Higher-Level Protocols

The introduction of new LAN technologies (such as 100VG-AnyLAN) is only one element in the development of multimedia networking. Higher-level protocols are also needed that can control and transfer stream data over multiple network hops. The Internet Engineering Task Force (IETF) and the International Telecommunications Union (ITU-T) have been working in this area.

IETF

The IETF has been developing protocols for a multiservice, packet-based network spanning the world (see Fig. 1), such as the Internet Stream Protocol (ST-II). This is a network-layer protocol roughly equivalent to Internet Protocol (IP), but specifically developed to support stream-based traffic. ST-II is being used in the Multimedia Teleservices section of the BERKOM-II program (see "Related Projects" on page 38).

The IETF has a number of groups looking at new protocols for multimedia that can be introduced into the worldwide Internet.

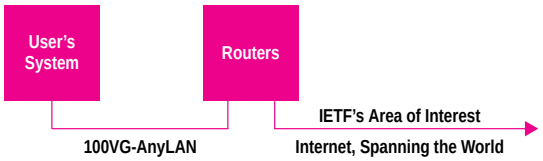

Fig. 1. IETF involvement in worldwide networks.

ITU-T Narrowband ISDN Standards

The ITU-T works towards developing standards for data transmission over an enhanced telephone network, such as ISDN or other digital circuits with fixed bit rates up to 2 Mbits/s (Fig. 2). 100VG-AnyLAN could provide desktop connections to these services. ITU-T Recommendation H.320 includes the following:

- H.261: Video CODEC for audiovisual services at $p \times 64$ kbits/s
- H.242: A system for establishing communication between audiovisual terminals
- H.221: A frame structure for a 64-to-1920-kbit/s channel in audiovisual teleservices
- Q.931/2: A D-channel signaling prot col.

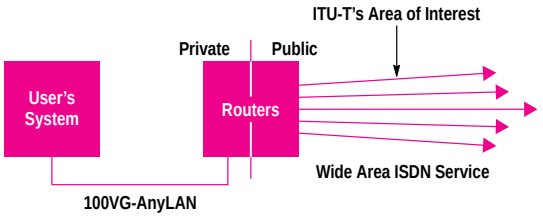

Fig. 2. ITU-T involvement in worldwide networks.