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Study Group 15   October 1996
Experts Group for Video Coding and Systems
in ATM and other Environments

(Rapporteur's Group on part of Q.2&3/15)

Study Group 15 - CONTRIBUTION

Question: 2/15

SOURCE: IBM

TITLE: ATM Multi-point in H.310 Multi-party conferences

Purpose: Discussion

ABSTRACT: This contribution suggests the use of ATM multi-point call facilities in the implementation of H.310 multi-party conferences.

INTRODUCTION

The H.310 standard targets video conferencing over ATM.. One of the major strengths of ATM is its ability to setup multi-point calls. This feature is supported in both Q.2931 and the ATM Forum's UNI 3.1 and will be further enhanced to include leaf initiated joins in later versions of these specifications. It is our belief that this feature should be exploited in H.310 to reduce bandwidth usage associated with high quality video transmissions over ATM networks.

MULTI-POINT CALL SETUP IN H.310

Multi-party conferences are defined for H.320 in H.231 for the Multi-point Control Units and H.243 for the procedures for the establishment of communications between three or more terminals. In such conferences, MCU capabilities determine the audio and video mixing and the final audio-visual presentation viewed by conference participants. This presentation may be the video image of the active speaker and the audio mix of all participants. The MCU may optionally mix video from multiple participants to place multiple smaller images on the video image. In a multi-party conference most terminals view the same final audio-visual presentation. As depicted in Figure 1, ATM multi-point calls may save significant bandwidth in the transmission of this presentation to all conference participants.
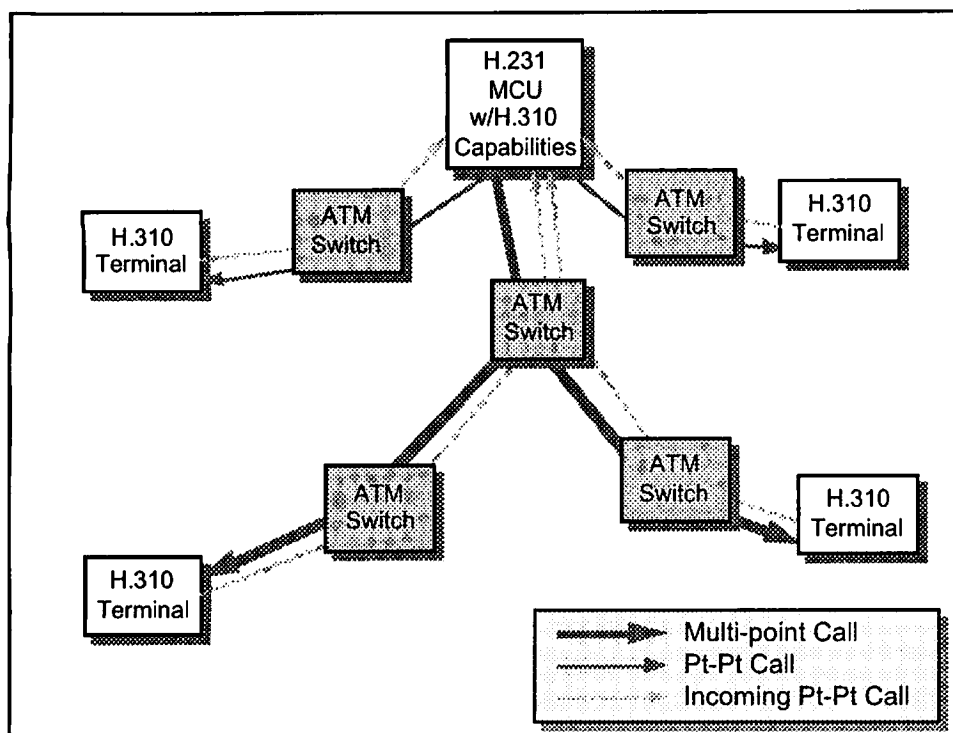
Figure 1 Multi-point calls from an MCU in a H.310 conferencing environment

Even though the audio and video are multicast, it is envisioned that a point-to-point H.245 control session exists between the MCU and each of the H.310 terminals.

H.310 needs to exploit the multi-point/multicast capabilities in ATM. Multicast/broadcast and H.231/H.243 functions need to be incorporated into H.245 and other recommendations (Possibly the T-series)..