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*Global Linkage Over Broadband Links*

# **GLOBAL**

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*European Commission Seventh Framework Project  
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**Virtual Auditorium Infrastructure /VCC v1 – D1.1**

**14 November 2008**

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## 1 Introduction

One main goal of GLOBAL is to allow and help research projects to disseminate their results and training events to a wider audience located in multiple geographical locations through the organization of virtual conferences. The virtual conference events will provide advanced videoconferencing and collaboration tools and support to all participants. Each event will be recorded and stored on a repository together with documents and outcomes for future consultation.

The virtual conference centre (VCC) is the key component to provide these services and consists of three main functions focused on usability: a virtual auditorium, for planning, coordination and management of the virtual events, an event repository, to store the recordings and outcomes of the events, and a virtual corridor, which will support networking and partnership building amongst the participants.

GLOBAL will provide with the VCC a user-centric interface for planning, creation, announcement, coordination, content management and realisation of virtual conferences with open and wide participation. Through these virtual conferences the participating users will be able to exchange information on e-Infrastructure development in their region, identify partners for future collaboration and exchange and discuss synergies between their running initiatives.

The existing videoconferencing tool Isabel was used as a starting point to develop the VCC. Isabel has a “flexible floor”, is IPv6 enabled, allows for firewall/NAT traversal, manages multicast/unicast data transmissions, among other features. Building on this state of the art, the VCC provides an integration of Isabel in a user-centric Web2.0 interface. This integration is based on a user-friendly interface that encourages participation and collaboration through the virtual auditorium and establishment of personal contacts for partnership building through the virtual corridor interface.

The implementation of the first version of the VCC concerns the VCC website's core infrastructure with the unification of these collaborative components into just one platform:

- Unified access to the virtual auditorium functionality
- An event scheduler
- Social networking with folksonomies
- Resources and tools needed for participation
- Streaming of virtual events
- Recording of virtual events
- Collaboration tools for document exchange, outcome dissemination, group communication

The VCC Website was designed following the Model-View-Controller model together with agile software design methods such that the logic and the models of the various functionalities of the site can be developed independently of the views. This task focused on providing the models and controllers of the sites, whereas the views will be provided by WP3 which will take charge of the user interface and will perform the usability evaluation.

Ruby on Rails and RESTful software design frameworks were chosen as they are the most efficient rapid prototyping tools for website design. This design followed a basic principle, use collaborative knowledge aggregation mechanisms based on tagging, folksonomies and social networking used for resource classification such that all information is accessible keeping the user in the centre of his preferences.

In the next chapters we will introduce the different aspects of the first version of the VCC.

## 2 VCC structure and functionality

The first production version of the VCC website can be reached on this URL: <http://sir.dit.upm.es>. This version is already a social Web 2.0 like site that fulfils all the requirements specified in the Global documents for the initial release. In Figure 1 we see a screenshot of the VCC public view.

The screenshot shows the public view of the GLOBAL - Virtual Conference Centre website. The header includes navigation tabs for Home, Events, Posts, People, and Spaces, along with a search bar and a 'Space: Public' dropdown. The main content area features a 'Public description' section with the following text:

**GLOBAL**  
GLOBAL - Global Linkage Over Broadband Links will provide a virtual conference centre using advanced communication technologies and concepts to support the promotion of e-infrastructure topics in Europe and around the world.

One main goal of GLOBAL will be to allow and help research projects to disseminate their results and training events to a wider audience located in multiple geographical locations through the organization of virtual conferences. GLOBAL will provide a user-centric interface for planning, creation, announcement, coordination, content management and realisation of virtual conferences with open and wide participation. Through these virtual conferences the participating users will be able to exchange information on e-infrastructure development in their region, identify partners for future collaboration and exchange and discuss synergies between their running initiatives.

The virtual conference events will provide advanced videoconferencing and collaboration tools and support to the participants. Each event will be recorded and stored on a repository together with documents and outcomes for future consultation. The virtual conference centre will provide three main functions focused on usability: a virtual auditorium, for planning, coordination and management of the virtual events, an event repository, to store the recordings and outcomes of the events, and a virtual corridor, which will support networking and partnership building amongst the participants.

**past conferences supported by GLOBAL**  
[GEANT2 \(Bled, March 2008\)](#)  
[Terena Networking Conference \(Brugge, May 2008\)](#)

**Download**  
Brief live introduction of the GLOBAL project by Juan Quemada, which was recorded at the GEANT2 conference in Bled, March 2008.

[GLOBAL live intro by Juan Quemada at the GEANT2 conference in Bled, 2008.mp3](#)

**Project Partners**  
Zentrum für Soziale Innovation (ZSI), Austria  
[www.zsi.at](http://www.zsi.at)  
Universidad Politécnica de Madrid (UPM), Spain  
[www.upm.es](http://www.upm.es)  
Agora Systems S.A. (ASSA), Spain  
[www.agora-2000.com](http://www.agora-2000.com)  
Cooperación Latino Americana de Redes Avanzadas (CLARA), Uruguay  
[www.redclara.net](http://www.redclara.net)  
University College London (UCL), UK  
[www.ucl.ac.uk](http://www.ucl.ac.uk)  
Jozef Stefan Institute (JSI), Slovenia  
[www.jis.si](http://www.jis.si)  
Ubuntunet (Ubuntunet), Malawi  
[www.ubuntunet.net](http://www.ubuntunet.net)

The sidebar on the left contains a 'Search' bar, 'Latest News' (including Internet Ng event, Interesting Article, testing articles, Testing attachments, Test, global conference), and 'Latest Events' (including event test, prueba amendo, user event, rails conference, Internet NG, Telekom I + D). The footer features a 'supported by global-project.eu' logo and the European Union flag.

Figure 1 Public view of the VCC

The VCC represents a single unified point of access to the virtual auditorium features. The different functionalities of the VCC can be accessed through the available tabs: *Home*, *Events*, *Posts*, *People* and *Spaces*.

A summary of the main features of this site is:

- Users: Access to the VCC is open to all users. Access to view or modify some VCC content requires the user to be previously registered.
- Spaces: The application is divided into spaces allowing the user to organize all the data related to a specific project into a space. Every project or group will have a space associated and all the posts with uploaded attachments, created events, or project documentation will be located there. Each space has also a public area accessible to all registered or unregistered users of the VCC.
- Event scheduler: In this version only Isabel events are supported. The user can create an event on any space he belongs to and specify if the event is a public event (anyone can see the scheduled event including the description information) or a private space event (only visible to members of that space).
- Posts: The application has a blog-like or forum-like system based on posts. The posts can be public or private to a space. Users that can read the posts may replay to it. Posts can have multiple attachments to share documentation.
- Attachments: The posts can have multiple attached documents in any format. This is the only method available to upload documents in this version. In next versions, a document repository will exist with other upload interfaces.
- Tags: Tags are the best means for users to flag specific items (users, posts, attachments, events, etc) with meaningful searchable marks. Used tags are gathered in a tag cloud with each tag sized depending on the number of appearances and ordered by size.
- Search: A contextual search is provided on all pages. The name space searched depends on the context of the current search. Advanced search fields are also available.

### 3 Users

Although access to the VCC is public not all documents can be viewed or modified without registering the user. The users can register in the system, login and logout. The application can remember the user and keep the session information if so required. Users also have a customizable profile with an associated hcard micro-format.

Registration of the user is necessary to create events and access information of specific areas of the VCC that are private to a particular group of people also called *Space* and explained in the next section.

Figure 2 shows a screenshot of the user registration form. This registration will be assigned initially to the *Public Space* but the user may become member of other spaces too.

The screenshot shows the user registration form on the GLOBAL - Virtual Conference Centre website. The page header includes the logo for global-project.eu, the site title "GLOBAL - Virtual Conference Centre", and navigation links for "about GLOBAL", "Project Partners", "Login", and "Register". A secondary navigation bar contains "Home", "Events", "Posts", "People", and "Spaces" (which is highlighted). A "Space:" dropdown menu is set to "Public", and an "RSS Feed" link is visible.

The registration form itself contains the following fields and elements:

- Username**: Text input field
- Email**: Text input field
- Password**: Text input field
- Confirm Password**: Text input field
- Interests(\*)**: Text input field
- Image**: A small image showing the text "KJPEKM" on a blue background.
- Code Entry**: A text input field with the instruction "(type the code from the image)".
- Buttons**: "Sign up" and "Back" buttons.

A "Tips" box on the left side of the form provides the following information:

**Tips**  
After signing up, you will receive and email confirmation message  
You should click in the activation link to log in  
Already have an account?

Below the interests field, a note states: "(\*) The tags that will define you, separated by commas".

Figure 2. User Register Form

Once logged in, the registered user may revise his/her profile and update any information that is considered important. An hcard profile can be generated to ease exchange of contact information. Figure 3 shows a screenshot of a user profile after accessing to the MyProfile tab.

Profile was successfully updated.

**Your Photo**

**My Hcard**  
 Iván Rojo  
 Work  
 C/ Monaco nº 1 7ºC  
 Madrid Madrid 28040  
 Spain  
 Phone/Fax: Work: 913556989/ Mobile: 659781598  
 Organization: Dit  
 Email: ivan.teleco@gmail.com  
 Edit

**About Me**

**My Friends**

**Member of the Spaces**  
 You are not subscribed to any space

**My Account**  
 Login: ivan  
 Email: ivan.teleco@gmail.com  
 Your Interests (Tags): global,telekom  
 Edit

Ask for Resources

Figure 3. User profile view

The *People* tab allows to check on the members of a specific space such that targeted messages can be sent to group or space members. A view of users is shown in Figure 4.

**Search Users**

Login / (name,lastname)	Organization	Interests	Member of
admin			none
ivan / Iván Rojo	Dit	global,telekom	Private space
volomir / Rafael Gar...	DIT		space2 ,Private space
ivanrojo		internet	Private space
Juan Quemada / Juan ...	DIT		none
amendo / antonio mendo	DIT	global,isabel,sir	Private space
Monica Cortes / Monic...	UPM		space2
ebarra		prueba	Private space
rafale		ski	Private space
leonard		ski	Private space
doubleshot		ski	space2 ,Private space
sam / Sam Lui	Nowhere Unive...		none
alonsoval / Pedro Lui...	DIT - ETSIT / ...	test	none

Figure 4 VCC People tab



## 4 Spaces

Spaces are the means to organize different projects and different topics. Each space has a repository with public and private documentation and events. The space's public area can be customized to be the public face of the project in the VCC.

Registered users are members of the *Public* space and may be members of any specific space. The administrator of a space can join any registered user to the space or have an "open to all" registration policy. There is no limit to the amount of spaces a particular registered user can be a member of.

Each space can also build internal groups mimicking the task force or work-package organization of the projects. A member of a space may also be member of various groups of that space.

Figure 5 shows the view of different spaces available on the VCC. The right most tab shows a pull-down menu with available spaces, public or private spaces. The *Manage* tab allows the VCC administrator to create new spaces, create groups of users under a space, add new users to a given space or delete a space.



The screenshot shows the GLOBAL - Virtual Conference Centre website interface. The top navigation bar includes links for 'about GLOBAL', 'Project Partners', 'Logout', and 'admin'. The main navigation tabs are 'Home', 'MyProfile', 'Events', 'Posts', 'People', 'Groups', and 'Manage'. A 'Space:' dropdown menu is open, showing options for 'Public space2', 'test', and 'Private space'. Below the navigation, there is a search box and a table of spaces.

Name	Action
space2	Add Users Groups Delete
test	Add Users Groups Delete
Private space	Add Users Groups Delete

Figure 5. Spaces

One of the spaces will be dedicated to the GLOBAL project website including public and private contents. In the public area of the GLOBAL space all relevant information, resources and additional tools needed for user participation will be provided. The public area of the GLOBAL space will contain all necessary information for project work and development.

## 5 Event scheduler

The event scheduler is the main part of the VCC. It allows a registered user to create events and organize all documentation for the events in a clear accessible manner. Any user can access the calendar with all the booked events available in any public space, or public events from private spaces and any private event from any spaces he/she is a member of. This allows him/her to register in any, if interested in attending, or take existing event dates into account to avoid overlaps if interested in creating a new event.

An event can be a one off or have certain periodicity, and can be booked for a determined number of participants. All this information may be introduced at event creation to ease the event creation process. At the time of the event, the application will boot the Isabel application in a server machine and communicate to the event participants the URL to connect to.

In this version only Isabel events are included, but it will not be very difficult to enhance it with new simple events that only have name and description and that notify by mail the users required to assist.

Figure 6 shows a screenshot of the *Events* tab, all the upcoming events are listed with summary information including the event title a short description, the starting date and the tags associated with the event. The tags allow the members of the VCC to search for interest topics that may exist in the tag cloud.

The screenshot displays the 'Events' tab of the GLOBAL - Virtual Conference Centre. At the top, there is a navigation bar with links for 'Home', 'MyProfile', 'Events', 'Posts', 'People', 'Groups', and 'Manage'. The 'Events' link is highlighted. To the right of the navigation bar, there are links for 'about GLOBAL', 'Project Partners', 'Logout', and 'admin'. Below the navigation bar, there is a 'Space:' dropdown menu set to 'test'. A 'Server Time: 12:34:35' is displayed. On the left, there is a 'Calendar' widget showing a calendar for November 2008. Below the calendar is a 'Search Events' widget with an input field and a search button. The main content area is titled 'Latest Events Added' and contains a table of 'Events Coming...'. The table has five columns: 'EVENT TITLE', 'EVENT DESCRIPTION', 'START DATE', 'TAGS', and 'ACTIONS'. The table lists several events, including 'teleclass', 'DEA Teleclass', 'Conferencias Flex', 'Telecom I+D', 'rails conference', 'admin', 'Drop 7 Project RGO', 'IBA Teleclass', 'Internet NG', 'Screencast Rails', 'Rails Conferencia H...', and 'volomir'. Each event entry includes a short description, a start date, a list of tags in brackets, and a set of icons representing actions like 'add', 'edit', 'delete', and 'share'.

EVENT TITLE	EVENT DESCRIPTION	START DATE	TAGS	ACTIONS
teleclass	IBA teleclass	10 Nov 18:10	[iba,teleclass,test]	[add, edit, delete, share]
DEA Teleclass	DEA	04 Dec 10:00	[dea,madrid,upm]	[add, edit, delete, share]
Conferencias Flex	Flex	03 Dec 10:00	[flex,madrid,upm]	[add, edit, delete, share]
Telecom I+D	Telecom I	01 Dec 10:00	[madrid,telecom]	[add, edit, delete, share]
rails conference	the rails conferences	13 Nov 17:54	[rails,ruby]	[add, edit, delete, share]
admin	Drop 7 Project RGO	24 Nov 17:53	[drop,project,rgo]	[add, edit, delete, share]
admin	IBA Teleclass	28 Nov 10:52	[class,iba,isabel]	[add, edit, delete, share]
admin	Internet NG	26 Nov 17:52	[internet,ng]	[add, edit, delete, share]
admin	Screencast Rails	14 Nov 17:51	[isabelinos]	[add, edit, delete, share]
admin	Rails Conferencia H...	13 Nov 10:00	[conference,rails]	[add, edit, delete, share]
volomir	Rails Conferencia H...	12 Nov 10:46		[add, edit, delete, share]

Figure 6.Event view

## 6 Space Repository

Each Space has a repository of shared documents and a blog-like or forum-like upload system based on posts to fill it. In this first version of the VCC posts are the only means to fill the repository. In next versions, a document repository will exist with other upload interfaces.

The posts can be public or private to a space. Any users that can read a specific post may also reply to it. Posts can have multiple attachments to share documentation and these can be in any chosen format.

Figure 7 shows the VCC view of the available posts after selecting the *Posts* tab. The posts are listed with information about the posting time, the subject, the posting user and the assigned tags.



The screenshot shows the 'Posts' view in the GLOBAL - Virtual Conference Centre. The page has a header with the site name and navigation links. A search bar is on the left. The main content area is titled 'Entries - test' and shows a list of posts. Each post includes the user name, tags, subject, date, and interaction icons.

User	Tags	Subject	Date	Interactions
admin (1):	[event,test,testing]	Internet Ng : internet Ng event	6 Nov	📌👤👤
admin (0):	[global,testing]	Interesting Article: this is an interesting arti...	6 Nov	👤👤
admin (0):	[test,testing]	post : testing articles	6 Nov	👤👤
admin (3):	[test,testing]	Testing attachments: Test	6 Nov	📌👤👤
Iván Rojo (0):	[global,testing]	global conference: global conference	6 Nov	📌👤👤
Iván Rojo (0):	[global,telekom,t...]	Telekom I + D: telekom I + D	6 Nov	📌👤👤
Iván Rojo (0):	[rails,ruby,test]	Rails conference: Rails conference	6 Nov	📌👤👤
admin (2):	[testing]	first admin post: post with attachment	6 Nov	📌👤👤

Figure 7. Posts view

The main Global project space repository will have links to recorded events in two different formats: a downloadable format and streamed format. This will allow interested parties to follow virtual events both live and on demand.

Virtual events will be streamed live so participants, who can't or who don't want to participate actively, are able to watch the event simply using their web browser. Also, virtual events will be recorded and stored at the repository, together with documents, so participants can get up to date with new developments in project events. Before publishing recordings to the repository they will be edited and tagged.

## 7 Group communication and searches

All spaces have simple means to allow communication between space members. A private group mailing list is automatically set up such that news and important messages can be notified via this push mechanism instead of the pull method (posts) of users logging into the system. The administrator of the space can manually create any number of groups with a associated mailing lists.

All related space documentation could be tagged with any label. A tag is a non-hierarchical keyword or term assigned to a piece of information (such as a user, a post, an attachment or an event). This kind of metadata helps describe an item and allows it to be found again by browsing or searching. Tags are chosen informally and personally by the item's creator or by its viewer. On a website in which many users tag many items, this collection of tags becomes a folksonomy. Used tags are gathered in a tag cloud with each tag sized depending on the number of appearances and ordered by size. In Figure 8 we see an example of such a generated tag cloud where any tag can be clicked on to obtain a full search of any item in the VCC that has been assigned that tag.



Figure 8. Tag cloud

Figure 9 shows the result of clicking on the ruby tag.

The screenshot shows the GLOBAL - Virtual Conference Centre website. At the top right, there are links for 'about GLOBAL', 'Project Partners', 'Logout', and 'Monica Cortes'. The main navigation menu includes 'Home', 'MyProfile', 'Events', 'Posts', 'People', and 'Spaces'. A 'Space:' dropdown menu is set to 'test(\*)'. Below the navigation is a search bar and a 'supported by' logo for global-project.eu.

The search results are displayed under the 'Events' section, indicating '2 events were found'. The results are as follows:

EVENT TITLE	EVENT DESCRIPTION	START DATE	TAGS	ACTIONS
rails conference	rails conference	12 Nov 17:36	[rails,ruby]	
rails conference	the rails conferences	13 Nov 17:54	[rails,ruby]	

Below the events section, the 'Users' section shows 'No users Found'. The 'Posts' section shows one post by 'Iván Rojo (0)' with tags '[rails,ruby,test]' and the title 'Rails conference: Rails conference', dated '6 Nov'.

Figure 9 Search result clicking on ruby tag

Searches in the VCC can be done on many fields such as user name, post title or description, event name or description, tags etc. The search results depend on the context of the current search. Advanced search fields are also available. Figure 10 pictures a search form window of the VCC.

The image shows a screenshot of the GLOBAL - Virtual Conference Centre website. The page features a blue header with the site title and navigation links. A search form is prominently displayed in the center, offering various search options. On the left side, there is a sidebar with a search box and a 'supported by' logo. The main search area includes a general search field, specific search filters for event titles and descriptions, and a date range selector.

about GLOBAL | Project Partners | Logout | admin

**GLOBAL - Virtual Conference Centre**

Home | MyProfile | **Events** | Posts | People | Groups | Manage

Space: Private space ▾

[New Event](#) | [Show Calendar](#) | [RSS Feed](#)

Search

(in title, description and tags with exactly words)

Search by Event's Title

Search in Event's Description

You can search here between two dates

From to Search

supported by

Figure 10. Advanced search form

## 8 Conclusions

The first version of the VCC sets the core infrastructure of the Video Conferencing Centre and can be accessed in following URL <http://sir.dit.upm.es>. This first version of the VCC will be checked with usability criteria in mind and will build the basis for the most advanced functionalities. The first version includes many core functionalities described in the various sections of this document such as:

- Concept of registered user with permissions to be a member of any public space and become a member of private (closed) spaces. A registered user may view any private documentation of public spaces and of those private spaces he is a member of.
- Concept of Space to group information, registered users, documentation and communication of different projects in clear delimited areas. Spaces may create groups with a subset of members of the same space to handle specific tasks.
- Creating posts with multiple attachments of any format to populate the space repository.
- Event scheduler that allows for creation of new events or participation in an event.
- Tagging any information piece inside the VCC to allow for targeted searches and contextual searches.

Most importantly of all, the VCC hosts a special *Space* that will contain the GLOBAL website. This site will have any public or private documentation that GLOBAL will be wanting to distribute publicly, such as an event recording repository, list of GLOBAL supported events, VCC usage documentation and resources, etc. Also any internal documentation and resources needed for the project itself will be uploaded as required.