

Before the  
**Federal Communications Commission**  
Washington, DC

In the Matter of: )  
**Closed Captioning of Internet** )  
**Protocol-Delivered Video** )  
**Programming: Implementation** ) MB Docket No. 11-154  
**of the Twenty-First Century** )  
**Communications and Video** )  
**Accessibility Act of 2010** )

**Comments of**

**Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI)**  
**National Association of the Deaf (NAD)**  
**Hearing Loss Association of America (HLAA)**  
**Association of Late-Deafened Adults (ALDA)**  
**Cerebral Palsy and Deaf Organization (CPADO)**  
**American Association of the Deaf-Blind (AADB)**  
**California Coalition of Agencies Serving**  
**the Deaf and Hard of Hearing (CCASDHH)**  
**Deaf and Hard of Hearing Consumer Advocacy Network (DHHCAN)**  
**Technology Access Program at Gallaudet University (TAP)**

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## Summary

Telecommunications for the Deaf and Hard of Hearing, Inc. (TDI), the National Association of the Deaf (NAD), Hearing Loss Association of America (HLAA), the Association of Late-Deafened Adults (ALDA), the Cerebral Palsy and Deaf Organization (CPADO), the American Association of the Deaf-Blind (AADB), the California Coalition of Agencies Serving the Deaf and Hard of Hearing (CCASDHH), and the Deaf and Hard of Hearing Consumer Advocacy Network (DHHCAN), collectively, “Consumer Groups,” joined by the Technology Access Program at Gallaudet University (TAP), submit these comments in response to the Commission’s Further Notice of Proposed Rulemaking (“*FNPRM*”) in the above-referenced matter.<sup>1</sup>

Consumer Groups seek to promote equal access to video programming for the 48 million Americans who are deaf, hard of hearing, late-deafened, or deaf-blind so that they may fully experience the informational, educational, cultural, and societal opportunities afforded by the telecommunications revolution. We commend the Commission’s sustained commitment toward implementing the closed captioning provisions of the Twenty-First Century Communications and Video Accessibility Act (“*CVAA*”).<sup>2</sup>

In response to the questions raised in the *FNPRM*, we urge the Commission to require device manufacturers to ensure that apparatuses display captions in time with video programming. Synchronization problems occur at the apparatus level and current timing data provides device manufacturers with the timing data needed to synchronize captions with video. We also urge the Commission to require DVD and Blu-ray players to render closed captions.

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<sup>1</sup> The *FNPRM* was part of a multipart Commission document, *In the Matter of Closed Captioning of Internet Protocol-Delivered Video Programming*, Order on Reconsideration and Further Notice of Proposed Rulemaking, MB Docket No. 11-154, 28 FCC Rcd. 8785 (rel. June 14, 2013) (“*FNPRM*”).

<sup>2</sup> Pub. L. 111-260, 124 Stat. 2751 (Oct. 8, 2010) (“*CVAA*”).

## Discussion

On August 20, 2013 the Media Bureau granted an extension for comments in this matter to allow TDI and other consumer groups to meet with representatives from the Consumer Electronics Association (“CEA”) and its members to discuss the many technical issues raised in the *FNPRM*.<sup>3</sup> On October 1, 2013 representatives of the Consumer Groups met with CEA in person and via videoconference. The dialogue from that meeting informs these comments on the two sets of issues raised in the *FNPRM*: (1) synchronization requirements for apparatuses and (2) caption rendering requirements for removable media players, including DVD and Blu-ray players.<sup>4</sup>

### **I. The Commission should require apparatus manufacturers to ensure that apparatuses render captions according to included timing data.**

In the *FNPRM*, the Commission asks whether apparatus manufacturers should be required “to ensure that their apparatus synchronize the appearance of closed captions with the display of the corresponding video.”<sup>5</sup> To guarantee that viewers who are deaf and hard of hearing can view captions simultaneously with the corresponding video, the Commission should require that apparatus manufactures synchronize captions with the timing data included with captions. Standard closed captioning formats provide apparatuses with the necessary timing data to accurately synchronize captions with video, and apparatuses should be required to render captions according to the timing data.

In 2011, the Video Programming Accessibility Advisory Committee (“VPAAC”) released a report representing a consensus among the VPAAC’s members, including industry and consumer group representatives, specifically emphasizing the importance of

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<sup>3</sup> *Closed Captioning of Internet Protocol-Delivered Video Programming: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010*, Order, MB Docket. No. 11-154, 28 FCC Rcd. 12,339.

<sup>4</sup> See generally *FNPRM*, 28 FCC Rcd. at 8805-08, ¶¶ 32-37.

<sup>5</sup> *Id.* at 8805, ¶ 32.

properly timed captions.<sup>6</sup> The report notes that “[a]ll processing through the [Internet Protocol (“IP”) closed captioning] distribution chain, including transcoding, must provide a timing experience that is equal to or an improvement to the timing of captions provided in the captioning shown on television.”<sup>7</sup>

In general, there are several steps in the process of delivering closed captions synchronized with video to a viewer via Internet Protocol (“IP”):

- First, a captioner must create captions that are properly synchronized with the video, embedding appropriate timing data into the captions distributed with the video;
- Second, that timing data must be preserved throughout the interchange and delivery system as the video is delivered to the viewer over an IP-based network; and
- Third, the apparatus used by the viewer to receive and display the video must render the captions according to the embedded timing data.

Problems with caption synchronization can occur at any point in this delivery chain. Caption timing data can be embedded improperly at inception, discarded or corrupted during delivery, or not adhered to by rendering devices. Regardless of where a synchronization issue occurs, viewing media with unsynchronized captions is as disruptive for a viewer who is deaf or hard of hearing as watching media with an unsynchronized audio track is for a hearing viewer.

However, the source of synchronization problems may be difficult for consumers to discern, and without comprehensive rules covering each stage of the process, members of the industry responsible for each of the three stages may simply point to potential

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<sup>6</sup> See *First Report of the Video Programming Accessibility Advisory Committee*, at 4-6, 14 (July 12, 2011) (“*VPAAC Report*”), available at [http://transition.fcc.gov/cgb/dro/VPAAC/First\\_VPAAC\\_Report\\_to\\_the\\_FCC\\_7-11-11\\_FINAL.pdf](http://transition.fcc.gov/cgb/dro/VPAAC/First_VPAAC_Report_to_the_FCC_7-11-11_FINAL.pdf).

<sup>7</sup> *Id.* at 14.

problems in other stages when confronted with synchronization problems. This finger-pointing dynamic leaves consumers without a remedy.

We applaud the Commission’s prior decision to require video programming distributors (“VPDs”) to ensure that timing data is encoded and maintained throughout the captioning interchange and delivery system, ensuring accountability for timing problems that occur in the delivery of captions to a viewer.<sup>8</sup> The Commission is also conducting ongoing proceedings on quality standards for television captions that promise to ensure accountability for timing problems in the creation of captions.<sup>9</sup> In this proceeding, the Commission should complete the chain of accountability for synchronization problems by requiring apparatuses to render captions according to the timing data included with video. If every step of the delivery chain is covered by a synchronization requirement, consumers will finally be able to seek remedies when problems occur.

The Commission should implement apparatus synchronization rules because synchronization problems occur at the apparatus level. In fact, apparatus manufacturers have admitted that caption synchronization problems do occur at the apparatus level.<sup>10</sup> Moreover, when captions arrive at the apparatus, we believe that timing data generally

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<sup>8</sup> *Closed Captioning of Internet Protocol-Delivered Video Programming: Implementation of the Twenty-First Century Communications and Video Accessibility Act of 2010*, Report and Order, MB Docket No. 11-154, 27 FCC Rcd. 787, 812-13 ¶ 37 (Jan. 13, 2012) (“*IP Captioning Order*”); 47 C.F.R. § 79.4(c)(2)(i).

<sup>9</sup> See generally *Closed Captioning of Video Programming, Telecommunications for the Deaf, Inc., Petition for Rulemaking*, CG Docket No. 05-231, Notice of Proposed Rulemaking, 20 FCC Rcd. 13,211 (2005).

<sup>10</sup> See *Comments of Mitsubishi Electric Visual Solutions America*, MB Docket No. 11-154, at 2 (June 7, 2012) (“*MEVSA Opposition*”) (conceding that “video post-processing as typically performed in consumer video decoders, displays and similar equipment” can induce “a very short delay.”); *CEA Opposition to Petitions for Reconsideration*, MB Docket No. 11-154, at 18 (June 7, 2012) (“*CEA Opposition*”) (conceding that “[v]ideo post-processing and related functions” can be associated with “very minor delays”).

remains intact, and synchronizing captions to that data is no more difficult in principle than synchronizing audio and video—a task that all video playback apparatuses perform. Affording consumers access to properly synchronized captions would plainly serve the public interest and vindicate Congress’s clear intent in enacting the CVAA. Accordingly, the Commission should require apparatuses to render captions according to included timing data.

**A. Caption synchronization problems occur at the apparatus level.**

In the *FNPRM*, the Commission asks whether apparatuses can cause closed captioning synchronization problems, and if so, how.<sup>11</sup> At the outset, it is critical to note that apparatuses must be deliberately programmed to synchronize captions with video; thus, synchronization problems may arise simply because an apparatus is not properly programmed to synchronize captions with video.

The potential for these problems is not hypothetical; the record in this proceeding amply demonstrates that synchronization problems occur at the apparatus level. Last year, Dr. Christian Vogler, Director of TAP, demonstrated during an *ex parte* meeting that apparatuses can cause caption synchronization issues.<sup>12</sup> To demonstrate this, Dr. Vogler streamed an episode of *Law & Order: SVU* simultaneously on both a computer web browser and an iPad.<sup>13</sup> The captions were displayed at different times on each apparatus despite the fact they both were streaming the same content from the same service.<sup>14</sup> While the captions on the web browser were properly synchronized, the captions on the iPad were rendered approximately four to five seconds ahead of the

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<sup>11</sup> *FNPRM*, 28 FCC Rcd. at 8805, ¶ 33.

<sup>12</sup> Letter from Andrew S. Phillips, Policy Counsel for NAD, to Marlene H. Dortch, Secretary, FCC, MB Docket No. 11-154, at 1-3 (July 20, 2012).

<sup>13</sup> *Id.*

<sup>14</sup> *Id.*

video.<sup>15</sup> This demonstration proves that different apparatuses can display the same captions from the same video streamed from the same service at different times—a problem conclusively tied to the apparatus.

Dr. Vogler also demonstrated that pausing, resuming, rewinding and fast-forwarding can cause captions to be displayed at significantly different times when streaming the same video from the same service on the same apparatus.<sup>16</sup> This demonstration proves that it is possible for captions to be rendered out of sync purely as a result of a poor implementation of the caption rendering mechanism on a particular apparatus.<sup>17</sup>

During our October 1 meeting, CEA representatives posited that the synchronization problems Dr. Vogler demonstrated could be the result of network bandwidth problems and not an indication of a problem at the apparatus level. While we agree that network bandwidth problems could contribute to a caption synchronization problem, the presence of problems in the delivery and interchange system cannot rule out the existence of improper caption synchronization at the apparatus level—particularly when the same apparatus properly synchronizes audio and video but not captions for the same programming. Both CEA and Mitsubishi Electric Visual Solutions America (“MEVSA”) have admitted that post-processing performed by video playback apparatuses can cause delays in caption synchronization.<sup>18</sup>

Moreover, VPDs are obligated to maintain timing data through the delivery and interchange system, while apparatuses currently need not do so.<sup>19</sup> Apparatuses must be purposefully designed to synchronize video, audio, and captioning data received from the

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<sup>15</sup> *Id.*

<sup>16</sup> *Id.* at 3. Dr. Vogler’s video demonstration is available at <http://youtu.be/5Xy7scfORh0>.

<sup>17</sup> *Id.*

<sup>18</sup> See *MEVSA Opposition* at 2; *CEA Opposition* at 18.

<sup>19</sup> See *IP Captioning Order*, 27 FCC Rcd. at 812-13, ¶ 37.

interchange and delivery system, but apparatus manufacturers uniquely lack the market incentive to implement caption synchronization at the same quality as audio and video synchronization.

**B. Existing captioning standards provide the timing data necessary to synchronize captions with video.**

Industry-standard captioning formats, including CEA-608, CEA-708, and Society of Motion Picture & Television Engineers-Timed Text (“SMPTE-TT”) all include timing data that allows apparatuses to synchronize captions with video. Although CEA and MEVSA assert otherwise, their own explanations of the standards, as well as the standards themselves, support the conclusion that timing data is provided to apparatuses.<sup>20</sup> The Commission has previously acknowledged this fact, even making the use of the SMPTE-TT standard a “safe harbor” for compliance with the Commission’s rules.<sup>21</sup>

CEA-608 and CEA-708 are the traditional captioning standards for analog and digital broadcast television, respectively. CEA states that CEA-608 and CEA-708 captions “do not provide a method for associating caption data with specific video frames” but admits that captions are supplied to receivers with “relative timing information” and “arrive in intervals, correlated to the video being displayed.”<sup>22</sup> Indeed, the relative and implicit timing data provided by the captioning stream dictates when captions should be rendered—just as the same data provides an apparatus with the necessary cues for rendering audio at the proper time.

Moreover, SMPTE-TT, the Commission’s safe harbor interchange and delivery format, provides explicit timing data—as the term “Timed Text” in the title plainly

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<sup>20</sup> See *CEA Opposition* at 19-20; *MEVSA Opposition* at 3-4.

<sup>21</sup> See *IP Captioning Order*, 27 FCC Rcd. at 860-61, ¶¶ 124-125; 47 C.F.R. §§ 79.4(c)(1)(i), 79.100(c)(1).

<sup>22</sup> *CEA Opposition* at 19.

implies. In recommending SMPTE-TT, the VPAAC concluded that SMPTE-TT best met the technical capabilities required for captioning IP-delivered video programming, including the proper timing of captions.<sup>23</sup>

As explained in our earlier comments in this proceeding, the SMPTE-TT standard *does* support precise timing of captions.<sup>24</sup> SMPTE’s guide for converting CEA-608 caption data to SMPTE-TT format notes that the SMPTE-TT files contain explicit time codes for the display of captions.<sup>25</sup> SMPTE-TT is a SMPTE-specific “profile,” or superset, of the World Wide Web Consortium’s Timed Text Markup Language (“TTML”) standard.<sup>26</sup> TTML defines two time base modes, “media” and “smpte,” that facilitate associating particular caption data with a particular video frame, enabling apparatuses to precisely synchronize captions with video.<sup>27</sup> These TTML time codes are accurate to at least the second, and optionally to the millisecond, frame, or even fraction of a frame.<sup>28</sup>

Finally, we clarify that we do not intend for the Commission to require apparatuses to proactively address timing problems introduced prior to captions reaching an apparatus. We agree with CEA that apparatus manufacturers should not be responsible for correcting timing errors that are introduced during the creation of captions or the transition of video through the delivery and interchange system—although VPDs responsible for both delivering and rendering captions in a VPD-supplied application,

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<sup>23</sup> See *VPAAC Report* at 21-22, 26.

<sup>24</sup> *Reply Comments of TDI, et al. to the Oppositions of MEVSA and CEA*, MB Docket No. 11-154 at 7 (June 18, 2012).

<sup>25</sup> See *SMPTE Recommended Practice: Conversion from CEA-608 Data to SMPTE-TT*, at 16 (Jan. 3, 2012), <https://www.smpte.org/sites/default/files/rp2052-10-2012.pdf>.

<sup>26</sup> See *SMPTE Standard: Timed Text Format (SMPTE-TT)*, at 3 (Dec. 3 2010), <https://www.smpte.org/sites/default/files/st2052-1-2010.pdf>.

<sup>27</sup> See W3C, *TTML 1.0* § 6.2.11 (Nov. 18, 2010), <http://www.w3.org/TR/2010/REC-ttaf1-dfxp-20101118/>. The SMPTE-TT standard has recently been updated. See *Comments of SMPTE*, MB Docket No. 11-154 (Oct. 29, 2013). Our comments are based on the 2010 revision of the standard.

<sup>28</sup> *Id.* at § 10.3.1.

plug-in, or device should be held responsible for the timing of captions at both delivery and apparatus levels.<sup>29</sup> Although we have no doubt that innovative manufacturers will devise ingenious methods for correcting caption timing errors at the apparatus level, we believe that the Commission should merely require apparatuses to render captions according to the timing data included with the video programming.

**C. Requiring device manufacturers to render captions according to included timing data included with the video would serve the public interest.**

In order to ensure caption synchronization, entities responsible for each stage in the process of creating, delivering, and rendering must adhere to timing requirements. At the apparatus level, manufacturers are in the best position to ensure that captions are synchronized with video.

Failure to synchronize video and captions poses a serious impediment to accessibility. CEA and MEVSA characterize captioning delays caused at the apparatus level as “very short,” “very minor,” or not “noticeable.”<sup>30</sup> However, Dr. Vogler has observed that these apparatus-introduced delays can be up to several seconds long.<sup>31</sup>

To understand how disruptive viewing captions delayed by a few seconds can be, a hearing person might imagine watching a video with audio delayed by several seconds. It is easy to recognize the difficulty viewers would face if every video was displayed substantially out of sync with audio.

This problem is further exacerbated when viewing a video with closed captions and no sound because viewers may not be able to associate the delayed words with the correct speaker. For example, in a conversation between a male character and a female

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<sup>29</sup> *CEA Opposition* at 21.

<sup>30</sup> *See MEVSA Opposition* at 2; *CEA Opposition* at 18-19.

<sup>31</sup> Letter from Andrew S. Phillips Policy Counsel for NAD, to Marlene H. Dortch, Secretary, FCC, MB Docket No. 11-154, at 1-3 (July 20, 2012).

character, a hearing viewer is likely to be able to identify which character is talking even if the audio is not properly synchronized with the video. However, if a viewer is using closed captions and cannot hear the audio, he may not be able to associate the dialogue with the correct character.<sup>32</sup>

As the VPAAC notes, “consumer[s] [who are deaf or hard of hearing] must be given an experience that is equal to, if not better than, the experience provided as the content was originally aired on television”—a recommendation implemented by the Commission and codified in its rules.<sup>33</sup> The VPAAC also identified timing as one of the four critical attributes that defines “experience.”<sup>34</sup> It is undeniable that unsynchronized closed captions are not currently meeting this standard. We urge the Commission to take the next step toward rectifying this problem by requiring apparatuses to render captions according to the timing information included with captions.

## **II. The Commission should require DVD and Blu-ray players to render closed captions.**

The Commission seeks comment on the closed captioning standards for removable media players, including DVD players and Blu-ray players.<sup>35</sup> The Commission should require DVD and Blu-ray players to render captions. The HDMI standard commonly used by removable media players does not facilitate the pass-through of caption data, and most DVD and Blu-ray players output exclusively via HDMI.<sup>36</sup> Because HDMI-only removable media players generally lack pass-through or rendering capabilities, consumers who are deaf or hard of hearing are unable to access video programming on removable media, even when the programming contains captions.

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<sup>32</sup> *See id.*

<sup>33</sup> *VPAAC Report* at 13; *see* 47 C.F.R. §§ 79.4(c)(1)(i), (c)(2)(i).

<sup>34</sup> *VPAAC Report* at 13.

<sup>35</sup> *FNPRM* 28 FCC Rcd. at 8806-08, ¶¶ 35-37.

<sup>36</sup> *See IP Captioning Order*, 27 FCC Rcd. at 855, ¶ 116.

In the *FNPRM*, the Commission seeks comment on alternatives to apparatus rendering.<sup>37</sup> None of the alternatives suggested, including analog outputs, subtitles, or Subtitles for the Deaf and Hard of Hearing, satisfy the CVAA’s promise to guarantee “equal access, equal opportunity, and equal respect for every American.”<sup>38</sup>

**A. Requiring DVD and Blu-ray players to render closed captions will allow consumers to access removable media.**

Without a requirement for DVD and Blu-ray manufacturers to render captions within the apparatus, consumers will not be able to view captions on video programming distributed on removable media. DVDs are capable of, and often include, closed captions which can be viewed on a player with a capable analog output. However, manufacturers are increasingly offering players with HDMI as the only interconnection mechanism. Because the current HDMI standard does not support the pass-through of caption data, captions cannot be viewed using an HDMI-only player if the player does not render the captions. The industry transition to HDMI outputs is effectively leaving consumers who are deaf or hard of hearing without access to modern removable media players.

By requiring apparatuses to decode and display captions, Congress and the Commission have afforded consumers who are deaf or hard of hearing the ability to participate in the modern media ecosystem for the past two decades. Before televisions were built with decoder circuitry, consumers connected a decoder set-top box between the antenna and the television set. In 1990, the Television Decoder Circuitry Act (“TDCA”) mandated that all “apparatus designed to receive television pictures broadcast simultaneously with sound be equipped with built-in decoder circuitry designed to display

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<sup>37</sup> *FNPRM*, 28 FCC Rcd. at 8807-08, ¶ 37.

<sup>38</sup> President Barack H. Obama, Remarks on Signing the Twenty-First Century Communications and Video Accessibility Act of 2010 (Oct. 8, 2010), *available at* <http://www.gpo.gov/fdsys/pkg/DCPD-201000851/pdf/DCPD-201000851.pdf>.

closed-captioned television transmissions.”<sup>39</sup> Because of this mandate, most televisions in America were built to decode and support captions; in response, stations began broadcasting programming with captions.<sup>40</sup>

By 2003, Americans were viewing captioned media through a variety of means such as cable and satellite set-top boxes and removable media such as DVDs and videocassettes. While most of the associated apparatuses were not capable of rendering captions, they were equipped with analog outputs that passed through caption data to televisions to be decoded and displayed, making those apparatuses accessible to consumers who are deaf or hard of hearing.<sup>41</sup>

In the past decade, however, HDMI has quickly become the standard for all high-definition video playback apparatuses, including cable set-top boxes, video gaming devices, and Blu-ray and DVD players. The current HDMI standard lacks the ability to pass through captions alongside audio and video information, necessitating a migration to apparatus-based caption rendering. Unlike many other types of apparatuses, however, removable media players have not been redesigned to include caption rendering capability—a critical problem that demands Commission action to rectify.

The Commission asks if there is “a consumer expectation that captioned DVDs should be viewable on a backward compatible Blu-ray player.”<sup>42</sup> The Commission also asks whether it should “require Blu-ray players to render captions from DVDs.”<sup>43</sup> Just as hearing consumers expect the ability to view DVDs on Blu-ray players with audio intact, consumers who are deaf or hard of hearing expect to be able to view DVDs on Blu-ray players with included captions intact. Because Blu-ray players generally lack the ability to

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<sup>39</sup> Pub. L. 101-431, 104 Stat. 960 § 3 (codified at 47 U.S.C. 303(u)).

<sup>40</sup> See *VPAAC Report* at 7-8.

<sup>41</sup> *Id.*

<sup>42</sup> *FNPRM* at 8807, ¶ 36.

<sup>43</sup> *Id.*

pass through captions, the Commission should require Blu-ray players to include caption rendering capability.

The Commission notes in the *FNPRM* that there is no industry standard for Blu-ray captioning.<sup>44</sup> However, requiring Blu-ray players to render captions promises to usher in a new era of captioned removable media in the same way that the Commission’s rules implementing the TDCA ushered in the modern era of captioned broadcast, cable, and satellite programming. We believe that requiring Blu-ray players to render captions “would spur the industry to prioritize developing a standard for discs and include captions on Blu-ray discs.”<sup>45</sup>

**B. Analog outputs on DVD and Blu-ray players are not an acceptable alternative to apparatus rendering and do not serve the public interest.**

The Commission asks whether DVD and Blu-ray players should include an analog output.<sup>46</sup> Requiring the inclusion of an analog output would force consumers who are deaf or hard of hearing to choose between viewing programming with captions through a low-quality analog output or viewing programming without captions through a high-definition HDMI connection. The Commission should avoid relegating consumers who are deaf or hard of hearing to second-class status and make clear that the CVAA mandates equal access to all apparatuses.

**C. Neither subtitles nor Subtitles for the Deaf and Hard of Hearing are viable alternatives to closed captions.**

The Commission asks if subtitles or Subtitles for the Deaf and Hard of Hearing (“SDH”) should be considered an alternative means of compliance if they meet the

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<sup>44</sup> *Id.*

<sup>45</sup> *Id.* at 8807, ¶ 37.

<sup>46</sup> *Id.* The Commission additionally asks whether Blu-ray players that include an analog output for DVD, but not Blu-ray media, should be considered in compliance with the apparatus rules. *Id.*

functionality standards required by the CVAA.<sup>47</sup> If subtitles or SDH were modified to meet the CVAA’s functionality standards, they would effectively *be* closed captions, not an alternative. However, subtitles and SDH should not be considered an alternative to closed captions because they do *not* provide functional equivalence for viewers who are deaf or hard of hearing. As the Commission has already recognized, subtitles and SDH do not facilitate changing the font, size, or color of transcriptions or implement other functionality standards required by the CVAA.<sup>48</sup> Moreover, English subtitles of foreign language films also do not functionally substitute for captions because they often include only transcriptions of foreign language dialogue translated into English and do not include transcriptions of English dialogue. Finally, English subtitles of foreign language films often do not include transcripts of non-verbal sounds or song lyrics.

During our October meeting, CEA representatives raised the possibility of using SDH as a “one-size-fits-all” solution to captions, leaving the configuration of all captioning options to the captioner. However, as the Commission has repeatedly noted, a one-size-fits-all approach fails to meet the needs of millions of Americans who are both deaf or hard of hearing and blind or visually impaired, for whom equal access to video content requires not only captions, but the ability to adjust font sizes, color configurations, and other options to make them readable.<sup>49</sup> Even consumers who are not blind or visually impaired need to be able to adjust the appearance of captions in a variety of circumstances, including when captions are the same or similar color as the background of a video. Subtitles and SDH do not meet these needs because they are rasterized and cannot be manipulated by the user. Requiring viewers who are deaf or hard of hearing to

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<sup>47</sup> *Id.*

<sup>48</sup> *IP Captioning Order*, 27 FCC Rcd. at 846, ¶ 100.

<sup>49</sup> *See, e.g., In the Matter of Accessibility of User Interfaces, and Video Programming Guides and Menus*, Report and Order and Further Notice of Proposed Rulemaking, MB Docket No. 12-108, at ¶ 141 & n.544-45 (Oct. 31, 2013) (citations omitted).

accept a one-size-fits-all approach to captions is no more tenable than denying hearing viewers the ability to change the volume of a video's audio track.

### **Conclusion**

We concur with Commissioner Clyburn's assessment that the CVAA "is one of the most important pieces of legislation for the deaf and hard of hearing community since the passage of the ADA more than two decades ago."<sup>50</sup> As Commissioner Clyburn noted, "[i]n that time, we have seen an explosion of revolutionary Internet-based telecommunications and video programming technologies. Yet, the tremendous promise of these technologies has remained largely inaccessible to Americans who are deaf or hard of hearing. The CVAA intends to bridge this divide."<sup>51</sup> To unlock the "tremendous promise" of video programming for people who are deaf or hard of hearing, the Commission should impose synchronization requirements on apparatus manufactures and require DVD and Blu-ray players to render captions in the apparatus level.

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<sup>50</sup> *IP Captioning Order* at 897 (Statement of Commissioner Clyburn).

<sup>51</sup> *Id.*

Respectfully submitted,

/s/

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