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Rick Baker
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Fax: 075 931005 (2 pages)

Dear Mr. Baker,

Thank you for the faxes that you sent over the last couple of weeks. Please accept my apologies for the delay in responding; I have been overseas for the past fortnight, and only returned to the office yesterday.

My reading of your query is that your requirement is for the transfer of high quality video signals to a very wide audience, which is why you have an interest in systems based on use of the ordinary telephone lines. There are two approaches, depending on whether you send the signal in real-time or not.

Real-time (or "live") video transmission is possible on the ordinary telephone network, but only at a relatively low quality. We are aware of videophones under development specifically for this network, that use about 120 x 96 picture samples, and about 5 - 7 frames per second. The quality is not high, and the pictures are only usable on a small screen. They'd look terrible if you displayed them on a large screen TV, for example. The ISDN network allows higher quality video to be transmitted, and has led to the development of ISDN videophones (the subject of our media attention) and videoconference equipment. Using one ISDN line gives quality quite adequate for talking heads on a small screen but, again, very active material or a large display would show up weaknesses. Videophones for this application are likely to be available next year. Higher quality requires more ISDN lines and very expensive videoconference equipment.

The non-realtime solution is to do as you suggest and transmit the information at a low rate, store it and play it back in real-time. This is possible, but you must be aware of the requirements for storage. Any system that can accept data at low speed and record onto videotape will be extremely expensive. An alternative solution would be storage onto computer (hard) disk. This is possible, and is doable at a reasonable quality using the just completed "MPEG" system (MPEG stands for Moving Picture Experts Group - it's just one of the various international standards bodies active in this field; in fact, that's where I've been the last two weeks!). The time expansion using this system over the ordinary telephone

network would be about 125, though: to transmit 1 minute of real time video would require over two hours. The ISDN would be better - expansion by about 20 times. You should also be aware that this is a very new standard (it hasn't even been formally agreed yet) and, while there are various developments around the world, you cannot (as far as I am aware) buy any real equipment for it yet.

I hope that has been of some assistance to you. I am not familiar with the "major breakthrough" to which you referred, from the British media reports. I would be wary of any non-standard system in this area, though. (I'm also wary of "major breakthroughs" reported in the media in general!) They may have been referring to the MPEG system discussed above, I don't know.

Please [illegible] again if you wish to discuss any of the above.

Yours sincerely

Michael Biggar
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