AcroTeX.Net

The rmannot Package
Demonstrating Event Cue Points

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A source file containing the example presented in this article is attached. Open the attachments panel (by clicking on the red link) and save to your local computer. There is a link on the AeB Blog page to download the FLV file (`driving.flv`) used in this article. The source code attached to this document has sample code for embedding the FLV rather than streaming it, as this article does.

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1. Event Cue Points

This is the second article on the topic of cue points. Please review the first article, titled *Demonstrating Navigation Cue Points*.

Event cue points are used to trigger ActionScript methods when the cue point is reached, and let you synchronize the video playback to other events within the Flash presentation.

The Acrobat version of event cue points allows us to execute JavaScript on PDF side instead of ActionScript on the SWF side. (Recall that a FLV is played by the embedded `VideoPlayer.swf` player that ships with Acrobat.)

The movie, seen on the next page, was created with the following code,

```
\resizebox{.67\linewidth}{!}{%
    \rmAnnot[url,poster=aebmovie_poster,
        cuepoints={\myCuePoints}]{320bp}{240bp}{driving}}\\[6bp]%
    \textField[\BC{}\Q{1}\Ff{\FfReadOnly}
        ]{txtCues}{.67\linewidth}{11bp}
```

We use the `url` key to signal to `\rmAnnot` that the video file is external, on the web. The new part is the inclusion of the `cuepoints` key-value pair; in the code above, see `cuepoints={\myCuePoints}`. The `\myCuePoints` command is user-defined in the preamble (or anywhere before first use). For the `driving.flv` video, which is the video to be played in the rich media annotation for this document, `\myCuePoints` are defined as follows:

```
\def\myCuePoints{%
    {type=event,name=Start,time=0,action={\wrtTxt{Alexander drives a car}}},%
    {type=event,name=BackUp,time=17651,action={\wrtTxt{He stops and backs up}}},%
    {type=event,name=Stop,time=46613,action={%
        \wrtTxt{Alexander parks};
        var timeout=app.setTimeOut('\wrtTxt{}',2000);
    }}%
}
```

The value of the `cuepoints` key is a *comma-delimited* list of key-value pairs. Note the comment characters (%) after the comma of each cue point. It is important to have the comment character because of the crude way of parsing comma-delimited list, this may be fixed in the future.

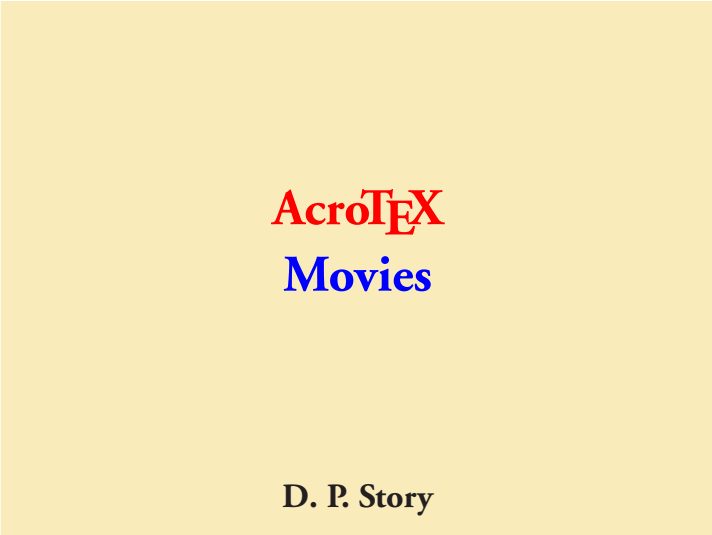
The original movie, `driving.mov`, was converted to a FLV video using the **Adobe Media Encoder**, and at that time the cue points—event cue points—were defined. The encoder has a feature for saving a copy of the cue point data as an XML file, it is this file that I used to set the cue point data in the `\myCuePoints` command.

Let's look at one of these cue points:

```
{type=event,name=BackUp,time=17651,action={\wrtTxt{He stops and backs up}}},%
```

The keys recognized by the rmannot package are `type`, `name`, `time`, and `actions`. The value of `type` may be either `nav` (for navigation) or `event`. Each cue point, occurring at a specific time, is assigned a name. The name is given when the file is encoded; the name and time data is written to an XML file for later use. The value of the `actions` key is JavaScript code that is executed when the cue point is reached.

Before continuing with this discussion, take a look at the example. Click on the rich media annotation below.



The action for each cue point is simple, a message is written to the text field directly beneath the movie. The action, `action={\wrtTxt{Boy slides down}`, for example, writes the message to the field when the boy slides down the slide. The command `\wrtTxt` is a convenience command defined as

```
\newcommand{\wrtTxt}[1]{this.getField("txtCues").value="#1"}
```

The cue points are of an event type. Unlike navigation cue points, you cannot use the arrow buttons to move from one cue point to the other the way you can for navigation cue points. The left arrow does rewind the movie to the beginning, but the right arrow does nothing.

Now, I simply must get back to my retirement! ☺