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**ETS**

# Course Profile

## Executive Briefing on Wireless Technologies

**ETS333**

**Duration:**

1 day

**Objectives:**

**P**rovide a description of the wireless technologies available for data in both local and personal area networks.

**D**escribe other wireless technologies such as wireless local loop.

**D**escribe the key business issues and how these are influenced by the networking technologies described.

**Who should attend:**

Any executive requiring a greater understanding of the use of wireless communications in the business environment.

**Prerequisites:**

None.

**Follow-on courses:**

None.

**Course style:**

The course is presented as a mixture of explanation and discussion, with questions and contributions from delegates being especially welcome. The overview concludes with a discussion on key business issues.



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### **The Technical Background**

This section describes the key technical concepts behind all forms of wireless communication, explaining why only certain parts of the spectrum can be used. The different types of multiple access are compared. Finally some of the key terms in cellular systems are explained.

#### The Electromagnet Spectrum and its Properties

Radio

Microwave

Sub-millimetre

Infra-red

Light

#### Multiple Access

Frequency Division

Time Division

Spread Spectrum

Code Division

Frequency Hopping

Orthogonal Frequency Division

Polarisation Division

#### Cellular Systems

Why are Cellular Systems used

Access Points

Network Interface Cards

Roaming

Handover



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### **The Industry**

The main players in the industry are described. The problems of frequency allocation, and their impact are described.

Suppliers

Regulators

Standards Organisations

IEEE

ETSI

Spectrum Allocation

### **Brief Review of LANs**

This section will briefly review the main characteristics of LANs.

Broadcast and Multicast Networks

Client/server Operating Systems

Ethernet/IEEE 802.3

Traditional Ethernet

Fast Ethernet

Gigabit Ethernet

Switched Ethernet

Cabling Issues



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### **Wireless Local Area Networks**

This section explains the technologies used in wireless LANs, and future developments.

Frequency Issues

IEEE802.11 Networks (America)

CSMA/CA

802.11

802.11b

802.11a

802.11g

Security

WEP

IEEE802.1x

Interfacing to Ethernet

HiperLAN (Europe)

HiSWANa (Japan)

DECT LANs (Europe)

PHS LANs (Japan)

### **Wireless Local Loop**

This is a brief description only but is included because it has much in common with the technology described in this overview.

Multichannel Multipoint Distribution Service (MMDS)

Local Multi-point Distribution Service (LMDS)

### **Wireless Home Networks**

Although intended for the home, these can also be used within an office.

Bluetooth (Europe)

HomeRF (America)

### **Business Issues**

The briefing will conclude with a discussion of the key business issues, and how they are impacted by the technology described.



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