Telecommunications Training

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SEPARATELY BOOKABLE SEMINARS

WiFi Essentials for Non Technical Managers

10TH MAY 2010, DUXTON HOTEL, WELLINGTON
13TH MAY 2010, DUXTON HOTEL, AUCKLAND

★ New for 2010

Course Objectives

- Gain an understanding of the various IEEE 802.11 specifications
- Demystify the terminology for WiFi
- Learn practical applications for WiFi
- Learn how WiFi works alongside RF deployments

FACILITATED BY

Ian Hastie

Telecommunications Explained for the Non Technical Manager

24TH & 25TH MAY 2010, MUSEUM HOTEL, WELLINGTON
14TH & 15TH JUNE 2010, DUXTON HOTEL, AUCKLAND

★ Updated for 2010

Course Objectives

- Increase your understanding of the fundamentals of communications technology
- Communicate effectively with those in the telecommunications and data industries
- Gain an insight into the future of telecommunications technologies

Brian Ackles

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New for 2010

WiFi Essentials for Non Technical Managers

10TH MAY 2010, DUXTON HOTEL, WELLINGTON • 13TH MAY 2010, DUXTON HOTEL, AUCKLAND

COURSE OUTLINE

An introduction to WiFi in New Zealand

A brief introduction to WiFi in New Zealand to set the scene.

- What is WiFi?
- The 802.11 standard
- Frequency hopping
- Direct sequence spread spectrum
- Carrier sense multiple access (CSMA/CA) with collision avoidance
- Modulation techniques
- Frequency bands
- Interference considerations
- Radiocommunications Act 1989, other applicable regulations and applications to WiFi

IEEE 802.11a-1999

IEEE 802.11a-1999 or 802.11a, is an amendment to the IEEE 802.11 specification that added a higher throughput of up to 54 Mbit/s by using the 5 GHz band. It has seen widespread worldwide implementation, particularly within the corporate workspace.

- Operational frequencies in New Zealand
- Data rates
- Range
- OFDM advantages
- Interference
- Penetration
- BPSK, QPSK, 16-QAM
- IFFT
- Line of sight and the effect of obstructions
- Coding rate
- Compatibility

IEEE 802.11b-1999

IEEE 802.11b-1999 or 802.11b, is an amendment to the IEEE 802.11 specification that extended throughput up to 11 Mbit/s using the same 2.4 GHz band.

- Operational frequencies applicable to New Zealand
- Data rates
- Range
- Point to multipoint
- DSS
- Complimentary code keying
- External antennas & outdoor ranges
- ERP as applicable to NZ
- Adaptive rate selection
- Compatibility

IEEE 802.11g-2003

IEEE 802.11g-2003 or 802.11g, is an amendment to the IEEE 802.11 specification that extended throughput to up to 54 Mbit/s using the same 2.4 GHz band as 802.11b.

- Operational frequencies applicable to New Zealand
- Data rates
- Range
- Compatibility
- OFDM

IEEE 802.11n

IEEE 802.11n is a proposed amendment to the IEEE 802.11-2007 wireless networking standard to significantly improve network throughput over previous standards

802.11n is expected to be finalized, although many "Draft N" products are already available.

- Current standards update
- Goals and objectives of the specification
- Estimated timeline towards release

RF Deployments

- Project planning for RF deployments
- Process of RF deployments
- Successful/unsuccessful RF deployments
- Design engineering
- Traffic engineering
- RF optimisation & performance testing

Testing for Knowledge

- Scanning and joining
- Authentication and de-authentication
- Associating and disassociating
- Differentiate radio related issues associated with operating in different bands
- Explain the fundamentals of CSMA/CA in WiFi networks
- Power saving mode
- Re-association and mobility management techniques of WiFi

WiFi in Operation

- Original MAC layer
- BSS
- AP and STAs
- Synchronisation
- RTS/CTS
- Network allocation vector
- DCF basic access
- DIFS & back off algorithm
- SIFS
- MSDU
- PCF for controlled, un-contended access
- QoS limitations with 802.11 MAC

Practical Exercise

- WiFi network design
- Generation of a network topology and all elements required to support the given traffic requirements and service types
- RF considerations for planning access point coverage
- Generation of sample deployment GANTT charts

Future of WiFi

A brief overview of where WiFi is likely to be used in the future, changes in technology or and/or standards.

INSTRUCTOR PROFILE

Ian Hastie
Link Information Technologies Ltd

Ian owns and operates LINK Information Technologies Ltd (LINKIT).

Ian brings over 30 years experience in the Telecommunications and Aviation industries in New Zealand. He spent his early years working on voice communications and radio transmission systems in the aviation sector and, in later years, systems integration and project management of complex radio data networks with Ericsson Communications; and since 1997 launched LINKIT and developed customers and business partners throughout NZ, Australia and the Pacific Islands.

Ian has designed, built and tested a number of indoor and outdoor metropolitan IP based wireless networks, bringing a wide breadth of systems integration, project management and systems training expertise. Ian developed and installed NZ's first outdoor Wireless IP Network in Wellington in 1996 for NetLINK.

Updated for 2010

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COURSE OUTLINE

Understanding the Scope, Evolution and Fundamentals of Telecommunications

- Evolution of telecommunications and its impact on business and society – From POTS to 3G cellular
- What are the key drivers of change transforming the global telecommunications landscape?
- Understanding basic telecommunications concepts and terminology: Protocols, architecture, wired vs. wireless, bandwidth and capacity, voice and data transmission, and compression techniques

The Fundamentals of Communications Networks and How They Work

- Overview of the principles of transmission and network systems
- Overview of transmission media; Fibre-optic networks, microwave systems; satellite; cellular networks; wired networks; wireless networks
- Overview of high speed networks and broadband systems; their uses and limitations
- Using Internet Protocol technologies for voice and data

Understanding Voice, Data, and Video Communications

- The basics of voice communications
- The difference between voice and data communications
- Basic overview of video and multimedia communications
- Voice-Over Internet (VOIP) systems
- How do Interactive Voice Response (IVR) systems work?

The Effects of Convergence of Voice and Data Communications

- Overview of what convergence really means
- The effects of convergence on networks
- The role of the internet in communications

The Communications Industry in New Zealand

- The evolution of the market
- Major players in communications in New Zealand
- Regulation and how it affects business
- New entrants and the effects on business communication

Overview of Communication Tools

- Phones; past, present and future
- Trends in communication devices; smartphones, multimedia, and multifunctional devices
- The effects of network integration on communication devices

Understanding Cellular Technologies

- 3G, UMTS, W-CDMA, and Beyond
- Data transmission over Cellular
- 4G networks

Entering the New Realities of Global Telecommunications

- Understanding major trends and issues in global telecommunications and their likely impact
- Cloud computing and the effects on communications technology and business
- How the growth of broadband, fibre and xDSL will affect business operations
- Understanding the growth of mobile technologies and the ultimate convergence of content and delivery
- Leveraging communication technologies to enhance productivity and performance

INSTRUCTOR PROFILE

Brian Ackles

Brian has spent over 20 years working with project teams across a range of industries. A certified project management Professional (PMP), Brian spent over 10 years working around the world in the international telecommunications industry with Ericsson, Northern Telecom, and others, designing and delivering complex projects with teams of people from all over the world. As a consultant he has worked extensively in Canada, the USA, UK, and New Zealand with a diverse range of industries developing effective project processes, developing teams, managers, and project managers. Having recently returned home to New Zealand, Brian's focus is on helping organizations integrate the best tools, practices, and techniques of project management to deliver outstanding results for the customer, the organization.

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Telecommunications Training

WiFi Essentials for Non Technical Managers

Telecommunications Explained for the Non Technical Manager

Brochure Code: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

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First Name (Mr/Ms/Mrs/Miss/Dr) _____

Last Name _____

Position _____ Email _____

WiFi Essentials for Non Technical Managers ○

Telecommunications Explained for the Non-Technical Manager ○

Please indicate city

Auckland ○ Wellington ○

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Telecommunications Explained for the Non-Technical Manager ○

Please indicate city

Auckland ○ Wellington ○

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Course Information

Course Information	EARLY-BIRD SPECIAL Registrations received/paid **before** below dates		STANDARD PRICE Registrations received/paid **after** below dates
Telecommunications Explained for the Non-Technical Manager (TD029)	$1895 plus GST (5 April 2010)	**SAVE $100**	$1995 plus GST (5 April 2010)
WiFi Essentials for Non Technical Managers (TD027)	$1195 plus GST (22 March 2010)	**SAVE $100**	$1295 plus GST (22 March 2010)
Both Seminars	$2690 plus GST* (*earliest applicable earlybird date applies)		$2790 plus GST*

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Send two people to **WiFi** and save $250.
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