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Showcase plan

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Abstract

This deliverable presents the INSEMTIVES project's showcase plan. The main objective of this showcase is to share with the general public the main contributions made in the context of the INSEMTIVES project in the shape of a fully usable solution which exhibits the benefits of the application of semantic annotations to enhance content searching and navigation by means of more intelligent and efficient mechanisms.

The proposed showcase focuses on a particular image annotation scenario combining 2 well-known platforms as they are Flickr (as an image portal) and Facebook (as a social network). The proposed showcase will extend both platforms to include the possibility to add semantic annotations to the images as well as to provide more natural, intelligent and efficient ways to consume those images.

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INSEMTIVES – Incentives for Semantics

INSEMTIVES

WP8 – Dissemination and Exploitation

Title: Showcase Plan

Editor: Christian Hofer, STI, University of Innsbruck

WP leader: Germán Toro del Valle, Telefónica Investigación y Desarrollo (TID)

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Executive summary

The INSEMTIVES showcase aims at producing an intuitive demonstrator of the technologies and tools being implemented in the context of the INSEMTIVES project. The objective is to address and to attract as many users as possible and to apply incentive models together with annotation methods in order to create a large amount of semantic content. For this purpose, the INSEMTIVES partners plan to combine some of the tools being developed in work-package 4 into a joint Web case study on "incentivized" image annotation that will be available on the Web as a Facebook application and a Flickr plugin.

Flickr is an images sharing Web site with little focus on content annotation except for free text tags and some geolocation features. Our plan is to extend the Flickr photo upload workflow as well as the search and consumption of images to showcase the power of using semantic technologies. Our showcase utilizes and integrates the different INSEMTIVES technologies in 4 of the main steps of the Flickr workflow: (1) content uploading/sharing, (2) content annotation from the images creators, (3) content search from images consumers and (4) content annotation from the images consumers.

In the first step, the INSEMTIVES bootstrapping toolkit, which was developed in work-package 4, will be integrated in the Flickr Uploader tool (jUploader). The integration will allow semi-automatic bootstrapping of annotations from images being uploaded to Flickr.

In a second step, the Flickr Web interface will be extended with the annotation model developed in work-package 2. The model provides more powerful annotation features, such as controlled terms which are linked to specific semantics. The enhanced interface will also allow to annotate regions of images and link them to other semantic Web resources.

The semantic annotations from the previous steps will then be used to enhance Flickr's search capability by means of the exploitation of the semantic annotations stored into the INSEMTIVES platform.

Finally, we will integrate all these annotation and consumption tools to Facebook in order to enable and exploit various incentive models (mainly social ones).

As a way to disseminate the showcase to a largest audience, different dissemination activities are introduced including: scientific conferences, sponsorship events, the INSEMTIVES Web site, Facebook, mailing lists, YouTube, SlideShare, etc.

List of authors

Company	Author
University of Innsbruck	Christian Hofer
University of Trento	Pierre Andrews
University of Innsbruck	Katharina Siorpaes
Telefónica Investigación y Desarrollo	Germán Toro del Valle

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1 Introduction

The INSEMTIVES showcase aims at producing an intuitive demonstrator of INSEMTIVES technologies and tools. The goal here is to address and attract many users and apply incentive models together with annotation methods in order to create a large amount of semantic content. For this purpose, the INSEMTIVES partners plan to combine the tools developed in WP4 into a joint Web case study on "incentivized" image annotation that will be available for public consumption.

The idea behind this is that the INSEMTIVES toolkit provides a series of small and useful tools for creating semantic content. The objective of the showcase is to illustrate and demonstrate the technology developed within the project to a large audience. The envisioned INSEMTIVES showcase combines bootstrapping tools, the human-driven media annotation tool with incentive models defined in WP1, search and navigation tools and integrates this with social media platforms (Flickr and Facebook) in order to reach a big audience. This tool allows the collaborative and semi-automatic annotation of images, motivated by various incentive models on the example of Facebook. The result is a demonstration of how INSEMTIVES technology and methods can improve image annotation and search by simple methods within existing systems.

In this deliverable we describe a plan to deliver this integrated set of tools based on the INSEMTIVES project contributions to help users annotate images and consume them more effectively. This integrated set of tools will be released as a showcase of the INSEMTIVES project's achievements and contributions, with the main aim to serve as an accessible entry point for the general public to semantic technologies and semantic annotation technologies in particular.

The consortium grants the Commission the right to use the showcase for its own dissemination and awareness activities (including Web based and electronic publications) after the completion of the project.

2 Showcase scenario

The INSEMTIVES showcase is an integrated image annotation tool that provides the following features:

- automatic image annotation through semantic image bootstrapping tools
- collaborative and manual annotation and revision of existing annotations through a human-driven media annotation tool
- incentive models implemented using Facebook as an example of a social platform
- enhanced search and navigation capabilities based on the image annotations

The rationales of using Flickr and Facebook are the following:

- Both platforms already have a user community and a big user base. There is no point in re-inventing the wheel and trying to setup yet another portal. Instead, we are exploiting the functionality and user base of these portals in order to showcase our technology and methods.
- Flickr is an image sharing platform based on the annotation or tagging of the images to ease its searching and consumption by the final users. The INSEMTIVES showcase will demonstrate how semantic technology and slightly richer annotations can improve the search and retrieval of the images.
- Facebook has obtained good results applying an effective set of incentives (keeping in touch with friends and their personal network, integrating youtube and other platforms with facebook, etc.) that raised the adoption and the usage of the tool. We will inherit some of them and include new ones.

In fact, Flickr is an images sharing website with little focus on content annotation except for free text tags and some geolocation features. We have performed a study of the tagging habit of users on Flickr by studying a dataset of 2.403.594 photos with 482.006 tags randomly collected through the Flickr API. Two main things can be concluded from this study:

- Users tend not to add tags to their photos. Even if we can observe a long tail behaviour (see Figure 1), the number of photos with no annotation is outside of this long tail norm and still quite big (almost 20% of all the dataset). Our goal in this showcase is to motivate people to add more annotations.
- Users tend not to reuse tags on their photos or share tags with other users. In fact, if we look at Figure 2, we can see that almost 50% of the tags are only used once in the whole dataset (i.e. by one user on one photo). This behaviour impairs the use of annotations as it means that users use very specific or personal tags on their photo and thus the social power of the annotation is lost, this is, photos will be hard to search and retrieve, the meaning of tags is hard to understand and share between users, etc.

Our plan is to extend the Flickr photo upload workflow as well as the search and visualisation of images to showcase the power of using semantic technologies adding new features to the portal, such as sharing pictures with people connected in the facebook network or with others.

The typical workflow of the INSEMTIVES showcase from the user's point of view involves the following steps:

1. content uploading/sharing
2. content annotation by the images creators
3. content search from images consumers
4. content annotation by the images consumers
5. rewards and social recognition through Facebook

In the following sections we discuss the plans for the integration of the INSEMTIVES' technologies and contributions along these phases.

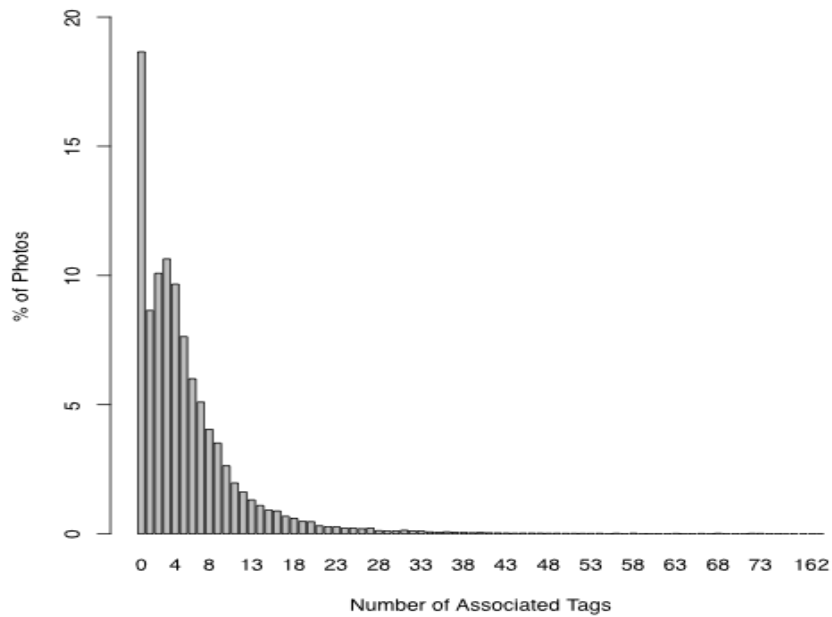


Figure 1: Number of annotations per photo on Flickr

2.1 Upload: bootstrapping image annotation

The first step for the users is to upload their files to Flickr for sharing with the community. At this stage, many local semantic information is lost (some EXIF information, location of the file on the personal file system, etc.) instead of being used to share optimally the files online.

The bootstrapping toolkit developed in work-package 4 and integrated in work-package 3 to the INSEMTIVES platform will be integrated to the Flickr Uploader tool (in particular the open source, multi-platform jUploadr application) to semi-automatically bootstrap the annotations of the images being uploaded to Flickr.

2.2 Human-driven annotation: Collaborative semantic annotation

The users can manually annotate their images before uploading but also when they already are on Flickr. However, Flickr provides a very simplistic tagging system.

The annotation model developed in work-package 2 and implemented in work-package 3 can provide more powerful features when annotating by letting users to use controlled terms linked to their semantic in a vocabulary (e.g. we can know that a cat is an animal).

To empower the end-users with these features, we will extend the uploader to Flickr as well as the Flickr Web interface (through a browser plugin, see Figure 3) to provide an extended annotation interface allowing to use semantic tags in addition to simple free text. This extended interface will also provide features to annotated regions of images and link them to the semantic web resources.

2.3 Search: advanced semantic search and navigation

All the tools discussed earlier would be without much utility to the end-users if they do not have ways to leverage their annotation to provide improved services at a later extent.

An extended search and navigation interface will thus be provided to navigate the annotations provided on the Flickr content and stored in the INSEMTIVES platform.

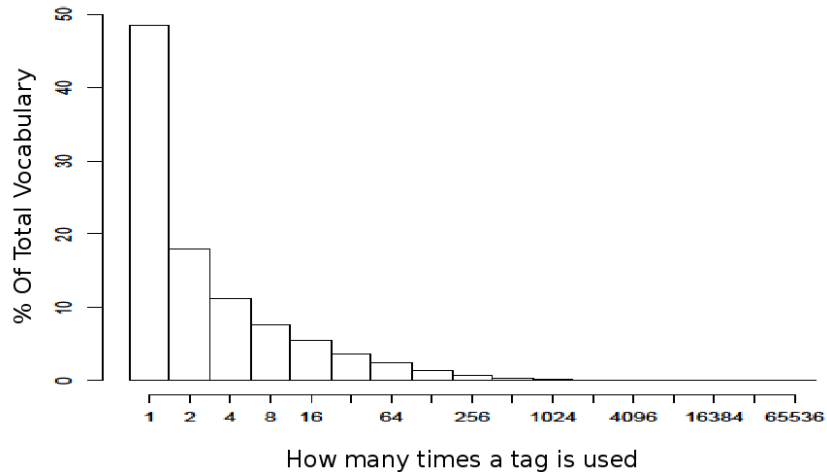


Figure 2: Reuse of tags within Flickr. The vocabulary is the set of all 482 006 tags in the dataset

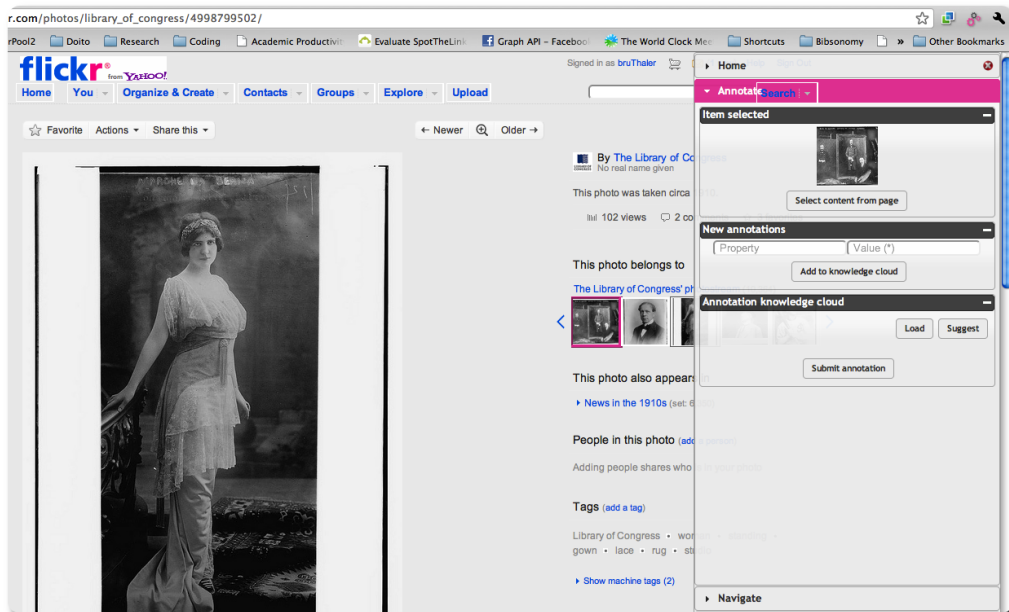


Figure 3: Annotate Flickr! with the OKenterprise Internet browser plugin being developed in work-package 5.

2.4 Incentives: motivation and rewards

The final step is to allow a better sharing with friends and to leverage the community knowledge to create more annotations. This will be provided by a small Facebook application that will allow the end-users to share their content easily with their friends and to ask for their help to create more powerful annotations of their content.

3 Proposed showcase

3.1 The proposed showcase in a nutshell

The INSEMTIVES showcase essentially is a social semi-automatic image annotation and search tool. We expect that the showcase will have an impact beyond the project's duration because it provides useful functionality integrated in two very popular portals, namely Flickr and Facebook.

In a nutshell, the INSEMTIVES showcase is an integrated image annotation tool that provides the following features:

- automatic image annotation through semantic image bootstrapping tools
- collaborative and manual annotation and revision of existing annotations through a human-driven media annotation tool
- incentive models implemented using Facebook as an example platform
- improved and advanced search of images through search and navigation methods

The main idea of the showcase is to help the end-users share their images on Flickr, provide strong semantic annotations and engage their friends on Facebook to create more annotations, view and reuse the users shared content.

3.2 Semantic image annotation: extension to jUploadr for Flickr

The first step in publishing content to be annotated online is to upload it to the Web.

To help the user annotate their images when they are being uploaded on Flickr, we provide an extension to a popular opensource uploader for this sharing platform: jUploadr.

This tool is developed as part of the work-package 4 development work to provide an interface to the Bootstrapping service of the INSEMTIVES platform. This services allows to extract semantic annotations from the user local context before uploading to the Web where the local context will be lost [1].

The jUploadr extension will provide the following features:

- **Semantic Annotation:** the simple freetext tag interface is extended to allow annotation with concepts from a controlled vocabulary. This is achieved with the addition of a new field for input of concept and the support to the user to choose the right sense (see Figure 4),
- **Automatic Bootstrapping:** The images will be automatically annotated based on the user local context and the photos metadata (see Figure 5). This will include the extraction of semantic annotation from the users' file classification, the extraction of semantic annotations from the geolocation of the photo (when available) and the extraction of semantic annotations from the photo title and description. All of this will be supported by the Bootstrapping service of the platform that can extract and disambiguate important concepts of the controlled vocabulary from text and classifications.

3.3 Semantic annotation consumption: semantic search and navigation

The showcase includes tools for search and navigation over semantically annotated content, created using the publishing tools described above.

These user interfaces and are based on the INSEMTIVES platform. In the interface, the various search and navigation paradigms are grouped according to the types of data or content they work with: metadata, concepts, entities, multi-media or textual content. The set of search and navigation methods described in this document can be used together or separately to serve a particular annotation or retrieval task in or outside the context of INSEMTIVES. The visual interfaces are also subject to change according to the needs of a specific use case. The tools described here have been developed according to the requirements gathered in the project so far and allow for:

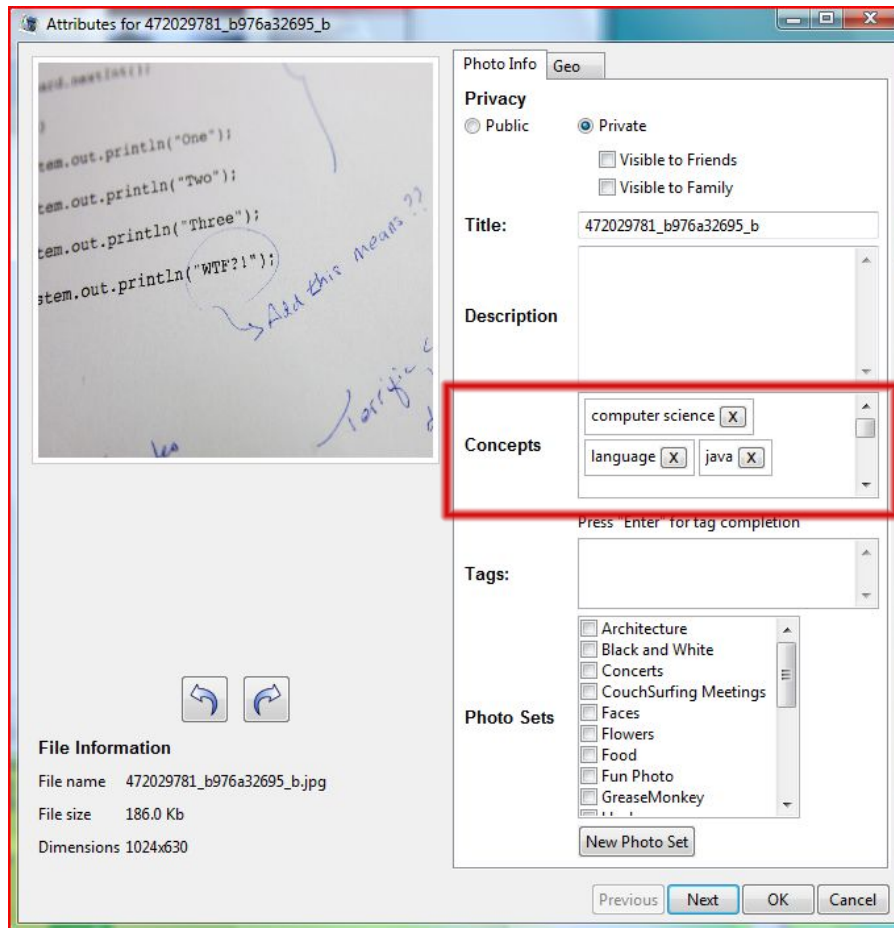


Figure 4: Semantic annotations in the Flickr! jUploadr

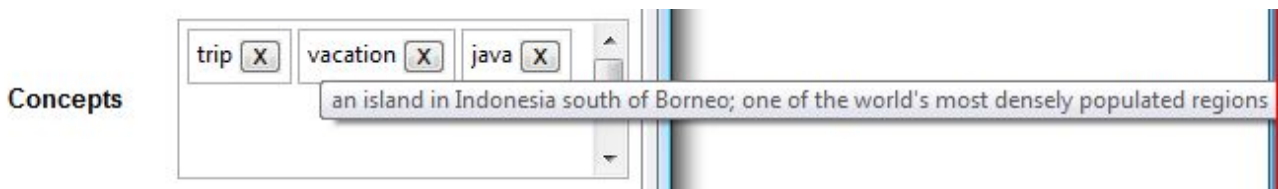


Figure 5: Automatic disambiguation of concepts from the local classification

- handling complex and heterogeneous information resources
- retrieving information resources with textual or media representation based on a set of relationships that are external to those resources
- providing multiple search options for richer investigation
- linking semantic search results with the sources of the data and the users who published them

The semantic search and navigation will give users an incentive to publish semantic data by proving utility which makes the daily tasks of the users easier. All search paradigms will allow users to track the source of a unsatisfying search results. It will be easy to see where semantic data is missing and how convenient will be for the users if they contributed the missing data.

The flexible back-end of the tools Semantic Search and Navigation service will allow for the tools will be integrated into the Search section of the media annotation extension and into a dedicated Web-accessible search interface. More concretely, the search and navigation capabilities to be provided include:

- **Knowledge Navigation** is about thoroughly exploring the ontology classes and knowledge base entities.(see Figure 6)

- **Patterns Search** is about modeling frequently executed structured queries (uses predefined patterns for graph searching) (see Figure 7)
- **Full-text Search** is about retrieving information resources with textual representation, allowing you to combine words and phrases using Logical Operators (such as AND, OR, and """) to limit, widen, or define your search (uses metadata, and textual content)
- **Facets Search** is about finding entities that co-occur with other entities, points of time or time intervals, and terms in the same context. In other words, it helps you find unknown entities by defining the environment in which they appear (uses relations with other entities, concepts, or terms) (see Figure 8).



Figure 6: Exploring semantic metadata in Knowledge Navigation

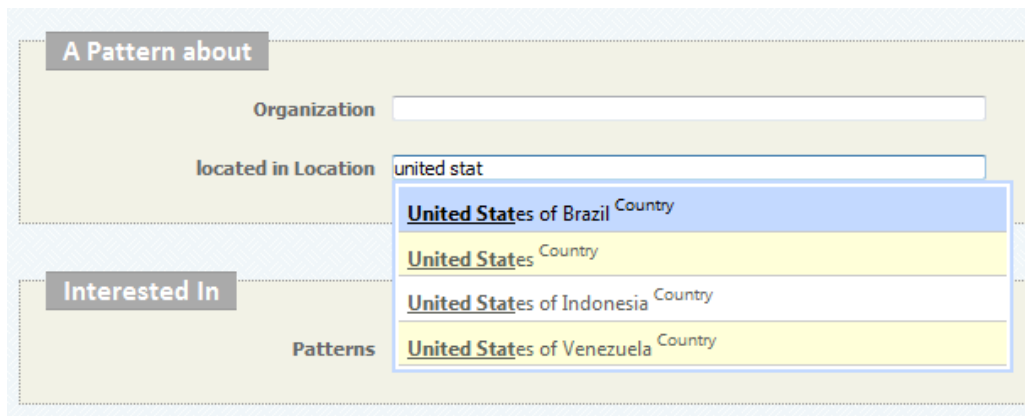


Figure 7: Making semantic queries with Patterns Search

3.4 Integration with external platforms

While all the tools we are proposing to develop for extending the Flickr annotation experience produce semantic annotations, Flickr can only store free text tags. Thus, when using the jUploadr extension and the annotation extension, a dedicated instance of the INSEMTIVES platform will be used to store and search the annotations to the images stored on Flickr.

In this way, the use of the Flickr API will be minimal to store annotation as freetext tags in their platform to mirror the semantic annotations in a less precise manner for backward compatibility with Flickr features.

The integration into Facebook will require the development of a Facebook application that can notify the users of new photos posted on Flickr and implement INSEMTIVES mechanisms to motivate people to help produce annotations for their friends' photos.

Selected Items

- [-] Hamid Karzai

Recent Items

- [+] David Cameron
- [+] European Union
- [+] CIA

Organizations

25 of **466** shown below.

- 🔍 Talebans
- 🔍 The Associated Press
- 🔍 United Nations
- 🔍 North Atlantic Treaty Org...
- 🔍 Electoral Complaints Comm...
- 🔍 Independent Election Comm...
- 🔍 Police
- 🔍 Interior Ministry
- 🔍 S. Embassy
- 🔍 Foreign Ministry
- 🔍 European Union
- 🔍 Army
- 🔍 Breaking News
- 🔍 Defense Ministry
- 🔍 Al-Qaeda
- 🔍 State Department
- 🔍 New York Times
- 🔍 BBC
- 🔍 CIA
- 🔍 National Democratic Insti...
- 🔍 CNN

Locations

25 of **406** shown below.

- 🔍 Islamic State of Afghanis...
- 🔍 Kabul
- 🔍 United States
- 🔍 Islamic Republic of Pakis...
- 🔍 Velayat-e Helmand
- 🔍 Kandahar
- 🔍 Velayat-e Kandahar
- 🔍 Washington
- 🔍 Republic of Iraq
- 🔍 United Kingdom of Great B...
- 🔍 White House
- 🔍 Pentagon
- 🔍 Federal Republic of Germa...
- 🔍 London
- 🔍 Velayat-e Oruzgan
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- 🔍 Velayat-e Nangarhar
- 🔍 Herat
- 🔍 Islamic Republic of Iran
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- 🔍 Velayat-e Vardak

Document Keyword Filter

Matching documents: **1067**
Between: 28 Sep, 2008 - 01 Oct, 2010

DOCUMENTS **TIMELINES**

Documents, containing all selected entities

1-10 of the first 1000 documents matching the search criteria.

Date	Title
26-08-2009	Afghan election heads for deadlock Hamid Karzai and his chief challenger, Abdullah Abdullah, were running neck and neck in the Afghan ...
21-11-2009	Afghan police are weak link in security force ...whom note that under the repressive rule of the Taliban, at least crime was low. President Hamid Karzai broug he said ...
21-08-2009	26 killed in election day attacks in Afghanistan ...percent who cast ballots for president in 2004. Low turnout in the south would harm President Hamid Karzai's Foreign Minister ...

Figure 8: Finding concepts that frequently occur together with Facets

4 Planning

The aforementioned components and functionality will be implemented based on the following planning:

1. jUploadr extension:

- Initial release: *already delivered*
- Bootstrapping from metadata: *15th October 2010*
- Manual disambiguation of concepts: *30th November 2010*
- Manual input of concepts: *20 December 2010*
- Interface improvements: *TBD*

2. Semantic search and navigation:

- Standalone web-based tools (not integrated with showcase): *already delivered*
- Initial integration with the OKEnterprise annotation plugin *15th November 2010*
- Complete integration with the OKEnterprise annotation plugin *15th December 2010*

3. Human-drive annotation:

- Standalone web-based tools (not integrated with showcase): *already delivered*
- Integration of the OKEnterprise annotation plugin: *30th October 2010*

4. Integration with Facebook:

- Conceptual plan: *30th October 2010*

5 Dissemination of the showcase

This section describes how the aforementioned showcase will be disseminated.

In order to ensure that the INSEMTIVES showcase gets adequate attention among the largest target audience possible, the following concrete dissemination channels and activities will be used and accomplished:

- **INSEMTIVES Web site¹:** The INSEMTIVES Web site will be the most important communication mean used in the project as a way to effectively inform the scientific community and the public and corporate audience about the INSEMTIVES showcase.

The INSEMTIVES Web site will be extensively used to propagate the showcase scenario around the Web. More concretely, we will use the following communication means of the INSEMTIVES Web site:

- **Blog:** The INSEMTIVES blog will be used to disseminate information about the showcase in the *blogosphere*. The blog allows user participation and discussion by leaving comments. User participation can lead to a higher promotion value, since interested users tend to carry new information to other interested sources by themselves. The INSEMTIVES blog exposes a RSS feed so it can be also consumed using traditional RSS readers.
 - **News section:** The News section is the place where noticeable news about the INSEMTIVES project achievements and releases are published. We will include specific entries about the status of the showcase so the INSEMTIVES Web site visitors are conveniently notified.
 - **Specific "Showcase" section:** We will create a new specific section for the showcase where we will include all the information about the showcase with an special emphasis on the installation and usage of the tools and components of the showcase.
- **Scientific conferences:** In order to disseminate the showcase to the scientific community, the showcase will be promoted at 2 major scientific conferences via demo submissions. Amongst all the scientific conferences available in the Semantic Web field, we will target 2 specific ones as they are: (1) the European Semantic Web Conference (ESCW) and (2) the International Semantic Web Conference (ISWC). The ISWC and ESCW are two major fora where latest research results and technical innovations in the Semantic Web domain are presented and discussed.
 - **Sponsorship events:** The showcase will also be presented at different sponsorship events. Sponsorship events are used to promote the showcase scenario among potentially interested and important public and corporate parties.
 - **Press releases:** All the members of the INSEMTIVES consortium will be encouraged to publish concrete entries about the release of the INSEMTIVES showcase in national and local (press) media as a way to provide the showcase the major attention possible. These press releases will be collected and republished on the "Press coverage" section of the INSEMTIVES Web site.
 - **Twitter:** Information about the status of the INSEMTIVES showcase will also be broadcasted on the INSEMTIVES' Twitter account at <http://twitter.com/insemtives>.
 - **Facebook:** Information about the status of the INSEMTIVES showcase will also be broadcasted on the Facebook as we did for the 1st INSEMTIVES Game Challenge².
 - **Flickr App Garden³:** The Flickr App Garden allows the distribution of Flickr dedicated applications and extensions such as the ones discussed in this document. It is definitely a good vector to target the specific Flickr audience as well as to get information about the impressions and opinions of the users about the showcase.

¹<http://insemtives.org>

²<http://www.facebook.com/pages/The-INSEMTIVES-Game-Idea-Challenge/373063880822>

³<http://www.flickr.com/services/>

- **YouTube:** Once the tools and components which will compose the INSEMTIVES showcase are available, we will create a channel on YouTube to upload videos including screencasts as well as any other useful video material.
- **SlideShare⁴:** Presentations about the showcase will be published on SlideShare where they will be publicly accessible.
- **Mailing lists:** We will also publish detailed information about the main releases of the showcase on the main semantic web and semantic annotation mailing lists so that the scientific community around the topics of interest of the INSEMTIVES project is reached.

All the aforementioned communication channels and activities have one main objective: attract the major attention possible to the INSEMTIVES project as a whole and to the showcase as a demonstration of the potential and usefulness of the technologies elaborated in the context of the INSEMTIVES project.

⁴<http://www.slideshare.net>

6 Conclusions

This deliverable presents the INSEMTIVES project's showcase whose main objective is to announce to the largest audience the main contributions made in the context of the INSEMTIVES project: (1) the INSEMTIVES platform, (2) the INSEMTIVES tools, (3) the INSEMTIVES annotation models and (4) the INSEMTIVES annotation methodologies.

The proposed showcase focuses on a image sharing scenario and is based on 2 of the most well-known Web services available today as they are Flickr (as an image sharing platform) and Facebook (as a social network). More concretely, the showcase will extend both services to include the possibility to add semantic annotations to the images as well as enhanced search and navigation capabilities to provided its users with more natural, intelligent and efficient mechanisms to consume the published images.

A plan for the proposed showcase is included with concrete dates for the release of its main components.

References

- [1] Pierre Andrews, Ilya Zaihrayeu, and Sergey Kanshin. Insemtives d4.3.1: Bootstrapping tools for image files (initial version). Technical report, UNITN, 2009.