

Telecommunications Introduction

A 2 day training course



Description

A comprehensive tour of the telecommunications technologies and terminology currently in use, and under development.



Key outcomes

By the end of the course delegates will be able to:

- ✓ List and describe components of the PSTN.
- ✓ Explain how calls are made over the PSTN.
- ✓ Compare analogue and digital transmission methods.
- ✓ Describe the technologies within the transport plane.
- ✓ Recognise the benefits of extra features available in today's telephone networks.



Training approach

This structured course uses Instructor Led Training to provide the best possible learning experience. Small class sizes ensure students benefit from our engaging and interactive style of teaching with delegates encouraged to ask questions throughout the course. Quizzes follow each major section allowing checking of learning.



Details

Who will benefit?

Anyone new to the Telecommunications industry.

Prerequisites

None.

Duration: 2 days

Customer rating:



Generic training



Generic training compliments product specific courses covering the complete picture of all relevant devices including the protocols "on the wire".

"Friendly environment with expert teaching that teaches the why before the how."

G.C. Fasthosts

Small class sizes



We limit our maximum class size to 8 delegates; often we have less than this. This ensures optimal interactivity between delegates and instructor.

"Excellent course. The small class size was a great benefit..."

M.B. IBM

Hands On training



The majority of our courses use hands on sessions to reinforce the theory.

"Not many courses have practice added to it. Normally just the theoretical stuff is covered."

J.W. Vodafone

Our courseware



We write our own courses; courseware does not just consist of slides and our slides are diagrams not bullet point text.

"Comprehensive materials that made the course easy to follow and will be used as a reference point."

V.B. Rockwell Collins

Customise your course



Please contact us if you would like a course to be customised to meet your specific requirements. Have the course your way.

"I was very impressed by the combination of practical and theory. Very informative. Friendly approachable environment, lots of hands on."

S.R. Qinetiq

Telecommunications Introduction

Course content

Telephone network architecture

Handsets, local loop, distribution points, Local exchanges, main telephone switches, PBXs.

Making a call - some basics

Telephone call components, how a telephone call works, accessing the local exchange, loop disconnect, DTMF, standards, E.164, PSTN routing, Intelligent Networks, Special Rate Services.

Analogue vs Digital

Voice characteristics, PSTN bandwidth, analogue signalling, Digital encoding, PCM and the 64k, ADPCM and other voice compression methods.

PBXs

PABX, Call processing, networking PBXs, PBX facilities, bandwidth, blocking probability and Erlangs, Erlang models, using Erlang tables.

Transmission methods

Two wire transmission, 64k circuits, Nx64, E1, 2 wire to 4 wire conversion, echo, echo suppression, echo cancellers, twisted pair, coax, fibre optic, power lines, satellite systems, microwave.

Signalling

Analogue signalling, loop start, earth calling, E&M, AC15. Digital signalling -CAS, robbed bits and E1 slot 16 signalling. Digital signalling CCS, Q.931, SS7, Q.SIG, DPNSS, DASS2.

Transport planes

PDH, PDH issues, SDH, SDH architecture, SDH standards, SDH bit rates, SDH multiplexors, DWDM.

Networks

Circuit Switched Networks, TDM, Packet Switched Networks, Frame Relay, Message Switching, Circuit Switching, STDM, Cell Switching, ATM, ATM cells, ATM traffic parameters, ATM QoS, MPLS.

Other network access

Modems, modulation, speeds, ISDN, BRI, PRI, xDSL, SDSL, ADSL.

Other Services

Centrex, VPNs, FeatureNet, CTI, Call Processing Systems, Voice Mail, Automated Attendant Systems, Interactive Voice Response, Call Management Systems, Call Conferencing, Star Services.

Mobile communications

3 types of wireless telephone, mobile generations, base stations, cells, GSM, GPRS, 3G, UMTS, WCDMA, 4G, LTE.

VoIP overview

What is VoIP, VoIP benefits, What is IP? The IP header, Packetising voice, VoIP addressing, H.323, SIP, RTP. Bandwidth requirements.

