

# Document Modeling and Multi-Modal Access Discussion Group

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## List of Attendees

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## Discussion Summary

The problem of document models and multi-modal access is a problem of the division of labour between the producer of the documents (the author) and the consumer (the reader). The more work the author performs, the easier it is for the reader to extract the desired information from the documents and to make available with different media and different modes of interaction between user and document. Adding information which facilitates multi-modal access can be time-consuming for the author and therefore undesirable. In order to encourage authors to accept this additional effort, they need to benefit directly from it.

The discussion group participants agreed on the fact that formal document models are required, but the pay-off will be in the long term only. In this context, XML is considered a useful format for expressing document models.

Some problems and questions that have been identified:

- Often, authors do not want to give users the freedom to define the output. This is one reason why stylesheet languages are not yet used to a large extent.
- Why should an author adhere to standard document models if he does not see a direct advantage of doing so? Adhering to strict document models usually results in overhead people want to avoid.
- Powerful tools are required to encourage people to use standard document models.
- To encourage people to use document models, the models need to be comprehensive enough to cover a wide area of applications. Ad-hoc document models often only represent slices of the full potential model.

- Is it possible to have document models that support a wide range of various output devices? Shouldn't we focus on media-dependent stylesheet languages rather than general ones?
- How to combine the different layers of document models? Semantics, physical structure etc.
- How do we deal with synchronization in multi-modal documents? The SMIL (Synchronized Multimedia Integration Language) standard has solved the problem for multi-media documents. It seems therefore that some multi-modal equivalent of SMIL is required.

## Conclusion

The most important points resulting from our discussion can be summarized as follows:

- We need powerful tools so that authors benefit directly from additional information they put into their documents.
- Formal document models are needed, but the pay-off is in the long term only.
- Multi-modal documents with synchronization among different media are needed. In other words, a multi-modal equivalent of SMIL.