

DOCUMENT IV: Technical and functional requirements for the Web Content Management System (Lot 2)

Technical and functional requirements for the Web Content Management System (WCMS) related to the Request For Proposal for the creation of a new Web-site and intranet for the European University Institute

- Lot 1. The elaboration of a new graphical identity for the future web-site.
- Lot 2. The setting up and configuration of a Web Content Management System for the renovation of the web site and intranet.

Ref: EUI.2007.LibCS001

The first part of this document presents the [technical environment and the design constraints](#) inherent to this project.

The second part of this document concerns the [tools and functionalities to be provided by the WCMS product](#) (functional and technical requirements).

The last part of this document presents the [custom tools to be created](#) that are more specific to the Institute.

In this document we make a distinction between needs or requirements that are critical for the project (referred to as [major requirements](#)) and those that are considered to bring an added value (referred to as an [advantage](#)). When nothing is specified the requirement is considered as 'major'. Candidates are informed that proposals that do not meet all major requirements will not be automatically eliminated. Offers will be assessed comparatively and the best offer will be selected based on our priorities. Please see Document II – Part IV for more information on the selection procedure.

The use and selection of the product, based on these requirements is explained in detail in Document II of this Request for Proposals – section IV and repeated in Annex III.



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Part I TECHNICAL ENVIRONMENT & DESIGN CONSTRAINTS

I.1 SEPARATION OF LAYOUT AND CONTENT

It is a major requirement that content and lay-out are completely separated from each other. All elements that influence the lay-out of the web-site (font style, colours, positioning of navigation, and so forth) should to be managed by the system through the use of templates and style sheets.

Because templates and style sheets will dictate the look and feel of the web-site, their construction should be documented in detail. Anyone with a good knowledge of style sheets should be able to change these. (See more in [Layout management section](#))

I.2 ABOUT THE WCMS PRODUCT SOURCES

Major requirements for the WCMS product are that it should be:

- Open. We do not want a “black box” system. The WCMS should be either fully open (access to code directly) or customisable through API interfaces.
- Built on a non-proprietary language. The language used to build the WCMS should be a generally known public programming language allowing for future developments and not limiting the choice of companies for such developments. By a generally known public language we mean the following: PHP, C, C++, J2EE, JSP, ActionScript, ASP, .Net, C#, Coldfusion.
- The architecture of the WCMS should be clear and clean. We would like to avoid getting a system where pieces are built in different programming languages or based on different kind of databases.

We consider as advantages:

- That candidates have the full “know-how” of the product they propose, being either certified resellers and installers or the WCMS product creator.
- That the WCMS has already a large customer base.

I.3 INTERACTING PROGRAMMING LANGUAGES

It is a major requirement to have access to the source code directly or through an API interface. The programming language used to interact with the WCMS should be a generally known and public programming language.

Generally known public languages are: PHP, JSP, C, C++, J2EE, ActionScript, ASP, .Net, C#, and Coldfusion. A proprietary language or any other language than the ones listed will be considered as a disadvantage.

I.4 SUPPORT OF STANDARDS AND ADVANCED TECHNOLOGIES

The major requirements are as follows:

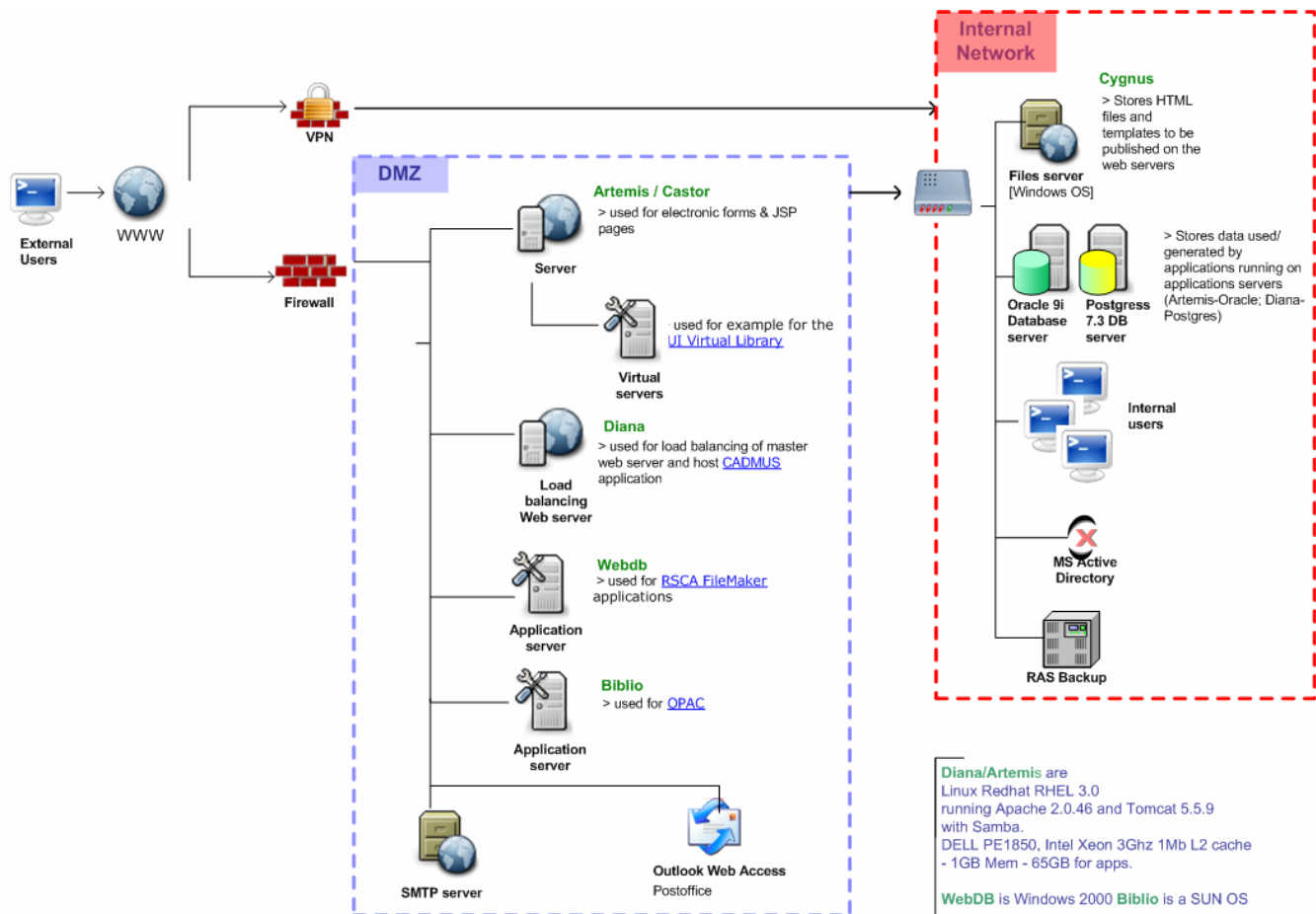
- All content and files managed by the WCMS should be stored in a database.
- It should be possible to use non-Western character-sets and it should support the use of accented characters (in Database and HTML output)
- Support for LDAP for the authentication. (See [more](#))
- Conformity with [CSS-2](#) specifications of W3C.
Web pages built using the WCMS product should pass successfully a [W3C CSS validation test](#).
- Conformity with HTML and XHTML W3C specifications.
Web-site built using the WCMS product should pass successfully a [W3C Markups validation test](#)
- Support RSS and enable easily creation of RSS and Podcast feeds.
Feeds built using the WCMS should be compliant with W3C recommendations and should pass successfully a [W3C feed validation](#) test.

It is an advantage if the WCMS product can:

- Support AJAX technology
- Support and implement Web-based Distributed Authoring and Versioning ([WebDAV](#)) protocol. (See more detail on [WebDAV implementation](#))
- Support XML
- Enable easy creation of web services and support the [WSDL](#) standard
- Support the W3C standard for the automatic creation of logs

I.5 HARDWARE INFRASTRUCTURE

The current hardware infrastructure used for the existing web-site and intranet is illustrated by the following diagram:



Two of these servers (see legend) could be re-used in the new WCMS architecture. Both are Linux RedHat RHEL 3.0 with Apache and Tomcat.

The WCMS architecture proposed by the candidates should re-use as much as possible our existing servers and infrastructure. There is a clear preference for a Linux Operating system and an Oracle 9i database.

In case the successful candidate should propose to re-use the Oracle system we currently have (Oracle Database), detailed specifications should be prepared for the Oracle definition (universe, instances, etc.).

When the use of virtual servers is possible please specify this in the architecture map.

Respecting these requirements is an advantage and is not a major requirement. However the hardware architecture proposals made by the candidates will be assessed from a cost and quality perspective. Architecture proposing overly expensive solutions will be considered a disadvantage.

I.6 INTERNET Vs INTRANET

It is a major requirement that the WCMS product allows for handling content of both intranet and Internet web-sites.

In practical terms, the Internet and intranet should not be distinct entry points. The intranet parts of the web-site should be fully integrated in the web-site, and the latter will only be visible for people identified by the system. This means that there will be one core tree structure, and that some parts of the tree will be visible only for certain people (authorised users).

Identification of users having access to intranet pages must be possible based on individual authentication.

In this solution users identify themselves by entering a username and password before they are able to view intranet pages. It should however remain transparent and easy for internal users:

- Users using EUI's sites computers or VPN users will be automatically identified once they log in into Windows so it is transparent for them. The WCMS intranet identification system must therefore allow authentication against LDAP/Active Directory.
- For off-site authorised users, an option such as "View Intranet pages" should appear on all web pages, which launches the display of an authentication window. Once they have entered a username and password, all intranet pages should become visible. If an off-site visitor is not authorised or authenticated and tries to view a page of the intranet, a message should appear explaining that only authenticated persons can access and see this page. The authentication window should automatically appear.

Distinction of intranet / Internet pages and access to the authentication form:

- It should be visually clear to visitors when the web page they are visiting is public (Internet) or internal (part of the EUI's intranet). This can be done using a different colour scheme or using a sign.
- On every page a message should inform the visitors whether they are currently logged-in the intranet or not. (close to the access to the authentication form).
- When a visitor is not yet logged in to the EUI's intranet, a button should appear close to the message, leading to the intranet authentication form.

I.7 BACK-UP PROCEDURES

The system provided should have a clear and automatic general back-up procedure. Details on the back-up and recovery procedure and the hardware infrastructure needed, should be provided in the technical proposal. An estimation of back-up size to be recovered each day should be included (Gb). This is a major requirement. The candidates are requested to indicate in their offer if a local

back-up is available (so that users can back-up their web pages and documents to their computers or on a disk).

In addition the candidates may also propose an automatic off-site back-up solution. In this case the candidate should provide all details in a separate offer. Proposing off-site back-up solution is an advantage.

I.8 LOAD BALANCING AND FAILOVER PROCEDURE

The architecture proposed by the candidates in the technical proposal for the set up of the WCMS should foresee the following features (both are major requirements):

- To avoid a processing bottleneck, the system should have a load balancing architecture so that the workload of the publication process can be spread between different servers and networks.
- To avoid system breakdown, the system should allow for a failover procedure. For example, if a publication server is down the workload should be redirected to another server.

The architecture elements and procedures should be explained and highlighted in the technical proposal.

I.9 WCMS PUBLICATION ENVIRONMENTS

Staff members will never work on a live version of the site. The editing environment should be on a staging environment. This staging environment should allow for a full preview versions of pages and content, so as to see the display on the web-site.

Consequently two publishing environments should be foreseen. The first is for viewing and storing web pages created during a publication process (i.e. a staging environment for previewing which can only be seen internally). The second is a production environment (final – which can be seen either internally or publicly on the Internet). This is a major requirement.

I.10 WCMS INSTANCES

Two instances of the WCMS product should be installed: one will be used for the publication process and the other for tests and pre-deployments. This is a major requirement.

I.11 WCMS PUBLICATION PROCESS

It is a major requirement that the publication process meets the following criteria:

- The publication of the pages from the staging environment to the production environment should be fast. The candidates should guarantee that a web-site of 100 pages (page weight of about 150Kb per page) can be published integrally within ten minutes.
- The publication of web pages that are ready to be published should be possible in three ways:
 - Selective: publication of specific parts of the web-site (pages or menu section) selected by the person in charge of the publication.
 - Incremental: publication of all pages that have changed since the last publication
 - Full: publication of the entire web-site.

It is an advantage if there is a control screen allowing publication officers to check the history of publications for the whole web-site (date, type, and user).

I.12 MAILING

The WCMS should use authenticated SMTP connections.

Email sent by the system should be in HTML format or plain text when the receiver's inbox does not accept HTML (mixed MIME types).

The email subject should be clear and sufficiently composed to meet common anti-spam rules.

These are major requirements.

I.13 AUTHENTICATION AND USER MANAGEMENT

It is a major requirement that users and their authentication information (name, login and password) come from Microsoft Active Directory. However, it is an advantage if it uses the standard part of Active Directory and is not too tied to the Microsoft Active Directory extension. The authentication process to enter the WCMS or view the intranet pages should be made against the LDAP directory and use secured connections (SSL).

I.14 INTERCONNECTION WITH OTHER EUI APPLICATIONS

To ensure smooth integration of some existing applications into the new web-site and intranet the following requirements are considered as major:

- Users should have the possibility to edit inner-content of a page directly in HTML and to integrate custom HTML code or Javascript code into it. (See also source editing [in page content editor](#) section)
- It should be possible to integrate forms external to the WCMS within a web page (external forms are forms which are not created nor handled by the WCMS such as HTML or JSP forms). If these forms have a specific result page then the result should be displayed in a new window. This should not be performed by simple users. (See examples in [section on external forms](#))
- The realisation of some WCMS functionalities requires that the WCMS collects information from EUI internal systems:
 - Both [Who's Who tool](#) and [Events Calendar](#) functionalities require that WCMS import data from EUI systems. XML schema of the data that can be made available is provided in annex
 - Display of information on [EUI Publications](#) gathered from the publications repository ([DSpace](#)).

I.15 SECURITY

It is a major requirement to have a high level of security to prevent any attack or intrusion. It is specifically required that non-public content and directories should not be searchable by Internet public search engines such as Google.

By non-public content we mean:

- Intranet web pages. (See more on [intranet](#))
- Intranet documents
- Internet web-site non-published web pages or documents. (See more on the [Publication process](#) and [Document management](#))
- Any content of restricted-access collaboration spaces. (See more on [Online-collaboration section](#))
- Internal news. (See more in [News section](#))
- Internal events. (See more in [Events section](#))

In this perspective URL linking to these elements should be safe. (no password or user identifiers in URL, etc.) and URL linking to non-public elements should not be accessible unless users are authenticated.

I.16 MANAGEMENT OF ERRORS

It is a major requirement that error pages are handled by the WCMS in order to display user friendly messages. By error pages we mean WCMS internal error pages and main errors (server and DNS errors such as Error 404, 500, etc.).

The error page displayed should offer the possibility of going to the site's most important menu sections (first level sections).

It should also be possible to customise the error pages under a given section of the web-site, using a customised layout specific to that section of the web-site. For example, it should be possible to provide for a different contact email depending on the section of the web-site (e.g: in Law department's section, the error page should display the email address of the Law department's webmaster)

I.17 PRODUCT ARCHITECTURE

It is an advantage if the product is a web-based architecture (with no client to install on stand-alone computers).

If this is not the case, it should be specified in the offer which kind of client and packages should be installed on stand-alone computers.

It is an advantage if the product has a Service Oriented Architecture.



Part II REQUIREMENTS FOR THE WCMS PRODUCT AND ITS CONFIGURATION.

II.1 LANGUAGE MANAGEMENT

Major requirements concerning the WCMS language management are:

- The WCMS product user interface and manuals should be (at least) in English.
- The new web-site will largely be in English. Some parts of the site may be in other European languages. It is a major requirement for the WCMS to be able to handle a multilingual web-site.

II.2 CONTENT EDITING

The WCMS should be built in such a way that a content editor does not need to know any HTML in order to be able to use it. An average computer user should be able to make or adapt a page using the WCMS . [major requirement].

II.2.1 CONTENT EDITING - USER INTERFACE

Users should be able to edit web pages content in two ways (both are major requirements):

- i. Throughout a tree-like structure within the back-end of the web-site (comparable with Windows Explorer).
- ii. Throughout in-context edition (WYSIWYG interface). Where the user navigates through the web-site to the page he would like to edit and start editing the text directly on the web page.

II.2.2 EDITING - PAGE CONTENT EDITOR

It is a major requirement that the page content editor should allow users to:

- Enter and edit text.
- Determine font styles: bold, italics, underlines.
- Choose between a limited number of text styles. These styles should be determined in a web-site style sheet (running text, title, subtitle etc). An administrator should be able to adapt these styles.
- Changing text alignment: left, right, centred.
- Basic text formatting through paragraphs and breaks.
- Create bullet lists and automatic numbering.

- Enter and edit links ([see section below](#)).
- Enter and edit bookmarks(anchors) and linking to these bookmarks.
- Enter, upload and adapt images ([see section below](#)).
- Enter and edit tables. Full table support is needed: nested tables, images within tables, modify table properties, cell properties, etc.
- Full “undo” and “redo” functionality.
- View and edit HTML source code of a page (the inner content). This feature should only be available for certain users depending on their rights.
- Microsoft Word-friendly import functionality. This should allow copy/paste or importing Word document content directly into a web page. (See also [content reusability](#)).

It is very important for the administrator to be able to disable certain functions of the editor for certain groups of users (e.g. no choice of font styles, font colours, etc.).

II.2.3 LINKS MANAGEMENT AND LINK CHECKER

The WCMS should allow editors to place any kind of links in the page content.

Please note that in this section a distinction is made between internal links (considered as all links to elements handled by the WCMS such as links to documents, images, and web pages) and external links which are links to elements or web pages of other web-sites.

It is a major requirement that editors should be able to:

- Enter a free link to another web-site (used for external links).
- Enter a link to another EUI web-site page (internal links) by selecting from the list of existing pages on the European University Institute site.
- Have the possibility to add a link to an office document (Word, PDF,) or a media (movie, image, flash) by selecting it from the resources available in the media/document library of the WCMS. By default an icon illustrating the resource type will be added aside the link. (See more in section [Document Management](#)).
- Have the possibility to add links to a particular event or to a list of events in the calendar.
- Have the possibility to add links to a news page.
- Have the possibility to edit the display text of the link.
- Links within the web-site must always open in the same browser window, links to external web-sites and non-html files must automatically open in a new browser window.



It is a major requirement that the WCMS has a link checker feature that reports broken internal and external links to the publishers/authors. This feature should list and provide direct access to the pages with broken links so as to fix them quickly.

The link checking process may be launched manually and may be scheduled to check and report automatically every week. It is an advantage if authors are able to check only the links on specific web-site parts in a federated way.

It is considered an advantage if the WCMS can disable broken links automatically. For example: whenever a web page is removed from the system, then all links pointing to that page from within the web-site should automatically become inactive. In this case a notification should be sent to publishers/authors whose links have been disabled.

II.2.4 INCLUDING IMAGES IN A WEB PAGE

The following are major requirements concerning the management of images:

- There should be no limitations on the number of images that can be inserted in web pages.
- There should be the possibility to enter an alt-tag. If no alt-tag is entered, the alt-tag should be coded as empty (alt=""). (See also [Tags Management](#) section).
- An editor should be able to choose the image position and insert it to on any place in the page.
- An editor should be able to align an image and specify distance from edge of text to edge of image.

It is an advantage if:

- Images can be juxtaposed and their juxtaposition order can be chosen.
- An administrator can limit the image formats that can be used in a web page. If this is possible the default limitation should be set to 'gif' and 'jpg'-formats.
- The administrator can define the maximum size limit of an image.

II.2.5 INCLUDING VIDEO FILES IN A WEB PAGE

An editor should be able to include a video file in a web page. The video file will be selected from the WCMS document repository ([see more](#)). When included in a web page a player should automatically appear with basic control options (play, pause, timeline control, mute).

The player should be able to play main video file formats such as .wmv, .mpeg, .mov and .avi

These are major requirements.



II.2.6 INCLUDING AUDIO FILES IN A WEB PAGE

An editor should be able to include an audio file in a web page. Audio file will be selected from the WCMS document repository ([see more](#)). When included in a web page a control should automatically appear beside the file name in order to launch the diffusion of the audio file or stop it (Play/Stop). The default behaviour is "Stop". This is a major requirement.

II.2.7 INCLUDING AN AUDIO OR VIDEO STREAM IN A WEB PAGE ([WEBCASTING](#))

Webcasting is sending audio and/or video live over the Internet. In essence, webcasting can be thought of as live broadcasting over the Internet.

It is an advantage if webmasters can include an audio or a video stream in a web page. If a stream is included in a web page a player should automatically appear with basic control options (play, pause, timeline control, mute)

II.2.8 CONTENT REUSABILITY

It is considered as a major requirement to be able to re-use easily content from our web-site for other purposes and even reuse content from other sources to create our web pages.

a) *Re-use content of the web-site (export)*

The content stored in the system database can also be used for other purposes than the web-site, for example the creation of brochures (with a desktop software such as Indesign or Word).

The WCMS system should therefore have an export facility in order to extract easily parts of the web-site to reuse it in other tools. This could be either through a XML interface or a custom "export to" tool. [major]

In addition we expect the WCMS to provide our visitors with the possibility to download our news and our events calendar in PDF format. (See more information on this requirement in the sections "[news](#)" and "[events calendar](#)")

b) *Incorporating existing content into the web-site (import)*

It should be possible to easily create a web page article using the content of an existing Word document (.doc) or text document (.txt). The WCMS system should have an import facility in order import the content of these kinds of documents. (See also [WYSIWYG editor](#)). In operation such a tool should also clean the content to be copy/pasted or imported in order to make it usable on the web. [major]

II.2.9 META-INFORMATION

It is a major requirement that the WCMS should allow editors to edit basic meta-data information such as:

- Title of the page
- Description
- Keywords
- Author (automatically set)
- Contact address
- Publication date (automatically set)
- Categories /classification
- Version number (automatically set)

These meta-data should be able to contain different kind of values such as numbers, decimal, long text (at least 1024 characters), etc.

Administrators should be able to specify whether editors can enter more than one value for each meta-data field. For example the meta-data field "Related events" could contain one or more references to events (event name or identifier).

It should be possible for administrators to enter a predefined list of values for a meta-data field in order to avoid typing mistakes and to facilitate categorisation.

Web-site elements to meta-information that can be attributed should include at least:

- Menu sections
- Web pages
- Document or media files stored in the WCMS. (See also [Document Management](#) section)

In addition it is an advantage if the WCMS permits to adding meta-data for the following web-site elements:

- News
- Projects (See [collaboration spaces](#))
- Events (provided by EUI)
- People

It is also an advantage if the WCMS is flexible enough to allow users or webmasters to add extra meta-data fields to pages in order to facilitate searches, sorting and later customisations or inter-connection with other systems. It is an advantage if there is no limitation to the number of meta-data fields that can be added.

The goal here is multiple:

- Feeding HTML page tags:
Some meta-data information (such as 'Title', 'Keywords' or 'Description') should be



re-used automatically within the HTML pages created by the WCMS as HTML tags to facilitate the work of search engines and crawlers such as Google.

- Linking information sets:
With this extra information the EUI will be able to create links between web-site elements based on their meta-information (categories, project names, events,. This will also enable the successful candidate to build advanced functionalities such as search engines, the [event calendar](#) , the [news display](#), etc.).
- Making inter-connection with EUI's future Document Management system easier:
It is the EUI's long term objective to store its electronic resources in a central repository (internal DMS). In this perspective extra meta-data could be used to store information necessary for the future DMS of the Institute. For example to store the DMS Unique Document Identifier, author, versioning information, status, visibility (public, private), etc.

II.2.10 TAGS

Every page of the site should have clear tags - "title", "description" and "keywords" - that provide information on the contents of the page. These should be manually adaptable in the WCMS but could be generated automatically using the title of the page. [major requirement].

The WCMS should allow for the indication of pages (NOINDEX metatag) and directories (robots.txt) that cannot be indexed by spiders. [major requirement].

It is an advantage if the WCMS allows adding extra tags to pages (special tags such as the *<no snippet>* tag for the Google bot).

II.2.11 SPELL CHECKER

It is an advantage if there is a spell check feature available in the content editor of the WCMS. The spell checker may rely on the spell checker of Microsoft Word (including the custom directories of the user), but when the user does not have Word installed there should be at least an English spell checker available in the system itself. Spell checking can be done "as you type" or on demand.

The spell checker should have English (UK) as the default.

II.2.12 EDITING AT CONTENT BLOCK (PARAGRAPH) LEVEL

A WCMS that supports editing and rights management on content block level, is considered an advantage. Such a system should allow for the allocation of rights per content block on a page to different editors.

Such features allow for the creation of a content block and placing that block on several pages (e.g. a block with a call for new candidates and paragraph cross-referencing).

II.2.13 CLEANING OF CODE IMPORTED FROM WORD

When content is copy-pasted or uploaded from Word, the code should be cleaned up. This means that general formatting (bullet lists, paragraphs,) is converted to standard HTML with full use of style sheets. [major requirement].

II.3 DOCUMENT MANAGEMENT SYSTEM (DMS OR ERMS)

The WCMS should allow editors to include links to all types of documents in a web page (media files such as images, documents or office documents such as Word, PDF, Excel, etc.). The system should therefore include a central repository in order to centralise these documents and provide appropriate management tools (categorisation, classification, versioning etc.). This is a major requirement.

The EUI plans the purchase of its own Document Management System (DMS) and therefore considers it a strong advantage if the DMS system proposed within the WCMS product is open enough to allow a smooth integration between both systems.

It is a major requirement that the central repository system and database is open and accessible from a programming point of view.

Criteria concerning future DMS integration are:

- It is a strong advantage if the WCMS product can be configured to use another document repository source other than its own built-in repository (either in addition to it or as replacement).
- It should be possible to add extra information ([meta-data](#)) to documents managed by WCMS in order to store information that could be used by the future DMS. For example to store the DMS Unique Document Identifier, author, versioning information, status, visibility (public, private) etc.
It should be possible to add as much meta-data as possible to a document and meta-data should be of any type ([see also section on meta-data](#)). [major requirement].
- It is a major requirement that the WCMS has an importing/exporting tool or some kind of synchronising facility (preferably based on XML) in order to facilitate a structured transfer of documents and their meta-data to/from the future DMS.

Like texts, the resources proposed on a web page (images, video, office documents, etc.) may differ whenever a visitor changes the web-site display language. Therefore we consider it an advantage that the WCMS can handle multilingual resources. [advantage].

We prefer a Windows Explorer style for the user interface [advantage]



II.3.1 MANAGING MEDIAS FILES (IMAGES, VIDEOS, SOUNDS)

It should be easy to upload and select media files of any kind: images, videos and sounds. All images used in the web-site should be in this document repository. [major requirement].

A thumbnail should be created automatically for each image uploaded in the repository. The administrator or a programmer should be able to set the thumbnail size (width, height) to apply to all images. (See also [images management](#)). [major requirement]

It is an advantage if we have the possibility to tag media files too. (See also [meta-information and tags](#)).

II.3.2 OFFICE DOCUMENTS (WORD, PDF, ...)

The following are major requirements:

All Word, PDF and other document files used in the web-site need to be centralised in one area.

In this system it should be easy to upload documents, link to those documents and find a document in the repository. The candidate should provide detailed information on the data structure used to store documents.

The system should be smart enough to update links to documents in the DMS when the place of that document in the DMS changes (e.g., when a document is moved from one directory to another, the links to that document on the web pages will not be broken).

II.3.3 DOCUMENTS MANAGEMENT CONTROLS

- Document Upload / Download should be possible from/to the DMS from/to the user's personal computer. The maximum upload size can be fixed by the administrator. There should be a warning when the maximum upload size (kB and mm) is exceeded. [major]
- Multiple document upload (or Folder upload) should be possible so that editors can upload in one click a folder from their computer to the WCMS document repository (DMS). It is an advantage if the DMS can also recreate the inner folder structure automatically. [advantage]
- Document versioning. The version number and the version owner's name should be visible to editors. [major]
- It should be possible for an editor to view all the web pages that contain links to a specific document of the repository. [major]
- A user should not have the possibility to delete a document or a document version if he is not the owner/author of it. [major]

- Folder structure management.
Possibility for users to organise documents inside the repository in a folder structure. [major]
- Rights management.
Possibility for webmasters to manage users' rights on the folder structure [major].
Depending on their rights, users should be able to :
 - Create/delete/rename/move a folder and its contents
 - Upload/download/rename/move/view a document
- Flexible editing and management of meta-information associated with documents.
As expressed here above in [section II.3](#) it should be possible to append extra information to a document. (See also [meta-data section](#)). [major]

II.4 WEBDAV IMPLEMENTATION

As expressed in Part I of this document it is an advantage if the WCMS can implement the Web-based Distributed Authoring and Versioning ([WebDAV](#)) protocol.

We consider it an advantage if WebDAV as implemented offers at least one of the following features:

- a) Saving documents directly to the DMS repository.
A simple but useful implementation would be at the document repository level (DMS): the ability to map/mount a WebDAV collection as a virtual drive on WCMS users' computers so they can save their documents, media and HTML sources directly to the DMS repository without having to go through the upload operation.
- b) Online authoring facility.
An advanced implementation would be the online editing facility where WCMS users would be able to transparently edit and work with at least MS Word, Ms Excel and Adobe PDF documents directly in a web browser (using the WebDAV protocol).

II.5 CROSS REFERENCING OF CONTENT

Some pages can appear in different sections of the web-site to help to ensure consistency of information on the web-site. Editors should be able to re-use existing web pages in any section of the web-site and link to it. It is also required that, in case the original/source web page changes, all the referencing web pages change accordingly so as to diminish the work for the editors (in comparison to a simple page copy, for example).

Editors should be able to see if the web page they are working on is used in other sections of the web-site, and should be warned if these changes will affect other web pages.

These are major requirements.



If the WCMS allows for editing of single content block/paragraphs level ([see more](#)) then it is an advantage if it enables cross-referencing of paragraphs within web pages too.

II.6 WEB-SITE NAVIGATION MANAGEMENT (MENU)

All requirements in this section are major requirements.

II.6.1 MENU STRUCTURE

There should be no limitation in the number of the menu items, nor in the number of levels and sub-levels in the menu hierarchy.

As a reference, the WCMS should be able to handle and manage a web-site structure as illustrated in the blueprint for the new graphical identity (Document III – Part I)

II.6.2 MULTIPLE MENUS AND MENU PLACEMENT

There will always be a unique menu structure for the web-site and intranet. However, the WCMS should allow for handling multiple menu displays.

It should therefore be possible to place a menu in different places on the page. For example, the first two levels might be displayed on a horizontal menu; and a second, vertically positioned, left-hand menu would display sub-levels of the menu item selected in the first horizontal menu (as currently exists on the EUI web-site).

If the WCMS provides the possibility to handle several web sites (See [section on mini-websites](#)) then it should be possible to visualise and work on the web sites structure separately

II.6.3 ACTIONS POSSIBLE ON THE MENU STRUCTURE

WCMS users should be able to perform the following actions on the menu structure:

- o Choosing the menu placement in a template
- o Defining the menu position (vertical or horizontal)
- o Moving a menu section (with its sub-sections and web pages) to another position in the menu hierarchy
- o Create a new menu item in a section
- o Define a menu item as a link to another web-site (external link)
- o Define the web page to display as the menu overview page. (See [multiple page management](#))
- o Send a entire menu section for publication (in one action)
- o Un-publish an entire menu section from the web-site (in one action)



- Delete an entire menu section (if not published)
- Add/ edit meta-data information fields for a section
- Change the design of the menu display

Not all WCMS users will have the possibility to perform these actions. This will depend on their roles (editors, webmasters, etc.). See chapter “User Roles” for more information.

II.6.4 CLICKABLE TABLE OF CONTENTS (=MENU SECTIONS WITH MULTIPLE PAGES/ARTICLES)

Whenever a section contains more than one page the user should be able to define which page is the one to be displayed by default when a visitor clicks on the menu section in the web-site. This page is referred in these documents as the “section overview page”

The other pages belonging to this section should be accessible in two different ways (both are major requirements):

- The web-site editors should be able to add links in the overview page content to the other pages. (See also [links management](#)).
- Unless stated otherwise by the editor, a clickable table of contents of all the pages in a section should be created and appear automatically on the overview page as defined in the template. It can be a simple list with page titles and links to the web pages.

II.6.5 FULL BREADCUMB SUPPORT

It is a major requirement that the WCMS automatically generates breadcrumbs for menu sections or pages (the navigation path). It should be clickable so that visitors can go back and forth.

This feature should show the path the user has taken within the site to get to the current page. As pages can appear in more than one section of the web-site, any given page might be presented with different breadcrumbs because users could have taken different routes.[major]

It is an advantage if the WCMS automatically generates the names of the navigation items and allows the administrator to change these names afterwards.

II.7 WEB PAGES MANAGEMENT

The system should automatically create a web page ready to be edited every time an editor creates a new menu section. [major requirement]

The WCMS system should allow editors to add one or more web pages per menu section. [major requirement].

II.7.1 STAGES OF A WEB PAGE'S PUBLICATION

A web page will typically go through different stages during the publication process. The stages are the following:

- The created web page does not appear on the web-site until it is sent for publication by the author. The page is at a 'draft' stage.
- The web page is sent for publication but has not yet been published on the web-site. The page is considered as 'pending'.
- The web page content may need to be 'approved' by a publisher before its publication is effective.
- A web page visible on the web-site is considered 'published'.
- A web page may be temporarily removed from the web-site and is not visible anymore ('disabled'). However the web page is still visible and editable in the WCMS. This page can be sent again for publication later on.
- A web page may be 'deleted'. It is then removed completely from the WCMS.
- An old web page may be 'archived'.

The candidate's terminology for these various stages may deviate from the one used above, and do not need to follow this exact workflow. However, it is a major requirement that:

- That these different stages in the life of a page are possible and are set up with the WCMS.
- That WCMS users should always have a clear view of the current stage of a web page in the WCMS.

An illustration of these different stages and how a page goes from one to another can be found in the section related to the [publication workflow](#).

II.7.2 PAGE VERSIONING

Each time a published page is updated and published, a new page version should be created. [major requirement].

Users should always have the possibility to view previous versions of a web page and -if necessary – return to an older version. [major requirement].

II.7.3 ACTIONS POSSIBLE ON WEB PAGES

WCMS users should be able to perform the following actions to manage pages where they are editors:

- Create web pages in the menu sections [major]

- Move a web page to another menu section [major]
- Delete their draft web pages [major]
- Create a new version of a web page [major]
- Delete a page version [major]
- Archive a web page [major]
- Send a web page for publication [major]
- Remove a web page from the web-site [major]
- Compare two versions of a same web page [advantage]
- Add/ edit meta-data information fields [major]

Not all WCMS users will have the possibility to perform these actions. This will depend on their roles in the system (editors, webmasters, etc.). See the section “User Roles” for more information.

II.7.4 PAGES WITH LONG TEXTS

When a text article in a page is too long it should be automatically sliced into different pages. Webmasters should be able to specify/change the maximum number of characters per page before a page split (or the maximum page height) for the whole web-site.

Page navigation (such as “first page”, “last page”, “next”, “previous”) will appear automatically beneath each article in order to allow the user to navigate from one page to the other. It should still be possible to deactivate this option on certain pages.

Even when a text is sliced in different pages the print option should allow to print the full text. The same option should be foreseen for downloading PDF articles (the entire text should be saved).

The WCMS should warn the authors when their text is too long and will be sliced in different pages.

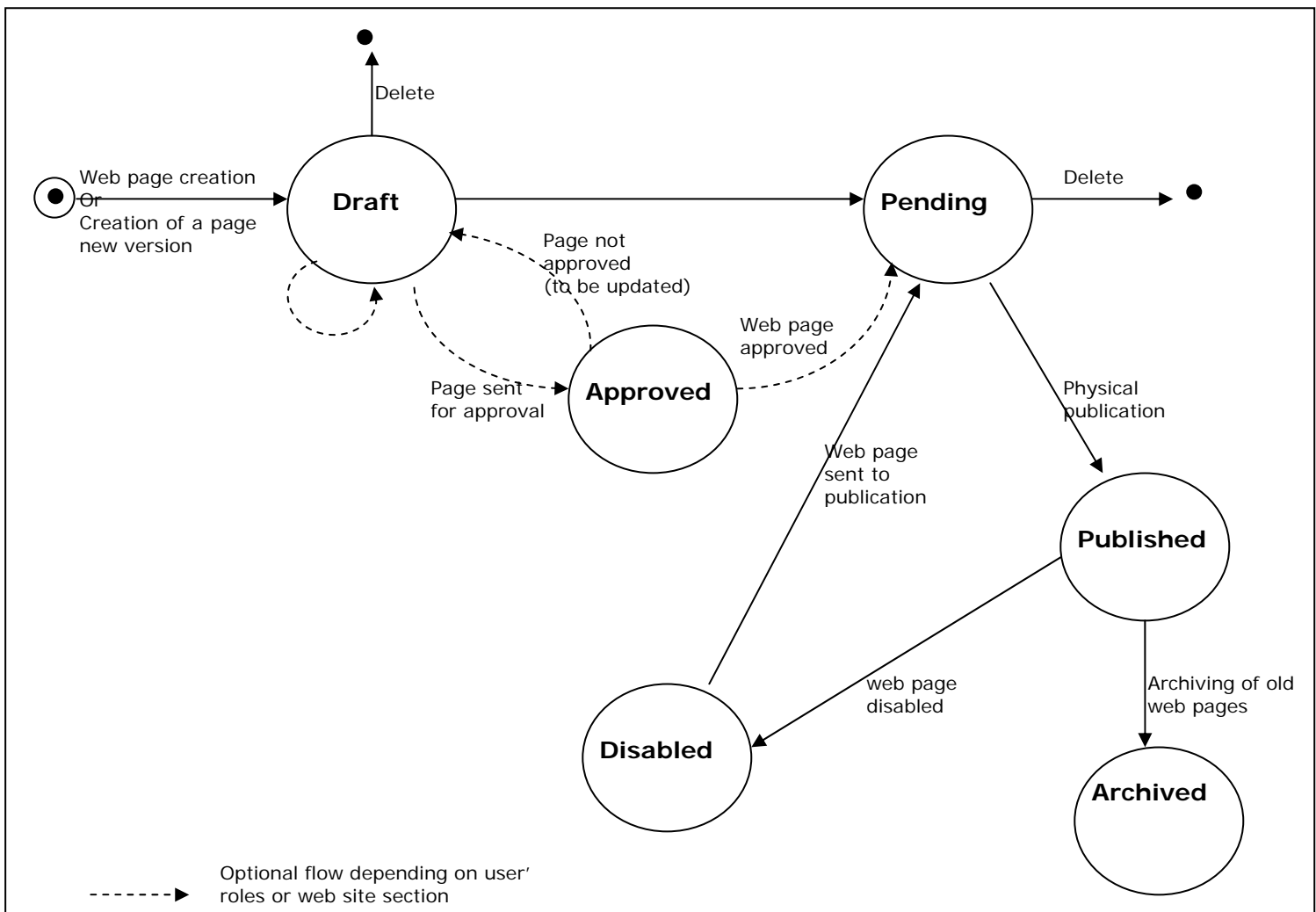
The above are major requirements.

II.8 WORKFLOWS AND VERSION CONTROL

II.8.1 PUBLICATION WORKFLOW

The publication workflow example is based on the page stages seen in the previous section (See [pages stages](#) section).

The Institute should be able to set-up a simple publication workflow as illustrated in the picture below. It is a major requirement that the publication workflow is flexible and allows for adding or removing stages later on.



Example of initial publication workflow

The transition of a page from one stage to another is carried out by WCMS, depending on the role of the WCMS user in the publication process. (See next section).

II.8.2 WORKFLOW ROLES

We consider a role as a set of rights that has been attributed to a WCMS user.

Currently at least the following roles are foreseen [major requirements]:

- Administrators
Administrators have full rights. They have complete control over the WCMS product. They can allocate certain roles to other users or group of users. Administrators



should be able to manage critical web-site configurations (databases access, servers used for the WCMS environments, back-ups, publication workflows, etc.).

- Webmasters
Users with a webmaster role should have full control of the management of the web-site structure and content, web-site templates, publication process and they should be able to allocate roles to other WCMS users.
- Editors
Editors can create/update parts of the web-site for which they have been authorised (web pages or menu sections). They can update or create new versions of all web pages for which the editor's role has been assigned. Editors are not necessarily allowed to publish content.
- Publishers
A publisher can check a page created by an editor and - after changing it when necessary or even returning it to the editor with some remarks - publish it. Publishers have full editing (like editors) and publishing rights for those sections of the site they are responsible for.

It is also a major requirement that:

- When an editor updates a page, a new page version is created.
- When a page is being edited it is locked so no-one else can edit it at the same time.

It is an advantage if the workflow tool has the following features or controls:

- When a publisher is out of the office, items for approval can be transferred to another substitute publisher (automatic back-up chain integrated).

II.8.3 USER ROLES MANAGEMENT

The following are major requirements:

- The WCMS is flexible enough so that a user can be simultaneously editor and publisher to as to speed up the process.
- Users may have different roles in different parts of the web-site. For example someone could be editor for the section "Library publications" and at the same time be publisher for the section "Master in Law"
- The WCMS allows administrators to attribute roles to users (or groups of users) on web pages or menu sections.
- It should be possible to attribute roles to groups of users. In this perspective a user could belong to one or more groups.
- The back-end should provide different views to help administrators to visualise and manage roles:



- A user-oriented view: view of the web-site structure with the current role of the user for each element of the web-site structure (web page or menu sections).
- A web-site-oriented view : view of the users and their roles for each web page or menu section.

It is an advantage if the interface makes it possible to attribute roles to a user for several web-site elements in a single action.

II.8.4 ARCHIVING AND ACCESS TO THE ARCHIVES

The following are major requirements:

It should be possible to archive old web pages.

Impact in the WCMS back-end:

- Cleaner view of the web-site content for editors (they only see active pages)

Impact on the web-site

- Archived web pages should be accessible through a “view archives” option in main sections

It should be possible to un-archive (restore) a web page.

II.8.5 COMMENTING CAPABILITIES FOR EDITORS

It is an advantage if the WCMS allows authors to leave text notes on a page for other editors or members of their approval chain. When the page is published, comments are not visible. (This feature can be compared with the ‘collaboration’ or ‘comment’ feature that can be found in Word.)

II.8.6 TRACK CHANGES

It is an advantage if the WCMS allows publishers to adopt ‘track changes’ on a web page text. The ‘track change’ behaviour should function as in Microsoft Word on a web-page text reworked by the publisher and the editors.

‘Track changes’ should not be visible on the web-site, but only during the web page update process by the editors.

II.8.7 PUBLICATION WORKFLOW BETWEEN THE STAGING AND THE PRODUCTION AREAS

Only people with publishing rights (see [workflow roles requirements](#)) can publish information from the staging server to the live server. [major requirement].



A batch feature should be set which publishes approved content automatically every xx hours. [major requirement].

It is a major requirement that there is a control screen allowing publication officers to check the history of publications for the whole web-site (date, type, and user).

Scheduling content

It is an advantage if a publisher can schedule when a page or a menu section will go live and/or expire at a future date and time.

II.9 LAYOUT MANAGEMENT

The principal major requirements are that:

- The templates created using the WCMS should be conform to clickability and usability guidelines detailed in the blueprint for the new graphical identity (Document III – Part II of this Request For Proposal).
- The WCMS should be able to handle template structures as detailed in the blueprint for the new graphical identity (Document III – Part III of this Request For Proposal).
- The WCMS should be able to handle templates as detailed in the blueprint for the new graphical identity (Document III – Part IV of this Request For Proposal).

All other requirements in the following sub-sections are also to be considered as major requirements.

II.9.1 STYLE SHEETS

The web-site graphical identity should be completely independent from the content.

EUI designers should be able to apply style sheets (CSS-2 compliant) to the web-site in order to define the general look-and-feel of the pages, menus, and the text styles that are available in the [text editor](#).

In addition there should be a style sheet specific for printing (including printing of forms) and for the newsletter email.

II.9.2 TEMPLATES

Designers or webmasters should be able to apply pre-defined templates to the web-site or specific web-site sections.

For example:

- The banner, logo and the main menu navigation should be part of the general web-site template.
- All web pages should have the general web-site layout but some web-site sections (such as department or centres sections) may have a different banner image and colour scheme on their web page so as to enable clear identification of the various sections.

Webmasters should be able to create and apply new templates for specific web-site sections, using the main elements (a menu, a live content group, an image, etc.). See requirements in Document III concerning the template structure and other design elements.

When an element of a template changes, all pages or sections based on this template should change accordingly

It should be possible to manage rights on the templates (which areas can be updated/edited by which WCMS users; which part of the template). Some parts should be fixed and not updatable by common users. (For example, only webmasters can change the logo).

These are major requirements.

In addition it is an advantage if more than one template can be applied to a menu section following the principle of cascading inheritance. The purpose is to make it easier to update the template since some elements are fixed in the first template (for example, the logo) and some in the second template (for example, the banner).

For example:

- All menu sections and web pages of a department would inherit the general web-site layout, but department web pages will also inherit the department's specific template. For example on a department page the banner image and the colour scheme may change depending on the department visited.

II.10 SEARCH ENGINE

The search engine should index all information available on the web-site: web pages, images, documents, [Who's Who](#), the [calendar](#), the [news](#), etc. [major].

II.10.1 SEARCH ENGINE FRIENDLINESS

The future web-site should be such that it can be easily crawled and indexed by the main Internet realm search engines such as Google, Yahoo, etc.

Specific attention needs to be paid to the following engine-friendliness rules:

- To allow easy crawling of the web-site, there should be as little automatic redirection as possible within content pages. [advantage]

- The CMS should produce simple, easily readable URLs that are also search robot-friendly. (See more on [URL friendly](#)). [advantage]

II.10.2 SEARCH TOOLS

The following are major requirements:

There should be two search options available on the web-site: a simple search, available on all pages in addition to an advanced search.

a) *Simple search tool*

The simple search provides for a simple text input field together with a submission button to search for the information entered by the visitor.

The visitor must be able to enter and search on several keywords. ([See more on the search process](#))

b) *Advanced search tool*

It is a major requirement that the advanced search tool gives the visitors the possibility to

- Enter one or several keywords in a text input field
- Choose one or more content types to search for. The search can be on:
 - The whole web-site (Default option - includes all options below) or a specific part of the web-site
 - People
 - Web pages with a sub-choice for web page status (all, currently online, archived). The second option is the default choice. Users may select one or more options from the list
 - Documents (including medias files) with then a sub-choice possible on document types
 - Events
 - News
 - Projects in [Online Collaboration workspaces](#)
- Choose to search only specific sections of the web-site (e.g. main sections such as a department).
The default setting of this dropdown should be for searching the entire web-site.

Publications, archives and other electronic resources have their own dedicated search engine. Links should be placed on the advanced search page in order to redirect visitors to the appropriate search engine [major]. These links are:

- Search EU archives (link to [CLARA](#) search)

- Search EUI Publications (link to [CADMUS](#) advanced search)
- Search the Library Catalogue (Link to [OPAC](#))

There should be a link to the electronic resources presentation page (view [Electronic resources presentation page](#)). [major]

II.10.3 SEARCH PROCESS

As explained in the section above, the search engine will look for keywords on various content types. (See [more on content types](#) to search).

It is a major requirement that the search process itself works in the way Google works according to the rules below. This means it should be a full text search that lists results based on relevancy and the type of information found.

Some rules:

- A search is always on the complete word, or a part of a word.
- A search should take plural forms into account
- If a user enters more than one word, the standard Boolean operator used is AND.
- Users should be able to use all Boolean operators, in any form they choose. (e.g.: AND and OR, but also + and -)
- Documents that have (part of) the search string in their title, are more relevant than others.
- The more the searched string appears on a page, the more relevant the page is.
- The higher the search string appears on the page, the more relevant the page is.
- Documents belonging to the EUI intranet should not be searchable or visible when performing a search on the public web-site (unless the visitors has authenticated in the intranet)
- It is an advantage if the search engine searches also for synonyms and accented characters
- It is an advantage if the search can also be made on PDF text content. (PDF indexation)

The simple search form should look for keywords relevancy on all content types. The advanced search form should search also for content types as specified by the visitor. (See [more on content types](#) to search). [major].

By default the search engine only looks for information on the public web-site. (See [more on security requirements](#)). However, if a visitor is recognised by the system (Meaning: internal users or off-site authenticated users) the search engine should also search the intranet and non-public Online Collaboration Workspaces. (See more on [Online Collaboration Workspaces](#)). [major].



If the user is not authenticated a clear sentence should be displayed in the advanced search page, explaining that searches on the intranet and collaboration workspaces requests identification. (A link to the authentication page should be given). [major].

II.10.4 SEARCH RESULT DISPLAY

The following requirements are considered as major:

- The search form should remain available on the page where search results are displayed, and the search parameters should remain visible or selected in the form fields.
- Before the result list is provided, a feedback sentence that summarises textually the search request entered by the visitor should be displayed, and provide the total number of items found. For example "Your search on XXX has produced Y results".
- The search results should be ordered by degree of relevance. In addition results could be ordered also by content type or by web-site section (and then by relevance). In this case shortcuts should appear so as to allow a user to quickly go to one of the results. (See also Amazon.com for the basic principles of this system.)
- For each search result found, all relevant information should be shown depending on the content type. For a web page this will be the 'description' tag of the page; for more specific information such as calendar items (seminars, etc.) or the 'Who's who' the information shown needs to be determined by the EUI.
- A search results page should show twenty results. When there are more results a clickable page overview is shown at the bottom of the page. See Amazon.com for an example.
- The visitor should be able to change the order of the results displayed.
- There should be a visual/graphical distinction between results from the EUI intranet and the Internet.
- There should be a visual indication of whether the web page is archived or currently online.

It is an advantage if the information displayed for each result is set in the first sentence where keywords have been found and if keywords are highlighted in the text.

II.10.5 REPORT ON SEARCHES MADE ON THE WEB-SITE

It is a major requirement that the queries used by the site's visitors are stored and that the WCMS offers easy access for webmasters to view these.

For any given time-frame webmasters should have the possibility to obtain a report with an overview of the queries for that period, the number of times a query was made and the number of results each query string produced.

II.11 FORM AND FORM ENGINE

II.11.1 GENERAL RULES FOR FORMS

It is a major requirement that forms provided by the WCMS possess the following characteristics. The form's layout and logic should always be exceptionally clear.

a) Rules concerning form presentation

- Labels should be in front of the type-in fields.
- Type-in fields should be neatly aligned at the same distance from the left edge.
- Type-in fields that belong together should be placed on the same line (e.g.: postal code and city, first name and last name,).
- If there is a maximum number size set on a field (maximum number of characters, maximum upload size, etc.) it should be displayed.
- If there are compulsory fields, the beginning of the form page should state: "Fields with a * are compulsory".
- Compulsory fields should be indicated by a red asterisk between the label and the type-in field.
- The "Send" button should be at the same distance from the left edge as the type-in fields.
- If users have the possibility to select one or more options in a list it should be written beside the field.
- If dates are not entered using a calendar tool the date format (e.g. "dd-mm-yyy") should be clearly written beside the date field.
- There should be no "Erase" button. However there can be a button to annul the action (e.g.: on an application form) but this will ask a confirmation of annulment before sending the user back to the homepage.
- Error messages have to appear on the page itself, at the top of the form, in bold and red or (preferably) by generating a clearly visible error message close to the type-in field in question (such as a red frame around the field and the error message directly under the field, within the red frame).
- Text boxes should be displayed with at least five rows height and at maximum twenty.
- A vertical scroll bar should appear automatically in longer text boxes if the text entered exceeds the limits of the size of the box in the HTML display.



b) Form behaviour

- There should be a basic check on all compulsory fields. This check should be as precise as possible. It performs the following verifications:
 - Check that the content entered in a field does not exceed the maximum size expected.
 - Check that the content is the same type as expected (for example if there is a number in the postal code field, are characters in the city field, etc,...)
 - For special fields such as email address, web-site address and phone/fax numbers there must be a check on the content format. (e.g. email address should contain at least "@" and "."...)
 - If dates are not entered using a calendar tool there should be a check to ensure the date is valid (e.g. 30-02-2007 must be refused)
- Error messages generated by forms should be clear and be easily understood by everyone. The error code and server message should appear but as secondary information.

The error message should include a link to the help desk mailbox. This link should create/open automatically an email using the web user's mailbox. This email should contain automatically the error message, date, time and the reference to the web page/form where the error occurred.

- All errors occurring in forms should be logged with the error code, user name (if authenticated) or IP address (if not authenticated), date, time and form/web page identifier.
- No error messages in a pop-up or only by JavaScript (If JavaScript is used a server check should be performed too).
- After successfully submitting a form a clear confirmation page should be displayed.
- Once a form is submitted, there should be an on-screen display of the form, so that users can print a copy of the information they have entered

c) Accessibility

- The user should be able to fill in all forms on the site without the use of a mouse. If the user uses the tab-key to jump from one field to the next, the order should be logical.
- Every field needs a clear (and identical) field name and title.



II.11.2 FORM GENERATOR

It is a major requirement that the WCMS should allow setting up basic web forms easily without the need for technical or HTML skills. Examples of such forms are a contact form, subscription to a seminar, evaluation form. This tool can also be used to set up a (simple) survey or poll.

The form generator should allow for forms to be built in line with accessibility and usability rules in this document. It is an advantage if error messages and the confirmation message are customisable for each form.

Once the form has been filled out, this form is sent to the 'contact persons' listed on the form. It is a major requirement that the contents of the form can be stored in a text file. It is an advantage if the content of the form can be stored in a database.

It is a major requirement that WCMS users are able to:

- Insert a field and specify the type of data expected (string, multi-line text, number, date, etc.)
- Specify limitation rules for each field:
 - Numbers should be below/higher than ... or between...
 - Answers should not contain more than x characters
 - Dates between... or Date after/before ...
- Insert a list box. The WCMS user should then provide a list of options possible and state if it is possible to select more than one option
- Insert a radio button and check boxes for a set of options. The WCMS user should then provide the list of choices possible.
- Specify if a form element is compulsory or not.
- Specify multiple email addresses for confirmation email recipients
- Should have the option of having a copy of form sent to the person who is filling out the form (based on a required field of email address)
- Include one or more explanatory texts on same page as form
- Edit the display text within the form to differentiate between sections of the form (essential for complex forms)
- Include links in forms (opening in new windows)

It is an advantage if:


- WCMS users can specify a default value for form elements

- WCMS users can insert fields for document upload.
- WCMS users can specify size of text boxes for responses – some responses are conducive to a single line (e.g. title), others will elicit lengthy explanations.
- WCMS users can format the email reply on the form, such as responses based on radio-button questions; adjust output, such as to whom the form will be mailed; or pre-format text displayed based on such responses. The aim is to define answers and automatically send these out.

II.11.3 FORMS TO BE HANDLED BY THE FORM GENERATOR

The Institute has already developed a number of basic forms for its web-site. It is considered a major requirement that the form generator enables us to re-create and manage these forms easily.

These are:

N°	Links to existing form	Database Necessary? (*)
1	Personal web page request form	No
2	Library > Request Forms > Book purchase suggestions	No
3	Library > Request Forms > Application form for former EUI members	No
4	Library > Request Forms > Application form for Partners of EUI members	No
5	Library > Request Forms > Application form for External users	No
6	Library > Request Forms > Search request - Monograph	No
7	Library > Request Forms > Search request - Periodical	No
8	Library > Request Forms > Search request – Working papers	No
9	Library > Request Forms > Book Delivery Request: Badia to Economics Dept	No
10	Library > Request Forms > Material request for Economists - Working Papers	No
11	Library > Request Forms > Electronic Resource Access Problem Report Form	No
12	Home > Intranet > EU Historical Archives> RAME> Records transfer and disposal > request for transfers 	No
13	Home > Intranet > EU Historical Archives> RAME> forms http://www.eui.eu/ECArchives/RAME/form.shtml	No



14	Computing service > Request forms > Print quotas changes	No
15	Library > Request Forms > Request for storage material - Periodicals	Yes
16	Library > Request Forms > Request for storage material - Monograph	Yes
17	Library > Request Forms > Request for storage material - Working Papers	Yes
18	Computing service > Request forms > Mail forward request	No
19	Computing service > User support > Help request	Yes
20	Vacancies> Traineeship online applications	Yes
21	Academic Service > Post Graduate Information request	Yes
22	Online surveys (Launched twice a year)	Yes
23	Home > Academic Service > Postdoctoral > Max Weber Fellowships > Max Weber Fellowships - How to Apply > EUI Fellowships reference form	Yes(**)
24	Opac remastered search form – results are displayed in OPAC application in a new window	HTML form sending request to OPAC application

(*) If the WCMS provides the ability to store form results in a small database ([See requirement](#)) then it must also be possible to create forms marked as “yes” and record the result in a database.

(**) Only if the form generator allows to insert type “file” fields for documents. ([See requirement](#))

The Institute foresees using the form generator to create event/meeting registration forms and simple online surveys. It is an advantage if the form generator enables us to re-create and manage these kind of forms easily.

Example of existing surveys:

26	Home > People > Directory of personal homepages > Project EDEoPCP (All surveys)
27	Home > People > Directory of personal homepages > Project Cabinet survey

II.11.4 EXTERNAL FORMS TO BE PLACED IN WEB PAGES USING THE WCMS

The Institute has already developed a series of advanced forms, or small applications. It is not foreseen that these can be handled by the WCMS due to their back-end complexity. However, it is required that the WCMS will permit including these forms in the EUI web pages. [major requirement].

These advanced forms are:

N°	Links to existing form	Form type
1	Computing service > Request forms > Request computing account for project	JSP
2	EUI Online Postgraduate Application Form: Application to LLM or PhD programme, 2007 - 2008	JSP
3	Academic service > Post doc > How to apply > online application	JSP
4	Online recruitment application for traineeship	JSP form with an DB and an Excel Back-end)
5	D-SPACE simple search form – results are displayed in a new window	
6	OPAC simple search form – results are displayed in a new window	
7	Clara simple search form – results are displayed in a new window	JSP form

II.12 LATEST NEWS

News is short information published on the web-site's homepage, in the section "overview pages" (e.g. department homepages) or in specific "News" sections.

News may or may not link to a web page where there is a complete article about the news.

It is a major requirement that the WCMS proposes a tool to enter and manage news and to display these following our requirements. (See requirements details in next sections).

II.12.1 NEWS DISPLAY

News may be displayed either:



- In a specific “News” section. We foresee several “news” sections on the web-site (for more details see the web-site structure proposed in Document III - Part II).
- As highlights on the homepage and in the specific sections’ overview pages.

a) News sections:

- The news section will display a list of the twenty latest news articles (title, date and summary, thumbnail of picture when a picture is available). News articles are ordered from most to least recent.
- If a detailed page is available for the news, a link to this page should be automatically placed on the news title.
- If an image has been selected to illustrate the news, the image thumbnail should automatically appear aside the news.
- At the bottom of the page there should be a link to the news archive (allowing for browsing in previous pages and for viewing old news).
- There should be a link to the [Weekly Highlights](#) on this page.

b) News highlights on homepages:

On the web-site’s homepage and on some overview pages (such as department overview pages) there will be a news box/ticker showing the x latest news items (title, date and summary, thumbnail of picture when a picture is available).

The news ticker should fulfill the following requirements:

- This news ticker may appear in different places on a web page (in a column on the right, in a box in the centre, etc.). Its position in the page should be manageable through the use of templates. (See [section on templates](#)).
- The number of news items to be displayed in tickers can be set by the administrator (for all tickers it will be the same).
- At the end of this news box/ticker there should be a link to the “News” section of the corresponding web-site section.

So, for example, if we are in a department’s overview page the link should redirect the visitor to the department’s “News” section and if we are on the homepage the link will lead to the general “News” section.

- News items may be animated so that they appear one after the other (or move up or down) in a defined space (news ticker). However, news items flagged as “high” priority by editors should always remain visible.
- Depending on their category (meta-information) news items should be displayed (or not) in some sections.

For example:

The Law department "News" section and overview page will only display news belonging to the category "Law department". The web-site homepage highlights may only display news from categories "major news" or "president words".

II.12.2 NEWS MANAGEMENT TOOL

News items will be entered via a user-friendly news edition tool which should be part of the WCMS.

This tool should allow users to insert the following fields [major requirement]:

- News title
- News abstract (summary that will appear on overview pages and in the newsletter)
- Full article (if this field is not used, there will not be a link to the detail page of the article on the overview pages). Articles can be considered as a web page.
- Publication date and expiration date (when the news will be automatically archived).
- An image. (Image must come from the [DMS](#))
- A link to an event from the [Events Calendar](#)
- A priority level. (e.g. "High" , "Medium" , "Low")
- News visibility (Internet or intranet only)
- Insert meta-information on the news such as:
 - One or more News categories
 - Project(s) (see section about [online collaboration spaces](#))
 - Event(s) (see [section about events](#))

As for main Web-site elements, administrators should be able to add extra meta-information fields ([See general requirements on meta-information](#))

It is envisaged that users may decide where to publish news in two different ways:

- Possibility to link a news directly to one or more menu sections ("About the EUI", "Departments and Centres", etc.)
- Using meta-information, the system will automatically link the news to the menu section (or other site elements) having the same categories values. (See [example above](#))

In both cases administrators should be able to specify if an editor can publish news directly or if the news has to be approved first. [major].

II.12.3 DOWNLOAD LATEST NEWS IN PDF

Visitors should be able to download the latest news in PDF directly from this page. This is a major requirement.

The PDF document should be identical to the web page and contain:

- The full text content of the news
- Images associated with the news (if any)
- Links to the news page on the web-site.
- Date of PDF creation
- The header should contain the logo and banner of the news page
- The footer should contain the web-site footer information (disclaimer, relevant logos)

II.13 ONLINE COLLABORATION AND INTERACTIVE TOOLS

II.13.1 ONLINE COLLABORATION WORKSPACES (ON-LINE COMMUNITIES)

The Institute would like to provide collaboration spaces so that groups of people can collaborate on a project, a topic or on specific events.

People can be from inside the Institute (professors, researchers, summer school students, etc.) or external (speakers, thesis jury members, etc.)

The goal is that each person belonging to a group of interest, or working on a common project can have access to an on-line area where they can collaborate with other members of this group.

People should be able to access public collaboration workspaces (open to any visitor without prior authentication) or reserved ("private") collaboration workspaces that only authenticated members can access. [major]

In reserved ("private") collaboration spaces it should be possible to:

- Exchange documents - download/upload any kind of material and documents in an online repository (with authoring and versioning) [major]
- Participate in a discussion forum. [major]
- Publish content (web pages only visible for the community, a kind of mini-web-site) [major]
- Publish community news, announcements [major]

- Obtain a Podcast retransmission of the seminar or meeting registered for in workspaces. [major]
- Chat with other members of the group who are connected [major]
- Send invitations to other persons so as to join the collaboration space [major]
- Edit and review a MS Word document online ([through WebDAV](#)) [Advantage]
- Organise a [web meeting](#) with the group. [advantage].

In public collaboration workspaces visitors should only be able to perform a limited number of actions (no file upload, web page publication), [major]

It should be possible to moderate discussions and control access to the various collaboration spaces. [major].

Visitors should be able to view the topic/theme of the existing private collaboration workspaces and send a request to join a workspace to the moderator [major].

It should be possible to add meta-information on collaboration spaces (such as Categories, Project name, Topic, Keywords, etc.) so that these collaboration spaces can be linked to other web-site elements based on this meta-information.

For example a collaboration space could be linked to events and web pages related to the same topic. (See also [meta-data information section](#))

II.13.2 VISITORS COMMENTS AND REVIEWS

It is an advantage if visitors can give their feedback on the content of some web-site pages. The two or three latest comments should be displayed beside the web page article. The visitor should have two options:

- To add a comment (with its name and email address)
- To view all comments on the article

Web masters should have the possibility to moderate the feedback received on these web pages and delete comments if necessary.

A link to a disclaimer should be visible in case of the use of this feature.

II.13.3 CONTENT RATING BY VISITORS

It is an advantage if visitors can rate the content of some web pages (For example, give a rating of between 1 and 5). Webmasters will be able to determine what content will be subject to such a rating system.

II.13.4 "SEND TO A FRIEND" TOOL

It is a major requirement to foresee a "send to a friend" tool on each web page that offers the visitor the possibility of sending the content of the article by email to an another

person. The visitor must enter his name and the recipient's email addresses (compulsory fields) and may enter a small text message (optional field).

If the page to be sent is an intranet page a message must warn the user that only authorised users shall be able to view this page.

The email sent should be conform to the mailing guidelines specified in this document ([see more](#)).

II.13.5 PERSONAL BLOGSPACES

Proposing a blog solution which allows for the creation of personal blogs while preserving the EUI's corporate image is a plus. [advantage]

A link to a disclaimer should be visible in case of the use of this feature.

II.14 HISTORY AND LOGS

Each time a content block or a page is modified by a user, a history record is stored in the database. This allows [major requirements]:

- Restoring older versions of content with one click of the mouse.
- Keeping a back-up of older versions of the site and content.

The administrator has the possibility to clean up these history records when needed. A history record is only added when a web page is approved and published.

Logs created should respect the W3C standard on the automatic creation of logs.

II.15 OTHER FEATURES

II.15.1 BUILD-IN CREATION OF RSS-FEEDS

It is a major requirement that the WCMS offers a tool that allows editors to create RSS-feeds for certain areas of the web-site. (E.g. to get a feed on all information on a certain department, calendar, news in general, all information on a certain seminar, etc.)

Visitors should have the possibility to register for a RSS feed on the EUI news and/or EUI events.

Feed provided must pass the [W3C feed validation](#) [major]



II.15.2 PODCASTING

It is an advantage if we can allow for automatic downloading of audio broadcasts to an MP3 player in web-site pages.

Feed provided should pass the [W3C feed validation](#)

II.15.3 URL FRIENDLY AND ALIASING

The WCMS should produce simple, easily readable URLs which are also search robot-friendly. These aliases are generated automatically but can preferably be changed by the editor.

No session IDs should be visible in the URL. [major]

There should be no parameters on non-interactive pages. URLs should to be readable by humans and search engines (words need to be separated by "-", not "_"). [advantage]

In the case the WCMS provides the ability to manage several web-sites it should be possible to enter aliases for the mini web-sites URL (See [section on mini-websites](#))[major]

II.15.4 URL MAPPING OR RE-WRITING

If URL-mapping or URL-rewriting is used, it should be guaranteed that the URLs in the log files correspond to the right pages so the EUI can use log file analysis tools such as Webtrends and ClickTracks.

II.15.5 WCMS REPORTING TOOLS

The WCMS should have detailed reporting tools concerning the use of the WCMS product usage. A full list of the reporting possibilities (with screenshots if possible) is expected in the offer. [advantage]

The EUI will purchase and install its own statistics system for the web-site usage (number of visitors, visited path, pages, etc.). Such tool is therefore not part of this Request For Proposal.

II.15.6 SEARCH AND REPLACE FUNCTIONALITY

It is recommended that the WCMS supports a content-wide search-and-replace functionality that makes it easy to find and replace certain words or even phrases. This feature should have the same possibilities as the search-and-replace feature in, for example, Microsoft Office (lower case / upper case match possibility, whole or partial string search, etc.). [advantage]

II.15.7 TASK MANAGEMENT TOOL

It is an advantage if the WCMS product makes available a task management tool which allows for a 'higher ranked user' so as to assign tasks to other users (tasks such as "make a

new page”, “update the content of a page”, etc.). Tasks assigned to a user would appear on the WCMS main page so users can see them when they enter the system. (or an email can be send to notify the user).

II.15.8 HELP AND “TIPS AND TRICKS”

It is a major requirement for the WCMS to have a help section available on every page. Help must be contextual; for example, a click on the help button in the page content editor should display the help topic about page content editing.

In addition it is an advantage if the WCMS can help page editors and templates designers, by providing suggestions and best practice guidelines (tips and tricks).

II.15.9 AUTOMATIC SITEMAP CREATION

The WCMS should be able to generate automatically a sitemap page from the menu structure. A specific template will be provided for the sitemap presentation. Menu and pages listed in the sitemap should be clickable and link to the selected menu or page. This is a major requirement.

It would be an advantage if the WCMS could generate an A-Z index of the web-site from the menu structure

II.15.10 PHOTO GALLERY

It is an advantage if the WCMS provides for the automatic creation of an attractive photo gallery page from images contained in a specific location of the Document Management System.

If this is possible the photo gallery should be browsable (in case there are too many images, several pages should be created using a simple navigation such as “previous, next, last, first”).

Images should be displayed in thumbnails, but visitors should be able to view and download the enlarged version. The name, size and description of each image should be displayed aside, together with the option to enlarge or download the image.

A template for the photo gallery design should be provided.

It is desirable that several photos albums can be created in a photo gallery (or several photo galleries).

II.15.11 MINI WEB-SITES MANAGEMENT

The current EUI web-site contains several web pages which can be considered as mini web-sites hosted by the EUI main web-site.

Here are some examples:

- Finance and consumption programme (about 20 pages)
<http://www.eui.eu/FinConsEU/About/>

- [HEC representatives](#)
- [Researchers' Representatives](#)
- [ECO Representatives](#)
- <http://www.eui.eu/Personal/Researchers/EDEoPCP/>
- <http://eurohomepage.eui.eu>
- <http://vlib.iue.it>

It is major requirement that the WCMS enables the management of these mini web-sites; for example, by providing a different view of the structure from the main web-site structure and the possibility of having aliases to reference and access them.

The WCMS should be able to handle mini-web-sites placed on virtual servers.

A link to a disclaimer should be visible.

II.15.12 ARTICLE TOOLBOX

It is an advantage if the WCMS offers a web-surfer's toolbox to visitors to enhance their browsing. An example of a such toolbox can be viewed on the [Herald Tribune web-site](#). The following options are proposed:

- Reduce/Enlarge text size
- Send the article to a friend (see more)
- Listen to article
- Print this article (providing a printer friendly version of the article)
- Download article in PDF

Part III CUSTOM TOOLS

The tools described in this section are specific to the Institute and use (and require) information from our internal systems.

During the implementation of this contract it is mandatory that the successful candidate provides the following custom tools.

III.1 EVENTS CALENDAR

The events calendar is meant to provide our visitors with information on the upcoming events at the Institute in an attractive manner.

The successful candidate should therefore provide a tool imbedded in the WCMS which displays an overview of the events, latest news and announcements for today, this week, this month etc. using information coming from the WCMS (the latest news) and from our internal [Events Management system](#).

With this tool, it should be possible to focus on a specific type of event or on a specific department, or centre, programme etc. As highlighted in the web-site map provided in Document III – Part I, the calendar will be accessible from several places on our web-site.

III.1.1 EXISTING EVENTS MANAGEMENT SYSTEM

The EUI has already a system for managing events. This system allows inserting information on the events (event type, speakers name, date, location, etc.). Screen images of the current events application and the information its structure/stores are provided in the annexes.

The WCMS should use this information and display these events on the web-site as specified in the design requirements. (See Document III - part IV).

It is the task of the contractor to collect events information from the Events Management System and import it into the WCMS to display the calendar on the web-site. Information can be imported directly from the Oracle9i relational database or can be provided by the Institute under the form of XML files. (To be specified at the contract signature).

The types of information that can be extracted from our system can be found in the annexes.

III.1.2 EVENTS CALENDAR TOOL TO BE PROVIDED WITH THE WCMS

a) Access to the calendar

The events calendar should be accessible from several points in the web-site:

- From menu sections labelled “Seminars and events”. (See web-site structure in Document III - Part I).
- From a person’s homepage: for example, a page giving information on a professor will provide a link to all seminars and lectures given by him.)
- From specific menu sections: for example, there may be a link called “Law department events” linking to all events related to this department. It should be possible to link from a web page to a single events details page.
- From a news page when a news page refers to this event

b) Calendar views

Visitors should be able to view the latest news as well as calendar information for different periods of time. A tabs view should show the following options:

- Today’s events (default view)
- Tomorrow’s events
- This week’s events
- Next week’s events
- This month’s events (or next 4 weeks)

Each view should display the list of events for the period of time selected; by default events are ordered chronologically (date/time ascending).

The display events order can be changed by the visitor (descending date/time, ascending date/time, by event type, by department etc.)

When accessed from the homepage the calendar should display all news (of every type and from every department). However when accessed through from a department homepage the calendar should, by default, display only news concerning this department. Users should always be able to change the events display using the calendar filter ([see more](#) in section below).

For each event in the event list the following information should be displayed:

- Title of the event (clickable, except for a holiday)
- Type of event in brackets after the title
- Affiliation (departments/centres/services)
- Date (if not today tab), start and end time, and location if any.
- Description of the event in one sentence

- For multiple-day events pages the information is ordered by day.

It should be noted that some events are visible by all whereas others should only be visible by the Institute's members (EUI intranet users).

In addition to the events information, latest news should be displayed on the page with a link to the main "news" section of the web-site. The latest news should always display as a default, (or should always remain visible) even when clicking on next week's events, this month's events etc.

c) Event details page

The event details page should present the following information:

- General information on the event:
 - Date and time. Multiple-day events should be taken into account. In such case several dates and times should be displayed.
 - Duration
 - Location (building, room number or name)
 - "Part of":
This line is shown if the event is part of a programme, project, summer school, or other category (if this meta-information is available)
These items are clickable and lead to the main page within the WCMS of the relevant programme, project, etc.
- People involved:
 - Speakers
 - Organisers
 - Contacts
 - Jury members

The system should automatically place a link to the person's details web page in the [Who's Who tool](#).
- Description
Description of the event.
- Registration
Display registration information such as fee, deadline, with a link to the registration form. This appears only when registration has been foreseen or has been requested ([see more on registration forms](#)).
- Related material and information.
Providing that the WCMS proposes online collaboration spaces and providing that a

collaboration space exists for this event, there will be a link to the event collaboration space where documents, forums and other information related to the event reside.

In addition an event can have a list of downloadable files attached.

- News
Link to the news associated to this event (if any)
- Photo gallery
Link to the photo gallery associated with this event (if any)

d) Calendar filters

- Visitors should be able to filter which events they want to view in the calendar.
- They should be able to filter so as to see only events related to one or more departments (Law, Economics, etc.) and/or one or more event type (seminars, working groups, etc). Lists with the filters values will be provided by the EUI.
- Visitors' filter preferences do not have to be persistent from one visit to another. However they must be persistent throughout the session

For example when a user switches from "Today" view to "This month" view, the selections made for the "Today" view are kept for the "This month" view.

- For a better usability it is required that the calendar display is updated without a page reload or page refreshment.

The default filter will vary depending on where the calendar is accessed from.

For example if we want to see the event calendar from the "Economics department" section, the default view proposed at calendar display must all be events related to this department.¹

e) Events advanced search

The events advanced search tool enables our visitors to search from all events including past events.

The advanced search tab opens a search screen with following functionalities:

¹ Knowing that an event has information field "Department"(See technical annex) and knowing that a menu section may have a meta-data field "departments", we technically suggest the use of meta-information to enable this kind of automatic filter.



- Keywords (can be a speaker's name, part of the title, description, ... full text search)
- Select date or period (from – until).
- Select department or centre (possibility to select more than one option)
- Other affiliation (list of projects, programmes and other meta-information)
- Select type of event (possibility to select more than one option)

The search results page should allow the visitors to browse to see results for the events the week before, the week after etc.

f) Events registration

The EUI's Event Management System foresees event registration as an event's attribute. It means that in our system, at the event creation, WCMS users can specify if it is necessary to register for this event or not. When registration is possible they can also enter additional information such as the registration fee, the registration conditions, deadline, etc. (See also data structure in Annex for more information).

Considering this fact, we require that the WCMS act as follows when a registration is foreseen for an event:

- Display automatically a link below the event description in the calendar views and in the event detail page to open the registration form ([see more](#))
- A default registration form should be available automatically. This form should contain following fields:
 - Title
 - Name
 - Surname
 - Address
 - Postcode
 - City/State
 - Country
 - Phone
 - Comment (multi-line text field)
- The form should also display a static text with general registration information. This text should be displayed prior the registration fields. Text will be provided by EUI's event application.
- When submitted, the event registration form should generate an email and send it to the event registration manager (email address provided by EUI's event application)
- The WCMS should allow editors to edit this default form using the [form engine](#) in order to add fields or text.

- After registration a confirmation page should be displayed.

It is an advantage if:

- Information related to registration is also stored in a database
- People can see the list of events they have registered for (EUI intranet users only)
- Webmasters can view list of attendees for a specific events (in WCMS back-end)

g) RSS feed

It should be possible for a visitor to register for an RSS feed on the calendar events taking into account the filter selection (In order to register for a feed on specific kind of events and specific departments)

h) Microsoft Outlook synchronisation

It is an advantage if visitors can have the possibility to import events from the calendar to their personal Outlook calendars.

i) Download calendar in PDF

Visitors should be able to download the events calendar in PDF directly from the event calendar page. [major]

The PDF document should be identical to the calendar as displayed on the web page and contain also:

- Links to the event full description on the web-site page on the web-site.
- Date of PDF creation
- The header should contain the logo, banner of the news page
- The footer should contain the web-site footer information (disclaimer, relevant logos)

III.2 WHO'S WHO

The WCMS should make available a Who's Who tool allowing our visitors to search for Institute members and display their personal details (phone, email, picture, etc.)

III.2.1 PEOPLE DATABASE

The EUI does not have a central database with information on its members. This information is managed by several different systems. However the Institute will gather the necessary information from these various systems and provide it to the contractor either as:

- A set of XML files and schemas
- A relational oracle 9i database

(To be specified at the contract signature)

III.2.2 PEOPLE SEARCH TOOL

It is a major requirement that there is a search tool on our web-site that allows finding a person via a search feature which shows a least three fields (and a fourth optional one):

- Name (text-box which will search first name, last name or both)
- Department, centre, service or programme (dropdown list)
- Position (dropdown list)
- Category (Optional; meta-information)

A user can search for a person by name and/or department and/or position.

Only certain positions are available in a given department and only certain categories of positions are available for a given position; some positions will have no sub-category and this must be reflected in the choices available in the drop down lists, which should change dynamically. These changes in choices should be reflected preferably without refreshing the page.

A feature such as suggestion/auto-completion of name of person while typing would be considered an advantage.

III.2.3 PEOPLE SEARCH RESULT (PEOPLE LIST)

The result of a search on people using the Who's Who search tool should display :

- A person's details page (if only one person matches the search criteria)
- A list of persons presenting the following information:
 - Name
 - Surname
 - Department/Service /Centre/Programme
 - Job title
 - Phone (external and internal phone. The later should only be visible to intranet users)
 - Fax
 - Email (images to avoid spam)

The list should be ordered alphabetically however it should still be possible to sort by name, surname or department, service or programme

III.2.4 PERSONAL DETAILS PRESENTATION

The information to be displayed on a personal details page is the following:

- Name
- Surname
- Department/Service /Centre/Programme
- Job title
- Phone (external and internal phone)
- Fax
- Email (images to avoid spam)
- Picture (if available)
- Link to the person's publications in a publications repository (DSPACE)
- Link to the events related to this person, viz, a link to the events calendar with a filter for this person
- Biography zone: a free-text zone that can be edited by people using the WCMS text editor
- Link to personal web-site or blog

III.3 EUI PUBLICATIONS

The Institute gathers publications in its repository through a system called [DSPACE](#). The following information should be published on the web-site:

- Display all publications of a person.
- Display the xx latest publications - in general or by department - (latest publications in general on the homepage or latest publications of a department if it is on a department's overview page).

The output of these queries could be placed in web pages and be highlighted by of a rolling ticker (such as the latest news ticker) displaying the publications sequentially. These tickers will be placed on various templates. (Only available for webmasters or administrators).

The content of the ticker will depend on the page visited. The homepage "latest publications" ticker will display summary information on the x latest publications of the Institute (in general, all departments). The tickers placed on a department's homepage will display information on the x latest publications of this specific department. When there is no content, the ticker should not appear.

The information to display for each publication is the publication date, title, author and co-authors names, and abstract. A link to the full text of the publication in [DSPACE](#) should be placed on the publication title.

As expressed in the Specifications of this Request For Proposals (Document II), the Institute can provide access to this information as a set of XML files and schemas. It is however considered an advantage if the successful candidate gathers this information directly from the [DSPACE](#) system. (It is possible to extract information from the OAI repository by using an OAI-PMH native protocol or a [Dublin-core XML repositories](#) approach).