

VITALAS



Video & image Indexing and Retrieval in the Large Scale

VITALAS is an innovative project designed to provide advanced solutions for **indexing, searching and accessing large scale digital audio-visual content**. The strength of this initiative is the application of advanced technology to **real use-cases**, which reflect the expectations and concerns of major European multimedia archives.

Content:

Objectives of the VITALAS project

VITALAS plans to deliver a reliable and efficient **pre-industrial prototype**, allowing intelligent access to multimedia professional archives.

The original VITALAS technology will not only be applied in B2B applications, but will also reach out for larger public adoption, by addressing consumers' need for efficient and reliable multimedia content search engines.

VITALAS addresses three major challenges:

- **Cross-media indexing and retrieval** (automatic annotation)
- **Large scale search** techniques,
- **Visualisation and Context adaptation** (personalized services considering both on- and off-line).

VITALAS relies on the development of efficient and advanced informative content description methods, robust **machine learning** approaches towards automatic annotation and interactive content search.

The project will deliver a pre-industrial search engine designed and validated by audiovisual professionals exhibiting functionalities that allow **interactive indexing** and **semi-automatic annotation**, with interactive and **personalized access** to **large-scale multimedia content**.

Project Description

The VITALAS work plan relies on **3 core activities**:

- ▶ **Cross-media indexing and retrieval methods:** Efficient cross indexing methods will be developed through semi-automatic multimedia content annotation using several media inputs. VITALAS will put forward appropriate probabilistic retrieval techniques. **Advanced hybrid relevance feedback model** will be investigated to provide better user target retrieval. VITALAS will consider **machine learning** methods together with the development of more informative new content description methods.
- ▶ **Interactivity and Context adapting:** considering the preliminary use-cases expressed by our content provider partners, approaches which adapt the search space to the **user profile** and provide interactive functionalities to control the results are expected. **Interactive cartographies** and **video synthetic views** should allow users to give feedback, analyse and manipulate the results according to the task being achieved. Off-line user profiles and on-line personalisation will also be used to provide more user satisfaction by expressing users' subjective preferences.
- ▶ **Search scalability issue:** to enable search in very **large and heterogeneous databases**, the system validation will be performed on real and live databases, up to 10,000 hours of television archives and several tens of millions of political/societal news content images.

Specification and Validation based on professional use-cases:

The VITALAS system will be **defined and validated by major European multimedia content and archive professionals**, in conjunction with the academic and the industrial partners of the project. VITALAS expects to deliver **relevant and usable technology**. The evaluation issues will be carefully addressed through the definition and selection of test corpora, success criteria statement and external user trials.



Expected Results & Impact

The VITALAS project will develop new technological functionalities and services considering all media inputs (visual, textual and audio) to facilitate access to multimedia content in large databases.

The system functionalities will provide the core system and technologies for **intuitive multimedia search engine services**, whose development is currently constrained by technological bottlenecks.

The principle of VITALAS is that **professional usage validation** is an essential milestone before an extension to mass market applications (general public). To this end the project can rely on three leading European professionals in the field:

- ▶ **INA (France)**
- ▶ **BELGA (Belgium)**
- ▶ **IRT (Germany)**

Their expertise will not only be essential to validate the VITALAS technology and to apply it in **real case scenarios**, it will also be a strong indicator of user satisfaction and a gateway to the **technology adoption** by the rest of the community.

The project also foresees the organisation of **open tutorials** to invite the broad potential user community to interact with the VITALAS functionalities.

Ultimately, the VITALAS technology could also be adapted to **mobile platforms** with further collaboration with partners having expertise in mobile technologies and networked systems.



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CENTRE FOR RESEARCH AND TECHNOLOGY HELLAS	GR
Codeworks	UK
Agence télégraphique de Presse Belga SA	BE
Institut für Rundfunktechnik <i>(in the process of joining)</i>	GE

Vital Statistics

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