

The VIDEOSTAR Project

Theofilos Mailis, George Stamou, Stefanos Kollias, ICCS-NTUA

Before the VIDEOSTAR project (developed by the STAR CHANNEL in collaboration with National Technical University of Athens, 2007-2008, co-funded by the Greek Secretariat for Science and Technology), a large amount of audiovisual content was held by the Star Channel in many different storage forms such as films and videotapes. Storing this content was a hard task since apart from the physical space there was also the need for specific conditions that would prevent their damage from factors such as humidity, exposure to light and heating. Furthermore hand held archives, containing multimedia data related information, -such as their titles, the names of the actors and descriptions of their content were difficult to exploit. Specifically it was difficult to introduce new data, sort and search into a large list of more than 1000 audiovisual objects containing movies, TV-shows and series. The main target of the VIDEOSTAR project was the development of an innovative system that would allow the efficient management of multimedia content, providing mechanism for indexing and retrieval. To meet this objective various state of the art technologies were explored and adopted. The VIDEOSTAR project resulted in a set of methods and tools allowing for: Efficient storage of multimedia objects and (Meta) data related to them. In order to store the data related to a multimedia object two different approaches have been explored. In the first approach a relational database is used for efficiently storing and maintaining (backing up) multimedia related information. In the second approach the relational database is substituted by an Ontology Knowledge Base (Sesame in our case) that allows for semantically enhanced queries. The multimedia objects are stored in both cases as files in the system and their locations are held in the relational database (or Knowledge Base). Hand held and automatic extraction of metadata related to each multimedia objects. The VIDEOSTAR system has the ability to extract information related to each multimedia object such as its duration, the frames per second along with other kind of information like that located in the info part of a DVD storage unit. The system also gives its users the ability to add by hand data related to a multimedia object. A semantic query subsystem for accessing in an intelligent manner metadata related to each multimedia object. Metadata about each multimedia object are stored as the assertion part of ontology. This knowledge is combined with terminological knowledge that allows inferring information and performing semantically enriched searches on the set of data. As part of this subsystem a graphical query language has been developed that makes semantically enhanced queries easy for the user to perform. Personalized searches on the set of metadata. The system gives the user the ability to easily access the multimedia data in a personalized manner. The profile of each user is created dynamically based on the content of his queries along with some information initially collected about the user. The consortium consisted of 3 partners each contributing their own particular technical and business expertise necessary for the successful accomplishment of VIDEOSTAR's objectives. Each partner plays a specific role and its expertise significantly complements with the others in order to be able to deploy and demonstrate VIDEOSTAR's expected benefits. In the following, there is an overview of the consortium: New Television is the owner of Star Channel which has been broadcasting in Greece since December 1993 from its 40 owned broadcasting centers that cover 95% of the Greek population. It is located in Tauros Athens in its own installation of more than 5000 square meters which includes 4 studios for broadcasting news and entertainment shows. Star Channel has the broadcasting rights of more than 1000 titles of movies and movie series with total duration of more than 2.500 hours. NTUA, through the Image, Video and Multimedia Systems Lab (IVML) was the technical subcontractor responsible for the technological developments. The DISY INFORMATIONSSYSTEME GMBH (<http://www.disy.net>) was founded in 1997 from Karlsruhe Information Center (FZI) was a consultant in the whole development phase.