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ETS

Course Profile

UMTS Cell Planning

ETS524

Duration: 2 days

Objectives:

- E**xplain the concepts of UMTS Cell planning.
- D**escribe the techniques used when UMTS Cell planning.
- P**resent an overview of the methods used when designing a UMTS Network.
- G**ive an overview of the differences between UMTS & GSM Cell planning.

Who should attend:

This course is open to any telecommunications professionals who require a good understanding of the features, concepts, techniques and terminology related to GSM Cell planning.

Prerequisites:

Overview of Mobile Networking (ETS507).

Follow-on courses:

None.

Course Style:

This course is presented as a mixture of teaching sessions and discussions.



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Key contents:

First Generation Mobile

3rd Generation Mobile

TDMA

Analog Systems

NMT900

UMTS

TCP/IP

Packet Switched Networks

Data Rates

Quality of Service

DECT

WCDMA

Spread Spectrum

Node B

RNC

AAL

MeXe

PCM30

Soft/Softer Handovers

Goulay Codes

FDD

MUD

Rake Receivers

Synchronisation

ATM

E1

Frequency Licenses

EDGE

HSCSD

2nd Generation Mobile

GSM

CDMA

NMT450

GPRS

2.5G

IPv4

Circuit Switched Networks

Frame Relay

Cordless Telephony

CT1 & 2

UTRAN

RAN

BSS

SONET/SDH

CAMEL

PCM24

UE

Gold Codes

OLPC/CLPC

TDD

Macro Diversity

Intelligent Antenna

OVSF

MPLS

T1

Future enhancements

GERAN

Standards Bodies



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Detailed contents:

UMTS Overview

UMTS Services/Applications

UTRAN

UMTS Interfaces

Cellular overview

Coverage planning

The Mobile network cellular planning process

Network Characteristics

Scope of network planning

Cellular network radio frequency planning

Cellular coverage planning

Transmission planning

UTRA Network Planning

Characteristics of radio wave propagation

Radio Propagation Models (Okumura -Hata, Walfish- Ikegami)

Antenna systems, types and characteristics,

Antenna downtilts both electrical and mechanical,

Smart Antennas

Diversity Techniques, Macro

Radio Link Budgets, Power budgets, cell size evaluations

Interference

Scrambling & Channelisation Code planning

Network Capacity

Traffic Theory, Trunking effect and Erlang formulas

Traffic planning and patterns

Network Dimensioning

Signalling Capacity

Co-existence with 2G/other mobile networks



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Detailed contents continued:

Network Planning Tasks

Signal Measurements
Coverage Planning
Transmission Planning, Microwave links & Leased lines
Site Selection and building process
Frequency Planning, reuse rates,

Advanced Radio Network Planning

Parameter Planning
Location area design
Handover and power control
Network Optimisation

Capacity evolution

Cell size evolution
IUO & IFH
Microcells
Indoor Coverage
Tunnel coverage

Radio Network Planning Tools

Tools overview
Network Planning Tools
Site Survey Tools
Measurements
GIS and Site databases
Network performance Reporting Tools



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To book this course, or to obtain more information, contact:

The Course Administrator

ETS Ltd.

P.O. Box 405

Dorking

Surrey

RH5 5WZ, UK

Telephone: +44 (0)1306 628 006

Facsimile: +44 (0)1306 627 802

e-mail: sales@etsl.co.uk

internet: www.etsl.co.uk

This information is provided in good faith to represent the typical contents of the course material. The course will change as required to keep pace with technology changes and learning styles, as a result the exact contents may differ from those specified here. The benefit of instructor led training is that it will evolve to suit the needs of any specific class, therefore no warranty is given that any specific course will cover the subjects outlined here to any implied level of detail.

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