The Timed Text Track JavaScript API

INTRODUCTION

In the HTML5 part 1 course, we saw that `<video>` and `<audio>`elements can have `<track>` elements. A `<track>` can have a`label`, a `kind` (subtitles, captions, chapters, metadata, etc.), a language (`srclang` attribute), a source URL (`src` attribute), etc.

Here is a small example of a video with 3 different tracks (`"......"` masks the real URL here, as it is too long to fit in this page width!):

```
<video id="myVideo" preload="metadata"controls crossOrigin="a
nonymous">
    <source src="http://...../elephants-dream-
medium.mp4" type="video/mp4">
    <source src="http://...../elephants-dream-
medium.webm" type="video/webm">
    <track label="English
subtitles"kind="subtitles" srclang="en"
           src="http://...../elephants-dream-subtitles-
en.vtt">
    <track label="Deutsch
subtitles"kind="subtitles" srclang="de"
           src="http://...../elephants-dream-subtitles-
de.vtt" default>
    <track label="English
chapters"kind="chapters" srclang="en"
           src="http://...../elephants-dream-chapters-
en.vtt">
 </video>
```

And here is how it renders in your current browser (please play the video and try to show/hide the subtitles/captions):

Notice that (unfortunately), the support for multiple tracks differs from one browser to another. You can read this article by Ian Devlin: "HTML5 Video Captions – Current Browser Status", written in April 2015, for further details. Here is a quick summary:

- IE 11 and Safari provide a menu you can use to choose which subtitle/caption track to display. If one of the defined text tracks has the `default` attribute set, then it is loaded by default. Otherwise the default is off.

- Chrome and Opera: *these browsers don't provide a menu for the user to make their choice*. Instead, they load the text track set that matches the browser language. If none of the available text tracks match the browser's language, then it loads the track with the `default` attribute, if there is one. Otherwise it loads none of them. Let's say that support is very incomplete (!).
- Firefox provides *no text track menu at all*, but will show the first defined text track *only if* it has `default` set. It will load all tracks in memory as soon as the page is loaded.

So.... how can we do better? Fortunately, there is a Timed Text Track API in the

HTML5/HTML5.1 specification that will give us lots of potential to manipulate `<track>` contents from JavaScript. Do you recall that text tracks are associated with WebVTT files? As a quick reminder, let's look at a WebVTT file:

```
WEBVTT

1
00:00:15.000 --> 00:00:18.000 align:start
<v Proog>On the left we can see...</v>

2
00:00:18.167 --> 00:00:20.083align:middle
<v Proog>On the right we can see the...</v>

3
00:00:20.083 --> 00:00:22.000
<v Proog>...the <c.highlight>head-snarlers</c></v>

4
00:00:22.000 --> 00:00:24.417 align:end
<v Proog>Everything is safe. Perfectlysafe.</v>
```

The different time segments are called "cues" and each cue has an `id` (1, 2, 3 and 4 in the above example), a `startTime` and an `endTime`, and a `text` content that can contain HTML tags for styling (<b>, etc...) or be associated with a "voice" like in the above example. In this case, the text content is wrapped inside `<v name_of_speaker>...</v>` elements.

It's time now to look at the JavaScript API for manipulating tracks, cues and events associated with their life cycle. In the following lessons, we will look at different examples using this API that implements missing features such as:

- a menu for choosing the subtitle track language to display,
- how to display a synchronized description of a video (useful for disabled people, for example),

- how to display a clickable transcript aside the video (similar to what the edX video player does),
- how to show chapters,
- how to use JSON encoded cue contents (useful for showing external resources in the HTML document while a video is playing),
- etc.

KNOWLEDGE CHECK 1.2.1

Do the most recent versions of all major browsers provide a menu for choosing the subtitle or the caption track?

- No
- Yes