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Information Society and Media

## Future Search Engines for Audio-Visual Content



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DG INFSO Networked Audio-Visual Systems

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### R&D challenges

(cf Background document "Challenges of Future SE")

**Speed and Scale:** Handling of exponentially growing data volume and new users' behaviour and demands

Need new **architectures** taking a system approach to multimedia content, platform, context, changing usage patterns, broadband access;

Requirements of **dedicated environments**, e.g scientific search, medical, economic... applied to personal, professional and the Internet at large/ cultures and languages

Limitation of semantic web approach for **mobile search**, and need for global approaches encompassing content modelling, sensor modelling with mobile platforms;

Extension of search to **mixed media**, sensor captured and indexed data;

Automated indexing of user generated data;

**Contextual search**, Context awareness for result presentation (sensor data), Object fusion;

Metadata augmentation techniques;

Relevance for the users (new users' behaviours, new **social networks**)

Interoperability that provides access to protected (**DRM**) content;

Benchmarking for industry

....

**Need to bring together very wide spectrum of players**



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## IST Call SO 6.2.3

- Federating approach (of previous R&D, of on going initiatives..)
- Technologies for multimedia search;
- Tools and Methods;
- System approach and validation in realistic everyday user scenarios and variety of environments
- Relevance validations
- Large scale testbed target



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## Search Engines for Audio-Visual Content

### Objective:

- To provide **advanced solutions for organising, searching and accessing** large-scale, distributed digital audio-visual content and objects.
  - Support those projects that significantly **advance research capabilities and/or consolidate existing research work** and identify future orientations in the field.
  - Propose concerted action to have a **federating effect** on on-going work within relevant national initiatives for on-line access to digital content.



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## Focus

- **Technologies** to support the process of representing and interpreting, navigating and retrieving audio-visual content and other types of digital objects. Particular aspects to be considered include heterogeneous data fusion, optimised system integration and where applicable P2P technologies.
- **Methods and tools** aimed at higher levels of information harvesting, including automated knowledge discovery and extraction, annotation and summarisation, indexing and retrieval of all types of digital content (text, image, video, audio, 3D graphical objects etc.), including protected content.
- **Systems for adaptive search** by content and/or context to be tested in realistic everyday life settings, based on **relevance feedback** – including socially-derived relevance. This should encompass the integration and testing of search from a variety of sources based on mixed-media queries and the delivery of different media types on a variety of devices (including mobile terminals).



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## System aspects

- **Emphasis should be placed on future user and service search requirements** and on ubiquitous access, be it from a **fixed or mobile networks**, hiding complexity, as well as handling context and geographical awareness in multiple environments (e.g. local, corporate, open Internet).
- **Work should be placed in a systems context** with a clear industrial exploitation drive. Solutions should be validated with **targeted applications** in critical sectors, using large scale heterogeneous and networked audio-visual information repositories.



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## Call Information

- **Instruments:**
  - IPs, STREPs, CAs
- **Indicative budget:**
  - 33 M€; IPs: 40%; STREPs, CAs: 60%
- **Project negotiations (October)**
- **Engage budget by Nov 2006**



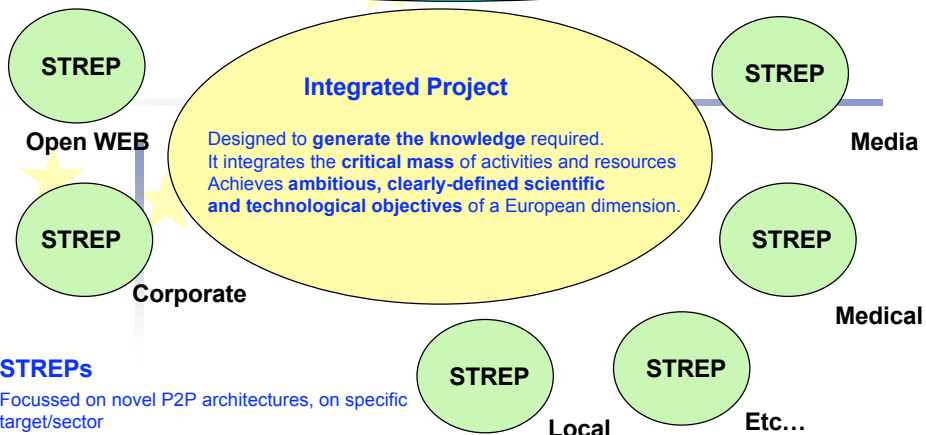
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### Potential Scenario for Search Engines for AV Content

#### Coordination Action

Promote and support the networking and co-ordination of research and innovation activities aiming to improve integration.

Cover the definition, organisation and management of joint or common initiatives, as well as activities such as the organisation of conferences, meetings, the performance of studies, exchange of personnel, exchange and dissemination of 'good practices', and the setting up of information systems and expert groups.





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**In Europe there is significant talent and know-how to deal with the challenges of search engines. To succeed these resources must be pulled together. Five conditions are key:**

- 1- R&D investment by the private sector needs to be substantially increased.
- 2- Disruptive thinking must become a permanent state of mind
- 3- Collaboration of an increased number of actors from different sectors becomes a condition of success
- 4- Innovation must be unleashed
- 5- Industry must be in the driving seat

*The European Commission is ready to support this challenge, grasp the future and pull Europe forward.*

## EC communication policy plans

- Review of the **eCommunications regulatory framework**, including the recommendation on relevant markets and a regulation on international roaming;
- Promote an efficient management of **spectrum**;
- Assess developments in **standardisation and interoperability wrt mobile TV services**;
- Extend the Film Online initiative to **Content Online** and offer a communication by late 2006;
- Address trust, privacy and security issues in a forthcoming communication on **EU security strategy** and in the communications on cybercrime, Spam and malware;
- Review the **consumer protection** regulatory framework, in view of new technical developments;
- Analyse the policy implications of convergence in cooperation with MS: **i2010 High Level Group**

<http://www.cordis.lu/ist/audiovisual/index.html>

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## FP7 € 54 582.1 million

- 1a: Competitiveness for growth and employment:
- The proposal provides new impetus to increase Europe's growth and competitiveness, recognising that knowledge is Europe's greatest resource. The programme places greater emphasis on research that is relevant to the needs of European industry, to help it compete internationally, and develop its role as a world leader in certain sectors. It will also for the first time provide support for the best in European investigator-driven research, with the creation of a European Research Council. Focus will be on excellence throughout the programme, a requirement if it is to play its role in developing Europe's global competitiveness.

