Communication Protocols: HDLC, SDLC, X.25, Frame Relay, ATM

DL TC72

Objectives:

Base training of an engineer for the installation and maintenance of Digital Telecommunications and Internetworking systems.

This package provides the "background" for the next training on the ISDN network, on the Wide Area Networks and on Internet.

Educational Path:

The Educational Path of the Training Package covers the following subjects:

- **The communication architecture of the OSI model**
  Introduction to the communication protocols, The OSI reference model, Format of the information, The OSI model: Physical Level (level 1), Line Level (level 2), Network Level (level 3), Transfer Level (level 4), Session Level (level 5), Presentation Level (level 6), Application Level (level 7)
- **HDLC/SDLC Protocols**
  Introduction to the HDLC/SDLC Protocols, The structure of the HDLC frame, CONTROL field and type of frames, The HDLC frames: Information, Supervisory, Unnumbered, Examples of HDLC session: NRM and ABM connection
- **Frame Relay network and protocol**
  Introduction to the Frame Relay network and protocol, The Frame Relay and DLCI virtual circuits, The permanent (PVC) and switched (SVC) virtual circuits, Control of the congestion: parameters DE, FECN, BECN, Management of the throughput: parameters CIR, BC, BE, TC, LMI: Local Management Interface, Format of the Frame Relay frames, Format of the LMI frames
- **X.25 package switching network**
  Characteristics and operating parameters, Format of the level 2 frame, Format of the level 3 package, Addressing in the X.25 network
- **Asynchronous Transfer Mode – ATM**
  Characteristics and operating parameters, Format of the ATM cell, Connections, Virtual Paths and Channels, The ATM reference model

Composed of:

TC72-MP: Communication Protocols

This module allows the simulation of the operation of the communication protocols.

It includes 2 LCD displays for the visualization of the frames and of the packages that the communication devices exchange.

Furthermore, it includes a simulation boards insertion system for the different protocols. The following simulation boards are provided:

HDLC protocol Network X.25 Frame Relay