



User guide  
EVO (ver. 3.2)

<http://evo.caltech.edu>



**EVO - TEAM © 05.08.2008**  
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# 1. STARTING

## 1.1 MINIMAL REQUIREMENTS

To run EVO properly, your PC needs to fulfill certain minimum hardware requirements, especially if you intend to send/receive video/audio with good quality and interactivity:

- Intel PC: Pentium 4 1,5 GHz, 512 MB RAM (minimum) or 1Gb RAM (recommended)
- Macintosh with PowerPC processor: 1 GHz, 512 MB RAM (minimum) or 1Gb RAM (recommended)
- Macintosh with Intel processor: 512 MB RAM (minimum) or 1Gb RAM (recommended)

EVO is a Java application, and needs to have the Java virtual machine installed on the PC from which it will be run. Version 1.5 and upward is supported by EVO.

- Go to the Java website at <http://java.com>
- Click on **Verify installation** to make sure that java is installed or to get the newest version of Java
- If you don't have it or want the newest version (recommended), click on **Download** to get it

## 1.2 REGISTER TO EVO

Before you can start any EVO meeting session, you have to register to get your login and password.

- a. From EVO website ( <http://evo.caltech.edu> ), select your language.



- b. Click on “Register” to become an EVO user.

- c. Enter all your details. Click on “SUBMIT”.

- d. You may upload a picture of yourself after successful registration.  
 e. **You will receive email to your mailbox shortly after clicking on “SUBMIT”, with a link to activate your account. If you don’t receive the email, check in your spam folder or/and contact the EVO support.**

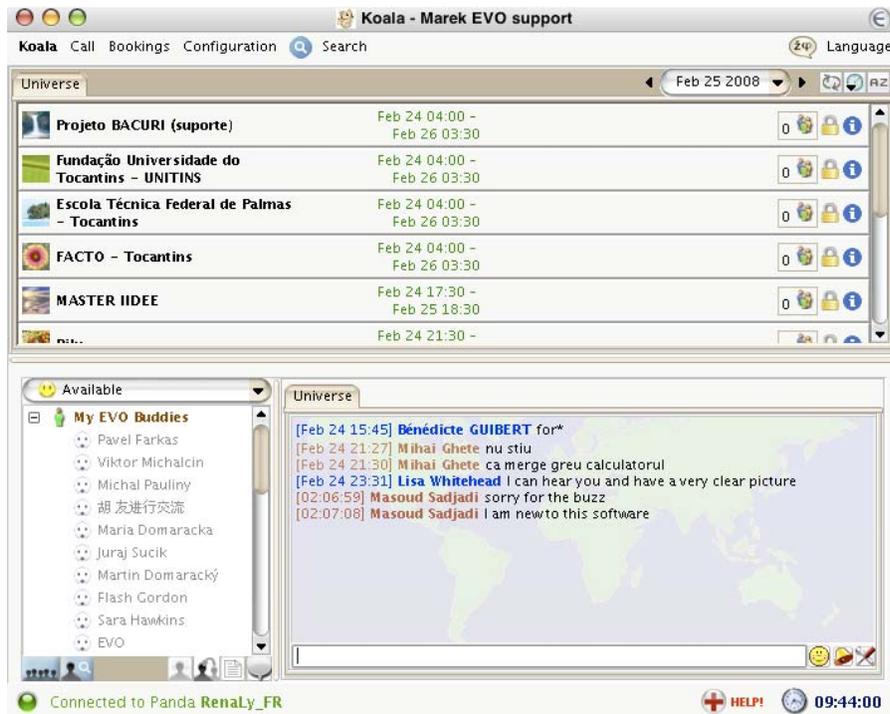
### 1.3 LOGIN TO EVO

- a. From the EVO site, click on “Start” to launch the **KOALA** application (EVO Client). The **KOALA** client will be automatically downloaded as well as all the necessary components. Please wait, this process can take few minutes. (Note that (1) you must accept digital signature of Koala and (2) the automatic download will occur for any further update of EVO components).
- b. A Login window will appear.
- c. Enter your login name and password and hit enter or click on “OK”.
- d. If you want to login automatically next time you can check the “Auto Login”.

- e. First time users may register by clicking the link “Need to register?” (See. Section 1.2 Register for EVO).
- f. If you are already a user and have forgotten your password, click on “Forgot your password?” Enter your registered e-mail address. A new password will be sent to you via e-mail.

## 1.4 FIRST TIME USER

In EVO, we created the concept of communities which regroup people working in the same project or with the same interest (pretty much like a news group). Every new user belongs automatically by default to the **Universe** community and so is able to enter to ongoing meetings and make booking related to this community. You may change the language in the top-right corner of the Koala window.



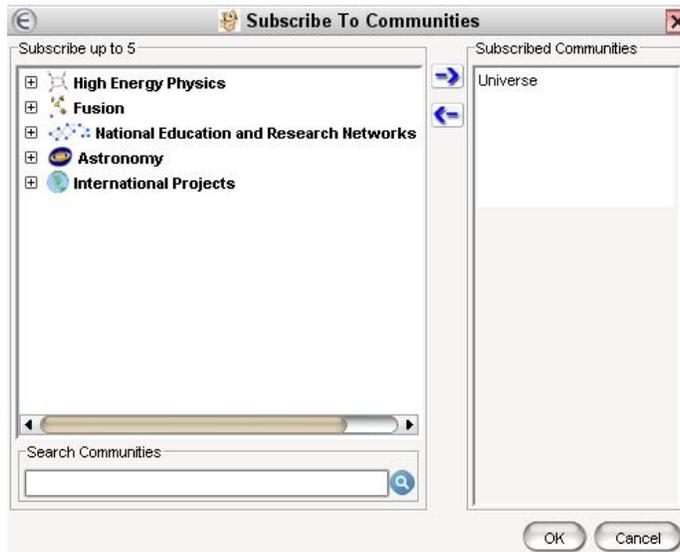
### 1.4.1 Choosing communities

You may not belong to any communities when you first started, so you won't be able to join any of the meetings until you add some into your "My EVO Communities"

- a. If you want to register to more communities, you have to click on button "other EVO communities"; this will open other window for choosing community.



- b. Select the communities you prefer from the list on the left panel. Click on "+" to expand a list of communities under the community category.



- c. Click on the right arrow (or double click) to bring your selection to the “Subscribed Communities” list on the right. Note: You can add maximum 5 communities. Click on “OK” to close the window.
- d. The selected communities will appear under your “My EVO Communities” in your EVO environment tree. (You may add or delete communities from your list at any time)

## 1.4.2 Menu

The menu bar items control system-wide behavior. (**Koala, Call, Bookings, Configuration, Search**. For more details, please see section 3<sup>1</sup>)

## 1.4.3 Language

The  pull down menu on the top right corner allows selection of a number of different languages for KOALA’s graphical user interface.

## 1.4.4 Connection info

The Connection display on the bottom left corner shows the EVO server (called Panda) to which the Koala client is currently connected.

---

<sup>1</sup> If your preferred language is not displayed and would like to provide a translation, please contact the EVO team.

## 1.4.5 Time zones

The Time Zone on the bottom right corner shows the current time. Clicking on the  icon will allow you to change the time zone.

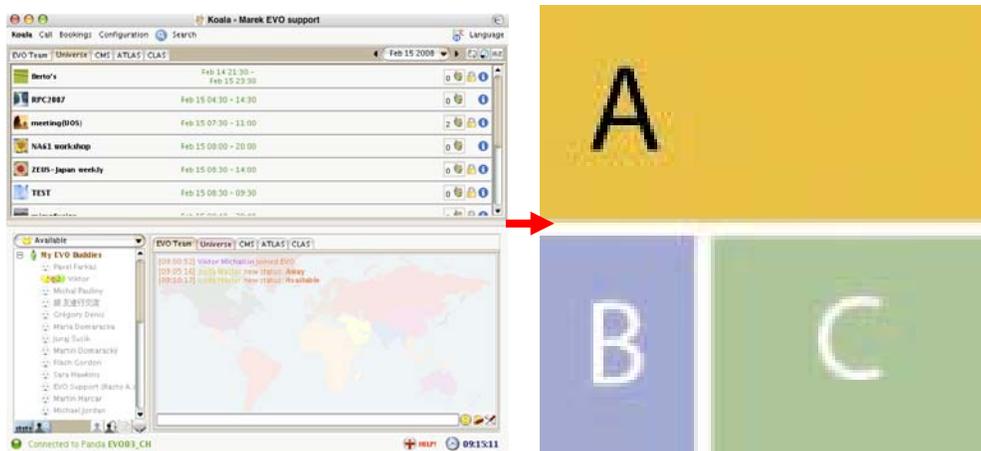
## 1.4.6 HELP!

If you are having problems with EVO or there are some problems during the meeting, you could contact us by clicking on “HELP!” button  on the bottom left corner of the Koala window. Please provide us with a description of the problem you’re having, and click the “Send” button.



## 2. HOW TO COMMUNICATE WITH EVO SYSTEM

The EVO client interface is provided by the KOALA application, which runs after every login to EVO (see 1.2). The window of this application is divided into three parts A, B, C.



### A: The Meeting space:

- a. This is the major stage where most of the activities take place.
- b. Overview of the ongoing meetings taking place in all communities in which you are subscribed.
- c. Once you enter in a meeting, you'll see all the other participants of the current meeting in this area.

### B: The Environment of your contacts and communities:

- a. The Environment is a tree view structure that shows information (presence status, idle time...) about other online participants in your communities.

### C: The Chat area:

- a. Ongoing group chat support for communities, meetings and also private chat between individuals.

*Note that keeping the mouse cursor over an icon button will display a tip in the selected language*

## 2.1 THE ENVIRONMENT OF YOUR CONTACTS AND COMMUNITIES

In this area, you can get information about other participants. Moving mouse cursor over a participant, gives you more detailed information about him (presence, meeting...).

**My EVO Buddies** shows your selected Buddies information at all the time.

You may open any of the communities from My EVO Communities to see the current presence information of the participating users.



- a. You can set your presence information with preset status (Available, Away, Busy, at Lunch) or Customize a message via the pull down menu on top of the panel.
- b. The buttons on the bottom allow you to initiate actions for the “Buddies” or “Community”:



1. **Other EVO Community** - Search and subscribe/unsubscribe to communities. For more details please see section 1.3.



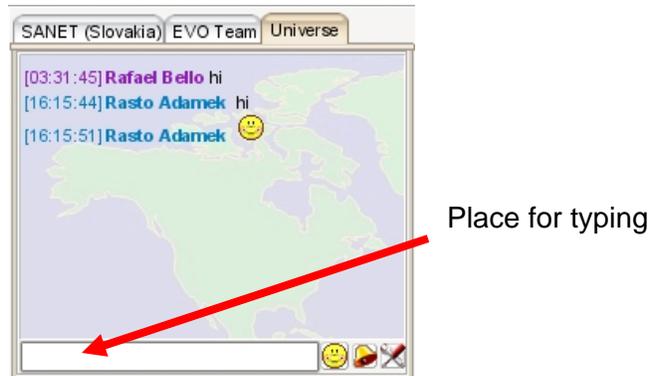
2. **Search for Users** – Search and add to “My Buddies” list. For more details see section 3.4.



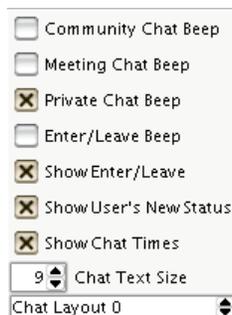
3. To interact with another user, select his/her icon from the list. You can then use the following functions (from left to right):
  - Add / Delete Buddy to/from list of My EVO Buddies.
  - Invitation to meeting. If you are in the meeting, you will invite him to this meeting; otherwise, you will meet in private meeting, where no one else has access.
  - Send file.
  - Start private chat.

## 2.2 CHAT

The bottom right panel shows you the ongoing public **CHAT** communication inside the community, meeting or private chat between participants. Each community or meeting has its own chat. Clicking on the tab labeled with community/meeting name, will activate the corresponding chat.

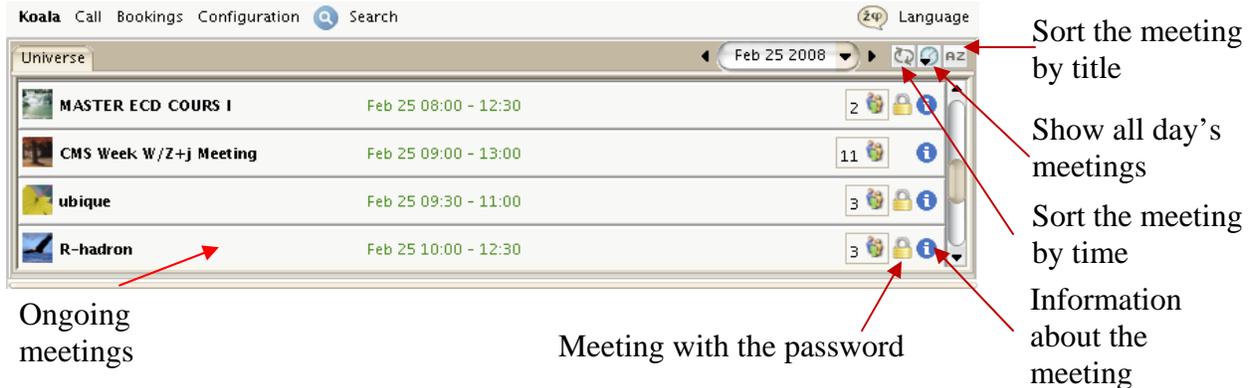


- Enter the text on the bottom field to write chat messages and type on *Return/Enter* key to send it.
- Select from **Smiley** the pull down menu to select emoticons.
- The icon shakes the window to call for attention from the other participants.
- icon controls settings within the chat panel such as: Beep, text size, Chat Layout, Show User's New Status, etc.



## 2.3 ENTERING A MEETING

As soon as you log in EVO, KOALA will show the list of ongoing meetings in selected community. On the left, you can see name of the meeting and on the right side, you can see the number of participants in the meeting. If you click on letter "i", you will get detail information about meeting. To join a meeting, just click on it. If you want to join a meeting in another community, click firstly on the tab with the community name and then on the meeting.



### 2.3.1 Ongoing meeting

After entering into a meeting, the top part of KOALA will display the **ongoing meeting** window. The Icons with participants will always show up, even if the user is not sending audio/video.



- a. Clicking with the left mouse button on user's icon will allow you to choose one of the following options (respectively): : start a private chat with selected user, send a file to a user, add him to your buddy list and to make private audio chat inside the meeting:



Your private audio conference will not be heard by other users in the meeting, but at the same time you still have the possibility to hear and see other participants.

- b. The user that made reservation for the meeting, will become automatically moderator and has additional options : mute audio/video of selected user, kick a user off the meeting and allow a user to become moderator.
- c. Buttons for quick **VIDEO control**: turn on  and off  transmitting video from your camera and display video from other user's.
- d. Button for **Desktop Sharing**: turn on  and off  the Desktop Sharing.
- e. Buttons for quick **AUDIO control**: turn on  and off  microphone and speakers. 2 gradient columns are present for indicating and setting the audio level both of outgoing and incoming audio.
- f. You can change the participants view by clicking on the “Resize/Sort the list Participants” button  located in the top left corner. With two clicks on this button, the participants will be sort by first name and if you click one more time they will be sorted by the last name. Here you can also see, who has the microphone open  and who is the current speaker indicated by the small microphone icon .



- g. **ATTENTION:** buttons for quick control (a. c. and e.) works only for the default videoconference client EVO Tools (ViEVO, JRAT, EVOWB)<sup>2</sup>.
- h. If you want to see the information about the meeting, click on the small  icon. From here, you get the information about the Phone bridge ID, the password and if you are moderator, you can move the ending time of the meeting.

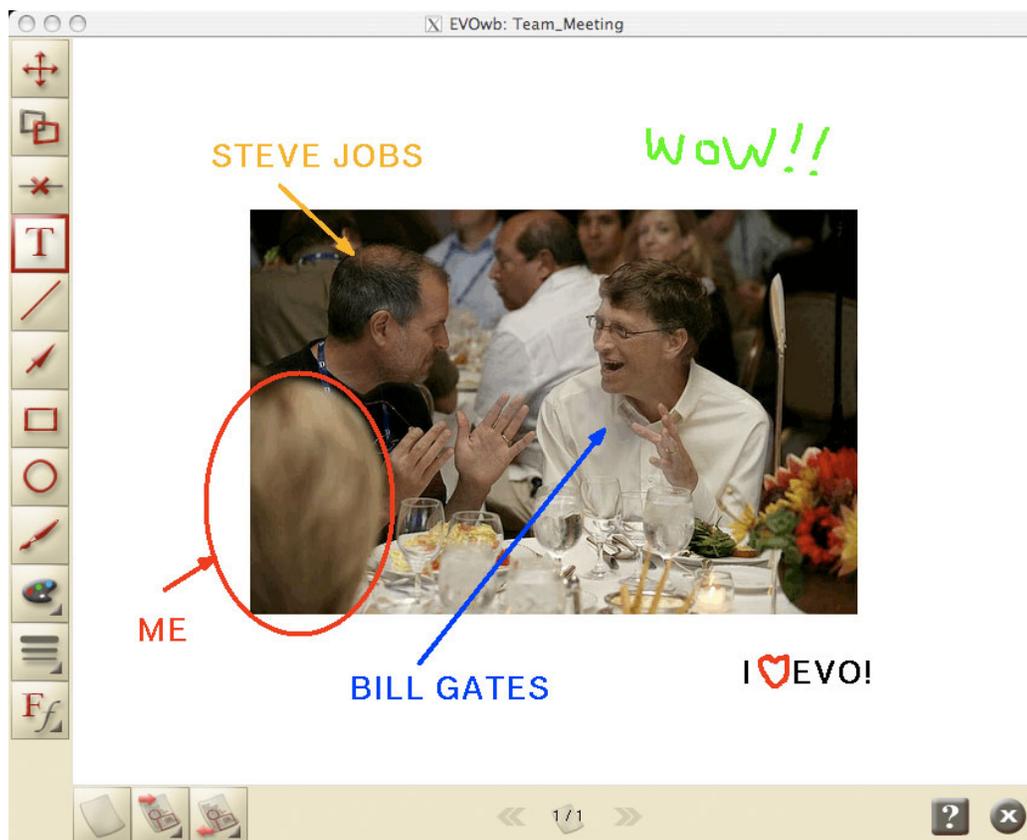
<sup>2</sup> ViEVO is the EVO video tool, JRAT is the EVO audio tool and EVOWB is the whiteboard.



- i.  **Leave this meeting** will make you leave the meeting and return to the previous view. You'll be able to enter other meetings from there.

### 2.3.2 Whiteboard

The Whiteboard is an application which allows users in the meeting to share a drawing area. The button for activation is on the bottom panel of the ongoing meeting. The button  means that the whiteboard is not started.



The Whiteboard allows you to draw simple shapes, write text, deleting objects, move objects, insert pictures from your local disk, insert your desktop screenshot and save of pages to your local disk for later usage

### 2.3.3 Desktop Sharing

The Shared Desktop is a pure software-based video codec tool. To use it click on the button  in Koala. The Shared Desktop window co-exists independently of the Koala client window as shown below. It presents a red frame that indicates the shared part of your desktop. When you turn on the sharing (using the  button), everything showing on your screen within the red frame will be transmitted to the other users in a meeting.

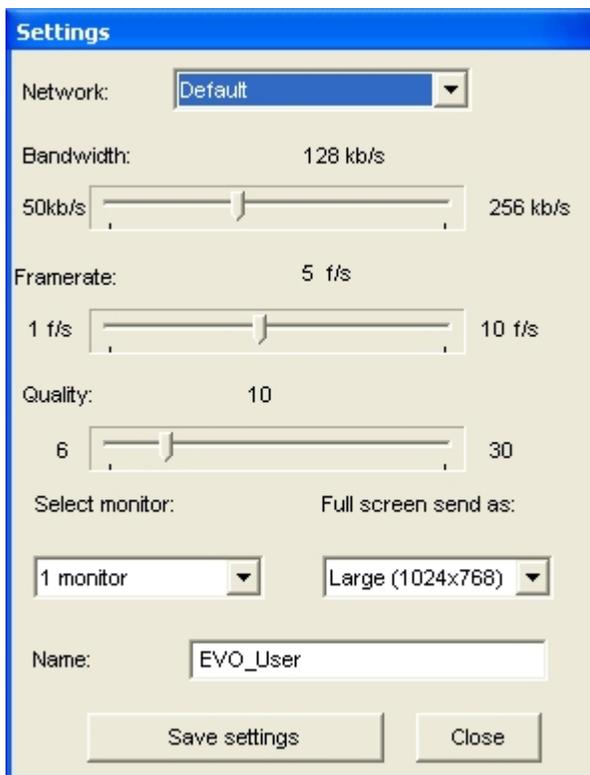
In the window there are seven graphics buttons. Three buttons are on the bottom side of window: “Settings”, “Share”, and “Close”. Four buttons are on right side of window, which can set the size of the shared desktop: “CIF”, “4CIF”, “XGA”, and “Full screen”.



- a.  - if you click on this button it will turn red  and the size of the window and size of the shared desktop will change to CIF (352x288).
- b.  - if you click on this button it will turn red  and the size of the window and size of the shared desktop will change to 4CIF (704x576).
- c.  - if you click on this button it will turn red  and the size of the window and size of the shared desktop will change to XGA (1024x768).

- d.  - if you click on this button it will turn red  and the size of the window and size of the shared desktop will change to FULLSCREEN.
- e.  - if you click on this button it will turn red  and the application will share your desktop, with the size and position shown by the application's red frame.
- f.  - if you click this button, you will close the sharing application.
- g.  - if you click this button the new window called „**SETTINGS**“ will open.  
Setup

### 2.3.3.1 Setup



- a. “Network”– you can choose from preset network settings: **Default, ADSL 128 kbps, ADSL 384 kbps, High speed 1 Mbps, No limit**. Preset network settings have predefined settings for bandwidth, framerate and quality for your network speed.
- b. “Bandwidth”– you can choose the bandwidth according to your network

- c. “Framerate” - you can choose the framerate in accordance with your network
- d. “Quality”- you can choose the quality in accordance with your network.
- e. “Select monitor”- you can choose your monitor to share. In case you have more than one monitor connected to computer, you can share your primary or secondary monitor.
- f. “Full screen send as”- you can share full screen in three sizes:
  - **Small (352x288)** the desktop picture sent from your PC will be sent with 352x288 resolution
  - **Middle (704x576)** the desktop picture sent from your PC will be sent with 704x576 resolution
  - **Large (1024x768)** the desktop picture sent from your PC will be sent with 1024x768 resolution
- g. “Name” - you can change the name of your desktop sharing image – this will identify your desktop to the other EVO participants.

## 2.3.4 Record and Playback functions

### Recording

EVO has built-in functions for recording meetings or playing back previously recorded ones. You can click on the record button  on the top of Koala interface and a new window with Record/Playback control and settings will appear.

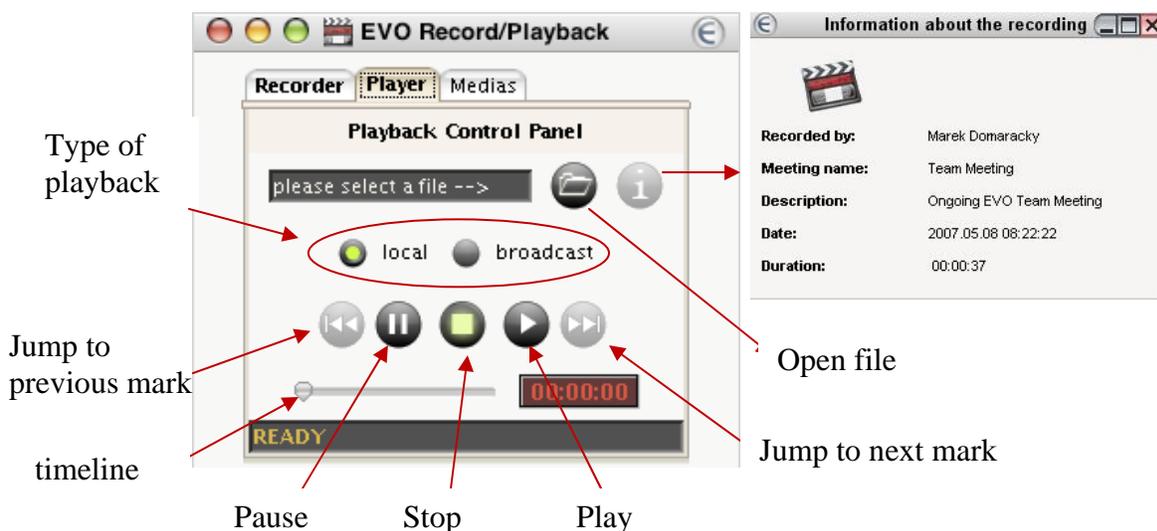


- a. First, enter the name of the file. The first time you do this, you will be asked to choose a Destination directory. Later, you can change it by clicking on  button.
- b. You may start recording by clicking on the record button . A flashing red indicator appears in this button to remind you that meeting is being recorded.
- c. You may insert some marks by clicking on the mark button . Inserting marks into your recording will allow you to get faster access to important parts of the recording during the playback.
- d. You have also the possibility to pause or stop the recording. Note that when you hit the stop button, you need to enter a new filename, which is not the case when you hit the pause button.
- e. You can choose in real time which type of media you want for your recording/playback. Click on “Medias” tab in the main EVO Record/Playback window and check/uncheck the media type.



## Playback

- a. You can play back recorded meetings by clicking on “Player” tab in Recording/Playback window.



- b. Firstly select which file you want to playback. You can select only files with .evo extension. Choose the file and click on “Open”.
- c. In the main window, you can select local playback or you can broadcast the recorded meeting to other users inside a meeting.

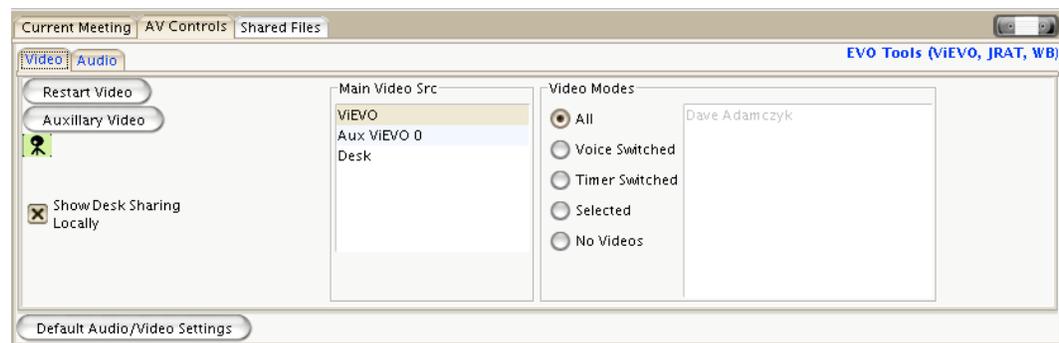


*Note: You should not broadcast a recorded sample clip into the same ongoing session that has been recorded. If you do so, then you may experience some weird video and audio effect.*

### 2.3.5 Audio/Video (AV) Controls

The controls for Video/Audio are found in **AV Controls tab**.

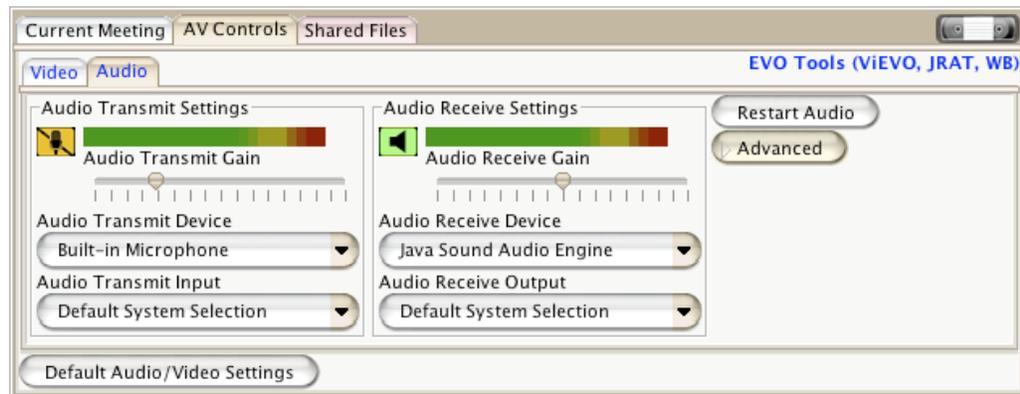
#### Video



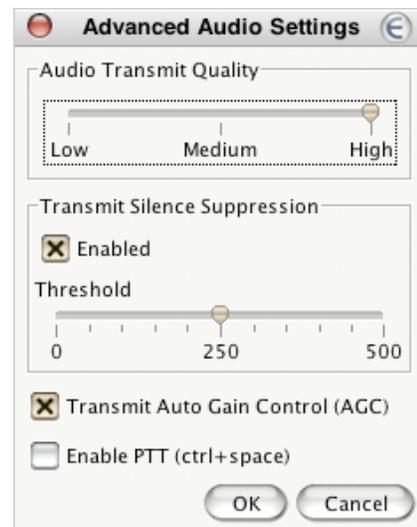
- a. Click on “Restart Video” to resume ViEVO video application if there is a problem or if you have previously shut it down.
- b. “Auxiliary Video” will start up a second instance of ViEVO. You can set it to a second source other than the camera that is pointing at you.
- c. You can start/stop transmission using the Camera icon.
- d. “Show Desk Sharing Locally”: If you want to see, what you are sharing, check this option and the video will appear in the vievo application.
- e. “Main Video Src”: If you are sending more than one video or you are sharing your desktop, you can choose which video source will be seen by other participants, if they choose different “Video Modes” than “All”.
- f. “Video Modes”: here you can choose which video streams you receive from network. If your location has a low bandwidth, you can reduce the incoming network traffic by decreasing the number of received video streams. You can choose “All”, to receive all video streams, video only from Speaker or choose from list of participants (with CTRL + mouse).

- g. “Default Audio/Video Settings“: It will switch back to the default system setting. Note that every setting changes are saved when you leave the meeting. When you launch Koala next time or join a new meeting, your saved settings will be set automatically.

## Audio



- Click on the icon to set the audio function On/ Off.
- Control the volume with the Transmit/Receive Gain sliding bar.
- You can select a different audio device or Input/Output to transmit or receive from the pull down menus. You may want to do this if you don't hear the remote participants or if you don't see any activity in the view meter when you are talking.
- You may monitor the volume on the meters: your volume should be within the green zone for a correct audio quality.
- You can select the “Advanced” button to set some additional settings.
  - If your network connection has a low bandwidth, you can change the “Audio Transmit Quality” to reduce bandwidth used by your audio
  - Disabling “Transmit Silence Suppression” will send audio at all the time even if you are not speaking. If enabled, one can change the threshold under which one will not send audio
  - “Transmit Auto Gain Control (AGC)” will automatically adjust your Transmit volume.
  - “Enable PTT (ctrl+space)“: This check button will enable the Push To Talk functionality. To open temporary the microphone, hold the ctrl+space.

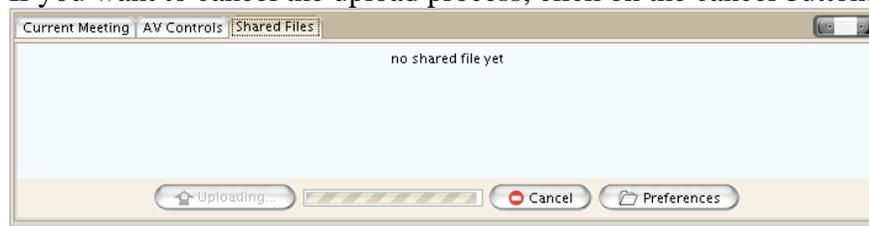


- f. “Default Audio/Video Settings“: It will switch back to the default system setting. Note that every setting changes are saved when you leave the meeting. When you launch Koala next time or join a new meeting, your saved settings will be set automatically.
- g. “Update Device List“: If the Koala already start and then you connect any USB device, you have to click on this button to update the list of the available audio devices.

### 2.3.6 Shared files



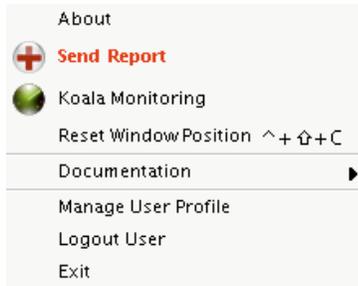
- a. To upload a file: Click “ Upload a file” button and select the file to send from the file browser.
- b. If you want to cancel the upload process, click on the cancel button.



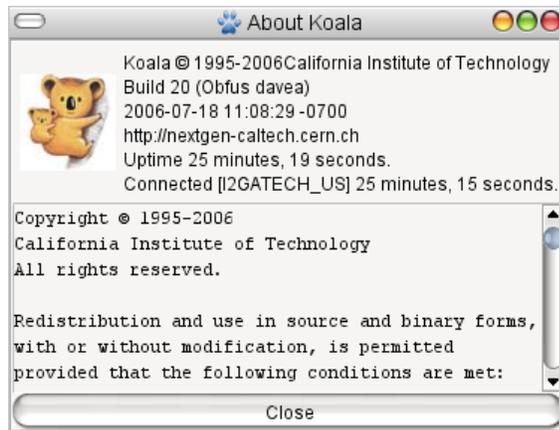
- c. To download a file: Select the desired file from this space and click “ Download the file”. The first time you do this, you will be asked to choose a Destination directory. You can change it later via “Preferences”.
- d. To delete a file, select it and click “ Delete the file” button.
- e. “ Preferences”. – Here you can change Shared files parameters like Destination folder, bandwidth limitation etc. For more information check the section 3.3.

### 3. EVO System functions

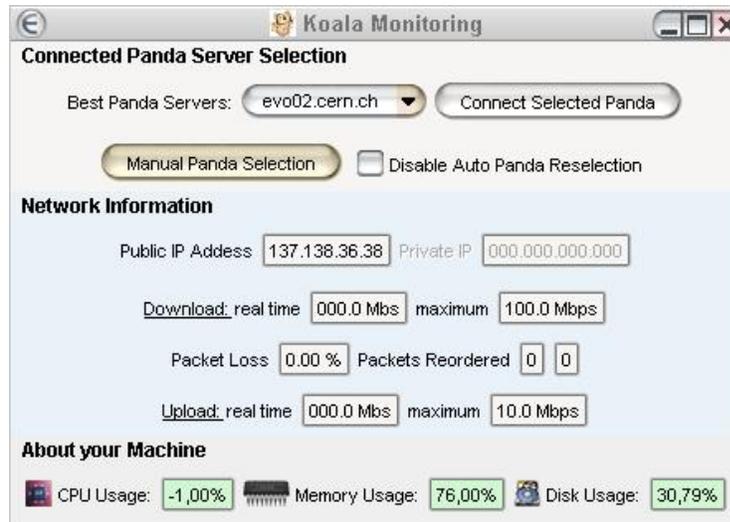
#### 3.1 KOALA MENU



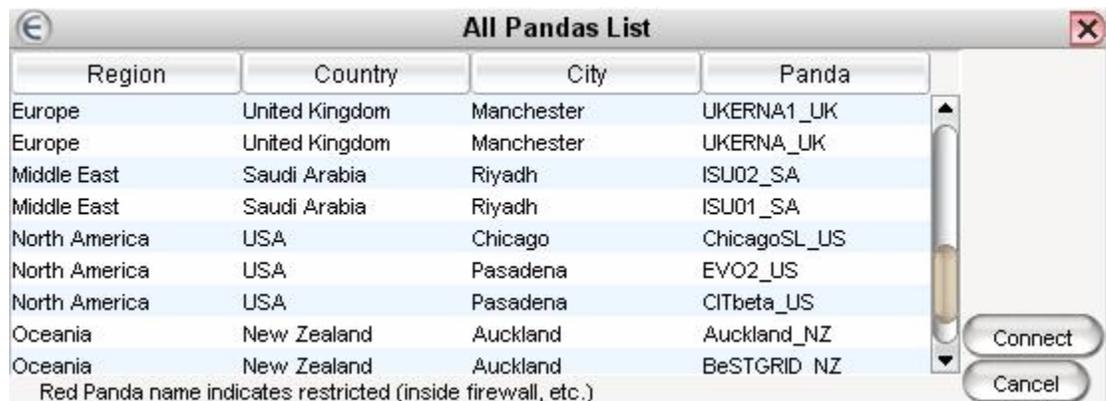
##### 3.1.1 About Koala



### 3.1.2 Koala Monitoring



- Select from the pull down menu one of the three “Best Panda Servers” and click “Connect Selected Panda”. This allows for the manual overriding of the PANDA server selection from the previous selected one.
- If you want to connect to the different Panda, then “Best Panda Servers”, you may click on “Manual Panda Selection” and choose one from the list, as depicted below.
- “Disable Auto Panda Reselection” will not allow Koala to connect to another Panda with a better connectivity.



- “Network Information” displays the Public IP Address, testing your internet connection and shows packet loss.
- The part “About your Machine” displays and monitors your PC network, CPU usage and disk.

### 3.1.3 Reset window Position

To set Koala window to default position.

### 3.1.4 Documentation

To open documentation in your browser.

### 3.1.5 Manage User Profile

To open User profile in your browser (here you can change your display name, picture etc.)

### 3.1.6 Logout User

To logout the current user from the EVO

### 3.1.7 Exit

To exit the KOALA client software.

## 3.2 BOOKINGS MENU

### 3.2.1 Start an Ad Hoc Meeting:

*The meeting starts immediately and it is set by default to last for 8 hours and you enter to meeting automatically using your preferred videoconferencing client. The meeting information is broadcast to all the other members of the community so there are able to join the meeting via a simple click. When the system detects that there are no participants for more than 20 seconds (after the initial 10mn) then it closes the meeting automatically.*



- a. Enter name on “Meeting Title”.
- b. Enter additional information in “Meeting Description”.
- c. Enter Password (Optional).

- d. Select which community you want the meeting to belong to by using the pull down menu.

### 3.2.2 Book a meeting

Booked meetings start at a time in the future, they cannot be backdated.

- a. Select the community from the pull down menu
- b. Enter meeting name in the “Title”.
- c. Enter additional info in the field “Meeting Description”
- d. Enter the meeting password (optional)
- e. Enter meeting starting date and time with the pull down menu at “From”
- f. Select meeting ending date and time with the pull down menu at “Until”.
- g. If you use to booked the meeting in one community then, select the community and hit the “Set As Default“ button, so the next time you don’t need to choose the community.

Check the “Recurrence” box if you want the meeting to be repeated in a regular time interval. Checking this box will bring up the options associated with the “Occurs” option.

**WEEKLY:**

- a. Click on the “Weekly” radio button
- b. Then select the day/s of the week that you want the meeting to occur
- c. “Repeat for” – Enter total number of meetings scheduled.

**BY DAY:**

- a. Click on the “By Day” button
- b. “Every” – Enter the number of days between meetings
- c. “Repeat for” – Enter total number of meetings scheduled.

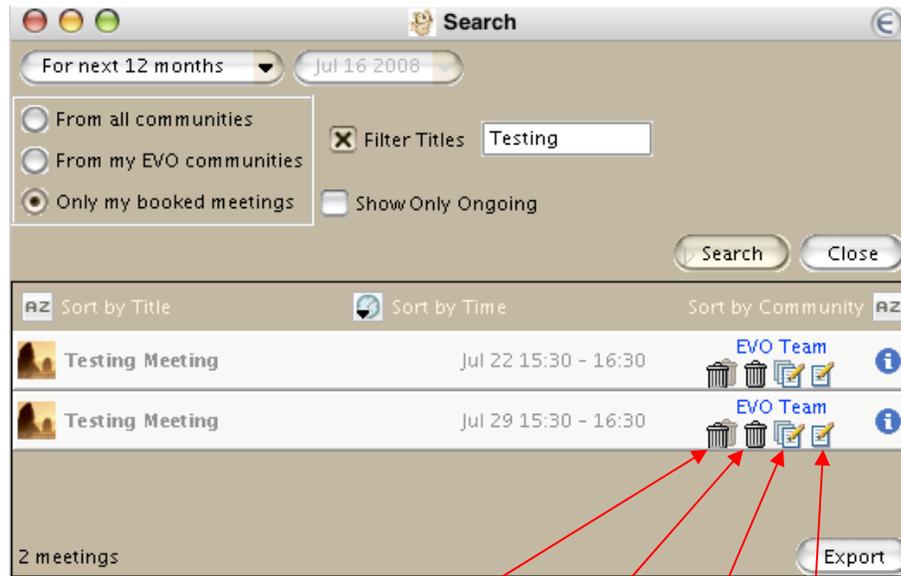
**3.2.3 Edit current Meeting (Grayed out -unavailable)**

- a. This function is only available during and from an ongoing meeting session
- b. Only the creator of the meeting has the privilege to edit the current meeting, (e.g. extending the meeting time).

*Note: If the system detects that the meeting reaches its ending time but there is still participants connected then it will extend the meeting by half an hour slots up to one hour maximum.*

### 3.2.4 Edit or delete the meeting

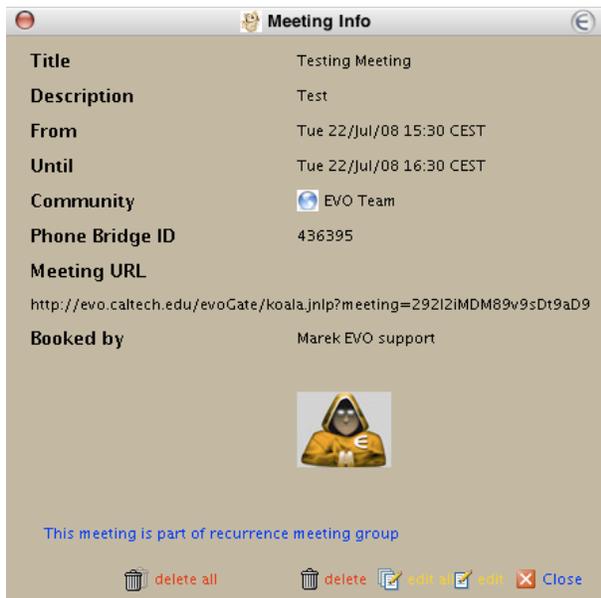
You can edit or delete only the meetings that have booked. To do so, firstly you have to find the meeting(s) you want to edit or delete. From the main Koala window, click on **Search** and then **Search for meetings**. From there, you will find the corresponding meetings, as shown in the picture below.



Delete all    Delete    Edit all    Edit

- a. If you booked the Recurrent meeting, then you can delete all the meetings by clicking on “delete all”  icon.
- b.  “delete”, will delete the meeting from EVO.
- c. In the case of Recurrent meeting you can edit **Community**, **Title**, **Description** and **Password**, if you select “Edit all” .
- d. Clicking on “Edit” icon , you can edit all the bookings properties for the selected meeting.

To find out more about a meeting, click on the blue “i” info icon and you can also edit or delete the meeting from this window.



### 3.3 CALL MENU

In EVO, it is possible to call any H323 or SIP client directly from Koala. You have 2 options to invite a remote participant to a meeting: (1) to make a call from inside the meeting to invite him/her into this particular meeting or (2) to make the call without joining a meeting. In the latter case, the system will automatically create a Private Meeting.

In the Koala menu choose “Call” and then choose the type of call you want to initiate: H.323 or SIP, or select the recent call list menu for quick call set-up.

#### 3.3.1 H323 Call

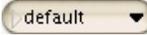
You may call any H323<sup>3</sup> hardware device (e.g. Polycom, Tandberg, Aethra, etc.) or H323 software clients (Ekiga, Xmeeting VCON, etc.). Click on “Call” and then on “H323”; then, a new window will appear:

“Profiles”

- a. You may have several profiles stored, so you don’t need to type all the parameters every time. To create a new profile, click on the “Edit” button,

---

<sup>3</sup> The H.323 standard provides a foundation for audio, video, and data communications across IP-based networks (see at: <http://www.protocols.com/pbook/h323.htm>)

choose “New” and type the name. Select your new profile from the roll out menu  and fill in the parameters; hit “Create” button.

“Display Name”

- b. The call is shown in Koala as another participant. The name which you type in this field will appear as the name of this participant.



“H.323 IP”

- c. Type your H.323 client’s IP address in the field if you want to make a direct call using the IP address of the remote client.

“Gatekeeper”

- d. If your machine is registered on a Gatekeeper enter the “Alias of your H323 client”@”IP address of the Gatekeeper”.



“Audio only” will only send and receive only audio.

“Frame Rate” will define the maximum frame rate of your video.

“Bandwidth” represents the maximum bandwidth that you will send to the other participants.

“Connect through local Koala”

- e. If you are behind firewall for example, you may want to check this option, as the call will be established from your PC instead of the Panda server to which you are connected, so the call will be made within your network.

“Limit inbound Video”

“Show Speaker only”

As soon as you finish filling all the necessary information, hit the call button  to make a call. If you want to cancel the call, hit hang up  button.

- g. In EVO you can connect both H.323 stand-alone clients or bridge a meeting in a H.323 MCU (H.323 Multipoint systems such as for example the ESNET video service). In this case, you may send DMTF tones. This can be useful, since it allows you to operate the video layout display (works with Codian MCUs) and send



commands to the MCU, to create an Ad-Hoc meeting with password, etc.

- h. Usually you don't want other participants to hear the DTMF tones, especially when you are sending a password or other codes. Uncheck "Send To Meeting" to disable sending these tones to the meeting. If the device is not connected using "Connect through local Koala" option, the only way to send the tones to H.323 client is to check "Send To Meeting".

### 3.3.2 SIP Call

If you want to make a SIP<sup>4</sup> call protocol call it via Koala. Click on "Call" and then on "SIP". A new window will appear:



"Profiles"

- a. You may have several profiles stored, so you don't need to type all the parameters every time. To create a new profile, click on "Edit" button, choose "New" and type the name. Select your new profile from the roll out menu  and fill all the parameters; hit "Save" button.

"Display Name"

- b. The call is shown in Koala as another participant. The name which you type in this field will appear as the name of this participant.



<sup>4</sup> "The Session Initiation Protocol (SIP) is an application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants (see at [http://en.wikipedia.org/wiki/Session\\_Initiation\\_Protocol](http://en.wikipedia.org/wiki/Session_Initiation_Protocol))



- c. In the field below the “Display Name” type: “Name”@”IP of your SIP client”

“Audio” is used to send and receive only audio.

“Video” is used to send and receive only video.

As soon as you have filled in all the necessary information, hit the call button  to make a call. If you want to cancel the call, hit the hang up  button.

- d. In EVO when you connect to a SIP client, it may be useful to send DMTF tones to the meeting. Check “Send To Meeting” to enable sending these tones. The other meeting participants will hear the tones. Default/In Band/SIP Info: These are the type of "tones" that can be generated.



"In Band"

- e. This means the tones are sent in the audio band or audible tones like you hear on the phone.

"SIP Info"

- f. This is a SIP INFO message that includes the frequencies and duration of the sounds. If you send this to a bridge device it may actually generate the tones to send on telephone lines. You can also then hear the tones.

"Default"

- g. This option tries to use the type of tones that was setup randomly at the start of the call. In the SIP call setup, it is supposed to be some indication of which tone type the device will accept in-band or SIP Info.

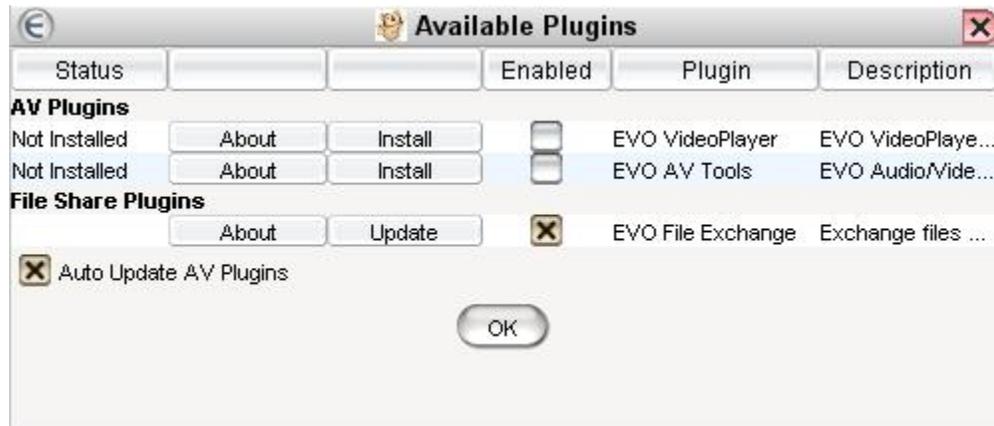
### 3.4 CONFIGURATION MENU

#### 3.4.1 My Video Conference client

Here you can choose your videoconference client, which will start when you enter the meeting. After the first start of Koala, the default clients **EVO Tools**, **EVO SIP** and **EVO H.323** will be automatically installed on your PC. Depending on which tool is selected, the panel on the right will show the settings associated to the specific tool.

### 3.4.2 Show plugins

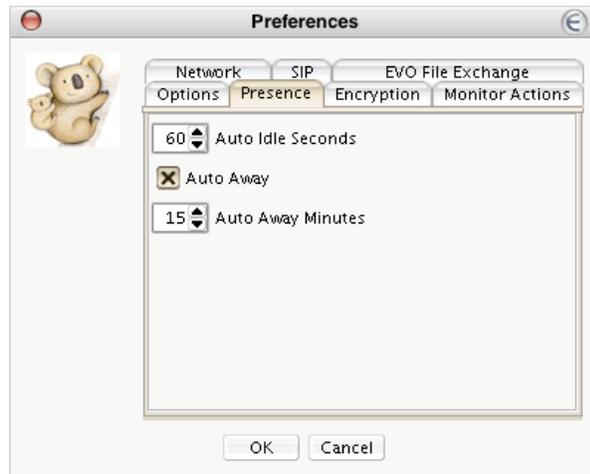
EVO allows a great flexibility in its collaboration tools. Users who use different tools can collaborate with each other using EVO as the mediating interface. The array of tools that work with EVO is shown as a list of Plugins, which are downloaded automatically when EVO is first installed.



- a. Click “Update” for the latest version of the plugin.
- b. Click “Install” to install the plug-in.
- c. Check the “Auto Update AV Plugins” to allow Koala to always update the latest plugins when you start Koala.

### 3.4.3 Preferences...

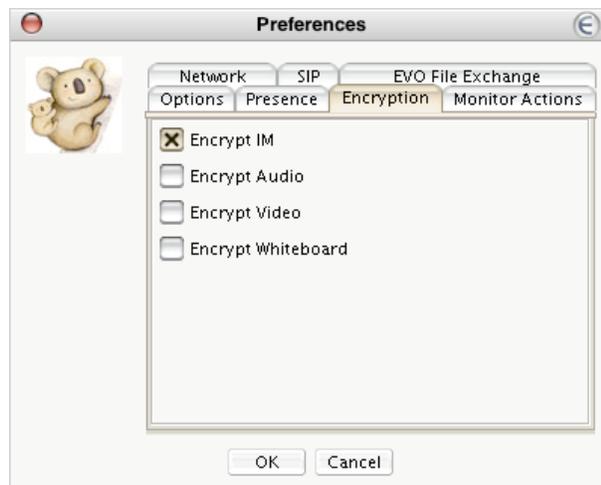
“Presence”



“Presence” controls the icons that indicate your current status at the “Environment” view at the main EVO window.

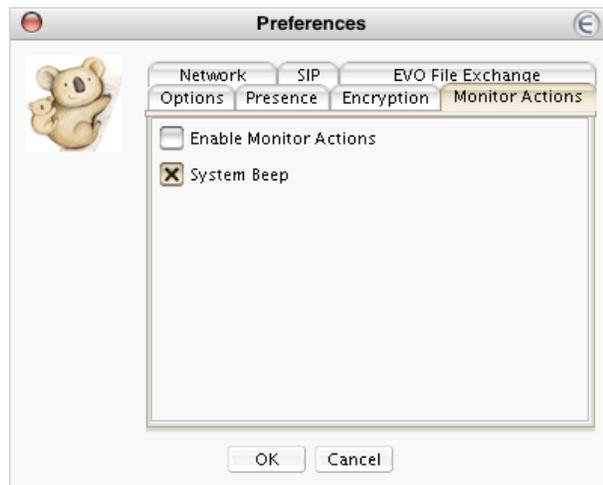
- a. Set the time before going Idle in seconds.
- b. Check “Auto Away” to turn on the “Away” icon after certain time has elapsed.

“Encryption”



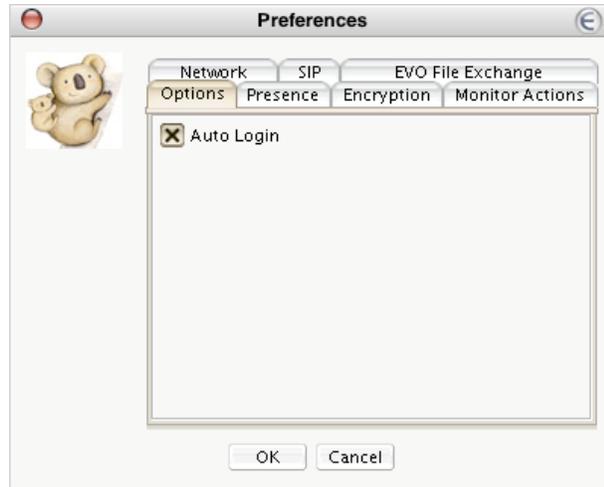
Encryption is available for IM, Audio, Video and Whiteboard. (Note: Turning off encryption allows you to decrease the load on your computer).

## “Monitor actions”



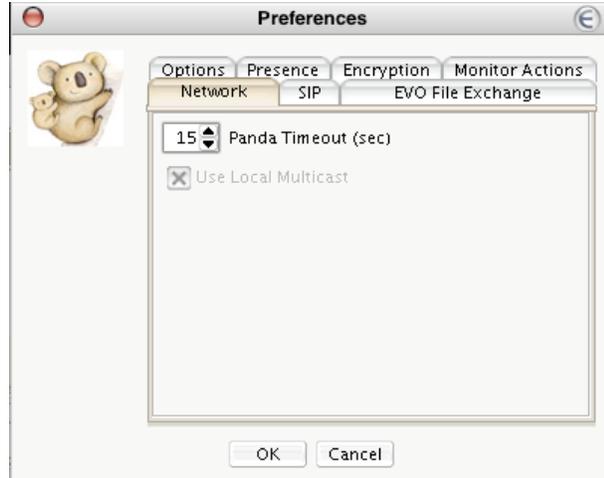
- a. Check “Enable Monitor Actions” to allow Koala to monitor the system and dynamically adjust the transmit and receiving setting (i.e. reduce the video bandwidth sent, reduce the number of video streams received, etc...) in function of the local system behavior (CPU load, packet loss, ...) whenever the resource are insufficient.
- b. Check “System Beep” to turn on the alarm. Any time when a shortage of system resource is detected by Koala (as described above), it will produce a short beeping noise in regular interval.

## “Options”



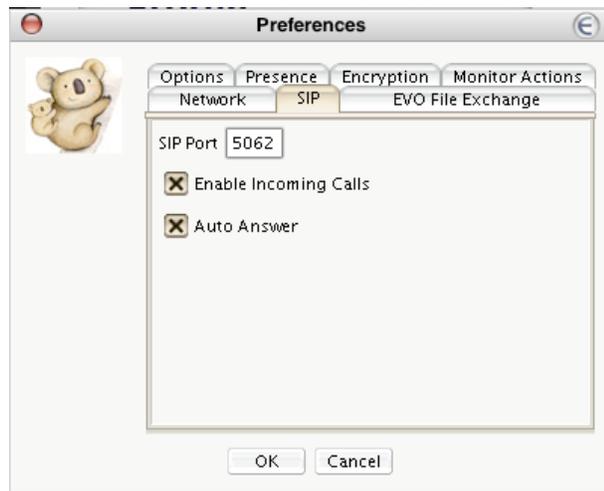
Check “Auto Login” to allow Koala to connect you automatically to EVO without confirming it during starting time.

## “Network”



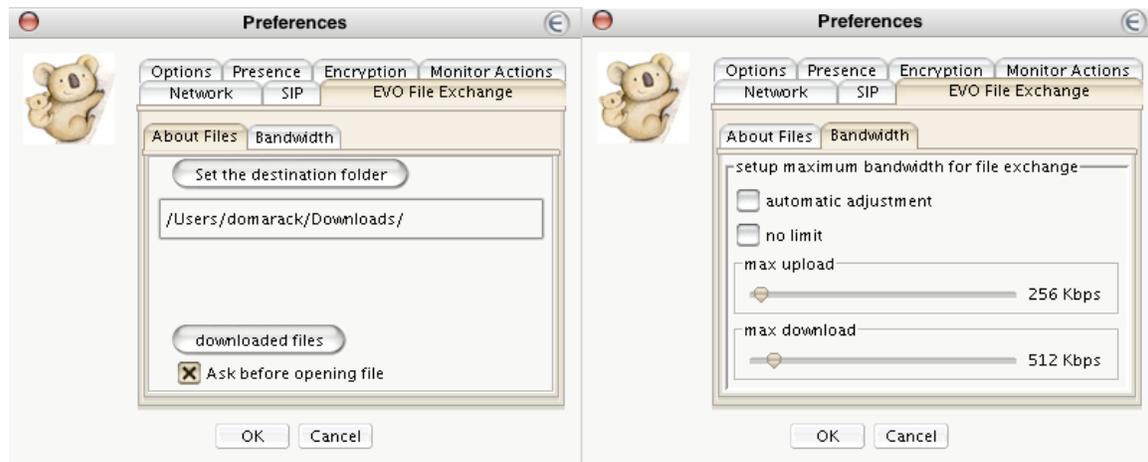
- a. Panda Timeout value corresponds to the time Koala has to wait when it lost the connection to its Panda node before to trying to connect to an alternative one.

“SIP”



Should we put this to Documentation? Is it done?

“EVO File Exchange”



- a. Check “automatic adjustment” if you want to let the Koala to automatically set the maximum upload and download.
- b. If you don’t want limit your upload/download, then check “no limit”
- c. You can setup the maximum upload/download by moving the sliders. Note, that this option is disabled when “no limit” or “automatic adjustment” is checked.
- d. Click “Set the destination folder” to change the destination where you would like to have you downloaded files stored.
- e. Click “downloaded files” to open up the folder where you can find the downloaded files.
- f. Uncheck “Ask before opening file” if you prefer to have any download file to be opened automatically after downloading.

### 3.5 SEARCH MENU

SEARCH allows a user to locate specific meeting or particular individual within the EVO universe.

“Looking for someone?”



- a. Enter name (first, last or partial) and hit “Search”. A list of matching names will appear on the left panel.
- b. Clicking on any contact name will bring up detailed information about the chosen contact, on the right panel
- c. Click on “Add to my Buddies List” will include the user into your “my Buddies” list within the Environment/ Tree view.
- d. Click on “Start Chat” to initiate a chat session with the selected user in the chat panel of the main window
- e. Click “Close” to close the Search

“Search for meetings”

Search meetings by different criteria.



- Select the range of date/s from the pull down menu.
- Select the communities involved from the pull down menu.
- Check the “Filter Title” box to filter the meetings by entering the full or partial meeting name.
- Hit “search” button
- The matching results will appear as a list on the lower half of the window.
- These results can be sorted by Title, Time, or Community
- Click “Export” to save the list of meeting to an iCalendar .ics file. Then it will be ready to be imported into the most popular calendar software tools. .
- Click on any ongoing meetings to enter that specific meeting
- To find out more about a meeting, click on the blue “i” info icon
- Click “Close” to close the Search

## Appendix A: ViEVO video client

ViEVO is a pure software-based video codec tool. It is used whenever you enter into a meeting. The ViEVO window co-exists independently of the EVO KOALA client window as shown below.

### 1. VIDEO CLIENT - 3D

The OpenGL-based ViEVO application uses 3D rendering techniques to achieve a better efficiency when drawing to the screen the multiple received videos streams. Using this new mode, the 3D rendering is fully controlled by the GPU (Graphics Processing Unit) located on graphical card. The GPU implements a number of graphics primitive operations that run much faster than drawing directly to the screen using the usual CPU (Central Processing Unit). This technique significantly saves CPU cycles especially in a configuration where ViEVO has to display several concurrent received videos streams at the same time.

OpenGL (Open Graphics Library) is used as an application programming interface for 3D rendering, similar to the techniques used for gaming. In the same time, the OpenGL integration enables us to improve significantly the look and feel with a 3D environment and interface that make the general control of the ViEVO application nicer, more comfortable and easy to use.

#### 1.1 HARDWARE/SOFTWARE REQUIREMENTS TO RUN VIEVO

To run OpenGL version of ViEVO your PC needs to fulfill hardware (HW) and software (SW) requirements:

SW: OS Windows XP/Vista (support for MAC OSX and Linux will follow)

HW: Graphical card with hardware acceleration of OpenGL version 1.1 and upward.

Note that an update of video graphic card driver can improve the support of OpenGL.

##### 1.1.1 Video devices (video cameras) support

To transmit video you need to have properly installed and plugged camera to your PC via USB (Logitech QuickCam is recommended) or FireWire web cameras.

To grab video from external analog sources (analog camera, VGA signal...) ViEVO supports also internal (PCI) or external (USB) grabbing TVcards/devices.

## 1.1.2 Video codecs

H.261 and H263 video codecs are used.

H.261 is used for small resolutions QCIF(176x144) and CIF(352x288). For higher resolutions (up to HD) H.263 video codec is used. Switching between them is done automatically when changing resolution.

## 1.2 GUI AND FUNCTIONALITIES DESCRIPTION

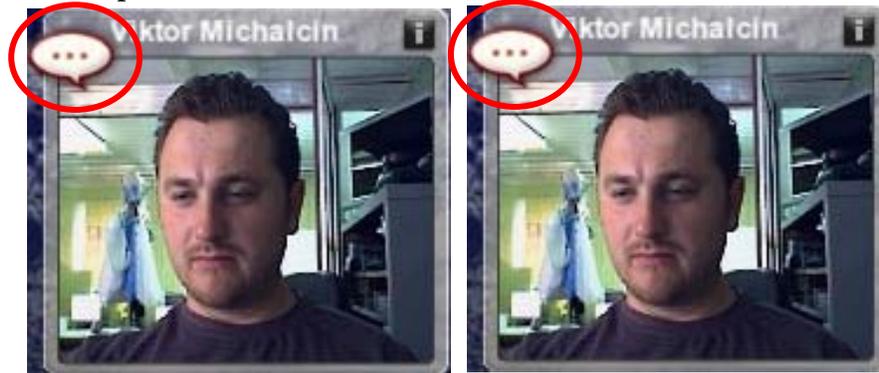
When ViEVO starts, the main window will appear with its initial size and position on the screen. ViEVO immediately starts to display all received videos in Presence section (see Display sections). Displayed videos are represented by 3D objects (see Video component) and together with controls, labels and background picture they are composing the final 3D. *NOTE that for first time ViEVO starts with “Click to select” display mode as default.*



To resize the main window you can drag by mouse top, bottom, left or right edge of the window or you can use resize button  in bottom-right corner. *NOTE that all settings with size and position of ViEVO window will be saved automatically when application is closed (when leaving the EVO meeting).*

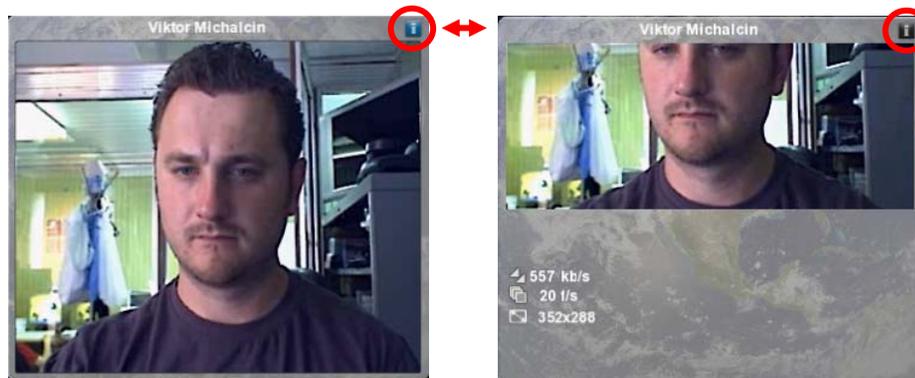
### 1.2.1 Video component

Each received video is represented by a 3D video component with a participant's name label on the top. Position, size and shape of each displayed video component are dependent on chosen display mode, size and position of window.



Speaker's video component will be automatically marked with speaker indication icon  in top-left.

Each video component has info icon  in top-right corner. By clicking on it, you can display the information about the current bit rate, frame rate and resolution of video component. To return back in normal view you have to click again on  icon.



### 1.2.2 Display sections

ViEVO window is divided on two sections “**Display Mode section (top)**” and “**Presence section (bottom)**” where video components can be displayed. Presence section is meant especially for general overview of all video components (received videos). Display mode section is used for displaying selected video components from Presence section in accord with the chosen display mode (Toolbar->Display modes menu).



To ensure maximum display efficiency (especially if there is high number of video components) you can adjust vertical size of Presence and Display mode sections by using a “virtual” splitter. Actual vertical position of the splitter is indicated by two small arrows on the left and right window edge as it is shown on picture. To enlarge/reduce vertical size of sections you have to point your mouse between these two arrows and use mouse dragging in vertical direction. *NOTE that there is a limitation for minimal size of Presence and Display mode section and it depends on current size of ViEVO window. When resizing the whole window Presence section will maintain his size in vertical direction (height).*

### 1.2.2.1 Presence section

Video components are displayed on the mirrored floor in one horizontal row with potential 3D rotation. A degree of 3D rotation depends on number of video components and width of the section. Horizontal scroll bar will appear automatically if there is not enough space for all video components. There is an automatic focus feature on speaker’s video component and focus on video component pointed by mouse. Focused video component displays in frontal view (without rotation). Focus invoked by mouse has higher priority than the automatic focus on speaker’s video component.

*NOTE that you can use scrolling of video components with mouse moving over all video components in horizontal direction. NOTE that to display all video components in Presence section only you have to choose “None” display mode Toolbar->Display modes menu.*

### 1.2.2.2 Display mode section

A display mode section is located in top part of the window. Video components are there always displayed in frontal view with automatic utilizing of free space. Chosen display mode in Toolbar->Display modes menu controls the way how video components will be selected from Presence section and displayed in Display mode section.

Note that to display all video components in Display section you have to choose “Select all” display mode.

### 1.2.3 Meeting info



On the top of the window is the meeting info panel with the name of the ongoing EVO meeting (in middle), download  (on left) and upload  bit rates (on right). *NOTE that download bit rate is related to all received video streams and upload bit rate is related to video stream send from your camera.*

### 1.2.4 Toolbar

All necessary display and video camera controls are well arranged in one expandable toolbar. Click on  (next to Video Camera button) to fully expand Toolbar.



Click on  if you want to hide Toolbar.



**Video Camera transmit button** allows to switch ON/OFF your camera and also indicates camera activity. Click on it to start/stop transmitting the video of your video camera.



- Video Camera **OFF**



- Video Camera **ON**

#### 1.2.4.1 Display modes

The chosen display mode controls the way (manual/automatic) how video components will be selected from Presence section and will be displayed in Display mode section. The chosen

display mode controls the way (manual/automatic) how video components will be selected from Presence section and will be displayed in Display mode section.



- a. **Click to select** (manual) – just click on video component in Presence section to display it in Display mode section. If you click on video component in Display mode section it will return back to the Presence section.
- b. **Current speaker** (automatic) – current speaker’s video component only will be automatically displayed Display mode section.
- c. **Select all** (automatic) – all (including new) video components will be displayed in Display mode section only. *NOTE that Presence section will be hidden.*
- d. **None** (automatic) – all (including new) video components will be displayed in presence section only. *NOTE that Display mode section will be hidden.*

#### 1.2.4.2 Camera settings



- a. **Configure camera** button – displays window with driver settings for selected device (see below).
- b. **Device** – selected device (video camera) for video transmitting. In case you have connected two and more devices to your PC you can select from the list (click on small blue arrow) preferred one. You can switch between devices in the list “on the fly”. *NOTE that if you don’t have any device (camera) plugged/installed to/on your PC the Still Image mode will be listed only.*
- c. **Resolution** – you can select resolution of picture sent by selected device (camera). You can switch between resolutions in the list “on the fly”. *NOTE*

*that the resolution list contains only resolutions supported by the selected device (video camera) and it may differ for different models and types of devices.*

- d. InputPin** – you can select a required pin (Video Composite, S-Video, ....) for your selected device (typically TV capture card). *NOTE that InputPin will not be displayed in Camera settings menu for selected devices without any input pins such as webcams.*

### 1.2.4.3 Video parameters



- a. Bandwidth** – slider to control the maximum amount of bandwidth used by the video sent. It ranges from 50kb/s to 4Mb/s.
- b. Framerate** – slider to control the video frame rate. It ranges from 1 to 30 frames per second (f/s).

*NOTE that quality factor of transmitted video will change automatically to ensure maximum smoothness of video stream. The maximum Framerate can be limited (to 10 or 15 fps) according to the supported frame rates of selected Device and the selected Resolution in the Camera setting menu.*

## 2. VIDEO CLIENT - 2D

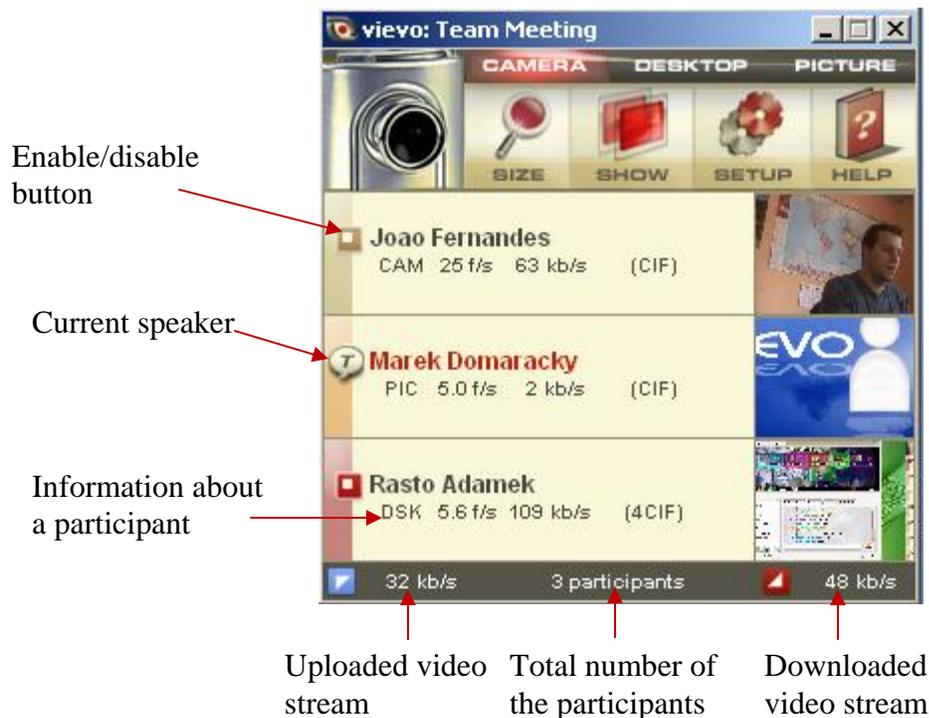
- a. When no one is sending video, you will see the message “no video signal”



- b. When users are sending video, for each participant you will see a panel composed by the information about the participant, with a selectable button on the left side and a small video square thumbnail representing the video this person is sending, on the right-hand side.



### 2.1 INFORMATION ABOUT PARTICIPANTS



- a. The main information about the participants is the name on the left part of the participant's panel. If you click on it you will see a small window with detailed users info (format, cname, tool, email, srcid).
- b. You can easily identify the type of source transmitted by the participant: **CAMERA**, **DESKTOP** or **PICTURE**. Each type of source has its own color and it is identified by the shortcut below the name:  
CAM = CAMERA  
DSK = DESKTOP  
PIC = PICTURE  
In addition, there is information about frame rate, bandwidth and resolution (format) of the video.
- c. The set resolution can be QCIF (176x144), CIF (352x288), VGA (640x480), 4CIF (704x576), XGA (1024x768). In case of packet loss from the participants a red value of packet lost in %.
- d. On the bottom part of **ViEVO** there is a summary information about the total number of participants (in the middle), uploaded video stream (on the left) and downloaded video stream (on the right).
- e. Enabling/Disabling a participant.  
On the left part of the participant's panel there is a selectable button which allows you to enable/disable decoding and displaying the video streams from a given participant. Each participant is by default enabled (selected). If you disable a participant in **ViEVO** you stop decoding, displaying and receiving the

video stream. You can always enable or disable each participant except the current speaker. When the disabled participant becomes the current speaker his video will automatically become enabled and you will be able to watch his decoded video stream. This is valid only during the period when the given participant is the current speaker.

*NOTE: in case you do not have a powerful PC, disabling of some participants will free up some system resources*

## 2.2 TRANSMITTING VIDEO

In the top part of the main ViEVO window you can click and select a video source which will be transmitted to all participants that joined a EVO meeting.

There are three textual buttons: **CAMERA**, **DESKTOP** or **PICTURE** to select and transmit the source.

The selected source will be highlighted with a red background color and on the left side the corresponding icon will be displayed.

Transmitting picture from the camera



Broadcasting of your desktop



Transmitting picture from the file



## CAMERA

Transmitting picture from the camera →



- a. Click on **CAMERA** textual button to enable the transmission of your picture from a plugged video camera. This video image will be transmitted to all participants in an EVO meeting.
- b. Initially, you will see it as a small video thumbnail on right side of the main ViEVO window.
- c. Your small picture will always be present on the top of the list of all displayed pictures received from all participants.
- d. To enlarge the small pictures you have to click directly on this small video thumbnail.
- e. To stop transmitting, one has to click on **CAMERA** textual button in main ViEVO window (red highlight is disabled).

*NOTE: that to transmit picture from your video camera via ViEVO you have to have properly connected and installed a video camera (webcam, or video camera plugged into a video card) to your PC.*

## DESKTOP

**You should use Desktop Sharing directly from Koala window. Please refer to section 2.3.3.**

## PICTURE

Transmitting picture from the file →



- a. **ViEVO** allows you to transmit a still image instead of a picture from a video camera. It is a useful feature in case you do not have a video camera plugged to your PC.
- b. Click on **PICTURE** textual button and you will send a still image (default EVO participant blue image) from a .bmp file.
- c. If you want to transmit your own image go to Setup and in **Picture** tab click on **"Select Image"** to find the location of your own .bmp file. A user who is sending a bitmap picture will have a title "STILL IMAGE MODE" in the right-

bottom corner of his picture. In this way, you can easily distinguish a live video feed from a static picture.

- d. To stop transmitting one has to click one more time on **PICTURE** textual button in main **ViEVO** window (red highlight is disabled).

## 2.3 CHANGING SIZE OF VIDEO



You can change the video size by clicking on **SIZE** in the main ViEVO window and selecting the resolution (size) of transmitted video for the given source. In the case of the CAMERA source, you can select from sizes QCIF (176x144), QVGA (320x240), CIF (352x288), VGA (640x480) and 4CIF (704x576)

*NOTE: The number of possible available resolutions depends on the driver of your video camera or video grabber.*

In case of **PICTURE** source only CIF (352x288) size is supported.

## 2.4 SHOW PARTICIPANTS



If you click on **SHOW** in main ViEVO window, you can select an automatic mode for displaying participant's video in larger windows on your screen:

- a. **Display off** - switches off automatic displaying
- b. **Show selected** only enabled (selected) participants will be displayed. The current speaker will be marked with red text "Talking" in top-left corner of video-window.
- c. **Show only speaker** - only the current speaker will be displayed (in case of sending video) in top-left corner of your screen. In addition, the name of the speaker in main ViEVO window will appear in red color together with changed icon.

*NOTE: DSK video streams (captured desktops) are not displayed in the "Show selected" mode.*



- a. **Display off** – switches off automatic displaying.

- b. Show all selected** – all enabled (selected) participants will be displayed. The current speaker will be displayed in bigger frame and will be marked with red “T”. To remove/add displaying of some participant just click on participants video thumbnail in main ViEVO window.
- c. Show only speaker** – only the current speaker will be displayed (if he’s sending video). The name of the speaker in the main **ViEVO** window will appear in red color together with the changed icon.
- d. Presentation** - only the current speaker (on the left) and presentation/desktop (on the right) will be displayed in this mode. If you want to display another presentation (in case of more than one presentations/desktops are receiving) instead of the automatically selected, you just need to click on desktop (DSK) video thumbnail in main ViEVO window.

*NOTE: In “Display off” mode you can display any participant by click on participant’s video thumbnail in main ViEVO window.*

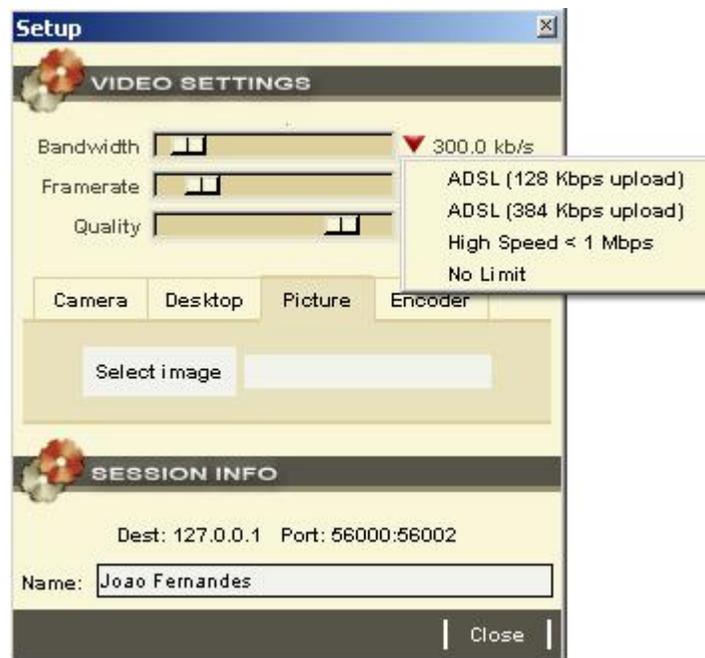
## 2.5 SETUP OF TRANSMITTED VIDEO

Click on **SETUP** in the main **ViEVO** window to set **Bandwidth**, **Frame Rate** and **Quality** parameters of the transmitted video.

- a. The **Bandwidth** control slider is used to control the transmitting bandwidth of the video. It ranges from 1kbps to 4Mbps.
- b. The second slider is used to control the video **Frame Rate** . It ranges from 1 to 30 frames per second (fps).
- c. The last slider is called **Quality** to control video quality. The best quality corresponds to 2, and the worst to 30. Typically the value of 5 is already considered a good quality to use.

*NOTE: If these settings are too complex for you, just click on little red triangle on the right side of Bandwidth slider and select your internet connection.*

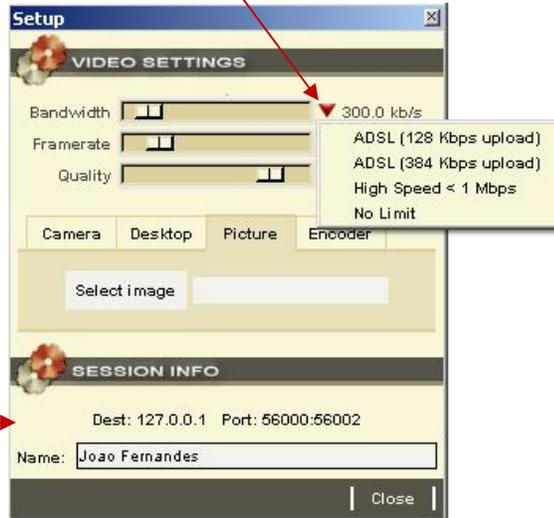
*This will change automatically the settings to ensure a maximum quality and smoothness of video stream according to your network connection.*



Preset the values for specific internet connections

Settings of Bandwidth, Framerate and Quality

Your name displayed with your video

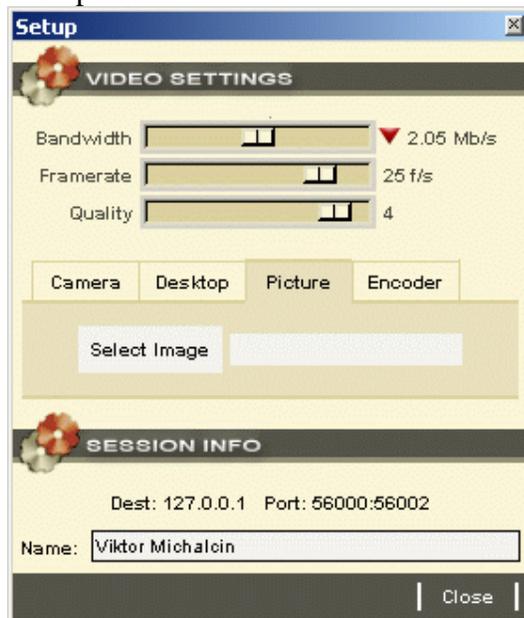


### 2.5.1 Camera

If you click on **Select camera** you can select the correct driver for your attached video camera.

### 2.5.2 Picture

To transmit your own image, instead of the default one, click on **Select Image** to find the location of your .bmp file.



*NOTE: Only bitmap (.bmp) file with CIF (352x288) resolution is currently supported.*

### 2.5.3 Encoder

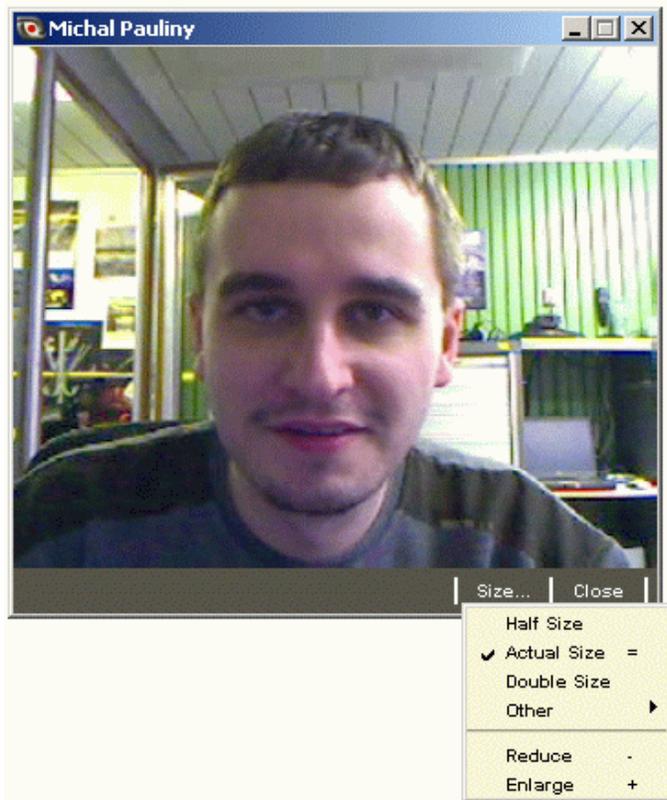
The encoder settings are used specially to ensure a better compatibility with H.323 devices.



- a. **Updated background** – It will enable faster updating of non-moving (unchanged) parts of the picture
- b. **Better H.323 compatibility** - Check this option if someone using an H.323 client has problems decoding your video (e. g. video is frozen, some artifacts in your video, etc.).  
NOTE: This option will increase the stream bandwidth
- c. **INTRA mode only** - your video will be encoded only in INTRA mode (as a simplified encoder). It is useful if there is packet loss on your side or if your CPU is overloaded. (no present on the Mac platform)

## 2.6 VIDEO ENLARGED WINDOW

If you click on any video thumbnail in the main **ViEVO** window you will get an enlarged video window. At the bottom of the new window, there is a small menu bar with two buttons: **Size...** and **Close**.



- a. The Size menu will allow you to set the size of the window. You can select Half Size, Actual Size and Double Size.
- b. You can also select **other** different video formats: QCIF (176x144), CIF (352x288), 4CIF (704x576), 1/16 NTSC (160x120), 1/4 NTSC (320x240), NTSC (640x480), 1/16 PAL (192x144), 1/4 PAL (384x288), PAL (768x576).
- c. The **Close** button will close the window.

*NOTE: You can reduce the size of the video window by using the shortcut “- “. To enlarge it you can use shortcut “+ “. To display it in Actual Size you can use shortcut “= “.*

## APENDIX B. – EVO checklist

### 1. EVO checklist

Before participating in an EVO session, **we advise you** to complete this checklist to set up EVO on your system and environment. Following this checklist will eliminate the most common pitfalls, which can be detrimental to a successful session.

#### 1.1.1 Minimum PC hardware requirements

To run EVO properly, your PC needs to fulfill certain minimum hardware requirements, especially if you intend to send/receive video/audio with good quality and interactivity:

- Intel PC: Pentium 4 1,5 GHz, 512 MB RAM (minimum) or 1Gb RAM (recommended)
- Macintosh with PowerPC processor: 1 GHz, 512 MB RAM (minimum) or 1Gb RAM (recommended)
- Macintosh with Intel processor: 512 MB RAM (minimum) or 1Gb RAM (recommended)

#### 1.1.2 Ensuring sufficient network bandwidth to receive/send good video/audio signal

To communicate with other participants and receive/send good video and audio using EVO, your network connection should fulfill these minimum requirements (we assume that 384kbps is sufficient to provide a very good visual/audio quality):

- $384 \text{ kbit/s} + 64 \text{ kbit/s} = 448 \text{ kbit/s}$  download speed for each participants you're receiving video and audio from (i.e. if there are two external participants, you need a download speed of  $2 \times 448 \text{ kbit/s} = 896 \text{ kbit/s}$ ) unless you select the "Voice switch" mode (using this mode, you will receive only the video from the current speaker)
- 448 kbit/s upload speed (for each EVO station in the network you wish to send good video and audio stream)
- **Important note:** the figures quoted above refer to the *minimum sustained bandwidth which must be dedicated to your connection* during the EVO session if you want to get some assurance to receive and send good video/audio and have a very good interactivity. You will not have a successful meeting for example, if your 1Mbit connection is shared by several other computers, which all generate network traffic at the time that you want to have a meeting. You may need to ask your network administrators to dedicate bandwidth for your connection, referring them to the figures above (448 kbit/s download and upload)
- To test the download and upload speed of your internet connection, use the tool available here: <http://www.speedtest.net/> (measure you speed with a server close to the participants you'll be communicating with in EVO)

- **Important note:** It is advised to conduct the test at the same time of day as the actual EVO session so you get an accurate situation of your network.
- **Important note:** It is advised do not connect to EVO by a wireless connection unless you have no alternative. It will eliminate some possible network breakout (Wireless connections are notorious for fluctuating bandwidth and are usually shared with other computers on the network and so quality is unpredictable).

### 1.1.3 Installing and updating Java on your PC (Windows, Linux or Mac)

EVO is a Java application, and needs to have the Java virtual machine installed on the PC from which it is to be run. Version 1.5 and upward is supported by EVO.

- Go to the Java website at <http://java.com>
- Click on **Verify installation** to make sure that java is installed or to get the newest version of Java
- If you don't have it or want the newest version (recommended), click on **Download** to get it

### 1.1.4 Registering for an EVO account

Before you can use EVO, you need to register for an EVO account.

- Click on **Register** at <http://evo.caltech.edu>
- Fill in your details
- You will receive a confirmation email. Click on the link in this mail to enable your account

### 1.1.5 Setting up Koala, the EVO client

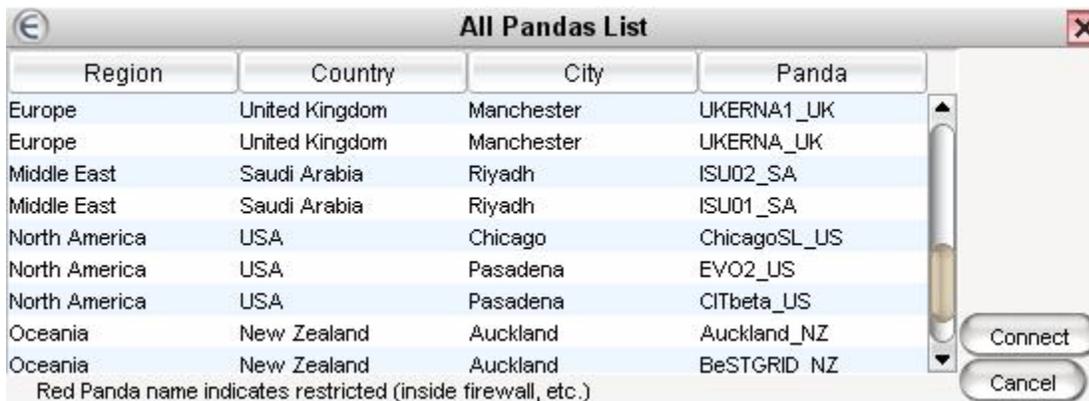
Koala is the EVO client which you use to book and access meetings, register with different communities, chat with other participants etc.

- If you're running Windows, it is advise that you're logged in with administrator privileges otherwise you may experiment some unexplained phenomena (depending of the local security set-up)
- Click on **Start** at <http://evo.caltech.edu>
- If a message from the Windows firewall pops up asking you if you want to keep blocking EVO, click on **Unblock**
- Take a note of which Panda (all EVO servers are called Pandas) you are connected to (symbol at the bottom left of the screen):  Connected to Panda CERNnext\_CH
- The last two letters indicate a country code. Make sure these letters correspond to your country (or your neighboring country – it's important that you're connected to a server close to you)

- If you're not connected to a Panda which is geographically close to you, click on **Koala** - > **Koala Monitoring** and get a drop-down list of the best servers to connect to following some real-time network measurements:

Best Panda Servers:

You can also manually select the Panda closest to your location by clicking on the “Manual Panda Selection” button.



### 1.1.6 Selecting you preferred Videoconference client when joining a EVO meeting

EVO client support several videoconferencing clients and protocols. While EVO provide by default some video/audio tools called EVO Tools, the user may decide to use his most familiar application such as an H.323 device or a SIP client.

#### 1.1.6.1 Setting up EVO to use a H.323 device as you preferred videoconference tool

EVO can be used with an H.323 device (e.g. a hardware device which uses the H.323 “videoconferencing over IP” protocol).

Especially if you're in an auditorium or other large room and you're going to broadcast the incoming audio into EVO, using a hardware H.323 device gives you **superior echo cancellation** and also the ability to move the camera around (e.g. zooming in on the audience if someone has a question to the remote site in EVO).

- Before entering a meeting, click on **Configuration** -> **Videoconference client** and choose **EVO H.323** as the client
- Enter the IP address of your H.323 device (or the gatekeeper address and E.164 alias if your device uses a gatekeeper)
- Select your video frame rate and bandwidth (25/30 fps and 384 kbit/s is a good starting point)

#### 1.1.6.2 Setting up EVO to use EVO tool as you preferred videoconferencing tool (using a webcam and microphone)

If you're on your own and want to communicate with other participants in EVO, you can use a webcam and a headset.

- Before entering a meeting, click on **Configuration -> Videoconference client**
- Select **EVO Tools** as your client
- Check **Auto Transmit Audio** and **Auto Transmit Video** and then click **Save** if you want to start transmitting automatically when you enter your meeting
- Enter the meeting room called **Testing** (or another meeting room booked by you) to fine-tune your audio settings
- Make sure your microphone is unmuted (the microphone icon should be like this: , not like this: )
- Check that your audio meter  doesn't go into the red area (this means your audio is set too high)
- The auto gain control will adjust the level of your microphone automatically but in case you disable this function (see on the AV Controls panel the "Advanced" option), you can adjust it by clicking on the meter 
- If your audio meter doesn't give any indication at all, click on  and  and make sure your **Audio Transmit Device** is set to the microphone you're using
- If you can't hear the other participants, check that **Audio Receive Device** is set correctly. If you're using an USB headset and EVO doesn't list it under **Audio Receive Devices**, you have to close Koala; plug in the headset and then start Koala again.
- Optimizing the local audio setup

It's very important that your audio setup doesn't give rise to echoes (this wouldn't be audible to you; an incorrect setup at your end would only be heard by the other participants, who would get a very annoying echo of themselves whenever they speak).

Our recommendations depends of the videoconference tool selected and the room environment

- H.323 Client:
  - Connect to EVO with a H.323 hardware device, which has (superior) built-in echo cancellation
- EVO Tool<sup>5</sup>
  - If connecting by EVO Tools and only for yourself, use a headset, if possible
  - Alternatively, when connecting with EVO Tools, use a speakerphone with built-in echo cancellation (like Logitech QuickCall, Phoenix Duet etc.)

**Important note:** adapting an audio setup meant for one person (headset or webcam microphone/PC speaker) to a medium/large group of people in a room will most probably NOT

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<sup>5</sup> Note: Using EVO Tools with any other setup without the use of a local echo suppression system (e.g. if you're in an auditorium and need to broadcast the incoming audio into EVO to the audience using the sound system in the room) requires you to mute your microphone whenever you're not talking. In this case you must establish routines for muting your microphone quickly – either by having a person by the computer to mute in EVO, or by switching the microphone off.

WORK or result in bad audio. When using a room with a large group of people you have to ensure that the local audio is adapted to the room, by using an H.323 device or a good echo suppression audio system connected to the EVO PC station.

### Troubleshooting

Problem	Cause	Solution
<b>Starting Koala</b>		
EVO gives an error message when starting up or it doesn't start at all	Windows-specific issue: sometimes, after updating Java (by automatic update or by installing a newer version), the Java cache needs to be deleted	Click <b>Control Panel</b> -> <b>Java</b> . Under <b>Temporary Internet Files</b> , click on <b>Settings...</b> -> <b>Delete Files...</b> and select to delete everything
	Your Koala settings have become corrupted	In Windows: delete the directory C:\Documents and Settings\username\.Koala  In Linux and Mac OS X: delete the directory /home/username/.Koala
<b>Audio</b>		
I can't hear the other participants at all	Audio configuration problem	Check that you're receiving audio by checking the  icon  If not: you must ask the other participants to unmute  If yes: click on  ,  and select the correct playback device
The other participants can't hear me	You're muted or using an incorrect input device	Check that you're not muted (  )  Click on  ,  and select the correct input device
Audio quality is choppy	Your PC is too slow	Your PC must meet the minimum system requirements
	You're using a wireless network connection	Avoid this at all cost – ask the network administrator to activate or provide a network plug in the location where you'll be doing the EVO session
	Insufficient bandwidth/network congestion	Ask your network administrator to dedicate bandwidth to your EVO session
	You're connected to the wrong Panda	Click on <b>Koala</b> -> <b>Koala monitoring</b> and reconnect to a different Panda

<b>Video</b>		
I can't see the other participants at all	Remote site not sending video	If remote site is using EVO Tools: have them make sure camera is activated (the button in vievo then lights up  )
	Incorrectly configured firewall	See Appendix C for the list of ports.
Video quality is poor	Insufficient bandwidth	Make sure your network has at least 384 kbit/s upload and download speed for each participant you're receiving audio and video from
	You're using a wireless network connection	Avoid this at all cost – ask the network administrator to activate or provide a network plug in the location where you'll be doing the EVO session
	The remote site has incorrect video settings	<p>Ask the remote site to check their video settings</p> <p>If remote site is using H.323: ask them to click , choose lower bandwidth, </p> <p>If remote site is using EVO tools: ask them to click on <b>Setup</b> in the vievo window and then adjust the bandwidth down</p>

## APENDIX C. – Firewall settings for Koala

### Mandatory:

While EVO works fine in a Network Address Translation environment (NAT), the local or institute firewall (if any) should permit communication on the following port.

- **IN/OUT - UDP/TCP: 46015**

### Optional:

Allowing these TCP outgoing ports will offer the possibility to your Koala client to estimate in real-time what are the best Panda servers to connect to in function of your location, network parameters (bandwidth, packet loss...) and load.

- **OUT - TCP** on specific IP
  - 1) LUSs Services: **4042, 4043, 4044**  
 evo01.cern.ch (192.91.244.138)  
 evo01.caltech.edu (131.215.116.151)
  - 2) Proxy Services: **60001, 60002, 60003**  
 evo01.cern.ch (192.91.244.138)  
 evo01.caltech.edu (131.215.116.151)
  - 3) Topology Services: **10090**  
 evo01.cern.ch (192.91.244.138)
  - 4) SMTP service: **25**  
 vrvs01.caltech.edu(131.215.116.52)
- **IN/OUT - TCP** on specific IP
  - 1) File Sharing: **80**  
 evo02.cern.ch (192.91.244.139)

## APENDIX D. – Files created by EVO in home directory

<b>.Koala</b>		Main Koala directory.
	<b>lisa</b>	
	<b>plugins</b>	In this directory you can find all plugins.
	<b>EVO_Transcoder</b>	Directory, which contains the transcoder application.
	EVO_Transcoder.crc	CRCcChecking file
	EVO_Transcoder.exe	Application which mixes 4 video streams into one.
	EVO_MixerR.jar	Application which mixes/transcodes the audio streams from all participants.
	EVO_MixerR.jar.crc	CRC checking file
	EVO_Transcoder_win.zip	Transcoder zip file.
	EVOTools.properties	Saved settings of EVOTools plugin.
	fileXchangePI.jar	File exchange plugin.
	policy.JAT	JAVA policy file
	<b>ViEVO</b>	Directory which contains the ViEVO application.
	Default.bmp	The default bmp file for the picture mode in ViEVO.
	earth.bkg,...	Background image for the opengl window.
	Transparent.exe	Application for sharing desktop.
	ViEVO.crc	CRC checking file
	ViEVO.exe	ViEVO application.
	Vievo_win.zip	ViEVO application zip file.
	Koala.log	Output from the java console.
	Koala.properties	File created as soon as you quit Koala. Contains the last used Koala environment settings.
	missingStrings.txt	Depends of your language selection, it will dynamically includes the missing translation words.
	Plugins.xml	EVO XML plugins definition file