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Title: Transmission of 384 kbit/s audio-visual signals in the ISDN

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In this paper, the problem of transmission of 384 kbit/s signals in the ISDN is raised and principal solutions are discussed.

The ISDN is designed for switching of signals with 64 kbit/s bit rate. To operate at 6 x 64 = 384 kbit/s, special means are required.

1. The switching unit itself is capable of handling a sequence of six 64 kbit/s channels in a predetermined order without changing the order from call to call or during a call (time slot sequence integrity). At present most switches in ISDN do not obey this requirement. But new switching units with this capability are available and announced.

2. The right order of the time slot sequence is managed by the terminals. This solution puts no requirements onto the network. Two variants can be distinguished:

2.1 Every 64 kbit/s signal is equipped with a framing structure, e.g. according to rec. Y221, where special indication bits allow for arranging the proper order of time slots at the receiving terminals.

2.2 After call set up, a training sequence is sent to the receiver, and the order of time slots is adjusted during this time. Afterwards transmission of audio-visual information starts. With the assumption that the switching unit does not rearrange the sequence during the call, this scheme can operate properly. It has to be checked whether this is true or not for all switching units from various manufacturers.

Conclusions

Three methods, their advantages and drawbacks have been presented to transmit and switch 384 kbit/s signals in the ISDN. Further consideration of this subject is encouraged and proposed.