

Device Independent Multimedia Authoring

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The needs of your company/organization in the field of device independent authoring.

CWI is a research organization, so in addition to disseminating research results, we wish to ensure that our research remains relevant to device independent authoring, rather than driving the needs of the area.

Topics that you would like to have addressed in the workshop.

We would like to see the issues around accessibility and multimedia discussed. We see these as applicable in two areas: first, the presentation of (legacy) HTML documents to a heterogeneous set of end-users and, second, the creation of new material with the inclusion of additional information for facilitating the presentation creation and/or conversion processes.

In addition to issues around the content of the document, we would like to see implementation issues discussed. In particular, the relative advantages and disadvantages of client-side versus server-side adaptation of documents, and the potential role of additional intermediary processing for small memory, narrow bandwidth, small CPU client devices, such as WAP.

Your general expectations on the outcome of the workshop.

We would expect to obtain a clearer understanding of:

- the needs of multimedia content providers;
- the state of the art in authoring device independent documents in the commercial world;
- current unsolved problems, and to what extent the current SMIL 2.0 specification can supply solutions to these in the short term (as part of our contribution).

We would like to initiate a common approach for device independent authoring across different W3C formats that goes beyond the current situation of shared elements across specifications, such as HTML's accessibility attributes, the SMIL switch in SVG etc.

Your potential contributions to the discussion, including any specific proposals or suggested solutions.

Also for multimedia, there is a need to create presentations in presentation-independent forms and have the final form(s) generated from the base document. We can input our expertise on the specific requirements for multimedia in automatic document generation. In addition, we have experience in processing multimedia documents in a Web context

in general and related issues within SMIL 2.0 in particular.

We can explain the use of alternative media for devices where text is inappropriate. In addition, different sorts of meta-data can be incorporated into a presentation-independent base document, and device/user-specific presentations can be generated from this base document, using the information captured in the meta-data.

In addition, we can explain the advantages of incorporating timing as one of the dimensions of variation in a presentation. For example, adding temporal variations within HTML, using e.g. HTML+SMIL, can allow different types of trade-offs in a presentation.

Background on CWI's Multimedia and Human Interaction group

The rest of this position paper provides some relevant background material on the group.

The CWI Multimedia and Human Interaction group has an established research history in device and platform independent authoring of networked multimedia documents [1]. This culminated in the participation in the W3C SYMM working group in the development of SMIL. SMIL is an open and platform independent multimedia document format. The language includes the ability to select alternative media elements or presentation fragments to allow adaptation to specific device or user characteristics. One of the applications of this is to address accessibility issues by allowing the specification of the same content using alternative media types. Part of these features are now also used by other W3C specifications, such as the incorporation of the SMIL switch element in SVG [2].

Where only visual text is inappropriate, talking book devices can be used for providing a complementary audio rendering. In this case, where synchronization between the spoken version and the text version is required SMIL synchronization functionality can be used to specify a combined audio and text rendering of the HTML text [3].

Although SMIL provides a high degree of adaptivity, there are limits to the degree of flexibility one can achieve with a single delivery format. For example, for small memory devices, it is undesirable to send multiple presentation specifications. A more optimal solution is to provide server-side adaptivity and automatically generate presentations optimized for a specific device.

In more recent research [4], we have investigated means of automatically generating multimedia presentations tailored to specific device and user requirements. An important aspect of this research is finding appropriate levels of document and presentation abstractions.

Members of the CWI group organised a workshop on Multimedia and the Web at the WWW9 conference in Amsterdam.

[1]

See the group's publication page at <http://www.cwi.nl/~media/publications/>

- [2] Scalable Vector Graphics (SVG) 1.0 Specification. W3C Candidate Recommendations are available from <http://www.w3.org/TR/>
- [3] Daisy Consortium, **Daisy 2.0 Specification**
<http://www.daisy.org/dtbook/spec/2/final/daisy-2.html>, or National Information Standards Organization, **Digital Talking Book Standard (AQ)**
<http://www.niso.org/commitaq.html>
- [4] Lloyd Rutledge, Brian Bailey, Jacco van Ossenbruggen, Lynda Hardman, and Joost Geurts. *Generating Presentation Constraints from Rhetorical Structure In: Proceedings of the 11th ACM conference on Hypertext and Hypermedia*, May 30 - June 3, 2000, San Antonio, Texas, USA