



IMAGINATION

Image-based Navigation in Multimedia Archives

FP6 - 034626

**Call for participation in the Evaluation of the EU-funded
research project IMAGINATION**

Three evaluation phases:

Written comments after September 2006

2008 Workshop in Rome

2009 Evaluation Workshop in Rome

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Jan 31st, 2007





Call for participation in the evaluation

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1 EXPECTATIONS

In order to improve the research result of the project IMAGINATION we are looking for 6 to 8 users from the Wikipedia Community interested in the First World War and/or contemporary European politicians topics (preferably in both) who are willing to contribute with comments to our prototypes and are willing to participate in two user Workshops held probably in Rome in February, 2008 and February, 2009.

It is not necessary that these users have a strong technical background as we are looking for persons interested in the domains. These users should tell the consortium their opinions of concrete suggestions about the IMAGINATION prototype Web GUI. The users would also be free to make proposals for additional features. At the beginning of the project, the selected Wikipedia users should comment on the already compiled first version of GUI features of the system.

Later, when the first working prototype of the project is available, an evaluation workshop will be held, approx. in February, 2008. Preferably the same Wikipedia users should participate in this workshop, and evaluate the system. This evaluation would be a so-called formative evaluation, i.e., it is not about giving notes for the system, but about informally collecting new ideas from the users to improve the system.

Finally, at the project end, approx. in February, 2009, another workshop will be held, where a summative evaluation of the IMAGINATION system will take place. The same Wikipedia users should participate on this workshop as the ones that participated in the previous steps. This time, they should give points to the various system features.

It would be very important that at least 6 (and because of financial constraints most preferably exactly 6) Wikipedia users participate on the evaluation workshops. **The consortium cannot pay a fee to the participants but we will pay the incurred costs of the participants (travel, hotel, food etc.). The workshops will most probably take place in Rome.**

For the first (user requirements analysis) phase there is not limit on the number of the users, the more input we can get, the better. The users actually participating on the workshop should be, however, already involved to the user requirements analysis phase (commenting on the list of GUI features).

2 HOW TO PARTICIPATE

Persons interested in participating in the evaluation can send their application to nagypal@disy.net. The application should contain following information:

- Name and contact information
- Short description of the person and his/her interest in the project (max 0,5 pages)
- Declaration that she or he is interested to participate in all phases (2006-2008, two workshops)

It would be great if users could post also a brief description of how they see our system operating and what do they expect from the system (based on the short project description that follows). Half-a-page description would be enough, covering the following 3 major questions:

- Who is in your opinion the typical user of such a system?
- What would you look for in our system? (in some detail)
- Where do they see our system practically implemented and used in real life, some examples?

These questions can also be answered later during the first phase of the evaluation.

More information on the project, and also a project flyer is available at <http://www.imagination.org>.

3 PROJECT SUMMARY

The main objective of IMAGINATION is to bring digital cultural and scientific resources closer to their users, by making user interaction image-based and context-aware. Our ultimate aim is to enable users to navigate through digital cultural and scientific resources through its images.

IMAGINATION will provide a novel, image-based access method to digital cultural and scientific resources. It will reduce complexity by the provision of an intuitive navigation method. IMAGINATION will facilitate an interactive and creative experience providing intuitive navigation through images and parts of images.

To do so IMAGINATION will combine, apply and improve existing techniques to provide a new way of navigation through cultural heritage multimedia archives. It will exploit the context of resources stored in its knowledge space by combining text-mining, image segmentation and image recognition algorithms. This combination will cause a synergy effect and will result in semi-automatically generated, high-level semantic metadata. The focus of IMAGINATION is on indexing, retrieving and exploring images. The project will apply knowledge technologies and visualisation techniques for improved navigation and access to multimedia collections.

Comprehensive tool support (including an ontology editor and a semi-automated image annotation tool) will be provided, together with an easy-to-use web-based interface which visualises the contextualised content stored in the IMAGINATION knowledge space. A major outcome of the project will be the new and intuitive approach of navigation through images and a set of technologies and tools to support the annotation of images by manual, semi-automatic and automatic techniques.

4 PROJECT OBJECTIVES

This goal can be achieved by providing three basic services for the users. First, the system should be able to **find relevant entities** or resources for a given entity or resource in its knowledge base. Second, the **navigation (browsing) to relevant entities** or resources should be supported, so that users do not have to construct and type in new queries, which task is a big burden for most of the users. Finally, **non-trivial connections between entities should be visualized**, i.e. the context of an entity or a resource should be displayed.

We envision a system where the user clicks through semi-automatically annotated and segmented images. Like the paradigm of the Web, where navigation is realized by interlinked text-parts, **IMAGINATION will create an Image-Web, where images and parts of the images are semi-automatically interlinked and made browsable.**

User interaction with the IMAGINATION enhanced knowledge base

Graphically enhanced contextualization through images will be carried out as follows:

When the user moves the mouse pointer over Molotov, his name will be displayed. Once the user clicks on Molotov, the IMAGINATION system:

- automatically analyses semantic metadata embedded in the picture containing instances from an ontology: Roosevelt, Eden, Churchill, Stalin;
- based on this information it consults an ontology containing background information and derives time and location context;
- based on that, retrieves articles and pictures on “Molotov” in the context of Yalta, 1945, (instead of giving Molotov’s general biography or other static DB entry first).



Figure 1: Picture of the Yalta Conference

In IMAGINATION we want to combine image segmentation, image recognition and text-mining technologies to support the user with the semantic annotation of the images and image-parts

We expect, moreover, that the **burden of manual annotation will be drastically lessened** by our combined approach, because we will achieve significantly better semantic metadata estimations as by using text mining and image recognition methods in isolation.

4.1 General objectives

With IMAGINATION we envision a **methodology and tool (a) to segment images in to parts, (b) to assist the user in browsing through the images-base by a click-trough navigation and (c) to assist retrieval by semantically interconnect images and image-parts.** To achieve this we follow an approach shifting gradually from manual to automatic annotation. This guarantees that our approach will really improve access to multimedia content and simultaneously provide the means to extend and tailor the approach by plugging in new algorithms for image segmentation, image recognition and text-mining.

IMAGINATION will create an environment, where machines will assist humans to annotate and embed knowledge into multimedia objects (JPEG images) to make them self-describing and usable for automatic context generation by other machines (incl. our demonstration prototype). In future, we see our system fully automatic, as the development of image recognition technologies progresses.

Yalta Conference

From Wikipedia, the free encyclopedia.

The **Yalta Conference**, sometimes called the **Crimea Conference** and codenamed the **Argonaut Conference**, was the wartime meeting from **February 4 to 11, 1945** between the heads of government of the **United States**, the **United Kingdom**, and the **Soviet Union**. The delegations were headed by **Franklin D. Roosevelt**, **Winston Churchill**, and **Joseph Stalin** respectively.

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The conference [\[edit\]](#)

It was a continuation of the series of meetings begun at the **Casablanca Conference** (**January 14 to 24, 1943**) although the meetings can be tracked back to prior U.S. involvement in the War, between both Britain's PM and the President of the U.S. in the middle of the ocean (see **Atlantic Charter**). This conference was then followed by the **Potsdam Conference**. The meeting took place in the former Imperial palace at Yalta in the **Crimea** on the north shore of the **Black Sea**.



Winston Churchill, Franklin D. Roosevelt and Joseph Stalin at Yalta in 1945.

Preparation

Step 1: automatic segmentation with manual correction

Step 2: image-part recognition

Step 3: text-mining of the surrounding text

Step 4: automatic semantic annotation suggestions with manual corrections

Navigation

Step 5: Users browses through semi-automatic annotated images

Figure 2: IMAGINATION technology applied to Wikipedia

IMAGINATION's image-based contextualisation environment will do even more. It will read the image-embedded metadata and visualise it. So that users can see it and








interact with it, for example, by clicking on specific image areas, initiating context-aware knowledge retrieval from the knowledge space.

As a result, IMAGINATION will bring the knowledge base (to which our system is applied) closer to its users. The gap between human and computer perception of images will decrease, as the machines will be able to comprehend images and their users better, which is the ultimate aim of the semantic web.

5 SOFTWARE PROPERTY RIGHTS

The IMAGINATION project will produce a set of software components which will be provided mostly on open source basis (ontology, user interface, text-mining algorithms etc.). Nevertheless some modules are based on already available commercial and closed source software owned by consortium members (like image detection algorithms), which most probably cannot be provided as open source. Nevertheless, the system architecture will provide the frame to incorporate available open source packages in the future. Moreover, the consortium will make sure that the system will be operational using solely open-source parts, eventually with a limited functionality (e.g. with only manual annotation).

6 PROJECT CONSORTIUM INFORMATION

Partner	Acronym
<p>FZI Forschungszentrum Informatik an der Universität Karlsruhe</p>	<p>FZI</p> 
<p>Fraunhofer Institute for Integrated Circuits</p>	<p>IIS</p>  <p>Fraunhofer Institut Integrierte Schaltungen</p>
<p>R un I Demo</p>	<p>RIDemo</p> 
<p>Jozef Stefan Institute</p>	<p>JSI</p>  <p>Institut "Jožef Stefan" Ljubljana, Slovenija</p>
<p>Photos12</p>	<p>Photo12</p> 
<p>National Technical University of Athens</p>	<p>NTUA</p> 
<p>disy Informationssysteme GmbH</p>	<p>disy</p> 
<p>Biblioteca di Storia Moderna e Contemporanea Italian State Library of modern and contemporary history</p>	<p>BSMC</p> 