

CETIA Heads European Consortium On Development of ATM Technology

Over the past three years, CETIA has headed a European Consortium which was set up to develop and evaluate a real-time, high quality, multi-party desktop, videoconferencing system using ATM technology. The project, known as 'DIVINE' (Deployment of Interpersonal Videoconferencing Systems on IBC Networks) was sponsored by the European Community under the auspices of its ACTS program (Advanced Communication Technologies and Services).

Earlier this year, CETIA successfully tested its ATM system during a three month period, which provided a link within the research community associated with the University of NICE. Three independent facilities, the Ecole Superior Science Informatique (ESSI) and Laboratory I3S, less than one mile apart from each other, located in the Sohia Antipolis region, were linked with the University of NICE, another 13.5 miles away. For this particular test project, the network facility set up a EuroSud155 pilot along the French Riviera.

Project Requirements

The technical objective, outlined by the DIVINE consortium, was to rapidly provide a large number of end-users with an attractive multipoint teleconferencing system which drew from the benefits offered by both the Quality of Services (QoS) and the broadband capability associated with ATM technology. In order to fairly test CETIA's ATM solution, the new

system would be installed in an environment where several end users were already accustomed to using videoconferencing, and would use the new ATM videoconferencing system on a daily basis.

The sites chosen for the next round of testing included, Thomson-CSF, ALCA-TEL and Ford Europe as well as a few small European organizations, all of which were spread throughout Europe. All the sites already had in place 400 videoconferencing terminals based on an ISDN system. The employees who had been using the ISDN system over the past two years, were not happy with its performance and were looking for ways to improve their videoconferencing technology. For example, the ISDN system would allow a participant to view only one other participant at a time. Furthermore, the video images themselves were not viewable in real-time mode and were choppy causing their online sessions to feel less interactive.

The participants' input was key in determining the features of CETIA's ATM solution. For example, they requested that their new system provide a high definition (CIF or higher) and fluent video image (a frame refreshment higher than 15 fps) in order to 'conference-in' all of the participants in a seamless real-time videoconference session. Additionally, they wanted their new terminal packages to include easy access to other groupware facility products, i.e., word processing, spreadsheet and database capabilities, as well as desktop "regular" telephone access.

CETIA's ATM Solution

A gateway was created which permitted the new ATM system and the current ISDN system to work together. All video images, as well as any pertinent data that needed to be shared during the videoconference was now broadcast to all of the participants by using the multicast capability associated with ATM switching. Hence, the new ATM solution eliminated the need to book, in advance, a Multipoint Central Unit (MCU) which is mandatory in ISDN networks for managing the uninterrupted flow of all the data and images transferred during a videoconference.

The new ATM solution offered additional benefits with the incorporation of multicasting. Every participant could now choose to display, on his/her screen, those participants and information he/she wished to see. The project participants were also given the ability to initiate a multi-party conference whenever needed without having to book, in advance, the MCU. The audio portion of the videoconference was now mixed on each individual terminal which permitted the participants to hear all other participants at the same time. Finally, the trial participants were able to present slideshows, as well as use a shared whiteboard to assist them during their video conference sessions.

Results

The ATM technology proved itself as a viable solution in linking a number of remote groups for important meetings. Pleased with the results produced during the initial part of the DIVINE project, users from THOMSON-CSF decided to implement the system in two additional locations around the Parisian suburbs. The ATM system used for this portion of the test has been built around two 25Mbps ATM switches interconnected by an ATM 155Mbps multimode fiber. The test will initially start with 2 terminals at these two locations with an aggressive plan to rapidly expand the number to 20 terminals by 1998.

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