A User Centered Annotation Methodology for Multimedia Content

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Abstract. Fully automated solutions for semantic annotation of multimedia content still do not deliver satisfying results. Most manual ontology-based annotation approaches are not suitable for end users who are not experienced with navigating huge ontologies or extending the ontologies used to annotate. We thus present an annotation methodology which supports the user in the aforementioned tasks. This lowers the entry-barrier for non-experienced users to produce ontology based annotations and thus could be used in situations in which annotation should happen just-in-time during the creation of the media which is being annotated.

1 Introduction

In an increasing number of domains classification of media assets is becoming a growing challenge. With the trend towards re-use of content, both the development and consumption of media are demanding more accurate, accessible and flexible ways of listing, categorizing and showing relationships. Approaches for the annotation of media objects try to limit the so-called Semantic Gap [5], i.e. the large gulf between low level image features and high level concepts. These so-called high level semantics are typically derived based on the experience and background of the user. Thus most of the automated approaches are not delivering promising results.

Therefore we propose a manual annotation methodology which allows non–experienced users to annotate multimedia content using elements from an ontology in an easy way. The methodology combines several semantic–based approaches from the information retrieval domain (e. g. [2] or [3]) and recent proposals for end user–driven semantic content creation [1, 4] in one coherent framework: the Element **S**election and Element **A**ddition (SA) – **Methodology**.

2 The SA Methodology

The aim of the SA methodology is to support users in the process of manual annotation by providing aid in the selection of adequate ontology elements and in the extension of ontologies during annotation time. The methodology will be integrated in media production environments to be available just in time of the

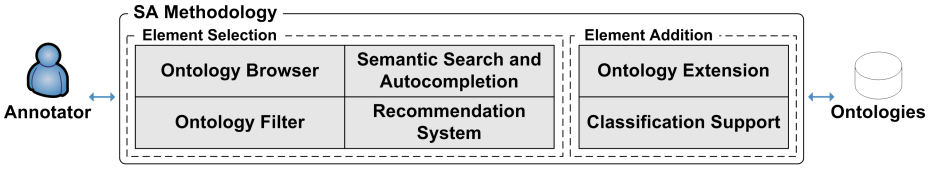

Fig. 1. SA Methodology Structure

creation of new media elements. Figure 1 depicts the structure of the methodology which consists of two parts: The *Element Selection* – part includes a set of components for the selection of ontology elements based on semantic techniques presented in [2] and [3]. The key idea is to help the user in finding adequate ontology elements by using semantic retrieval techniques and by automatically proposing ontology elements that could be relevant for annotating a specific resource.

The *Element Addition* – part consists of two components enabling a collaborative and work-embedded ontology engineering approach based on mechanisms presented in [1] and [3], and the classification mechanism used in [4]. These components provide the possibility to add missing elements to ontologies while working with them, to adapt previously added elements and to provide support for classification through a manual and a semi–automatic classification approach. For the addition of elements, the user is guided through the existing elements of the ontologies and for the classification, elements are proposed based on a recommendation system.

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