WP6: Dissemination and Collaboration

Deliverable D6.1
Project Website
BIOMICS Project (Grant no. 318202)

<table>
<thead>
<tr>
<th>Contract Number: 318202</th>
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<td>Project Acronym: BIOMICS</td>
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<table>
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<tr>
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<tr>
<td>Due Date: 2012-12-31</td>
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<tr>
<td>Delivery Date: 2013-02-25 (Resubmitted Feb 2014 to add Year-1 analytics and description of internal site)</td>
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<table>
<thead>
<tr>
<th>Author: UNI PASSAU, Daniel Schreckling, Eric Rothstein</th>
</tr>
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<tbody>
<tr>
<td>Partners contributed: UH, Anne English, Paolo Dini</td>
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<td>Made available to: Public</td>
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<table>
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<tr>
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<td>Name, Organisation</td>
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<td>1</td>
<td>2013-02-12</td>
<td>D. Schreckling, UNI PASSAU</td>
</tr>
<tr>
<td>2</td>
<td>2013-02-18</td>
<td>D. Schreckling, UNI PASSAU</td>
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<tr>
<td>3</td>
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</tr>
<tr>
<td>4</td>
<td>2013-12-20</td>
<td>Anne English (UH) – Added analytics appendix</td>
</tr>
<tr>
<td>5</td>
<td>2014-02-25</td>
<td>Anne English (UH) – Updated Section 2.2- Internal Site</td>
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<table>
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<tr>
<th>Quality check:</th>
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<tr>
<td>Louise Newton-Clare (UH)</td>
<td></td>
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<tr>
<td>Internal Reviewers:</td>
<td></td>
</tr>
<tr>
<td>Nicoline den Breems (UNIDUN)</td>
<td></td>
</tr>
<tr>
<td>Kyriakos Christodoulides (UD)</td>
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Executive Summary

This document sketches the structure of the project website and discusses the decisions which guided its design. A brief introduction of the overall functionality of the website will serve as short manual for project partners. For completeness and to document our internal procedures we also describe the technical details used to implement the site.
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1 Introduction

The websites of regular research projects which run for several years follow the usual tasks of disseminating the project goals and the actual project output, increasing awareness of the existence of the project, announcing invitations to relevant events and distributing interesting publications originating in the project. This information usually targets a broad audience, including academia of a specific field, stakeholders, and students.

In BIOMICS, we pursue the same goals as listed above. At the same time we face one of the most difficult challenges in this project: How to get people from very different backgrounds and who follow very different research methodologies and disciplinary languages to collaborate closely together?

Thus, while this document tries to reflect the current status of our “communication tool”, it may already be outdated by the time it is published as our way to collaborate constantly adapts in this early phase of the project. This will be continuously reflected in the structure and content of our website. So, although many design decisions described in this document have been discussed thoroughly, the webpage must represent the evolution of the project and of the way researchers in this domain communicate. Earlier decisions may become outdated and features required in the past may lose importance or disappear completely.

Nevertheless, we see this document as a tutorial on how to use the project website for internal and also for external communication and will continuously document deviating or modified functionality. This deliverable will form the basis for this documentation.

Another challenge we faced was the fact that it took longer than expected to secure the services of a Dissemination Manager on the part of the Coordinator (UH), but we had a hard deadline for the delivery of the website of 25 January 2013, which was the kick-off meeting of the TRUCE Support Action for the Unconventional Computation (UCOMP) cluster. With Christmas in the middle, this effectively cut down the implementation time from the 3 months originally envisaged to 1 month. Most of the features were finished on time, but a few were completed after 25 January.

2 Requirements

During the BIOMICS kick-off meeting we collected the requirements for the project website. As it is a means for communication in WP6, its main task is to provide a platform for internal and external dissemination and communication. Thus, in this section we structure the website requirements accordingly. For simplicity we do not differentiate between content and functionality.

2.1 External Site

The external site should be accessible by anyone. Of course, the external site must only deliver content which is intended for external use. The external site requires the following features and content:

ER1 The site must contain sufficient information about the project.

ER2 The site must show the project logo.

ER3 The site must relate the project to the Framework Programme (FP7) UCOMP cluster and provide essential project details, compatibly with FP7 rules.

ER4 The site should dedicate a section for each research domain involved in the project, i.e. mathematics, biology, and computer science.

ER5 The colour coding which has already been used during the proposal writing should be reflected in the sections dedicated to the three research domains.

ER6 The external site must give an overview on the partners involved in the project.
2.2 Internal Site

The purpose of the internal area of the site is that it should facilitate, foster and encourage communication, collaboration and the exchange of ideas between our project partners. Information accessible in this area of the site is not intended for users external to the project partners. In this way it affords a ‘safe’ environment to exchange work that may still be ‘work in progress’ and not ready for external consumption or indeed to exchange other papers etc that are not publicly shareable.

From experience in previous projects such as SEQUOIA (Coordinating Action), OPAALS (Network of Excellence) and the Digital Business Ecosystems (Integrated Project), we hoped that supplying certain elements of a collaborative knowledge space would benefit the project partners and in turn enrich the research output. One of our learnings from Communities of Practice (CoP) theory was that users must share commons needs and goals in order for them to develop a cohesive, compatible community. And in online environments one of the ways to foster the development of a CoP was to have users – in this case our project research community – engage in the requirements gathering process, i.e. acknowledge the requirements that they actually had and help in translating these needs into online tools that could satisfy such needs. It was our experience that the more the user base was involved in the determination of the functionality or design of the environment the more likely they were to engage in using it. To this end, we set about determining the requirements of this internal part of the site with the consortium and identified the following high-level requirements:

1. IR1 The internal site must be protected by some access control mechanism that also provides some user management for the administrators and the project coordinator.
2. IR2 A document repository should archive internal project documents (e.g. working papers, deliverables in progress, etc) in categories. It should be possible to publish some of these documents on the external website.
3. IR3 Project partners should have the possibility to share ideas by creating new contributions.
4. IR4 A wiki should be used to easily create and link content and support the collaborative documentation of ideas.
5. IR5 Partners should have the ability to upload content, such as papers, videos, images, templates, etc., and to make it available internally.
6. IR6 A repository, such as Subversion (SVN) or Git, which supports the collaborative writing and versioning of LaTeX papers should be provided. Papers written in MS Word can also use this system for versioning. However, support for merging documents and tracking changes will not be available and must be implemented using the functionalities offered by MS Word.
7. IR7 Analytics about the site usage should be accumulated and made available to the coordinator and ultimately to the EC.
8. IR8 Entities administrated by the site should allow for flexible access control (e.g. SVN and GIT) and versioning.

These requirements translated into the environment visible via the User Menu below, which was driven by the wiki approach. The wiki approach was used as it was developable from Joomla, it was an online collaboration approach that was mentioned numerous times in the requirements gathering phase, and it was familiar to the research team. The fact that this area is ‘wiki’ driven is somewhat inconsequential. It is simply an accessible, easy-to-use environment.
The ‘Compose a Wiki Article’ has an easy-to-use WYSIWYG (what you see is what you get) editor.

This is the list of each of the pieces of content listed in ‘Latest wiki articles’. 
We hope that as the project team matures it will use this environment more. However, we are very clear in our position that while we understood, based on an exhaustive requirements gathering process, that this is the environment that best satisfied the online collaboration needs of the team, it should not be to the detriment of other communication methods such as face-to-face meetings, or conference calls, email, IM etc. If any of these satisfy the requirement at hand then the focus will be to support the research issue at hand as opposed to force an online collaboration approach.

3 Site Structure

The skeleton of the site structure (see also Figure 1) was first sketched by the Dissemination Manager (Anne English).
Figure 1: Skeleton of the Website Layout
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Together with the dissemination manager and the project coordinator we refined and elaborated this structure. The result was both the basis for the first design draft, and was also used to implement a feasible template for the site that would then host the design of the page. For the project art work, we engaged a designer (Jak Kimsey). The selection of this designer was based on the submission of samples from three designers on which the consortium voted and the most popular designs won the sub-contract. We then worked with this designer to refine the logo and related art work according to our needs.

3.1 External Site

The external site reflects the overall site structure. It is only changed marginally in the internal area.

Top down we start with the login area (1), and search form (2) and logo (3) are followed by a horizontal navigation bar (4) which provides access to the single sections of the page. Each item on this navigation bar can have sub-items (5). They help to navigate through more complex areas in the site. The content of the page follows (6).

![Figure 2: External site structure](image)

Titles of a page or the logical structure of a page are highlighted using coloured horizontal bars (7).

The bottom of the page (8) mostly contains links to legal information.

Each research domain is coloured differently using a different colour scheme as shown in Figure 2.

![Figure 2: Colour-coded areas for the different research domains.](image)

3.2 Internal Site

The structure of the internal site is slightly different from the external site (see Figure 3). Upon logging in, apart from a logout form (1) the user is now also offered various options in an extra user menu block on the left (2).
Here, the user can write new articles (similar to blog posts or wiki pages), i.e. design completely new pages, using a “what you see is what you get” (WYSIWYG) editor. The editor does not use control information to structure content or any particular syntax, such as in various Wiki versions. Instead, it uses a user interface familiar from many popular text processing tools (see Figure 4).

The user can also display the latest articles he/she or some other partners has created. The content displayed here can also be edited by using a link on a small edit icon.

![Figure 3: Internal site structure](image)

![Figure 4: WYSIWYG editor in the internal site](image)

Access to the internal share centre is also obtained via the user menu on the left (see Figure 5). It displays the content uploaded by a partner and placed in the appropriate category.
To upload content, the user can use the "Manage my Uploads" option in the user menu. It displays an upload area in which every internal user can search the files he/she has already uploaded, upload a file, and create or edit meta-information, such as a title, description, etc. for the file uploads.

Please note, that during upload the user must specify a file category. If the category is public then the uploaded file will also be available for download for external site users. Files marked with an internal category can only be accessed by internal and authenticated users. Thus, every internal file must be marked with an internal category (see Figure 6). The category of a document can be changed at any time. As a consequence, this will also change its visibility to external users.

4 Technical Implementation

There is a wide range of alternatives which can be used to implement a website with the characteristics just described. We briefly explain the setup and explain our choice of software and components used for implementation.

4.1 Domain

The website is registered under the domain name biomicsproject.eu at the ICANN (Internet Corporation For Assigned Names and Numbers) accredited registrar NetNames and maps to an IP hosted in the subnet of the Universität Passau, Germany.

4.2 Server

We are using the computing resources of the institute of IT-Security and Security Law at the Universität Passau, Germany. Therefore, we adapted the fundamental serving platform for our
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website to the common properties of the web servers we are currently hosting. This reduces management overhead and ensures a well established knowledge base.

Thus, our site runs in a virtualized environment and the host is a Linux operating system which provides the actual web server, an Apache system. A mysql database is running in the backend. The whole server is protected by several firewalls. From outside the university network or from our institute access to the server can only be established via http or https.

4.3 Content Management System

The choice for a content management system (CMS) was not straightforward. Of course, implementing all the requirements listed above in a reasonable way is not possible in one single PM if you start from scratch. Thus, we decided to use some CMS which would satisfy most functional requirements.

We investigated the following free CMSs, blogging, archiving and project management software, which provide similar features:

- Drupal
- Redmine
- Joomla!
- Liferay
- Typo3
- Wordpress
- Mediawiki

We installed the latest versions of the products listed above and evaluated each separately. While most products supported the features required for our site, some required several adjustments and extensions to become as feature-rich as others, e.g. Wordpress. On the other hand, there are systems such as Liferay which basically bring everything in one product. However, the effort to adjust the system to our needs turned out to be tremendous. Same holds for the complex Typo3 which appeared to be far too complicated to be set up within the tight time requirements we were facing. Software mainly intended for project management or for wiki pages, such as Redmine or Mediawiki, is difficult to adjust to the requirements of a public page. We also discussed a combination of several systems, but this would again increase maintenance and administrative overhead. The challenge to for researchers from different research domains to become accustomed to the platform would also be tremendous.

In the end we decided for Joomla!. It offers a big variety of modules and extensions which can be used to modify the page and add more features to it. We identified products which provide additional functionalities to our site, such as Blogs, RSS feeds, searching, forums, etc. They can become useful to the project in a later phase where communication with other groups and the UCOMP cluster have been established or strengthened.

During our evaluation phase, we found several free modules which complied with the site requirements. Most of them were also easy to adjust to our needs. In the end, an investigation of the Common Vulnerabilities and Exposure (CVE) records for the different products and the underlying programming language (PHP) made us choose this software.

4.4 SVN

To support the collaborative writing of publications and the common development of ideas, the web server also provides the versioning system Subversion (SVN) which is accessible via https at: https://biomicsproject.eu/svn/. Currently, UNI PASSAU will administer repositories of project members. At a later stage, the administration may also be realized with a web interface.
To reduce the number of credentials required for each project member, UNI PASSAU will also couple the SVN user administration with the Joomla! user management via an LDAP (Lightweight Directory Access Protocol) server. This feature had not yet been realized by the time this document was written.

4.5 Analytics

To monitor the site usage, the web page uses Google Analytics. The appropriate analytics account is administered by the project coordinator, Paolo Dini, and UNI PASSAU. An appropriate privacy policy is included in the website.

5 Maintenance

5.1 Security

As Joomla! is a widely used system, it also attracts a lot of attackers. Many serious vulnerabilities have been found in the past. However, in recent years, the CVE records show a different trend and it appears that the community is now able to deal with this problem better.

The operating system hosting the website is updated regularly, i.e. as soon as new security vulnerabilities are published the server is patched if appropriate fixes become available.

We regularly investigate the logs of the server to discover unusual scanning or break-in attempts. Critical data on the server, i.e. the file system and the database used to run the frontend of the CMS, is backed up incrementally every hour. Full backups are generated every day.

5.2 Content

The general content of the website will be mainly updated by the project coordinator, the dissemination manager, and the administrators from UNI PASSAU. This particularly holds for the main structure of the website, e.g. navigation, project details, events, links, etc.

Research content on the internal as well as on the external sites will be updated collaboratively by the project members. On the one hand, this is done through the upload of research papers and the writing of articles. On the other hand, we also plan to extend the site with blogs for all researchers that are registered users of the site.

5.3 User Manual

On the internal site, we will maintain a short user manual. It will help project partners to navigate through the page, understand how to create, upload, and modify content and where to find specific information. This user manual will be provided as an internal web page to avoid media disruption\(^1\) and to evolve the manual together with the site, i.e. as soon as new features are integrated the user will be able to find appropriate information about how to use it.

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\(^1\) “Media disruption” is a negative effect which appears when one switches between different media or means while presenting content, e.g. something is presented on paper but the main content is found on a web site. To bridge this gap more easily one can use QR codes (for example).
6 Conclusions

After the release of our website, we received first positive feedback from consortium members. This also includes constructive requests for specific changes to increase usability or to include new features into the page. Our website is seen as a tool for collaboration and communication which tries to establish interaction between different research communities. Having said this, we will continuously discuss the implementation and integration of suggestions and elaborate our site to the best of our needs and the needs of the community evolving around it.
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7 Appendix

7.1 3.3 Analytics

We use Google Analytics to track traffic to the BIOMICS website. This enables us to track which pages have been most successful in disseminating the project output and should be further expanded.

From the period January 2013 to Oct 2013 there were a total of 14,152 page views on the site. Of these views 30% were from new visitors and 70% return visitors. (Chart 1)

Of the 14,152 page views, 7261 were from unique users and 6891 non-unique views. (Chart 2)

Chart 3 shows how these views were dispersed across the site. The Home page unsurprisingly received the highest percentage of visits at 39.6%.
7.2 A closer look at some of the main pages of the website:

7.2.1 The Home Page

Visitors via the Home page to the BIOMICS website in the period January 2013 to October 2013 were 2705 of which 1713 were unique visitors. 2006 of the total number of visitors returned for at least one repeat visit. Page views peaked in February 2013.

7.2.2 Community Page

The Community Page which introduces each of the project’s researchers and provides links to their websites/publication pages received the second highest number of unique visits at 879 and 704 of those paid return visits.
### 7.2.3 Publications Page

The Publications page saw the third highest number of unique visits at 714 and 616 return visits.

<table>
<thead>
<tr>
<th>City</th>
<th>Pageviews</th>
<th>Unique Pageviews</th>
<th>Avg. Time on Page</th>
<th>Entrances</th>
<th>Bounce Rate</th>
<th>% Exit</th>
<th>Page Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Visits</td>
<td>879</td>
<td>543</td>
<td>00:01:46</td>
<td>176</td>
<td>59.66%</td>
<td>31.85%</td>
<td>$0.00</td>
</tr>
<tr>
<td>Returning Users</td>
<td>704</td>
<td>408</td>
<td>00:01:42</td>
<td>134</td>
<td>54.48%</td>
<td>28.41%</td>
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<tr>
<td>New Users</td>
<td>175</td>
<td>135</td>
<td>00:02:11</td>
<td>42</td>
<td>76.19%</td>
<td>45.71%</td>
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</table>

### 7.2.4 About Us

This About Us page saw the fourth highest number of unique visits at 572 and 386 return visits.

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<thead>
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<th>Unique Pageviews</th>
<th>Avg. Time on Page</th>
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<th>Bounce Rate</th>
<th>% Exit</th>
<th>Page Value</th>
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</thead>
<tbody>
<tr>
<td>All Visits</td>
<td>714</td>
<td>305</td>
<td>00:01:15</td>
<td>44</td>
<td>56.82%</td>
<td>13.31%</td>
<td>$0.00</td>
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<tr>
<td>Returning Users</td>
<td>616</td>
<td>257</td>
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<td>33</td>
<td>48.48%</td>
<td>11.53%</td>
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<tr>
<td>New Users</td>
<td>98</td>
<td>48</td>
<td>00:01:30</td>
<td>11</td>
<td>81.82%</td>
<td>24.49%</td>
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### 7.2.5 The Research Page

This Research page saw the fifth highest number of unique visits at 420 and 308 return visits.

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<th>Unique Pageviews</th>
<th>Avg. Time on Page</th>
<th>Entrances</th>
<th>Bounce Rate</th>
<th>% Exit</th>
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<tbody>
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<td>21</td>
<td>61.90%</td>
<td>12.38%</td>
<td>$0.00</td>
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<tr>
<td><strong>Returning Users</strong></td>
<td>308</td>
<td>187</td>
<td>00:00:39</td>
<td>16</td>
<td>62.50%</td>
<td>10.06%</td>
<td>$0.00</td>
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<tr>
<td><strong>New Users</strong></td>
<td>112</td>
<td>79</td>
<td>00:00:28</td>
<td>5</td>
<td>60.00%</td>
<td>18.75%</td>
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