

## HOW TO RUN A SIMULCAST or How to connect a local event with participants at a distance

The potential of a simulcast, which is broadcasting a local event live online is extraordinary, not only because of reaching people at a distance but also because of the potential of getting great speakers and the lasting benefits of recordings.

How though can you create a simulcast that doesn't cost much and is easy to set-up? How can this be done with a maximum of interactivity so that participants at a distance feel involved? How do you avoid echoing?

This has been my study project at the end of this year and after having run 5 different sessions over a period of several weeks and having learned some tips and tricks from a simulcast master, I have come to understand the set-up and the technicalities involved in doing this.

The following is a brief description of 3 different scenarios, 2 of which are 'low-tech' and one which was 'high-tech'.

### A LOW TECH VERSION OF A SIMULCAST

#### Scenario 1: Simulcating a conference

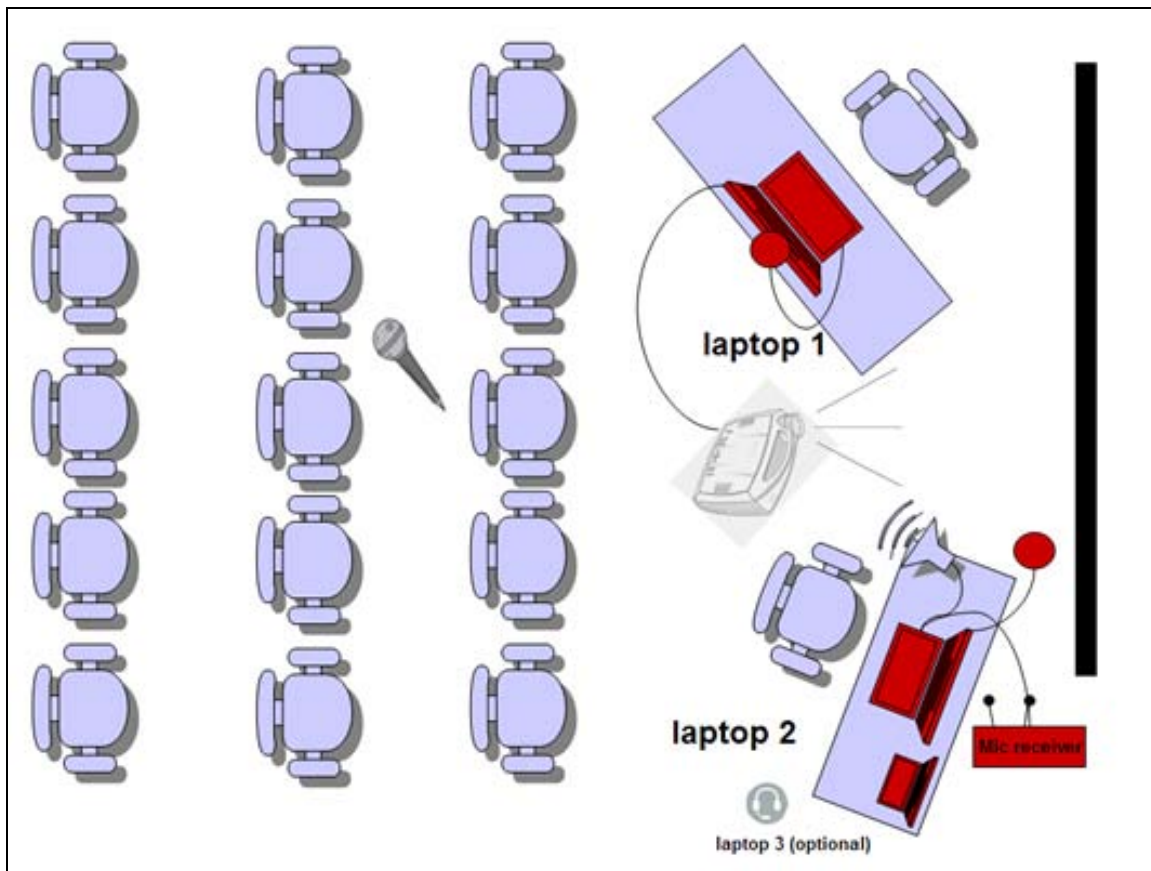
Example: The IATET conference in Stuttgart at the ISD GmbH building

With 26 local attendees and 65 unique visitors at a distance, this simulcast has certainly proved to be very successful. And the set-up was completely low tech.

Recordings can be watched on the conference website <http://iatet-events.ning.com/>

#### Equipment

- virtual classroom software
- a fast internet connection
- two laptops (optionally a 3<sup>rd</sup> laptop)
- laptop no1 connected to a webcam with built-in mic
- laptop no2 connected to a webcam to capture the audience
- laptop no2 connected to table top speakers (when required)
- connected to laptop 2 connected to a professional cordless microphone (Sennheiser EW 135G2 Bundle)



**Image 1.1** Conference facilities

### The presentations

In the above graphic, the black bar on the right is the main presentation screen and the main laptop is connected to a beamer which projects the slides onto the screen as is the case in every conference. This is 'business as usual'.

During a simulcast the slides however, instead of just showing the MS PowerPoint Slide show, instead the slides are uploaded in the virtual classroom software. The guest speaker then forwards the slides by hitting the arrow keys on the keyboard or by clicking the "Forward" button with a mouse. NOTE: Whether the virtual classroom displays the slides properly should be tested because in our experience with Adobe for example, the pptx format proved unreliable.

Running the slides in the virtual environment ensures that participants at a distance can see them in synch with the participants in the 'real' conference room.

To put the presenter at ease we displayed the full-screen view during his or her presentation. The guest speakers did not see the text chat nor the webcams. Those could only be seen by the participants at a distance. - See Image 1.2

After the presentation we switched the layout from the slides layout to the discussion layout and we displayed the discussion view onto the main presentation area so that everybody in the real conferencing area and online would see the same view which was an enlarged text chat, enlarged webcams but no slides. - See *image 1.4 and 1.5*.

To ensure that not only the guest speaker could be heard but also the participants present locally we passed a cordless microphone around to whoever wanted to speak. The cordless Sennheiser EW 135G2 Bundle is a professional microphone and it has a receiver station. In order for this receiver station to connect to laptop 2 an additional cable was necessary. It is called a 'Klinkenkabel 3,5mm' in German and is a cable for the mic jack for the laptop.

I opted to rent this equipment from a professional audio, light and performance technology vendor in Freiburg. The Sennheiser mic is said to cost 650 EUR and I got it for 35 EUR rent for one day.

Sennheiser cordless mics with several frequencies may cost anything around 100 EUR when ordered online. It is only advisable to go for the more expensive version because of a certain fixed frequency which can not easily be disturbed by mobile phones or other radio frequency using equipment. This might be the case at larger conferences or in taller buildings but was certainly a little over the top for this type of local conference.



**Image 1.2**

On this image you see the full-screen view on the main screen and the 'normal view' in the virtual venue. (See netbook)

This 'normal participant view' displays the slides smaller on the right hand side and the webcam window, the participant grid and the text chat in a its original settings on the left hand side.

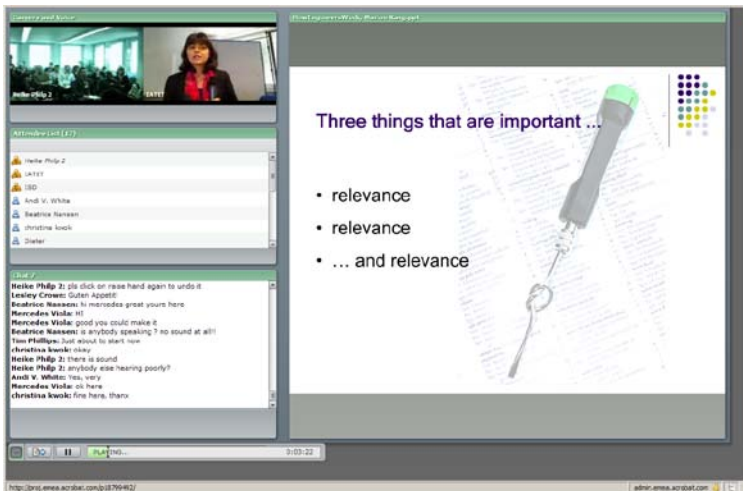
In this picture you also see that we placed the webcam on a tripod so that we capture the complete room.

It is advisable to have a webcam with manual zoom. My auto-focus did not work well but I believe the conference participants did not mind to be really sharp and good looking.

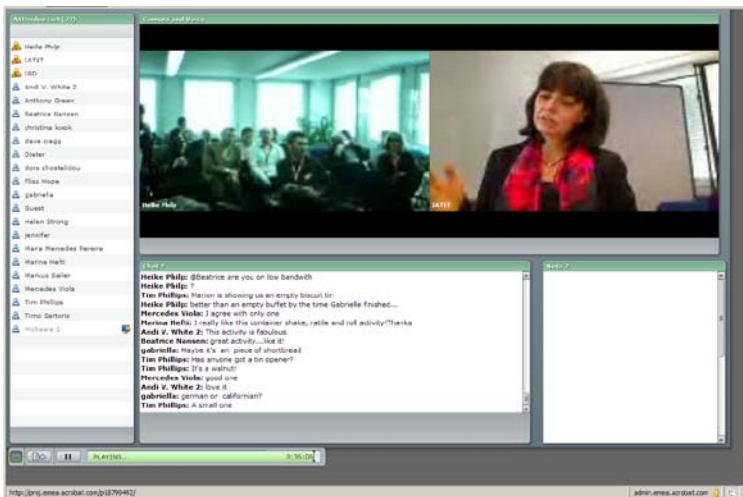


**Image 1.3**  
Table top speakers only plugged in when somebody at a distance wanted to speak. Interestingly this is not often the case. Everybody likes to text chat but not many actually want to voice chat.

However this is needed in case when a guest speaker presents from the distance.



**Image 1.4**  
The 'Slide Show' layout which the participants saw during the presentations.



**Image 1.5**  
This shows the 'Discussion' layout which was used for the Q&A sessions.

## Lessons learned

Technically speaking it worked very well because we had two microphones and when temporarily the hand-held mic malfunctioned (low batteries) we could use the built-in mic of laptop no 1 and we could switch back and forth.

Later on I found out that the cable from the receiver to the microphone should have been a mono and not a stereo. Laptop no 2 is only a netbook and this happened to have only a mono mic jack. Normal notebooks have stereo. My friend Mero said, that this could have resulted in the microphone not working but for some strange and wonderful reasons it did work.

What I would have changed though the next time around is that I would prepare the guest speakers for this technical set-up.

Every speaker is nervous and the technology on top did not help. Also the speakers knew that they get recorded which added to their nervousness. On the other hand, they also felt that due to the simulcast and the virtual classroom software they could not do what they would have normally done, namely show a video or show a website.

To use multi-media is possible in a virtual classroom but needs to be trained upfront and this is an area which I would do differently the next time round. I would spend time with the presenters explaining them the potential and the beauty of the virtual classroom technology which allows them to show and screenshare almost everything.

What proved to be very positive indeed is to have laptop no 3. Laptop no 3 is optional but a really nice to have. It allows you to 'listen-in' to what the participants hear. Now, this is something I learned from my friend Mero who has been doing video conferencing and web conferencing for years as well as simulcasting it and it proved to be very valuable because this way I could detect that the built-in mic of laptop no 1 was very choppy first thing in the morning. And we tested this built-in mic at length and found it to be excellent during the many hours of testing prior to the event. But for some strange and wonderful reasons, it did not work. This might have been bandwidth – who knows. Funny enough later on in the afternoon it worked fine when the hand-held mic gave up due to missing batteries (it took me a while to get this as the display on the mic showed two thirds still full but it also might have been the mono effect – who knows).

So when the built in mic was choppy we asked our dear guest speakers to use the hand-held mic because the quality of this mic was superior. Something I would not have done to not cause any discomfort for the speakers themselves but listening into the choppy stream did not let me hesitate to make this decision and the quality of the sound was great. So, our guest speakers sat at the table in front holding a microphone. Funny.

Next time I would buy a hand-held mic for future simulcasts.

**ANOTHER LOW TECH VERSION**

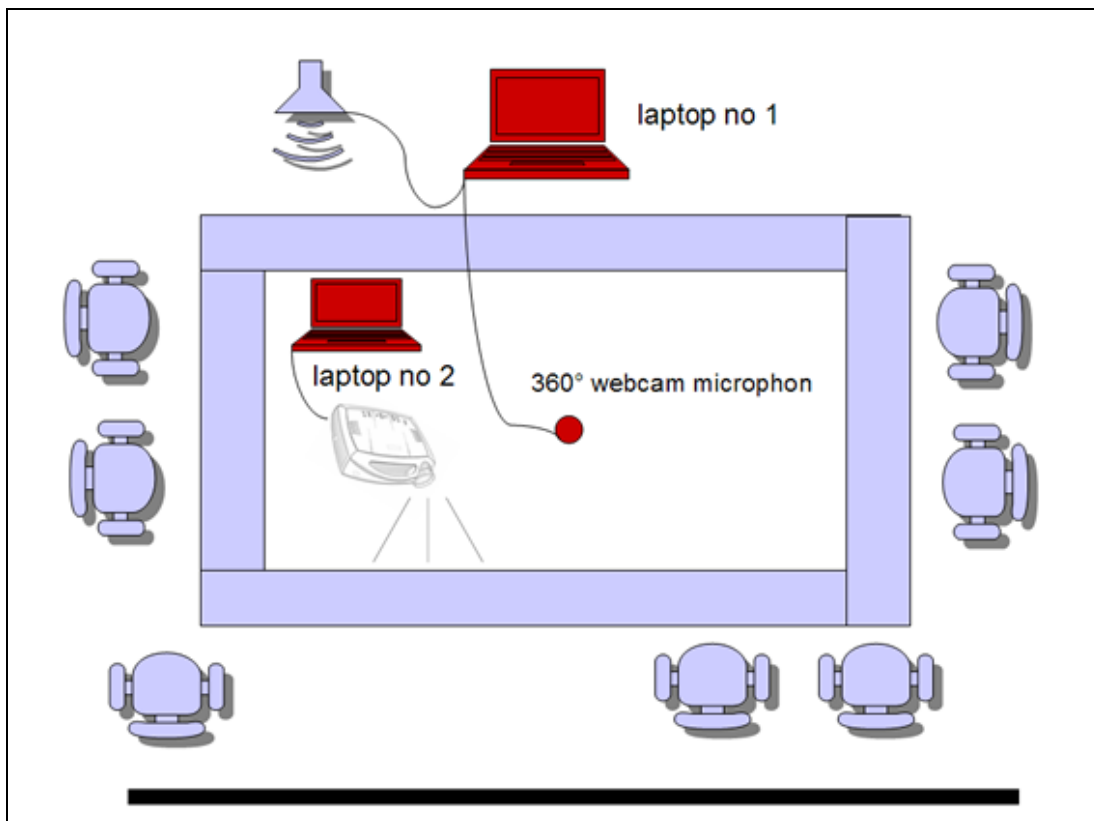
**Scenario 2: A meeting of a small group of people simulcasted in Second Life**

Example: An EU project meeting in Vienna

15 participants in an a University building sit around a set of tables in square formation and connected to approx 12 participants in Second Life.

**Equipment**

- Second Life/ Video conferencing/ virtual classroom software
- a fast WLAN connection to the Uni server
- laptop no1 connected to a 360° webcam mic
- laptop no1 connected to a set of speakers
- laptop no 2 connected to a projector
- listen-in headset connected to laptop no 2 (optional)



This is probably the most typical setting of a skype conference or a similar simulcast, to connect a local meeting online. Sometimes this may also be a small group of language learners with a teacher at a distance or two groups of people connected via a video or webconferencing system.

Whatever the case maybe, the interesting situation here is that speakers and microphones have to be connected in such a way, that the 'looping echo' (what I call the

'audio supergau') does not occur and the only way of avoiding this is to connect all of the audio out (speakers) as well as in (mic) to one and the same laptop. At this laptop one person has to switch off the mic, by enabling and disabling the TALK button so that when those at a distance speak that it will reduce the echo for the participants (not needed for Skype which has a built in echo cancellation).

The important message here though is that when this is set-up in the above described way, that no looping echo will occur in the very real meeting venue. This was the little 'trick' that we discovered after about 1 week of intensive testing.

### **Lessons learned**

All of the above really and that if all participants have access to the Internet to a very fast University server, it is not advisable that all 15 enter Second Life.

To ensure a nice flow of conversation it would have been better if the one who controls the microphone gives a signal as to when the group can speak. A hand sign of some sort by the person controlling the mic would have been advantageous. All of the meeting participants can talk at the same time because the webcam mic in the middle picks up all of the sounds of the room but for some reason, we kind of were shy or did not really understand this. So conversations were slow but only because this was new and not because of the audio-setup.

## A HIGH TECH VERSION

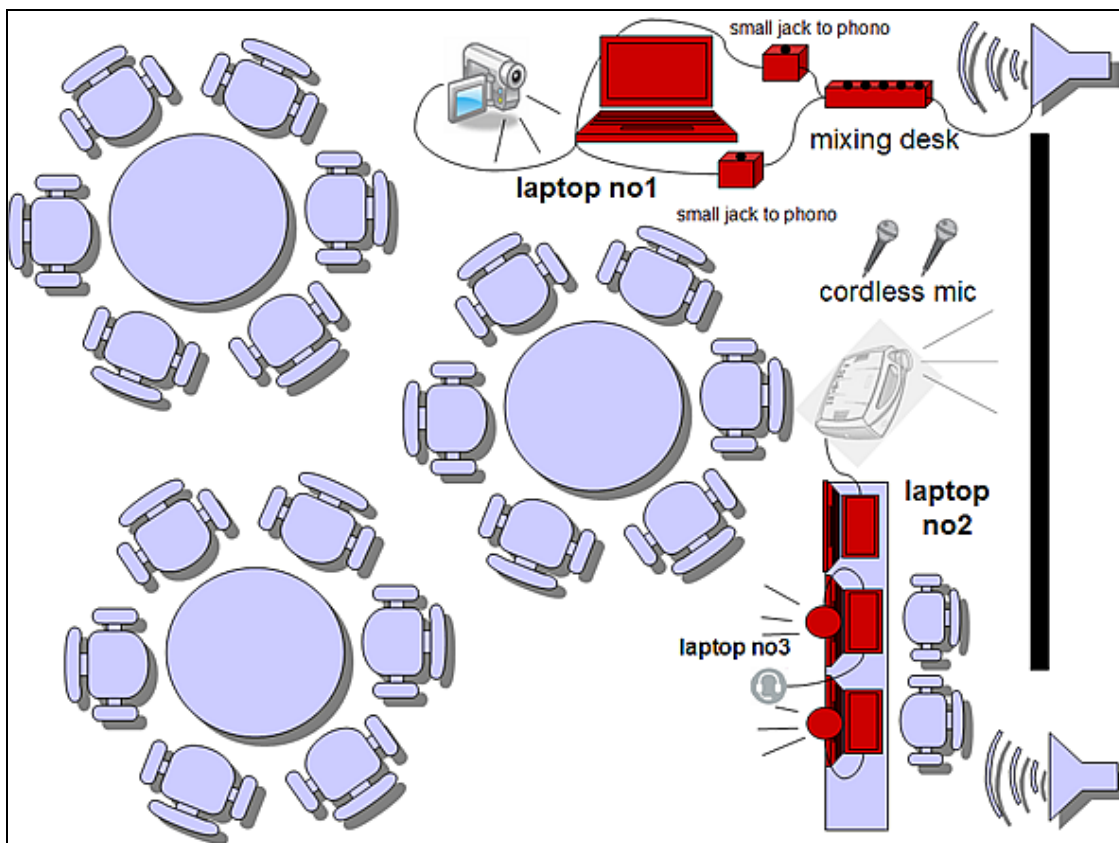
### Scenario 3: Simulcasting a conference

Example: Online Educa 2009 in Berlin, room Tegel, the corporate learning event of Jay Cross which was simulcasted over the two days.

Sample recordings of the Pecha Kucha event <http://tinyurl.com/pechakucha-oeb2009>

#### Equipment

- virtual classroom software
- laptop no1 connected to camcorder (on tripod), mic in and mic out
- laptop no 2 connected to projector
- some headphones on laptop no 3 to be able to listen into what the participants at a distance hear (to detect possible echos or lags)
- a mixing desk connected to 2 table mics, 2 cordless mics and 2 standing speakers
- 2 LAN connections
- 2 cordless microphones
- 2 standing loud speakers
- 2 phonos for a mono connection to the laptop (small jack to phono cable)
- 2 cables for small jacks to phono



Now I really have to disappoint the greatest of technically interested simulcast fans when trying to describe the the technical set-up of this high-tech equipment.

If you ever wanted to know in detail what all of this equipment is and what settings were done on the mixing desk then I can forward your enquiry to my simulcast master Mero Meinrad Rombach of Acovis.de who has been doing video conferencing, webconferencing and professional event management with multi-media for a good 12 years. I am but his humble apprentice.

However, there are a couple of principles which I can share and of course also some pictures which I took.

The strangest and most wondersome thing technically speaking which he made possible is to channel a high-powered audio system with two large standing speakers, two table-top microphones and two cordless hand-held microphones into a mini ASUS Eee. The key to this technical marvel was two pandora boxes. – *Images 3.4 and 3.5*

The second strange and most wondersome miracle for me was to understand that a mixing desk is designed avoid the 'looping echo' or (audio supergau). Something that naturally should happen if you have a mic permanently open and the speakers permanently enabled.

Normally when you speak into a microphone and hear this very sound coming out of the speakers ... how come that the very microphone does not pick up this sound again and feed it back into the speakers where it should theoretically create this looping supergau?

And this is what I was wondering in my mind forever during the preparations for the simulcasts and during endless testing and all. In the end I learned that the level microphone of the microphone has to be adjusted with great care so as to avoid this loop. This is why you see those in a rock-concert nearly bite into the microphones because this is the only way they are set-up. More than 15 cm away from the mouth and their decibel sensitivity adjusted in countless "1-2-3 testing – testing" paraphrases is the key of getting this to work. The rest of echo cancellation is done by this sophisticated technology.



**Image 3.1**  
This fantastic ASUS Netbook Eee did all of these amazing jobs of transferring the audio from a large audio system into the internet and vice versa.



**Image 3.2**  
Close up of mic in and audio out and USB to camcorder.



**Image 3.3**  
Camcorder on tripod.



**Image 3.4**  
Small jack on phono from the mixing desk into this phono box and then in mono with a small jack cable out to the netbook. This was the secret pandora box.



**Image 3.5**  
Small mono jack for phono (kleine Klinke auf Cinch in German) for the audio from the distance to be transmitted audible in the room. This was especially important for the video conferencing with Jon Husband, Harald Jarcke and Kevin Wheeler who joined live online.



**Image 3.6**  
The mixing desk and these big boxes in front are just for the hand-held microphones.



**Image 3.7**  
All high tech stuff and lots of cables and here you see the table top microphones too. In our case we activated the hand-held mics rather than these table-top mics.

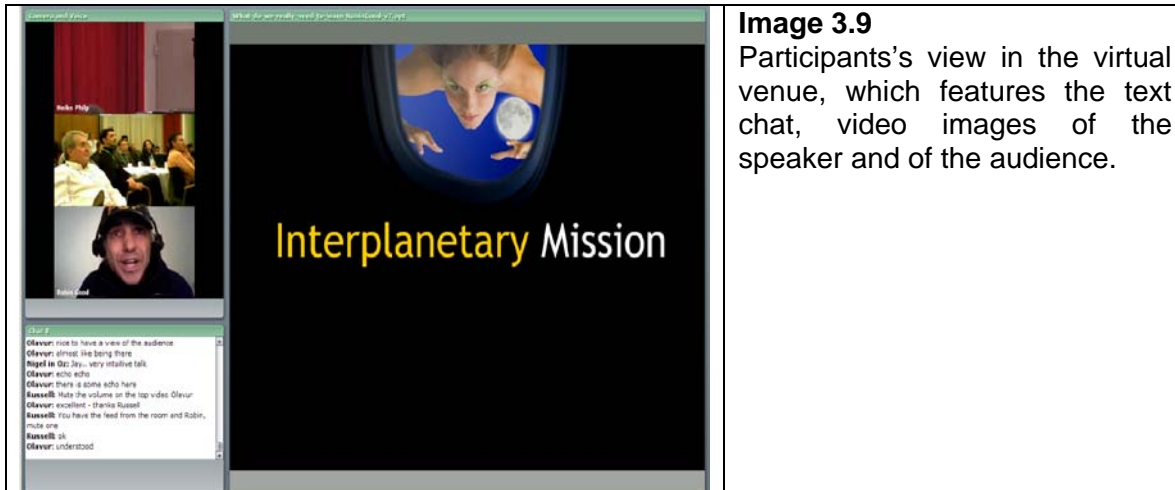
### Presentations

Here we used the same principle as before, namely full screen view for the guest speaker and the regular participants view with webcams directed at the audience and a camcorder for the speaker.

This camcorder has a simple USB plug and has to be set not to record and then it works like a webcam in almost any system.



**Image 3.8**  
Participants' view in the main 'real' venue projected by a beamer on the main screen.



**Image 3.9**  
Participants's view in the virtual venue, which features the text chat, video images of the speaker and of the audience.

**Lessons learned**

Technically speaking we had very little problems with the audio. That was truly amazing and a fantastic job by Mero and when Jay told us that another skype conference in another room of the Online Educa produced really poor audio, high squeeking loops and an almost incomprehensible voice despite the fact they used Skype, then I am left with awe at the handywork of my friend.

So, the one thing I would have done is to hire him for assured success. Aparently to hire Mero is cheaper than to hire all of the equipment at the conference because Mero has a car load of equipment which he normally brings along.

The only bigger technical glitch happened at the end of the two day simulcasting at the time of the video festival. This is the one that I really messed up and I guess I was just tired and didn't think or else I would have prepared this in my mind and would have connected the speakers to the laptop which had all the videos ready and layed out.

A camcorder is not really needed if there is a webcam or two which can be focused manually and the quality of the webcams were at times superior to the camcorder because they were more sensitive to the lights of a room without daylight. So, incapable of setting up proper sensitivity of the camcorder, you will find that most images are a little dark. This may have also been caused by the reflection of the big screen and the presenter standing in front of the screen at times.

So next time I will not trouble myself with a camcorder anymore. A tripod though is recommendable so that there can be a little overview and as a tecchy to avoid running into the picture every so often.

**Summary**

A simulcast is neither expensive nor unlearnable and does not necessarily require sophisticated equipment nor IT personnell. Encouraged by the explanations above I hope that many more will give this a try so as to reduce the carbon footprint of each conference. This way not only can participants at a distance enjoy a fabulous learning

experience but above all, the great know-how shared at these conference can be recorded for later viewing. Isn't this worth the effort?

Already, my biggest dream of seeing the Online Educa go online has come true, thanks to Jay Cross who trusted me. Kudos to Jay who, a mere 10 days prior to this event gave me the go-ahead and announced the simulcast in his larger network.

### About the author



Heike Philp is founder and managing director of LANCELOT School GmbH, an accredited training center for language trainers in the use of virtual classroom technology. Her background has been in education for more than 20 years and several years of teaching German in Japan and the UK. Her passion for real-time internet communication technology led her to co-initiate two EU funded projects, LANCELOT (2005-2007) about language learning in virtual classrooms (LANguage Learning with CERtified Live Online Teachers) and AVALON, which is ongoing and explores the use of virtual worlds for practising the language (Access to Virtual and Action Learning Live ONLINE). LANCELOT School is the host of the Virtual Round Table Conference.