



Closed Captions and Descriptive Audio

*The requirements, challenges, opportunities
and solution*

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“The Twenty-First Century Communications and Video Accessibility Act establishes multiple content accessibility requirements.”

An Introduction

On October 8, 2010 President Obama signed legislation designed to address the needs of those who are vision and/or hearing impaired. Called the Twenty-First Century Communications and Video Accessibility Act (CVAA) of 2010, the legislation establishes multiple content accessibility requirements including the following:

- Closed captioning for online TV programming
- Closed captioning for mobile devices such as tablets and smartphones
- Descriptive audio for online and broadcast content
- Improved ease of use for remote control access to closed captioning

Enforcement of CVAA requirements is entrusted to the Federal Communications Commission (FCC) and instances of non-compliance can result in substantial penalties and/or fines.

This white paper provides an overview of current FCC regulations, identifies challenges commonly encountered in achieving compliance and introduces a simple solution for operators to not only address these challenges but also seize the opportunity to grow their markets - all by using a cloud based service.

CVAA

While the Telecommunications Act of 1996 required closed captioning for certain television broadcasts, it was strictly limited to television as a means of broadcast consumption. But now, with an ever-increasing quantity of programming migrating to the Internet and recent passage of the CVAA, the FCC is working to ensure increased accessibility across all video delivery channels.

Based on CVAA requirements the FCC created two Reports and Orders that are currently being implemented:

- *FCC 12-9 - Jan 2012 – Captions on IP Video content* – This Report and Order implements rules governing the closed captioning requirements for owners, providers, and distributors of video programming delivered using Internet protocol. It also sets rules governing the closed captioning capabilities of certain devices used to view video programming.
- *FCC 11-126 - Aug 2011 - Descriptive Video Service (DVS)* - This Report and Order implements rules governing the insertion of audio narrated descriptions of a television program's key visual elements into natural pauses in the program's dialogue, and makes video programming more accessible to individuals who are blind or vision impaired.

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As of March 30th, 2013, the CVAA requires that live and near-live programs shown on TV with captions must also be captioned when re-broadcast on the Internet. A near-live program is recorded less than 24 hours before being aired for the first time. By September 30th, 2013, all pre-recorded video programming that has been substantially edited for the Internet must also be captioned if it was previously shown on TV with captions – this covers all short clips that appear online.

For descriptive audio, FCC rules require that top national networks (ABC, CBS, Fox, NBC) affiliates in the top 25 markets, the five top-rated cable networks (Nickelodeon, TBS, TNT, The Disney Channel, USA) and the cable and satellite systems with 50,000 or more subscribers – all must provide a minimum of 50 hours per quarter of video described programming in prime time and/or children’s programming blocks. This rule took effect on July 1, 2012, and calls for an expansion in the number of hours that descriptive audio is available in order to ensure 100% accessibility for the blind and visually impaired by 2020.

The Challenge

Compared to the world of television broadcasting in the year 2000, preparing content for adherence to regulatory compliance has become significantly more complex. The CVAA poses a variety of technical and operational challenges that often exceed the capabilities of even the most advanced broadcast video workflows. Moreover, with the rapid adoption of online content, broadcasters are challenged to support multi-screen delivery resulting in even more obstacles towards meeting CVAA requirements including how to:

- Prepare broadcast media and content that includes closed captioning and/or descriptive audio for online delivery
- Support the numerous delivery frameworks and end user devices such as tablets, smartphones, game consoles, connected TVs and Internet set top boxes

Efforts to overcome these challenges often result in costly CAPEX investments, inefficient workflows, and limited flexibility for adapting to new requirements.

The Opportunity

The 21st Century Communications and Video Accessibility Act was passed to protect the accessibility rights of approximately 8 million Americans with hearing loss and 7.5 million with significant vision loss. However, the benefits

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“Caption and descriptive technologies can be used for director’s commentaries, foreign language tracks and improve online searchability (SEO).”

of achieving compliance with CVAA regulation also extend to potential for competitive differentiation to address not only the abilities of this audience but also the preferences of other consumers. For example, services addressing people who are hard-of-hearing will also benefit people who are aging or just want to tailor the speech in a movie so they can better follow the story. Individuals without hearing and vision loss also use closed captioning and audio descriptions. Captions are commonly used in workplaces and in loud public settings and are a popular learning tool for people studying to achieve advanced proficiency in new languages.

In addition, the technologies that enable captioning and descriptive audio can be used for director’s commentaries, foreign language tracks, and in many use cases provide new opportunities for monetization. For example, captions and descriptive audio can be indexed to support search engine optimization (SEO). This empowers content producers to improve the online search visibility of a video by using audio or visual aspects such as images, dialogue actions and other visual content. With better searchability, broadcasters can drive increased viewership of their existing catalogs.

Think Beyond Requirements

Although the CVAA wasn’t enacted to help broadcasters increase market share, the opportunity to reach an expanded audience certainly does exist for those who are able to think beyond what is required of them and leverage the additional benefits that closed captioning and descriptive audio can provide.

By thinking beyond the CVAA’s minimum requirements, and providing high volumes of quality programming that is both captioned and described, broadcasters and other video producers will be positioned to significantly grow their reach. This means that broadcasters need to caption as much of their programming as possible and not just limit closed captioning to programming previously broadcast on television. In addition, it means they need to provide audio descriptions for more than four hours of their weekly programming lineup. It also means that even those broadcasters not singled out by the CVAA must offer these services.

Perhaps the right technology solution would empower broadcasters to think beyond the requirements, truly grasp the opportunities, and maybe even stave off further industry legislation.

The Solution

Fortunately, both closed captioning and descriptive audio accessibility services are at the very heart of a technology partnership between Encoding.com and Dolby Laboratories. Built on the tools, knowledge, best practices, passion and

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“A single unified platform that offers full-featured closed captioning and descriptive audio support.”

leadership of these two companies, this cloud based all-in-one solution eliminates many of the technical challenges associated with CVAA compliance.

Encoding.com and Dolby provide a single unified platform that offers full-featured closed captioning and descriptive audio support. This comprehensive offering not only makes it easy for broadcasters to meet the requirements established by the CVAA, but it also reduces costs, accelerates job times and integrates seamlessly with existing infrastructure to streamline video workflows. The solution is rooted in a technical partnership in which Dolby Digital Plus is integrated within Encoding.com’s cloud-based video encoding platform combining Encoding.com’s video expertise with Dolby’s audio expertise.

Closed Captioning Solution

Closed captioning (also commonly referred to as subtitling in Europe) is the process of adding text to a video to provide additional or interpretive information. Closed captions typically show a transcript of the audio portion of a program as it occurs (either verbatim or in edited form), sometimes including non-speech elements.

Encoding.com is the first encoding service to offer universal closed captioning support for delivery to all devices. The powerful, reliable and scalable feature set for closed captioning workflows enables digital video distributors to quickly and easily achieve compliance with the CVAA.

Encoding.com’s full-featured closed captioning solution makes it simple to:

- Utilize all formats including cea-608/708, DFXP, SAMI, SCC, SRT, TTML and 3GPP
- Seamlessly integrate with any existing digital video authoring and distribution workflow
- Extract, inject, copy and mux captions tracks into sidecar (text) files or digital video
- Extract standard caption tracks from source files and convert them into sidecar files
- Copy closed caption or timed text tracks from source videos to output videos
- Mux a sidecar file with a source video to encode closed caption tracks into output videos

Descriptive Audio Solution

Descriptive audio provides accessibility to an audible narration that describes all visual context of a video. For visually impaired individuals experiencing video content without using descriptive audio, 80-90% of the visual content

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“Dolby offers a full-featured descriptive audio solution that is more bandwidth efficient, easy to produce and distribute.”

becomes inaccessible. In the past, broadcasters have often prepared video with descriptive audio by mixing both the main and descriptive audio elements. The mixed audio is then transmitted with the main audio and receivers switch between the two audio services based on user setup. This approach can double the audio bitrate requirement, prevents users from adjusting how the mix is performed and prevents true 5.1 surround sound.

Encoding.com and Dolby offer a full-featured descriptive audio solution that transmits descriptive audio as a separate bitstream, utilizing a secondary audio channel delivered alongside the main audio service. Mixing occurs within the receiving device. This approach is more bandwidth efficient because each audio element is transmitted only once. Both main and descriptive soundtracks are delivered in a single Dolby Digital Plus stream that is easy to produce and distribute.

Encoding.com and Dolby’s descriptive audio solution enables:

- Improved efficiency for delivery in low bandwidth environments
- Support across over 1.3 billion devices including mobile, browser and OTT
- Delivery via a single Dolby Digital Plus stream that is easy to produce and distribute
- Highest possible quality and support for multichannel surround sound including 5.1
- Controls for balance between main and descriptive audio to suit their listening preferences

In Conclusion

One could safely assume that no online video producer, publisher or distributor wants to exclude the hearing or vision impaired from its targeted customer base. Moreover, with a growing number of additional benefits for producing captioned and described video content, many savvy broadcasters are thinking beyond the CVAA requirements. The technology partnership between Encoding.com and Dolby has resulted in a comprehensive solution for closed captioning and audio description services, with toolsets seamlessly built into Encoding.com’s cloud-based video encoding and delivery workflows. The solution offers the necessary CVAA compliance as well as many additional benefits for broadcast and multi-screen ecosystems.

About Encoding.com

Encoding.com, the world's largest video encoding service and provider of Vid.ly, the groundbreaking universal video URL platform, powers video for thousands of leading brands across Advertising, Media and Entertainment, eLearning, Retail, Telecommunications and Lifestyle.

Encoding.com's cloud video platform enables organizations to instantly scale support for all popular web and mobile formats and utilize Encoding Intelligence™ to accelerate processing while eliminating expensive video infrastructure investments.

With over 20 million encodes under its belt, Encoding.com is the only encoding service to offer service level guarantees for performance so that you can focus on what you do best.



About Dolby Laboratories

Dolby Laboratories (NYSE:DLB), the global leader in technologies that are essential elements in the best entertainment experiences. Founded in 1965 and best known for high-quality audio and surround sound from the cinema to the living room to mobile devices, Dolby creates innovations that enrich entertainment at the movies, at home, or on-the-go. For more information, visit www.dolby.com.



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