

Requirements Document for FLOCCTUM

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Glossary

conference A conference is an instantiation of at least one plugin. 11–16, 27, 28

guest A user who is not a member. 16, 28

member A member is a user that is registered to the system. 11–13, 16, 28

moderator A moderator is a member with rights to share,close and invite new persons to an existing conference. 12–15, 28

plugin A plugin is an application provided from the system. 12

sub-moderator A sub-moderator is a user who was given moderation rights by the moderator of the conference.. 13, 15, 16

user A user is a person who uses the system. 11–14, 16

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Part I

User Requirements

0.0.0.0.1 UR001

Statement *users shall be able to register to the system .*

Priority *A*

0.0.0.0.2 UR002

Statement *member shall solve a short tutorial right after registration .*

Priority *C*

0.0.0.0.3 UR003

Statement *members shall have social profiles .*

Priority *B*

0.0.0.0.4 UR004

Statement *A member's profile shall be editable and hideable .*

Priority *B*

0.0.0.0.5 UR005

Statement *members shall have a contact list .*

Priority *B*

0.0.0.0.6 UR006

Statement *members shall be able to sort contacts in self-defined groups .*

Priority *C*

0.0.0.0.7 UR007

Statement *members shall be able to search for other members to visit their profile and add them to their contact list .*

Priority *B*

0.0.0.0.8 UR008

Statement *members shall be able to block other users. Thus users shall not be able to request a conferences with that member. .*

Priority *C*

0.0.0.0.9 UR009

Statement *members shall be able to unblock blocked users .*

Priority *C*

0.0.0.0.10 UR010

Statement *members shall be able to use the plugins offered by the system .*

Priority *A*

0.0.0.0.11 UR011

Statement *The offered plugins shall be at least: voice- and video-, chat-, whiteboard-conference, document- and screen-sharing .*

Priority *A*

0.0.0.0.12 UR012

Statement *The system shall be extendable with new plugins .*

Priority *A*

0.0.0.0.13 UR013

Statement *members shall be able to open and use several plugins simultaneously .*

Priority *A*

0.0.0.0.14 UR014

Statement *The system's interface shall be windows-based .*

Priority *A*

0.0.0.0.15 UR015

Statement *members shall be able to minimize and scale the plugin-windows .*

Priority *A*

0.0.0.0.16 UR016

Statement *members shall automatically become moderators of their self-opened conferences .*

Priority *A*

0.0.0.0.17 UR017

Statement *moderators shall be able to give moderator rights to other members in his conference. members with moderator rights, that are not the moderator itself shall be called sub-moderators The moderator shall also be able to remove those rights from sub-moderators .*

Priority *B*

0.0.0.0.18 UR018

Statement *moderators (and sub-moderators) shall be able to invite users to their conference .*

Priority *A*

0.0.0.0.19 UR019

Statement *moderators (and sub-moderators) shall be able to remove other users from the conference. sub-moderators shall not be able to remove other sub-moderators. Only the moderator shall be able to remove sub-moderators.*

Priority *A*

0.0.0.0.20 UR020

Statement *In a voice- and video-conference a user shall be able to turn on/off his soundinput, -output and videoinput .*

Priority *B*

0.0.0.0.21 UR021

Statement *In a voice- and video-conference a user shall be able to configure the sound and video quality .*

Priority *C*

0.0.0.0.22 UR022

Statement *In a chat-conference a user shall be able to turn on/off an obscene language filter .*

Priority *B*

0.0.0.0.23 UR023

Statement *In a chat-conference a user shall be able to choose a color and font for his text .*

Priority *B*

0.0.0.0.24 UR024

Statement *In a whiteboard-conference a user shall be able to choose different tools and colors to draw/erase .*

Priority *A*

0.0.0.0.25 UR025

Statement *In a whiteboard-conference the moderator shall be able to give/remove drawing rights to the participants .*

Priority *B*

0.0.0.0.26 UR026

Statement *In a document-sharing-conference the participants shall be able to create and edit a text-based document .*

Priority *A*

0.0.0.0.27 UR027

Statement *In a document-sharing-conference the moderator shall be able to give/remove writing rights to the participants .*

Priority *B*

0.0.0.0.28 UR028

Statement *In a document-sharing-conference the participants, if they have writing-rights, shall be able to highlight text-parts with a individually chosen color .*

Priority *B*

0.0.0.0.29 UR029

Statement *In a document-sharing-conference the participants, if they have writing-rights, shall be able to comment their highlighted text-parts .*

Priority *B*

0.0.0.0.30 UR030

Statement *In a screen-sharing-conference the moderator shall be able to show his actual screen .*

Priority *A*

0.0.0.0.31 UR031

Statement *sub-moderators shall be able to share their conferences to other conference's participants. .*

Priority *A*

0.0.0.0.32 UR032

Statement *The conferences shall be recordable(video,voice,whiteboard) or savable(chat-log,text-document,whiteboard) All records, saved on the server, shall be accessible by the (registered) conference participants. All records, saved on the server, shall be downloadable. .*

Priority *A*

0.0.0.0.33 UR033

Statement *moderators (excluding sub-moderators) shall be able to combine their conferences to another conference. They have to be moderators of both of those conferences to combine them. This combined conference will be handled like only one conference. Functions like recording,mute,sub-moderation rights and invitation will now take effect on both conferences.*

Priority *C*

0.0.0.0.34 UR034

Statement *No data shall be stored on local devices .*

Priority *A*

0.0.0.0.35 UR035

Statement *The system shall be as efficient as possible .*

Priority *A*

0.0.0.0.36 UR036

Statement *The system shall be hosted on a dedicated server .*

Priority *A*

0.0.0.0.37 UR037

Statement *The system shall be accessible as a website via browser .*

Priority *A*

0.0.0.0.38 UR038

Statement *The system shall be easy to use .*

Priority *A*

0.0.0.0.39 UR039

Statement *The system shall also allow unregistered users to take part in conferences as guests, if they were invited by a sub-moderator. .*

Priority *A*

0.0.0.0.40 UR040

Statement *A member shall be able to open public or private conferences. Public conferences shall be accessible to every user who wants to join. .*

Priority *C*

0.0.0.0.41 UR041

Statement *The system shall be accessible to a high amount of users .*

Priority *A*

0.0.0.0.42 UR042

Statement *The system shall be protected against attacks .*

Priority *A*

0.0.0.0.43 UR043

Statement *The system shall be conform with the german rights .*

Priority *A*

0.0.0.0.44 UR044

Statement *The system shall be conform with the GI-concepts of data storage .*

Priority *B*

Part II

System Requirements

Chapter 1

Non-Functional Requirements

1.1 Product Requirements

1.1.1 Usability Requirements

1.1.1.0.45 UR001

Statement *There shall be no client or anything equal to make use of the system.*

Priority *A*

1.1.1.0.46 UR002

Statement *The system shall provide the usability to every device that is able to use the supported browsers.*

Priority *A*

1.1.1.0.47 UR003

Statement *Whiteboards shall also be saved as whiteboard object. The participants shall be able to reopen the saved whiteboards.*

Priority *A*

1.1.1.0.48 UR004

Statement *The GUI shall be easy and manageable.*

Priority *A*

1.1.1.0.49 UR005

Statement *Guest accounts shall not have the ability to open new conference.*

Priority *A*

1.1.1.0.50 UR006

Statement *Because most people using windows, the system shall be set up in an equal way to ensure the simplicity of the system's structure.*

Priority *A*

1.1.1.0.51 UR007

Statement *There shall be an Application-Bar on the bottom like on windows 7. Above this bar, there shall be small space for minimized conferences.*

Priority *A*

1.1.1.0.52 UR008

Statement *The system shall be reachable via browser. At least the browsers safari, WebKit, IE, firefox and google chrome.*

Priority *A*

1.1.1.0.53 UR009

Statement *A public conference shall have a title and (optional) a description. Those shall be set by the publisher/the moderator.*

Priority *C*

1.1.1.0.54 UR010

Statement *A public conference shall be listed in a 'public' section.*

Priority *C*

1.1.1.0.55 UR011

Statement *There shall be a search function in the public section.*

Priority *C*

1.1.1.0.56 UR012

Statement *If a user joins via joining-link he shall (if not already logged in) be asked to login or to join as a guest.*

Priority *C*

1.1.1.0.57 UR013

Statement *There shall be a connection management system.*

Priority *A*

1.1.2 Efficiency Requirements

1.1.2.1 Performance Requirements

1.1.2.1.1 PR001

Statement *The system shall try to connect conferences with only two members via peer-to-peer. There shall be a server connection if they decide to record or save, so the record or saving will be stored to the server.*

Priority *A*

1.1.2.1.2 PR002

Statement *The administrator shall be able to set a maximum count of simultaneous conferences per member to limit the server workload.*

Default *5 simultaneous conferences*

Priority *A*

1.1.2.1.3 PR003

Statement *Guest accounts shall be deleted after leaving the conference.*

Priority *A*

1.1.2.1.4 PR004

Statement *There shall not be any encrypted connection, to keep each connection on a low workload.*

Priority *A*

1.1.2.1.5 PR005

Statement *The changes done by any user on the shared document in a document sharing session shall be directly visible for all other users.*

Priority *B*

1.1.2.1.6 PR006

Statement *In a screensharing session. Each user can set the quality of the video he receives.*

Priority *A*

1.1.2.1.7 PR007

Statement *In case of a server overload. The users shall be notified of possible slowdowns.*

Priority *A*

1.1.2.2 Space Requirements**1.1.2.2.1 SR001**

Statement *Conference records or logs shall be saved on the server.*

Priority *A*

1.1.2.2.2 SR002

Statement *The administrator shall be able to set a maximum time for unused records to be kept on the system.*

Default *4 weeks*

Priority *A*

1.1.2.2.3 SR003

Statement *The administrator shall be able to set a maximum time for unused accounts to be kept on the system.*

Default *6 months*

Priority *A*

1.1.2.2.4 SR004

Statement *A saved record shall also be deleted automatically if all references of the participants are deleted.*

Priority *A*

1.1.2.2.5 SR005

Statement *Documents used in document sharing shall not exceed a certain size limit*

Priority *A*

1.1.3 Dependability Requirements

1.1.3.0.6 DR001

Statement *If the system crashes, the system shall try to reboot automatically.*

Priority *A*

1.1.3.0.7 DR002

Statement *To prevent crashes the system shall at least reach 90 percent in testing.*

Priority *A*

1.1.3.0.8 DR003

Statement *all chat messages since the start of the conference shall be viewable, even by users who joined after those messaged were sent.*

Priority *A*

STATEMENT in document sharing, each user shall be able to save his own version (snapshot) of the document working on. This snapshot shall appear in the records section. PRIORITY A

1.1.3.0.9 DR004

Statement *a moderator shall be able to clear the whiteboard.*

Priority *A*

1.1.3.0.10 DR005

Statement *In document sharing, each user shall be able to save his own version (snapshot) of the document working on. This snapshot shall appear in the records section.*

Priority *A*

1.1.4 Security Requirements

1.1.4.0.11 SR001

Statement *Guest accounts shall not have a social profile but they shall have all other sections (even records section).*

Priority *A*

1.1.4.0.12 SR002

Statement *All members shall get a warning email for every going-to-be-deleted situation they are concerned to. The administrator shall be able to set the interval to the deletion date, when the system will send the warning email.*

Default *5 days*

Priority *A*

1.1.4.0.13 SR003

Statement *The system shall have a DDOS-Protection.*

Priority *A*

1.1.4.0.14 SR004

Statement *The system shall have a firewall to defend against outer attacks.*

Priority *A*

1.1.4.0.15 SR005

Statement *The password of a member shall at least include one number, one capital and one lower letter.*

Priority *A*

1.1.4.0.16 SR006

Statement *All data on the system shall not be copyable.*

Priority *A*

1.1.4.0.17 SR007

Statement *If a user tries to login with another IP as he is registered or if he wants to change his password he shall be forced to verify those actions by email. This shall prevent hacking-attacks.*

Priority *A*

1.1.4.0.18 SR008

Statement *As to avoid potential abuse, chat messages shall have a reasonable maximum length.*

Priority *A*

1.1.4.0.19 SR009

Statement *STATEMENT Functions like recording, mute, sub-moderation rights and invitation will be transferred to a merged conference.*

Priority *B*

1.1.4.0.20 SR010

Statement *To merge two conferences, the moderator of both conferences shall be able to link them.*

Priority *B*

1.2 Organizational Requirements

1.2.1 Environmental Requirements

1.2.1.0.21 ER001

Statement *Member data shall be saved in well-structured databases.*

Priority *A*

1.2.1.0.22 ER002

Statement *The server shall have enough memory to stand a rather high amount of connections.*

Priority *A*

1.2.2 Operational Requirements

1.2.2.0.23 OR001

Statement *The system shall use mySQL to make the databases easy to manipulate for a maintenance.*

Priority *A*

1.2.3 Development Requirements

1.3 External Requirements

1.3.1 Regulatory Requirements

1.3.2 Ethical Requirements

1.3.3 Legislative Requirements

1.3.3.1 Accounting Requirements

1.3.3.1.1 LR001

Statement *Storing data of members shall be conform to german data legislations.*

Priority *A*

1.3.3.2 Safety / Security Requirements

1.3.3.2.1 SR001

Statement *A member shall be able to set options for privacy in his social profile: private(only administrator can see), for contacts(own contacts only,not if the user is part of another one's contact list) and public(for all other members that are not blocked by the user).*

Default *private*

Priority *A*

1.3.3.2.2 SR002

Statement *By account deletion all saved data concerned to this account shall be deleted too.*

Priority *A*

1.3.3.2.3 SR003

Statement *If anyone wants to record or save a conference, all other participants shall get asked to confirm the record. If there is only one participant not confirming, it shall not be possible to record.*

Priority *A*

Chapter 2

Functional Requirements

2.0.3.2.4 FR001

Statement *Every participant of a recorded conference shall find a reference to the conference data in a records section.*

Priority *A*

2.0.3.2.5 FR002

Statement *Every participant shall be allowed to download all data referred in his record section to his local device.*

Priority *A*

2.0.3.2.6 FR003

Statement *Members shall be able to delete their reference in the records section. They will no more receive an warning email if this record is going to be deleted.*

Priority *A*

2.0.3.2.7 FR004

Statement *The application-bar shall be scrollable horizontally if needed.*

Priority *A*

2.0.3.2.8 FR005

Statement *The application-bar shall be freely sortable by the member (drag and drop).*

Priority *B*

2.0.3.2.9 FR006

Statement *(Sub-)Moderators shall have the ability to invite guests via email. If they join, they will get a temporary guest account.*

Priority *A*

2.0.3.2.10 FR007

Statement *It shall be possible to upgrade a guest account to member account. All options and information (like references in records section) shall be transferred to the new member account.*

Priority *A*

2.0.3.2.11 FR008

Statement *A moderator shall be able to publish his conference.*

Priority *C*

2.0.3.2.12 FR009

Statement *In a public conference, the moderator shall be able to create a joining-link in the conference options. He shall be allowed to publish this link. Everyone who click this link will automatically join to this conference.*

Priority *C*

2.0.3.2.13 FR010

Statement *Certain character sequences shall be reserved for emoticons support. Those character sequences shall then be added to the chat message by choosing them from a menu.*

Priority *D*

2.0.3.2.14 FR010

Statement *The user shall be notified of new messages by a sound notification.*

Priority *D*

2.0.3.2.15 FR012

Statement *Users shall be able to use all RGB colors on the whiteboard.*

Priority *B*

STATEMENT The whiteboard shall provide at least the following tools: pencil, eraser, brush, straight line, text box, rectangle and circle **PRIORITY B**

2.0.3.2.16 FR013

Statement *The whiteboard shall provide at least the following tools: pencil, eraser, brush, straight line, text box, rectangle and circle.*

Priority *B*

2.0.3.2.17 FR014

Statement *The document is saved on the server once the administrator or a sub-administrator lock it as the final version, to be downloadable then by other conference participants.*

Priority *A*

2.0.3.2.18 FR015

Statement *The document sharing function shall allow basic copy and paste and also allow selecting snippets of text.*

Priority *A*

2.0.3.2.19 FR016

Statement *the document sharing feature shall allow the modification of a pure text document.*

Priority *A*

Chapter 3

Scenarios

3.1 Scenario for a voice-and-video-call directly between two members

INITIAL ASSUMPTION: *Member1 wants to start a voice-and-video-call to Member2 on his contact-list.*

NORMAL: *He sends a request to the other user. The other User accepts the request. The System builds a P2P connection between those Users. Data is exchanged via that connection. A video-chat-window and tab opens on both Members platforms.*

WHAT CAN GO WRONG: *The request is not sent or not received. Give feedback to Member1.*

The Member1 is blocked by Member2. Give feedback to Member1 (Member2 blocked you)

The connection collapses. Give feedback to Member1 and Member2 (connection timeout)

OTHER ACTIVITIES: *There may not be more than one video-call to a single Member at the same time.*

SYSTEM STATE ON COMPLETION: *The data-stream is stopped. The video-chat-windows and tabs close on both Members platforms. The connection is cut (cancelled).*

3.2 Scenario for starting a conference with video, audio and whiteboard functionalities

INITIAL ASSUMPTION: *a member wants to start a conference with video, chat and whiteboard functionality. This member has the right to start a conference*

NORMAL: *the member starts a conference with the plugins he wants.*

He invites other people to this conference by sending them a link to the conference directly through the system (if they're members), or through email (if not members).

Each user, once he joins, will be able to see other people's chat messages and videos, and can hear their audio. He can also draw on the whiteboard.

Users will see a video tab for the videos of other users, and a whiteboard tab where they can draw together.

Each user can choose if he wants to share his video and audio or not.

WHAT CAN GO WRONG: *A user is abusing one or more plugin the moderator or a sub-moderator can kick the user from the conference, or block the user from accessing the plugin(s) he's abusing.*

the user doesn't have a camera, or a microphone, or both. Video and audio sharing will be disabled for that user, he'll still be able to see the others though.

A user's internet speed is too low for video streaming. The user will be given the option to disable video streaming, or lower the quality.

A user is blocked by another. The other user will not see this user's chat messages and video, nor hear his audio.

The connection collapses Give feedback to all users (connection timeout)

The moderator leaves the conference. The system assigns a sub-moderator as the current moderator, if at least one sub-moderator exists. If not, then some other member will be randomly assigned as moderator.

The server is overloaded. Show a message to the users, that they should expect issues because of overload.

OTHER ACTIVITIES: *Each user can take part in other conferences, but will have his audio and video disabled.*

SYSTEM STATE ON COMPLETION: *The conference is stopped. All the tabs close on all users' platforms. The connection is cut (cancelled).*