

# Interactive semantic video search with a large thesaurus of machine-learned audio-visual concepts



Video is vital to society and economy.

It plays a key role in the news, cultural heritage documentaries and surveillance, and it will soon be the natural form of communication for the Internet and mobile phones.

Digital video will bring more formats and opportunities and it is certain that the consumer and the professional need advanced storage and search technologies for the management of large-scale video assets.

Prominent market players enter this important area full force buying existing resources, rights, and available search engines.

Current search engines, however, all rely on keyword-based access leaving semantic access to the data to research.

**VIDI-Video** aims at boosting the performance of video search

by forming a 1,000 detector thesaurus aiming to localize the corresponding semantic concepts in the audio, visual or combined stream of data.

The approach is to let the system learn many, mostly weak, semantic detectors instead of modeling a few of them carefully.

These detectors will describe different aspects of the video content. In combination they will render a rich basis for interactive access to the video library.

Concrete outputs will be a video search engine, consisting of a learning part and a runtime system.

The learning part will consist of units for video processing, visual analysis, audio analysis, and learning integrated feature detectors.

The runtime system includes the same video, audio and visual units and the thesaurus of semantic concept detectors updated in performance after each round of training.

The system will have an ontology-based multimedia user interface.

The search engine will be evaluated on news broadcast search, video surveillance data, and cultural heritage documentary repositories.

*Funded under 6th FWP  
(Sixth Framework Programme)*

*Action Line: IST-2006-2.6.3  
Advanced search technologies for  
digital audio-visual content*

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## *Project details*

Project Acronym	VIDI-Video
Project Reference	045547
Start Date	2007-02-01
Duration	36 months
Project Cost	3.57 million euro
Contract Type	Specific Targeted Research Project
End Date	2010-01-31
Project Status	Execution
Project Funding	2.79 million euro

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