

CHORUS

EU - Coordination Action on Multimedia Search Engines



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Forward

- **About INRIA:**

- **INRIA French National Institute for Research in Computer Science and Control:** dedicated to fundamental and applied research in information and communication science and technology (ICST).
- INRIA is partner in **90** projects in the FP6 IST priority and is the **scientific coordinator** of **dozen** of them, strongly involved in the FP7 (27)

- **About Chorus:**

- Chorus is an initiative from the **D2 (Networked Media)** EC Unit
- **EC-FP6 Call6: 33 ME** dedicated to “Audio-Visual Search Engines” was born from the first consultation meeting (sept 2005 – Loretta Anania) when EU scientists were invited to brainstorm on challenges and priorities on non-textual search engines



Digital Content : From abundance to pollution?



- Information will continue to evolve towards more and more **multimedia content**. Volumes will explode.
 - 2006 “digital production”: **160 exabytes**, fuelled by user generated content
 - 6 fold increase expected by 2010, **990 exabytes** (pro + non pro)
- Variety of devices through different channels and models:
Integration of mobile devices (phone/camera/MP3, PDA/GPS/Wifi/3G, ...)
- Traditional distinction between consumers and producers will progressively vanish
 - Increasing portion of content will be produced by consumers or independent professionals: Blogs, podcasts, corporate sites,
 - In the professional area search and selection tooling will become the standard tool for accessing information.

=> **Efficient multimedia content search and access technologies are now crucial**



Explicit Knowledge

Eighty five percent of internet users use search engines to get to where they want to go

Typing “Google” is easier than remembering a specific website spelling, its toolbar is by far the most dominant interface to today’s WEB information.

Implicit Knowledge

Dr. J. Schwarz da Silva
Director, DG-INESO, European Commission

Google Recherche d'images

Images Afficher | Toutes les tailles

Resultats 1 - 18 sur un total d'environ 203 000 pour avocat (0,17 secondes)

Google Recherche d'images

Images Afficher | Toutes les tailles

Resultats 1 - 18 sur un total d'environ 530 000 pour voile (0,04 secondes)

**Content-based disambiguation,
Context awareness, Personalization ...
=> Content enrichment!**

Page de résultats: 1 2 3 4 5 6 7 8 9 10 [S'ouvrir](#)

belga NEWS WHEN YOU NEED IT

Photo-Agency, E.g. user= Public Relations Manager of KIA:
"... I want to be alerted whenever the KIA logo is used..."

QUERY: Whenever Search

Picture search results

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6250504 / ANNOVX 06/03/2007 14:54 BEL.GAIAFP SLOVAKIA-CRICKET-SPORT GENEVA	6227830 / ANMPSV 05/03/2007 14:56 BEL.GAIAFP SLOVAKIA HOCKEY STAR	6227783 / ANMFOO 03/03/2007 14:50 EPA SLOVAKIA EU FACTORY	6219456 / ANLTTT 01/03/2007 10:34 BEL.GAIAFP SLOVAKIA-INDUSTRY-KIA
6219441 / ANLTI 01/03/2007 10:32 BEL.GAIAFP SLOVAKIA-SKOREA-AUTO-COMPA	6219410 / ANLTOZ 01/03/2007 10:28 BEL.GAIAFP SLOVAKIA-AUTO-KIA	6219404 / ANLTOT 01/03/2007 10:27 BEL.GAIAFP SLOVAKIA-KOREA-KIA	6083234 / ANDZVL 09/02/2007 03:00 EPA USA CHICAGO MOTOR SHOWKIA

*Unwanted results....
Just because 'KIA' is part of the title/caption*

VITALAS

CHORUS AUDIO-VISUAL SEARCH

- Exponential growth of visual content, more than archivist's capacity of annotation
 - **But can we still see 'through the forest' ?**
- Traditional 'Journalistic annotation no longer meets user requirements'
 - **But post-editing of more 'conceptual' metadata is expensive/time intensive...**



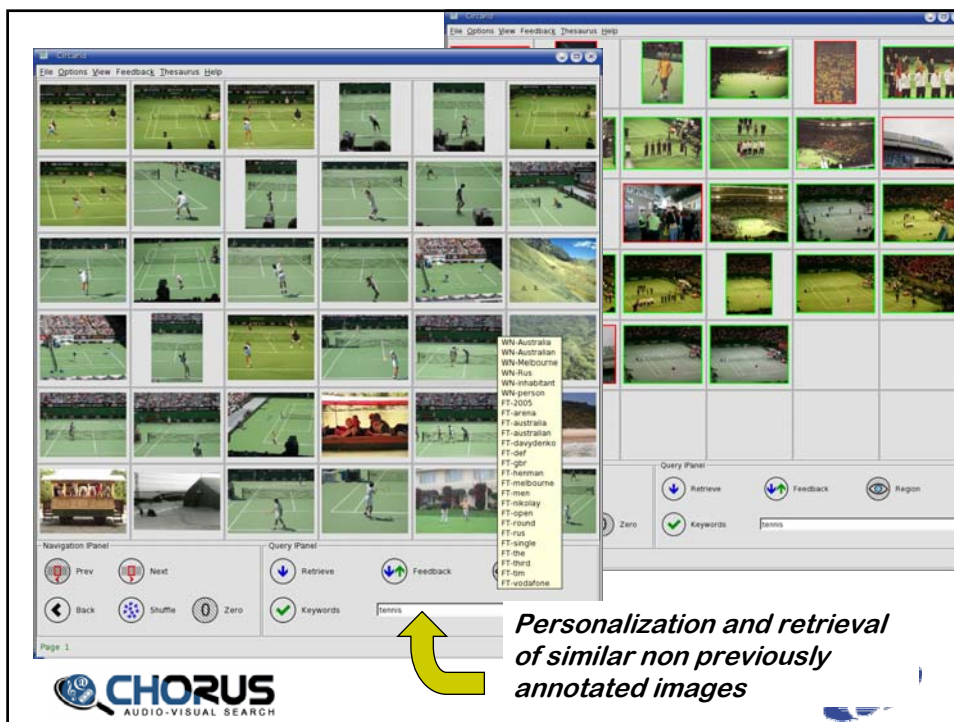
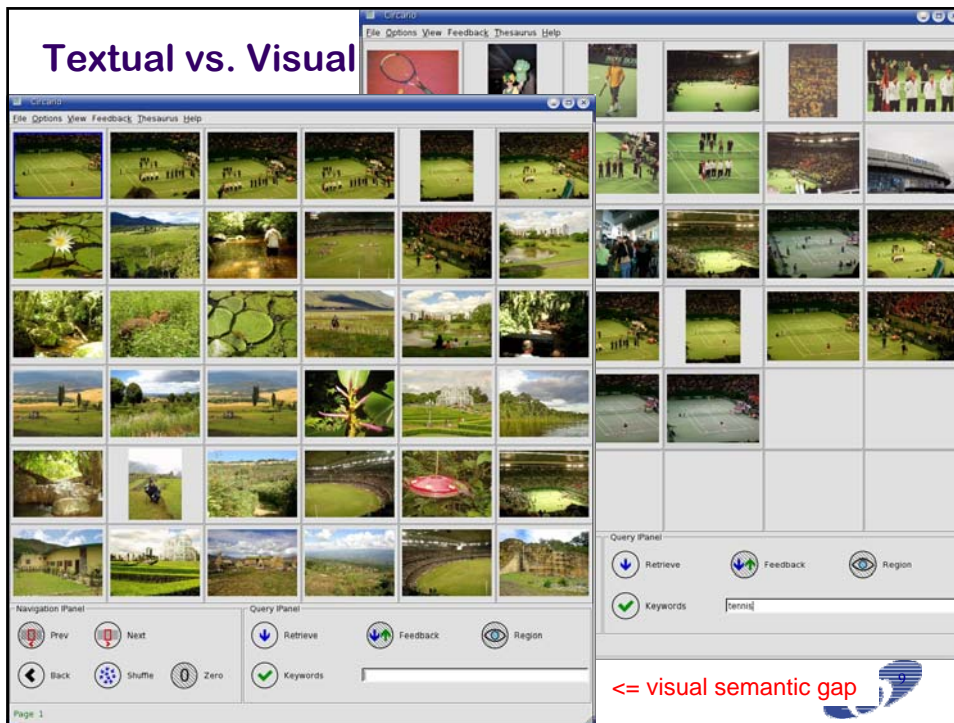
MISSED RESULT

=> IP-Vitalas use-case:
automatic conceptual object
annotation



Visual Search Engine IKONA

*Images courtesy of Alinari
(Oldest private European art photo archive)*



Copy detection-DRM

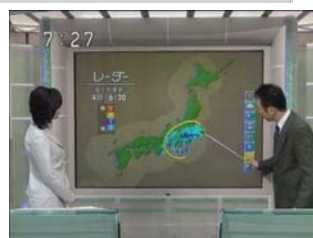
Eg: Application context: Youtube...



Detected copy



False Alarm



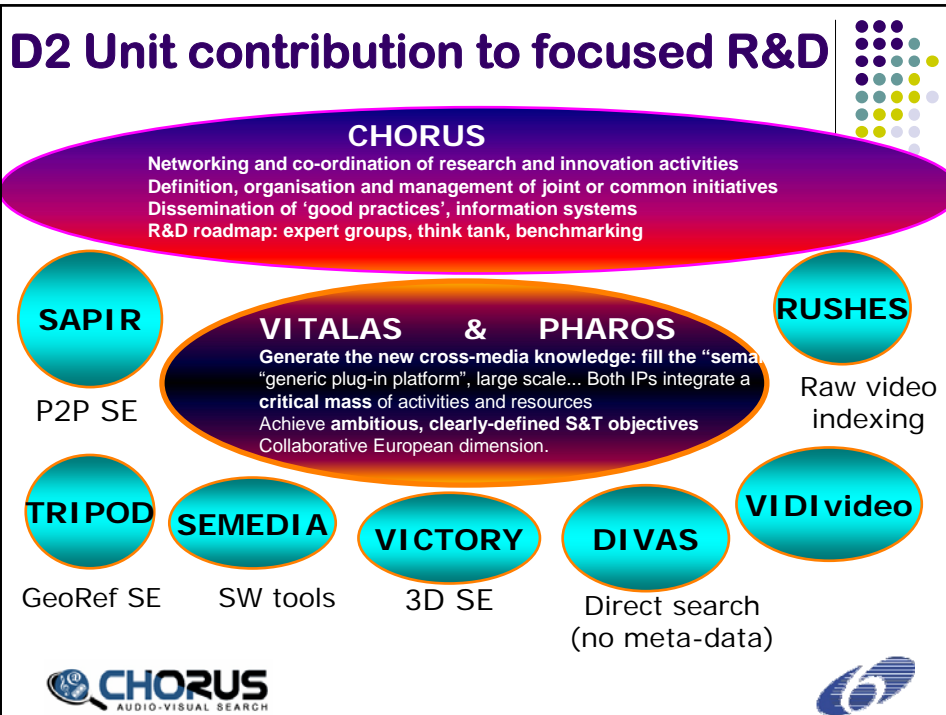
National Broadcasters Archive use-case (INA) Post-Production transformation



Composed video and broadcasted recently
by TF1
"Les duos de l'impossible" may 2005,
Director: Pullicino

Original video in INA archive
Mike Brant in "Laisse moi t'aimer" 1970





- ## CHORUS Objectives
- In the field of Audio-Visual Search Engines:
- Bridge the gap between *researchers view* (industry and academia) and the *new services* and applications *prospective* for every day life needs
 - Identify and derive *critical issues* and common technological aspects that need a *multi-disciplinary* approach, including socio-economic and legal aspects
 - Define a list of *cross-technology* critical issues in view of the 'search engine' area
 - Interaction with *standardisation* and *benchmarking* activities
 - Outcome: *roadmap and synthesis* including these multidisciplinary aspects, in coordination with the **Think-Tank**
- CHORUS** AUDIO-VISUAL SEARCH
- 14

1st year achievements



- Establishing the matrix of ongoing efforts:
 - Synthesis of current use-cases
 - Multimedia content indexing and retrieval techniques
 - Evaluation campaign => **need dedicated important European effort**
 - P2P and mobile search
 - Socio-E/Legal aspects
- Having the clearest picture of the **existing know-how and problems** will help to **identify the bottlenecks** before going a head in the Chorus roadmap activity and production.



Geneva Event on National Initiatives (Geneva – Oct 2007)



- **Quaero** (French Governmental Initiative)
 - **THESEUS** (German Governmental Initiative)
 - **iAd** (Norwegian Initiative) – Fast/Microsoft
 - **MultimediaN** (Dutch Initiative)
 - **IM2** (Swiss Initiative)
 - **Mundo AV** (Spanish Initiative)
- First time when these initiatives talk together and to the public*



What's next?

=> Focus on 3 WGs:

- WG1: all technological issues/investigations
- WG2: all user oriented issues, including uses-cases studies,
- WG3: Socio-economic and legal aspects

=> With the Think-Tank: Industry Vision to consolidate Gap Analysis, and the Chorus research community

- Brainstorm on news services?
- What are the future challenges and innovations in this regard?
- How to bridge these gaps (roadmap)?



Plan for future cooperation with Japan (PO)

- **EU-ICT, Lyon** (France) - Nov 08: “*Creativity and innovation*” Track session on search engines: “**New services and technology gaps**” – Chorus:
 - Major search technology providers (industry): Autonomy, Google, Exalead, ...
 - International participation from Japan is welcome: Grand Voyage, Information Explosion
- April 2009, **Call4** to support continuation of FP6 Call6 R&D investment in MM SE

=> Chorus2: Open participation for **mutual benefits** (through INCO budget - IPR secure),



Thank you

<http://www.ist-chorus.org/>

