

aloe-project.de

White Paper



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This white paper describes functionalities, use cases and technical background information of the **ALOE** system.

1 What is **ALOE**?

ALOE is a system for collaborative sharing and annotation of arbitrary multimedia resources such as text documents, audio and video files, or web pages:

- users can upload resources (using **ALOE** as a repository),
- existing resources – e.g., from the www or an intranet – can be referenced via bookmarks (using **ALOE** as a referatory),
- resources can be found by using various filter criteria and search modes,
- users can tag, rate and comment resources, initiate and join groups, organize contact lists, send messages to each other, etc.

Where and how can **ALOE** be used?

ALOE is a generic platform suitable to realize systems such as

- social (intranet) portals
- sharing and communication platforms
- administration and organization of arbitrary digital contents

ALOE can be used

- as a stand-alone system, but also as a backbone to integrate social media paradigms in existing environments;
- as an open system in the World Wide Web, but also in closed environments without any connections to the outside (access to resources outside only depends on existing security policies of the according organization).

To ensure privacy and security, encrypted communication is used, and information (resources and their associated descriptions such as tags) can be published in different modes:

- **private**: the information is only visible for the publishing user
- **group**: the information is only visible for members of a selected group
- **public**: the information is visible for all users

Due to its open architecture, **ALOE** allows for the usage of formal and static metadata about resources as well as for Web2.0-like information created by end users in different applications and contexts.

2 ALOE – Main Features

In the following an overview of **ALOE** main features is provided.

2.1 User management

All content that was added with visibility “public” in **ALOE** can be accessed without registration – yet, registration is mandatory for adding any kind of information to the system.

ALOE offers a complete user management, comprising the following features (among others):

- Registration with/without need to confirm via email (configurable)
- Ajax-based availability tests for nickname / email
- “Forgot your password?” functionality
- Stay logged in (optional, using cookies)

The screenshot shows the registration page in ALOE. At the top, there is a navigation bar with the ALOE logo on the left and a search bar on the right. The search bar contains the text 'Resources' and 'Groups' and has a 'Search' button. Below the navigation bar, there are links for 'Home', 'My ALOE', 'Explore', and 'Groups'. The main content area is titled 'Registration' and contains a 'Basic Information' section. This section has four input fields: 'Nickname:*', 'Email:*', 'Password:*', and 'Confirm Password:*'. Each field has a 'Check Availability' link next to it. Below the input fields, there is a checkbox with the text 'I have read and agree to the ALOE Terms of Service and ALOE Privacy Policy.' and a 'Submit' button.

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Registration page in ALOE

- User profiles with adaptable visibility for other users. The entries comprise, among others:
 - address
 - buddy icon
 - social network contact information (e.g., LinkedIn, XING)
 - affiliation (configurable: free text or using a predefined set of entries)
 - interests (configurable: free text or using a predefined set of entries)

The screenshot displays the ALOE user interface. At the top, there is a navigation bar with the ALOE logo, a search bar, and user information indicating the user is logged in as 'Martin'. Below the navigation bar, the 'My Profile' section is active, showing tabs for 'Activities', 'Resources', 'Groups', 'Collections', and 'Tags'. The 'Basic Information' section includes a profile picture, a 'Buddy Icon' field with a 'Browse...' button, and a 'Change Password' link. The user's details are as follows:

Nickname	Martin
Email	memmel@dfki.uni-kl.de <small>(Nobody can see your email address)</small>
Member Since	2007-09-13 08:26
Gender	male
Country	Germany
Spoken Languages	English, French, German, Italian
Interests	Backpropagation Networks, Bayesian Logic, Case-based Reasoning, Cognitive Modeling, Cognitive Science, Computer Vision, Constraint Satisfaction, Data Mining

The 'Additional information' section contains the following fields:

First Name	Martin	Affiliation	
Last Name	Memmel	Phone	
Birthday	Month: Day: Year:	Cell Phone	
Street		Homepage	
Zip Code		Instant Messaging	not specified
City	Kaiserslautern	Messenger ID	

At the bottom of the profile page, there are visibility options: 'public', 'visible for my contacts and me only' (selected), and 'visible for me only'. An 'Update' button is located below these options.

Profile page in ALOE

- Social networking functionalities
 - contact management
 - Messaging with optional message forwarding to the provided email account

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Message management in ALOE

2.2 Contribution of resources

ALOE supports arbitrary multimedia contents (bookmarks, text documents, audio, video, ...) by offering the following features:

- automatic metadata generation (based on Aperture¹)
- tag recommendations (type-ahead-find)
- generation of preview images for all common multimedia formats
- Embedded player for various resource types (e.g., flash, mp3)

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Sample contribution page for adding a web page to ALOE. On the right side, automatically extracted metadata is offered. At the bottom, other platforms that can be joined with ALOE are offered to allow for synchronously publishing the information on the respective systems.

1 <http://aperture.sourceforge.net/>

For each content contributed in **ALOE**, a respective detail page with a variety of information and interaction means is offered.

- Display of static (e.g., title, description) and dynamic (e.g., number of views) metadata
- Metadata editing
- Assigning the content to portfolios, groups, and collections
- Tagging, commenting, and rating
- Report a problem, send to a friend

The screenshot displays the ALOE website interface. At the top, there is a navigation bar with the ALOE logo, a search bar, and user information (Logged in as Martin). The main content area features a resource titled "Programming Collective Intelligence" by Toby Segaran. The resource includes a book cover, a rating of 5 stars, and a description. Below the resource, there is a comments section with a text input field and a "Add" button. On the right side, there are several interactive panels: "Tags" with a list of tags and a search filter, "Bookmarked by" showing user avatars, "In Groups..." with options to show resources or members, "In Collections..." with options to show resources, and "Associated Metadata" with a table of metadata entries.

Detail page of a resource in ALOE

2.3 Managing and organizing contents

ALOE offers a variety of means to organize and manage contents.

- Logged in users have a *personal portfolio* with all contents they have gathered
- Each content can be added to a *favorites* list
- *Collections* offer an additional way of organizing contents
- *Groups* (later explained in more detail) allow for assigning contents to different topics or users
- *Tags* allow for adding freely chosen keywords to contents

These organization types also allow for so called “social browsing” functionalities, i.e., the direct and intuitive navigation to related contents.

The screenshot displays the ALOE user interface for a user named Rafael. The top navigation bar includes 'Home', 'My ALOE', 'Explore', and 'Groups', along with a search bar and a 'Search' button. The user profile section shows Rafael's name, a profile picture, and statistics: Resources: 115, Comments: 6, Ratings: 15, and Member Since: 2007-09-12 17:32. Below the profile, there are three main sections: 'Recently Added Resources' featuring two articles with view counts and dates; 'Recently Joined Groups' showing 'Berliner' and 'Java programming' groups with member and resource counts; and 'Recently Created Collections' with 'Web3.0' and 'Clustering' collections. A 'Particular User Tags' section on the right lists various tags like '2008', 'aida', 'doc', 'analysis', etc., with a 'recommender' tag highlighted. The footer contains links for 'Home', 'Blog', 'Legal Information', and 'Contact', along with the copyright notice '© 2008-2012 - DFKI, Berlin'.

ALOE offers various means to manage and organize contents

2.4 Tag management

ALOE offers comfortable tag management:

- tag renaming
- tag removal
- access to tagged contents

The screenshot shows the ALOE web interface. At the top, there is a navigation bar with the ALOE logo, a language selector (German/English), and user information (Logged in as Martin). The main navigation includes 'Home', 'My ALOE', 'Explore', and 'Groups'. A search bar is also present. Below the navigation, the 'My Tags' section is active, showing a list of tags. The tags are organized in a grid with columns for tag names and counts. Each tag has a trash icon for deletion and a pencil icon for editing. The tags listed include: r.ct (1/1), 1833 (1/1), 1954 (1/1), 1396 (1/1), 2007 (0/0), 2008 (1/0), 2010 (23/30), 2011 (4/0), 3d (0/0), 6500 (1/1), 9780596529321 (1/1), aaa (1/2), abgeordnete (1/1), aomahnung (1/1), academia (2/2), access (1/2), accuracy (1/1), acm (1/1), acta (1/1), adobe (1/1), adduction (1/1), ads (1/1), aarcs (1/1), aesthetics (1/1), ag (1/1), agent (1/1), aggregation (2/1), agriculture (1/3), aircraft (1/1), alchemy (1/1), algorithm (1/4), ailia (1/1), alcc (17/21), amazon (2/3), analyse (1/1), analysis (6/3), analytics (3/3), arcons (1/1), ant'cid (51/67), animation (1/3), arnastasse (1/2), ans (1/1), aspect (1/2), ari (23/28), ap's (3/3), appengine (1/1), applications (1/1), apple (3/2), application (4/0), applications (2/2), apps (1/1), aquafilm (1/1), a' (65/80), architecture (7/8), architektur (2/2), ariely (1/1), arml (2/2).

Tag management in ALOE

2.5 Groups

Groups in **ALOE** can be used to aggregate users as well as contents. Group messages can be sent, group contents can be searched, and users can subscribe to group-specific activity reports. Group overview pages allow for immediate access to all group related information.

The screenshot shows the ALOE Group Overview page for the 'RADAR' group. At the top, there is a navigation bar with 'Home', 'My ALOE', 'Explore', and 'Groups'. A search bar is also present. The group name 'RADAR' is prominently displayed, along with its creation date (2010-11-11 09:48) and statistics (2 Members, 76 Resources). The group status is 'closed private group'. Below this, there are tabs for 'Group Overview', 'Group Resources', 'Group Members', and 'Group Administration'. The 'Group Overview' tab is active, showing a search bar and search options (Title, Tags, Description, Creator(s)). A 'Recently Added' section lists several resources, including 'Google Maps Mania: Historical Views of San Francisco', 'RADAR - Resource Annotation and Delivery for Mobile', 'Tagwhat Social Augmented Reality', 'springpad', 'Plink', and 'Augmented Driving Videos'. On the right side, there are sections for 'Group Feeds' (which is empty), 'Your Subscriptions' (with options for daily, weekly, or none), and 'Popular Group Tags' (including 3d, models, allgemein, etc.). The footer contains 'Home', 'Blog', 'Legal Information', and 'Contact', along with a copyright notice for 2008-2011 DFKI 3msH.

A group overview page in ALOE

ALOE offers the following types of groups:

- *open groups*: Every member of the system can join an open group without the permission of a group administrator. Group members, group resources, and group activities are accessible for all (also anonymous) users.
- *closed, public groups*: Group members, group resources, and group activities are accessible for all (also anonymous) users. Joining and thus having the possibility to share resources to such a group requires the permission of a group administrator.
- *closed, private groups*: All group activities are only visible for group members, resources can be contributed with group visibility, and joining the group requires the permission of a group administrator.

2.6 Search

ALOE offers different search and ranking options for the objects existing in the system.

- Resource search
 - Search in selected metadata fields (title, description, tags, ...)
 - Search in selected groups
 - Various ranking options (most viewed, best rated, most recent, most bookmarked ...)
 - expert search with different filters (mime type, license, date, ...)

The screenshot shows the ALOE search interface. At the top, there is a navigation bar with the ALOE logo, a search bar containing 'time line', and a 'Search' button. Below the navigation bar, the search results are displayed. The search criteria are 'time line' and the search fields are 'Title', 'Tags', 'Description', and 'Creator(s)'. The search results are sorted by 'Contribution Date' and show 5 results. The first result is 'Google Maps Mania: A Time-Line Library for Google Maps' with 3 views and an average rating of 5 stars. The second result is 'Google Maps Mania: Historical Views of San Francisco' with 27 views and an average rating of 5 stars. The third result is 'Intersect' with 11 views and an average rating of 5 stars. The fourth result is 'Reference Documentation for Timeline - SIMILE Widgets' with 27 views and an average rating of 5 stars. The fifth result is 'Tagline Generator - Timeline-based Tag Clouds' with 104 views and an average rating of 5 stars. The footer of the page contains the text 'Home • Blog • Legal Information • Contact' and '© 2008-2011 DFKI GmbH'.

Example of a search result page in ALOE

- Group search
 - Search within title and description
 - Various ranking options (number of members, number of contents, ...)
- Member search
 - Depending on the users' privacy settings

2.7 QR codes

ALOE offers the generation of so called QR (Quick Response) codes for all contents in the system.



A QR code generated in ALOE

QR codes in **ALOE** are generated by using the Zebra Crossing library².

² <http://code.google.com/p/zxing/>

2.8 Push services


ALOE offers several means to automatically get updates about new activities in the system.

- Feeds (Atom):
 - all activities in the system
 - activities in selected, public groups
 - activities on resource in the own portfolio
 - activities on selected resources
 - all new resources in the system
 - new resources in selected, public groups
 - new resources contributed by selected users
 - new resources matching arbitrary searches


[ALOE] Resources recently shared to group "web programming techniques"

This feed contains information about public resources recently shared to group 'web programming techniques' in [ALOE]


[Periodic Table of the HTML5 Elements](#)
08/02/2012 03:14 PM

 <http://joshduck.com/periodic-table.html>
No description available
Added by [swagner](#) on August 30, 2012 03:14:00 PM CEST


[Refine, reuse and request data | ScaperWiki](#)
07/17/2012 09:37 AM

 <https://scaperwiki.com/>
Did you ever extract information from websites? Why not reuse code provided by others and access it as you wish via the scaperwiki. Scrape and link data using Ruby, Python and PHP scripts that run maintenance free in the cloud. Request data for scoops and better decisions.
Added by [inet](#) on January 17, 2012 09:37:00 AM CEST

[HTML5 Reference Poster](#)
07/12/2012 10:30 PM

 <http://www.html5lab.com/html5-data/feed/HTML5-Reference-Poster.pdf>
This poster covers all HTML5 tags (almost, because HTML5 is still in development). Each tag is followed by its semantic meaning, and all attributes supported by the tag. Tags and attributes which are new to HTML5 are marked with color/symbols, so they are highlighted and easily distinguished from other tags.
Added by [azvaganj](#) on January 12, 2012 10:30:00 PM CEST

[Media Queries](#)
07/03/2012 11:05 AM

 <http://m.scrippens.nl>
No description available
Added by [Martin](#) on January 3, 2012 11:05:00 AM CEST

Extract of a sample ALOE resource feed

- Email reports:
 - all activities in the system
 - activities in selected groups
 - activities on selected resources

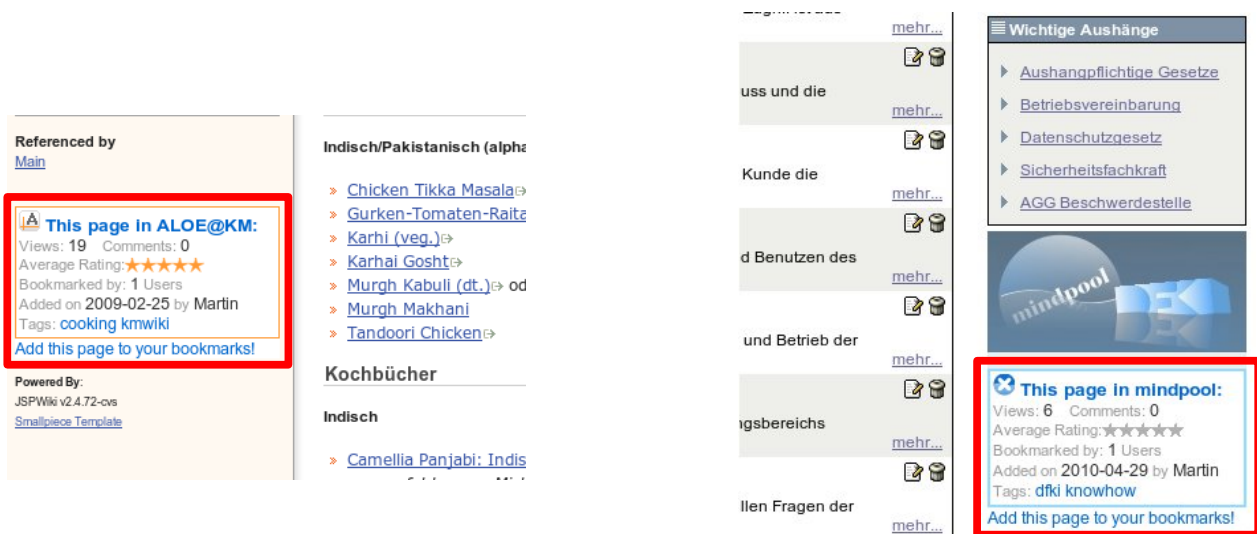
2.9 Data exchange

ALOE was intentionally designed to allow for an easy use of data in other contexts. This comprises

- optional “parallel upload” to simultaneously contribute information to other platforms (e.g., Delicious, Diigo, Twitter), among others based on OAuth
- export of own contents, search results and group contents as a Netscape Bookmark File (importable in all common browsers and bookmarking platforms)
- embedded metadata (microformats, RDFa)

2.10 Integration with other platforms

- functionalities are also offered as Services (SOAP/REST Web Service API)
- widgets to embed Information about contents in **ALOE**
- integration means for arbitrary metadata associated with contents



Two examples for the integration of information from ALOE instances by means of widgets

2.11 Localization

ALOE offers full UTF-8 support and other localization means for all **ALOE** components (already existing: DE/EN). This concerns all kinds of system messages, labels (also regarding interaction elements), icons, etc.

3 ALOE – System Architecture

The **ALOE** system architecture has particularly been designed with regard to user-friendliness, reliability, extensibility and to support an easy integration into existing infrastructures and applications. That way a sustainable deployment of the system can be guaranteed.

Due to its generic architecture, **ALOE** facilitates the individual creation of solutions adopted to the specific needs of the usage scenario. This concerns on the one hand the skin of the system and on the other hand metadata extensions as well as specific functionalities which are needed for a concrete scenario.

Web2.0 design

ALOE has been developed according to Web2.0 design paradigms. These comprise among others

- **The web as platform:** All functionalities of **ALOE** can be accessed via a web browser (e.g., Internet Explorer or Mozilla Firefox). That way platform independence can be ensured and the application can continuously be improved without the need for updates or reinstallations on the client side.
- **Participatory character:** Information in **ALOE** cannot only be consumed – also users without particular proficiency are able to upload contributions and information (so called *user generated content*) thus strengthening the interconnectedness between users. The phenomenon of “collective intelligence” can be exploited for different purposes.
- **Mashup ability:** Web applications that aggregate content from different sources (so called *mashups*) are very popular in the Web2.0 context. The **ALOE** system architecture allows for an integration into such mashups. Users can subscribe to contents of selected topics via Atom feeds, furthermore all data and functionalities of the system (e.g., contribution of resources) are provided via a service API.

Utilized technologies

The **ALOE** system is entirely implemented in Java (version 1.6). It is deployed in the servlet container Apache Tomcat (version 6.0) of the Apache Software Foundation.

- **Graphical user interface:** The graphical user interface is realized with JSP by making use of established J2EE design patterns.
- **Web service interface:** The functionalities of the system are accessible via a SOAP/REST API that has been realized with Apache Axis2. That way the provided functionalities as well as the data stored in the system are at disposal for authorized clients via the Internet or intranet thus allowing an easy integration of **ALOE** into existing applications.
- **Storage and access of resources:** The resources are stored in a MySQL data base (version 5.0) and may be accessed by authorized clients over the network via a multimedia servlet or via the SOAP/REST API described above.
- **Storage of metadata:** The metadata describing the resources is also stored in the MySQL data base. This makes the generation of different views on the content in **ALOE** to realize appropriate visualizations.

System design

