, including technical standards, quality standards, exemptions for classes of programmers or delivery systems, appropriate timetables for implementing any mandatory requirements and the scope of the Commission's jurisdiction to impose mandatory closed captioning or video description requirements on video service providers and program producers and owners.

7. Because the 1996 Act adopted the provisions concerning the availability of video programming with closed captioning and video descriptions which formed the basis of the Commission's December 1995 inquiry, the Commission decided to use the comments filed in that proceeding for the inquiries it is required to conduct pursuant to Sections 713(a) and (f) of the Act. In an *Order* adopted February 27, 1996, the Commission announced this decision and asked that commenters direct their comments towards the specific provisions of the statute.⁹

II. SUMMARY OF THIS REPORT

A. Scope of this Report

8. This report addresses each of the issues the Commission is required to examine under Section 713 with respect to closed captioning and video description of video programming. We examine the extent to which programming is currently closed captioned (Section III) and the amount of video description of video programming currently provided (Section IV). With respect to closed captioning, the statutory mandate directs the Commission to study the current status of this technology and its uses. Thus, we provide a general description of closed captioning, the population groups that can benefit from its availability, the methods and costs of closed captioning, the amount of programming now available with captions, current funding of captioning and a description of the quality and accuracy of today's closed captioning. In this report, we do not address issues raised in the *Notice* regarding proposals for specific rules, standards and implementation schedules for closed captioning, as they go beyond the scope of the inquiry requirements of Section 713(a). These matters will be considered in the context of a subsequent notice of proposed rulemaking that we will issue to consider proposed rules to fulfill

⁹ See *Closed Captioning and Video Description of Video Programming, Order*, MM Docket No. 95-176, FCC 96-71, 11 FCC Rcd 5783 (1996). The Commission also extended the time for filing comments.

the Congressional mandate that the Commission adopt rules to implement closed captioning requirements by August 8, 1997.¹⁰

9. Section 713(f) focuses the Commission's inquiry on the appropriate methods and schedules for phasing video description into the marketplace and standards for this technology, including technical and quality standards for video descriptions. In Section IV we provide a general discussion of the availability of video description and general information regarding the population groups that can benefit from its availability, the methods and costs of adding descriptions to video programming, the amount of programming now available with description and the current funding of this technology. As directed by the statute, we then address methods and schedules for phasing video description into the marketplace, including appropriate regulatory and technical requirements.

10. This report encompasses all types of available video programming with closed captioning and video description delivered to consumers through existing distribution technology. We report on the availability of broadcast commercial and noncommercial networks, basic and premium cable networks, syndicated and locally produced broadcast and cable programming with closed captions and video description. In addition to over-the-air broadcast television service and cable television service, we examine the availability of the delivery of closed captions and video descriptions to consumers by other multichannel video programming distributors ("MVPDs"). Among these distributors are direct-to-home ("DTH") satellite services, including direct broadcast satellite ("DBS") services and home satellite dishes ("HSD"), wireless cable systems using the multichannel multipoint distribution service ("MMDS"), instructional television fixed service ("ITFS") or local multipoint distribution ("LMDS"), satellite master antenna television ("SMATV") and local exchange carrier ("LEC") video services.¹¹

B. Summary of Findings

1. Closed Captioning

11. Captioning of video programming has existed since the early 1970s. Through the efforts of Congress, government agencies and a variety of private parties, captioned video programming has grown over the past 25 years so that it is now a common feature associated with the vast majority of popular prime time broadcast television programming. Congress'

¹⁰ Section 713(a). Specific requirements the Commission must consider when adopting regulations are specified in Sections 713(b)-(e) and comments directed at those provisions will be considered in the Notice of Proposed Rulemaking.

¹¹ See *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, Second Annual Report*, CS Docket No. 95-61, FCC 95-491, 11 FCC Rcd 2060 (1996) ("*1995 Competition Report*"). This report provides detailed information regarding all available video distribution technologies.

passage of the Americans with Disabilities Act of 1990 ("ADA")¹² requiring the closed captioning of federally funded public service announcements, the Television Decoder Circuitry Act of 1990 ("TDCA")¹³ and the 1996 Act reflect a continuing national commitment to ensuring "that all Americans ultimately have access to video services and programs particularly as video programming becomes an increasingly important part of the home, school and workplace."¹⁴

12. Beneficiaries of Closed Captioning: The principal beneficiaries of closed captioning are the approximately 22.4 million persons who are hearing disabled. In 1995, 25 million decoder-equipped television sets were sold in the U.S. It is estimated that between 50 and 60 million U.S. homes can currently receive closed captioning.

13. Technology: Closed captioning is distributed on line 21 of the vertical blanking interval ("VBI") of broadcast and other analog television signals. Commission rules reserve line 21 for this service. Pursuant to the TDCA, since July 1, 1993, all television receivers with screen sizes 13 inches or larger must be capable of receiving and displaying closed captions. Cable television systems retransmitting broadcast signals must pass through closed captioning to the receivers of all subscribers. For those whose television receivers are not capable of decoding and displaying closed captioning, separate decoders may be purchased. Existing technology, however, can only decode Latin based alphabets and symbols, so captioning of some non-English language programming (Chinese, Japanese, Russian, Arabic, etc.) is not possible using this system. This transmission and display system is generally well established and functions effectively. Digital transmission systems under development are being designed to include closed caption capabilities.

14. Notwithstanding the capabilities of this transmission system, a variety of problems can occur in the captioning process. Captioning of prerecorded programming involves adding a written transcription or description of the spoken words and sounds which is generally carefully prepared and checked for accuracy. In the case of live programming, however, the real time stenographic process of adding the captions increases the number of mistakes.

15. In addition, as programming is duplicated or prepared for transmission, improperly adjusted signal processing equipment can delete line 21, introduce errors or result in captions not being synchronized with the video portion of the program. Time compression of programming to fit it into specific time blocks may destroy captions. Finally, interference and poor quality reception may impair caption quality, sometimes causing individual letters to appear as square white blocks. Closed captions may also cover other written information on the screen, such as emergency weather or school closing announcements.

¹² Pub. L. No. 101-336, § 2, 104 Stat. 328 (1990) (codified at 42 U.S.C. § 12101 *et seq.*).

¹³ Pub. L. No. 101-431, 104 Stat. 960 (1990) (codified at 47 U.S.C. §§ 303(u), 330(b)).

¹⁴ Conference Report at 183-184.

16. Cost: There is a wide range in the cost of closed captioning that reflects the method of adding the captions, the quality of those captions and the entity providing the captions. Organizations and suppliers that charge the most for their services are reported to provide the highest quality and most accurate captioning. For prerecorded programming, the captions are developed off-line using a script of the actual program. Estimates of the cost of this type of captioning range from \$800 to \$2500 per hour of programming. Captions for live programs can be created by specially trained stenotypists. Live captioning costs are estimated to be between \$150 and \$1200 an hour. Off-line captioning is typically more expensive than live captioning because additional resources are expended to edit and proofread the captions. Another method of captioning live programming uses computer software that converts a script into closed captioning. This method, known as electronic newsroom captioning, is virtually cost free once the equipment and software are purchased at a cost generally estimated to be between \$2500 and \$5000. For high budget programming that is distributed nationally and reused many times, such as theatrical films that may receive network broadcast, subscription, syndication, cable television and video tape distribution over a period of years, the costs involved represent only a minor portion of the total production expense and revenue flow. For less expensive programming, such as local cable originations, the cost of captioning could be a significant proportion of total expenditures.

17. Amount of captioning: There has been significant progress in the delivery of closed captioning of video programming, but the goal of making video programming through all delivery systems accessible to persons with disabilities is not yet realized. Virtually all nationally broadcast prime time television programming and nationally broadcast children's programming, news, daytime programming and some sports programming, both commercial and noncommercial, is captioned. New feature films produced in the U.S. that will be distributed by broadcast networks, cable networks, syndicators and local stations following their theatrical release are now captioned at the production stage. Many local stations caption their newscasts, at least the portion that is scripted. Many of the national satellite cable programming networks distribute programming containing closed captions. Cable operators also appear to provide some limited captioning of their local and regional programming. Other MVPDs essentially distribute programming that is produced for broadcast and cable use, and they generally deliver the programming with the existing captions intact.

18. Certain types of programming, however, are unlikely to be captioned, including non-English language programming, home shopping programming, weather programming that includes a large amount of visual and graphic information, live sports and music programming. Captions are less likely to be included in programming intended to serve smaller or specialized audience markets. Programming (e.g., sports), which is considered perishable because it may only be aired one time, is less likely to contain captions than programming that can be rerun by the original distributor or redistributed by others (e.g., in the syndication market).

19. Economic Support: There are four principal sources of economic support for closed captioning. Financial assistance provided by the Department of Education ("DOE") funds represents approximately 40% of the cost of all captioned video programming. This funding is

available only for programming that reaches the largest audiences -- national news, public affairs, children's programming, movies and prime time specials. The remaining support comes from a combination of directly credited corporate advertising support, charitable and foundation support and producers and distributors of programming. Public service announcements produced or funded by the Federal government must be captioned, pursuant to Title IV of the ADA.

20. Little information appears to be collected in any systematic fashion about the size of the audience for closed captioned programming or about the economic demand for captioned programming when programming is distributed on a subscription basis. Not all advertisers caption their own advertisements even when the advertisements appear in conjunction with programming that is captioned. Some distributors, such as those offering subscription based services (e.g., HBO, Cinemax), appear to believe that the inclusion of captions is rewarded by the marketplace as they are able to attract additional subscribers. It also is likely that all programmers and program providers could increase their audience shares if their video programming is accessible to the deaf and hard of hearing community and therefore benefit economically through the inclusion of captions.¹⁵

2. *Video Description*

21. Current Status: Video description includes a narration of the actions taking place in the video programming that are not reflected in the existing dialogue. It requires the development of a second script and uses the second audio programming ("SAP") channel. Video description has not had as far a reach as video captioning. Video description is currently included only on some programs distributed by the Public Broadcasting Service ("PBS") and a few other programs distributed by cable systems. Not all broadcast stations or other video distributors are able to transmit the SAP channel and only about half of the nation's homes have a television with the capability to receive the SAP channel. Unlike line 21 of the vertical blanking interval, which is reserved only for captioning, there is no dedicated or reserved transmission capacity for video descriptions. As a consequence, it competes with second language transmissions, including Spanish language, for use of the SAP channel. According to the National Center for Health Statistics, there are approximately 8.6 million individuals who are blind or visually disabled who might benefit from video description.

22. Because video description is a newer service there is a lack of experience with developing and assessing the best means for promoting its use. In addition, costs for video description are approximately one and a half times the costs associated with closed captioning similar programming. Video description also receives substantially less government funding, which has been a significant factor in promoting the development of closed captioning. Additional legal and technical issues exist. For example, video description requires the development of a second script, which raises creativity and copyright issues, and must use the second audio programming channel and thus must compete for use with other audio services,

¹⁵ See, e.g., National Association of the Deaf Comments ("NAD") at 28-29.

particularly the bilingual audio service. While it is expected that the implementation of digital technology may be more conducive to video description than the current technology because it will permit the transmission of multiple audio channels, given the high costs, lack of funding and unresolved copyright issues, video description is presently a developing service that faces many obstacles before it can become more accessible.

23. Recommendation: In enacting this section of the Act, Congress intended to ensure video accessibility to all Americans, including persons with visual disabilities. The general accessibility of video description is dependent on the resolution of certain technical, legal, funding and cost issues. Any schedule for expanding the use of video description would depend, in part, on implementation of advanced digital television. Implementation of advanced digital television can make the distribution of additional audio channels feasible and facilitate the implementation of video description. In addition to these technical problems, funding remains a fundamental issue that will effect any schedule for the widespread use of video description since it appears that advertising support alone is unlikely to be sufficient to fund this service, given the costs involved.

24. Congress has directed the Commission to assess the appropriate methods and schedules for phasing video description into the marketplace and to address certain technical and quality standards issues. The present record on which to assess video description, however, is limited and the emerging nature of the service renders definitive conclusions difficult. Thus, we believe that, at this time, the best course is for the Commission to continue to monitor the deployment of video description and the development of standards for new video technologies that will afford greater accessibility of video description. Specifically, we will seek additional information that will permit a better assessment of video description in conjunction with our 1997 report to Congress assessing competition in the video marketplace. This annual report is submitted in compliance with Section 628(g) of the Act, 47 U.S.C. § 548(g). In the context of this report, the Commission will be able to gather and evaluate information regarding the deployment of SAP channels and digital technology that will enable video providers and programmers to include video description. In seeking more information, we intend to focus on the specific methods and schedules for ensuring that video programming includes descriptions, technical and quality standards and other relevant legal and policy issues.

III. CLOSED CAPTIONING OF VIDEO PROGRAMMING

A. Introduction

25. Closed captioning is an assistive technology designed to provide access to television for persons with hearing disabilities. Captioning is similar to subtitles in that it displays the audio portion of a television signal as printed words on the television screen.¹⁶ To assist viewers with hearing disabilities, captions also identify speakers, sound effects, music and laughter. Captions were first used in the early 1970s in an "open" format, transmitted with the video so that they were visible to all viewers. PBS developed closed captioning in the 1970s. Closed captioning is hidden as encoded data transmitted within the VBI of the television signal, which, "when decoded, provides a visual depiction of information simultaneously being presented in the aural channel (captions)."¹⁷ A viewer wishing to see the closed captioning must use a set-top decoder or a television receiver with built-in decoder circuitry.

26. The Commission has long sought to promote closed captioning technology. In the 1970s, the Commission granted PBS a number of authorizations to conduct experimental transmissions using closed captioning, and in 1976, adopted rules that provide that line 21 of the VBI is to be primarily used for the transmission of closed captioning.¹⁸ The Commission's rules specify technical standards for the reception and display of such captioning.¹⁹ The Commission has also adopted technical standards for the cable carriage of closed captioning data that

¹⁶ See *Implementation of Television Decoder Circuitry Act, Report and Order*, GEN Docket No. 91-1, 6 FCC Rcd 2419, 2420 (1991) ("*TDCA R&O*"), recon. granted in part, *Memorandum Opinion and Order*, 7 FCC Rcd 2279 (1992). Further background information concerning closed captioning can be found in DuBow, "The Television Decoder Circuitry Act -- TV For All," 64 Temp. L. Rev. 609 (1991), and on the World Wide Web home page of the Caption Center of the WGBH Educational Foundation ("*WGBH*"): <http://www.wgbh.org/pages/captioncenter/captioncenterhome.html>. Copies of materials from the World Wide Web that are cited have been placed in the record of this proceeding.

¹⁷ See 47 C.F.R. § 73.682(a)(22). In particular, closed-captioning information may be transmitted on fields one and two of line 21 of the VBI. Standard television pictures are transmitted at a rate of 30 frames per second, with two interlaced fields comprising each frame. Each field begins with a VBI of 21 lines, during which the picture scanning beam is turned off (blanked) and is moved from the bottom of the screen to its starting position at the top of the screen. There are two VBIs transmitted per frame, one in each field. The placement of data within the VBI is described in terms of the particular blanking line used and the field (one or two) in which it occurs. See *Permissible Uses of the Vertical Blanking Interval, Notice of Proposed Rulemaking*, MM Docket No. 92-305, 8 FCC Rcd 90 n.1 (1992).

¹⁸ See *Captioning for the Deaf, Report and Order*, Docket No. 20693, 63 FCC 2d 378 (1976) ("*Captioning R&O*"). See also *Permissible Uses of the Vertical Blanking Interval, Report and Order*, MM Docket No. 92-305, 8 FCC Rcd 3613 (permitting enhanced closed-captioning and other broadcast-related information services on line 21, field 2 of the VBI).

¹⁹ *Id.*

accompanies programming carried on cable systems.²⁰ In addition, cable operators are required to carry the closed captioning data contained in line 21 of the vertical blanking interval as part of their must-carry obligations.²¹

27. To implement the TDCA, the Commission adopted regulations requiring all television broadcast receivers with screen sizes 13 inches or larger that were manufactured or imported on or after July 1, 1993, to be capable of receiving and displaying closed captions.²² By mid-1994, decoder-equipped television sets were in nearly 20 million American homes.²³ In 1995, 25 million decoder-equipped television sets were sold in the U.S.²⁴ It is estimated that between 50 and 60 million U.S. homes can currently receive closed captioning.²⁵

28. In addition to these efforts to promote closed captioning technology, the Commission, in 1976, adopted a rule requiring television licensees to transmit emergency messages in a visual format.²⁶ In 1990, Congress passed the ADA which requires all federally funded public service announcements to be closed captioned.²⁷ Aside from these requirements, however, neither Congress nor the Commission has mandated captioning of television programming. Instead, Congress and the Commission have relied on the voluntary efforts of program producers and providers to make television programming accessible to persons with hearing disabilities. As far back as 1970, the Commission has urged broadcast television

²⁰ 47 C.F.R. § 76.606; *Cable Television Technical and Operational Requirements, Report and Order*, MM Docket No. 91-169, 7 FCC Rcd 2021, 2031 (1992), *recon. granted in part, Memorandum Opinion and Order*, 7 FCC Rcd 8676 (1992).

²¹ 47 U.S.C. §§ 534(b)(3), 535(g)(1) and 47 C.F.R. §§ 76.62 (e) and (f).

²² 47 C.F.R. § 15.119; *TDCA R&O*, 6 FCC Rcd 2419.

²³ VITAC Comments at 12.

²⁴ Electronics Industries Association, Consumer Electronics Manufacturing Association ("CEMA") Comments at 4 *citing* Electronics Industry of America Market Research Department 1995 figures.

²⁵ VITAC Comments at 12; Joe Clark ("Clark") Comments at 6..

²⁶ 47 C.F.R. § 73.1250(h); *Emergency Messages – Television, Report and Order*, Docket No. 20659, 61 FCC 2d 18 (1976), *recon. granted in part, Memorandum Opinion and Order*, 62 FCC 2d 565 (1977).

²⁷ 47 U.S.C. § 611. The ADA is a comprehensive civil rights statute that prohibits discrimination against individuals with disabilities in the areas of employment, state and local government services, and in private places of public accommodation such as restaurants, law offices, and movie theaters. *See generally* Burgdorf, "The Americans with Disabilities Act: Analysis and Implications of a Second-Generation Civil Rights Statute," 26 Harv. C.R.-C.L. L. Rev. 413 (1991). In addition to requiring the closed captioning of federally funded public service announcements, Title IV of the ADA amended the Communications Act of 1934 to require common carriers offering telephone voice transmission services to provide telecommunications relay services for individuals with hearing and speech disabilities. 47 U.S.C. § 225. The Commission has adopted regulations implementing this requirement. *See* 47 C.F.R. §§ 64.601-64.608.

licensees to undertake these voluntary efforts.²⁸ We have also "strongly encourage[d] cable operators to carry more closed-captioned video programming."²⁹

B. Audiences that Benefit from Closed Captioning

29. Providing persons with disabilities access to the "tremendously powerful television medium" serves an important public interest.³⁰ A recent study attests to the dominant role television plays in our society. It reports that nine out of ten Americans watch television on a regular basis.³¹ U.S. households spend an average of over seven hours every day watching television as a means of entertainment and relaxation and as a source of news and information.³² Most Americans depend on television to get their news, with 72% of Americans listing it as their primary news source.³³

30. Closed captioning makes television more accessible to persons with hearing disabilities. Indeed, the Commission on the Education of the Deaf has stated that "captioning of TV . . . is the most significant technological development for persons who are deaf."³⁴ In enacting the TDCA, Congress found that "closed-captioned television transmissions have made it possible for thousands of deaf and hearing-impaired people to gain access to the television

²⁸ *The Use of Telecasts to Inform and Alert Viewers With Impaired Hearing, Public Notice*, 26 FCC 2d 917 (1970) ("Use Public Notice") (alerting television licensees of the special needs of persons with hearing disabilities, and urging them to make use of visual as well as oral announcements of emergencies, position newscasters so as to permit the use of lip reading by viewers and feature visualization of materials in news, weather and sports programs). See also *Captioning R&O*, 63 FCC 2d at 389 ("We continue to encourage broadcast licensees . . . to make television a truly valuable medium for the hearing-impaired."); *Renewal Applications – Los Angeles, Memorandum Opinion and Order*, 69 FCC 2d 451, 459 (1978) (rejecting renewal challenges based on licensees' failure to provide closed captioning, but "urg[ing] all television licensees to review the options presently available that, within reason, might provide some of the benefits of the medium of television for this nation's hearing impaired"), *recon. denied, Memorandum Opinion and Order*, 72 FCC 2d 273 (1979), *aff'd sub nom. Community Television of Southern California v. Gottfried*, 459 U.S. 498 (1983).

²⁹ *Implementation of 1992 Cable Act Rate Regulation, Report and Order and Further Notice of Proposed Rulemaking*, MM Docket No. 92-266, 8 FCC Rcd 5631, 5902 (1993).

³⁰ *Use Public Notice*, 26 FCC 2d at 918. See also *Captioning R&O*, 63 FCC 2d at 388 ("[W]e believe it is of the utmost importance that the hearing-impaired, a significant portion of our population, enjoy the tremendously powerful television medium.").

³¹ Roper Starch Worldwide, *America's Watching: Public Attitudes Toward Television 3* (1995) ("*Roper Study*"). A copy of this study has been placed in the record of this proceeding.

³² *Id.* at 6; Nielsen Media Research (1994).

³³ *Roper Study* at 17.

³⁴ See H.R. Rep. No. 767, 101st Cong., 2d Sess. 4 (1990) (legislative history of TDCA) *citing Towards Equality: Education of the Deaf*, A Report of the Commission on Education of the Deaf (1988).

medium, thus significantly improving the quality of their lives."³⁵ Closed captioning can thus offer great benefits to Americans with hearing disabilities. In addition, many other people, including children and adults learning to read, and people learning English as a second language, can also benefit from watching captioned programming.³⁶

1. Persons with Hearing Disabilities

31. The National Center for Health Statistics estimates that there are 22.4 million persons with hearing disabilities.³⁷ According to the National Association of the Deaf ("NAD"), 80% of these individuals have irreversible and permanent damage to their hearing.³⁸ People with varying degrees of hearing loss comprise 8.6% of the U.S. population.³⁹ Closed captioned programming provides individuals who are deaf and hard of hearing access to information regarding national and worldwide current events, local and community affairs and entertainment. Without captions, this critical link is often lost, making it more difficult for these individuals to have basic access to the information and knowledge which the rest of society takes for granted.⁴⁰ Many in the deaf and hard of hearing community view the issue of closed captioning in terms of basic civil rights and rights to equal access that should not be subject to a cost benefit analysis.⁴¹

32. Of the persons with hearing disabilities, 3.7 million are children. Approximately 15 out of every 1000 people under the age of 18 have some type of hearing disability.⁴² When programs are captioned, children who are deaf and hard of hearing, as well as adults, do not have to depend on family members to interpret the soundtracks of such programming. Captioning may thus help facilitate healthy family interaction and provide greater independence to children and adults with hearing disabilities. Similarly, the ability to enjoy watching or discussing television

³⁵ Section 2(2) of TDCA, Pub. L. 101-431, 104 Stat. 960, 47 U.S.C. § 303 note.

³⁶ National Captioning Institute ("NCI") Comments at 9-10.

³⁷ National Center for Health Statistics, Current Estimates from the National Health Interview Survey, 1994, Series 10, No. 193, at 93, Table 62.

³⁸ NAD Comments at 4 *citing* National Institute on Deafness and Other Communications Disorders.

³⁹ *Id.* at 4 *citing* National Center for Health Statistics

⁴⁰ *Id.* at 3-4.

⁴¹ *See, e.g.*, Dick Burkhalter ("Burkhalter") Comments at 2; Self Help for Hard of Hearing People ("Self Help") Comments at 2; Disability Law Center ("DLC") Comments at 1; David S. Evans ("Evans") Comments at 1; Joan Cassidy ("Cassidy") Comments at 4-5, 9.

⁴² NAD Comments at 7.

shows with peers may advance greater acceptance of a child or adult with a hearing disability into his or her own community.⁴³

33. Senior citizens comprise approximately 29% of the total population. It is well established that the U.S. population as a whole is aging due to advances in health care and the aging of the "baby boom" generation, the first members of whom are turning 50 in 1996. As the average age of the total population increases, the number of elderly people with hearing loss is expected to grow as well. According to NAD, 415 of every 1000 people over the age of 75 have some type of hearing disability.⁴⁴ Similarly, it is estimated that currently 22 million adults over the age of 65 have a hearing loss and that this number will nearly double to over 40 million within the next ten years as the baby boom generation ages.⁴⁵

2. *Children Learning to Read and Persons Learning English as a Second Language*

34. For both children with hearing disabilities and non-hearing disabled children learning to read, captioning can become an educational tool, turning the many hours of television they watch each week into a learning opportunity.⁴⁶ Captioning is useful in exposing children to patterns of spoken English, such as slang and idioms used in everyday dialogue, that are not always found in literature.⁴⁷ Studies have also demonstrated that captions can improve a student's reading comprehension and spelling, augment vocabulary and word recognition and increase overall motivation to read. Not only does captioned television capture students' attention, but its multi-sensory presentation of information makes learning new words and concepts easier.⁴⁸

35. Captioning can be useful as a key learning tool for the 30 million Americans for whom English is a second language ("ESL").⁴⁹ ESL students have two related needs that are addressed through closed captioned television.⁵⁰ First, they need to increase basic vocabulary. Vocabulary researchers agree that the overwhelming percentage of words a person knows are acquired through the contexts in which they are used. Through captioning situational uses of

⁴³ *Id.* at 8-9.

⁴⁴ *Id.* at 5.

⁴⁵ *Id.* at 6.

⁴⁶ *Id.* at 9-10.

⁴⁷ *Id.* at 7.

⁴⁸ WGBH Comments at 4-5.

⁴⁹ NAD Comments at 10.

⁵⁰ WGBH Comments at 5.

words and idioms, and shades of meaning and nuance, can be conveyed visually as well as verbally. Furthermore, ESL students benefit from seeing an immediate spelling of words just uttered.

3. *Illiterate Adults*

36. There are 26 to 27 million illiterate adults in the United States. In addition there are 72 million adults who lack the basic skills to fill out employment applications or to follow written job directions.⁵¹ Only 2% to 4% of American adults requiring literacy services are reached by the present public and private literacy programs.⁵² Captioning can provide opportunities for the illiterate to increase their reading fluency, to participate in the workforce and to enjoy literature, magazines, and newspapers for both knowledge and recreation.⁵³

4. *Others Who Benefit from Closed Captioning*

37. Captioning also can help non-hearing disabled viewers understand the audio portion of television programs in noisy locations such as airports, hotel lobbies, waiting rooms, public exercise facilities, restaurants and bars. Additionally, captioning can help people understand dialogue in quiet areas where they may need to lower or to turn off the volume on the television set.⁵⁴ For any reader, captioning can also be used to improve vocabulary skills and to help clarify dialogue that uses difficult vocabulary or dialogue in programming in which the speakers have accents that may be difficult to understand.⁵⁵

C. **Methods of Closed Captioning**

1. *Technical Issues*

38. Closed captioning is transmitted on line 21 of the VBI along with the video and audio portions of a program. The VBI is the unused lines in each field of a television signal, seen as a thick band when the television picture rolls over usually at the beginning of each field. The VBI is an integral part of the television signal that usually includes information to instruct the television receiver to prepare to receive the next field and may be used to transmit other information, including closed captioning. A consumer with a television set that has a built-in

⁵¹ *Id.* at 4.

⁵² *Id.*

⁵³ NAD Comments at 10-11.

⁵⁴ *Id.* at 11.

⁵⁵ *Id.*; WGBH Comments at 4-5.

closed captioning feature or a set top decoder can receive closed captioning information by activating this feature.

39. The introduction of advanced digital television ("ATV") may affect closed captioning in terms of both transporting and displaying relatively error-free closed captioning data. ATV could greatly improve the overall quality of closed captioning because it may permit more rapid transmission of data. With regard to ATV technology for transporting closed captioning data, the Commission has a pending proceeding soliciting public comments concerning the ability of ATV to include captioning and how the Commission should implement captioning requirements for ATV in the event it does not adopt a mandatory ATV standard.⁵⁶ A draft standard for advanced television closed captioning ("ATV-CC") has been prepared by the Television Data Systems Subcommittee ("TDSS") of the Consumer Electronics Manufacturers Association ("CEMA"). This ATV-CC standards setting effort is being carried out in cooperation with the Grand Alliance (a group of electronics industry representatives) and the Advanced Television Systems Committee ("ATSC"). Provisions have been made in the ATSC standard to transport closed captioning information in the form defined by the TDSS at a fixed data rate of 9600 bits-per-second for closed captioning.⁵⁷ This proposed transporting standard would significantly increase the data transmission rate from its current 480-bits-per-second, thereby facilitating faster transmission of both more and better quality closed captioning data.⁵⁸

40. In terms of the quality of closed captioning displayed, ATV could significantly increase user control over such display. Currently, the only control the user has over this display is whether to activate the closed captioning feature on his television set. The user has virtually no ability to customize the closed captioning display to his individual needs or preferences. The advent of ATV could permit major closed captioning enhancements, such as user selected caption sizes (i.e., caption "volume control"), a broader selection of type faces, fonts, character sets and symbols that could convey a wider range of meanings and a wide array of presentation options, including different colors and backgrounds.⁵⁹ In addition, ATV, through its enhanced ability to transport more closed captioning data at a faster rate, could allow a user to select captioning from a variety of languages on a menu displayed on the television screen.⁶⁰

⁵⁶ See *Advanced Television Systems and Their Impact Upon the Existing Broadcast Service, Fifth Further Notice of Proposed Rule Making*, MM Docket No. 87-268, FCC 96-207, 11 FCC Rcd 6235 (1996) ("*Fifth Further Notice*").

⁵⁷ *Fifth Further Notice*, 11 FCC Rcd at 6262 ¶ 70.

⁵⁸ Telephone Interview with Amnon Salomon, Director, Systems Development, NCI (July 10, 1996) ("*Salomon Interview*").

⁵⁹ CEMA Comments at 8-9; Telephone Interview with George A. Hanover, Vice President, Engineering, CEMA (July 10, 1996).

⁶⁰ Salomon Interview *supra* note 58.

41. Despite its technological potential, ATV would not automatically resolve all technical or logistical problems with closed captioning. For example, current television receivers, which are based on analog technology, cannot receive the digitized ATV signal with all of its potential closed captioning enhancements. Therefore, the ATV technology would be of no practical use until television sets capable of receiving and displaying ATV signals have become available.⁶¹ It should be noted that such television sets may be available in the near future, even though the widespread market penetration of such technology may not occur for many years. Advocates of improved closed captioning emphasize that the initial limited availability of ATV should not overshadow its potentially significant enhancement of closed captioning.⁶² However, it should also be noted that, even when digital receivers become available, the procedures for captioning programming will probably be the same in terms of time, cost and labor intensiveness. Therefore, the development of digital television technology may not make closed captioning any less expensive or time consuming.⁶³

2. *Types of Closed Captioning*

42. There are essentially four major types of closed captioning. The first type is "off line captioning." Under this method, the captioning service gets an advance copy of the script, tape or film before the program is aired. The audio portion of the program, including sound effects as well as dialogue, is transcribed and added in synchronization with the video content. After the program is captioned it is sent to a post-production company or to the program producer on a computer disk or via modem. The captioning is encoded by the post-production company or the producer onto line 21 of the VBI of the master tape to be telecast.⁶⁴ This method of captioning entails a labor intensive process to ensure that the captions are placed precisely where the corresponding audio appears and then locked into the proper position on the program tape. The captioners must ensure that the captions will appear at precisely the right moment in a precise location on the screen.⁶⁵ This type of captioning is used for feature films and many prerecorded entertainment programming, including prime time series and children's programs.⁶⁶

43. A second type of captioning is live encoded captioning. This type of captioning is also created off-line for prerecorded programming, such as daytime dramas and late night entertainment shows in advance of the time that the program is aired. Despite the name of this

⁶¹ CEMA Comments at 9.

⁶² Salomon Interview *supra* note 58.

⁶³ National Broadcasting Company ("NBC") Comments at 14-15.

⁶⁴ *Id.* at 2; Capital Cities/ABC Comments at 4.

⁶⁵ CBS Comments at 10-11.

⁶⁶ *Id.* at 10.

form of captioning, these captions are not encoded onto the program tape, but rather are transmitted with the program at the time it is aired. These captions are less precisely synchronized than off-line captions and are rolled from the bottom of the screen rather than appearing at precise locations on the screen. Live encoded captioning is often used where there are only a few hours between taping and airing and the final edits for the program are not completed until close to air time.⁶⁷ An example of a program that uses this type of captioning is the *Late Show With David Letterman*, where the broadcast occurs only a few hours after the show is taped.

44. A third type of captioning is automatic live-encoded captioning. Like live encoded captions, these off-line captions are not encoded onto the prerecorded program prior to airing, but are transmitted at the time of airing. However, these captions are encoded onto the program after the original airing so that the captions will be automatically transmitted when the program is rebroadcast.⁶⁸ A variant of this type of captioning is called "electronic newsroom captioning" in which the captions come from the text in the station's news script computers. Only text transmitted from the scripting computers onto the teleprompters is captioned. Therefore, unscripted material that does not appear on the teleprompters is not captioned.⁶⁹ The electronic newsroom captioning method is commonly used for local broadcast station newscasts.

45. The fourth type of captioning is "real time" or "live captioning." Live programming, such as news, sports and awards shows are typically "stenocaptioned." This method of captioning is used for breaking news and other types of live programming that are unscripted. Under this method, the captioner's computer is linked to the telecast operation center and the captioning material is created for telecast in "real time." A specially trained "stenocaptioner" transcribes the audio portion of the live program as it airs. Because of the transcription and computer processing required, real time captioning appears on the screen about three seconds after the corresponding audio content.⁷⁰

⁶⁷ *Id.* at 11-12.

⁶⁸ *Id.* at 12-13.

⁶⁹ Capital Cities/ABC Comments at 4.

⁷⁰ NBC Comments at 2; Capital Cities/ABC Comments at 4; CBS Comments at 13.

D. Cost of Closed Captioning

46. The cost of captioning video programming is a related factor that affects the extent to which programming is currently accessible with closed captioning.⁷¹ The cost of closed captioning depends on the method used and a variety of other factors, including the format, the length of the program, the required turnaround time, the payment schedule and the volume of captioning, with discounts often given when contracts include multiple programs and hours.⁷² Captioning off-line of prerecorded programs is typically more expensive than captioning for live shows because it requires additional staff for editing and proofreading the captions.⁷³ There are more than 100 suppliers of closed captioning services.⁷⁴ According to several commenters, since 1990, the costs of captioning have declined due to increased competition among service providers.⁷⁵ The larger, more experienced captioning agencies still charge relatively high rates, but are known for their level of quality.⁷⁶

47. A considerable amount of closed captioning is done under contract with outside vendors. Estimates of the cost of off-line captioning range from around \$800 an hour⁷⁷ to \$2500 an hour.⁷⁸ In addition, the encoding of the captions onto the program tape entails an additional expense of approximately \$200 for a half hour program to \$650 for a two hour program.⁷⁹ For example, NBC states that it costs between \$900 and \$1800 to caption its prime time series, \$1800 for a made for television movie or an episode of a miniseries and \$1200 for a Saturday morning

⁷¹ The House provision concerning video accessibility included a specific requirement that the Commission also examine the cost of closed captioning to programs and program providers. The 1996 Act simply directs the Commission to examine "any other related factors" in its inquiry. Conference Report at 182.

⁷² NCI Comments at 5; NAD Comments at 27; Californians for Television Access ("CTA") Comments at 4; VITAC Comments at 10.

⁷³ NAD Comments at 27; CTA Comments at 4-5.

⁷⁴ WGBH Comments at 20; Media Captioning Services Comments at 5. Lists of suppliers of closed captioning are provided in the NAD Comments, Attachment G, and CTA Comments, Exhibit B.

⁷⁵ Association of Late-Deafened Adults ("ALDA") Comments at 5; Schwartz, Woods & Miller Comments at 3; Gerald Dominick ("Dominick") Comments at 4.

⁷⁶ NBC Comments at 7. There are six major suppliers of captioning. The National Captioning Institute and WGBH/The Captioning Center are both not-for-profit providers. VITAC, Media Captioning Services, Captions, Inc. and Real-Time Captions, Inc. are commercial suppliers. Capital Cities/ABC Comments at 10.

⁷⁷ CBS Comments at 11; Capital Cities/ABC Comments at 7.

⁷⁸ Schwartz, Woods & Miller Comments at 10.

⁷⁹ CBS Comments at 11.

live action children's show.⁸⁰ ABC indicates that it pays approximately \$790 to \$1200 per hour for off-line captioning.⁸¹ The magnitude of these costs is explained in part by the ratio of time needed to create the captions to the length of the program, which can be as much as 20 or 30 hours for a one hour program.⁸² In addition, the cost of captioning a commercial is estimated at about \$250 per minute.⁸³ It also is reported that the off-line captioning of music videos costs about \$275 to \$400 for a short form video or \$2500 for a long form video of 60 minutes in length.⁸⁴

48. The estimated cost of contracting for the services needed to caption live programming ranges between \$300 and \$1200 per hour.⁸⁵ For example, the National Captioning Institute ("NCI") states that this would cost \$300 to \$750 per program hour for a national program and \$125 to \$300 for a local program hour.⁸⁶ VITAC, another vendor, states that its rate card indicates that real time captioning costs \$810 for an hour program.⁸⁷ Caption Colorado, states that it has been able to reduce the cost of real time captioning from between \$600 and \$700 per hour to \$120 per hour by obtaining television audio programming and delivering encoded captions through telephone lines.⁸⁸ Others estimate the average cost of live captioning to be between \$150 and \$800 per hour.⁸⁹

49. Captions often must be reformatted when programming is rebroadcast or distributed by a secondary video provider. For a secondary use, a program may be edited to fit a time period that is different from the original one and commercials may need to be inserted. This

⁸⁰ NBC Comments at 7-8.

⁸¹ Capital Cities/ABC Comments at 7.

⁸² WGBH Comments at 1; NBC Comments at 7. CBS estimates this ratio as eight to one. CBS Comments at 11.

⁸³ F&V Channel ("F&V") Comments at 4; CaptionMax Comments at 2.

⁸⁴ Recording Industry of America ("RIAA") Comments at 2. RIAA also states that music videos can be captioned in-house with the purchase of \$20,000 of equipment.

⁸⁵ See, e.g., NAD Comments at 27-28; A&E Comments at 15; CBS Comments at 28. NBC indicates that it spends \$825 to caption its one hour prime time news programs. NBC Comments at 7.

⁸⁶ NCI Comments at 5. See also CBS Comments at 28; Capital Cities/ABC Comments at 7.

⁸⁷ VITAC Comments at 10.

⁸⁸ Caption Colorado Comments at 1, 3.

⁸⁹ ALDA Comments at 5.

editing can ruin the timing of the captions and therefore reformatting is required.⁹⁰ In cases where parts of the program are removed or rearranged, the captions must be removed or rearranged accordingly.⁹¹ The cost of reformatting is approximately one fourth that of the original captioning, or approximately \$400 to \$800 for a full length movie.⁹² Estimates of reformatting costs generally range between \$350 and \$450 per hour, depending on the amount of editing,⁹³ although it is reported that the cost of reformatting can be as high as \$750.⁹⁴

50. A program producer or provider also can do its own captioning in-house. An entity that does its own captioning must acquire equipment to add captions. For a station that does a significant amount of its own programming, it may be more effective over time to do the captioning in-house using stenocaptioners.⁹⁵ A one time equipment expenditure would be between \$50,000 and \$75,000, although it would also require significant staff time to operate this equipment over the course of a year.⁹⁶ For a local public broadcasting station, specialized captioning equipment to provide a work station and encoding equipment for one staff person costs between \$12,000 and \$22,000, in addition to a cost of approximately \$2500 to train a person to caption.⁹⁷ A station that distributes three and one half hours per week of locally produced taped programming, and captions 95% of that programming, may have to spend \$40,000 on equipment, \$5000 on training and \$31,000 per year plus benefits for each of two stenocaptioners.⁹⁸ After initial equipment and training costs, on-going captioning can represent between 5% and 8% of

⁹⁰ Caption Database Comments at 3.

⁹¹ PBS Comments at 3.

⁹² ALDA Comments at 3; Caption Database Comments at 3-4.

⁹³ A&E Television Networks ("A&E") Comments at 15.

⁹⁴ National Cable Television Association ("NCTA") Comments at 15.

⁹⁵ Stenocaptioners are trained as court reporters. For an experienced court reporter it takes approximately four to six months of additional training to obtain the skills needed to report the verbatim speech, using correct spelling, syntax and grammar, and understand what is said. Telephone Interviews with Jeffrey M. Hutchins, Vice President and General Manager, VITAC, and Gerald Freda, Vice President, Production and Engineering, NCI (May 31, 1996). The National Court Reporters Association recently created a new Certificate of Realtime Reporting which tests court reporters' skills in this area. WGBH Comments at 19.

⁹⁶ Schwartz, Woods & Miller Comments at 10. For a list of the items specific to the captioning industry and costs, and other generally available equipment needed to set up a captioning studio, see CTA Comments at 6-7.

⁹⁷ Association of America's Public Television Stations ("APTS") Comments at 4.

⁹⁸ *Id.* at 5, n.9.

the local production budget, compared with outside contracting which can reach as high as 16% of a station's local production budget.⁹⁹

51. Depending on capabilities, the cost of the equipment and software needed for a local station to provide electronic newsroom captioning generally ranges between \$2500 and \$5000,¹⁰⁰ but some estimates are as high as \$10,000.¹⁰¹ The National Association of Broadcasters ("NAB") reports that the average cost of captioning for local stations responding to its survey is \$514 per week, primarily for local newscasts. Since this figure includes stations that report no costs (which NAB assumes use only electronic newsroom capability), NAB asserts that the average cost is more likely to be \$1007, exclusive of no-cost stations. NAB concludes that this represents stations that use stenographic captioning or a combination of stenographic and electronic newsroom captioning.¹⁰²

52. A primary concern for those not currently captioning their programming, especially local broadcast stations, cable networks and local cable systems, is the relatively high cost of captioning when compared to their total budgets.¹⁰³ Commenters state that the cost of captioning local programming is likely to be a significant cost for local stations, even for major station groups and larger market stations.¹⁰⁴ The Association of Local Television Stations ("ALTV") claims that it would cost an individual television station approximately \$100,000 a year to caption one hour per day of its local programming.¹⁰⁵ For many affiliated and independent stations, the costs of even limited amounts of captioning would exceed their annual pre-tax profits.¹⁰⁶ Television station WSST-TV estimates that to close caption its daily six hours of local programming would cost approximately \$7500 a day, added to the present daily operating cost of approximately \$1650.¹⁰⁷

⁹⁹ *Id.* at 5.

¹⁰⁰ NAB Comments at 4-5, n.7. Capital Cities/ABC states that live display captioning, of which the electronic newsroom is a variation, costs between \$500 and \$550 an hour. Capital Cities/ABC Comments at 7.

¹⁰¹ CTA Comments at 5.

¹⁰² NAB Comments at 5, Attachment. The highest reported weekly captioning cost was \$4500.

¹⁰³ For network programming, this cost might be considered relatively small compared to the total production budget of many programs. NAD claims that a typical episode of *Seinfeld* costs \$750,000. NAD Comments at 28, n. 30. See also Massachusetts Commission for the Deaf and Hard of Hearing Comments at 3.

¹⁰⁴ CBS Comments at 29-30.

¹⁰⁵ ALTV Reply Comments at 3.

¹⁰⁶ ALTV Comments at 9-11.

¹⁰⁷ WSST-TV Reply Comments at 5-6. This estimate is based on a per hour captioning cost of \$1250, and should be compared to its daily income of approximately \$2000. *Id.*

53. The National Cable Television Association ("NCTA") estimates that it would cost the cable industry between \$500 and \$900 million per year to caption all basic cable network programming that is not currently captioned. This cost would represent nearly one third of the basic cable programmers' current total annual programming expenditures. NCTA further claims that the cost of captioning just prime time basic cable programming would range from \$58 to \$116 million a year.¹⁰⁸ Liberty Sports ("Liberty") states that closed captioning would add approximately 10% to the full production budgets of national sports events, which are generally in the \$15,000 to \$25,000 range.¹⁰⁹ The F&V Channel ("F&V") estimates that it would cost approximately \$4.5 million to caption programming for a year, an amount that exceeds its entire programming budget.¹¹⁰ The Weather Channel estimates that in order to caption its own live, often ad libbed, programming, it would need to have 12 real-time stenocaptioners on staff¹¹¹ and acquire the equipment needed for two captioning work stations at an estimated total cost of \$33,000.¹¹²

54. Local cable programming is often transmitted on public, educational or government ("PEG") access channels. The Alliance of Community Media estimates that the average annual budget of a full service access center is \$227,147. However, a typical access center, such as the one in Riverside, California, operates with a budget of \$50,000 and serves a population of more than 350,000. At an estimated cost of \$2500 per program hour, this center could caption only 20 hours of programming per year and have no funds left over for salaries, equipment and expenses.¹¹³ The Fairfax Cable Access Corporation states that it produces between 80 and 100 hours of programming a month. It estimates that it would cost \$160,000 per month to add captions to all of its programming, assuming a closed captioning cost of \$2000 per hour.¹¹⁴

55. The City of St. Louis estimates that the cost of closed captioning its Board of Aldermen's meetings, which are carried by the local cable system, for one year, would exceed

¹⁰⁸ NCTA Comments at 15.

¹⁰⁹ Liberty Sports ("Liberty") Reply Comments at 3-4.

¹¹⁰ F&V Comments at 4-5. These estimates are based on an estimated cost of \$1200 per program hour, \$750 per half hour program and \$250 for a commercial minute. *Id.*

¹¹¹ The Weather Channel estimates that it would have to pay an average salary of \$50,000 plus benefits per stenocaptioner. The Weather Channel Comments at 4.

¹¹² The Weather Channel Comments at 4. The equipment costs include setting up the two work stations, two personal computers, captioning software, keyboards, EEG Smart encoders and monitors/headphones.

¹¹³ Alliance for Community Media ("Alliance") Comments at 5-6.

¹¹⁴ Fairfax Cable Access Corporation at 1.

\$20,000 if an outside vendor were used.¹¹⁵ Alternatively, the City states that if it were to develop its own captioning the equipment needed would cost more than \$9000, with software alone costing \$3995. In addition, encoding equipment would cost about \$6300 and captionwriters would need to be hired at salaries of \$30,000 a year plus benefits of an additional 26%.¹¹⁶

E. Current Availability of Programming with Closed Captioning

56. As indicated earlier, Section 713 of the Act directs the Commission to ascertain the level at which video programming is currently closed captioned. Specifically, we are required to examine the extent to which existing or previously published programming is closed captioned, the size of the video programming provider or programming owner providing closed captioning, the size of the market served and the relative audience shares achieved. The information provided in this section concerning the current availability of programming with closed captioning is responsive to these issues.

57. Programming is most likely to be closed captioned when it is distributed nationally and available to a significant portion of all U.S. television households. In addition to reaching a substantial number of homes, such programming is available during the times of day with the highest viewing levels. The most popular programs as determined by audience ratings also are the ones most likely to contain captions. Accordingly, we find that the market served by programming with closed captioning is potentially large in size. However, there is no information available from audience ratings services or elsewhere regarding how many individuals currently use closed captioning when watching television programming.¹¹⁷ Thus, we are unable to assess the relative audience shares achieved by programs that are closed captioned as a result of such programming being accessible to individuals who are hearing disabled.

58. We find that in recent years programming distributed by the national broadcast networks, both commercial and noncommercial, has generally been captioned. For example, virtually all prime time programs, children's programming, news, daytime programming and some sports distributed by the networks contain closed captions. Programming widely distributed by broadcast syndication is captioned. Local television stations in larger television markets are more likely to caption programming than other stations, especially local news broadcasts. Many of the national satellite cable programming networks include closed captions as do some local and regional cable programming services. In recent years, feature films produced in the U.S. that will be distributed by broadcast networks, cable networks, syndicators and local stations following their theatrical release are closed captioned at the production stage. In many cases, the cost of

¹¹⁵ City of St. Louis ("St. Louis") Comments at 2-3. This estimate is based on a cost of \$425 for each of the 40 three to four hour meetings a year and would not include an additional \$50 per hour to have an engineer available to ensure all goes smoothly.

¹¹⁶ St. Louis Comments at 3.

¹¹⁷ NAB Comments at 7.

captioning these types of programming represents only a small portion of the total production budget.

1. *National Broadcast Television Networks*

59. Broadcast television networks produce or acquire programming for distribution by their local affiliates. Until now, all closed captioning has been done on a voluntary basis, with the exception of emergency broadcast information¹¹⁸ and government funded public service announcements.¹¹⁹

60. PBS has been at the forefront in the development of captioning technology and services. PBS is a non-profit membership organization whose members are the licensees of public television stations. PBS has approximately 340 affiliates that reach almost all television households.¹²⁰ PBS began distributing closed captioned programs to its member stations in 1980. PBS has voluntarily adopted the practice of requiring producers to provide closed captioning in all programming funded by PBS's National Program Service. All children's programs and prime time programming on PBS are closed captioned. In addition, the *Newshour with Jim Lehrer* is closed captioned each evening. The few PBS programs that are not closed captioned are visually oriented (e.g., ballet or other dance performances), or are non-verbal in nature (e.g., a symphony concert). Non-English language operas are not closed captioned since they already contain open English subtitles.¹²¹

61. PBS Learning Media distributes videocassettes and video laser discs of PBS programs to educational users and the general public through PBS Home Video and PBS Video. Whenever a program is licensed to PBS for home and audio-visual distribution and is available with captioning, PBS Learning Media tries to include the captioning in the version it distributes. The PBS video educational collection has over 1200 titles in distribution, over 80% of which are closed captioned.¹²²

62. Each of the three oldest commercial broadcast networks -- ABC, CBS and NBC -- reach virtually all households through their approximately 210 affiliated local stations. The majority of programming on these three networks, including virtually all of prime time

¹¹⁸ See 47 C.F.R. § 73.1250(h). Under Section 73.1250(h) of our rules, emergency information must be transmitted "aurally and visually or only visually," although the method of visual presentation is left to the television station and could be accomplished by means other than closed captioning.

¹¹⁹ Section 711 of the Act, which was added by Title IV of ADA, 47 U.S.C. § 611.

¹²⁰ R. R. Bowker, A Reed Ref. Pub. Co., *Broadcasting & Cable Yearbook 1996* at G-73.

¹²¹ PBS Comments at 2.

¹²² *Id.* at 4.

programming, is closed captioned.¹²³ NBC provides an average of 94 hours of programming per week to its affiliates and captions a minimum of 72 to 80 hours of such programming, with an average of 83 hours per week, or 88.3%. This weekly total comes to about 3750 to 4150 hours per year of captioned programming. NBC has provided this level of captioning for approximately three years.¹²⁴ ABC offers on the average about 90 hours of programming each week to its affiliates.¹²⁵ All ABC-produced shows, including news, sports, children's and entertainment programming, with very limited exceptions, are captioned.¹²⁶ In 1991, CBS captioned four hours of network programming per day. By the end of 1995, CBS captioned a daily average of 13.5 hours of programming provided to affiliates, or between 85 and 95 hours per week, depending on weekend sports programming schedules. With the exception of its overnight news service, all of CBS's network programming is closed captioned.¹²⁷

63. ABC, CBS and NBC, however, do not caption their overnight news programs broadcast between 2:00 a.m. and 6:00 a.m., such as *World News Now* on ABC,¹²⁸ *NBC NewsChannel*¹²⁹ and *Up to the Minute* on CBS.¹³⁰ These overnight news programs are not captioned because their late night time slots provide relatively low ratings and limited advertising revenues which the networks feel do not justify the cost of captioning.¹³¹ They also are often a compilation of reports sent to the networks by their affiliates without captioning.¹³² Furthermore, even if some of the reports were initially captioned, the affiliates may retransmit only portions of these programs to the network for their use, thereby adversely affecting the flow of the captioning.

64. There are three newer commercial national networks -- Fox, United Paramount Network ("UPN") and WB Television Network ("WB"). The Fox television network has

¹²³ NBC Comments at 3; CBS Comments at 9; Capital Cities/ABC Comments at 4; ALDA Comments at 3.

¹²⁴ NBC Comments at 3; Telephone Interview with Ellen Agress, Vice President, Legal Policy and Planning, NBC (June 4, 1996).

¹²⁵ Capital Cities/ABC Comments at 5.

¹²⁶ *Id.* at 6-7.

¹²⁷ CBS Comments at 8-9.

¹²⁸ Capital Cities/ABC Comments at 5-6.

¹²⁹ NBC Comments at 4.

¹³⁰ CBS Comments at 9.

¹³¹ Capital Cities/ABC Comments at 6.

¹³² NBC Comments at 4.

approximately 140 affiliates,¹³³ and reaches almost all homes. It distributes 16 hours of prime time, late night and early Sunday morning programming. In addition, it distributes 19 hours of children's programming throughout the week. All of this programming is closed captioned.¹³⁴ UPN has 156 affiliates, and covers 92% of the country.¹³⁵ UPN distributes six hours of prime time programming, one hour of children's weekend programming and a movie on Saturday afternoons. All of this programming is closed captioned. Closed captioning is one of the network's "delivery requirements" for its programming. Accordingly, the captioning is done by the program producers. Commercials on UPN are generally not closed captioned.¹³⁶ WB reaches 84% of the country.¹³⁷ It distributes five hours of prime time programming and five hours of children's programming each week. All of WB's prime time programming is closed captioned. The children's programming also is captioned, except for some older cartoons.¹³⁸

65. While nationally broadcast sports programming generally includes captions, none of the three established networks regularly captions regional sports programming. One exception has been the regional games of the 1995 and 1996 NCAA Men's Basketball tournament, which were captioned by CBS through joint efforts with funding and captioning agency partners.¹³⁹ The broadcast networks assert that there are several reasons why networks generally do not caption regional sports programming. First, there are technical and logistical problems associated with delivering different games to the affiliates in various parts of the country at the same time. Second, captioning services may not exist in the regions where particular games will be televised, so it is not possible for a stenocaptioner to "see" the game to caption it in real time. Third, there may not be encoding equipment at the game site from which the programming is transmitted by uplink. In addition, broadcast networks state that a sporting event is essentially visual, and statistical information and the progress of the game are often indicated by graphics, thereby reducing or eliminating the need for captioning.¹⁴⁰ Finally, much sports programming is by its very nature perishable; sports events have substantial entertainment value only at the time of their

¹³³ R. R. Bowker, A Reed Ref. Pub. Co., *Broadcasting & Cable Yearbook 1996* at G-69.

¹³⁴ Information from Peggy Binzel, Senior Vice President, Government Relations, Fox Broadcasting Company (June 17, 1996).

¹³⁵ Cynthia Littleton, *WB, UPN Rally the Troops*, *Broadcasting & Cable*, June 10, 1996, at 20-21.

¹³⁶ Telephone Interviews with Robert Kaplan, Programming Director, United Paramount Network ("UPN") and Robert Giese, Vice President, Chris Craft Broadcasting, (May 29, 1996).

¹³⁷ *Cynthia Littleton, WB, UPN Rally the Troops*, *Broadcasting & Cable*, June 10, 1996, at 20-21; *Communications Daily*, May 21, 1996.

¹³⁸ Telephone Interview with Mitch Nedick, Head, Finance and Administration, the WB Television Network (July 8, 1996).

¹³⁹ CBS Comments at 14-15.

¹⁴⁰ NBC Comments at 13-14; ABC Comments at 6; CBS Comments at 6.

occurrence. Since there is no residual market for such programming, commenters argue that production costs, including captioning, cannot be spread over multiple showings. Therefore, the networks claim that they have no real financial incentive to caption most sports programming.¹⁴¹

66. Many commercials scheduled during and adjacent to network programs are captioned by the advertising agencies which produce them. These advertisers recognize that without closed captioning they may fail to reach potential consumers who are deaf or hard of hearing. Network promotions of upcoming network programs are generally not captioned. For example, NBC produces approximately 75 to 100 promotional spots a day which are 10 to 20 seconds in length and usually broadcast within 24 hours after being produced. In some cases, especially for news magazines with topical subjects, the promotional spots are produced just a few hours before being aired. These time frameworks may make captioning such spots logistically difficult or impossible. Networks such as NBC state that even for uncaptioned promotional spots, information about the name of the program and the time of the upcoming broadcast is often displayed visually by graphics contained in the spot.¹⁴²

2. *Local Broadcast Television Stations*

67. Local television stations distribute programming they receive from a network, if they are affiliates, purchase programming in the syndication market and produce or acquire programming locally. As discussed above, stations affiliated with a network carry captioned programming during a significant portion of the broadcast week. First run syndicated programming is not produced by or for any particular network and is distributed to stations irrespective of network affiliation. Off-network syndicated programming is programming that originally aired on a particular network and is now available in reruns to stations that wish to purchase it. Examples of such programming are *I Love Lucy* and *M*A*S*H*. The amount of captioned first run syndicated programming varies depending on who produces and who airs the programming. Certain first run syndicated programming such as *Jeopardy!*, *Wheel of Fortune*, and *Oprah* is closed captioned by the program producers and/or distributors.¹⁴³ Newer off-network syndicated programming, especially that produced after the mid-1980s, is often closed captioned. Most off-network programming produced before the mid-1980s, such as *Bewitched* and *Jackie Gleason*, was not captioned when produced and remains uncaptioned.¹⁴⁴

68. According to a study conducted by NAB, 70% of the stations responding to its survey provide closed captioning for some of their non-network programming. This study further divides stations according to market size and indicates that market size plays some role in

¹⁴¹ NCTA Comments at 11; Liberty Comments at 6-7.

¹⁴² NBC Comments at 4.

¹⁴³ VITAC Comments at 12; CTA Comments at 3.

¹⁴⁴ NAD Comments at 16.

determining how much non-network programming stations caption. The study suggests that the highest percentage of stations captioning programs are those in the mid-sized markets (Nielsen designated market area or DMA market ranks 26 to 50 and 51 to 100), where over 75% of the stations reported that they provide captioning.¹⁴⁵ The actual amount of captioned programming also varies according to the NAB study, with the stations in the largest markets (Nielsen DMA market ranks 1 to 25) airing an average of approximately 158 hours of captioned non-network programming over the last year.¹⁴⁶

69. Most commercial stations that caption local news use electronic newsroom ("ENR") captioning. Because ENR captioning is created from the text of the newsroom's teleprompter, the quality of ENR captioning depends on the amount, completeness, and accuracy of the information entered into the system. Live reports from the field or reports of breaking stories, much sports and weather reporting, and ad libs and banter by the anchors will not be captioned unless a verbatim script is added to the computer running the text from the teleprompter.¹⁴⁷ According to NAB, 81.5% of stations caption their local news.¹⁴⁸ All ten of ABC's owned and operated stations caption their local news.¹⁴⁹ Eight of NBC's nine network-owned television stations caption their local news programs.¹⁵⁰ However, any unscripted remarks by anchors are not captioned.¹⁵¹ Some stations sell captioning sponsorships that give the sponsors commercial mention as a means of defraying the cost of captioning.¹⁵²

3. *Cable Television Systems*

70. Cable television systems distribute the programming of local broadcast stations and cable programming networks, and their own locally produced programming to subscribers. To the extent that the broadcast programming they carry is captioned they are required by Commission rule to retain the captioning.¹⁵³ There are more than 100 satellite delivered cable

¹⁴⁵ Fratrik, "The Television Industry's Provision of Closed Captioning Services in 1996," National Association of Broadcasters (March 15, 1996) ("NAB Study"), NAB Comments, Attachment at 2.

¹⁴⁶ NAB Study at 3-4.

¹⁴⁷ CBS Comments at 17.

¹⁴⁸ NAB Comments at 3; NAB Study at 4-5.

¹⁴⁹ Capital Cities/ABC Comments at 9.

¹⁵⁰ NBC Comments at 5.

¹⁵¹ *Id.* at 5.

¹⁵² Capital Cities/ABC Comments at 9.

¹⁵³ 47 C.F.R. §76.606.

programming networks. In addition to carriage by cable systems, these programming services also are distributed to subscribers by other MVPDs. These networks range from those, such as CNN and USA, that are available to almost all cable subscribers, to many with more limited distribution, either because they are new or they offer programming aimed at more limited niche audiences.¹⁵⁴

71. According to NCTA, the overall percentage of captioned programming (for the top 20 basic and expanded basic cable services¹⁵⁵ and the most widely distributed six premium networks¹⁵⁶) is nearly 24%.¹⁵⁷ For premium services alone, NCTA asserts that the number is over 54% with individual premium services ranging as high as 80% of the entire weekly schedule. These percentages translate to over 30,000 hours per year of closed captioned programming provided by the top 20 basic networks and the top six premium networks.¹⁵⁸ According to NCTA, nearly 30% of prime time programming on the top 20 basic cable networks and over 60% on the top six premium networks is closed captioned.¹⁵⁹

72. A number of cable programming networks are available on a per channel or per program basis. These premium services generally provide movies and special events. Home Box Office ("HBO") and Cinemax, two of the most widely available of these services, provide a variety of programming, much of which is captioned. In 1995, HBO and Cinemax had captioning on 76% of their theatrical motion pictures, 83% of their musical programming, 94% of their documentaries, 72% of their family programming, 82% of their series, 100% of their comedy programs, and 100% of other categories of programming.¹⁶⁰

73. According to NCTA, there are several reasons why the percentage of closed captioning on cable television is lower than that of closed captioning on broadcast television. First, there are over 100 national cable programming networks, most of which operate 24 hours

¹⁵⁴ For example, CNN and USA, which began in 1980 are currently available to over 60 million homes, while a newer channel, such as the Outdoor Life Channel which began in 1995, is available to only 2.4 million homes. NCTA Cable Television Developments Spring 1996 at 35, 66, 78.

¹⁵⁵ The top twenty basic cable networks are: AMC, A&E, CNBC, CNN, C-SPAN, Discovery, ESPN, The Family Channel, Headline News, Home Shopping Network, Lifetime, MTV, Nickelodeon, QVC, TNN, TNT, The Weather Channel, USA Network, VH1 and TBS. NCTA Comments at Attachment A, citing *TV Guide*.

¹⁵⁶ The most widely distributed premium cable networks are Disney, Encore, HBO, Cinemax, Showtime, and The Movie Channel. NCTA Comments at Attachment A, citing *TV Guide*.

¹⁵⁷ NCTA Comments at 4 and Attachment A, citing *TV Guide*.

¹⁵⁸ *Id.* at 4.

¹⁵⁹ *Id.*

¹⁶⁰ HBO Comments at 7.

a day, seven days a week.¹⁶¹ Furthermore, there are more than 40 regional and local cable programming networks. All of these networks combined represent thousands of hours of television programming daily. In contrast, there are only four major commercial broadcast networks, which combined present only 40 hours of network television programming daily. In addition, NCTA emphasizes that most government funding that has enabled programmers to close caption programming has historically been directed to the broadcast networks, both commercial and noncommercial, rather than the cable networks.¹⁶²

74. Cable networks also differ significantly from broadcast networks in their audience reach. Unlike the four major broadcast networks which reach nearly 100% of the television households in the U.S., even the most widely available cable network reaches only the 65% of the nation's television households that choose to subscribe to cable and DBS, and the approximately 5% of homes subscribing to other MVPDs.¹⁶³ Thus, even though cable networks may be available nationwide, they only obtain carriage on a limited number of systems. Even when they obtain carriage, they gain only a limited number of viewers. Some cable networks are also limited to certain regions, which further reduces their audience reach.¹⁶⁴ In addition, many cable networks target niche markets, some are quite new compared to the established broadcast network, and others do not have the audience viewership or the money to support captioning.¹⁶⁵ NCTA points out that the costs of captioning are fixed and do not hinge on the number of subscribers reached or the production budget for a program. Some cable networks operate with proportionately smaller programming budgets than large broadcast networks or the producers of shows for premium cable channels. For example, Arts & Entertainment Television Networks ("A&E") states that the four major broadcast networks spend more on prime time programming in two weeks than does a cable network the size of A&E or The History Channel in the course of a year.¹⁶⁶ Given these financial realities, NCTA asserts that many cable networks may find that the costs of captioning exceed their programming budgets for the entire year.¹⁶⁷ Therefore, in the cable context, NCTA believes that the size of the audience viewership and

¹⁶¹ NCTA Comments at 6. See also *1995 Competition Report*, 11 FCC Rcd at 2131 ¶150.

¹⁶² NCTA Comments at 6.

¹⁶³ Jim McConville, *The Search for DBS Homes*, *Broadcasting & Cable*, May 27, 1996, at 35.

¹⁶⁴ NCTA Comments at 6-7.

¹⁶⁵ For example, for April 1996, the average prime time rating for the USA Network, the highest rated cable network was 2 compared to the prime time rating for NBC, the highest rated broadcast network, of 10.5. Paul Kagan Associates, *Cable TV Programming*, June 30, 1996, at 10; *People's Choice: Ratings According to Nielsen*, *Broadcasting & Cable*, April 15, 1996, at 52, April 22, 1996, at 38, April 29, 1996, at 34 and May 6, 1996, at 21.

¹⁶⁶ A&E Comments at 17-18.

¹⁶⁷ NCTA Comments at 22.

advertising base rather than the size of the market reached by the programming service, should be a key factor in determining a cable network's economic ability to afford captioning.¹⁶⁸

75. Furthermore, much of the programming aired by many cable networks is significantly different from that of broadcast networks in terms of scheduling, format and content. The nature of cable programming varies significantly from network to network, and this may affect the logistics and costs of closed captioning. According to NCTA and many cable networks, these qualitative differences in cable programming account in large part for the quantitative differences in the percentage of closed captioning on cable networks. For example, many cable networks regularly show a substantial number of older films and television series, none of which were captioned when produced. NCTA asserts that some cable networks present topical or perishable programming with a short shelf life, such as music videos and sports programming. Numerous cable networks present live programming on a continuous basis, 24 hours a day, which would require real-time captioning. Other cable programming, such as home shopping channels or weather reports, often contain textual material or other visual depictions of the information being described verbally, which according to the cable networks reduces the need for captioning.¹⁶⁹

76. Some national news on cable is closed captioned. For example, CNN captions approximately 50% of its day, and CNN Headline News captions approximately 25%. CNN Headline News also provides on-screen financial and sports information in textual form 24 hours a day. CNBC, a 24-hour consumer news and business programming service on basic cable that is owned and operated by NBC, currently stenocaptions 47 1/2 hours of programming per week.¹⁷⁰ America's Talking, another basic cable network owned and operated by NBC which focuses on news and information, does not currently caption any of its programming.¹⁷¹ The Cable Satellite Public Affairs Network ("C-SPAN" and "C-SPAN 2") captions the proceedings of the U.S. House of Representatives and the U.S. Senate. Pursuant to a grant, C-SPAN also captions the one hour program *Booknotes* which airs on Sunday evenings, but the continuation of this grant is uncertain.¹⁷² Furthermore, cable local news channels generally do not caption live programming.¹⁷³

¹⁶⁸ *Id.* at 13.

¹⁶⁹ *Id.* at 7-8; The Weather Channel Comments at 3-4.

¹⁷⁰ NBC Comments at 5.

¹⁷¹ *Id.* at 5-6. On July 15, 1996, America's Talking was replaced by MSNBC, which is not captioning its programming. Telephone Interview with Ellen Agress, Vice President, Legal Policy and Planning, NBC (July 9, 1996).

¹⁷² Telephone Interview with Marge Amey, Viewer Services Assistant, C-SPAN (June 17, 1996).

¹⁷³ NCTA Comments at 9.

77. Kaleidoscope, a 24-hour a day cable programming network started in September 1990, was established for the purpose of serving persons with disabilities. This network is distributed by 201 cable systems and now reaches approximately 15 million subscribers. Kaleidoscope provides both general interest programming and programming specifically addressing topics relevant for persons with disabilities. All of Kaleidoscope's programming is "open captioned" so that the captioning is visible to all viewers. Kaleidoscope does its own captioning and also "open captions" programming it receives which is closed captioned.¹⁷⁴

78. In addition to national cable networks, cable operators provide regional and local programming. The regional programming is primarily news and sports channels. Much locally originated programming carried by cable operators is on their PEG channels. Programming over PEG channels is usually produced by individuals, schools, local governments or small non-profit organizations working with volunteer personnel. Most of these program producers usually operate with very limited funding that results in a low level of captioning of PEG programming.¹⁷⁵

4. *Other Types of Programming*

79. Broadcast and cable programming include movies. Nearly all widely distributed motion pictures currently produced and distributed by member companies of the Motion Picture Association of America ("MPAA") are closed captioned for distribution over broadcast television, home video and cable television following their theatrical release. Following first run release, a "submaster" of each motion picture is created, which is then closed captioned by the NCI or another captioning service. All prints of the motion picture distributed for broadcast television, cable television or home video exhibition are manufactured from the initial captioned submaster prepared for home video release, or from a subsequent submaster edited for broadcast television, and are therefore captioned themselves. More than 6000 closed captioned titles have been distributed.¹⁷⁶ According to MPAA, there are approximately 24,000 previously released films that have not been closed captioned and which would cost \$38.4 million to caption.¹⁷⁷ MPAA and other commenters believe that, because of the need to pass through these costs, broadcasters and other video programming providers would simply not purchase older programs and films which

¹⁷⁴ NCTA Comments at 5; Telephone Interview with Ryan Prince, Director of Kaleidoscope's National Advisory Board (May 29, 1996) ("Prince Interview"). Kaleidoscope has transmitted its service using digital compression technology since April 1995, and is currently trying to expand its coverage through the DirecTV and Primestar DBS systems. HSD owners who subscribe to Kaleidoscope need a special decoder to receive the digital signal.

¹⁷⁵ Alliance Comments at 7.

¹⁷⁶ MPAA Comments at 3-4.

¹⁷⁷ *Id.* at 12.

would then sit on the shelf unviewed. This situation would result in reduced diversity of programming products available to the public.¹⁷⁸

80. Closed captioning of programming for non-English speakers on both broadcast and cable channels is quite limited because captioning, particularly in multiple languages, can pose various logistical problems. Because such programming is targeted to a narrow niche market -- minority and ethnic viewers -- and is programmed in non-English languages, it has much more limited distribution, as well as more limited advertising and subscriber revenues than most English language programming. These factors can make the cost of captioning programming for non-English speakers significantly higher than English language captioning. Furthermore, expertise in non-English language captioning may be scarce and, for some languages, virtually unavailable.¹⁷⁹ In addition, the alphabets and characters used in certain non-English languages cannot be processed with standard computerized word processing and closed captioning equipment.¹⁸⁰ Even if such languages can be captioned with special equipment, the captioning decoders currently available in television sets used in the U.S. can only decode Latin based alphabets and symbols. Accordingly, captioning that uses non-Latin characters, such as Chinese, Russian and Hebrew, cannot be decoded on the television sets used by U.S. viewers.¹⁸¹ Another logistical factor is that closed captioning in English would require a staff with multiple translators of numerous languages. Whether captioned in English or a particular non-English language, it can be extremely difficult to assure the accuracy and quality of such multi-lingual captioning.¹⁸²

5. *Other Multichannel Video Providers*

81. Television programming is also delivered to consumers through several other MVPDs. These video distribution technologies retransmit programming also delivered over broadcast and cable delivery systems. One such new provider is the direct-to-home ("DTH") satellite systems. Approximately 2.2 million homes subscribe through direct broadcast satellite ("DBS") service and 2.3 million homes subscribe via home satellite dishes ("HSDs"). The total 4.5 million DTH subscribers represent approximately 5% of U.S. television households.¹⁸³ DTH

¹⁷⁸ *Id.* at 12.

¹⁷⁹ International Cable Channel Partnership, Ltd. ("ICCP") at 3.

¹⁸⁰ Among the languages with distinctive alphabets and characters are Arabic, Cambodian, Chinese (including various Chinese dialects) and Japanese, Farsi, Hebrew, Hmong, Hindi, Korean, Russian, Tagalog (Filipino), Thai and Vietnamese.

¹⁸¹ *Electronic Industries Association of America (EIA) Standard Recommended Practice for Line 21 Data Service (EIA Document #608)* September 1994 at 14-22; Telephone Interview with Gerald Freda, Vice President, Production & Engineering, NCI (June 17, 1996).

¹⁸² ICCP at 3.

¹⁸³ Satellite Broadcasting and Communications Association ("SBCA") Comments at 4.

is purely a program delivery system. Until now, it has not participated (other than through program licensing), in the creation of closed captioned programming, except for retransmitting intact the closed captioning already encoded in the programming it delivers to subscribers. All closed captioned pay-per-view, off-air broadcast signals carried on satellite, satellite-delivered programming and PBS broadcasts carrying closed captioning are included in satellite transmissions.¹⁸⁴

82. Another multichannel video provider is the wireless cable industry, which includes licensees of multipoint distribution service ("MDS") stations and ITFS stations that lease transmission capacity to wireless cable operators. Currently, wireless cable operators rely heavily on program suppliers such as broadcast networks and cable networks for their commercial programming. Most wireless cable systems voluntarily retransmit to their subscribers intact any closed captioning provided with that programming. The only exception to this general rule is when the scrambling system employed by some wireless cable systems does not allow line 21 of the VBI to be passed through to the subscriber's television set.¹⁸⁵ Much of the educational programming carried on ITFS channels and retransmitted on wireless cable systems is not closed captioned.¹⁸⁶

83. Local exchange carriers ("LECs") also can provide video programming service through telephone lines. For example, Bell Atlantic is current delivering video programming that has previously been captioned by the programming provider over its digital video system in Dover Township, New Jersey.¹⁸⁷ Many of the hardware and software components of advanced digital systems that Bell Atlantic will deploy, however, are in the prototype stage or not yet engineered to accommodate captioning. Bell Atlantic states that it cannot ensure compliance with any captioning requirements for any future systems it will deploy until it has had the opportunity to develop and test all system components required to support such requirements.¹⁸⁸ Pursuant to Section 653 of the Communications Act, LECs operating open video systems ("OVS") will be subject to the must-carry requirements applicable to cable systems.¹⁸⁹ Accordingly, under the must-carry requirements, OVS providers will be required to transmit intact any captioning contained in the must-carry signals they retransmit.

¹⁸⁴ SBCA Comments at 2, 6.

¹⁸⁵ Wireless Cable Association International, Inc. ("WCA") Comments at 2, 3, 7.

¹⁸⁶ *Id.* at 6.

¹⁸⁷ Bell Atlantic Comments at 4.

¹⁸⁸ *Id.* at 4-5.

¹⁸⁹ See *Implementation of Section 302 of the Telecommunications Act of 1996 Open Video Systems, Second Report and Order in CS Docket No. 96-46, FCC 96-249* (released June 3, 1996), summarized at 61 Fed. Reg. 28698 (June 5, 1996).

F. Funding of Closed Captioning

84. Currently, closed captioning is funded by a variety of sources. The Federal government is a major source of funding which is administered by the DOE. Last year, DOE provided \$7.9 million for closed captioning, which represents roughly 40% of the total amount spent on captioning.¹⁹⁰ Once Congress has made an annual appropriation to DOE, the Department allocates some of that funding to captioning, establishes priorities for programs and awards grants to captioning providers that have applied for Federal funding. Winning applicants supply proposed budgets and program selections for approval by DOE. Among the categories of programming receiving DOE funding for closed captioning are national news, public information, children's and sports programs, movies, mini-series, and special programs broadcast during prime time, syndicated programming and daytime programming.¹⁹¹ The national broadcast networks rely heavily on DOE grants to fund captioning of network programming. For example, approximately 45% of ABC's 1996 closed captioning costs are funded by DOE grants.¹⁹² Historically, most DOE funding has been provided to broadcast television rather than cable networks.¹⁹³ However, the future of Federal funding for closed captioning is uncertain.¹⁹⁴ Several commenters note that this possible defunding scenario appears inconsistent with the 1996 Act, which requires that the Commission adopt rules to implement captioning. These commenters also voice concerns about the Federal government issuing an unfunded captioning mandate.¹⁹⁵

85. Programmers and program providers also receive funding for captioning from private sources. For example, Capital Cities/ABC states that it will pay for about 46% of the \$2,840,000 cost of closed captioning its own programming in 1996, with DOE funding about 45% and private sources contributing about 9% of that cost.¹⁹⁶ For some of its news and public affairs programming, CBS has obtained support from advertisers who subsidize captioning as a public service. CBS also has been able to defray a portion of the costs of captioning its national and regional sports programming by providing open video credits to advertisers in return for

¹⁹⁰ *Taking Aim at Captioning*, *Broadcasting & Cable*, June 3, 1996 at 18.

¹⁹¹ NAD Comments at Attachment H.

¹⁹² Capital Cities/ABC Comments at 7-8.

¹⁹³ NCTA Comments at 16.

¹⁹⁴ On June 10, 1996, the U.S. House of Representatives passed a bill that would limit government funding of captioning to news and educational programs. See *Individuals With Disabilities Act (IDEA Improvement Act of 1996)*, H.R. 3268, Sec. 662(a)(10). A similar bill has been introduced in the U.S. Senate, S. 1578.

¹⁹⁵ Schwartz, Woods & Miller Comments at 3; ALTV Comments at 4-5; Media Captioning Services Comments at 6.

¹⁹⁶ Capital Cities/ABC Comments at 7-8. Capital Cities/ABC states that about 70% of the private source funding is from program producers and the other 30% is from network advertisers.

financial support of the closed captioning for this type of programming. For its entertainment programming, CBS states that it funds closed captioning in partnership with program producers and advertisers and financial support from the government.¹⁹⁷

86. Local broadcast stations also use private funding sources for captioning who are then acknowledged during the broadcast. NAB reports that 67.9% of the stations in their survey that carry captioned news programs have sponsors for the closed captioning.¹⁹⁸ This sponsorship by private companies and nonprofit organizations is appreciated by some members of the deaf and hard of hearing community and is credited for the increase in the amount of captioned programming in recent years.¹⁹⁹ Some representatives of the deaf and hard of hearing community, however, find it troubling that the closed captioning is sponsored by private organizations separate from that of the programming itself.²⁰⁰ They argue that since the audio portion of a program does not include similar statements of sponsorship, there is an appearance that captions are a "charity provided by the goodness of a benefactor, and not as it should be: sound business sense, good education strategy and equal access to information."²⁰¹

G. The Quality and Accuracy of Closed Captioning

87. The quality, accuracy and completeness of closed captioning is a relevant factor in examining the accessibility of video programming for persons with hearing disabilities.²⁰² Unless closed captions accurately reflect the audio portion of the video programming to which they are attached, they may be of limited use to the viewer. Captions, unlike words in books or periodicals, are impermanent. When there are typographical errors or incorrect word usage, the reader does not have the time to look over the previous words to deduce the intended meaning. Part of the art of captioning is the presentation, including the manner of captioning, its placement and timing.²⁰³

¹⁹⁷ CBS Comments at 14-15.

¹⁹⁸ NAB Comments at 5

¹⁹⁹ ALDA Comments at 6.

²⁰⁰ MCAHI Comments at 1; Northern Virginia Resource Center for Deaf and Hard of Hearing Persons ("NVRC") Comments at 5; VITAC Comments at 12.

²⁰¹ NVRC Comments at 5. *See also* VITAC Comments at 13.

²⁰² The House version of this section required the Commission to examine the quality of closed captioning and the style and standards which are appropriate for the particular type of programming. Conference Report at 182.

²⁰³ VITAC Comments at 19. *See also* JoAnn M. Myers ("Myers") Comments at 1.

88. Currently, there is no standardization of captioning styles or presentation.²⁰⁴ Captions can be displayed in pop-up or roll-up form. Pop-up captions are displayed and then erase entirely. They are used most often for off-line captioning. Roll-up captions, which are mostly used for real-time captioning, scroll onto and off the screen in a continuous motion.²⁰⁵ Some captioning is verbatim, following exactly what the speakers are saying, while other captioning is not and reflects some editing on the part of the captioners. Other differences among captioning styles include the manner in which speakers are identified and how voice inflections, background noise, audience reaction and sound effects are indicated.²⁰⁶ For example, some entities identify speakers using parentheses and others provide the speaker's name followed by a colon.²⁰⁷ In addition, some captions are centered and others are left-justified. Expert captioners do not appear to agree on the best presentation style.²⁰⁸

89. A number of problems have been observed with closed captioning. Commenters report that often captions are omitted from any review of a prior week's program at the beginning of a show or any preview of a coming episode of a program.²⁰⁹ They state that it is not uncommon for the commercials or station breaks to lack captions during a program that is otherwise captioned.²¹⁰ It is also reported that the closed captions are sometimes turned off five to eight minutes before the end of national network programming.²¹¹ Open character generated announcements, such as emergency messages, election results, weather advisories and school closing information, which crawl across the bottom of the screen are obscured by captions.²¹² The closed captions also tend to disappear when the picture is reduced to a small size in order

²⁰⁴ NCI Comments at 7.

²⁰⁵ NAD Comments at Attachment I.

²⁰⁶ *Id.* at 18-19.

²⁰⁷ *Id.* at 17.

²⁰⁸ VITAC Comments at 20.

²⁰⁹ NAD Comments at 18.

²¹⁰ *Id.* at 18; Barbara Liss Chertok ("Chertok") at 2; American Society for Deaf Children ("ASDC") Comments at 3.

²¹¹ Jeannette Costa ("Costa") Comments at 2. According to Jeffrey M. Hutchins, Vice President & General Manager, VITAC, this may occur when a local station switches from its master control center to the control center in its news room at the end of a prime time program and just prior to the local news. If that control room is not set up to pass the VBI through properly, the result is the stripping of the captions during the final segment of the program. Telephone Interview with Jeffrey Hutchins (June 17, 1996).

²¹² WGBH Comments at 31; ASDC Comments at 3-4; NAD Comments at 23.

to show other information (e.g., school closings) and they do not return until the picture returns to its normal size.²¹³

90. In addition, commenters observe that the closed captions may not remain with a program throughout the distribution chain, as would be expected.²¹⁴ It is reported that, sometimes, a prime time program broadcast on network television may not have the captions when it is rerun in syndication or redistributed by a cable network.²¹⁵ When a prime time program goes into syndication it may be edited to fit a shorter time frame. While the video and audio portions remain intact, the captioning may be removed.²¹⁶ For example, some PBS programming originally broadcast with closed captions has been redistributed on cable by A&E without the captions included.²¹⁷ It is also reported that a program may be captioned in one place and not another. For example, one commenter claims that *Jeopardy!* is captioned in Washington, D.C. and Nashville, Tennessee, but not in Atlanta, Georgia.²¹⁸ Further, commenters state that movies on HBO can appear one day with clear, error-free captions and be repeated on another day with captions that are scrambled and unreadable.²¹⁹ Additionally, programs may have the "CC" logo indicating that they are closed captioned when they do not actually have the captions.²²⁰

91. Moreover, there are often errors in captions, including misspelled words, incorrect grammar, poor timing, inaccuracies and poor placement. Captions do not always match what the speaker is saying.²²¹ Sometimes they are out of synchronization with the audio portion of the

²¹³ NVRC Comments at 6.

²¹⁴ EEG Enterprises Comments at 3; NAD Comments at 22.

²¹⁵ Colorado Assistive Technology Project Comments at 4.

²¹⁶ American Society of Deaf Children Comments at 4.

²¹⁷ Massachusetts Commission for the Deaf and Hard of Hearing Comments at 3. A&E does not respond to this assertion in its reply comments.

²¹⁸ Atlanta Hears Chapter/SHHH Comments at 2. It is not clear to what extent the commenter monitored this programming and whether the lack of captions reflects a transmission problem on a specific day or the failure of the local broadcaster to distribute the programming with the captions intact. *Id.*

²¹⁹ Atlanta Hears Chapter/SHHH Comments at 3.

²²⁰ Mary Clepper ("Clepper") Comments at 2.

²²¹ Boston Chapter/SHHH Comments at 2.

program.²²² Accuracy is a problem, particularly with real time captioning.²²³ When the ENR type of captions is used it is common for abbreviations, camera cues and anchor cues that appear on the teleprompter to be included in the closed captions.²²⁴ The result of such errors is garbled captions, which one commenter points out are "a nuisance and sometimes funny."²²⁵

92. Some of the errors in captions noted above are likely due to captionwriter errors. It has been noted that even highly skilled captionwriters, with up to 99% accuracy rates, often make up to two mistakes per minute. These mistakes occur either because of captionwriter's error or the software mistranslation of the operator's keystrokes. Software mistranslation occurs when the software does not recognize the machine shorthand and the mistakes appear as a phonetic rendering of the word.²²⁶

93. Problems also occur because of inadvertent errors in the transmission of captions by the broadcaster, distributor, cable network, local station or cable system operator. In many cases, the captions have been stripped, moved to the wrong line of the VBI or flipped onto the wrong field of line 21 by maladjusted signal processing equipment. The critical technical steps of a quality captioning service are accurate encoding, transmission reception and decoding of the signal. To avoid such errors, it is important that the captioned signal be monitored as it is fed, monitored during the duplication process and checked to ensure that the equipment used is not inadvertently stripping the captions, moving them onto the wrong line or placing them in the wrong field.²²⁷

IV. Video Description of Video Programming

A. Introduction

94. Video description²²⁸ is a more recent innovation than closed captioning. It provides aural descriptions of a program's key visual elements that are inserted during the natural pauses in the program's dialogue. For example, it describes an action that is otherwise not reflected in

²²² *Id.*; Burlington Chapter of North Carolina Association of the Deaf at 3-4.

²²³ League for the Hard of Hearing Comments at 5.

²²⁴ WGBH Comments at 31.

²²⁵ Chertok Comments at 2. *See also* Boston Chapter/SHHH Comments at 2.

²²⁶ WGBH Comments at 32.

²²⁷ *Id.* at 30. *See also* ASDC Comments at 4; NAD Comments at 22.

²²⁸ Some commenters suggest that video description is an inaccurate term and this service should more properly be called "audio description." *See, e.g.,* Clark Comments at 4. We will use the term video description because it is the terminology used in the statute. 47 U.S.C. § 613(g).

the dialogue such as the movement of a person in a scene. It was first used in theatrical performances in the early 1980s, and since that time has been developed for television programming primarily by WGBH and other PBS affiliates.²²⁹ PBS first tested broadcast video description in 1988.²³⁰ The video description of a television program is most often transmitted through the SAP channel. The SAP channel is a subcarrier that allows each distributor of video to transmit an additional soundtrack. Essentially video distributors which utilize a SAP channel allow the viewer to choose between the primary soundtrack and an additional, or secondary, soundtrack transmitted on the SAP channel for the program. In addition to video description, the SAP channel is also frequently used for alternative language programming.

95. This ancillary service is permitted under the Commission's rules so long as it causes no observable degradation to any portion of the visual or aural broadcast signal.²³¹ To receive the service, the audience member must have a stereo television or a videocassette recorder ("VCR") that is capable of receiving the SAP channel, or a television adapter for this channel. There are presently no regulatory requirements regarding video description.

B. Audiences that Benefit from Video Description

96. The precise number of persons with visual disabilities likely to benefit from video description is difficult to estimate.²³² This is, in part, due to the wide differences in the degree of visual disability. Indeed, many persons with sufficient vision to watch normal television programming may still benefit from video description.²³³ According to the National Center for Health Statistics there are 8.6 million persons who are visually disabled.²³⁴ However, other estimates of the population of persons with visual disabilities who would benefit most from video description range between eight and 12 million persons.²³⁵ Beyond the direct benefit to such persons, video description can relieve family and friends of persons with visual disabilities of the

²²⁹ WGBH has established the Descriptive Video Service to provide video description. See WGBH World Wide Web home page: <http://www.boston.com/wgbh/pages/dvs/dvshome.html>.

²³⁰ APTS Comments at 2. PBS went on to air the first nationally described program, *American Playhouse's* "Sense and Sensibility" in 1990.

²³¹ See 47 C.F.R. §§ 73.646 and 73.682(a)(23)(ii) .

²³² See, e.g., Audio Optics Comments at 1.

²³³ American Foundation for the Blind ("AFB") Comments at 5-8. Narrative Television Network ("NTN") refers to these persons as the "hidden visually impaired." NTN Comments at 4.

²³⁴ National Center for Health Statistics, Current Estimates from the National Health Interview Survey, 1994, Series 10, No. 193, at 93, Table 62.

²³⁵ AFB Comments at 5-8 (estimating the population of visually impaired to be between eight and 10.8 million). But see American Council of the Blind ("ACB") Comments at 2 (estimating that there are probably at least 12 million Americans with visual disabilities who could potentially benefit from video described programming).

task of providing on the spot descriptions while viewing programming, thereby essentially serving as ad hoc describers.²³⁶

97. Many of these individuals are children for whom educational programming with video description would offer significant benefits.²³⁷ Estimates suggest that up to 500,000 persons under the age of 18 can be classified as visually disabled.²³⁸ Video description would allow these children to enjoy the same educational experience as their sighted peers.²³⁹ Finally, video description may allow parents with visual disabilities to participate more fully in their children's educational experience.²⁴⁰

98. As the population ages, an increasing number of people will become visually disabled as part of the aging process.²⁴¹ These people may also become increasingly dependent upon television for information, entertainment and companionship.

99. Some sources have suggested that video description services can also offer ancillary benefits to nonvisually disabled persons.²⁴² Video description may also benefit persons with cognitive or learning disabilities.²⁴³ Furthermore, video description may offer an educational opportunity for the sighted to improve their vocabulary and even writing skills by suggesting more creative and informative ways of describing a scene.²⁴⁴ Persons without visual disabilities may sometimes choose to passively "watch" television while engaged in other activities. These persons, like those in the visually disabled community, are already partially served by conventional television and television band radio receivers. However, their experience, like that

²³⁶ Washington Metropolitan Ear Comments at 6.

²³⁷ AFB Comments at 9. *See also* Laurence Anne Coe ("Coe") Comments at 3.

²³⁸ AFB Comments at 9. ABC Comments at 3. *But see* WGBH Comments at 3 (estimating that 45,000 school children are "legally blind").

²³⁹ AFB Comments at 9; ACB Comments at 3.

²⁴⁰ *See, e.g.*, Louis M. Smith ("Smith") Comments at 1.

²⁴¹ Washington Metropolitan Ear Comments at 7.

²⁴² Coe Comments at 2-4. *See also* NTN Comments at 3. AFB cites the popularity of play-by-play sports broadcasting among sighted persons as support for this proposition. AFB Comments at 10.

²⁴³ AFB Comments at 9.

²⁴⁴ *Id.*

of people with visual disabilities, might be enriched through video description.²⁴⁵ The widespread availability of video description might increase this type of use.²⁴⁶

C. Methods of Distribution of Video Description

100. Generally, video description service is provided using the SAP channel.²⁴⁷ The SAP channel allows for the delivery of a third audio track for a program in addition to the monaural and stereophonic audio tracks. The transmission of the SAP channel is accomplished with the use of a secondary carrier called a subcarrier. The ancillary audio (in this instance video description) is transferred onto the SAP subcarrier through the use of a modulator. Therefore, any program distributor wishing to deliver SAP would need to install an additional modulator at the transmission facility. In comparison, closed captioning information is carried on the VBI and does not require the use of additional equipment at the transmission facility. The VBI is available as an inherent feature of the Broadcast Television System Committee ("BTSC") video signal standard and is part of the transmission of a television signal, whereas the SAP channel requires the video distributor to generate a separate subcarrier containing the additional audio track.

101. In order for a viewer to access the SAP channel, the consumer must have a television or VCR equipped to receive the SAP channel.²⁴⁸ Approximately 52% of American households own SAP-compatible televisions, and 20% own VCRs capable of receiving the SAP channel.²⁴⁹ A consumer who has a television or VCR with SAP capability can activate this feature to receive the video description or other audio, if available, in lieu of the primary soundtrack.

102. When the SAP channel is employed, the program can be transmitted with two separate audio tracks. The additional track "follows" the main program signal through the

²⁴⁵ Coe Comments at 4-5. NTN asserts that 60% of their audience mail comes from sighted viewers who enjoy the programming. NTN Comments at 3.

²⁴⁶ Inclusive Technologies Comments at 4. Anna Dresner ("Dresner") also suggests that the popularity of books on tape hints at the possible popularity of video description among sighted viewers. Dresner Comments at 2. Washington Metropolitan Ear also suggests that such an application may be popular. Washington Metropolitan Ear Reply Comments at 9. Interestingly, Turner Classic Movies has suggested that the video description soundtracks may have some value as part of the books on tape market. Telephone Interview with Ken Schwab, Director of Programming, Turner Classic Movies (June 7, 1996)

²⁴⁷ CEMA Comments at 7.

²⁴⁸ Audio Optics Comments at 1. Audio Optics also notes that stand alone SAP receivers were previously available but are no longer distributed. *Id.*

²⁴⁹ CEMA Comments at 7-8.

distribution process.²⁵⁰ For example, the SAP channel as currently used by PBS for its video description follows the main program signal from the network's master control facility and satellite distribution system to the local station's broadcast facility and through the local transmitter. The accommodation of this additional soundtrack typically requires changes to the network and local station plant wiring and equipment. At the local transmitter, the distributor must have the technical facilities to remodulate the subcarrier signal to include the SAP channel information.²⁵¹

103. Video description may also be provided as an "open" service with the descriptive narrative incorporated as part of the regular sound track. Narrative Television Network ("NTN") is currently providing nearly 20 hours per week of such programming over more than 1000 cable systems.²⁵² NTN states that this method has the advantage of being available without the special equipment required to access the SAP channel.²⁵³ One potential disadvantage to this method is that the additional narrative may act as a distraction to the wider, sighted audience who wish to watch programming in a conventional manner.

104. In Canada, video description has been provided using a Radio Reading Service. AudioVision Canada transmits descriptive audio separately from regular audio over a radio reading service available on most Canadian cable television FM systems. This allows the consumer to receive either the video signal with the primary soundtrack or the video description soundtrack alone, but not both. For this reason, this technique works best for those not interested in or able to see the video portion of the program, since only one television channel can be accessed at a time. This would partially undermine the value of video description by not allowing persons with visual disabilities to enjoy television programming with their friends and family. However, this technique, as with open video description, allows the audience access to the descriptive narrative without special equipment.²⁵⁴

105. Finally, video description may also benefit from digital television technology. This technology may allow operators to provide the viewer with a choice between video description and alternative language programming because it may permit the transmission of multiple audio

²⁵⁰ See *An Investigation of Vertical Blanking Interval (VBI) Audio Encoding for Technical Distribution of Television Programs Containing a Special Soundtrack for Blind and Visually Impaired Viewers, Final Report*, CPB/WGBH National Center for Accessible Media, Department of Education, National Institute of Disability Rehabilitation and Research Grant #H133C10223, February 28, 1995, at 2.

²⁵¹ *Id.* at 3.

²⁵² NTN Comments at 4.

²⁵³ *Id.*

²⁵⁴ AFB Comments at 4. See also ACB Comments at 2. ABC also asserts that it may be possible to deliver descriptive narrative audio using the VBI, or over telephone lines, but provides no further information. NTN also mentions this possibility but fails to provide specifics. NTN Comments at 5.

tracks.²⁵⁵ According to NAB, digital television may also allow a viewer to listen to more than one audio channel at the same time. This feature may lower the cost of providing video description by allowing the consumer to select both the main audio program with the conventional soundtrack and a descriptive narrative video description audio program synchronized with the natural pauses in the conventional soundtrack simultaneously. This would allow the producer to eliminate the costly process of mixing the main soundtrack with the descriptive narrative.²⁵⁶

D. Cost of Video Description

106. Estimates for the cost of providing video description vary widely. The service is labor intensive and the actual costs seem to vary considerably depending on the particular project.²⁵⁷ NCTA estimates that the cost of providing descriptive video service for a full length feature film can range up to \$10,000.²⁵⁸ However, the NTN estimates the cost of high quality narrative programming, when included as part of the primary audio track, to be between \$1000 and \$1200 per program hour.²⁵⁹ In addition to NCTA and NTN, other commenters address the issue of cost. PBS estimates the cost at one and one half times the cost of closed captioning or \$3000 per program hour.²⁶⁰ Audio Optics estimates that the cost alone for adding video description to a one and a half hour feature film would be about \$4000, exclusive of profit or overhead.²⁶¹ This would equal about \$2667 per program hour.

107. Video description also entails increased distribution costs.²⁶² Currently, the commercial broadcast networks do not have the facilities to distribute the SAP channel to affiliated stations for retransmission. In order to distribute programming with SAP channel audio, the network must encode the SAP signal into the transmission to the satellite using a costly digital encryption system. The encrypted signal must be decrypted when received by the ground station. ABC, while unable to provide precise estimates, states that the required upgrades at the network

²⁵⁵ NAB Comments at 14.

²⁵⁶ WGBH Comments at 30.

²⁵⁷ NCTA Comments at 16. *See also* WGBH Comments at 19.

²⁵⁸ NCTA Comments at 16.

²⁵⁹ NTN Comments at 6. NTN also asserts that digital technology will bring costs down further and shorten the turn around time required. *Id.*

²⁶⁰ PBS Comments at 3.

²⁶¹ Audio Optics Comments at 3.

²⁶² Closed captioning does not involve additional distribution costs because the VBI is an integral part of the transmitted television signal. The costs associated with closed captioning are for the production of the captions.

production facilities and the over 200 affiliated stations could cost "many hundreds of thousands of dollars."²⁶³ NBC and CBS estimate the total cost of retrofitting their network facilities and infrastructure with equipment to provide video description using a SAP channel to be at least several million dollars.²⁶⁴

108. After receiving the decrypted signal from the networks the ground station must encode the SAP signal into its signal using a SAP generator. The commercial networks estimate that individual stations that do not have SAP reception and decoding capability would have to spend between \$30,000 and \$1 million for each local station to obtain it.²⁶⁵ According to the commercial broadcast networks, upgrades to current facilities necessary to provide video description would be wasted after conversion to digital television.²⁶⁶

109. Cable systems are technically able to transmit information on the SAP channel. However, cable operators face the same problems as broadcast stations regarding the reception and retransmission of SAP signals. In the case of cable the problems are somewhat compounded because the cable system requires a separate SAP generator for each channel it wishes to distribute with the SAP channel.²⁶⁷

E. Funding for Video Description

110. To date, the primary source of funding for video description has been through government grants administered by the PBS, National Endowment for the Arts, National Science Foundation and especially the DOE.²⁶⁸ The DOE currently allocates \$1.5 million for video description or about \$0.19 per American with a visual disability.²⁶⁹

²⁶³ Capital Cities/ABC Comments at 15-16.

²⁶⁴ NBC Comments at 15. *See also* CBS Comment at 38.

²⁶⁵ NBC Comments at 15 (estimating the cost of the upgrade to be between \$30,000 and \$100,000). *See also* CBS Comments at 38 (estimating the cost to be between \$100,000 and \$1 million). According to CBS only about 10% of stations broadcast through the SAP, while slightly more, perhaps 20% of CBS affiliates do so. *Id.*

²⁶⁶ Capital Cities/ABC Comments at 15; NBC Comments at 16; CBS Comments at 40-41.

²⁶⁷ Learning Industries, Inc., SAP-1 and SAP-2 Second Audio Program Generators (1996).

²⁶⁸ WGBH Comments at 23. WGBH's Descriptive Video Service receives about 65% of its budget from such sources. *Id.*

²⁶⁹ Coe Comments at 4-5. This calculation is made assuming the population of persons with visual disabilities is 8 million which is the most conservative estimate of the number of persons with visual disabilities. Coe also notes that this compares with about \$0.35 spent on closed captioning for each person with a hearing disability. *Id.*

111. In addition to public funding, private sources have begun to support video description. WGBH's Video Description Service receives 35% of its funding from corporations and foundations, home video revenues and individual viewer donations.²⁷⁰ Video description also has begun to enjoy some success as a commercially viable product as witnessed by the success of NTN, Kaleidoscope and the recent introduction of described programming on Turner Classic Movies.²⁷¹ However, even these commercial projects benefit from public funding. For instance, NTN has received government grants.²⁷² Turner Classic Movies has developed its video description programming in partnership with WGBH, which as noted receives 65% of its funding from government grants.²⁷³

F. Current Availability of Video Description

112. Public broadcasting has contributed substantially to the development and availability of video description.²⁷⁴ PBS currently distributes video description on 22 programs, including *Mister Rogers' Neighborhood*, *Masterpiece Theater* and *Mystery*.²⁷⁵ PBS's video description programming is currently being broadcast by 130 PBS stations reaching 71% of the U.S. population.²⁷⁶ PBS also provided video description for the 1993 presidential inauguration, the only example of live video description to date.²⁷⁷

113. There is no video description on the commercial broadcast networks.²⁷⁸ According to the networks, providing video description would be prohibitively expensive and logistically onerous.²⁷⁹ For instance, NBC observes that PBS is able to describe some of its programming

²⁷⁰ WGBH Comments at 24.

²⁷¹ These commercial offerings are discussed more completely below. See ¶¶ 114-116 *infra*.

²⁷² NTN Comments at 7-8.

²⁷³ Telephone Interview with Ken Schwab, Director of Programming, Turner Classic Movies (June 7, 1996) ("Schwab Interview"). See also note 268 *supra*.

²⁷⁴ APTS Comments at 3

²⁷⁵ DVS Update, August 1995, WGBH Descriptive Video Service. However not all episodes incorporate video description. In addition to describing public television programs, DVS is used for describing popular movies on home video. *Id.*

²⁷⁶ APTS at 3. Other public television stations are in the process of upgrading their equipment for SAP capability and the ability to carry video description. *Id.*

²⁷⁷ WGBH Comments at 12.

²⁷⁸ NBC Comments at 15; Capital Cities/ABC Comments at 14.

²⁷⁹ See, e.g., NBC Comments at 15.

because it receives the master tape two to three weeks in advance.²⁸⁰ In contrast, commercial networks state that they receive their master tapes two to three days in advance.²⁸¹

114. Kaleidoscope, the cable programming network devoted to the needs of persons with disabilities, provides movies that include video description. Kaleidoscope's programming schedule includes between two and two and one half hours of such movies each week.²⁸²

115. In addition to Kaleidoscope, NTN also provides video description.²⁸³ NTN does not use the SAP channel but rather uses "open video description" incorporating the descriptive narrative into the regular soundtrack.²⁸⁴ NTN programming is distributed by satellite, cable and broadcast. Cable subscribers who receive NTN's programming as part of their basic service are the majority of its audience. NTN maintains that there is some evidence that the availability of NTN programming acts as an inducement to persons with visual disabilities to subscribe to cable.²⁸⁵ NTN also cites its experience in Canada where it is usually distributed as part of a premium channel. It asserts that its experience there indicates that the availability of such programming may induce persons with visual disabilities to take premium services.²⁸⁶

116. Turner Classic Movies began airing movies with video description narrative as its "DVS Showcase" series.²⁸⁷ This series is aired weekly and runs for about two hours every Sunday afternoon. Turner Classic Movies' efforts are a joint project with WGBH and currently include 12 titles, such as Casablanca and the Maltese Falcon.²⁸⁸ Turner Classic Movies plans to add 15 more video description titles this fall.²⁸⁹

²⁸⁰ NBC Comments at 15.

²⁸¹ *Id.*

²⁸² Prince Interview *supra* note 174.

²⁸³ NTN Comments at 8.

²⁸⁴ *Id.* at 4.

²⁸⁵ *Id.*

²⁸⁶ *Id.*

²⁸⁷ Schwab Interview *supra* note 273.

²⁸⁸ *Id.* Turner Classic Movies is responsible for production and presentation costs while WGBH's Video Description Service is responsible for the descriptive narrative. A more precise break down of the costs is not available.

²⁸⁹ *Id.*

117. Video description poses varying degrees of additional difficulty for other MVPDs.²⁹⁰ DTH satellite systems face the same problems as other distributors. For example, these providers express general concerns regarding the availability of described programming, a conflicting demand for bilingual programming on the SAP channel and the possible expense of creating and adding descriptive narrative.²⁹¹ HSD is not capable of passing through the SAP channel.²⁹² Using current technology many MMDS operators are unable to decode SAP programming without upgrading a significant portion of their equipment.²⁹³ While the systems are generally capable of passing the SAP channel through, many of the current set top boxes are not capable of decoding the signal.²⁹⁴ Similarly, SMATVs are able to transmit and receive the SAP channel but are faced with the same limitations of the current SAP channel technology as other MVPD operators.²⁹⁵

118. With the exception of the service provided by PBS, Kaleidoscope, NTN and Turner Classic Movies noted above, video description, as such, is unavailable on local, regional or syndicated broadcast television and local or regional cable services. Thus, persons with visual disabilities must rely on these limited video description services or the information that can be gleaned from the conventional television soundtrack.

G. Obstacles to Video Description

119. Barriers to video description can be divided into two broad categories: technical issues and obstructions inherent to the service. Technical concerns include the unavailability of the SAP channel or the inability of some broadcast and cable networks to distribute programming with the SAP channel.²⁹⁶

120. Other barriers to more widespread use of video description are inherent to the service. For instance, the service requires development of a second script.²⁹⁷ The development

²⁹⁰ See generally SBCA Comments at 10-11; WCA Comments at 8-10.

²⁹¹ SBCA Comments at 10-11.

²⁹² Interview with Robert M. Zitter, Senior Vice President, Technical Operations, HBO (June 26, 1996) ("Zitter Interview").

²⁹³ WCA Comments at 8.

²⁹⁴ Zitter Interview *supra* note 292.

²⁹⁵ *Id.*

²⁹⁶ NBC Comments at 15.

²⁹⁷ NCTA Comments at 14.

and production of this second script can add considerably to both the production time and the budget required to produce a program.²⁹⁸

121. In addition to the increased costs, some commenters suggest that there may be significant copyright issues associated with the addition of descriptive narration to video programming.²⁹⁹ Whereas closed captioning is essentially a verbatim transcript of the original script, video description necessarily involves creative decisions and thus may create a distinct derivative work.³⁰⁰ A derivative work is an addition to a pre-existing work which transforms or otherwise modifies the original work.³⁰¹ To the extent that video description is subject to copyright laws, an unauthorized video description of an underlying work might constitute a copyright infringement.³⁰² As a consequence, commenters assert that, absent a statutory exception, mandatory video description regulations may conflict with the copyright holders' exclusive rights to create derivative works from their copyrighted works.³⁰³

122. Advocates for persons with visual disabilities argue that copyright issues can and will be resolved by the marketplace if video description requirements are put into place.³⁰⁴ According to this line of reasoning, video description will simply become a routine part of licensing agreements if the service is required.³⁰⁵

123. Furthermore, because video description requires breaks in the dialogue to permit the insertion of the description, some programming may simply not be amenable to video description. For instance, programming with a great deal of dialogue may not permit the additional description while a classical music concert or popular music video might not be appropriate for video description because the descriptive narrative would interfere with the primary substance of the programming.³⁰⁶ In other cases, programming such as an action

²⁹⁸ See, e.g., NBC Comments at 15.

²⁹⁹ MPAA Comments at 10-11.

³⁰⁰ *Id.* See also NAB Comments at 13.

³⁰¹ *Id.* (citing *Nimmer on Copyright*, § 3.03 (1995)).

³⁰² *Id.*

³⁰³ *Id.*

³⁰⁴ Washington Metropolitan Ear Reply Comments at 6.

³⁰⁵ *Id.*

³⁰⁶ See, e.g., ALTV Comments at 16.

adventure movie may contain so much action that an ongoing video description could not keep up with the action even if gaps in the dialogue existed.³⁰⁷

124. Similarly, other forms of programming already contain considerable narrative and, therefore, video description may be unnecessary. Play-by-play sports programming and talk shows are often cited by programmers as examples of programming which do not warrant video description.³⁰⁸ However, several commenters on behalf of the visually disabled community argue that play-by-play does not sufficiently address the needs of people with visual disabilities. For instance, a play-by-play announcer excitedly interjecting "Wow did you see that?" does not provide information to a viewer with visual disabilities.³⁰⁹ Other commenters suggest that video description is not necessary for sports if a comparable radio broadcast is available.³¹⁰ Still other commenters respond that a radio broadcast is only a substitute for video description if one assumes persons with visual disabilities were watching sports in isolation.³¹¹ These commenters argue that a significant benefit of video description is that it allows people with visual disabilities to enjoy television programming in social situations and to interact with their sighted friends and family members.³¹² Moreover, WGBH notes that even radio commentary is developed primarily with sighted people in mind and may omit information useful to people with visual disabilities.³¹³

125. Finally, many stations already use the SAP channel for other purposes. The most common purpose cited is bilingual programming, with 4.7% of local stations reported to be using the SAP channel to provide second language programming to reach 28% of television households.³¹⁴ Other uses include local stations using the SAP channel to provide weather bulletins, news or the local farm report.³¹⁵ A number of stations carry another feed of their main audio channel on the SAP channel to avoid consumer confusion if the SAP channel were inadvertently selected.³¹⁶ Such uses usually serve larger communities and necessarily compete

³⁰⁷ ALTV Comments at 16.

³⁰⁸ See, e.g., HBO Comments at 10-11.

³⁰⁹ AFB Comments at 14.

³¹⁰ Smith Comments at 2.

³¹¹ AFB Comments at 14.

³¹² *Id.*

³¹³ WGBH Comments at 28.

³¹⁴ See, e.g., NBC Comments at 15-16; Audio Optic Comments at 1; NAB Comments at 12; HBO Comments at 10

³¹⁵ NAB Comments at 12-13.

³¹⁶ *Id.*

with video description.³¹⁷ Commenters indicate that to the extent that stations believe that the demand for such uses of SAP capabilities is greater than the demand for video description, they can be expected to preempt video description at least as long as SAP remains a comparatively limited resource and is not mandated by law or regulation.³¹⁸

126. It appears that digital television may represent a solution to the problem of limited SAP capacity. Digital television allows video distributors to compress considerably more information within a given amount of bandwidth. Digital television may allow broadcasters to transmit several SAP like signals in conjunction with a program thereby permitting the consumer to choose between the conventional soundtrack, non-English language soundtracks or video description.³¹⁹ However, this would necessitate the consumer having a digital set-top box or digital television capable of accessing the digital video description.³²⁰

H. Statutory Considerations

127. Under Section 713(f), the Commission is required to assess appropriate methods and possible schedules for phasing video description into the marketplace.³²¹ We also are required to assess technical and quality standards for video descriptions, a definition of programming for which video descriptions would apply and other relevant technical and legal issues.³²² In this section, we examine each of these matters.

128. Due to their limited experience with video description and the technical difficulties in providing the SAP with video description today, industry commenters generally assert that it

³¹⁷ NBC Comments at 15; NAB Comments at 12.

³¹⁸ NAB Comments at 12-13. *See also* AFB Comments 15. WGBH notes however, that situations have arisen where a PBS program has both a video description and a Spanish language sound track available. To date, stations have either elected to air the one soundtrack most useful for their audience or have aired the program more than once with each sound track being made available on subsequent airing. WGBH Comments at 29.

³¹⁹ *See* CEMA Comments at 8- 9; WGBH Comments at 29. Bell Atlantic asserts that it is already developing the infrastructure to allow the digital carriage of video description as an additional audio channel in its systems. Bell Atlantic Comments at 4.

³²⁰ WGBH Comments at 29-30 (recommending that the Commission require this capability be included in all digital televisions or set-top boxes.) *But see* WCA Comments at 9-10 (recommending that MMDS operators not be required to provide digital set-top boxes but rather to provide consumers wishing to receive video description with such boxes for an additional charge).

³²¹ 47 U.S.C. § 613(f).

³²² *Id.*

is premature to consider implementation of video description requirements.³²³ Several commenters suggest that video description should be left to marketplace demands.³²⁴ Some commenters suggest that as the population ages, market demand will ensure that video description will become more widely available.³²⁵ Other commenters assert that as household penetration of SAP compatible televisions and VCRs increase, the marketplace can be expected to respond with increased product for the larger number of viewers with visual disabilities capable of receiving video described programs.³²⁶

129. Still other commenters, while recognizing a need for video description, urge various exemptions, such as certain kinds of programming where video description would be redundant or overly burdensome, and certain kinds of programmers or video distributors that might face undue hardship if required to provide video description service.³²⁷ Among these suggested exemptions are sports programming, local access programming and programming that already consists primarily of a discussion or narrative.³²⁸

130. In marked contrast to industry commenters, persons who would substantially benefit from the availability of video description and organizations that serve people who are visually disabled urge that the service be broadened and made more generally available.³²⁹ These commenters advocate a broad range of strategies from mandatory requirements³³⁰ to strong economic incentives as well as various combinations of mandates and incentives.³³¹ While several commenters offered these suggestions, few offered any specifics regarding the implementation of such incentive programs.

³²³ See, e.g., NCTA Comments at 14, WCA Comments at 8-9; ALTV Comments at 16; HBO Comments at 12; SBCA Comments at 10-11. SBCA also suggests the Commission explore whether alternatives may exist to make television more accessible to people with visual disabilities but offers no specific proposals.

³²⁴ See, e.g., HBO Comments at 11; CEMA Comments at 7; MPAA Comments at 9.

³²⁵ CEMA Comments at 7.

³²⁶ MPAA Comments at 9.

³²⁷ See, e.g., ALTV Comments at 15; NAB Comments at 13.

³²⁸ See, e.g., ALTV Comments at 15; NAB Comments at 13.

³²⁹ See e.g., Coe Comments 7; Metropolitan Washington Ear Additional Comments at 1; AFB Comments 15.

³³⁰ NTN Comments 8-9 (urging that reasonable requirements will allow both the industry and consumers to benefit); Pennsylvania Council of the Blind, Washington County Chapter Comments at 1; Washington Metropolitan Ear Comments at 10.

³³¹ See, Coe Comments 7; F&V at 7; Metropolitan Washington Ear Additional Comments at 1; AudioVision Comments at 2.

131. The American Council for the Blind ("ACB") urges that an increase in Federal funding is necessary to further the development of video description.³³² At the same time ACB contends that strict video description requirements should be applied across the industry, to producers, distributors and program providers.³³³ According to the American Federation for the Blind ("AFB"), there is no justification for any blanket exemption for any class of programmer or distributor. Rather, AFB suggests that the Commission adopt an undue burden standard similar to the standard used for closed captioning.³³⁴ Under such a standard, the Commission would be required to consider the nature and cost of adding video description, the impact on the provider or program owner, the financial resources of the program owner and the type of operations of the provider or program owner.³³⁵ ACB recommends that in establishing standards, priorities and schedules for implementing video description requirements, the Commission should consult with an advisory board composed of consumers with visual disabilities, industry representatives and individuals with video programming experience.³³⁶

132. Washington Metropolitan Ear suggests that while the marketplace may ultimately provide widespread use of video description, a government mandate is necessary in order to develop the market for this service.³³⁷ Washington Metropolitan Ear proposes that all program carriers be required to have the capability of relaying video description.³³⁸ Noting that the library of video described programming currently available is limited, Washington Metropolitan Ear also proposes a five year phase in period before video description becomes a required part of most programming.³³⁹

133. In addition to addressing potential regulatory requirements, commenters propose various alternative means of expanding the availability of video description services. These proposals range from increased government funding to tax incentives.³⁴⁰ In some cases, the positions of these commenters were somewhat contradictory. For instance, NTN argues that

³³² ABC Comments at 3.

³³³ *Id* at 6.

³³⁴ AFB Comments at 13.

³³⁵ 47 U.S.C. § 613(e).

³³⁶ ACB Comments at 8.

³³⁷ Washington Metropolitan Ear Comments at 10. Washington Metropolitan Ear compares video descriptions to "many socially useful programs that turn out to be commercially remunerative (recycling, non discrimination, etc.)", in that a federal mandate may be required to "break the industry out of its rut."

³³⁸ *Id*

³³⁹ *Id*

³⁴⁰ *See, e.g.*, F&V Comments at 7; Metropolitan Washington Ear Additional Comments at 1.

video description is economically viable in the marketplace, while maintaining that increased government funding will be necessary to increase the availability of video description.³⁴¹ US West proposes that private sources and the marketplace should be the primary funding vehicles for video description.³⁴² To the extent that public funding is necessary, US West proposes that the money should come from a percentage of locally collected fees, such as cable franchise fees charged by local governments. US West further proposes that the government should provide additional resources to video production companies that insert video description into their programming, and also to those companies and individuals that provide private support, through the use of tax credits or deductions as applicable.³⁴³

134. Some industry commenters express concern that any video description requirement to be recommended or ultimately imposed should require the producer of the programming rather than the video distributor to include the descriptive narrative. These commenters argue that such a requirement is more efficient than requiring individual video distributors to provide the descriptive narratives.³⁴⁴ Similarly, industry commenters urge that any requirements mandating that programming include video description be imposed only on a prospective basis.³⁴⁵ These commenters argue that requiring video description of the enormous libraries of existing programming would be unduly onerous and impose an impossible burden on the industry.³⁴⁶

135. Several commenters address the issue of quality standards. These commenters believe that video description has an inherently subjective aspect and that the issue of quality is not as easily measured as in the case of closed captioning.³⁴⁷ Whereas the quality of closed captioning can be described, at least in part, in terms of errors per hour of programming the quality of video description is, in large measure, a matter of the artistic choices made in developing a descriptive narrative such as what is described and how accurately the narrative conveys the experience enjoyed by a sighted viewer.³⁴⁸ Nevertheless, these commenters are adamant that video description address the actual needs of persons with visual disabilities rather than the needs perceived by the sighted community. In order to ensure this, these commenters

³⁴¹ NTN Comments at 7-8. NTN also favors "reasonable" requirements mandating video description. See ¶ 130 *supra*.

³⁴² US West Comments at 6.

³⁴³ *Id.*

³⁴⁴ *See, e.g.*, ALTV Comments 16; F&V Comments at 5.

³⁴⁵ MPAA Comments at 11-13.

³⁴⁶ *Id.*

³⁴⁷ NTN at Comments 9; WGBH Comments at 29.

³⁴⁸ *Id.*

urge that audience testing be required or that a standards board composed of persons with visual disabilities be created.³⁴⁹

136. Some commenters suggest that any regulatory action addressing video description should be on a parity with closed captioning.³⁵⁰ AFB proposes that the standards for video description and closed captioning be the same, including appropriate undue burden tests.³⁵¹ Bell Atlantic suggests that the same considerations that are of concern in developing closed captioning standards must be addressed in recommending any regulations for video description.³⁵² WGBH suggests that video description in its present state should be treated in much the same way as closed captioning is currently treated on cable systems, that is, if it is part of the original program source it must be included if technically feasible.³⁵³

137. Several commenters suggest that emergency information provided using captioning across the bottom of the screen without audio is of special concern.³⁵⁴ These commenters cite the public safety needs to provide both sighted people and persons with visual disabilities with important information.³⁵⁵ AFB proposes that such information be given priority in any requirement implementation schedule that the Commission adopts.³⁵⁶

I. Conclusion

138. In enacting Section 713 of the Act, Congress intended to ensure video accessibility to all Americans, including individuals with visual disabilities. Video description is an emerging service that currently enjoys only limited availability. Congress has directed the Commission to assess the appropriate methods and schedules for phasing video description into the marketplace and to address certain technical and quality standards issues. The present record on which to

³⁴⁹ See, e.g., Audio Optics Comments at 6 (recommending that audience testing ensure that video description is responsive to the needs of the sightless); ACB Comments at 7 (recommending that the Commission establish an advisory committee composed of blind consumers, individuals with experience in video programming, and industry representatives to establish standards).

³⁵⁰ See, e.g., NTN Comments at 10.

³⁵¹ AFB Comments at 13-15.

³⁵² Bell Atlantic Comments at 3.

³⁵³ WGBH Comments at 29. See also 47 C.F.R. § 76.62(c) (Manner of Carriage).

³⁵⁴ See, e.g., Smith Comments at 1; AFB Comments at 16. See also Pennsylvania Council of the Blind citing school closing information, weather warnings, election results, sports scores and lottery numbers. See Petition to Revise Part 73.1250(h) of the rules (filed Feb. 23, 1996).

³⁵⁵ *Id.*

³⁵⁶ AFB Comments at 16.

assess video description, however, is limited, and the emerging nature of the service renders definitive conclusions difficult. Moreover, with the exception of the Metropolitan Washington Ear's proposal to phase in video description within five years,³⁵⁷ commenters did not provide any guidance regarding the implementation of video description of video programming in terms of time frames, methods or standards. Nevertheless we believe that the development of rules for closed captioning, which is more widely available, can provide a useful model for the process of phasing in broadened use of video description. The nature and speed of the process for video description remains dependent on the resolution of certain technical, funding, legal and cost issues, as described below.

139. Many broadcast television stations are not yet equipped to transmit a SAP signal. These stations tend to be in smaller markets with a smaller economic base to support increased costs. Other MVPDs also currently do not transmit or decode a SAP signal. Advanced digital technologies, including specifically those used in broadcasting, direct broadcast satellites, MMDS ("wireless cable"), cable and wireline "open video systems" appear capable, when joined with digital receivers, of transmitting a separate channel. In particular, advanced digital television could make the distribution of additional audio channels feasible and thereby eliminate the conflict currently existing with other audio channel uses (e.g., second language). Any schedule for the full deployment of video description is dependent, in part, on the implementation of advanced digital technologies.

140. In addition to these technical problems, funding remains a fundamental issue that will effect any schedule for the widespread use of video description. Currently, given the costs involved, it appears unlikely that advertising support alone will be sufficient to fund this service. Irrespective of the level and source of funding, it appears desirable to phase in service over a period of years. We believe that initial requirements for video description should be applied to new programming that is widely available through national distribution services and attracts the largest audiences, such as prime time entertainment series. Over a period of several years, video description should be phased in for programming with more limited availability, including services distributed in limited areas, and programming that attracts smaller audiences, such as daytime shows. Lower priority for video description should be given to programming that is primarily aural in nature, including newscasts and sports events. Phasing in video description in this manner would follow the model of the development of closed captioning. A more specific schedule for increasing the availability of video description is dependent on the nature of the support mechanism selected. In this regard, Congress could consider increasing funding mechanisms for pilot programming and seed money for joint government/industry projects and could encourage the incorporation of video description in program production. Congress could use the development of closed captioning as a model for broadening video accessibility.

141. Additionally, there are certain legal issues, such as copyright matters, that remain unresolved and are likely to require a Federal reassessment of the applicability of existing laws.

³⁵⁷ See ¶ 132 *supra*.

The copyright issue might be resolved through private negotiation with respect to newly produced material as part of the initial production process. The law, however, may need to be clarified to permit the addition of descriptions without copyright owner approval to older, previously published programming by parties down the distribution chain from the original production process.

142. Therefore, we believe that the best course is for the Commission to continue to collect information and monitor the deployment of video description and the development of standards for new video technologies that are likely to affect the availability of video description. We intend to seek additional information and data that will permit a better assessment of video description in conjunction with our 1997 report to Congress assessing competition in the video marketplace. This annual report is submitted to Congress in compliance with Section 628(g) of the Act, 47 U.S.C. 548(g). In the context of this report, the Commission will be able to gather and evaluate information regarding the deployment of SAP channels and digital technology that will enable video providers and programmers to include video description. Persons with disabilities and the video programming industries will be able to report to the Commission on any developments to coordinate efforts in new technology standard setting and funding mechanisms. In seeking more information, we intend to continue to focus on the specific methods and schedules for ensuring that video programming includes descriptions, technical and quality standards and other relevant legal and policy issues. Simultaneously, we will monitor the deployment of video description through voluntary efforts and the development of standards for new video technologies that will afford greater accessibility of video description. Based on a more complete record, we expect to be able to better assess those issues that were not fully addressed through this proceeding.

V. ADMINISTRATIVE MATTERS

143. This *Report* is issued pursuant to authority contained in Sections 4(i), 4(j), 403 and 713 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 154(j), 403 and 613.

144. It is ORDERED that the Secretary shall send copies of this *Report* to the appropriate committees and subcommittees of the United States House of Representatives and United States Senate.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton
Acting Secretary

APPENDIX**List of Commenters****Comments**

1. A&E Television Networks
2. ALDA/Potomac
3. Alexander Graham Bell Association for the Deaf, Inc.
4. Alliance for Community Media
5. Aloha State Association of the Deaf
6. American Academy of Audiology
7. American Foundation for the Blind
8. American Society for Deaf Children
9. Joan Andrews
10. Association of America's Public Television Stations
11. Association of Late-Deafened Adults
12. Association of Local Television Stations, Inc.
13. Atlanta Hears Chapter/Self Help for Hard of Hearing People
14. Audio Optics, Inc.
15. AudioVision, Inc.
16. Bell Atlantic
17. Boston Chapter of Self Help for Hard of Hearing People
18. Broward County Library Access Services
19. Dick Burkhalter
20. Burlington Chapter of North Carolina Association of the Deaf
21. Californians for Television Access
22. Cape Organization for Rights of the Disabled
23. Capital Cities/ABC, Inc.
24. Caption Database, Inc.
25. CaptionMax
26. Joan Cassidy
27. CBS Inc.
28. Barbara Liss Chertok
29. City of St. Louis Communications Division
30. Joe Clark
31. Mary Clepper
32. Laurence Anne Coe
33. Colorado Assistive Technology Project, DakotaLink (South Dakota Tech Act Project), Georgia Tools for Life, Hawaii Assistive Technology Training and Service, Iowa Program for Assistive Technology, Louisiana Assistive Technology Access Network, Maine Consumer Information and Technology Training Exchange (CITE), Maryland Technology Assistance Program, Massachusetts Assistive Technology Partnership, Minnesota System of Technology to Achieve

Results (STAR) Program, Missouri Assistive Technology Project, New Hampshire Technology Partnership Project, Oklahoma ABLE Tech, Oregon Technology Access Through Life Needs, Pennsylvania's Initiative on Assistive Technology, Rhode Island Assistive Technology Access Project, Texas Assistive Technology Partnership, WisTech (Wisconsin Assistive Technology Program)

34. Consumer Action Network
35. Frank P. Corsica
36. Corporation for Public Broadcasting
37. Jeannette Costa
38. Council of Organizational Representatives
39. Deaf Counseling, Advocacy and Referral Agency
40. Disability Law Center, Inc.
41. Sally Dodge
42. Gerald Dominick
43. Anna Dresner
44. Kathy Dunn
45. EEG Enterprises, Inc.
46. Electronic Industries Association, Consumer Electronics Manufacturing Association
47. David S. Evans
48. F&V Channel, L.L.C.
49. Fairfax Cable Access Corporation
50. Mary Ann Foohey
51. Gallaudet University's Technology Assessment Program
52. Dan Glisson
53. Stuart and Marilyn Gopen
54. Great River Valley Chapter of the Coalition of Citizens with Disabilities in Illinois
55. Mildred D. Helyer
56. Home Box Office
57. Lillian and Glenn E. Hoshauer
58. Inclusive Technologies
59. Jerald M. Jordan
60. Lansing School District
61. League for the Hard of Hearing
62. Willis J. Mann, Telecommunications Access Program, Maryland Department of General Services
63. Massachusetts Commission for the Deaf and Hard of Hearing
64. MCAHI
65. Media Captioning Services
66. Metropolitan Washington Ear, Inc. (Comments and Additional Comments)
67. Sandra Miller
68. Motion Picture Association of America, Inc.
69. JoAnn M. Myers
70. Narrative Television Network

71. National Association of Broadcasters
72. National Association of the Deaf
73. National Broadcasting Company, Inc.
74. National Cable Television Association, Inc.
75. National Captioning Institute
76. National Congress of Jewish Deaf/Jewish Deaf Congress, Inc.
77. National Federation of the Blind of Idaho
78. Lucille E. Nestler
79. Lee Nettles
80. Frank L. Neuhauser
81. North Carolina Association of the Deaf, Inc.
82. North Carolina Department of Human Resources, Division of Vocational Rehabilitation Services
83. Northern Virginia Resource Center for Deaf and Hard of Hearing Persons
84. Ohio Educational Telecommunications
85. Pennsylvania Society for the Advancement of the Deaf, Inc.
86. Richard Pokrass
87. Public Broadcasting Service
88. Barbara H. Putney
89. Recording Industry Association of America
90. Regional Audio Information Services Ent.
91. Rochester Recreation Club for the Deaf, Inc.
92. Satellite Broadcasting and Communications Association
93. Schwartz, Woods & Miller on behalf of Ball State University, Connecticut Public Broadcasters, Inc., Detroit Educational Television Foundation, Educational Television Association of Metropolitan Cleveland, Fifteen Telecommunications, Inc., Long Island Educational Television Council, Inc., Louisiana Educational Authority, Maryland Public Broadcasting Commission, Metropolitan Board of Public Education, Mississippi Authority for Educational Television, New Jersey Public Broadcasting Authority, Oregon Public Broadcasting, University of New Hampshire, Window to the World Communications, Inc., University of North Carolina Center for Public Television, WJCT, Inc.
94. Self Help for Hard of Hearing People, Inc.
95. Celia Conlon Shepard
96. D.A. She
97. Louis M. Smith
98. South Carolina Association of the Deaf
99. Bernard J. Sussman
100. Telecommunications for the Deaf, Incorporated
101. U S West, Inc.
102. VITAC
103. Washington County Chapter, Pennsylvania Council of the Blind
104. Weather Channel
105. Charles C. Webster

106. WGBH Educational Foundation
107. Wireless Cable Association International

Reply Comments

1. A&E Television Networks
2. American Council for the Blind
3. American Foundation for the Blind
4. Association of Local Television Stations, Inc.
5. Dick Burkhalter
6. Caption Colorado, Inc.
7. Division of Services for the Deaf and Hard of Hearing
8. Encore Media Corporation
9. Home Box Office
10. Independent Cable & Telecommunications Association
11. International Cable Channel Partnership, Ltd.
12. Liberty Sports, Inc.
13. Maryland Association of the Deaf
14. Metropolitan Washington Ear, Inc.
15. Mid-Hudson Valley Civic Association of the Deaf
16. Motion Picture Association of America, Inc.
17. National Association of the Deaf
18. National Black Deaf Advocates
19. National Cable Television Association, Inc.
20. OpTel, Inc.
21. Herbert L. Pickell, Jr.
22. Rhode Island Association of the Deaf, Inc.
23. Sonny Access Consulting
24. Sunbelt South Tele-Communications, Ltd.
25. Gary Tomlinson
26. Virginia Association of the Deaf, Inc.
27. VITAC
28. Washington State Association of the Deaf
29. Delbert A. Wheeler
30. Wilson Association of the Deaf
31. Wireless Cable Association International, Inc.
32. Wisconsin Association of the Deaf