Listening to events

CUECHANGE TEXTTRACK EVENTS, ENTER AND EXIT CUE EVENTS

Instead of reading the whole content of a track at once, like in the previous example, it might be interesting to process the track content cue by cue, while the video is being played. For example, you choose which track you want - say, German subtitles - and you want to display the subtitles in sync with the video, below the video, with your own style and animations... Or you display the entire set of subtitles to the side of the video and you want to highlight the current one... For this, you can listen to different sorts of events.

The two types of cue event are:

1. `enter` and `exit` events fired for cues, (not supported by all browsers as at October 2015).
2. `cuechange` events fired for TextTrack objects (good support).

Example of `cuechange` listener on TextTrack:

```
// track is a loaded TextTrack
track.addEventListener("cuechange", function(e) {
   var cue = this.activeCues[0];
   console.log("cue change");
   // do something with the current cue
 });
```

In the above example, let's assume that we have no overlapping cues for the current time segment. The above code listens to cue change events: when the video is being played, the time counter increases. And when this time counter value reaches time segments defined by one or more cues, the callback is called. The list of cues that are in the current time segments are in `this.activeCues;` where `this` represents the track that fired the event.

In some of the examples presented in the following lessons, we show how to deal with overlapping cues (cases where we have more than one active cue).

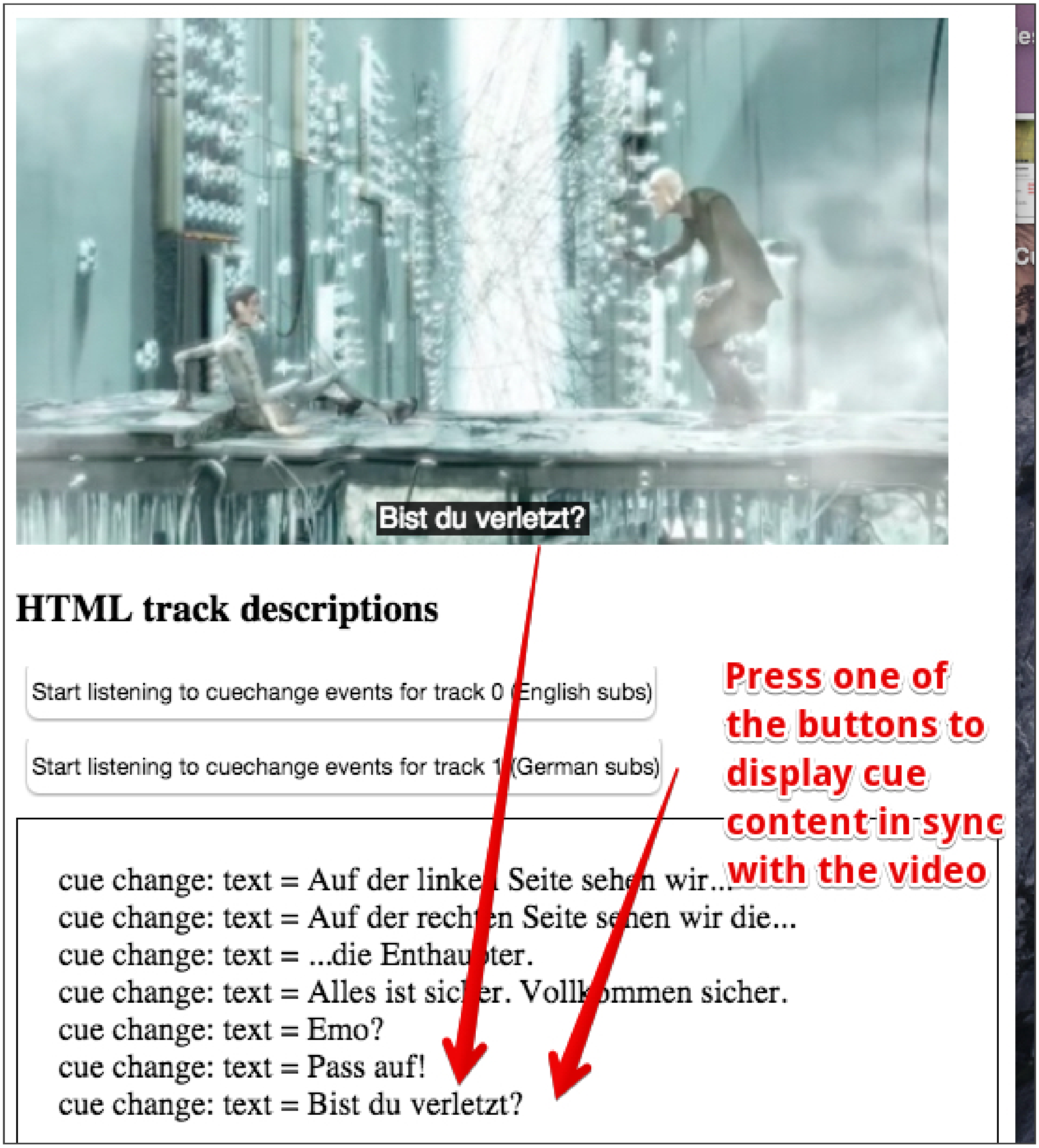
Example of enter and exit event listeners on a cues:

```
 // iterate on all cues of the current track
 var cues = track.cues;
 for(var i=0, len = cues.length; i < len; i++) {
   // current cue, also add enter and exit listeners to it
   var cue = cues[i];
   addCueListeners(cue);
   ...
 }

function addCueListeners(cue) {
  cue.onenter = function(){
    console.log('enter cue id=' + this.id);
    // do something
  };
  cue.onexit = function(){
    console.log('exit cue id=' + cue.id);
     // do something else
  };
} // end of addCueListeners...
```

SHOWING REAL EXAMPLES OF EVENT LISTENERS

Here is an example at JSBin that shows how to listen to `cuechange` events:



HTML track descriptions

Start listening to cuechange events for track 0 (English subs)
Start listening to cuechange events for track 1 (German subs)

```
cue change: text = Auf der linken Seite sehen wir...
cue change: text = Auf der rechten Seite sehen wir die...
cue change: text = ...die Enthaupter.
cue change: text = Alles ist sicher. Vollkommen sicher.
cue change: text = Emo?
cue change: text = Pass auf!
cue change: text = Bist du verletzt?
```

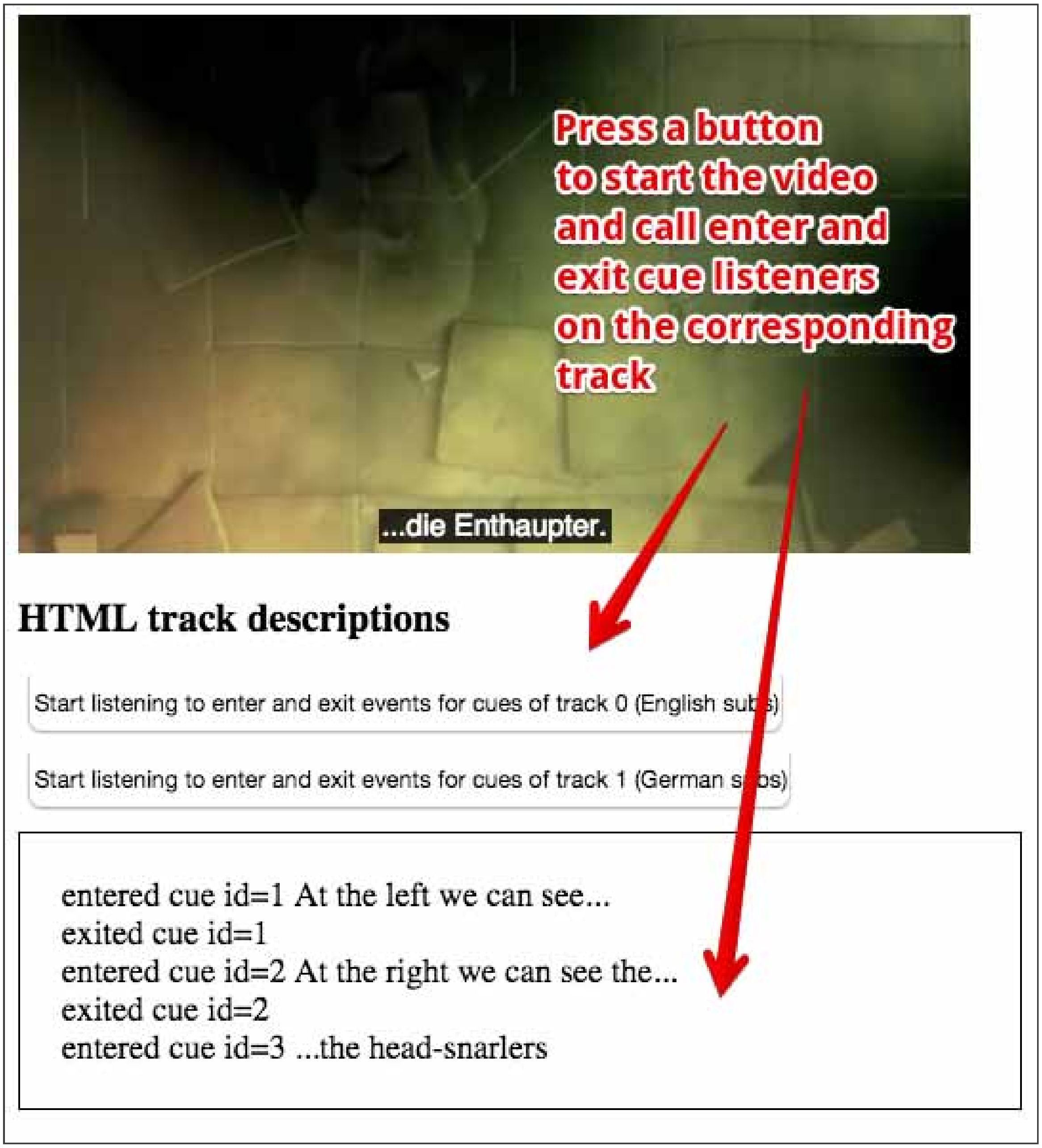
Press one of the buttons to display cue content in sync with the video

Source code extract:

```
function readContent(track) {
   console.log("adding cue change listener to loaded track...");
   trackStatusesDiv.innerHTML = "";
   // add a cue change listener to the TextTrack
   track.addEventListener("cuechange", function(e) {
      var cue = this.activeCues[0];
      if(cue !== undefined)
         trackStatusesDiv.innerHTML += "cue change: text =
" + cue.text + "<br>";
   });

   video.play();
}
```

And here is another modified version of this example at JSBin, that shows how to use `enter` and `exit` events on cues:


Press a button to start the video and call enter and exit cue listeners on the corresponding track

HTML track descriptions

Start listening to enter and exit events for cues of track 0 (English subs)
Start listening to enter and exit events for cues of track 1 (German subs)

```
entered cue id=1 At the left we can see...
exited cue id=1
entered cue id=2 At the right we can see the...
exited cue id=2
entered cue id=3 ...the head-snarlers
```

Source code extract:

```
function readContent(track) {
   console.log("adding enter and exit listeners to all cues of this track");
   trackStatusesDiv.innerHTML = "";
   // get the list of cues for that track
   var cues = track.cues;
   // iterate on them
   for(var i=0; i < cues.length; i++) {
      // current cue
      var cue = cues[i];
      addCueListeners(cue);
 }
video.play();
}

function addCueListeners(cue) {
   cue.onenter = function(){
      trackStatusesDiv.innerHTML += 'entered cue id=' + this.id + " "
                                  + this.text + "<br>";
   };
   cue.onexit = function(){
      trackStatusesDiv.innerHTML += 'exited cue id=' + this.id + "<br>";
   };
} // end of addCueListeners...
```

KNOWLEDGE CHECK 1.2.5

What conditions are necessary for a video to fire events on a particular track?

○ The track must be loaded and the `mode` property of its TextTrack object must be "hidden" or "showing". Of course you have to define event listeners too in order to do something interesting.

○ No particular conditions, just add event listeners and you'll be good.