OzPlayer White Paper Draft

“Internet Video Player Accessibility Testing”

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For Gian Wild

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# Notes:

* Target: AT Directors in Higher Ed looking to purchase a video player or skin for their university.
* CTA: Enter email address to download white paper and full testing results, sign up for video accessibility updates newsletter.
* Keyword Brainstorm: camtasia, compliance, blackboard, LMS, accessibility, media player, w3c, wcag, wcag2, captions
* Suggestions: allow people to read the entire white paper for free. Require email address to download white paper. From there, invite on for full testing results. Start drip campaign which sends a three part email to nurture people down the funnel. Use data to measure engagement.

# Intro

When it comes to procuring an online video player for your campus, you are likely trying to determine if your new player solution will host your videos or if perhaps you just need a media player plugin or module that works as a third party application. You will be weighing the various options against a combination of both features and accessibility. As you look at the accessibility features of a video player, it will help to have an understanding of how your choice might affect actual people with disabilities as well as how to meet compliance according to WCAG. This white paper offers a review of our testing results on various video players to provide a sense of which accessibility elements you may want to check for each one.

# Sidebar 1

When going through this process, it is important to note that addressing the accessibility of the Video Content and Accommodation Elements will be separate from making sure you have an accessible Video Player.

## Video Content

Video Content may include audio visual elements recorded and possibly edited in a time-based sequence. Accessibility for content includes making sure the video doesn’t flicker too quickly and seeing that there are high contrast colors for frames with text on them, for example. Your campus accessibility roadmap should include guidelines for faculty and staff to make sure that the content itself is accessible. This may involve providing training, checklists and perhaps even policy that staff and faculty can refer back to when they are selecting and producing video.

## Accommodation Elements

Accommodation Elements include captions, transcript and audio descriptions. These are separate files produced to provide accommodations for people with disabilities. Your campus accessibility roadmap should include resources for faculty and staff to make sure any video they want to share has proper Accommodation Elements. This may involve contracting with an outside firm or hiring staff to create and source captions, transcripts and audio descriptions.

# Sidebar 2

When it comes to video compliance, WCAG2 has three levels of guidance for accessibility standards. Each of these require the creation of Accommodation Elements as well as the use of a player that supports these elements.

## WCAG2 rules for pre-recorded videos

|  | Level A | Level AA | Level AAA |
| --- | --- | --- | --- |
| Captions  | Required | Required | Required |
| Transcript  | Or audio description | No | Required |
| Audio descriptions  | Or transcript | Required | Required |
| Extended Audio descriptions\* | No | No | Required |
| Sign language\*\* | No | No | Required |

## WCAG2 rules for Live Videos (live streaming) {consider deleting unless OzPlayer is serving in this space}

|  | Level A | Level AA | Level AAA |
| --- | --- | --- | --- |
| Captions  | No | Required | Required |
| Transcript  | No | No | No |
| Audio descriptions  | Or transcript | Required | Required |
| Extended Audio descriptions\*  | No | No | No |
| Sign language\*\* | No | No | No |

# Video Player Accessibility

Video Player Accessibility is about the controls and settings of the player itself. Our testing indicates how well someone who cannot use a mouse because of a vision or physical impairment could operate a video player using a keyboard or braille display device, for example. We also look at color contrast settings in the captions themselves, as well as the color contrast of the controls for the video player. This applies particularly to people who may have some but limited vision. In short, an accessible player has controls that function well, are labelled and easy to locate for any user. Procuring the right player will help you increase user satisfaction and ensure accessibility compliance.

# Sideblurb 1

Important! What tests one way today, may change tomorrow or whenever a browser or player gets updated. We offer these testing results as a baseline, but keep in mind they may change overnight, for example. Although the testing for nine players takes X hours by our testers, we perform it annually as an indication of our commitment to video accessibility.

## Accommodation Elements

### Captions

Captions are the white text in black boxes synchronized with video at the bottom of the screen. They include descriptions of important audio elements throughout the video and they indicate who is speaking. Caption standards are regulated by the FCC, including rules around formatting, punctuation, color contrast, etc. Captioning is particularly important for people who are deaf or hard of hearing but also for screen reader users because {GW had something anecdotal about this?} A video player must be able to display captions and have them accessed via screen reader user in order for it to have passed this portion of our testing.

### Transcripts

A transcript should have similar information as captions, however it will appear separately – perhaps below or alongside the video and it will include textual and graphical information. It may appear in HTML, Word or accessible PDF format. Transcripts can be easily skimmed through rather than tied to the timing of the video. This benefits people with various disabilities as well as those without disabilities. To pass our testing, a video player must allow the associated transcript be easy to find.

### Audio Descriptions

Audio Descriptions, also referred to as video descriptions, are additional narration tracks which describe the key visual elements or action on the screen. Audio Descriptions are distinguishable from the audio content in the video. In movie theatres or museums, patrons might wear a headset that “guides the listener through the presentation with concise, objective, descriptions of new scenes, settings, costumes, body language and ‘sight gags’ all slipped in between portions of dialogue or songs.” {ref <http://www.acb.org/adp/ad.html>} Although it is a requirement by WCAG to reach AA compliance, it is uncommon for video players to provide separate tracks for audio description.

### Extended Audio Descriptions

Extended Audio Descriptions are created in cases when the video moves too quickly to fit Audio Descriptions in between dialogue, for example. This means the video will be frozen, allowing the Audio Descriptions to fully explain the scene before unpausing the video. {ref <https://www.w3.org/TR/UNDERSTANDING-WCAG20/media-equiv-extended-ad.html>} We are not aware of any player that allows Extended Audio Descriptions.

### Sign Language

These days in video, you see sign language interpreters alongside reporters when critical safety information is being relayed on live television. You may also recall seeing an interpreter portrayed using “Picture in Picture” – an inserted frame on the right side of the screen. Including sign language in a video presentation makes it that much more accessible to Deaf people, who may not be comfortable relying on captions for critical or complex information. This kind of effect is typically created in the video editing software before exporting the video. It is unlikely to find a player that syncs up two separate video files side by side, however, this effect is used today in live video conferencing.

## Video Player Accessibility Testing Results

{Some of this drafted by BM. Replace with updated testing results}

Our testing looks at broader WCAG standards to determine the accessibility of the player, itself, not just the Accommodation Elements. These tests indicate whether a user who uses a keyboard or screen reader to access video would find the video player accessible. They also examine color contrast for low-vision users. These tests help people with Blindness, Color-Blindness, Low vision, Deafness, Motor impairments and Cognitive Impairments. This paper reviews nine of the most popular video players used on the Web.

### Testing Methodology – Visual Keyboard User Accessibility

The Visual Keyboard user accessibility tests were performed by sighted users who primarily interact with the browser using the keyboard. They were conducted on Windows 7, Windows 10, and MacOS, using current versions of Firefox, Chrome, Internet Explorer, Edge, and Safari as appropriate. To receive a “pass” on a test, the player must have passed on all browser and platform combinations. {GW please note rewording for test descriptions which clarify both what makes a player accessible and that we are testing the player. The previous wording made it seem like we were testing what made players inaccessible and that we were testing the content.}

# Sideblurb 2

We look at a number of A and AA requirements. If the player fails any of these unique requirements, then it is not Level AA compliant. We have yet to come across a player that is AAA compliant.

#### A Group {graphic or table}

* Audio must not play automatically unless the user is made aware this is happening or a pause/stop button is provided\*
* Video player must not contain a keyboard trap\*
* Video volume can be modified independent of the system volume
* Video player does not use colour alone and/or shape alone and/or shading alone to convey information
* Video player is keyboard accessible
* Video player allows captions
* Video player allows either transcript or audio description tracks

# Side blurb

\*Those failures of the non-interference clause are critical errors and completely block some users accessing the video.

#### AA Group {graphic or table}

* Colour contrast in the video player is sufficient
* Video control presentation changes on keyboard focus
* Video controls have a highly visible keyboard focus indicator
* Colour contrast in the video captions is sufficient
* Video player allows audio descriptions

### Testing Methodology – Screen Reader Accessibility

The players were also tested by a native screen reader user with over 15 years’ experience in Assistive Technology. He is an AccessibilityOz tester who is provided one link to an existing video with Captions, Transcripts and Audio Descriptions for each of the players. Note in some in cases there may be some false failures due to user errors such as captions being set to the wrong contrast settings, for example. These tests were conducted on Windows 7 with JAWS, NVDA, and Windows-Eyes, using Chrome, Firefox, and Internet Explorer. As with the keyboard testing, if a player fails on any of these combinations then it fails more broadly. {Run these blurbs by someone with UX research experience to see if they would add more details to the testing parameters.}

#### A Group {graphic or table}

* Player’s controls are labelled
* Player’s controls are easy to locate
* Button status (on and off) is accessible and read correctly by screen readers
* Next and Previous are easy to find
* Volume level is announced while changing
* Current time of currently played movie is accessible for screen reader
* Fast forwarding/rewinding is operable
* The title of currently played movie is easy to check
* Caption/subtitles can be read by a screen reader
* Transcript’s text is easy to find

### Results Summaries

{written by BM, needs updating with newest results} This is a basic overview of the results of the study for each of the players which points out unique problems and notes common issues. We are highlighting these players because {maybe they have the highest Alexa rankings? Or maybe they score well for accessibility?} {add CTA For a more in depth look at our testing data…}

#### Brightcove

BM - Brightcove mostly scored very well in the category of controls. Testers were able to fast forward the video without interference. Captions were also mostly available. But this player fell flat across all browsers in terms of color contrast within the videos. Transcripts were also not available to testers.

#### Kaltura

BM - Kaltura did not have any recorded keyboard traps, and the video presentation did not change across most browsers when testers zoomed in. The current time of the currently playing video was also available to screen readers in most browers. Captions and transcripts were rare across all browsers for this player. Controls were also not labelled.

#### OzPlayer (built by AccessibilityOz)

BM - OzPlayer was the only video player tested that contained captions, audio descriptions, and transcripts across different browsers. It universally passed in seventeen out of twenty-two testing qualifications (with some features not being testable across all platforms). The only areas of failure were in volume level announcement and accessibility of the current time of the movie being played. Even these only took place on a few browsers out of the testing group. {which ones}

#### JW Player

BM - JW Player had clearly labelled controls, with keyboard accessible across all browsers save Mac Safari. Mac Safari tested as the most difficult browser across video players in this study. Controls were labelled but not always easy to locate. Transcripts, audio descriptions, and captions were not locatable across browsers. Color contrast in the videos was also not sufficient for low vision accessibility.

#### Video.js

BM - Video.js scored very well in a few areas that pertained especially to screen readers. The title of the video being watched was easy to check. Captions and subtitles were easily by screen readers. However, video controls were not easy to locate for most users. Keyboard focus indicators were not highly visible. This player also did not include audio descriptions across browsers.

#### Vimeo

BM - Vimeo was notable in this study because of the prevalence of text aiding the colors and shapes in the display design in conveying information. No keyboard traps were present across browsers. But there was a startling lack of captions, audio descriptions, and transcripts on this video player. The captions and subtitles that were present scored low in being able to be read with screen reader technology.

#### Vimeo Embedded

BM - Vimeo Embedded scored largely the same, but with more problems with continued video play through focusing through the keyboard.

#### YouTube

EG – YouTube passed a good number of the tests however it does not have the capability for audio descriptions and the controls are difficult to locate for screen reader users. Those on Chrome browsers may find they cannot see the current time of the played movie and the captions/subtitles can’t be read out by the screen reader. Volume level may also be difficult to discern while changing.

BM - One of the most popular video players on the Web, YouTube, scored quite well overall regarding accessibility. Controls were overall easy to find for most testers and the videos were discernible for testers with low vision. However, the player’s controls were not always locatable across different browsers. Audio descriptions were also infrequent. {?}

#### YouTube Embedded

BM - YouTube Embedded results were similar except for a lower prevalence of transcripts available to viewers.

# Conclusion

Overall, the conclusion to be drawn from these results is that accessibility among video players is improving but is still not complete. No single player passed in every area with every single tester possibility. Our own player, OzPlayer outshone the other video players tested, comparatively.

## What’s next in our industry?

{GW to provide blurbs about the following or to authorize EG to spend time reading/incorporating. Suggestion to focus on what can be written about how these developments might impact players.}

* Facebook auto-image recognition: <http://mashable.com/2017/02/02/facebook-computer-vision-ai-upgrade/#v1zGYm7EkOq0>
* Facebook auto-captioning: <http://www.3playmedia.com/2016/10/07/why-facebooks-automatic-captioning-is-not-worth-the-risk-to-your-brand/>
* Auto-captioning: <http://www.3playmedia.com/2017/08/25/recaptioning-vs-editing-live-captions-and-autocaptions/>
* Crowd-sourcing audio descriptions (called “YouDescribe”) <https://jitp.commons.gc.cuny.edu/youdescribe-testing-crowd-sourced-video-description-for-service-learning-at-the-city-university-of-new-york/>

{Other points which GW can provide blurbs on or authorize EG to spend time interviewing her or researching/incorporating. Suggestion to focus on what can be written about how these developments might impact players.}

* More on accessible streaming media
* sign language
* Facebook version of OzP
* Extended AD
* Interactive links within video, etc.

{Final CTA} If you’re interested in reading the entire study (including the full tables of data providing every result of testing for every video player), please visit {URL}.

## About the Author(s) {Include Raf?}

About the Author Gian Wild​ is the founder and CEO of ​AccessibilityOz​. She has worked in the accessibility industry since 1998 and consulted on the development of the first Level AAA accessible web site in Australia (Disability Information Victoria). She has worked with the Disability Services arm of the Victorian Government for over thirteen years to keep the four iterations of the Disability Services site (Disability Information Victoria, Disability Services, Disability Online and DiVine), Level AAA accessible. She ran the accessibility consultancy PurpleTop from 2000 to 2005 and built the accessibility tool, PurpleCop.

 She spent six years on the W3C Web Content Accessibility Guidelines Working Group, the W3C Evaluation and Repair Tools Working Group and the W3C Authoring Tools Accessibility Guidelines Working Group. She spent six years contributing to the development of WCAG2.

 Amongst other sites, Gian has worked as the Accessibility Consultant for the Melbourne 2006 Commonwealth Games and was responsible for training Microsoft developers in accessibility. She judged the Web Directions McFarlane Award, been the Accessibility Judge for FullCodePress (build a web site in a day) twice and has been the Accessibility Judge for the Australian Web Awards three years running.

# Next Steps

* Review for {notes}
* Incorporate updated testing results
* Keyword research
* Incorporate keyword research
* Refine writing, grammar/punctuation
* Request review from Sean at CCC or someone else in target audience who can offer pointers
* Work with designer