SDH Basics (TG2500-01S)

Brief Description

- In this course, you´ll acquire an overview of the principal multiplexing methods of PDH and SDH including the appropriate bit rates. Participants will learn the advantages of SDH over PDH, which includes the main characteristics of SDH. The basic elements of the STM-1 signal, such as containers, virtual containers, tributary units, etc, are discussed. The mapping of PDH signals and ATM cells also form part of the course information, as does pointer technology. The structure of the overhead bytes, along with their functions, their uses in monitoring, fault detection and management are also outlined.

Target Group

- All personnel starting a sequence of SDH training, from Planning and Engineering to Management Experts and Service should attend.

Learning Target

- The main objective is to introduce the many concepts used in SDH technology. It gives the students the building blocks for the courses to follow. This course is fundamental and should not be bypassed.

Prerequisite

- Participants must have some technical knowledge in telecommunications, and some basic knowledge in PDH & SDH.

Contents

- PDH Multiplexing
  - Principles of PDH Multiplexing
  - ANSI/CEPT Bit Rates
  - Frame Structure of a PDH Signal
  - Multiplexing / Demultiplexing of PDH Signals
- Principles and Characteristics of SDH
  - Introduction to the Synchronous Digital Hierarchy SDH
  - ITU-T and SDH, an Introduction
  - ITU-T Recommendations for SDH Bit Rates
  - Structure of an STM-1 Frame
  - Byte by Byte Multiplexing of SDH Signals
  - Synchronization of STM-1 Frames
  - Line Codes used in SDH
  - Codes and Interfaces of SDH
- Basic Elements of STM-1
  - Elements of an STM-1 Signal
- Mapping

For additional information:

　　　Website www.radioengineering.it　　　　Email   sidicomcr@gmail.com

- o   Mapping of a 34 Mbit/s Signal to the Container C3
- o   Mapping of 2 Mbit/s Signal to STM-1
- o   Mapping of ATM Cells into the STM-1
- o   Concatenation of Payloads
- Pointer
  - o   Pointer Functions
  - o   Pointer Types
  - o   Pointer Structure
  - o   Pointer Addressing Scheme
  - o   Pointer Justification
- Overhead
  - o   Overhead Functions
  - o   Section Overhead (SOH)
  - o   VC-3 and VC-4 Path Overhead (POH)
  - o   VC-12 Path Overhead (POH)
- Monitoring, Maintenance and Control in the SDH
  - o   Alarm Interactions Overview
  - o   Bit Error Monitoring
  - o   Error Reports REI and RDI
  - o   AIS
  - o   Bit Error Monitoring Concept (Examples)

Duration

2 – 3 days

Maximum number of participants (suggested)

10

Course Type

Theoretical course