November 20, 2019

Marlene H. Dortch
Secretary, Office of the Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: Petition for the expansion of the speaker identification requirement included in the non-technical quality standard of accuracy, CG Docket Nos. 05-231 and PRM 11CG.

Dear Mrs. Dortch,

The members of the Advisory Committee for the project *GoCC4All: Using Pervasive Technology to Provide Access to TV and to National and Local Emergency Information to the Deaf-blind Community* funded by the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR grant number 90IFDV0004-01-00) and Dicapta Foundation, respectfully request the Commission to expand on the accuracy component of the current non-technical captioning quality standards for television governed by the 2014 Closed Captioning Quality Order.

Current standards maintain that to be fully accessible, closed captions on television programs must accurately convey dialogue and sounds, be delivered synchronously, run from the beginning to the end of the program, and not obscure important on-screen information.[1] Unfortunately, the approved best practices for speaker identification prevent individuals who are deaf-blind from accessing television information from captioning data currently available in different platforms. The requested expansion will allow individuals who are deaf-blind to have access to television programming "to the same extent that the audio track conveys this content to people who are able to hear."[2]

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[1] Closed Captioning of Video Programming; Telecommunications for the Deaf and Hard of Hearing, Inc. Petition for Rulemaking, CG Docket No. 05-231, Report and Order, Declaratory Ruling, and Further Notice of Proposed Rulemaking, 29 FCC Rcd 2221 (2014) (Closed Captioning Quality Order). p. 20.

[2] Ibid. p. 3.

1. Caption Access Technology for Individuals Who Are Deaf-Blind

1.1. Background Information

Several technical developments have adapted existing assistive technology that is used by blind or deaf individuals, by turning aural and/or visual outputs into tactile outputs. Those technical developments increase communication opportunities for the deaf-blind community. [3]

Documented experiences using braille displays to deliver television captions to people who are deaf-blind include the following two prototypes: The Braille TeleCaption System, with output available in braille and large print, funded by a federal grant in 1989,[4] and the Closed Caption/Braille Computer System (CBCS) in which a video tape recorder sent captions to a braille computer card into an IBM compatible computer.[5] The concept elicited positive results among the users. However, the high costs of technology, as well as limited commercialization possibilities due to the low incidence of deaf-blindness, prevented further developments based on those prototypes.

Apart from TV captioning, there have been initiatives to provide other types of captions to individuals who are deaf-blind. In 2013, NPR Labs, Public Radio Satellite System (PRSS), and Maryland's Towson University produced live-captioned radio programming and braille radio programming.[6] The radio broadcast dialogues were converted into text and sent to a caption editor who corrected and formatted the information for readability. The captioning feed was then modified for use with stand-alone refreshable braille displays.

Ultratec, a company that offers phone captioning services, uses its CapTel 880iB phone technology to provide braille captions of phone conversations.[7] The phone can be connected to a braille display where the user can read word-for-word captions of what a caller is saying.

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[3] Hersh, M. A., & Johnson, M. A. (2008). "On modelling assistive technology systems–Part I: Modelling framework." Technology and Disability, 20(3), 193-215.

[4] Biederman-Anderson, L. (1989). "Braille Telecaptioning: Making Real-Time Television Accessible to Deaf-Blind Consumers." Journal of Visual Impairment and Blindness, 83(3), 164-65.

[5] "Braille Telecaption System" AbleData, https://abledata.acl.gov/product/braille-telecaption-system

[6] "Breaking the Sound Barrier - NPR Labs Brings Radio To Hearing Impaired." NPR, https://www.npr.org/sections/npr-extra/2013/05/28/177751307/breaking-the-sound-barrier-npr-labs-brings-radio-to-hearing-impaired

[7] "Braille CapTel Service." Captel, http://www.captel.com/braille/

In recent years, Apple has taken into consideration communication with braille displays in its accessibility features. VoiceOver users can access closed captions and subtitle tracks audibly or through the braille displays on their iPhone or iPads.[8] In addition, Apple TV lets VoiceOver users access closed caption and subtitle tracks through their braille displays.[9]

1.2. Work of Dicapta Foundation on Television Access for Individuals who are Deaf-Blind

Since 2016, Dicapta Foundation has been developing the GoCC4All technology aimed at delivering TV captions to individuals who are deaf-blind and who otherwise have limited or no access at all to captions. The GoCC4All technology provides captions through an app as well as through a braille display, giving those who are deaf-blind the possibility to customize the reception of captions according to their particular needs. Customization options are essential since "the population of people who are deaf-blind is quite diverse. Each person who is deaf-blind has a unique life experience based on several factors including their sensory abilities (how much they see and hear), the age of onset (when they became deaf, blind, and deaf-blind), educational and cultural background, and whether or not they have additional disabilities."[10]

During the testing of the GoCC4All technology, our users manifested profound frustration when they couldn't follow the stories because of the lack of speaker identification. To partially overcome this issue, and with the purpose of testing the technology, Dicapta Foundation created an "ideal channel" offering hours of prerecorded programming with captions that included written speaker identification. The response from the users was overwhelmingly positive. Providing speaker identification significantly improved their TV viewing experience.

2. Current Speaker Identification Requirements

As stated in paragraph 29 of the 2014 Closed Captioning Quality Order related to Accuracy "in order to be accurate, captions must also provide nonverbal information that

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[8] "Accessibility. iPhone, as accessible as is personal." Closing the Gap, https://www.closingthegap.com/iphone-as-accessible-as-it-is-personal/

[9] "Accessibility. Everyone can enjoy a cinematic experience with assistive technologies on Apple TV." Apple, https://www.apple.com/accessibility/tv/hearing/

[10] "Introduction to Deaf-Blindness." Hellen Keller National Center for Deaf-Blind Youths and Adults, https://www.helenkeller.org/hknc/lesson/introduction-deaf-blindness

is not observable, such as who is speaking."[11] Furthermore, the 2014 ruling states that "if there is more than one speaker, the proper placement of captions dictates that each speaker be identified, through caption identification or caption placement, so that viewers can understand who is speaking at any given time. When a speaker is not on the screen, identification of that individual in the caption text must also be provided if viewers not using captions are able, from the program's audio content, to discern the speaker's identity."[12]

Since captioning is intended to "replicate the hearing listener's aural experience,"[13] the identification of the speaker is vital to providing a similar aural experience to individuals who are deaf-blind. Regrettably, the Commission's ruling on speaker identification does not successfully address the issue for those who are deaf-blind because caption placement by itself does not allow individuals who are deaf-blind to identify the speaker effectively.

3. Proposal for the Modification of the Captioning Standard for Speaker Identification

We respectfully propose that the Commission expand the captioning requirements for speaker identification by requiring inclusion of the name of the speaker.

1. When the speaker's name is known, the speaker's name should be included. When possible, use the entire name of the character. If that is not possible, use the character's initials.

Examples:
(Robert Smith)[14]
Let's do it!

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[11] Closed Captioning of Video Programming; Telecommunications for the Deaf and Hard of Hearing, Inc. Petition for Rulemaking, CG Docket No. 05-231, Report and Order, Declaratory Ruling, and Further Notice of Proposed Rulemaking, 29 FCC Rcd 2221 (2014) (Closed Captioning Quality Order). p. 22.

[12] Ibid. p. 23.

[13] Ibid. p. 20.

[14] This example follows the guidelines suggested by the Described and Captioned Media Program. "Captioning Key. Speaker Identification." https://www.captioningkey.org/speaker_identification.html

Robert Smith: Let's do it!

(R. S.): Let's do it!

R. S.: Let's do it!

2. When the speaker's name is unknown, identify the speaker using the same information a hearing viewer has.

Examples: [15]
(female #1)
I'm happy.

(male narrator)
That is wonderful!

3. When more than one speaker has the same name, use numbers to identify them in order of appearance. Last name could be used as well.

Examples:
(Robert #1)[16]
Let's do it!

(Robert #2)
Yes, let's not waste time.

Or,

(Robert Smith)
Let's do it!

(Robert Wilson)
Yes, let's not waste time.

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[15] Ibid.

[16] Ibid.

Finally, any consistent code or convention to identify the speaker, based on letters and symbols available in braille displays,[17] will allow people who are deaf-blind to have full access to information on television whenever captions are available.

Respectfully submitted,

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[17] "How to Use the Braille Alphabet." National Braille Press, https://www.nbp.org/downloads/alphsamp.pdf

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