

Common Multimedia Ontology Framework

Athens, Thursday, 7 December 2006, 16:30 - 18:30

SAMT 2006, Divani Palace Acropolis Hotel

Room: Socrates

Present

Name	Affiliation	Email address
Paola Hobson	Motorola	paola.hobson@motorola.com
Yiannis Kompatsiaris	CERTH-ITI	ikom@iti.gr
Tasos Gounaris	CERTH-ITI	gounaris@iti.gr
Raphael Troncy	CWI	Raphael.Troncy@cwi.nl
Lynda Hardman	CWI	Lynda.Hardman@cwi.nl
Michael Hausenblas	Joanneum Research	michael.hausenblas@joanneum.at
Tobias Burger	Salzburg Research/Deri Innsbruck	tobias.buerger@salzburgresearch.at
Michaela Spagnuolo	IMATI-CNR Genova	spagnuolo@ge.imati.cnr.it
George Vasilakis	CERTH-ITI	vasilak@iti.gr
Marios Pitikakis	CERTH-ITI	pitikak@iti.gr
Jenny Benois Pineau	LABRI	jenny.benois@labri.fr
Oscar Celma	Music Group, UPF	oscar.celma@ima.upf.edu
Lyndon Nixon	Frei Universitat Berlin	nixon@inf-fu-berlin.de
Susanne Boll	Univ of Oldenburg	susanne.boll@university-oldenburg.de
Chrisa Tsinaraki	Tech university of Crete	chrisa@ced.tuc.gr
Vassilis Tzouvaras	National Technical University of Athens	tzouvaras@image.ntua.gr
George Petasis	NCSR "Demokritos"	petasis@iit.demokritos.gr
Thomas Franz	University of Koblenz-Landau	franz@uni-koblenz.de
Richard Arndt	University of Koblenz-Landau	rarndt@uni-koblenz.de

1 Introduction

The meeting objectives are to discuss progress in the multimedia ontologies informal group, and discuss proposals for a harmonised framework.

2 Current status of documents

There were 15 contributions to the call for requirements. The document "Analysis of the contribution to call for a common multimedia ontology framework requirements" is available on the aceMedia web site

http://www.acemedia.org/aceMedia/reference/multimedia_ontology/index.html.

Most contributions described existing ontologies which have specific objectives including annotation, storage, reasoning, context, retrieval, personalisation, filtering, analysis, workflows and tools. There are also multimedia upper ontologies and a multimedia core ontology. Harmonisation proposals should address the requirements gathered during this call.

The framework requirements are for

- media description
- representation of content structure
- representation of content description
- other needs such as provenance details

Harmonisation proposals included

- modularisation
- ontology cross-domain linking
- harmonise with existing core ontologies and propose extensions where needed
- development of a common upper ontology
- compliance with standards

The proposals to be made during this meeting will need to show how they can address these requirements.

3 Multimedia Semantics XG

Raphael described the activities W3C Multimedia Semantics Incubator Group.

This group will continue until May 2007. There are currently 33 participants.

The objective is to see how Semantic Web technologies can be used in practical multimedia applications. The XG charter is available on the web.

<http://www.w3.org/2005/Incubator/mmsem/>

4 Related standardisation activities

There are some activities ongoing in the US including the IBM Large Scale Concept Ontology for Multimedia Understanding, and US library of congress Metadata for Images in XML Standard - MIX (NISO Data Dictionary: Technical

Metadata for Digital Still Images). The latter refers mostly to multimedia technical metadata rather than semantic metadata.

Industry groups which could be users of content metadata include Open Mobile Alliance (OMA) which has a dynamic content delivery work item which requires annotation to determine what to send to whom, and the Digital Living Network Alliance (DLNA) whose work item on media management requires media description.

We need to be aware of external activities to know where we might need to propose a position in future. We noted that industry groups are sometimes reluctant to adopt W3C standards due to the intellectual property conditions.

5 Proposals - ideas for common framework

5.1 Integration of domain and application knowledge in MPEG-7/21 in the DS-MIRF framework - Chrisa Tsinaraki

DS-MIRF proposes an OWL upper ontology which fully captures the MPEG-7 MDS, and extends this with domain ontologies for soccer and formula 1.

It addresses the requirements as being standards compliant (MPEG-7/21), modular (interlinking of the DS-MIRF ontologies), and is rich enough to describe multimedia content.

5.2 Integrated multimedia/multilingual ontology - Tasos Gounaris

This proposal comes jointly from ITI and DFKI. The proposal was created with automated multimedia analysis in mind, taking into account practical constraints from projects that ITI and DFKI participated in (SmartWeb, K-Space and MESH). The Dolce information ontology pattern was followed, with extensions and re-use of existing properties.

Tasos presented an example of analysis of a multimedia document. The framework enables the entire document to be represented as well as the component parts (text, image, linguistic features etc). A multimedia context analysis model was presented.

The proposal is modular and can support extensions. Most of the usage requirements (e.g. analysis, retrieval etc) are supported. It can also support low level descriptors, and is compliant with MPEG-7.

The ontology will be made available on the web by the end of December.

5.3 Adding Formal Semantics to MPEG-7 Raphael Troncy and Richard Arndt

This proposal comes from K-Space jointly by CWI and Uni Koblenz-Landau. The motivation comes from multimedia analysis, semantic annotation, and web interoperability. The requirements addressed are MPEG-7 compliance, modularity and extensibility, semantic and syntactic interoperability, and separation of concerns.

The proposal starts from MPEG-7 but does not propose a one-to-one translation of descriptors into the ontology. The multimedia ontology is based on Dolce, extending two patterns (Decomposition and Situations, and Ontology of Information Objects). The main part of MPEG-7 MDS is covered, and further coverage of audio and visual parts is in progress.

<http://multimedia.semanticweb.org/ontology>

6 Discussion

During the discussion, we identified a new requirement that the ontology must handle multimedia documents where the content elements are represented within another framework and exist by reference (such as SMIL or html).

We also discussed issues of scalability, especially when trying to re-use frameworks which were originally created for other applications.

7 Next steps

We ask all proposers to send a 2 - 3 page description of their proposal, which should follow a template which Paola and Yiannis will propose.

Proposers will be asked to send their responses by 19 December. These will be put onto the web site

http://www.acemedia.org/aceMedia/reference/multimedia_ontology/index.html for everyone to review.

We will issue a Call for Comments on the multimedia ontology mailing list (and to wider lists where applicable), where interested parties can compare the proposals against the requirements they submitted previously. We will ask CERTH-ITI to aggregate the comments and fill in comments relating to requirements not commented on.

We will close the Call for Comments at the end of January 2007.

We will post the aggregated comments on the web page by the end of February 2007.

Proposers would be asked to review the comments and publish their response on the mailing list.

We will review progress during March 2007 and propose the next meeting based on the achievements.

8 Next meeting

Possibly to coincide with ESWC in Innsbruck 3 - 7 June 2007, or WIAMIS in Santorini - 8 June 2007.

Appendix : Agenda

Time		Topic	Person
16:30 – 16:40	1	Introduction	Paola
16:40 – 16:50	2	Current status of the documents	Yiannis
16:50 – 16:55	3	Multimedia Semantics XG	Raphael
16:55 – 17:00	4	Related standardization activities (e.g. OMA, DLNA).	Paola
17:00 – 17:50	5	Proposals – Ideas for Common Framework	Raphael, Chrisa, Tasos (10 mins each)
17:50 – 18:20	6	Discussion	All
18:20 – 18:30	7	Next steps - Next meeting	