Max/MSP/Jitter patches for the live video frame rate control testbed

The following Max/MSP/Jitter patches implement the two frame rate control policies compared in [2]. In particular, the patches 'Send_ref1.maxpat' and 'Recv_ref1.maxpat' implement the sender and receiver for the frame rate control policy from [1], while 'Send_ours.maxpat' and 'Recv_ours.maxpat' implement the sender and receiver for the frame rate control policy based on instantaneous motion from [2].

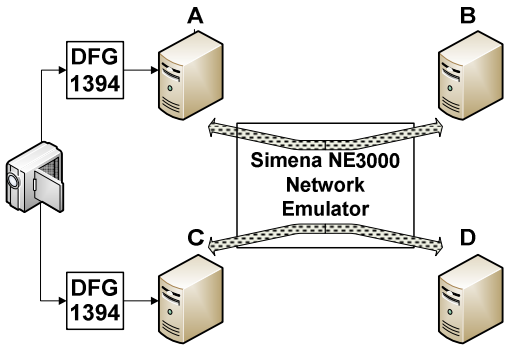

Figure 1. Experimental testbed.

For the testbed structure shown in Fig. 1, 'Send_ref1.maxpat' and 'Recv_ref1.maxpat' should run, say, on computers A and B, respectively, while 'Send_ours.maxpat' and 'Recv_ours.maxpat' would then run on computers C and D, respectively.

The Max/MSP/Jitter objects 'mcl.jit.motion.*' compute the D_h value in [1]-[2], which measures the motion intensity between two frames. Object 'mcl.jit.motion.mxe' is for use on Windows systems, and 'mcl.jit.motion.mxo' is for MacOS.

In addition to the above, to run the testbed, you will need the encoder objects for computers A and C, and decoder objects for B and D. Please download the ones appropriate for your system (Windows or MacOS) from the **mcl.jit** library website: http://www.sfu.ca/~ibajic/mcl.jit.html

References

[1] H. Song and C.-C. Jay Kuo, "Rate control for low-bit-rate video via variable-encoding frame rates," *IEEE Trans. Circuits Syst. Video Technol.*, vol. 11, no. 4, pp. 512-521, Apr. 2001.

[2] I. V. Bajić and X. Ma, "A testbed and methodology for comparing live video frame rate control methods," accepted with minor revisions for publication in *IEEE Signal Processing Letters*, October 2010.