

Title: Report on BT/France Telecom H.320 codec test over ATM networks
Source: UK (BT)
Purpose: For information

1. Introduction

This document reports on a successful experimental test accomplished on 18th August 1994 for connecting existing H.320 codecs to ATM networks between the UK and France. A similar UK based experiment has been previously reported in AVC-651.

The object of the test was to establish a videoconference connection between BT Labs at Ipswich (UK) and France Telecom/CNET Laboratories at Lannion (France) using the European ATM Pilot Trial Network and two H.320 terminals of different manufacture.

2. Configuration details

The test configuration is shown in Figure 1 and consisted of a BT VC2100 H.320 videoconference terminal located at BT Labs, connected to a Telsat Cameris H.320 terminal located at CNET Labs. The European ATM Trial network comprised of a number of cross-connect ATM switches of different manufacture.

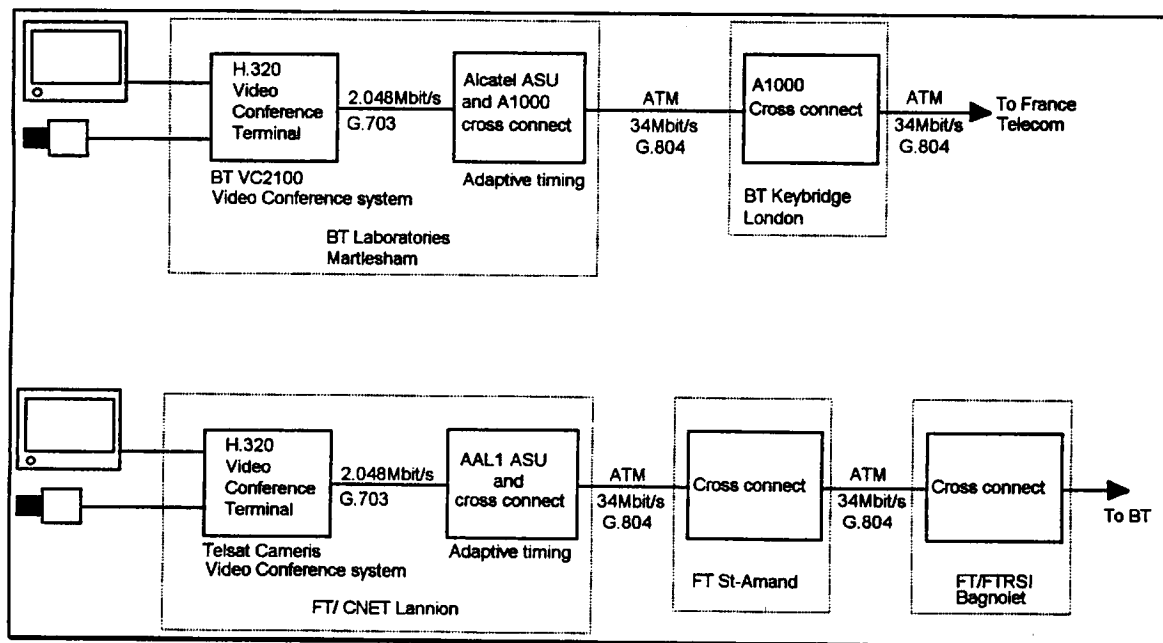


Figure 1: A schematic of the H.320/ATM test configuration between UK and France

The video conference was run at a rate of 1920Kbit/s (the maximum for the H.320 video codecs), including 64kbit/s for the audio channel. This is the codec's maximum rate over a G.704 2.048Mbit/s channel. A Virtual Path (VP) and Virtual Circuit (VC) were configured for a bandwidth of 7500 cells/sec to accommodate the G.704 2.048 Mbit/s channel.

Note that 2.048 Mbit/s actually correspond to:

$$\text{cell rate} = \frac{2.048E6 \times 53}{47} \frac{1}{47 \times 8} = 6142.15 \text{ cells/sec}$$

An initial VP of 7500 cells/sec was set up to allow sufficient overhead such that any CDV would not cause the peak rate policing algorithm to discard cells.

Once the connection had been established the videoconference proceeded and good video quality was obtained with no visible cell-loss degradation occurring. During the test the codecs were reconfigured to work over a range of bit rates, within the 2.048 Mbit/s channel, to check codec-to-codec signalling; there were no problems and picture quality remained good.

The VP capacity was later reduced to 6143 cells/sec, the minimum required for a 2Mbits/sec link over an ATM link using AAL1 adaptation. Again, no visible video degradation was observed.

It was agreed with our French colleagues that the experiment would be repeated around November, when CNET takes delivery of new ATM cross connect and AAL1 adaptation equipment.

3. Conclusions and comments

This test demonstrated the compatibility and interoperability of two different H.320 terminals over an ATM network using a number of different ATM cross connect switches. The quality of the link and coded pictures was very good and is the same as an equivalent 2Mbit/s ISDN link. This test and other similar test between other organisations working on the European ATM Pilot Trial has instilled confidence in the system, such that the opening ceremony for the trial network will be by a H.320 videoconference connection.

It should be noted that was a very preliminary test and does not give a clear indication of what the performance would be with a heavily loaded network and the resulting impact on the coded pictures. More stringent, formal testing is planned for the future together with further inter-operability tests with other participants in the European ATM Trial. Further tests will also employ SRTS timing, policing and formal subjective testing.

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