The Negotiation of Multimedia Content Services in Heterogeneous Environments

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Abstract

Few number of works have discussed the problem of multimedia services negotiation in heterogeneous environments. This paper presents a new negotiation strategy of services in such environments. The negotiation protocol that we propose uses a method of profiling evaluation that we call the TL evaluation.

Keywords: Multimedia negotiation, SMIL modularization, CC/PP-RDF Model, document profiling, user profiling.

1 Introduction

Heterogeneous multimedia environments are characterized by the presence of a wide variety of client devices. In order to satisfy the needs of such different terminal types, the multimedia system must be adaptable to obey environment constraints. As we will see later in the paper, the XML model [2] and related tools represent the basis of our framework. It provides many advantages such as the clean separation between the content and its presentation and a common representation that can be communicated between different platforms and system entities. Our negotiation strategy defines the rules to apply when some steps are achieved. The main steps are:

- Preparing style sheets that can be used, this depends on the particular characteristics of the considered multimedia system, i.e. handled documents, network constraint, user preferences, etc.
- Ensuring an XSLT transformation processor.
- Preparing profiles of the content server potentially requested by the different clients.

1.1 A sub-section

This is just an example of subsection.

2 The proposed approach

The key idea for ensuring an efficient negotiation strategy lies in making the best effort to:

1. Find the appropriate content (a document or an existing document version if it exists); or

2. The transformation method permitting to create such content.

The served content must satisfy the user agent preferences and take into account the complete set of constraints presented in the global environment. We are not interesting in our work by messages routing, in [1] we find several strategies for ensuring routing in wireless environments. This is why some required fields (which are used to achieve that network service) are omitted.

3 SMIL approach

The 'SMIL 2.0' approach provides good descriptions of abstract functionality collections, either on the client side or on the server one. SMIL 2.0 offers a scalable framework for encoding several aspects of multimedia presentations. It specifies what media items will be presented, when, where and how. It also accounts for whom the media is played and, the most important, how the presentation is adapted for different end users on different contexts. This last point can be ensured, for instance, using the switch element and the test attributes. So we can specify that one or zero selections are to be made among a set of alternatives for inclusion at individual locations in the temporal hierarchy of a SMIL document.

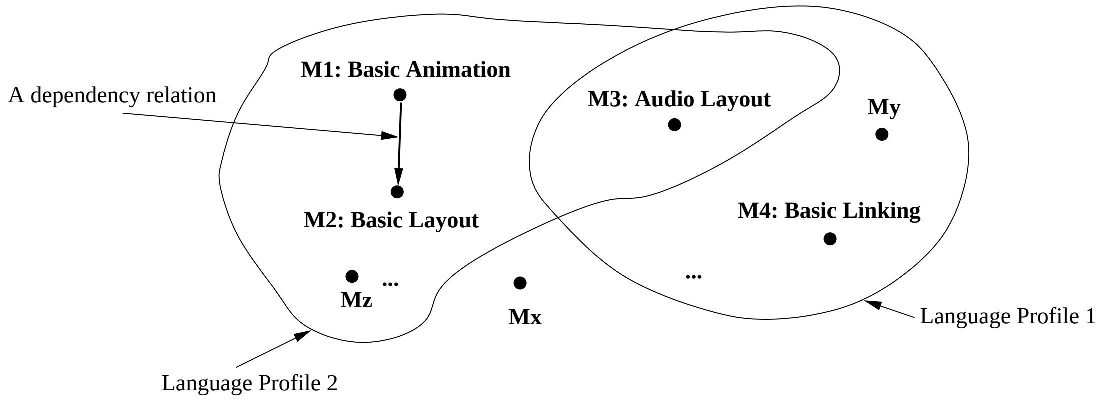

Figure1: SMIL profiling

4 This is a section for special characters

I try here to give some special characters, to show how my StyleSheet supports them: é ê è ï î à á â ç ô ù û | _

4.1 This is a subsection

no content

4.1.1 This is another subsection, to show that my stylesheet supports subsections levels

no content too!

References

[1] Tayeb Lemlouma, *Routing in Mobile Ad Hoc networks* , Master Thesis, Computer Science Institute, USTHB University, Algiers, Algeria, October 2000.

[2] W3C, *Extensible Markup Language (XML) 1.0, W3C Recommendation* , http://www.w3.org/TR/1998/REC-xml-19980210, 10 February 1998.