Call for a Common Multimedia Ontology Framework Requirements

23 December 2005

1.   Introduction

As a result of the recent research trend in the convergence between Multimedia, Knowledge and Semantic Web technologies, the number of ontologies used for multimedia related research approaches, applications and systems has been significantly increased. A number of relevant research activities were presented during the Multimedia & Semantic Web workshop (http://www.acemedia.org/ESWC2005_MSW/) held as part of ESWC05 and as an outcome of this workshop, a Multimedia Ontology Meeting (http://www.acemedia.org/aceMedia/reference/multimedia_ontology/index.html) was organised as part of EWIMT 2005. The objective of the meeting was to discover if it is feasible to build an overall multimedia ontology, re-using existing work and current approaches, and to identify how multimedia ontologies could be harmonized and shared.

During this meeting it was agreed that a possible approach for harmonization is to aim defining a set of core features and specifications which is a "minimum set" for a multimedia ontology to be used as a basis for all multimedia related applications to build on and extend. A profiling approach could be followed where features are allocated to various hierarchical levels. Towards this objective, it was agreed to draft a document with requirements, definitions and objectives.

All interested organizations are invited to submit proposals by 24 January 2006 listing requirements in which we need multimedia ontologies and describing potential approaches for harmonization.

The results will be collated and a first analysis will be carried out. During a future meeting the requirements document will be finalized and a timeplan for a potential harmonisation activity will be decided.

2.   Requested items

Specifically, your submission should include a description of the following items relating to your applications :

- Introduction/summary
  - o   For what application are you using/plan to use a multimedia ontology (e.g. annotation, retrieval, media production, summarisation etc)?
  - o   Reference to your web site and/or publications describing the application

- **Requirements** of the "minimum set" involving the analysis of:

- o Scope and Usage including:
    - Annotation (e.g. ontologies used to store and manipulate metadata including reusability of metadata)
    - Analysis (e.g. ontology driven semantic analysis of multimedia content)
    - Reasoning (e.g. application of reasoning techniques to multimedia content)
    - Retrieval (e.g. content filtering and context-based retrieval)
- o Resources/Concepts including information on what concepts you need to describe, for example:
    - Media (image, video, audio, multimodal, 3D)
    - Media characteristics (features of all types, structures of all types,..)
    - Workflow for multimedia processing (production, presentation, computation,…)
- o Links to domain models - vocabularies;
- o Requirements for cross-domain linking, if applicable
- o Tools (e.g. annotation, reasoning)
- o Languages - standards
- o User preferences, policies, constraints

- **Identification of the** characteristics to be represented: this will probably include characteristics such as:
    - o features of all modalities, including 3D and audio
    - o Spatio-temporal and other structures
    - o High-Level annotation (Vocabularies - Domains)
    - o Workflow for multimedia processing (production, presentation, …)
    - o Algorithms

- **Harmonisation** approaches such as
    - o Profiling of requirements submitted[1]
    - o Examples and best practices
    - o Existing core ontologies
    - o Methodologies for the integration of application-specific models with core ontologies
    - o Methodologies for the integration of domain models with core ontologies

3.   Submission procedure

Please send your contributions by January 24, 2006 to:

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[1] If you have any experience with profiling of ontologies, please describe how this was done as well as lessons learned and give references if available.