

1 GENERAL DESCRIPTION

This WBT will provide a sound technical overview on IEEE's 802.3 standard "Ethernet". It focuses on the generic key parameters of the physical and data link layer of different wired data network types. Content includes description of OSI Layer 1 and 2 characteristics, generic equipment, applications, and network monitoring.

Pre-requisites for efficiently using this WBT are

- Telecommunication basics

Duration will be approx. 3.0 hours.

2 CONTENT

2.1 Introduction

- What is Ethernet?
- Ethernet in Carrier Networks
- Ethernet Naming and Standards

2.2 Ethernet Physical Layer

- Basic IEEE 802.3 Frame Format
- Data Field
- Frame Checking Sequence
- Interframe Gap
- Frame Format Extensions
- Fram Tags
- VLAN Tagging
- Traffic Priority
- Frame Bursting
- Jumbo Frames
- 10/40Gbit Ethernet

2.3 Ethernet Data Link Layer

- Half-Duplex and CSMA/CD
- Transmission Flow

2.4 Ethernet Equipment

- Bridges
- Routers
- Hubs
- Switches
- Spanning Tree Protocol

2.5 Ethernet Applications

- Ethernet in LANs
- Ethernet for Access Networks
- Ethernet in Metro Networks
- Ethernet in WANs
- Ethernet Service Types
- Ethernet Infrastructure

2.6 Network Monitoring

- Ethernet QoS Aspects
- Remote Testing Possibilities