

## Z24 Coursework, Jan 2004.

1. You have just been employed as the chief software engineer for a company that aims to produce video conferencing software. Draw a block diagram of the entire (one-way) video pipeline from H.261 video capture at the sender, through network transmission over a constant bitrate RTP session, to video display at the receiver. Indicate the feedback loops present in the pipeline, and what they control. Indicate also where the principle sources of delay arise, giving an explanation of why the delay occurs.
2. The paper “*A Survey of Packet-Loss Recovery Techniques for Streaming Audio*” by Perkins, Hodson and Hardman (available from <http://nrg.cs.ucl.ac.uk/mjh/AudioRecovery.pdf>) gives a fairly complete discussion of how audio streams can be protected against packet loss. Some of the techniques may be applied to video, some need modification to apply for video, and some don't apply at all. Choose two techniques that apply, two that don't apply, and one that can be modified, and discuss why you believe the choices apply or don't apply, or what modifications are needed.

Your answer should not exceed 2000 words (approximately 4 pages of text) plus diagrams. Your answer should be submitted, on paper, to the CS departmental office no later than **12 noon Monday 16<sup>th</sup> Feb 2004.**