Overview

- A JavaScript library for multimedia web documents taking advantage of HTML5 and CSS3
- Using the relevant features of SMIL to bring timing, synchronization, and interaction to HTML documents

Example

HTML document:

```html
<script type="text/javascript" src="timesheets.js"/>
<link href="banner.smil" rel="timesheet" type="application/smil+xml"/>
<div id="banner">
  <img src="image1.png"/>
  <img src="image2.png"/>
  <img src="image3.png"/>
</div>
```

Timesheet (banner.smil):

```xml
<timesheet xmlns="http://www.w3.org/ns/SMIL">
  <seq repeatCount="indefinite">
    <item select="#banner img" dur="3s"/>
  </seq>
</timesheet>
```

Features

Timesheets.js provides:
- synchronization of HTML content with audio/video objects
- content-based navigation
- user interaction
- custom extensions

Typical Application

A videotaped conference with slides and table of contents

More Applications

- Captioned video
- Slideshow
- Annotated audio
- Web documentary
- On-line radio archive
- Animated / interactive graphics
- and more...

Timesheets.js and Web Languages

- HTML5: structure, text, `<video>`, `<audio>`
- SVG: 2D graphics, animations
- CSS3: transitions, animations
- Timesheets.js: timing, synchronization, interaction

Main Contributions

- A new approach
- Document editing as opposed to application development
- Extensions to the W3C SMIL Recommendation
- Synchronization with HTML5 `<audio>` and `<video>` elements
- 3-state activation (idle, active, done)
- Timesheet engine
- Timing model compatible with continuous media
- Event-friendly implementation
- Extensible framework
- Generic components for multimedia documents
- API and events to build applications on top of the timing engine

Possible Workflow

Template-based Authoring

DTD-aware authoring

Structured view

Media and fragments sharing

HTML5 Authoring

Time Editor

HTML5 Publishing

HTML5 Player

(Web browser + Timesheets.js)

Key Benefits

- Separating content (HTML) / presentation (CSS) / timing (SMIL)
- Native rendering in all browsers, including mobile devices
- Stable syntax: W3C Recommendation
- Declarative user interactions (no JavaScript code to write)
- No dependency: usable with any development framework
- Usable by non-developers
- Extensible by web developers

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http://wam.inrialpes.fr/timesheets/
fabien@mozilla.com vincent.quint@inria.fr cecile.roisin@inria.fr