X.25: A Technical Overview

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- X.25

X.25 is a CCITT recommendation for a synchronous interface between a data
terminal equipment (DTE) operating in a packet mode and the data circuit
terminating equipment (DCE) on the public data network. The elements of the
interface is defined independently as:

    Physical - the mechanical, electrical, functional, and procedural
               characteristics to activate, maintain, and deactivate
               the physical connection between the DTE and DCE.

        Link - the link access procedure for data interchange across the
               link between the DTE and the DCE.

      Packet - the packet format and control procedures for the exchange of
               packets containing control information and user data between the
               DTE and the DCE.

These three levels are associated with the first three levels in the
International Standards Organization (ISO) Open System Interconnect (OSI)
Reference Model.

- Physical

The interface characteristics for a DTE connected to a packet switched
transmission service by a dedicated circuit or by a circuit switched network is
defined in Recommendation X.21 and X.21bis (V.24). Recommendation X.21 is only
for connections via a circuit-switched data network while X.21bis can be used
for connections via a circuit-switched data network and a telephone network.

- Link

The Link Access Procedure, LAP and LAPB, is the protocol and the frame format
is High-level Data Link Control (HDLC). LAPB defines procedures for link
set-up, error control, flow control, and link disconnect. The frames used
within the LAPB ensures error-free packets on the access link.

- Packet

The packet level procedures pertain to virtual calls on the X.25 access link,
and is independent of the internal protocol of the packet switched network.
Procedures are defined for the setting up and clearing of switched virtual
circuits, data transmission, and restart of switched and permanent circuits.

The packet format includes a user facility field which allow users to subscribe
to various features such as Closed User Group, Reverse charging, and fast
select.
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