Active Remote Participant Videoconference setup for IETF working groups
IETF88 experiment/setup recommendations

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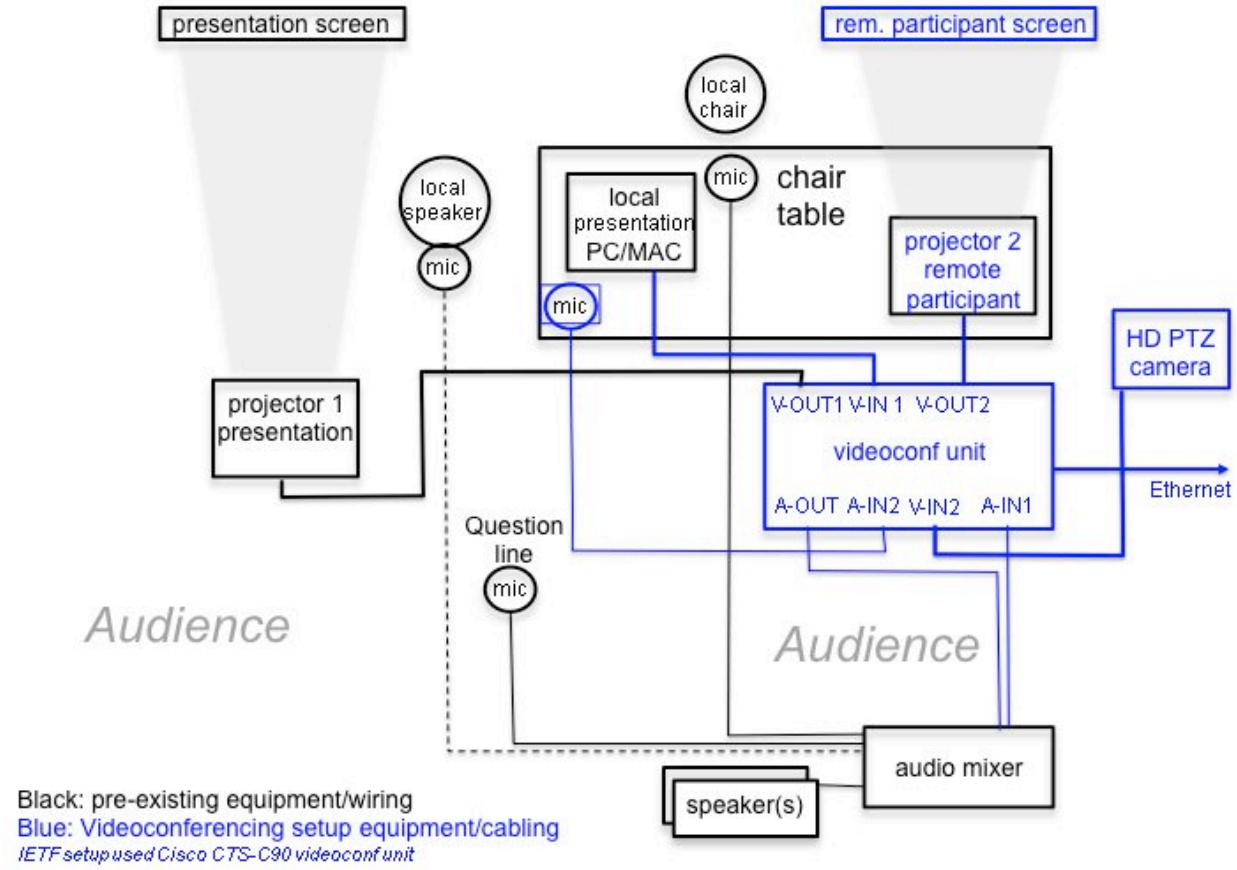
Summary

At IETF88 we set up active remote speaker videoconferencing for two working groups where one chair each could not be present in person (6man and mboned). The setup was perceived to be well working by both in-room chair/speaker/audience as well as the remote working group chairs. We encourage the IETF to work towards supporting this type of setup in upcoming IETFs on an ongoing basis to help dealing with travel issues of important contributors. A good start would be to set up a large and a small meeting room and schedule meetings into these two rooms if it is known that a chair and/or speaker cannot be present in person. We are happy to help make this happen.



Experience

We explain the aspects of the setup that we think are necessary and sufficient for the desired experience: Seamless integration of a remote speaker or chair into the existing IETF working group meeting workflow. Allow the remote speaker/chair to have audio/video presence in the room. Allow the remote participant to see and hear the room well, allow presentations from the room to be seen by the remote participant and vice versa.

In addition, easy setup and as much as possible zero-touch operations during the meeting are covered.

Meeting Room

The main projector/screen was used as solely for presentations. These did come either from a local presenter/chairs PC/Mac or from the remote participant. In the case of the first WG, 6man, the remote chair, Ole Troan in Oslo was driving the whole set of presentations for the WG meeting from his Mac.

Audio from the remote participant was passed into the pre-existing in-room audio-mixer such that the remote participant was equally audible like locally present chair, speaker or question-line via in-room speakers. There where no audio quality issues nor echo such as experienced often in prior experiments. The audio quality was perceived to be very good.

To avoid feedback loops, the pre-existing microphones in the room (local chair, speaker, question lines) are always set up to only pick up audio very close by the microphone. This limits the ability of a remote participant to listen in to the room audio equally to a local chair/speaker. For this reason, we set up an additional much more sensitive microphone near the speaker table connected directly into the videoconference unit. Its output was fed only to the remote participant but not back into the room. This improved the remote participants audio experience to be similar to that of a local speaker/chair.

Camera video from the remote participant was displayed from a second (IETF) projector to a screen positioned behind the speaker table to give the audience an experience similar to the local presence of a chair. A camera with Pan/Tilt/Zoom (PTZ) was positioned on a tripod near the speaker table to provide room video to the remote participant.

PTZ allowed the remote participant to zoom in on chair, audience, speaker or question line. This camera video was also shown picture-in-picture on the remote-participant screen in the room. This increased presence of the remote participant by allowing the audience to see what the remote participant was looking at.

Remote Participants

The first remote chair had a dedicated desktop videoconference device with two screens and VGA output from his PC connected into the videoconference device for presentation sharing with the meeting room.

In result he could see full-screen the meeting room and the presentation from the meeting room. He could equally present from his PC into the room.

The first chair was not using any headset, instead the echo cancellation in both the videoconference devices (meeting room and remote participant) where inhibiting any form of echo/feedback.

The second remote chair (Greg Shepherd) was solely using a software videoconference application he downloaded an hour before the meeting to his PC. He could equally see room video and presentations. While not tested, he could equally present and use two screens.

Using only a PC with software, this remote participant was asked to use a headset to avoid any form of feedback/echo due to unknown quality of the PCs echo cancellation.

Network

For the first chair, IPv6 was used between his home location and the conference room. He had > 5 Mbps bidirectional which together with the better video camera on his desktop endpoint gave excellent video quality of the remote speaker in the room.

For the second chair, IPv4 was used, and only T1 speed was available bi-directionally. Due to speed and PC camera, the quality of the remote speaker video in the meeting room was quite acceptable.

Operations

After experimenting to arrive at the above described setup and pre-configuring the videoconference unit for it, installation/placement of the equipment was mostly done by the hotel installer/AV people over night, we just had to plug together some cables. The setup only requires one audio in and one audio out cable to run to the in-room mixer which where provided by the AV team.

Before the meeting, it was only necessary to switch on projectors, videoconference unit and place a "phone-call" to the remote participant via the IR of the videoconference unit - or have the remote participant call in. Dialing was by IPv6 address or URI.

After the call is set up, the conference is almost zero-touch. When changing from remote-participant presenter to local presenter, one key on the IR had to be pressed. To change the PTZ of the in-room camera, a preset key on the IR could be pressed, or the remote participant could control it from his device/software.

Worst case, if the conference unit would have failed or misbehaved (which it did not), it would have only been necessary to replug the local presenters PC to the VGA cable directly to the projector instead of the videoconference unit, therefore the setup poses no risk of interrupting the smooth operations of the working group meeting.

Likewise, one of the main challenge in the past has been connecting a random presenter PC to the projector. In our setup, the videoconference unit seemed to be able to accept a wider variety of input format, converting it to what the projector supported, therefore even reducing this issue.

Room 1 (6man)

Room 2 (mboned) - more ad-hoc, bringing over equipment and setting it up in 20 minutes.