Requirements Document for WWWEKA – World Wide WEKA

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Glossar

Administrator folgt. 12, 14, 15, 19, 20

Application programming interface The application programming interface describes how to interact with a system. The interface provides methodes which can be accessed from outside the system. 30

Backup folgt. 15

Browser folgt. 13

Datensatz folgt. 12

Flexdock Flexdock is the name of a framework where subwindows can be dragged freely. 31

garbage collection Garbage collection is a routine to search unused files and data sets. Found files will be deleted. 21

Gast Bin mir unsicher, ob wir das brauchen.. 12, 14

Hyper Text Markup Language 5 HTML 5 is a markup language which is used for structuring and presenting content for the World Wide Web. 23

Hypertext Transfer Protocoll Secure Hypertext Transfer Protocol Secure (HTTPS) is a communications protocol for secure communication over a computer network, with especially wide deployment on the Internet. Technically, it is not a protocol in and of itself; rather, it is the result of simply layering the Hypertext Transfer Protocol (HTTP) on top of the SSL/TLS protocol, thus adding the security capabilities of SSL/TLS to standard HTTP communications. (source: en.wikipedia.org: 11.11.2013). 22

Interactive Connectivity Establishment Interactive Connectivity Establishment (ICE) is a technique to establish connections with clients behind a router or firewall. 32

JavaScript JavaScript is an interpreted computer programming language. As part of web browsers, implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. It has also become common in server-side programming, game development, and the creation of desktop applications. (source: en.wikipedia.org : 11.11.2013). 23

Model folgt. 12, 14

Paket folgt. 12

Plugins A plugin is an extension to any sort of software that adds additional features or alters existing ones. 11, 13, 15

RDF Resource Description Framework. 12

recordable plugin These are plugins which can be recorded. In case of start the recording of such a plugin the plugin starts to record himself from this moment on in a seperatly file on the server. 26

REST Representational State Transfer. 15

UI User-Interface. 15

Web-Applikation folgt. 11

webRTC WebRTC is a free, open project that enables web browsers with real-time communications (RTC) capabilities via simple Javascript APIs. The WebRTC components have been optimized to best serve this purpose. WebRTC also uses HTML 5. (source: http://www.webrtc.org/: 11.11.2013). 25

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Teil I

User Requirements

0.0.0.0.1 UR001

Statement *Das System soll als plattformübergreifende Web-Applikation nutzbar sein.*

Priority *A*

0.0.0.0.2 UR002

Statement *Das System soll Vorhersagen auf Basis von Datensätzen und bestehenden Modellen treffen können. Bei gleichen Eingaben sollen gleiche Ergebnisse generiert werden.*

Priority *A*

0.0.0.0.3 UR003

Statement *Nutzer sollen die benötigten Datensätze, Modelle, sowie Algorithmen von einem lokalen PC auf den Server hochladen können.*

Priority *A*

0.0.0.0.4 UR004

Statement *Das System soll sowohl auf Servern als auch auf lokalen PC laufen.*

Priority *A*

0.0.0.0.5 UR005

Statement *Das System soll via Plugins erweiterbar sein.*

Priority *A*

0.0.0.0.6 UR006

Statement *Nutzer sollen die Rechte an hochgeladenen Daten selbst verwalten können.*

Priority *A*

0.0.0.0.7 UR007

Statement *Nutzer sollen ihre hochgeladenen Dateien selbst verwalten können.*

Priority *A*

0.0.0.0.8 UR008

Statement *Die Ausgabe von Ergebnissen soll benutzerfreundlich und gegebenenfalls grafisch dargstellt werden.*

Priority *A*

0.0.0.0.9 UR009

Statement *Das System soll über mehrere Server verteilt arbeiten können.*

Priority *A*

0.0.0.0.10 UR010

Statement *Nutzer sollen sich selbstständig auf dem System registrieren können um Zugang zum Service zu erhalten.*

Priority *A*

0.0.0.0.11 UR011

Statement *Nicht angemeldete Nutzer, im weiteren als Gast bezeichnet, sollen den Service anonym nutzen können.*

Priority *A*

0.0.0.0.12 UR012

Statement *Der Service ist für Gasts nur eingeschränkt nutzbar. Die Einschränkung soll von Administratoren einstellbar sein.*

Priority *A*

0.0.0.0.13 UR013

Statement *Modelle, Ergebnisse und Datensätze sollen in herunterladbare Pakete vom Nutzer zusammengefasst werden können*

Priority *A*

0.0.0.0.14 UR014

Statement *Modelle,Datensätze,Ergebnisse und weitere relevante Daten sollen in einer Resource Description Framework (RDF)-Datenbank liegen.*

Priority *A*

0.0.0.0.15 UR015

Statement *Es soll möglich sein eine begrenzte Anzahl an Berechnungen/Simulationen gleichzeitig auf dem Rechner auszuführen.*

Priority *A*

0.0.0.0.16 UR016

Statement *Das System soll zuverlässig erreichbar sein.*

Priority *A*

0.0.0.0.17 UR017

Statement *Das System soll alle in WEKA nutzbaren Algorithmen zur Klassifikation nutzen können.*

Priority *A*

0.0.0.0.18 UR018

Statement *Das System soll über Plugins mit weiteren Algorithmen erweiterbar sein.*

Priority *B*

0.0.0.0.19 UR019

Statement *Das System soll weltweit erreichbar sein.*

Priority *A*

0.0.0.0.20 UR020

Statement *Das System soll über alle gängigen Browser nutzbar sein (Desktop und Mobile): Firefox, Chrome, Opera, Internet Explorer*

Priority *A*

0.0.0.0.21 UR021

Statement *Das System soll ohne den Download weitere Programme (ausgenommen dem Browser) auf einem Gerät laufen.*

Priority *A*

0.0.0.0.22 UR022

Statement *Das System soll sowohl registrierten als auch Gasts die Nutzung ermöglichen. Registrierte Nutze sollen die Möglichkeit haben Rechte an ihren Daten zu verteilen, Gruppen mit anderen Nutzern zu bilden und haben mehr Rechenzeit. Gasts besitzen nur begrenzte Rechenzeit und hochgeladene Daten sind öffentlich zugänglich.*

Priority *A*

0.0.0.0.23 UR023

Statement *Das System soll eine Option zum Abbruch von Algorithmen bereitstellen.*

Priority *A*

0.0.0.0.24 UR024

Statement *Das System soll den Vergleich von kompatiblen Modellen ermöglichen.*

Priority *A*

0.0.0.0.25 UR025

Statement *Der Quellcode soll sich an die gängigen Standards halten.*

Priority *A*

0.0.0.0.26 UR026

Statement *Nutzer und Administratoren sollen nach angemessener Einführung das System bedienen können.*

Priority *A*

0.0.0.0.27 UR027

Statement *Nutzer sollen die Möglichkeit haben, ihren Modelle Lizenzinformationen anzufügen.*

Priority *A*

0.0.0.0.28 UR028

Statement *Jeder soll das System kostenlos nutzen können.*

Priority *A*

0.0.0.0.29 UR029

Statement *Die Verbindung zwischen Nutzer und System soll verschlüsselt sein.*

Priority *A*

0.0.0.0.30 UR030

Statement *Im System verfügbare Algorithmen sollen für WEKA exportierbar sein.*

Priority *A*

0.0.0.0.31 UR031

Statement *Pluginss sollen nur von Administratoren hinzufügbar sein.*

Priority *A*

0.0.0.0.32 UR032

Statement *Das System soll eine spezielle Ansicht zur administration des Systems bereitstellen.*

Priority *A*

0.0.0.0.33 UR033

Statement *Das System soll regelmäßig Backups machen.*

Priority *A*

0.0.0.0.34 UR034

Statement *Das User-Interface (UI) soll auf englisch sein.*

Priority *A*

0.0.0.0.35 UR035

Statement *Das System soll Representational State Transfer (REST)-konform sein.*

Priority *A*

Teil II

System Requirements

Kapitel 1

Non-Functional Requirements

1.1 Product Requirements

1.1.1 Usability Requirements

1.1.1.0.1 NFR001

Statement *Nach einer 10 stündigen Einführung in die Software durch ein Tutorial soll eine Person der Zielgruppe in der Lage sein, das System mit weniger als 3 Fehlern pro Stunde zu bedienen.*

Priority *A*

1.1.1.0.2 NFR002

Statement *Ein Nutzer braucht lediglich eine Internetverbindung, um den Service nutzen zu können. Der Zugriff soll dabei unabhängig der eingesetzten Hardware (Router, Proxy, Server) und der Sicherheitsmaßnahmen (Firewall) möglich sein.*

Priority *A*

1.1.1.0.3 NFR003

Statement *Die Administratoren soll nach einer 70 stündigen Einführung das System mit weniger als einem Fehler in der Stunde bedienen können.*

Priority *A*

1.1.1.0.4 NFR004

Statement *Das System soll mit den folgenden Browsern möglich sein:*
-Google Chrome C42(Desktop und Android)
-Firefox 38

-Microsoft Internet Explorer 8
-Safari 8
-Opera 12
-Microsoft Edge 12
-Android Browser 4.0
-Opera Mini 7.5
-Microsoft Internet Explorer 11 Mobile
-Safari 600(iPhone und iPad)

Priority *A*

1.1.1.0.5 NFR005

Statement *Das System ist auf Englisch.*

Priority *A*

1.1.2 Efficiency Requirements

1.1.2.1 Performance Requirements

1.1.2.1.1 NFR006

Statement *The quality of video broadcast shall adjust to the users internet connection.*

Priority *A*

1.1.2.1.2 NFR007

Statement *Die minimalen Systemvoraussetzung ist: i7 CPU octal-core mit 32GB Ram und einem Linux Betriebssystem*

Priority *A*

1.1.2.1.3 NFR008

Statement *The interaction between the conference participants shall be in real-time.*

Priority *A*

1.1.2.2 Space Requirements

1.1.2.2.1 NFR009

Statement *Die Datenmenge, die ein Gast auf den Server hochladen können darf, soll vom Administrator beschränkt werden können.*

Priority *A*

1.1.2.2.2 NFR010

Statement *Sessions shall be deleted after an inactive time of 5 hours.*

Priority *A*

1.1.2.2.3 NFR011

Statement *Once a day garbage collection is triggerd to search expired guest accounts, session recordings, and shared files.*
Expired files are defined as followed:

guest accounts *After 24 hours.*

session recordings *After 2 weeks.*

shared files *After 2 weeks (depends on length of session recordings).*

Priority *A*

1.1.2.2.4 NFR012

Statement *Files shared via file sharing are limited to 1 GB.*

Priority *A*

1.1.3 Dependability Requirements

1.1.3.0.1 NFR013

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

Priority *A*

1.1.3.0.2 NFR014

Statement *Backups of stored data (session recordings, shared files, user accounts) shall be done daily and stored on a different server.*

Priority *A*

1.1.3.0.3 NFR015

Statement *The system shall be available 24/7.*

Priority *A*

1.1.3.0.4 NFR016

Statement *The number of system crashes in a mounth shall be less than one.*

Priority *A*

1.1.3.0.5 NFR017

Statement *There is no need to stop the application to perform a backup.*

Priority *A*

1.1.4 Security Requirements

1.1.4.0.1 NFR018

Statement *Data transfer to and from the server must be performed via an Hypertext Transfer Protocoll Secure connection.*

Priority *A*

1.1.4.0.2 NFR019

Statement *Peer-to-Peer communication shall be encrypted with a hybrid encryption algorithm.*

Priority *A*

1.1.4.0.3 NFR020

Statement *The invitation URL for guests shall only be usable once.*

Priority *A*

1.1.4.0.4 NFR021

Statement *Passwords are stored on the server in text/plain, but hashed with a random seed.*

Priority *A*

1.1.4.0.5 NFR022

Statement *All data (shared data and session recordings) is stored unencrypted on the server.*

Priority *A*

1.2 Organisational Requirements

1.2.1 Environmental Requirements

1.2.2 Operational Requirements

1.2.3 Development Requirements

1.2.3.0.1 NFR023

Statement *The software shall be valid Hyper Text Markup Language 5 and JavaScript.*

Priority *A*

1.3 External Requirements

1.3.1 Regulatory Requirements

1.3.1.0.1 NFR024

Statement *The system is published under the GPL Version 3.*

Priority *A*

1.3.2 Ethical Requirements

1.3.2.0.1 NFR025

Statement *Development process stands under IEEE standards of ethical development.*

Priority *A*

1.3.3 Legislative Requirements

1.3.3.1 Accounting Requirements

1.3.3.2 Safety / Security Requirements

1.3.3.2.1 NFR026

Statement *The system respects German law.*

Priority *A*

1.3.3.2.2 NFR027

Statement *Storing data of members shall be conform the German data legislations.*

Priority *A*

Kapitel 2

Functional Requirements

2.0.0.0.1 FR001

Statement *The system makes use of webRTC to provide the video, voice and text communication. (see user requirement UR001)*

Priority *A*

2.0.0.0.2 FR002

Statement *When having a conference and one user clicks on another users name, a context menue appears where the user can select either whisper or mute someone. (see user requirement UR002)*

Priority *A*

2.0.0.0.3 FR003

Statement *The system allows to upload files in sessions and the user can sets restrictions to visibillity to other users. (see user requirement UR003)*

Priority *A*

2.0.0.0.4 FR004

Statement *Only authors of uploaded files, moderators or administrators can delete them. (see user requirement UR003)*

Priority *A*

2.0.0.0.5 FR005

Statement *The system allows to upload files out of sessions and the user can sets restrictions to visibillity to other users. The system generates an unique identifier (URI) under which other users can reach the file. (see user requirement UR003)*

Priority *A*

2.0.0.0.6 FR006

Statement *The system is designed such that can adopt well defined plugins. (see user requirement UR004)*

Priority *A*

2.0.0.0.7 FR007

Statement *One Plugin is the conference tool. This plugin gives the possibility to handle a big conference such a lecture with the system. Therefore different views are necessary. A conference needs an audience which sees the speaker, a schedule of the conference and the slides on the screen. They can also show the speaker that there is an question. The speaker has another view. He can see how many time left and which slides comes next. Furthermore a view for an conference designer is useful. He can see a plan of the whole conference, the current activities and can edit the schedule. At least a view for the presentation manager is used. He decides which part of presentation the audience can see. Just the slides or slides and speaker or additional information which he can add. The system shall also give the opportunity that an audience out of the conference romm can see the presentation. (see user requirement UR005)*

Priority *B*

2.0.0.0.8 FR008

Statement *The system must give the opportunity of user-registration via e-mail-address, username, and password. (see user requirement UR008)*

Priority *A*

2.0.0.0.9 FR009

Statement *The system shall give the possibility to record recordable plugin while sessions. Therefore the user can select which plugins in a session he wants to record. (see user requirement UR009)*

Priority *A*

2.0.0.0.10 FR010

Statement *Every registered user can choose whether he/she can be recorded or not. For an unregistrered user this option shall be set to no recordings. (see user requirement UR021)*

Priority *A*

2.0.0.0.11 FR011

Statement *The system denies the recording of a plugin if in the session is a user who forbids the recording (see user requirement UR021)*

Priority *A*

2.0.0.0.12 FR012

Statement *The systems stores records of differnt plugins in several files. (see user requirement UR009)*

Priority *A*

2.0.0.0.13 FR013

Statement *For an whiteboard recording the system stores every step by drawing - not only the end-result. (see user requirement UR009)*

Priority *A*

2.0.0.0.14 FR014

Statement *For an text chat the chat history will be stored as plain/text since the recording started. (see user requirement UR009)*

Priority *A*

2.0.0.0.15 FR015

Statement *For a video recording a video file will be saved since the recording is started. (see user requirement UR009)*

Priority *A*

2.0.0.0.16 FR016

Statement *For a audio recording the audio file will be saved since the recording started. (see user requirement UR009)*

Priority *A*

2.0.0.0.17 FR017

Statement *The system have to include the plugin of a digital whiteboard on which users can draw geometrical objects or write text. They can use it on their own or in sessions. (see user requirement UR010)*

Priority *A*

2.0.0.0.18 FR018

Statement *The system have to give the opportunity to include a whiteboard to a session, that other users in the session can hava a look at the whiteboard or edit the whiteboard too. (see user requirement UR010)*

Priority *A*

2.0.0.0.19 FR019

Statement *By including the whiteboard to a session the user has to decide whether the members of the session can only see the whiteboard or even edit things. (see user requirement UR010)*

Priority *A*

2.0.0.0.20 FR020

Statement *The system shall give a user the possibility to have more than one session. (see user requirement UR013)*

Priority *A*

2.0.0.0.21 FR021

Statement *The system denies a new session if with a new session the quality of the other sessions falls under a well defined value. For video chat this border lies by X kB and by voice chat by Y kB. (see user requirement UR013)*

Priority *A*

2.0.0.0.22 FR022

Statement *The system devides between three different arts of plugins. The first are high traffic plugins, the secont are medium traffic plugins and the third are less traffic plugins. So the system gives 10 percent of speed to the less traffic plugins, 30 percent to the medium traffic plugins, and 60 percent of speed to the high traffic plugins. (see user requirement UR013)*

Priority *A*

2.0.0.0.23 FR023

Statement *Every plugin can be marked (but only one at a time) as priorised, so that this plugin gets the most speed of the internet connection and the other plugins only gets the minimal value. (see user requirement UR013)*

Priority *A*

2.0.0.0.24 FR024

Statement *The system can deny new session who run over the server or a file upload if he has overload. (see user requirement UR013)*

Priority *A*

2.0.0.0.25 FR025

Statement *In a session a user can include a arbitrary number of plugins at the same time. (see user requirement UR014)*

Priority *A*

2.0.0.0.26 FR026

Statement *The system have to give the possibillity to add every plugin to a session. (see user requirement UR028)*

Priority *A*

2.0.0.0.27 FR027

Statement *The User has the possibility to include every opened dock on his flex dock in a session. (see user requirement UR012, UR014)*

Priority *A*

2.0.0.0.28 FR028

Statement *Every Plugin can have its own window inside the multi window view. (see user requirement UR015)*

Priority *A*

2.0.0.0.29 FR029

Statement *Sessions or even parts of sessions (Plugins that are storable) can be stored and reloaded from the session admin. (see user requirement UR027)*

Priority *A*

2.0.0.0.30 FR030

Statement *When a user includes a plugin to a session, the user has to decide which rights the specific users in the session has on the plugin. (see user requirement UR023)*

Priority *A*

2.0.0.0.31 FR031

Statement *While the session the user who added a plugin to the session (only this user) can change the permissions of the other users. (see user requirement UR023)*

Priority *A*

2.0.0.0.32 FR032

Statement *The system supports registered and unregistered users. (see user requirement UR023)*

Priority *A*

2.0.0.0.33 FR033

Statement *Registered shall be able to store their settings made at previous logins, sessions and able to record plugins. Unregistered user always start with default settings and changes they made are only valid for their current session. (see user requirement UR020)*

Priority *A*

2.0.0.0.34 FR034

Statement *The system provides a Weka plugin where the user must specify a dataset in arff format (which have to be located on the server where the application is running), parameters and the algorithm which shall be used. (see user requirement UR005)*

Priority *A*

2.0.0.0.35 FR035

Statement *The system provides an OpenTox plugin which implements the OpenTox Application programming interface. (see user requirement UR005)*

Priority *A*

2.0.0.0.36 FR036

Statement *When a user shares his/her screen all rights of other users are temporarily set to readonly. (see user requirement UR006)*

Priority *A*

2.0.0.0.37 FR037

Statement *The system includes a version-control-system to provide sharing and editing documents. The user can select and edit the latest version but has the opportunity to open older revision in a readonly mode. When changing a file a new revision is created and uploaded to the server. (see user requirement UR007)*

Priority *A*

2.0.0.0.38 FR038

Statement *When two users trying to work simultanously on the same file there are two cases.*
In the case that both users are in the same session they can work simultanously.
In the other case the user who wants to open the file secondly opens the file in an readonly mode. (see user requirement UR007)

Priority *A*

2.0.0.0.39 FR039

Statement *When a user logs in he/she has got the possibiltiy to add other registered users to its adressbook. A user can be added in 3 ways.*
1. When a user is in a conference he/she can click on an other username and select Ädd to adressbook".
2. On every users profile there is an option to add these contact to the adressbook.
3. When a user invites someone and this person registers they both appear in each others adressbook.
Of course users can be removed from an adressbook. There is also the possibillity to organize the contacts in groups. (see user requirement UR011)

Priority *A*

2.0.0.0.40 FR040

Statement *With the addressbook it is possible to invite multiple users in a group with one click to a conference. (see user requirement UR011)*

Priority *A*

2.0.0.0.41 FR041

Statement *The system provides a Flexdock GUI where the user can freely drag and resize windows. The flexdock is designed that every plugin can have its own dock. (see user requirement UR012, UR015)*

Priority *A*

2.0.0.0.42 FR042

Statement *Users can customize the appearance in the user settings. (see user requirement UR016)*

Priority *A*

2.0.0.0.43 FR043

Statement *The system makes use of Interactive Connectivity Establishment. ICE delivers techniques to establish connections to clients even they are behind a firewall or router. (see user requirement UR017)*

Priority *A*

2.0.0.0.44 FR044

Statement *The system supports the following browsers:*
1. Chrome/Chromium X
2. Firefox Y.
3. Opera (see user requirement UR018)

Priority *A*

2.0.0.0.45 FR045

Statement *The system supports at least one of the available browsers for the following mobile operating systems:*
1. Android 2.1+
2. iOS 5.0+
No additional app (except perhaps browser) is needed. (see user requirement UR018, UR021, UR024)

Priority *A*

2.0.0.0.46 FR046

Statement *The well defined plugin api ensures that every plugin offers ways to handle different rights and views. (see user requirement UR023)*

Priority *A*

2.0.0.0.47 FR047

Statement *The system provides a settings area where users can view and change their current settings (background colour, font-size, font, font-colour and if its allowed to record the user) made to the theme and the plugins. (see user requirement UR016)*

Priority *A*

2.0.0.0.48 FR048

Statement *The only things which are needed to use the software are an internet-connection and a browser which deals with HTML5 and the webRTC. (see user requirement UR016)*

Priority *A*

2.0.0.0.49 FR049

Statement *The system makes the user who first invites another member to a plugin (so he starts a session) to the session admin. (see user requirement UR032)*

Priority *A*

2.0.0.0.50 FR050

Statement *The system allows the session admin to give permissions to the session members. These permissions are the right to add plugins or kick and add other users. (see user requirement UR032)*

Priority *A*

2.0.0.0.51 FR051

Statement *Every user registered or not is able to invite other people. The only thing he/she needs is a valid email adress to where the invitationlink is sent. (see user requirement UR031)*

Priority *A*

2.0.0.0.52 FR052

Statement *The system provides an administration area where the system admin can trigger manual backups and has database access where he/she can update the period between the garbage collection. (see user requirement UR029)*

Priority *A*

Kapitel 3

Scenarios

3.1 Logging into the system

INITIAL ASSUMPTION: *The user has an internet browser running and opened the system website.*

NORMAL: *The user clicks on the login-button located at a prominent position on the website. A dialogue window opens up and the user has to fill his e-mail-address and password into the form. After submitting the systems window interface opens up in the browserwindow. Initially there are no Plugins open. If the user had active Plugins during his last logout, these Plugins will be opened again.*

WHAT CAN GO WRONG: *The connection to the database is damaged and therefor the login information can not be confirmed. So there will be an error message for the user.*
The user types in a wrong e-mail address or a wrong password. In this case a message appears, that the e-mail address or the password is wrong.
The user is not registered to the System. In this case an error message appears, that the e-mail address or the password is wrong.
The connection to the internet is lost.

OTHER ACTIVITIES:

SYSTEM STATE ON COMPLETION: *The user is logged in and able to use the system.*

3.2 Starting a Video-Chat-Session

INITIAL ASSUMPTION: *The user has an internet browser running and opened the system website, where he is logged in as registered user.*

NORMAL: *The user opens a new window in the browser and starts the video-chat-plugin. For this he pushes a button in the middle of the new window where a context menue appears and the user can choose out of many plug-ins which he want to open. After the video plugin is started, the user can invite another user to his this plugin and can set the permissions of the other users. So he can choose if they are allowed to add plugins or not, or if they can kick other users or invite some. This starts a session. To invite other users to this plugin there are two different ways. First he can push on a addressbook button so that he can see his addressbook and can choose an contact or group to chat with. In the second way he searchs over an field shown in the video plugin another user via his e-mail address. By choosing a user he has to give permissions to the user like described above. After he invited a vew people to his chat, he must wait for their acception. While waiting the user heres a telephone ring. If a member accept the invitation the ringing stopps and the users see each other in the video plugin. If more than one user accepts in the video plugin window appears different views. Each view for another user.*

WHAT CAN GO WRONG: *Maybe noone answer the invitation. In this case the ringing stopps after 2 minutes and the user has the opportunity to restart the session.*

In another case the internet connection of another user will be lost. In this case he leaves automatically the chat. In the same manner the others will see a lost internet connection of your one. By restarting the system the session will be lost. So the others have to invite the lost people again. So in the case, that the session admin looses his connection the whole session will be closed.

A third possibility is a server crash. In this case the session is lost and has to be new initialized.

OTHER ACTIVITIES:

SYSTEM STATE ON COMPLETION: *The user has a video chat with a arbitrary number of people.*

3.3 Adding plugins to a session

INITIAL ASSUMPTION: *The user has an internet browser running and opened the system website, where he is logged in as registered user and has opened a session with other users.*

NORMAL: *The uses starts in another window in his browser a new plugin. For example the digital whiteboard. Now he wants to add the whiteboard to the session. If the user is the session admin this is very simple. He click on the button share in the plugin field of the whiteboard and chooses out of a list of opened sessions the wished session. In an up comming context menue he has to give permissions to the session members. There he can*

give the permission to watch or to watch and draw. After this the plugin is added to the session and the session members will see a new window open on her screen with the whiteboard on it. If the user who wants to add is no session admin there are two possibilities. In the first case he has the right to add plugins. So this is like he is session admin. If he has no rights to add plugins a error occupies, that he has not the necessary permissions.

WHAT CAN GO WRONG: *The session can crash while adding. In this case nothing happen, what means that the plugin won't add to the session.*

OTHER ACTIVITIES:

SYSTEM STATE ON COMPLETION: *The user has added a new plugin to the session.*