



216715 NEWCOM⁺⁺

DS.4.1

First release of the open collaborative space of *ViCE-WiCom*

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Abstract:

This report is produced within the NEWCOM⁺⁺ WPS.4 “Virtual Centre of Excellence on Wireless Communications” (ViCE-WiCom). This Spreading-of-Excellence workpackage aims to create a reference interaction point for worldwide research and education into new frontiers of wireless communications. The set-up of a web-based collaborative space was the first step towards this ambitious goal. The first release of the ViCE-WiCom platform is the scope of the document. ViCE-WiCom allows for the creation of virtual communities which pursue the exchange of knowledge, teachware, software, and any other relevant data of interest. Its architecture and work-flows have been designed to allow communities to organise themselves autonomously in order to facilitate knowledge-based integration in the area of wireless communications, even beyond the conclusion of the NEWCOM⁺⁺ project. WPS.4’s activity started at T0, with an exhaustive analysis of requirements needed for the identification of the set of tools and features which best comply with the objectives of the collaborative space. This was followed by the definition of the architecture and the design of the graphical interface. At T0+9, i.e. the date of delivery of this document, the first release of the platform has been completed.

Keyword list:

Web-based platform, collaborative space, interactive fora, virtual community, knowledge exchange, teachware.

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1 INTRODUCTION

This report is the first Deliverable produced within the NEWCOM⁺⁺ workpackage WPS.4. This Spreading-of-Excellence workpackage aims to activate and organise a visible window into NEWCOM⁺⁺ for the entire scientific community. Its ambitious goal is to become a reference interaction point for worldwide research and educational into new frontiers of wireless communications.

The first step of the process has been the creation of a web-based platform – the Virtual Centre of Excellence on Wireless Communications (ViCE-WiCom) – as an open collaborative space. ViCE-WiCom allows for the creation of virtual communities which pursue the exchange of knowledge, teachware, software, and any other relevant data of interest. It will be promoted and enhanced during NoE's lifetime in order to become a catalyst for knowledge-based integration in the area of wireless communications, even beyond the conclusion of the NEWCOM⁺⁺ project.

This document focuses on the first release of ViCE-WiCom, and describes its requirements, structures and sections. The organisation of the document reflects the work done during the first period of WPS.4 activity. At the beginning, an intense analysis of requirements was carried out in order to create a solid basis for the identification of the set of tools and features which best comply with the objectives of the collaborative space. Subsequently, there was a phase focused on the architectural design, also including design of an adequate graphical interface to provide an optimal look-and-feel. The final phase has been concerned with the development of the portal, which is still ongoing in order to integrate all comments and suggestions that will be possibly raised by the NEWCOM⁺⁺ partners. According to the organisation of work stated in the final JPA plan, the outcome of the testing phase and subsequent improvements will be reported in the following deliverables.

This deliverable does not aim to be a user guide or an exhaustive report into the technology behind ViCE-WiCom. On the contrary, it provides guidelines and information about the potentiality of the available tools. The remainder of the document is organised as follows. In Section 2 the architecture and structure of ViCE-WiCom are described, together with its macro-requirements and the core-technology used; a very short description of the software modules created from the scratch is also given in this section. Section 3 provides a brief presentation of the portal's main areas, and illustrates features and use-cases through a set of screenshots. Please note that the information depicted in the screenshots (text, photos, names, etc.) throughout the document should be considered as merely illustrative. Conclusions address a brief list of the next steps to be performed in order to complete the portal structure and let users actually start working.

2 ARCHITECTURE AND STRUCTURE OF ViCE-WiCOM

2.1 ViCE-WiCom macro-requirements

The architecture designed for the ViCE-WiCom portal fully reflects the internal organisation of the workpackage tasks. The first phase of the requirement analysis, which has been carried out taking into account the objectives specified in the JPA, identified three kinds of general requirements (hereafter referred to as MRx), one for each WPS.4 task:

- MR1 (corresponding to TS.4.1): they are related to the creation of tools needed to provide all portal features and instruments available for their own collaborative cooperation:
 - Tools to edit user profiles: users can highlight their own area of interest, and search for potential partners by user-defined filtering criteria.
 - Tools to create virtual communities: users can organize themselves in working groups, in order to share contents and participate in private discussion forum.
 - Tools to create, edit and remove contents and to carry out ontological search. Contents are classified as *single contents* and *container of contents*.
 - Tools for managing several fora of discussion. Two kinds of fora are provided: public fora, each one corresponding to a specific Thematic Area, and private group discussion fora, open to users belonging to the corresponding workgroup.
 - Newsletters: public-accessible newsletters.
- MR2 (corresponding to TS.4.2): they are related to the organisation of the research thread of the ViCE-WiCom as a macro-area. Scientific and industrial community outside NEWCOM⁺⁺ can share scientific and technological knowledge chunks (articles, white papers, reports, surveys) related to research and technology aspects of wireless communications. Collaborations through public and private fora will provide the basis for new joint research activities and possibly increase their effectiveness.
- MR3 (corresponding to TS.4.3): they are related to the organisation of the educational thread of the ViCE-WiCom as a macro-area. This area is organised in such a way to be in line with one of the WP's objective stated in the final JPA: "teachers and students [...] outside NEWCOM⁺⁺ can put and retrieve material like annotated bibliographies[...], slides of tutorials, seminars and lectures and others". All the data are arranged in form of a teachware repository and the user is provided with browsing and ontological search facilities.

The first general requirement (MR1) is fulfilled by a common platform consisting of a certain number of interoperable modules and web tools which form the basis of the entire portal, allowing access and use of all functionalities. In order to fulfil MR2 and MR3, two macro-areas are included in ViCE-WiCom: the research macro-area and the educational macro-area. Their structure will be described in the following sections.

Figure 1 depicts the relationship between MR1 and the macro-areas of ViCE-WiCom fulfilling MR2 and MR3.

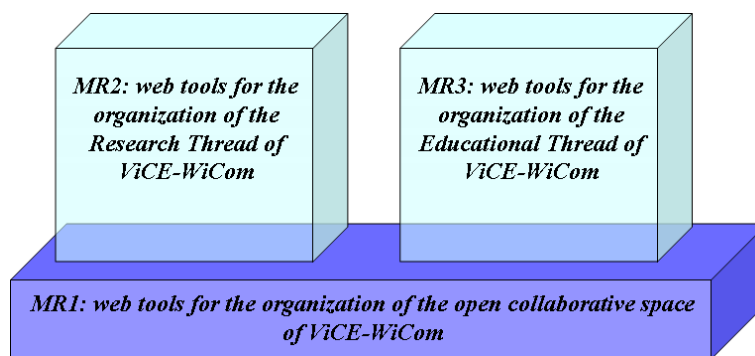


Figure 1: relationship between ViCE-WiCom macro-requirements

2.2 ViCE-WiCom structure

The portal structure is composed of a presentation part – consisting of the homepage, news, highlights etc. – and of the two macro-areas mentioned in the previous paragraph. The structure is best explained by referring to Figure 2.

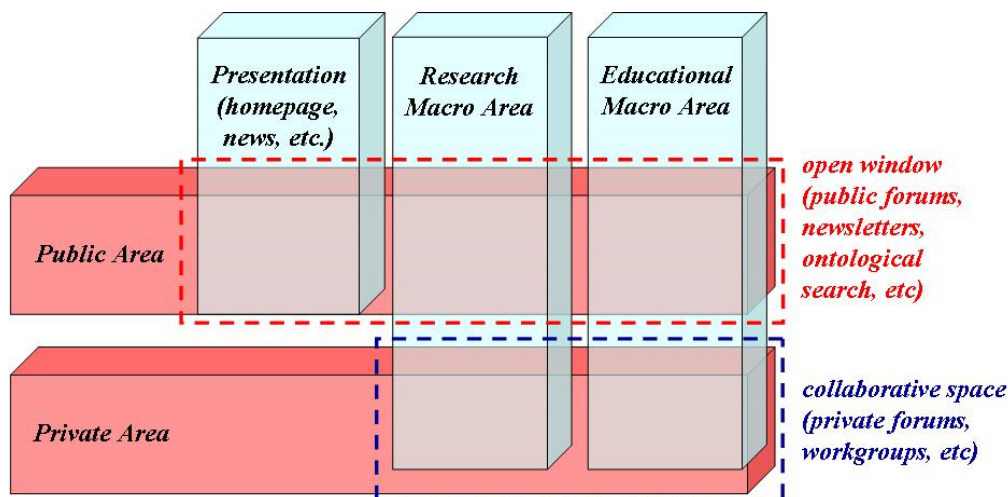


Figure 2: overview of ViCE-WiCom structure

Each macro-area offers several functions on both a public and private level. Collaboration between users only occurs on a private level, after their authentication. A more in-depth description of the levels of public and private access will be provided hereafter.

2.2.1 Thematic Areas

The macro-areas are subsequently divided into Thematic Areas in order to offer a simple classification of the Topics of scientific or educational interest. A second level of classification can be done, arranging each of them under sub-areas thereby providing a more detailed catalogue of the different research and educational aspects of wireless communications as follows:

Research Macro-area	Educational Macro-area
<ul style="list-style-type: none"> ▪ Thematic Area <i>res-topic-1</i> <ul style="list-style-type: none"> ○ sub area <i>res-topic-1.1</i> ○ ... ○ sub area <i>res-topic-1.N₁</i> ▪ Thematic Area <i>res-topic-2</i> <ul style="list-style-type: none"> ○ sub area <i>res-topic-2.1</i> ○ ... ○ sub area <i>res-topic-2.N₂</i> ▪ ▪ Thematic Area <i>res-topic-K</i> <ul style="list-style-type: none"> ○ sub area <i>res-topic-K.1</i> ○ ... ○ sub area <i>res-topic-K.N_K</i> 	<ul style="list-style-type: none"> ▪ Thematic Area <i>edu-topic-1</i> <ul style="list-style-type: none"> ○ sub area <i>edu-topic-1.1</i> ○ ... ○ sub area <i>edu-topic-1.N₁</i> ▪ Thematic Area <i>edu-topic-2</i> <ul style="list-style-type: none"> ○ sub area <i>edu-topic-2.1</i> ○ ... ○ sub area <i>edu-topic-2.N₂</i> ▪ ▪ Thematic Area <i>edu-topic-Z</i> <ul style="list-style-type: none"> ○ sub area <i>edu-topic-Z.1</i> ○ ... ○ sub area <i>edu-topic-Z.N_Z</i>

In order to facilitate user familiarisation to the portal structure, it has been decided to defer the implementation of sub-thematic areas to a further release of the portal.

Users interested in a particular subject can consult the corresponding Thematic Area, read and comment the information contained therein, create a new workgroup within that area or join an existing one. In this way the user is able to actively collaborate with other researchers or users interested in the same area. Discussion on research and educational topics can be activated and carried out only by users belonging to the same workgroup; users within the same workgroup can also create teachware materials in collaboration with each other.

2.2.2 Public Fora

A public forum is associated to each Thematic Area, both within research and educational area. Since the Thematic Areas are statically created by the portal administrator, the number of forums is fixed: when a new Thematic Area is added, a corresponding forum will be created. The following figure illustrates the structure:

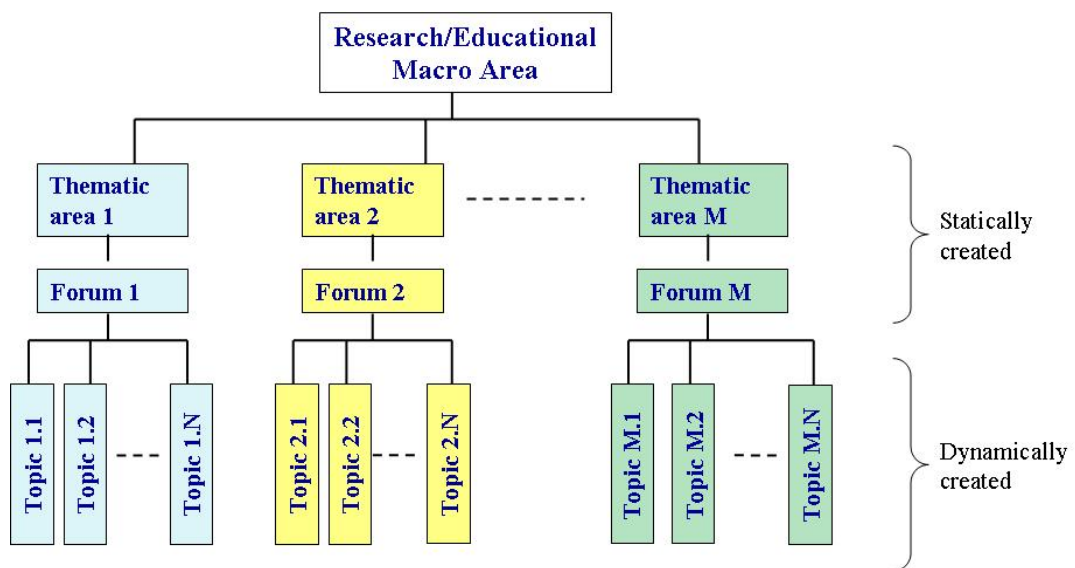


Figure 3: Forum structure

In principle, each forum hosts multiple *Topics* which can be dynamically activated by registered users. The *Topic* lifecycle within a forum is described as follows:

- A registered user is interested in starting a new discussion under a Thematic Area (e.g. Wireless Sensor Networks), to deepen a specific issue.
- He/she logs in to the portal and accesses the forum within the selected Thematic Area.
- He/she creates a new *Topic* (giving it a meaningful name), including a question or any other comment.
- The new *Topic* is made visible automatically in the public area; users willing to join the discussion have to register themselves to the portal.

Only users with administration privileges can delete *Topics* within a forum.

2.2.3 Content classification and versioning

Contents are organised as single items (classified as scientific papers, white papers or tutorials, reports, surveys, software, slide presentation, video course) and containers of items (only in educational area), the latter including more than one single content:

- publication 1
- publication 2
- course 1
 - chunk 1.1
 - chunk 1.2
- ...

The main difference between single publications and chunks (included in a course) is based on the associated metadata. Publications, in fact, have their own metadata while chunks inherit them from the course they belong to.

A container exposes a typical file system structure with file, folder and subfolder.

Each publication, as well as chunk, contains the following sections:

- *Title*, visible in all the content lists.
- *Abstract*: a short description of the publication.
- *Body*: the main part of the publication. It can contain text, images or hyperlink.
- *Attached file*: any file the user wants to enclose in the publication.
- *Metadata*: data used to classify the items; the metadata include information on: item nature, related Thematic Areas, tags.

Sub-versioning is applied to contents within ViCE-WiCom. Contents can be in one of three different states, as reported in the following table:

Version type	Description
Draft	A set of contents in its draft version. Authors should save their content in this state only during the first production phase.
Published	When authors are satisfied with their draft contents, they can decide to publish them and in public area.

	<p>Contents will be visible to everyone.</p> <p>Contents can be discussed in the private area.</p>
Under-revision	<p>An author can modify any of their contents keeping the original version in “published” state (i.e. visible in the public area). The content under modification, saved in “under-revision” state, will not be visible to the community until its author has set it as “published”.</p>

Table 1: content states

2.2.4 Workgroups

A workgroup is a collaborative space where participating users can share documents, comment and classify them, etc. Contents belong to the author who created them; they do not belong to a workgroup. An author can decide to share their contents inside one or more workgroups. In this way:

- They can start collaborating with other users within the workgroup chosen. Other members can comment their publications, contribute to the production of a course, etc.
- They emphasize the work done within a group. When a visitor starts reading a publication, the list of related workgroups is shown, together with the list of participating members and other information. In this way, the visitor can also have a list of other publications and courses shared within that workgroup.

Each workgroup identifies a group leader (the user who created it) and it is linked to a specific Thematic Area. A user can belong to more than one group, even within different Thematic Areas. Figure 4 illustrates such a classification. In this example, user John belongs to three different workgroups. Moreover, in the same illustration, the relation between workgroups and public fora is shown: both of them are linked to one and only one Thematic Area.

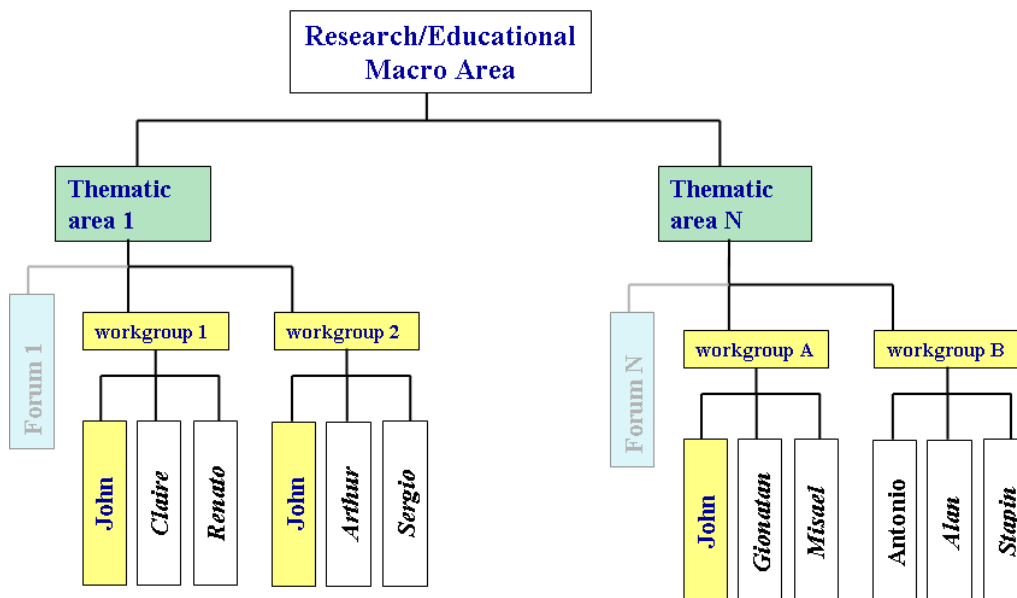


Figure 4: workgroup structure

A user willing to join a workgroup can do it without any permission. This is allowed within ViCE-WiCom for the sake of immediacy and ease-to-use. Anyway, for privacy (or any other) reasons, the group leader can decide to deny the membership by cancelling that specific user within the group.

A workgroup cannot be deleted by users. Group leaders can freeze the activity within their workgroups. Such a workgroup will be set as inactive and, as a consequence, the open collaboration sessions will be disabled.

2.2.5 User access level

Three access levels are implemented in ViCE-WiCom: anonymous (unregistered user), author (registered user) and administrator. Each of them is characterised by different levels of privileges and, as a consequence, by different permission levels when using the portal.

A brief description of the permission levels and user roles is reported as follows:

- anonymous users:
 - They can visit all the Public Area, navigating through thematic areas, newsletters, contents (all research and educational items can be viewed or downloaded), workgroups, etc. They can read any *Topic* within public fora. Finally, they can access the registration form to become registered users.
 - They cannot post (or reply to) public fora, join to existing workgroups, add any comment on published contents, join open collaborations. They cannot either modify the structure of the portal or add a new Thematic Area.
- registered users:
 - They can join to any existing workgroup, add any comment on published contents (only inside a group), and join open collaborations. They can become group leader: when a registered user creates a new workgroup (related to a specific Thematic Area), they automatically become group leaders. A group leader can deny memberships or delete contents added by other users within his group.
 - They cannot either modify the structure of the portal or add a new Thematic Area.
- administrator users:
 - They have complete control of the system. They can modify the structure of the portal and add a new Thematic Area. For security reason, they cannot access the system Database.

2.3 eZ Publish as core technology for ViCE-WiCom

The core technology behind ViCE-WiCom is based on eZ Publish (version 4.0), a professional PHP application framework with advanced CMS (Content Management System) functionality. Thousands of enterprises and organizations use eZ Publish world wide. Its architecture is fully customizable and extendable. This is also what makes eZ Publish suitable as a platform for general PHP development and specifically for the ViCE-WiCom Open Collaborative Space, allowing us to rapidly create professional web-based tools for contents management and collaboration, versioning, indexing, categorizing and sharing.

2.3.1 Built-in features

eZ Publish provides advanced built-in features, such as tag clouds, website statistics application (which provides detailed information about visitor activities integrated with Google Analytics), MS Word and Open Office document import/export.

Standard CMS functionality – such as news publishing, newsletters, fora – are already implemented and ready to use.

Stand-alone libraries can be used for cross-platforms database-independent PHP projects.

2.3.2 External modules (Extensions)

Extensions provide additional functionality (or extends existing functionality) in eZ Publish. An extension plugs-in to the eZ Publish core without requiring modifications to the original files. By placing new functionality in an extension, it is possible upgrade the eZ Publish version without affecting the extension.

There are several communities around the world which develop and make available extensions for hundreds of needed functionalities under GPL license (please, refer to License paragraph below). Several extensions were developed in order to fulfill ViCE-WiCom's requirements: authors' workspace management, articles categorization feature (course, paper, lectures, etc.), advanced ontological search and filtering.

2.3.3 License

eZ Publish is 100% Open Source, distributed under the terms and conditions of the GNU General Public License (GPL). Briefly summarized, the GPL gives you the right to use, modify and share eZ Publish. If you choose to share eZ Publish, you may only share it under the terms and conditions of the GPL. If you share a modified version of eZ Publish, these modifications must also be placed under the GPL. ViCE-WiCom developers will make the developed extensions available as featured articles in the Open Collaborative Space.

For more detailed information about eZ Publish, its features and extensions, please refer to the eZ Publish website available at <http://ez.no>; a good technical and user manual for eZ Publish 4.0 is available at <http://ez.no/doc>; several articles and tutorials about eZ Publish functionality development and configuration are available at <http://ez.no/developer/articles>.

2.4 Software modules created from scratch

Several extensions have been created from scratch in order to fulfill ViCE-WiCom's requirements. eZ Publish architecture provides an easy way for customizing and creating extensions.

An Extension consists of modules, views and templates.

- A module contains the business logic of the extension in form of PHP code.
- A view is a tier used to define the data structure to be included in order to present modules' functionalities to the users. More than one view can be associated (i.e. can use) to each module.
- A template is the way the information is showed in the web page. eZ Publish provides an easy overriding template system, able to associate the right template to the requested content.

(For more information about modules, views and templates please refer to the technical eZ documentation available at <http://ez.no/doc>).

Several classes providing content classification have been extended to better match the ViCE-WiCom Open Collaborative Space needs. With the new feature, ViCE-WiCom contents can be classified as described in the previous sections. For each of them, several modules and templates have been developed, in order to be able to create, modify and represent them.

Table 2 shows the most important templates created.

Name of template	Description
Full Article	Template for representing a published article. It shows the article's title, summary, thematic, contents, info about author(s), linked collaborative groups (if any), related items,

	downloadable resources, tags.
Full Course Main Page	Template for representing published course. It shows the course title, summary, related thematic area, contents (as a list of chunks), info about author(s), linked collaborative groups (if any), related items, tags.
Chunk File	Template for representing published chunk files inside a course. It shows the chunk's title, summary, nature (paper, lecture, video course, etc.), info about author(s), downloadable resources.
Author's Detail	Customized template showing author's detail, contacts, a list of articles/courses written.
Collaborative Group's Detail	Customized template showing collaborative group detail, participants, linked articles/courses.

Table 2: a description of the most significant templates created from scratch

Table 3 shows the most important modules and views developed to manage (create, edit, remove, versioning, publish) ViCE-WiCom's contents.

Actually, eZ Publish offers similar built-in functionalities but at a basic level only; in order to fulfill strict ViCE-WiCom's requirements, (e.g. those related to the ease of use) the built-in modules were replaced by newly created ones. Additionally, new views were created: as an example, views that provide "wizard" facilities to the users while uploading contents or collaborating with each other, were created.

Module name	Views	Description
Search	Contents	Engine for searching and filtering contents.
	Groups	Engine for searching collaborative groups, based on working thematic and name.
WSContent	List	View used in the user's workspace for listing (and filtering) oneself articles.
	View	View for showing author's articles content, organised as a tab view (see Figure XX): Metadata, Body, Collaboration Groups, Preview and Publish
	Edit	View for editing articles content, organised as a tab view (see Figure XX): Metadata, Body, Collaboration Groups, Preview and Publish
WSGroup	List	View for listing all collaborative groups related to a specific user.
	View	View for showing details of a specific collaborative group related to an author. It is organised as a tab view: Metadata, Users and Linked Contents.
	Edit	View for editing a collaborative group when created by an author (if group leader). It is organized as a tab view: Metadata, Users and Linked Contents.

Table 3: a description of the most significant modules and views created from scratch

3 FUNCTIONAL DESCRIPTION OF VICE-WiCOM

This section gives a brief presentation of the main modules of ViCE-WiCom portal.

Please note that the information depicted in the screenshots (text, photos, names, etc.) throughout the section should be considered as merely illustrative.

3.1 Overview and graphical layouts

ViCE-WiCom has been designed with the ambitious goal of becoming a reference interaction point for worldwide research and education on the new frontiers of wireless communications. This objective will be mainly pursued by offering facilities to establish effective collaborations and by creating a repository including high quality contents. Anyway, we strongly believe that an important role in capturing interests of new users and stakeholders in the field is played by the graphical presentation of the portal.

On the one hand it is important that presentation sections (homepage and public areas in general) feature an appealing aspect. On the other hand, the use of the private tools and the management of personal contents must be as easy as possible. For this reason several graphical layouts have been designed, each one specifically targeted for a particular area (i.e., more appealing for the public area, more schematic for a quicker use in the private one). Figure 5 and Figure 6 provide illustrative screenshots of the homepage and a personal workspace view, respectively.



Figure 5: a screenshot of ViCE-WiCom homepage

My research area

Filter for Thematic: -- All --

Filter for Status: All Draft Published

Filter for Keyword:

Number of articles [11]

Name	Thematic	Type	Modified	Status
<input type="checkbox"/> 1 - Cellular Telephone Industry	Wireless Sensor Networks	Simple Article	11/09/2008 5:47 pm	Published
<input type="checkbox"/> 2 - Computer networks and the Internet	Thematic Area 1	Simple Article	11/09/2008 7:44 pm	Under Revision
<input type="checkbox"/> 3 - Local area networks	No relation	Simple Article	04/09/2008 4:45 pm	Draft
<input type="checkbox"/> 4 - New article	Thematic Area 1	Simple Article	10/09/2008 4:18 pm	Draft
<input type="checkbox"/> 5 - New article	Thematic Area 1	Simple Article	11/09/2008 12:38 am	Under Revision
<input type="checkbox"/> 6 - Digital Access Index	Thematic Area 2	Simple Article	04/09/2008 4:46 pm	Under Revision
<input type="checkbox"/> 7 - Optical fibre waveguide	Thematic Area 1	Simple Article	10/09/2008 11:03 am	Draft
<input type="checkbox"/> 8 - prova policies	Thematic Area 2	Simple Article	09/09/2008 12:16 pm	Draft
<input type="checkbox"/> 9 - Society and telecommunication	No relation	Simple Article	04/09/2008 4:52 pm	Draft
<input type="checkbox"/> 10 - Telecommunication, tele- and communication	No relation	Simple Article	04/09/2008 4:53 pm	Published

Current user: John Brown
[My profile](#)
[Change password](#)
[Logout](#)

Events: Sep 2008
[Deliverable WPS4](#)
 Deliverable WPS4 about VICE-WiCom open collaborative space user interface.
Technical - 3 Sep 2008
[Technical meeting](#)
 Technical meeting about Deliverable WPS4.
Technical - 10 Sep 2008
[WPS4 the 2^o](#)
 Second meeting about

Figure 6: a personal workspace view

3.2 Thematic Areas within research and educational macro-areas

Thematic Areas, as described in the previous section, can be accessed from either the research or the educational macro-area by any user (both registered and anonymous).

A quick link to Thematic Areas is included in the left panel (please refer to point 1 in Figure 7). More detailed descriptions of each Thematic Area can be obtained by entering the relevant section (please refer to point 2 and 3 in Figure 7).



Figure 7: a screenshot while navigating through the Thematic Areas

Figure 8 shows an exemplary screenshot of a Thematic Area description.



Figure 8: a view of Thematic Area descriptions

3.3 Content navigation

Users can navigate the lists of contents and access them from the public area. Contents or part of them can be simply viewed or downloaded from the server.

Figure 9 and Figure 10 illustrate the steps to access a complete course within the educational macro-area: looking at “step 3” in Figure 10 makes clear how a user can view or download even a single part of a course.

The screenshot shows the 'Educational Area / Contents' page. The left sidebar contains a menu with 'Contents' highlighted. The main content area displays a search bar and a list of articles. The article 'Bicubic interpolation algorithm' is highlighted with a blue circle and an arrow labeled 'step 2: choose a course'. The article details include its title, publication date (Tuesday 15 July 2008 2:01:13 pm), author (autore1 autore1), and type (Course Main Page). The abstract describes bicubic interpolation as an extension of cubic interpolation for data points on a two-dimensional regular grid.

Figure 9: navigation through educational contents including several chunks

The screenshot shows a web page for a course article. The main content area is titled 'Course Article' and 'Bicubic interpolation algorithm'. Below the title, it says 'Published by John Brown on 15/07/2008 3:01 pm'. There is a 'Summary' section with 'Thematic Area: (?)' and 'Edu Wireless Sender Network'. A 'Participants' list shows 'John Brown - john@brown.com'. A paragraph of text explains bicubic interpolation. Below this is a 'Course Contents' table:

Nature	Name	Abstract	Download
Fiber (pdf)	Bicubic spline interpolation	Suppose the function values f and the derivatives f_x , f_y and f_{xy} are known at the four corners $(0,0)$, $(1,0)$, $(0,1)$, and $(1,1)$ of the unit square. The interpolated surface can then be written...	Embed PDF 26.06 KB
Lecture (doc, odt, etc.)	Interpolation algorithms	The determination of a surface defined by regularly or irregularly spaced data has been stated by Schumaker (1976) as: "Given the points (x_i, y_i, z_i) , for $i = 1, 2, \dots, n$, over some domain, a function $z = f(x, y)$ is desired which reproduces the given points, and produces a reasonable estimate of the surface z at all other points (x, y) in the given domain"	BicubicExample.doc 20.50 KB

The 'Bicubic spline interpolation' row is circled in blue. A blue arrow points to this row from the text below the screenshot.

step 3: choose a chunk within the selected course

Figure 10: selection of a single chunk within a course (container of contents)

3.4 Public areas

3.4.1 Content search feature

Contents are classified through metadata in a way to enable ontological search features. Such a classification allows for the provision of "related items". These are contents having specific metadata in common with the one the user is interested in.

Content search is performed using Lucene, which is a standard enterprise-level search engine. It is adopted by the well-known Web Server Apache. The search be done both on a global level within the two macro-areas (the keyword will be matched with any content part and metadata) and on a more specific level, using filtering features to restrict the search scope, so obtaining more accurate results.

Screenshots depicted in Figure 11 and Figure 12 show a simple search phase and an advanced one, respectively.



Figure 11: view of content search phase (simple search)

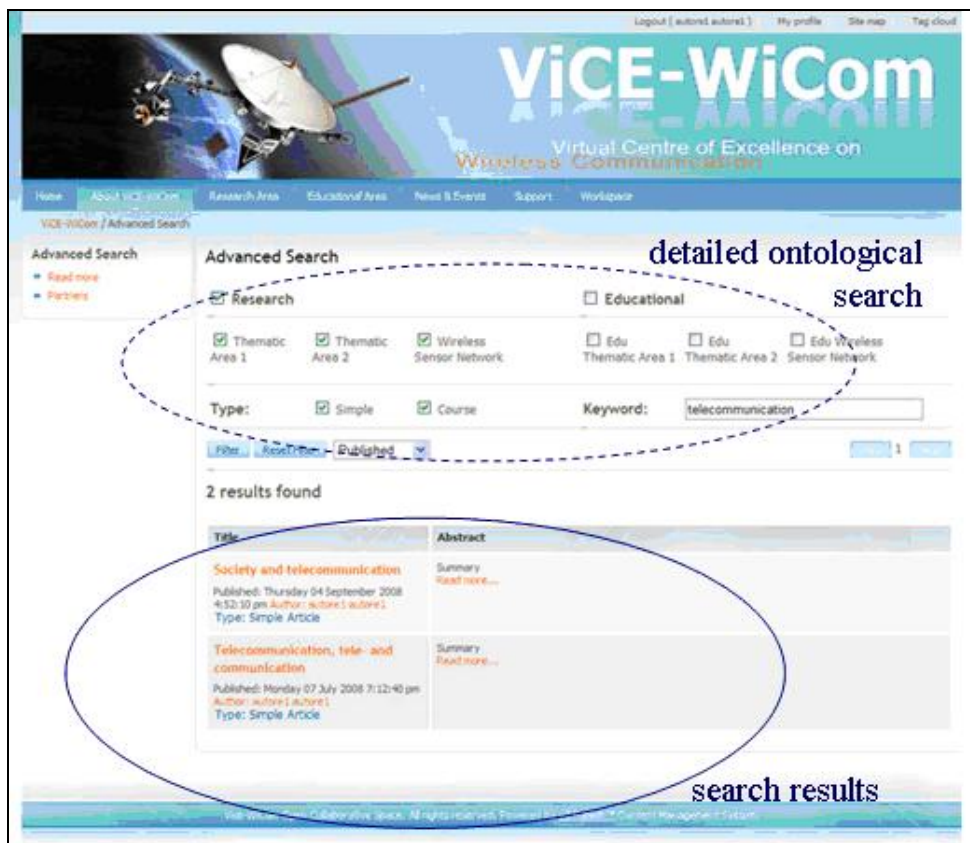


Figure 12: view of content search phase (advanced search)

3.4.2 News, events and newsletters

A section is dedicated to news, events and newsletters. Only administrators can upload such kind of information.

Latest news is automatically shown in the ViCE-WiCom's homepage. Newsletters are shown within a catalogue realised in Flash technology, making the presentation even more appealing. During the NoE lifetime, NEWCOM⁺⁺ Newsletters will be uploaded in the portal on a regular basis.

Figure 13 shows a screenshot of the News section.

The screenshot shows the 'News & Events' section of the ViCE-WiCom website. The header includes the site logo 'ViCE-WiCom' and the tagline 'Virtual Centre of Excellence on Wireless Communication'. The navigation menu includes 'Home', 'About ViCE-WiCom', 'Research Area', 'Educational Area', 'Users & Groups', 'News & Events', 'Support', and 'Workspace'. The main content area is titled 'Events and seminars' and features a calendar for September 2008. The calendar shows the following events:

Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

The events listed are:

- 3 Sep:** Deliverable WPS4 (3 Sep Technical). Deliverable WPS4 about ViCE-WiCom open collaborative space user interface.
- 10 Sep:** Technical meeting (10 Sep Technical). Technical meeting about Deliverable WPS4.
- 18 Sep:** WPS4 the 2* (18 Sep Technical). Second meeting about Deliverable WPS4.

A detailed view for Thursday 18th shows: 'WPS4 the 2*' (Category: Technical, 18 Sep 12:00).

The footer of the page reads: 'Vice-WiCom Open Collaborative Space. All rights reserved. Powered by eZ_Publish™ Content Management System.'

Figure 13: view of the News section

3.4.3 Public fora

Public fora are described in the previous sections.

Figure 14 shows a list of all fora within the research area. Figure 15 shows a view of a discussion within a forum.



Figure 14: view of a list of all the fora within the research area



Figure 15: view of a discussion within a forum

3.4.4 Support

A support section is included, in order to give users some instruction on how to use ViCE-WiCom and start profitable collaboration.

This section is only at its first draft version. How-To's, user guides and other information will be added in the next reporting period, when ViCE-WiCom will reach a stable version.

Figure 16 shows a view of the Support section.

The screenshot shows the ViCE-WiCom website interface. At the top, there is a navigation bar with links for Home, About VICE-WiCom, Research Area, Educational Area, News & Events, Support, and Workspace. The main content area is titled "Collaboration Groups" and contains the following text:

A workgroup is a collaborative space where participating users can share documents, comment and group them, etc. Contents belong to the author who created them; they do not belong to a workgroup. An author can decide to share their contents inside one or more workgroups. In this way:

- They can start collaborating with other users within the workgroup chosen. Other members can comment their publications, contribute to the production of a course, etc.
- They emphasises the work done within a group. When a visitor starts reading a publication, the list of related workgroups is shown, together with the list of participating members and other information. In this way, the visitor can have also a list of other publications and courses shared within that workgroup.

Each workgroup is linked to a specific thematic area. A user can belong to more than one group, even within different thematic areas. Figure 4 illustrates such a classification. In this example, user John belongs to three different workgroups. Moreover, in the same illustration, the relation between workgroups and thematic forums is shown: they both are linked to one and only one thematic area.

A user willing to join a workgroup can do it without any permission. This is allowed within VICE-WiCom for the sake of immediacy and ease-to-use. Anyway, for privacy (or any other) reasons, the group leader can decide to deny the membership by cancelling that specific user within the group.

A workgroup cannot be deleted by users. Group leaders can freeze the activity within their workgroups. Such a workgroup will be set as inactive and, as a consequence, the open collaborations will be disabled.

The sidebar on the left lists the following support topics: Support, VICE-WiCom basics, Searching a content, Collaboration Groups, and Thematic Area.

An inset window titled "My Groups" shows a table with the following data:

Group	Thematic Area	Status	Group Leader	Date
group1	Thematic Area 2	Group Leader	09/09/2008 10:04 pm	
group2	Thematic Area 1	Group Leader	25/09/2008 10:33 am	
group3	Thematic Area 1	Yes	25/09/2008 1:17 pm	
group4	Thematic Area 2	Yes	25/09/2008 1:19 pm	
group5	Edut Wireless Server	Yes	25/09/2008 1:21 pm	

Figure 16: view of the Support section

3.5 Private areas

3.5.1 Personal profile management

This section allows users to manage their personal details. Personal details included are:

- first name and last name
- email
- organisation
- password
- bookmarks

Figure 17 shows a screenshot of the Personal Profile management page.

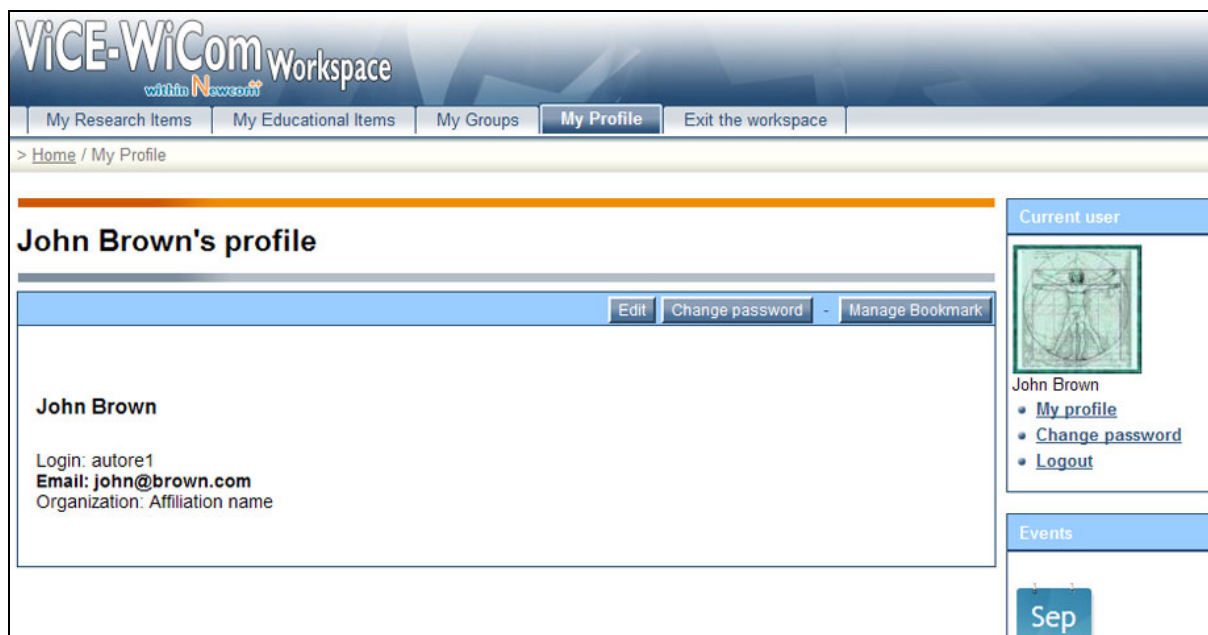


Figure 17: view of the personal detail management page

3.5.2 Workgroups

Workgroups are described in the previous sections. The following figures show some views of personal workspace sections. The first screenshot (Figure 18) shows the “my groups” section, containing a list of all the groups a user is part of. Figure 19 shows a view of a list of all contents related to a specific workgroup.

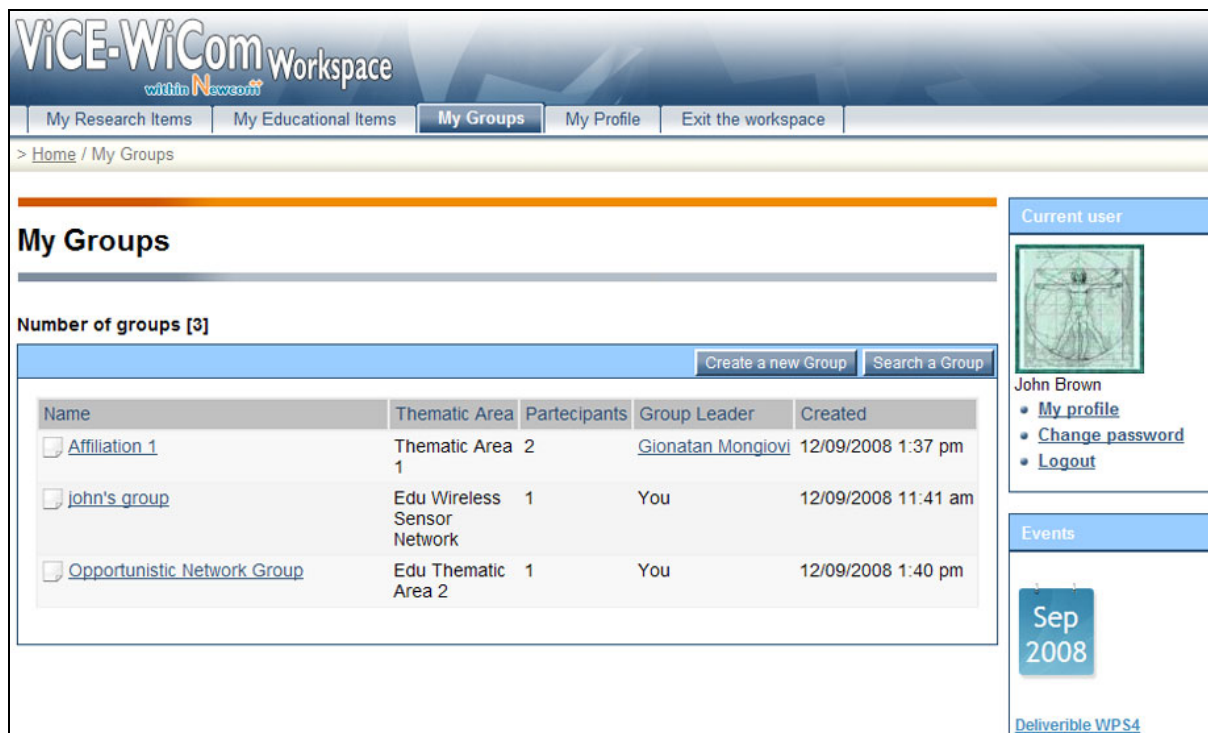


Figure 18: view of the “my groups” section

The screenshot shows the 'ViCE-WiCom Workspace' interface. At the top, there are navigation tabs: 'My Research Items', 'My Educational Items', 'My Groups' (selected), 'My Profile', and 'Exit the workspace'. Below the tabs is a breadcrumb trail: '> Home / My Groups / Affiliation 1'. The main content area is titled 'Affiliation 1' and includes the text: 'Created by: Gionatan Mongiovi (Group Leader) on 12/09/2008 1:37 pm' and 'Working at Thematic Area 1 (2)'. There are tabs for 'Metadata', 'Users', and 'Linked Contents', with a 'Link a content' button. The 'Articles Uploaded [4]' section contains a table with the following data:

Name	Author	Type	Modified		
<input type="checkbox"/> YUV Colorspace	You	Simple Article	11/09/2008 8:50 pm		
<input type="checkbox"/> Opportunistic networks	Gionatan Mongiovi	Simple Article	10/09/2008 3:29 pm		
<input type="checkbox"/> Optical fibre waveguide	You	Simple Article	10/09/2008 11:03 am		
<input type="checkbox"/> Computer networks and the Internet	You	Simple Article	10/09/2008 3:26 pm		

On the right side, there is a 'Current user' section for John Brown with a profile picture and links for 'My profile', 'Change password', and 'Logout'. Below that is an 'Events' section showing a calendar for 'Sep 2008' and a link for 'Deliverible WPS4'.

Figure 19: view of a list of all contents related to a specific workgroup

3.5.3 Content production

The content production phase is guided by a wizard and consists of the following steps:

- step1: create metadata for the new publication. Metadata includes: title, item nature, related Thematic Area, tags and an option used to enable or disable comments on those contents. Abstract production is included in this phase, even if it is not a proper metadata. On completion the system automatically drives the author to step2.
- step2: create the body of the publication. The body can contain text, images, hyperlinks and attached files. Moreover an attached file can be included. Figure 20 shows a screenshot of this phase. On completion the system automatically drives the author to step3.
- step3: associate the contents to one or more workgroups. This is done under the following conditions: the workgroup(s) has to refer to the same Thematic Area and the author has to belong to the workgroup(s). On completion the system automatically drives the author to step4.
- step4: preview the publication. Before publishing the contents, the author can have a preview, in order to check the overall result. Figure 21 shows a screenshot of this phase. The process is finished.

After these steps, the newly-created contents are stored as a draft version. Nothing is published yet: the authors, once they are satisfied with the contents, can eventually decide to publish them using the "Publish" tab. Subsequently, the contents will be managed by the versioning system described in the previous sections.

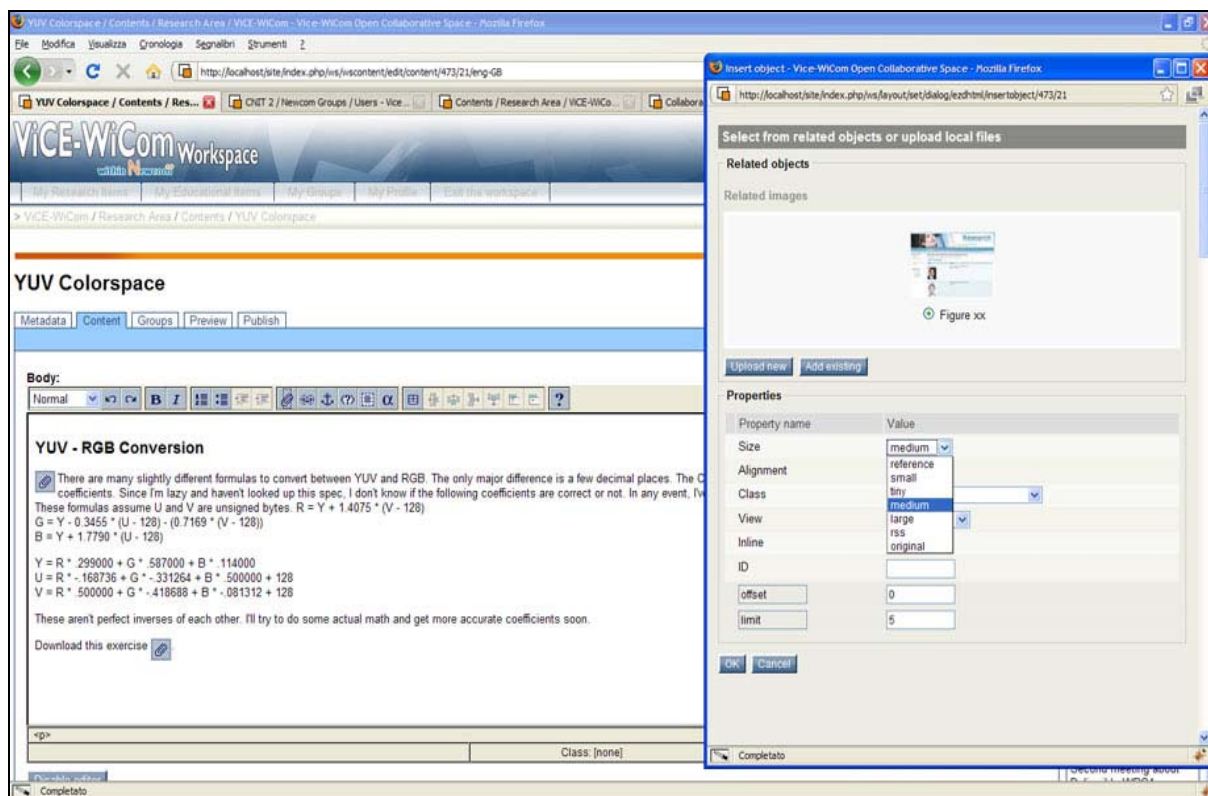


Figure 20: view of step 2 in content production process



Figure 21: screenshot of content preview

3.6 Administration area

ViCE-WiCom can be managed through the portal control panel. Only administrators can access the control panel. Access policies and user roles are described in the previous section.

Some screenshots of the administration area are reported in Figure 22 and Figure 23.

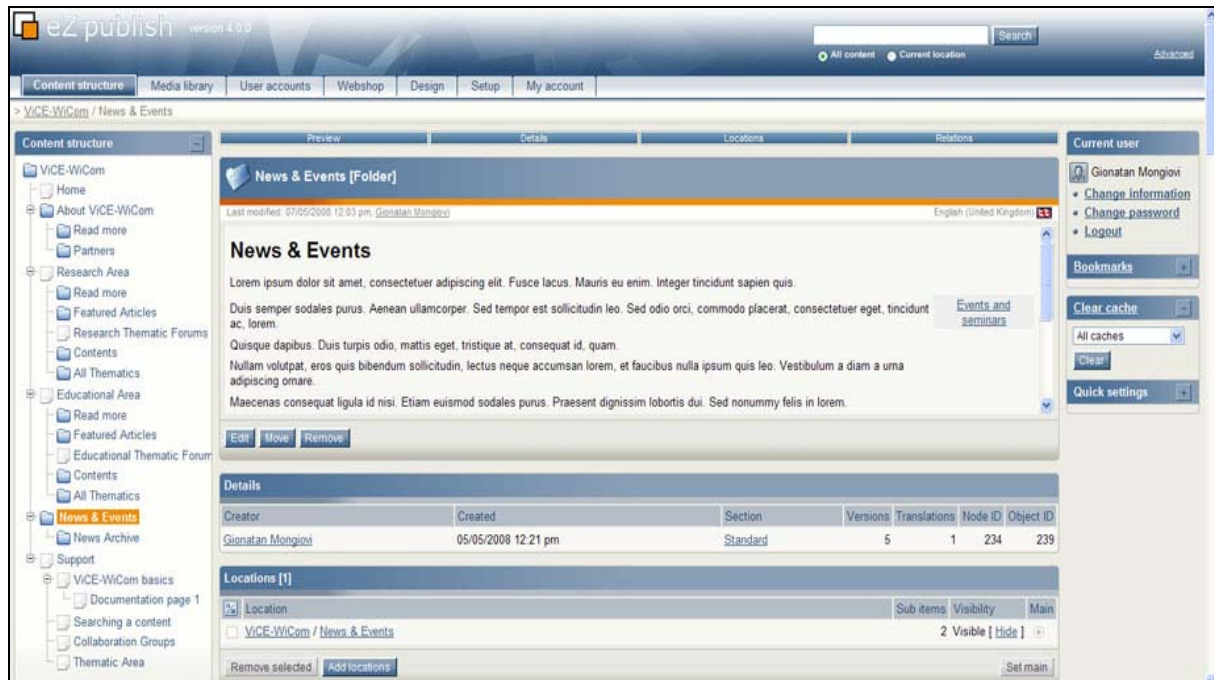


Figure 22: view of the control panel (administration of the “news and events” area)

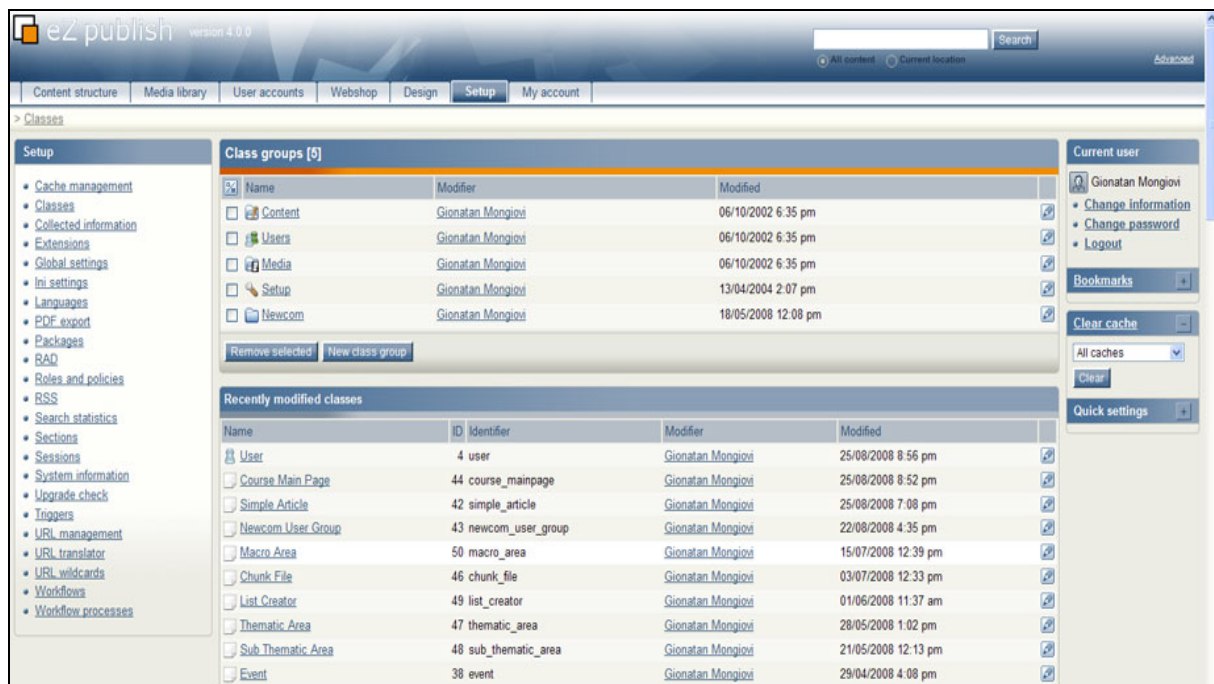


Figure 23: view of the control panel (administration of class modules)

4 CONCLUSIONS

This report has been produced within the NEWCOM⁺⁺ WPS.4 and describes the first release of the open collaborative space developed as an instrument to meet the objectives of the open collaborative space.

WPS.4 aims to create a reference interaction point for worldwide research and education into new frontiers of wireless communications. The set-up of a web-based collaborative space was the first step towards this ambitious goal. From its first release ViCE-WiCom allows for the creation of virtual communities which pursue the exchange of knowledge, teachware, software, and any other relevant data. Its architecture and work-flows have been designed to allow communities to organise their activity autonomously.

The ViCE-WiCom collaborative space will be up and running from T0+9 (end of September 2008). Following that date, partners belonging to WPS.4 will start using it, providing feedback on Thematic Areas, uploading the first contents and start collaborating with each other. The Thematic Area section will be populated during this phase; this will be done inside NEWCOM⁺⁺ in order to create a structure as much complete as possible, thanks to the collaboration of experts in the area of wireless communications. The feedback provided will constitute the basis of future releases of the ViCE-WiCom platform. Moreover, an integration process with the outcome of WPI.1 will be carried out. WPS.4 and WPI.1 will try to share experience, technologies and data in an attempt to improve their own respective results.

A subsequent phase of promotion will follow, in order to make the portal visible to the Scientific and industrial community outside NEWCOM⁺⁺.