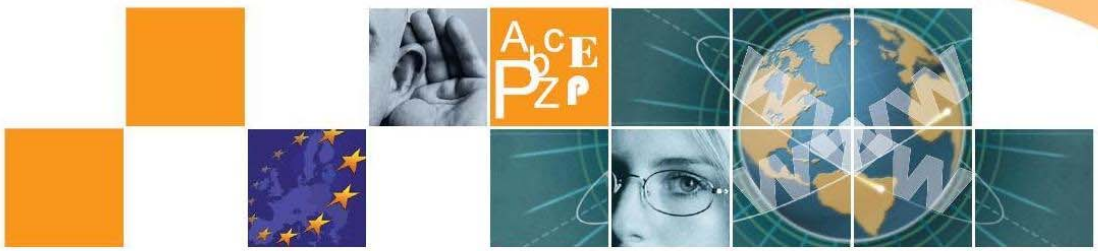

PHAROS: The multimedia search engine platform

Antonina Scuderi

PHAROS Business Director

Engineering Ingegneria Informatica SpA

Speakers

- *Antonina Scuderi* – ENGINEERING Ingegneria Informatica SpA, Rome - ENGINEERING is the coordinator of PHAROS Consortium

- *Alessandro Bozzon* – Web Models, Milan – member of the PHAROS Consortium

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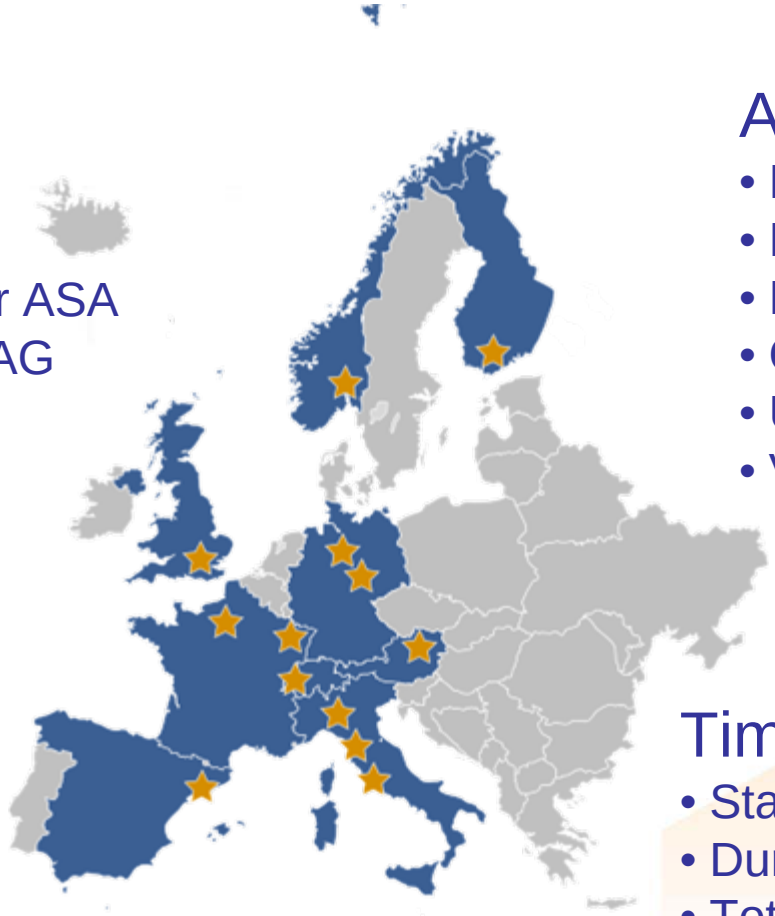
Partners and project key data

Industry:
- Engineering Spa
- Fast Search & Transfer ASA
- Sail Labs Technology AG
- Webmodels Srl



Academia:
- L3S Research Centre
- Fraunhofer IDMT
- EPF Lausanne
- Open University, KMI
- University Pompeu Fabra
- VTT Research Centre

Content and Service Providers:
- France Telecom
- Circom Regional

12 partners from 9 countries

Timescale and budget:
- Start January 2007
- Duration 36 months
- Total budget: €14.2m
- EC contribution: €8.5m

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Agenda

- PHAROS in a nutshell
- Interactive Demonstration
- How can you experiment PHAROS
- Questions and Answers

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PHAROS is not Google (1)

- "**Search**" is not limited to everyday experience of *googling* the web but it is now a must feature of business intelligence applications for the enterprise.
- "**Multimedia**" is a combination of text, audio, still images, animation, video, and interactivity content into a single form.
- "**Multimedia Search**" requires a structured representation of all important features present in all the media tracks of the content.

PHAROS is not Google (2)

- In Google (e.g. photos) multimedia search only works if someone has previously edited some textual description of the content, so Google knows what to search for.

- PHAROS analyses the multimedia content, automatically extracts features from it and associates them to it as “rich media” representations, which make the content contextually searchable.

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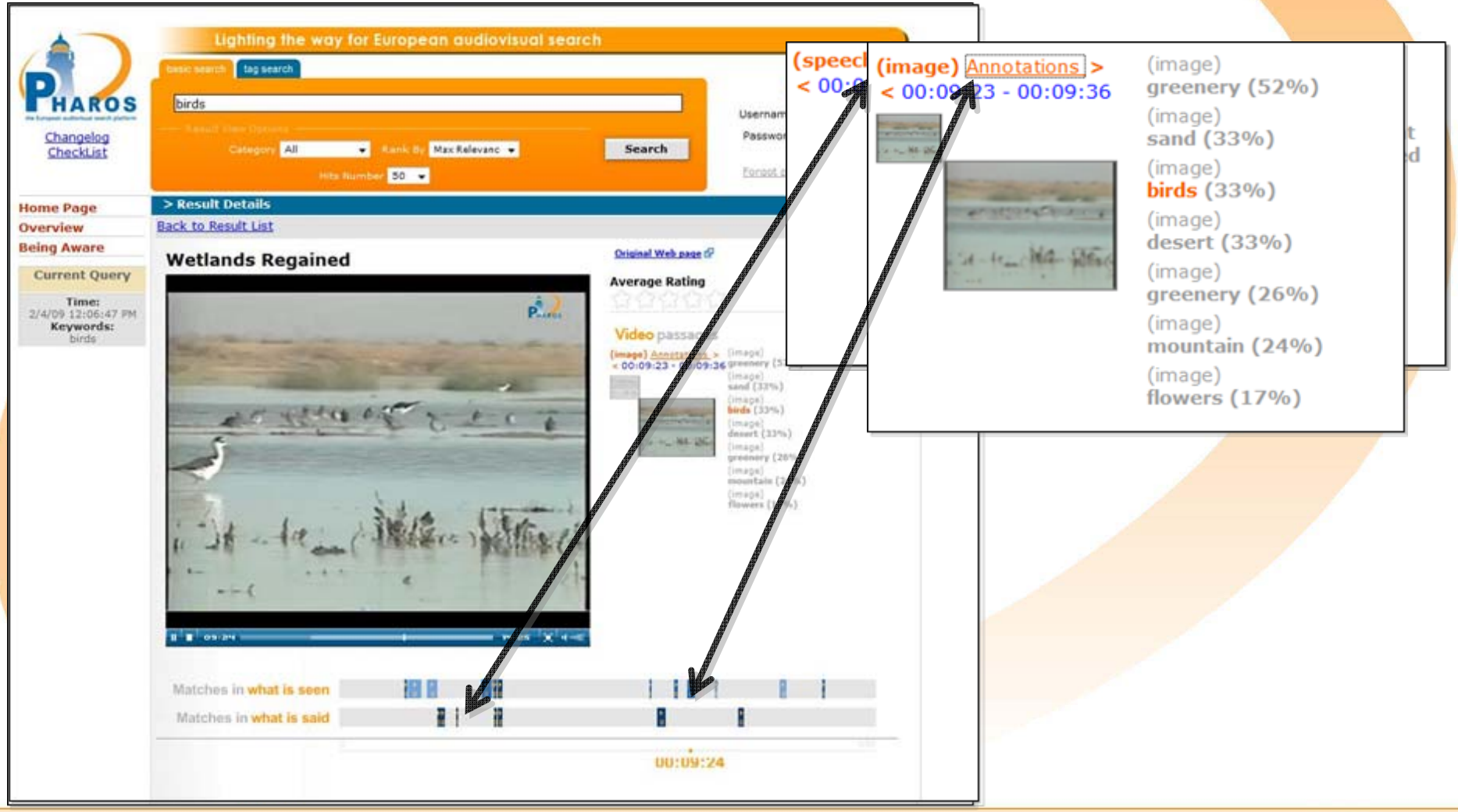
Example application: Video search



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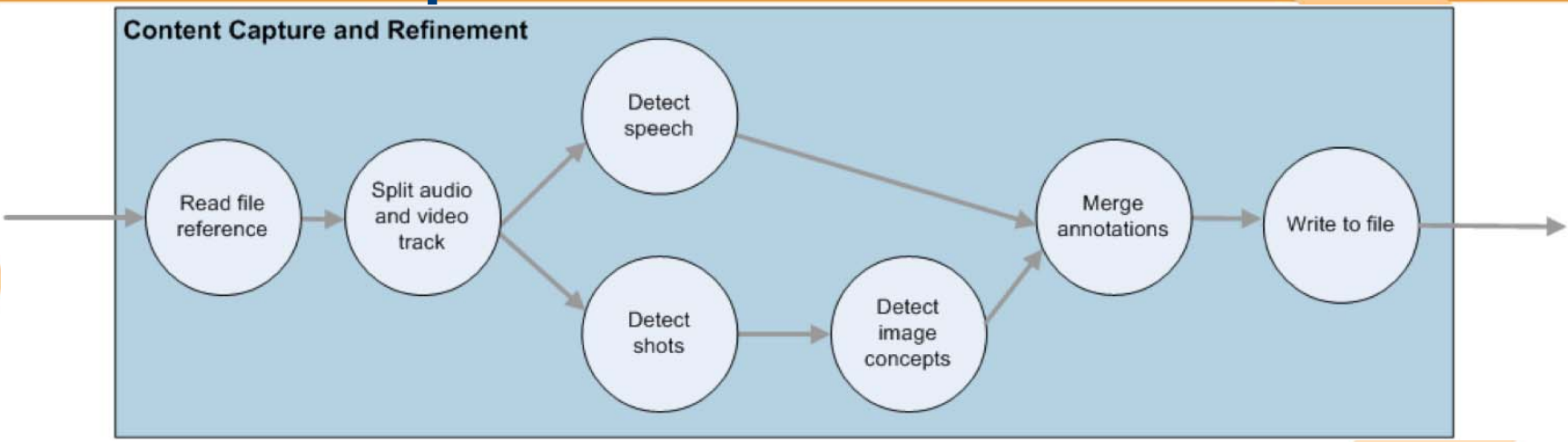
Content Capture and Refinement in PHAROS in previous example



In this example the content of a video is analysed:

- First of all is split into its audio and video track.
- Audio track is segmented, speech to text is performed and results is analysed.
- Video track is segmented by shots, each image in shots is analysed and associated to concepts.
- Information resulting from this analysis is merged into a unique annotation file associated to the video.

Indexing will take into consideration “rich media annotation” and will provide elements for subsequent search and the queries.

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PHAROS is a LEGO(TM) system

- PHAROS is like a “LEGO (TM)” system from which a System Integrator can select search functionality needed for business intelligence applications.
- This concept is intrinsic in PHAROS service architecture with web service and defined API interfaces. Adding a functionality that it is not yet present is easy (for example new annotators can be easily developed for specific needs).
- We did this exercise successfully by embedding a Face recognition service from 3rd party. The 3rd party actually did in a couple of weeks with the support of our PHAROS technical team.

PHAROS is a LEGO(TM) system: examples

Adding powerful personalization, to a B2C portal for community monitoring, and social analytics tools.

functionality of the **User & Social Information Storage** component as the user data are the most valuable and hard to delegate content.

Re-branding an existing search functionality with PHAROS, by superimposing a own interface

embedding Multimedia search into an existing portal: the service could be delegated to **Search Engines components** in PHAROS and integrated in a host application

Wishing to reuse the gateway software to various types of data sources.

Using the **Connectors components** PHAROS could support that either by integrating the service into the host application or by using the Connectors hosted by PHAROS.

Aggregating content from different providers while delegating the content registration and analysis process to PHAROS

by using the service provided by the **Content Registration & Rights** component in PHAROS

Having content annotated by PHAROS for a better search performed by existing search engine service

using annotators from the **Multimedia Annotation Library** and a personalised **Content Capture and Refinement** component in PHAROS

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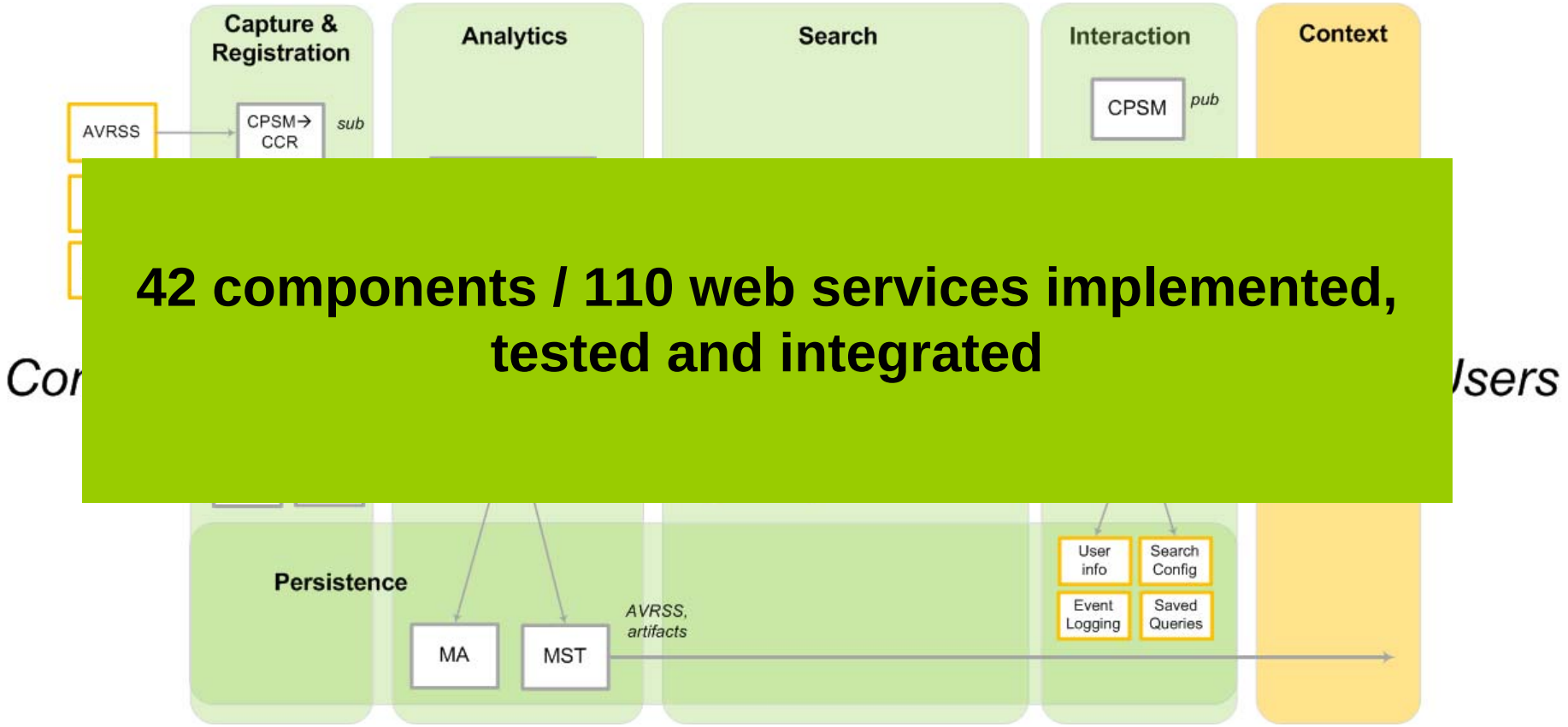
PHAROS: SOA Multimedia search platform (1)

- Built around a collection of reusable components with well-defined interfaces.
- Offering a tool kit to build search-driven applications and services
  - easy to build, customizable, adaptable to your specific needs;
  - extensible with plug-in (e.g. third-party) capabilities;
  - flexible and open to evolve and to be extended as application requirements change over time;
  - replicable to new application scenarios without having to rebuild a solution from scratch
- It is unique!

PHAROS: SOA Multimedia search platform (2)



42 components / 110 web services implemented, tested and integrated

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PHAROS for Enterprise Applications: examples

- **Enterprise productivity**: Efficient use of enterprise multimedia assets by making audio and video content searchable beyond text only
  e.g.: the YouTube of enterprise
- **E-learning**: Access for students to audio and video recordings by integrating multimedia search into e-learning applications.
- **Multimedia content portals**: Allowing users to search across metadata, user-generated tags, and automatically extracted metadata.
  e.g.: Searching sport events: find the penalties, find this player
- **Information federation**: Sharing of multimedia assets by publishing content metadata descriptions to search portals.
  e.g.: CIRCOM Regional?
- **Mobile search**: Combination of location based search with search using images and audio.
  e.g: This is the photo of the guy I have met at the Convention: who was he?
- **Multimedia editing**: Retrieval of multimedia content to be used for editing.
  e.g: Building a story supporting a news

PHAROS and your content: how does it work?

- By registering in PHAROS the publisher specifies the access rights associated to the content so that access after queries will behave accordingly
- Your system is federated with PHAROS in a trusted network.
- Your content is kept as it is, PHAROS will solve format or specificity related to Data Base or Content Management System in which it is stored
- Options:
  1. Content analysed at your premises
  2. Content injected in PHAROS and then analysed

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Example of PHAROS features and usage

- Demonstration by *Alessandro Bozzon* – Web Models

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PHAROS Federation Programme

- a vehicle for ”early adoption” that means
  - Starting to work with the Consortium members
  - Access to in-depth information about the project, not otherwise accessible
  - Participation to the Federation Day
  - Participation to Technology Transfer activities

open to students and to PHAROS FEDERATION MEMBERS

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Experimenting PHAROS

- The validation phase of PHAROS is now starting: it foresees its testing against requirements of use cases
- It will be complemented by feedback from experimental users of selected configurations open to external access
- Members of the PHAROS FEDERATION will have access to those configurations
- Those experimentations are essential to organisations willing to pilot PHAROS potential, preparing long term

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Advantages of joining

- PHAROS Federation members will have

1. the right to access the PHAROS Demonstrator and see how it works, evaluate and so on.
2. the chance to enact discussions about requirements with the project.
3. the right to propose to PHAROS some content to be annotated. The project will evaluate requests depending on available time and resources.
4. visibility of interfaces to PHAROS services on which a PHAROS-based application can be developed

The PHAROS FEDERATION Day

- A one-day event dedicated only to the Federation members.
- Objective: technology transfer to potential early adopters. A number of scenarios presenting the possible usage of PHAROS will be presented in order to allow potential adopters to become familiar with the PHAROS services and benefits.
- Morning: focus on the PHAROS scenarios and demonstration
- Afternoon: Federation members will have the opportunity to present themselves, their needs and what are they expecting from PHAROS.

http://www.pharos-audiovisual-search.eu/res/files/SummerSchool/Pharos_Summer_School_announcement_Federation1.pdf

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The PHAROS Summer School

- A training program of five full days
- To engage students, researchers, and practitioners
- Topics explained by top international experts in the field from both academia and industry.
- information retrieval, indexing and relevance computation, knowledge extraction from audiovisual data, query processing on audiovisual data, content-based search, social search, industrial and business scenarios for audiovisual search.

Participants will experience a close-by view of the PHAROS platform and its technological components and learn how to develop advanced audiovisual search applications in practice. A set of laboratory and hands-on sessions will guide the participants through the main technical aspects of a multimedia search platform.

http://www.pharos-audiovisual-search.eu/res/files/SummerSchool/Pharos_Summer_School_announcement_Federation1.pdf

“You” are invited to join!

- CIRCOM Regional is a member of the PHAROS Consortium
- Its members can join the PHAROS Federation:
  11 of you already in out of a total of 17 members
- Experimental use is not open to everybody, but only to active members of the PHAROS FEDERATION: **therefore please join!**
  - The usage of the PHAROS platform by broadcasting professionals is a high priority
  - We welcome your input to refine our understanding of specific requirements of CIRCOM Regional associates

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How to join

- Usual procedure is through the PHAROS website:

http://www.pharos-audiovisual-search.eu/pharos-federation/expressing.html

- Reference module is in your leaflet
- Come and discuss directly here at the Convention with Alessandro and I
- Requests for membership will be submitted to the Project Board and the notification will be delivered to the requester within fifteen days.

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Light involvement in PHAROS

- **PHAROS @ LinkedIN**: a community of interest where discussing and sharing opinions about Multimedia Search
  - 269 members to date
  - A Forum on the PHAROS initiatives update, for open discussion, with white papers and promotional information to be posted.
- **PHAROS newsgroup** created to include all the contacts that do not want to join the LinkedIn group or do not have a LinkedIn account.
  - About 100 contacts to date

Questions and Answers

- **Now it is your turn!**

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- **Thanks for your attention from the PHAROS team!**

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