Usability Review Report of GANMVL prototype 2.1

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Abstract

This document reports the outcome of a usability review regarding GAN-MVL software, version 2.1. The review has been conducted by using the *heuristic evaluation* method, in which usability experts take the role of less experienced users and describe the potential problems they see arising in a system or interface for those users. In particular, the report describes in detail the adopted method, summarizes the main issues found by the five experts involved in the evaluation, and provides the full individual reports in the appendix.

1 Introduction

The aim of usability evaluation is to assess if people can use a system easily and efficiently to accomplish their own tasks and activities.

The main characteristics of a usable system are that: a) it is easy to learn, b) efficient to use, c) it provides quick recovery from errors, d) it is easy to remember, e) enjoyable to use and f) aesthetically pleasing.

There are important benefits that can be gained by applying usability evaluation methods, starting from cost, system quality, and user satisfaction. Design problems can be detected earlier in the development process, saving both time and money. Moreover, a usable system means more satisfied users and a better reputation for the system and the organization or teams that developed it.

Usability is an iterative process that can be supported by many different evaluation techniques. Among the ones most often applied in early phases of a prototype design and testing, there are expert-based methods, such as *Heuristic evaluation,* that we found particularly appropriate to use for testing GANMVL release 2.1.

2 Heuristic Evaluation

Heuristic evaluation is a diagnostic method that has been widely applied and investigated, most likely due to its efficiency in detecting most of usability flaws (75-80%) at front of a rather limited investment of time and human resources in the evaluation (typically, 3-5 experts are needed) [Nielsen, 1994]. In this method, experts take the role of less experienced users and describe the potential problems they see arising in a system or interface for those users. The review is based on compliance with a set of principles (usability heuristics).

The ten heuristics that have been proposed and then refined in [Nielsen, 1994] for Heuristic Evaluation are the following:

1. *Visibility of system status*: The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

2. *Match between system and the real world*: The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

3. *User control and freedom*: Users often choose system functions by mistake and will need a clearly marked ``emergency exit'' to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

4. *Consistency and standards*: Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

5. *Error prevention*: Even better than good error messages is a careful design which prevents a problem from occurring in the first place.

6. *Recognition rather than recall*: Make objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

7. *Flexibility and efficiency of use*: Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

8. *Aesthetic and minimalist design*: Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

9. *Help users recognize, diagnose, and recover from errors*: Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

10. *Help and documentation*: Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

2.1 Heuristic Evaluation of GANMVL 2.1

Five Usability experts from University of Udine and University of Mannheim applied the Heuristic Evaluation method to analyse GANMVL 2.1 usability, upon completing a series of individual and collaborative tasks within the virtual environment, including a system walkthrough based on the following scenario:

Scenario 1a: Access to GANMVL as a User

Tasks performed
1. Registration as a new user
2. Activation of an account and change of password
3. Browsing of the Knowledge Management area, of the Help system to find and read the User Guide
4. In the GAN Portal, Skype contact of the GANMVL Administrator to get support and access to the Function Generator instrument
5. Download and installation of the High resolution viewer, from the download area
6. Remote check of the value of the signal generated by the Function Generator instrument.
7. Request (to the Administrator) to change current account from user to administrator.
8. Book of an event in the calendar

Scenario 1.b: Use of GANMVL as Administrator

Tasks performed
1. Download and installation of LabView Runtime Engine software for remote control of the Function Generator instrument
2. Modification of the value of signal generated by the instrument
3. Editing of a message in the Logbook about the operation previously performed
4. Use of the HTTP Wizard to add a new instrument to the Control Room toolbar
5. Access (from the GAN node) to the Tunnel Monitor to control (and eventually drop) the connections currently active, as in the case of an emergency (security) operation.
6. Logout

The usability experts received the same instructions and document template to complete their individual evaluation report, which included the request to provide a brief description for each usability flaw (issue) detected, a set of recommendations for overcoming the flaw and an assessment of the level of severity (for each flaw) according to the following three-point rating scale:

Low   cosmetic or minor, causes minimal difficulty

Medium   causes some problems to doing work or causes the user to stumble, but recovery is possible.

High   effectively prevents the user from doing work, the user will fail or have extreme difficulty in completing the task.

A main outcome of the evaluation was that the 5 experts were able to complete the whole list of tasks involved in the scenario above, deriving a clear picture of the core functionalities of GANMVL. In particular, experts could base their evaluation on a quite advanced and developed prototype, including basic access to desktop audio-video communication tools, as well as high resolution video and support for remote monitoring and control of a virtual instrument.

The prototype tested represents a first milestone in designers' effort toward developing and implementing effective mechanisms to access accelerator controls safely within a usable and transparent environment.

However, the usability of GANMVL can be further improved by addressing more specifically the potential difficulties that the target users could meet in getting acquainted with the system and carrying out their work activities.

The rest of this document presents a synthesis of the main usability issues found by the 5 experts together with their recommendations for improvements, followed by an appendix where each individual assessment is reported for reference.

Visibility of system status

Issue title	Description of Issue	Where it occurs	Notified by N. of experts	Severity ranking	Recommendation provided
Improve visual feedback when icons or capabilities are selected	When the user selects an icon on the toolbar there is no feedback showing which selection is currently active, so that good orientation and user navigation could be prevented.	Throughout the system (e.g., when clicking on the toolbar icons on the Control Room area, corresponding to the different operations the user can perform).	2	High	Improve the visual feedback, for example by highlighting the icon selected and also visualizing its name as the title of the new page/window opened. Make the relation of each section with the currently selected node explicit (e.g. when selecting the "elettra" node the title of the "toolbar" could be something like "elettra toolbar"). Highlight the currently selected capability (e.g. with a different background). Provide a header or title describing its content and its relation with the selected capability.
Improve feedback to user actions	There is no clear feedback once the user has completed critical operations, such as the change of password in the user profile.	Throughout the system (e.g., when saving changes to the user profile, when clicking on a capability).	3	High	Provide more explicit and clear feedback, for example by adding notification messages such as '*Your password has been changed*', provide visual (and possibly audio) feedback.
Provide peripheral awareness in text-based communication	When communicating via text messages in the chat space it is not possible to see if/when the other user is writing a message. This could make more difficult the turn taking during text based conversations.	Chat tool/space.	1	Medium	Take inspiration from the solution provided by Messenger's chat for example, which informs the user if the other participant to the conversation is writing a message.

Issue title	Description of Issue	Where it occurs	Notified by N. of experts	Severity ranking	Recommendation provided
Flickering of parts of the interface	In Mozilla Firefox the page loading progress indicator of the browser flashes intermittently at regular time intervals. The NB Chat applet flickers at regular time intervals.	In all pages, for the page loading progress indicator, and in the NB Chat capability (only in Mozilla Firefox 1.5.0.9).	1	Medium	Avoid flickering problems which distract and disturb the user.
Visibility and characteristics of user profiles/status	The visibility of the user profiles on GAN Portal is limited. It is not clear what is enabled by the guest status	GAN Portal, guest status	1	Medium/ High	Provide clear feedback about what a guest can and cannot do. Better highlight the user profiles on GAN Portal
Inconsistent use of text decoration	Since the tools currently displayed depend (and act) on the currently selected resource, it is crucial for the user to quickly understand which resource has been selected. However, sometimes an "underline" decoration is used to visualise that, sometimes no decoration at all.	Resources Browser	1	High	Use a consistent solution for displaying the currently selected resource. Also, indicating in the toolbar to which resource the tools apply could help the user in being aware about this aspect of the system status.
System status messages	When a specific task is performed (e.g. access to an instrument) no status messages are provided. The only hint for the user is browser feedback like the progress bar, cursor status, or error messages provided by the plug-ins.	Access to VI	1	High	Messages should inform about the system status (e.g. "… is loaded").

Match between system and the real world

Issue title	Description of Issue	Where it occurs	Notified by N. of experts	Severity ranking	Recommendation provided
Ambiguity of terms	Terms such as 'Knowledge Management' are ambiguous and not self-explaining. The terms 'capability' and 'resource' on the toolbar are not used elsewhere	e.g. Knowledge Management section	3	Medium/ High	Choose self-explaining and less generic terms. Revise the information architecture, if the new terms affect it. Check terminology. There should be a 1-to-1 correspondence between the terms used in the interface and the underlying concepts
Unclear access to Skype connection	After invoking a Skype connection the user is presented with a window showing the OK – Cancel buttons. Connection to more than 1 person is not supported	Skype connection	1	High	Specify which is the question to which the user is supposed to answer. Inform about the limitation on the number of connections available
Better explain the logic followed in grouping capabilities icons and in the Resource Browser	The logical grouping of icons in the capabilities toolbar or the sequence of categories followed by the Resource browser might not be intuitive to understand.	Toolbar Resource browser	2	High	Use a coherent logical grouping of capabilities (e.g. put all the related capabilities – those with the same icon – one next to the other) and keep these groups clearly distinguished (e.g. by using visual separators or surrounding each group with a different box). Provide a brief and schematic explanation (e.g., in the User Guide) of the logic followed in the Resource Browser.
Mixed use of English and Italian (German, French, …) Language	When choosing other languages than English (in the home page), text is presented using a mixture of English and the chosen language	Almost in every page	1	Low	Provide full translation for text in the system, or remove not fully supported languages from the possible user choices

User control and freedom

Issue title	Description of Issue	Where it occurs	Notified by N. of experts	Severity ranking	Recommendation provided
Better displace the system sections/features and the capabilities on the toolbar	To avoid unnecessary navigation by the user, the system interface could present the 4 main features (Logbook, Help, Download, GAN Portal) as directly available from the top toolbar. Horizontal scrolling of toolbars should be reduced	Throughout the system	1	High	Improve the spatial arrangement of the features available. Organize the toolbar so that horizontal scrolling is not necessary (e.g., create logical groups of capabilities and display each group in a separate tab).
Personalization of the interface settings is not supported	The users have little room for setting up their own preferences/defaults when using the system.	User Profile	1	Medium	Consider the opportunity of providing more support for personalization (in future system release(s)).
Effects of the browser back button	From the "architecture overview", pressing the Back button made the system enter a state where it was not possible to see the main help page anymore.	Help	1	High	The back button should have a behaviour consistent with its name and should not lead the user into unexpected states as the one reported
Size of pop-up windows	When applications are loaded in a pop-up window, it is not possible to resize the window. In Firefox, the window is quite big hiding everything else from GAN portal behind it. In IE it is smaller but still not resizable.	Pop-up Windows	1	Medium	Pop-up windows should be resizable and their "look and feel" should be the same in different browsers.

Consistency and standards

Issue title	Description of Issue	Where it occurs	Notified by N. of experts	Severity ranking	Recommendation provided
Inconsistent cursor	Cursor that appears on some text filling fields has unconventional shape (a small horizontal line added on top of the vertical line).	Text filling fields such as those for registering as a new user (Mozilla FireFox browser only)	2	Low	Always use the same standard cursor.
Registration partially inconsistent with typical web sites	In traditional web sites, the "register as a new user" option is typically placed close to the text fields for the login. Here, it is placed very far from it. Use of links instead of buttons	Screen with option for registering as a new user. Registration page	1	Medium	Follow the typical web convention.
Improper use of the red colour	The use of the red colour to display the "(popup)" label under some capabilities is not appropriate since the action associated to clicking the label cannot have dangerous consequences.	Capabilities labels.	1	Medium	Do not improperly use the red colour, since it is commonly associated with warning/error messages or potentially dangerous actions.
Inconsistent feedback on mouse over	For each capability, there are up to three items which can be clicked to obtain the same effect of selecting/activating the capability. Also, only when pointing the mouse over the capability label, the label changes colour. This behaviour is misleading.	Capability items.	1	Medium	Provide the same feedback (mouse pointer and highlighting) when pointing the mouse over any part of a capability item.
Inconsistent highlighting of root node	The root node does not become underlined when selected.	The root node of the resource browser.	1	Low	Highlight the root node in the same way as the other nodes of the tree.

Issue title	Description of Issue	Where it occurs	Notified by N. of experts	Severity ranking	Recommendation provided
Inconsistent presentation of information	There is inconsistency from one screen to the other in presenting information (e.g., sometimes tables, sometimes web links only are provided).	e.g. Skype page	2	High	Check all system pages to provide a consistent layout and presentation style for each information field.
Ambiguous Visualization of Users /Resources	In the resources browser, there is no clear visual distinction between resources (users, virtual organizations, such as Elettra, and others, such as "XRD1" and "Control Room").	In the "GAN Portal page	1	Medium	Use icons or separators to make it easy for the user to distinguish between the different kinds of resources
The same information is displayed multiple times or with no clear differentiation	Users are shown both at the second level of the hierarchy, and under other resources (e.g. "Control Room"). It is not clear which is the difference, and if clicking on one user in one place is a different action than clicking the user in another place.	Resources browser	1	High	Display each user once or make sure that the user can understand why the same user is displayed multiple times, and which is the difference between clicking on the same user name in different places.
Incorrect use of contextual menus in VI visualization	In the VI visualization, a right-click is used to pop-up a menu (which should be contextual, but is not) with commands to request control of the instrument. This is completely non-intuitive, as right-click menus are typically used only for contextual actions, and not for main commands.	VI visualization	1	Medium	If this tool is not directly developed by MVL-GAN, we suggest to help the user with instructions on the same web page. Moreover, the issue could be notified to the VI developer.

Error prevention

Issue title	Description of Issue	Where it occurs	Notified by N. of experts	Severity ranking	Recommendation provided
Lack of confirm actions and messages	The "User Manager" capability seems to allow system administrators to enable/disable user accounts, but no confirm/save button is provided, so that an admin user could quite easily enable/disable a user account by mistake without being aware of what s/he has done.	"User Manager" capability.\n\nTunnel Monitor	2	Medium / High	A potentially dangerous action like enabling/disabling a user account should require some form of confirmation (e.g. the admin user should be required to press a confirm/save button after making changes or a confirmation dialog should be displayed when the admin clicks any of the check buttons, or both). The same applies when dropping connections from the Tunnel Monitor
Error prevention not fully supported	The current prototype release does not fully / properly support error prevention.	Throughout the system	1	High	Make sure that adequate warns are issued to the user in the case s/he is about to make a potentially serious error (e.g., remote instrument control operations).
Too much jargon in error messages	Error messages are expressed in technical jargon and often do not provide clear indications or way out from errors to users.	Throughout the system	1	High	Provide text messages that more clearly describe the error(s) occurred and possible ways of recovering from it. Whenever possible, avoid use of jargon.
Computer jargon is used instead of user language	In some parts of the interface, the terms adopted (such as NBChat) are developer's jargon, and thus not easy for the user to understand	Toolbar (NBChat, VNCDesktop, HTTPDesktop)	1	Medium	Avoid computer or developer jargon and use terms that are as familiar and meaningful for the user as possible.

EUROTeV-Report-2007-005

Recognition rather than recall

Issue title	Description of Issue	Where it occurs	Notified by N. of experts	Severity ranking	Recommendation provided
Visibility of text and icons is improvable	In some windows text areas have too little 'breathing space' around them (e.g., Skype connection window), in others there is too much space unexploited (e.g., chat window). The same issue concerns the space around icons on the toolbar.	Skype page, chat tool	2	Medium	Use white space properly to help recognition processes, create symmetry and lead the eye in the appropriate direction.
Background vs text contrast is improvable	Sometimes the background vs text contrast is not appropriate for an easy reading (e.g., box headers in the user profile window use white characters on a clear background colour).	User Profile Commands at bottom of 'Knowledge Management' tab	3	Medium	Improve colour contrast between background and text.
Information about registration step	After completing the first step in the new user registration process, the system moves to a second screen which is very similar to the first one and gives no indication that we are at the second step. A novice user could find it hard to recognize this.	Registration of new user.	1	Medium	Explicitly highlight the number of steps that the user should go through and which step the user is currently in.

Issue title	Description of Issue	Where it occurs	Notified by N. of experts	Severity ranking	Recommendation provided
Wrong /Inconsistent usage of icons to indicate commands	In most cases, toolbar icons do not indicate clearly which action will be performed, or allow to distinguish among different actions / tools. E.g., the "Tunnel Monitor" icon does not indicate a connection monitor but it is the same one used for the chat and remote desktop, two very different actions	Toolbar	1	Medium	Design and use icons that allow the user to guess which action will be performed by clicking on them, and that at least allow the user to distinguish among different actions.
Indication of which page is currently visible	It is not sufficiently clear which secondary-level tab item is currently being shown (all items, e.g. home and registration, are presented using the same font / style / size / colour).	In every page, at the secondary-level tab line.	1	Medium	Make it clear, by using text styles and colours, which is the currently selected tab item.

Flexibility and efficiency of use

Issue title	Description of Issue	Where it occurs	Notified by N. of experts	Severity ranking	Recommendation provided
The system does not provide accelerators for expert users	The current release of the prototype does not support experts (or advanced) users (e.g., with accelerators or short cuts for frequent actions).	Throughout the system	2	Medium	Provide the possibility for expert users and administrators to bypass long operations with type-ahead, user-defined macros or keyboard shortcuts.
Rules regarding the management of user accounts and privileges	It is not clear which regulation is currently followed (or will be followed) in the assignment of user accounts to guests, users, administrators, etc.. A description of the privileges assigned to each category of user is required.	Help section (User Guide, Station Administration Guide), User Profile	1	High	Provide a clear description (in the Help section) about the rules governing the assignment of privileges to the different types of accounts and user roles.

Aesthetic and minimalist design

Issue title	Description of Issue	Where it occurs	Notified by N. of experts	Severity ranking	Recommendation provided
Check all text for errors	There are some misspellings (typos) and grammar errors in the information and dialogue presented to the user that need to be corrected.	Throughout the system	1	High	Correct all errors in the text.
Avoid excessive length of toolbars	There are toolbars (e.g., GAN Portal, Control room) that are too much extended horizontally (they contain many icons, so the last ones in the line have low visibility for the user).	GAN Portal (toolbars)	1	Medium	Avoid toolbars that are too long horizontally, whenever possible.
Maximization of calendar	Maximising a calendar causes graphical changes that are not limited to maximization and can be confusing	Calendar	1	Medium	Implement maximization as in most physical and electronic calendars
Complexity of displayed icons and nodes	It is unclear, which icons and nodes are important for the specific task. Because of the complexity, the user is irritated by the variety of unclear options.	Icons and nodes	1	High	Develop new ordering/grouping system to prevent too many options being displayed. Icons and menus should be task oriented, not function oriented.

Help and Documentation

Issue title	Description of Issue	Where it occurs	Notified by N. of experts	Severity ranking	Recommendation provided
Absence of contextual help	Some windows display a question mark which should display contextual help information, but clicking it does not make any help appear.	Throughout the system	4	Medium	Provide complete and accurate contextual help and documentation, possibly without hiding the window content.
Help contents	Help text is too concise, not always sufficient to explain the features and is not organized around user tasks.	Help text.	4	High	Give more information in the help, explain how to carry out typical tasks, provide usage examples.
Instructions on how to access the system need to be provided	Essential information on how to access the system need to be provided from the login page: e.g., how can the user request an account, which are the software/hardware requirements to access the system, etc.	Login page.	3	High	Provide the user with detailed instructions about system accessibility.
Provide help where and when help is needed	All help for the user is provided in a separate help section (accessible only after login) instead of providing proper help during task execution. For example, the help provides instructions on how to access the system for the first time, but users can see it only once they are logged into the system.	Almost everywhere in the system	1	High	Provide access to relevant help and documentation when and where the user will need them.

Acknowledgement

References

Nielsen, J. (1994). *Usability Engineering*. Morgan Kaufmann Publishers.

Appendix: Detailed Reports

Luca Chittaro

The following pages present the findings of a Usability Review of GANMVL 2.1 conducted by Luca Chittaro on 11-01-2007.

The reviewer used a Internet Explorer browser on a Windows XP platform. Screen resolution was 1280*1024 pixels. Internet connection type was high-speed.

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

Issue 1: Feedback on password change

Severity: [High]
There is no feedback after a user changes her password.

Where this issue occurs:
Password change.

Recommendation:
Provide clear feedback about the success/failure of the password change action.

Issue 2: Guest status

Severity: [High]
The system does not clearly highlight which are the limitations of the "guest" status.

Where this issue occurs:
Guest status.

Recommendation:
Provide clear feedback about what a Guest can and cannot do. Also provide more help to define the Guest status.

Issue 3: Visibility of which user profiles are on GAN Portal

Severity: [Medium]
The visibility of which user profiles are on GAN Portal is limited.

Where this issue occurs:
Listing of user profiles on GAN Portal.

Recommendation:
Better highlight which user profiles are on GAN Portal.

Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

Issue 4: Ambiguity of some terms

Severity: [High]
The terms "knowledge management" and "GAN Portal" used by the interface are ambiguous and not self-explaining. As a result, the organization into the two separate areas corresponding to the two terms in the information architecture of the system is not easy to grasp.

Where this issue occurs:
Different screens.

Recommendation:
Choose self-explaining and less generic terms. Revise the information architecture, if the new terms affect it.

Issue 5: Correctness of English

Severity: [High]
There are English errors in the second step of the registration process.

Where this issue occurs:
Registration of new user.

Recommendation:
Use correct English to prevent misunderstandings.

Issue 6: Information about Skype connection

Severity: [High]
After invoking a Skype connection, an empty dialog window with two buttons (OK, Cancel) appeared. Moreover, one can connect with only one user while Skype users expect also multiple connections.

Where this issue occurs:
After invoking a Skype connection.

Recommendation:
Specify what is the question to which the user is supposed to answer. Inform about the limitation on the number of connections.

Issue 7: Capability and resources

Severity: [High]
The toolbar contains the terms "capability" and "resource" which does not seem to be used elsewhere.

Where this issue occurs:
Toolbar.

Recommendation:
Check terminology. There should be a 1-to-1 correspondence between the terms used in the interface and the underlying concepts.

User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

Issue 8: Effects of the browser back button

Severity: [High]
After entering "architecture overview", I wanted to go back and I pressed the Back button two times: the system entered a state where it was not possible anymore to see the main help page.

Where this issue occurs:
Help.

Recommendation:
The back button should have a behaviour consistent with its name and should not lead the user into unexpected states as the one reported above.

Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Issue 9: Inconsistent cursor

Severity: [Low]
Cursor that appears on some text filling fields has unconventional shape (a small horizontal line added on top of the usual vertical line).

Where this issue occurs:
Some text filling fields such as those for registering as a new user.

Recommendation:
use always the same standard cursor.

Issue 10: Registration partially inconsistent with typical web sites

Severity: [Medium]

In traditional web sites, the "register as a new user" option (more often called "sign up") is typically placed close to the text fields for the login. In this system, it is placed very far from it.

Where this issue occurs:
Screen with option for registering as a new user.

Recommendation:
Follow the typical web convention.

Recognition rather than recall

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

Issue 11: Information about registration step

Severity: [Medium]

After completing the first step in the new user registration process, the system moves to a second screen which is very similar to the first one and gives no indication that we are at the second step.
The user has recognize this, but since she is a new user, it is very hard to do.

Where this issue occurs:
Registration of new user.

Recommendation:
Explicitly highlight the number of steps that the user should go through and which step the user is currently in.

Aesthetic and minimalist design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

Issue 12: Typographic choices for windows

Severity: [medium]

The different windows that open while using the system do not follow the same typographic conventions and colour coding and this can confuse the user.

Where this issue occurs:
Different places.

Recommendation:
Identify a uniform set of typographic choices and colour coding and apply them consistently to all windows.

Issue 13: Maximization of calendar

Severity: [Medium]
Maximizing a calendar causes graphical changes that are not limited to maximization and can be confusing

Where this issue occurs:
Calendar

Recommendation:
Implement maximization as in most physical and electronic calendars.

Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Issue 14: Help about unfamiliar terms

Severity: [Medium]
Help text is not always sufficient to explain the features and sometimes is completely absent, for example a new user registration asks about a "virtual organization" which can be an unfamiliar term to a new user and no definition can be retrieved there, in other screen words such as "e-logbook" are used without the possibility to retrieve a definition.

Where this issue occurs:
Different places.

Recommendation:
Give the user the possibility to click on uncommon terms (or maybe a question mark near them) to retrieve help about them, pay attention to precisely define terms in the help, explain functionalities and their effects, provide examples of usage.

Issue 15: Help contents

Severity: [High]
Help text is too concise, not always sufficient to explain the features and is not organized around user tasks.

Where this issue occurs:
Help text.

Recommendation:
Give more information in the help, explain how to carry out typical tasks, provide examples of usage.

Checklist
The following checklist was used when completing the review.

Navigation

Item	Compliance	Comments
Clear indication of current location	Sometimes.	
Clear and constant link to homepage	Partially.	
Access from home page to major parts of system	Yes.	
System map is provided	Seems not.	
System structure is simple	Partially	
Search is available	No.	

Functionality

Item	Compliance	Comments
Functionality is clearly labeled	In most cases	
No unnecessary plug-ins		

Control

Item	Compliance	Comments
User can cancel interactions	Yes	
Clear Exit point from interaction pages	Not always	
All appropriate browsers supported	No	I initially tried the system with the latest version of Mozilla 2.x and the visualization windows did not work.

Help and Support

Item	Compliance	Comments
Online help is available	Partially	The help is very limited.

Language

Item	Compliance	Comments
Language is simple	Partially	
Jargon is avoided	Partially	

Feedback

Item	Compliance	Comments
It is always clear what is happening	No	
Feedback is prompt	Not always.	
Users can give feedback	Seems not	There seems to be no "contact" or "feedback" link inside the pages.

Consistency

Item	Compliance	Comments
Only one word or term used to describe an item.	Possibly not.	See detailed report.
Terminology consistent with system	Possibly not.	See detailed report

Error Handling

Item	Compliance	Comments
Errors do not occur unnecessarily	No.	
Error messages are in plain language	Yes.	
On error, further assistance is available	No.	

Visual Clarity

Item	Compliance	Comments
Layout is clear	Not always	See detailed report
Sufficient 'white space'	Yes.	At times too much
Images have 'Alt' text	Not checked	
No unnecessary animation	Yes.	

Window management

Item	Compliance	Comments
Multiple browser instances avoided	Not checked.	

Luca De Marco

The following pages present the findings of a Usability Review of GANMVL 2.1conducted by Luca De Marco on 15-01-2007.

The review was conducted between 12-15 January 2007. The reviewer used Internet Explorer 6.0 and Mozilla Firefox 1.5.0.9 browsers on a Windows XP platform. Screen resolution was 1280x1024 pixels. Internet connection type was LAN [100 Mbps].

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

Issue 1: Need for improved feedback

Severity: High

Feedback to user's actions should be more evident, to better notify the user that commands have been issued and have been (or are being) processed by the system.

Where this issue occurs

When saving changes to the User Profile settings. When clicking on a capability icon.

Recommendation

Make the notification of changes more evident (e.g. by displaying a notification message to inform the user that changes have been successfully saved). Provide visual (and possibly audio, e.g. with a "click" sound) feedback when the user clicks on a capability (e.g. by highlighting the icon or its background).

Issue 2: No feedback when pointing the mouse over a capability

Severity: Medium

In Internet Explorer 6.0, no feedback is provided (the cursor shape does not change) when pointing the mouse over a capability, so that the user may not understand that the item can be clicked to select it. Moreover, when pointing the mouse over the capability label, the wrong type of cursor (the one for text input) is displayed.

Where this issue occurs

When pointing the mouse over a capability or its label (only in Internet Explorer 6.0).

Recommendation

Provide the same feedback provided in Mozilla Firefox, both when pointing the mouse over the capability or its label.

Issue 3: Flickering of parts of the interface

Severity: Medium

In Mozilla Firefox 1.5.0.9, the page loading progress indicator of the browser flashes intermittently at regular time intervals. The NB Chat applet flickers at regular time intervals.

Where this issue occurs

In all pages, for the page loading progress indicator, and in the NB Chat capability (only in Mozilla Firefox 1.5.0.9).

Recommendation

Avoid flickering problems which distract and disturb the user.

Issue 4: Lack of visibility of system status

Severity: High

There is no clear indication about where the user is in. The only cue about the currently selected node is the fact that the node is underlined in the tree. When a capability is selected, no visual cue is provided about the fact that it is the currently active one. No header or title is displayed in the toolbar nor in the section below it when a capability is selected.

Where this issue occurs

In all pages.

Recommendation

Make the highlighting of the currently selected node more evident (e.g. with a different background). Make the relation of each section with the currently selected node explicit (e.g. when selecting the "elettra" node the title of the "toolbar" could be something like "elettra toolbar"). Highlight the currently selected capability (e.g. with a different background). Provide a header or title describing its content and its relation with the selected capability.

Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

Issue 5: Capability icons are not logically grouped

Severity: High

There is no logical grouping of icons in the toolbar displaying the capabilities. This makes it more difficult for a user to find the searched capability.

Where this issue occurs

Toolbar

Recommendation

Use a coherent logical grouping of capabilities (e.g. put all the related capabilities – those with the same icon – one near to the other) and keep these groups clearly distinguished (e.g. by using visual separators or surrounding each group with a different box).

Issue 6: Inappropriate labelling of some capabilities

Severity: Medium

The labels of some capabilities do not clearly suggest their purpose. The use of acronyms for labelling some capabilities assumes that all the users are aware of their meaning.

Where this issue occurs

Http Desktop (some name), VNC Desktop (some name): the functionality is not clear.
HRC Wizard, VNC Wizard: acronyms are not explained.

Recommendation

Make the labelling more clear and expressive.

Issue 7: Inappropriate labelling of tabs

Severity: Medium

The label "Knowledge Management" does not suggest the contents of the section.

Where this issue occurs

"Knowledge Management" tab.

Recommendation

The tab should be split in three different tabs, one for each of the very different functionalities that it erroneously groups together.

Issue 8: Http Wizard not working properly

Severity: Medium

The "Http Wizard" does not work properly or at least as expected. After, creating a new entry (e.g. http://www.elettra.trieste.it), when selecting the new capability from the toolbar an error page is displayed.

Where this issue occurs

"Http Wizard" capability.

Recommendation

Fix the behaviour of the "Http Wizard".

User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

Issue 9: Windows size

Severity: Medium

To view all the content displayed on screen, some horizontal scrolling is required by the user, making it more difficult to find the capability which the user is searching for.

Where this issue occurs
Toolbar.

Recommendation
Organize the toolbar so that horizontal scrolling is not necessary (e.g. create logical groups of capabilities and display each group in a separate tab).

Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Issue 10: Improper use of the red colour

Severity: Medium
The use of the red colour to display the "(popup)" label under some capabilities does not seem appropriate since the action associated to clicking the label cannot have dangerous consequences.

Where this issue occurs
Capabilities labels.

Recommendation
Do not improperly use the red colour, since it is commonly associated with warning/error messages or potentially dangerous actions.

Issue 11: Inconsistent feedback on mouse over

Severity: Medium
For each capability, there are up to three items which can be clicked to obtain the same effect of selecting/activating the capability. Also, only when pointing the mouse over the capability label, the label changes colour. This behaviour is misleading, since the user may think that the outcome of clicking on different items could be different.

Where this issue occurs
Capability items.

Recommendation
Provide the same feedback (mouse pointer and highlighting) when pointing the mouse over any part of a capability item.

Issue 12: Inconsistent highlighting of root node

Severity: Low
The root node does not become underlined when selected.

Where this issue occurs
The root node of the resource browser.

Recommendation
Highlight the root node in the same way as the other nodes of the tree.

Issue 13: Color scheme

Severity: Medium
The commands at the bottom of the pages under the "Knowledge Management" tab are in blue characters over blue background.

Where this issue occurs:
"Knowledge Management" tab.

Recommendation:
Always use proper background-text color contrast.

Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

Issue 14: Lack of confirm actions and messages

Severity: Medium
The "User Manager" capability seems to allow system administrators to enable/disable user accounts, but no confirm/save button is provided, so that an admin user could quite easily enable/disable a user account by mistake without being aware of what s/he has done.

Where this issue occurs:
"User Manager" capability.

Recommendation:
A potentially dangerous action like enabling/disabling a user account should require some form of confirmation (e.g. the admin user should be required to press a confirm/save button after making changes or a confirmation dialog should be displayed when the admin clicks any of the check buttons, or both)

Issue 15: Calendar not working

Severity: Medium
The "Calendar" tool does not work properly. After adding/removing entries a page refresh is needed to see the effect of changes. This could lead the user to repeatedly add the same event or to delete it more than once.

Where this issue occurs:
"Calendar" tool.

Recommendation:
Automatically refresh the calendar when the user makes some action

Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Issue 16: Absence of contextual help

Severity: Medium
Some windows display a question mark which should display contextual help information, but clicking it does not make any help appear.

Where this issue occurs
Throughout the system

Recommendation
Provide complete and accurate contextual help and documentation, possibly without hiding the window content.

Issue 17: Help contents

Severity: [High]
The documentation provided in the User's Guide is quite poor for the following reasons:
- It does not explain all the features but only the contents of "GAN Portal" tab and the basic actions which can be performed.
- It contains several syntax and spelling errors.
- The text is not justified, making it more difficult to read.
- No styling convention is used to highlight keywords nor system parts (e.g., hyphens, bold or italic style).
- No spacing is provided between the explanation of different features, thus making it difficult to find the information needed at a glance.
- A "Welcome" tab is referred to, which is not present.

Where this issue occurs:
User's Guide.

Recommendation:
Pay attention to all the mentioned aspects to favour user's understanding and learning.

Issue 18: Instructions on how to access the system need to be provided

Severity: High
Essential information on how to access the system need to be provided from Elettra VCR login page: e.g., how can the user request an account, what procedure s/he needs to follow to obtain a certificate, which are the software/hardware requirements to access the system, etc.

Where this issue occurs
Login page.

Recommendation

Provide the user with detailed instructions about system accessibility.

Checklist

The following checklist was used when completing the review.

Navigation

Item	Compliance	Comments
Clear indication of current location	No	See detailed issues raised in the report
Clear and constant link to homepage	Yes	To go to the home, one has to click on a "Welcome" tab
Access from home page to major parts of system	Yes	
System map is provided	No	
System structure is simple	Yes	
Search is available	Partially	Only in the "Help" and "Logbook"

Functionality

Item	Compliance	Comments
Functionality is clearly labeled	Not always	
No unnecessary plug-ins	Yes	

Control

Item	Compliance	Comments
User can cancel interactions	Not checked [	
Clear Exit point from interaction pages	Yes	
All appropriate browsers supported	In most cases	See detailed issues raised in the report for exceptions

Help and Support

Item	Compliance	Comments
Online help is available	Partially	The help is limited.

Language

Item	Compliance	Comments
Language is simple	Partially	
Jargon is avoided	Partially	

Feedback

Item	Compliance	Comments
It is always clear what is happening	No	See detailed issues raised in the report
Feedback is prompt	No	See detailed issues raised in the report
Users can give feedback	No	There seems to be no "contact" or "feedback" link inside the pages

Consistency

Item	Compliance	Comments
Only one word or term used to describe an item.	Mostly	
Terminology consistent with system	Yes	

Error Handling

Item	Compliance	Comments
Errors do not occur unnecessarily	Yes	
Error messages are in plain language	Yes	
On error, further assistance is available	No	

Visual Clarity

Item	Compliance	Comments
Layout is clear	No	See detailed issues raised in the report
Sufficient 'white space'	Yes	
Images have 'Alt' text	No	
No unnecessary animation	OK	

Window management

Item	Compliance	Comments
Multiple browser instances avoided	No	Several capabilities open a popup

Silvia Gabrielli

The following pages present the findings of a Usability Review of GAN-MVL 2.1 conducted by Silvia Gabrielli on 08-01-2007.

The review was conducted between 2-8 January 2007. The reviewer used Mozilla Firefox 1.5.0.9 browser on a Windows XP platform. Screen resolution was 1152x864 pixels. Internet connection type was LAN [100 Mbps].

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

Issue 1: Improve visual feedback when icons are selected

Severity: High

When the user selects an icon on the toolbar there is no feedback showing which selection is currently active, so that good orientation and user navigation could be prevented.

Where this issue occurs

Throughout the system (e.g., when clicking on the toolbar icons on the Control Room area, corresponding to the different operations the user can perform).

Recommendation

Improve the visual feedback, for example by highlighting the icon selected and also visualizing its name as the title of the new page/window opened.

Issue 2. Improve feedback to user actions

Severity: High

There is no clear feedback once the user has completed critical operations, such as the change of password in the user profile.

Where this issue occurs

Throughout the system (in particular, the user profile and when adding/deleting events on the Calendar).

Recommendation

Provide more explicit and clear feedback, for example by adding notification messages such as '*Your password has been changed*'.

Issue 3. Provide peripheral awareness in text-based communication

*Severity***:** Medium

When communicating via text messages in the chat space it is not possible to see if/when the other user is writing a message. This could make more difficult the turn taking during text based conversations.

Where this issue occurs
Chat tool/space.

Recommendation

Take inspiration from the solution provided by Messenger's chat for example, which informs the user if the other participant to the conversation is writing a message.

Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

Issue 4. Better explain the logic followed by the Resource Browser

*Severity***:** Low

To a novice user the logic sequence of categories followed by the Resource browser might not be intuitive to understand.

Where this issue occurs
Resource browser

Recommendation
Provide a brief and schematic explanation (possibly in the User Guide) of the logic followed in the Resource Browser.

Issue 5. Rename or modify the 'Knowledge Management' section

*Severity***:** Medium

It is not familiar or conventional to find resources such as the Help and Download area under a section named 'Knowledge Management'.

Where this issue occurs
Knowledge Management section

Recommendation
Either rename this section with a more appropriate title (e.g., Help & Documentation) or ungroup the three functionalities there contained (Logbook, Help, Download area).

Issue 6. Check the cursor shape on the login page

Severity: Medium

The cursor shape on the login page is not the conventional one (when using Mozilla Firefox browser only).

Where this issue occurs

Login page

Recommendation

Replace it with the conventional symbol.

User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

Issue 7. Better displace the system sections/features

Severity: High

When entering the system the user can only see two sections available (Knowledge Management, GAN Portal). To avoid unnecessary navigation by the user, the system interface could present the 4 main features (Logbook, Help, Download, GAN Portal) as directly available from the top toolbar.

Where this issue occurs

Throughout the system

Recommendation

Improve the spatial arrangement of the features available.

Issue 8. Personalization of the interface settings is not supported

Severity: Medium

The users have little room for setting up their own preferences/defaults when using the system.

Where this issue occurs

User Profile.

Recommendation

Consider the opportunity of providing more support for personalization (in future system release(s)).

Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Issue 9. Contextual help/instructions not always provided

Severity: High

The '?' character on the toolbar(s) sometimes leads to brief instructions about the functionality selected, sometimes it doesn't provide any information, thus it is ambiguous for the user.

Where this issue occurs

Throughout the system

Recommendation

Either associate each '?' to relative instructions/information or eliminate it from the toolbar.

Issue 10. Fields & field labels should be better located in the space available

Severity: Medium

Sometimes fields and their labels are not adequately distributed in the space available for an easy scanning/reading by the user.

Where this issue occurs

Throughout the system (see for instance, Skype access page, chat…)

Recommendation

Solve this problem by properly exploiting the space available.

Issue 11. Inconsistent presentation of information

Severity: High

There is some inconsistency from one screen to the other in the presentation of information (e.g., sometimes the information or data provided are organized and presented within tables, sometimes web links only are provided).

Where this issue occurs

e.g. Skype page

Recommendation

Check all system pages to provide a consistent layout and style of presentation for each information field.

Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

Issue 12. Error prevention not fully supported

Severity: High
The current prototype release does not fully / properly support error prevention.

Where this issue occurs

Throughout the system

Recommendation

Make sure that adequate warns are issued to the user in the case s/he is about to make a potentially serious error (e.g., remote instrument control operations).

Issue 13. Too much jargon in error messages

Severity: High
Error messages are expressed in technical jargon and often do not provide clear indications or way out from errors to users.

Where this issue occurs

Throughout the system

Recommendation

Provide text messages that more clearly describe the error(s) occurred and possible ways of recovering from it. Whenever possible, avoid use of jargon.

Recognition rather than recall

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

Issue 14. Visibility of text and icons is improvable

Severity: Medium
In some windows text areas have too little 'breathing space' around them (e.g., Skype connection window), in others there is too much space unexploited (e.g., chat window). The same issue concerns the space around icons on the toolbar.

Where this issue occurs

Skype page, chat tool

Recommendation

Use white space properly to help recognition processes, create symmetry and lead the eye in the appropriate direction.

Issue 15. Background vs text contrast is improvable

Severity: Medium
Sometimes the background vs text contrast is not appropriate for an easy reading (e.g., box headers in the user profile window use white characters on a clear background colour).

Where this issue occurs
User Profile

Recommendation
Improve colour contrast between background and text.

Flexibility and efficiency of use

Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

Issue 16. The system does not provide accelerators for expert users

Severity: Medium
The current release of the prototype does not support experts (or advanced) users (e.g., with accelerators or short cuts for frequent actions).

Where this issue occurs
Throughout the system

Recommendation
Provide the possibility for expert users and administrators to bypass long operations with type-ahead, user-defined macros or keyboard shortcuts.

Issue 17. Rules regarding the management of user accounts and privileges

Severity: High
It is not clear which regulation is currently followed (or will be followed) in the assignment of user accounts to guests, users, administrators, etc.. A description of the privileges assigned to each category of user is required.

Where this issue occurs
Help section (User Guide, Station Administration Guide), User Profile

Recommendation
Provide a clear description (in the Help section) about the rules governing the assignment of privileges to the different types of accounts and user roles.

Aesthetic and minimalist design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

Issue 18. Check all text for errors

Severity: High

There are some misspellings (typos) and grammar errors in the information and dialogue presented to the user that need to be corrected.

Where this issue occurs

Throughout the system

Recommendation

Correct all errors in the text.

Issue 19. Avoid excessive length of toolbars

Severity: Medium

There are toolbars (e.g., GAN Portal, Control room) that are too much extended horizontally (they contain many icons, so the last ones in the line have low visibility for the user).

Where this issue occurs

GAN Portal (toolbars)

Recommendation

Avoid toolbars that are too long horizontally, whenever possible.

Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Issue 20. Help system interface not consistent with the overall interface

Severity: Medium

Currently the Help system interface (navigation, presentation) is not consistent with the system interface.

Where this issue occurs

Help feature.

Recommendation

Provide a more consistent and easy to navigate presentation of the help and documentation.

Issue 21. Contextual help is improvable

Severity: Medium

The quality of contextual help currently provided is rather poor and incomplete.

Where this issue occurs
Throughout the system

Recommendation
Provide brief, clear, relevant context-sensitive help (e.g., on toolbars) to speed up learning of the system.

Checklist
The following checklist was used when completing the review.

Navigation

Item	Compliance	Comments
Clear indication of current location	Partially	While in general the tabs on top provide an idea of the page where one is, windows on the page can sometimes contain further location information (e.g. the Resource Browser) that do not follow the same conventions for location indication
Clear and constant link to homepage	Partially	It is not clear if the 'Welcome to GAN' page is the homepage
Access from home page to major parts of system	Yes	
System map is provided	No	
System structure is simple	Yes	
Search is available	No	

Functionality

Item	Compliance	Comments
Functionality is clearly labeled	Mostly	Sometimes jargon and acronyms are used
No unnecessary plug-ins	Yes	

Control

Item	Compliance	Comments
User can cancel interactions	Yes	
Clear Exit point from interaction pages	Not always	
All appropriate browsers supported	No	Internet Explorer is less supported than Mozilla Firefox, according to designers

Help and Support

Item	Compliance	Comments
Online help is available	Partially	The help is limited.

Language

Item	Compliance	Comments
Language is simple	Sometimes	
Jargon is avoided	No	

Feedback

Item	Compliance	Comments
It is always clear what is happening	Sometimes	See detailed issues raised in the report
Feedback is prompt	Sometimes	See detailed issues raised in the report
Users can give feedback	Yes	

Consistency

Item	Compliance	Comments
Only one word or term used to describe an item.	Mostly	
Terminology consistent with system	Yes	

Error Handling

Item	Compliance	Comments
Errors do not occur unnecessarily	Sometimes	See detailed issues raised in the report
Error messages are in plain language	Sometimes	
On error, further assistance is available	No	

Visual Clarity

Item	Compliance	Comments
Layout is clear	Sometimes	See detailed issues raised in the report
Sufficient 'white space'	No	See detailed issues raised in the report Actually at times is too much (chat).
Images have 'Alt' text	N/A	
No unnecessary animation	Yes	

Window management

Item	Compliance	Comments
Multiple browser instances avoided	Mostly	

Markus Hodapp

The following pages present the findings of a Usability Review of GANMVL conducted by Markus Hodapp on 26.01.2007.

The review was conducted between 27.01.2007 and 02.02.2007. The reviewer used Mozilla Firefox 1.5.0.9 and Internet Explorer 7 browser on a Windows XP platform. Screen resolution was 1280 x 1024 pixels. Internet connection type was fast University network [100 Mbps].

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

Issue 1: System status messages

Severity: High

Where this issue occurs:
When a specific task is performed (e.g. access to an instrument) no status messages are provided. The only hint for the user is browser feedback like the progress bar, cursor status, or error messages provided by the plug-ins.

Recommendation
Messages should inform about the system status (e.g. "… is loaded").

Issue 2: Selection of Icons

Severity: High

Where this issue occurs:
In the GAN Portal, the text underneath the icons is highlighted in blue when the mouse is on it. When an icon is selected, a pop-up window opens or something is loaded on the GAN Portal page but the icon itself is not highlighted as selected.

Recommendation
Clear indication which icon is selected at the moment and which task is started by it. This would ensure the orientation within the system.

Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

Issue 3: Icons

Severity: High

Where this issue occurs:
The icons used in GAN MVL Portal are not indicating their functionalities. In the Elettra –
Control Room toolbar, only 2 icon variations are used for more than 10 different applications.

Recommendation
A pool of icons should be developed that indicate clearly the functionality that's behind it.

Issue 4: Node structure

Severity: Medium

Where this issue occurs:
The resource browser uses a node structure for navigation. This structure is not intuitive and it
is unclear what functionalities hide behind it.

Recommendation
Use a clear structure where the single entries are self explanatory.

Issue 5: Use of the "?" Links

Severity: High

Where this issue occurs:
In some parts of the portal, a question mark is indicated where the users assumes a help
functionality. When you click on that symbol, in most of the cases nothing happens.

Recommendation
Use the "?" symbol only when help pages are offered.

User control and freedom

Users often choose system functions by mistake and will need a clearly marked "emergency
exit" to leave the unwanted state without having to go through an extended dialogue. Support
undo and redo.

Issue 6: Size of pop-up windows

Severity: Medium

Where this issue occurs:
When applications are loaded in a pop-up window, it is not possible to resize the window. In
Firefox, the window is quite big hiding everything else from GAN portal behind it. In IE it is
smaller but still not resizeable.

Recommendation
Pop-up windows should be resizable and the "look and feel" should be the same in different
browsers.

Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Issue 7: Order of Icons and space usage

Severity: Medium

Where this issue occurs:
When something is added to the toolbar (e.g. an instrument) vertical scrolling is necessary in Firefox. There is no specific ordering system that matches tasks in the icon bar.

Recommendation
Grouping of icons that belong to one or similar tasks and prevent scrolling!

Aesthetic and minimalist design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

Issue 8: Complexity of displayed icons and nodes

Severity: High

Where this issue occurs:
It is unclear, which icons and nodes are important for the specific task. Because of the complexity, the user is irritated by the variety of unclear options.

Recommendation
Develop new ordering/grouping system to prevent too many options being displayed. Icons and menus should be task oriented not function oriented.

Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Issue 9: Accessibility of the help function

Severity: Medium

Where this issue occurs:
The help function is located on the entry page. There are only two options on the entry page – help and the portal itself. To use the help system, the users has to leave the portal to find necessary information.

Recommendation
The entry page should only be the GAN portal with a link to the help system that opens in a different window. Maybe an active help system that is context oriented would help new users with hints on the different functions.

Checklist
The following checklist was used when completing the review.

Navigation

Item	Compliance	Comments
Clear indication of current location	Sometimes	
Clear and constant link to homepage	No	
Access from home page to major parts of system	Yes	
System map is provided	Sometimes	
System structure is simple	No	
Search is available	No	(not found if available)

Functionality

Item	Compliance	Comments
Functionality is clearly labeled	No	
No unnecessary plug-ins	Not sure	

Control

Item	Compliance	Comments
User can cancel interactions	Sometimes	
Clear Exit point from interaction pages	No	
All appropriate browsers supported	Sometimes	Portal "Look and feel" differs between browsers

Help and Support

Item	Compliance	Comments
Online help is available	Sometimes	

Language

Item	Compliance	Comments
Language is simple	Yes	
Jargon is avoided	No	Labeling of icons

Feedback

Item	Compliance	Comments
It is always clear what is happening	No	
Feedback is prompt	No	
Users can give feedback	Not checked	

Consistency

Item	Compliance	Comments
Only one word or term used to describe an item.	Yes	
Terminology consistent with system	Sometimes	

Error Handling

Item	Compliance	Comments
Errors do not occur unnecessarily	Not sure	Problems with installing plugins, only plugin specific error messages were provided
Error messages are in plain language		
On error, further assistance is available	No	

Visual Clarity

Item	Compliance	Comments
Layout is clear	No	Node and icon structure unclear
Sufficient 'white space'	Not sure	
Images have 'Alt' text	Not sure	
No unnecessary animation	No	

Window management

Item	Compliance	Comments
Multiple browser instances avoided	No	Popups are used but not consistently

Roberto Ranon

The following pages present the findings of a Usability Review of GANMVL 2.1 conducted by Roberto Ranon on 29-01-2007.

The review was conducted between 15-01-2007 and 29-01-2007. The reviewer used the Internet Explorer 7 and Firefox 1.5 browsers on a Windows XP platform. Screen resolution was 1280x1024 pixels. Internet connection type was broadband.

Note 1: as present help and documentation are clearly unfinished, I provided only a few of the existing issues about them.

Note 2: as aesthetics has clearly yet to be taken into account in this prototype, no issue has been included in this category.

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

Issue 1: Inconsistent use of text decoration

Severity: [High]
Since the tools currently displayed depend (and act) on the currently selected resource, it is crucial for the user to quickly understand which resource has been selected. However, sometimes an "underline" decoration is used to visualise that, sometimes no decoration at all.

Where this issue occurs:
Resources Browser

Recommendation
Use a consistent solution for displaying the currently selected resource. Also, indicating in the toolbar to which resource the tools apply could help the user in being aware about this aspect of the system status.

Issue 2: Text cannot be properly read at most common screen resolutions

Severity: [Low]
Depending on the width of the window, a sentence is broken into parts which are not displayed together.

Where this issue occurs:
Calendar portlet (at least with Internet Explorer)

Recommendation
Make sure that text is displayed correctly at most common screen resolution

Issue 3: it is not clear which tool is being used

Severity: [High]
When a user clicks on a tool in a toolbar, content appears in the bottom-right part of the page, but nothing explicitly indicates which tool is currently being shown

Where this issue occurs:
Gan Portal page

Recommendation
Explicitly indicate which tool has been clicked, e.g. by marking its icon on the toolbar

Issue 4: The tunnel monitor does not explicitly show that there are no connections

Severity: [Low]
When a user clicks on the tunnel monitor, if there are no active connections a table with headings and no rows is shown. This seems a page problem, rather than a good indication that there are no active connections.

Where this issue occurs:
Tunnel Monitor

Recommendation
Explicitly indicate, with proper text, that there are no connections.

Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

Issue 5: Mixed use of English and Italian (German, French, …) Language

Severity: [Low]
When choosing other languages than English (in the home page), text in the interface is presented using a mixture of English and the chosen language

Where this issue occurs:
almost in every page

Recommendation:
Provide full translation for text in the system, or remove not fully supported languages from the possible user choices

Issue 6: Computer jargon is used instead of user jargon

Severity: [Medium]
In some parts of the interface, adopted terms (such as NBChat) are developer's jargon, and thus not easy for the user to understand

Where this issue occurs:
Toolbar (NBChat, VNCDesktop, HTTPDesktop)

Recommendation:
Avoid computer or developer jargon and use terms that are as familiar and meaningful for the user as possible.

Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Issue 7: Links instead of buttons in forms

Severity: [Low]
Some forms (e.g., the registation page) use links instead of buttons for submit and cancel commands. The common convention on the Web is to use buttons for these two actions.

Where this issue occurs:
in the registration page

Recommendation
If there is no particular reason for using links, substitute them with buttons.

Issue 8: Ambiguous Visualization of Users/Resources

Severity: [Medium]
In the resources browser, there is no clear visual distinction between resources (users, virtual organizations, such as Elettra, and others, such as "XRD1" and "Control Room").

Where this issue occurs:
In the "GAN Portal page"

Recommendation
Use icons or separators to make it easy for the user to distinguish between the different kind of resources

Issue 9: The same information is displayed multiple times or with no clear differentiation

Severity: [High]
In the resources browser, users are shown both at the second level of the hierarchy, and under other resources (e.g. "Control Room"). It is not clear which is the difference, and if clicking on one user in one place is a different action than clicking the user in another place.

Where this issue occurs:
Resources browser

Recommendation
Display each user once or make sure that the user can understand why the same user is displayed multiple times, and which is the difference between clicking on the same user name in different places.

Issue 10: Inconsistent usage of mouse pointer icons

Severity: [Medium]
The possibility of clicking on an item should be indicated to the user by following well-established conventions, such as buttons or a proper mouse pointer icon (i.e. the one used by the browser for links). In the toolbar, placing the mouse over the icons does not indicate the possibility of clicking the icon; also placing the mouse over the icon text does not use the "link" mouse pointer.

Where this issue occurs:
In the toolbar

Recommendation
Consistently follow commonly used conventions for indicating items that can be clicked, e.g. changing the mouse pointer, using underline for text, using text styles and color when the mouse is over the item.

Issue 11: Unconventional link labels are used instead of common ones

Severity: [Low]
The "Welcome to MVL GAN" link text does not indicate where the link points.

Where this issue occurs:
in the GAN Portal page

Recommendation:
Use conventional link labels (or at least informative labels) when they are available. In this case, a choice such "home" would probably be more appropriate.

Issue 12: Incorrect formatting of tabular data

Severity: [Low]
Tabular data should be presented using a table-like format (e.g. clearly indicating the column heading for items in the table).

Where this issue occurs:
Once the skype tool is clicked with users selected

Recommendation:
Choose a table formatting layout for tabular data.

Issue 13: Incorrect use of contextual menus in VI visualization

Severity: [Medium]
In the VI visualization, a righ-click is used to pop-up a menu (which should be contextual, but is not) with commands to request control of the instrument. This is completely non-intuitive, as right-click menus are typically used only for contextual actions, and not for main commands.

Where this issue occurs:
VI visualization

Recommendation:
If this tool is not directly developed by MVL-GAN, we suggest to help the user with instructions on the same web page. Moreover, the issue could be notified to the VI developer.

Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

Issue 14: Required fields in forms

Severity: [Low]
The registration form visualizes an asterisk near some fields, but it is not specified what does that mean (probably, required fields)

Where this issue occurs:
In the registration page

Recommendation:
Add a properly visible note to explain the meaning of the asterisks.

Issue 15: Critical operations have no confirmation dialogs

Severity: [High]
The tunnel monitor allows an administrator to drop connections. This operations seems critical and potentially dangerous for users, yet the application does not allow the administrator to retract if the command is issued by mistake

Where this issue occurs:
Tunnel Monitor

Recommendation:
Show a confirmation dialog before dropping connections.

Issue 16: Warning dialogs are shown improperly or inconsistently

Severity: [Low]
When the VI window is popped up, a warning dialog appears to notice the user that a window is being loaded and shown. This does not happen for other pop-up windows, and is not a typical situation where you want to warn the user about what will happen.

Where this issue occurs:
Clicking on "HTTP instrument" tools

Recommendation:
Remove the warning dialog or use it consistently in the system.

Recognition rather than recall

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

Issue 17: Secondary-level Tab Items are not well-separated

Severity: Medium
Secondary-level tab items are places too close one to the other, which makes it hard to distinguish them with a quick scanning

Where this issue occurs
In every page

Recommendation
Increase the space between items to make it easier to visually distinguish them

Issue 18: Indicating which page is currently visible

Severity: [Medium]
It is not sufficiently clear which secondary-level tab item is currently being shown (all items, e.g. home and registration, are presented using the same font / style / size / color).

Where this issue occurs:
In every page, at the secondary-level tab line.

Recommendation:
Make it clear, by using text styles and colors, which is the currently selected tab item.

Issue 19: Usage of background/foreground colors

Severity: [Medium]
Using two similar colors for text and background reduces readability and makes the text more difficult to notice.

Where this issue occurs:
In the secondary-level tab line; in the last row of the log book ("search" and "add new post" links)

Recommendation:
Maximize the color contrast between text and background.

Issue 20: Wrong/Inconsistent usage of icons to indicate commands

Severity: [Medium]
In most cases, toolbar icons do not indicate clearly which action will be performed, or allow to distinguish among different actions / tools. For example, the "Tunnel Monitor" icon do not convey the idea of a connection monitor; the icons for starting a chat and a remote desktop connection are identical, while the two actions are very different.

Where this issue occurs:
Toolbar

Recommendation:
Design and use icons that allow the user to guess which action will be performed by clicking on them, and that at least allow the user to distinguish among different actions.

Flexibility and efficiency of use

Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

Issue 21: No possibility for expert users to customize the application

Severity: [Medium]
Expert users have no possibility to customize the application (e.g., add shortcuts) to their own tastes and needs.

Where this issue occurs:
Throughout the system

Recommendation:
Investigate and add possible customizations that might help expert users in improving the usability and effectiveness of the system.

Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Issue 22: Help function is not always visible

Severity: High
Help for the user is provided in a separate help section which is not always visible (e.g., when selecting the "GAN Portal" tab item, no help link is accessible).

Where this issue occurs:
Any page in the system where no "help" link is visible

Recommendation
Make the help link visible from any page in the system

Issue 23: Provide help where and when help is needed

Severity: High
All help for the user is provided in a separate help section (accessible only after login) instead of providing proper help during task execution. For example, the help provides instructions on how to access the system for the first time, but users can see it only after having accessed.

Where this issue occurs:
Almost everywhere in the system

Recommendation
Provide relevant help and documentation access when and where the user will need them.

Checklist
The following checklist was used when completing the review. For more detailed comments, see the issues in previous pages

Navigation

Item	Compliance	Comments
Clear indication of current location	No	
Clear and constant link to homepage	Yes	
Access from home page to major parts of system	Yes	
System map is provided	No	
System structure is simple	No	
Search is available	No	

Functionality

Item	Compliance	Comments
Functionality is clearly labeled	Sometimes	
No unnecessary plug-ins	Yes	

Control

Item	Compliance	Comments
User can cancel interactions	Sometimes	
Clear Exit point from interaction pages	Yes	
All appropriate browsers supported	No	This needs to be addressed in future versions

Help and Support

Item	Compliance	Comments
Online help is available	No	

Language

Item	Compliance	Comments
Language is simple	No	
Jargon is avoided	No	

Feedback

Item	Compliance	Comments
It is always clear what is happening	Sometimes	
Feedback is prompt	Yes	
Users can give feedback	Yes	

Consistency

Item	Compliance	Comments
Only one word or term used to describe an item.	No	
Terminology consistent with system	Sometimes	

Error Handling

Item	Compliance	Comments
Errors do not occur unnecessarily	Yes	
Error messages are in plain language	Sometimes	
On error, further assistance is available	No	

Visual Clarity

Item	Compliance	Comments
Layout is clear	Yes	
Sufficient 'white space'	Yes	
Images have 'Alt' text	Did not check	
No unnecessary animation	Yes	

Window management

Item	Compliance	Comments
Multiple browser instances avoided	Did not check.	