# CTO COURSE CATALOGUE

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TECHNICAL COURSES

Quality of Service Monitoring

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Setting and enforcing service quality standards between networks as well as for consumers is a key mandate for regulators. This course provides the techniques used to monitor and enforce quality standards, from network transmission and interconnection to market intelligence gathering. All areas that affect Quality of Service (QoS) at the access or transmission level are covered in detail.

Key Topics

- Defining QoS
- What are the QoS requirements of common applications?
- What can the network offer in terms of QoS today?
- Commercial challenges of QoS
- Who should pay for QoS, business or consumers, senders or receivers?
- What kind of assurance should carriers provide with QoS?
- Key performance Indicators (KPI) of PSTN and their measurement
- Key performance indicators (KPI) of broadband and their measurement (both traditional and mobile broadband)
- Key performance indicators (KPI) of Mobile telephony and their measurements
- Assignments of weights, performance evaluation and report generation
- Selection of Key Performance Indicators and their benchmarking
- Drive test and analysis
- BTS fault analysis and test
- OMC-R data collection and analysis
- Point of interconnection traffic analysis
- Call centre data analysis
- CDR analysis

Target Audience

This course is aimed at the network engineers and technicians as well as regulatory officers responsible for competition and consumer interests.
Principles of Optical Multiplexing

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This course addresses the many technical issues, possible solutions and recent progress in the area of multi-channel WDM systems. Discussions centre on various devices, systems, and network limitations and applications

Key Topics

- Overview of optical networking and data transmission over fibre
- Basic optical networking elements: fibre optic cable, optical couplers, transmitters and receivers, optical amplifiers, optical cross-connects and optical add/drop multiplexers.
- Optical transmission performance parameters.
- Advantages of fibre optic systems.
- Dense wavelength-division multiplexing (DWDM).
- Digital networking evolution.
- Tunable lasers, multiple wavelength laser arrays, tunable optical filters, wavelength division multiplexers, receiver arrays, wavelength-division multiplexing (WDM)/space division multiplexing (SDM) cross-connect.
- Fibre Bragg gratings.

Target Audience

The course targets network engineers expected to advise on strategic technological decisions.

Fibre optic Access networks

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test
Overview
Fibre optic access is generally referred as FTTx (where x stands for home, building, or curb) and is becoming very popular for triple-play services where voice, data and video all can go on a single fibre. Due to enormous bandwidth capacity of optical fibre, it has become medium of choice in long distance network replacing copper. Fibre to the access network is natural extension of technology where due to day-by-day increasing requirement of bandwidth, its only choice. This course covers fundamental and applications of FTTx technology.

Key Topics
- Overview of data transmission over fibre.
- Introduction to optical networking.
- Basic optical networking elements: fibre optic cable, optical couplers, transmitters and receivers, optical amplifiers, optical cross-connects and optical add/drop multiplexers.
- Optical transmission performance parameters
- Advantages of fibre optic systems.
- Fibre optic access technologies: fibre to the home (FTTH), fibre to the building (FTTB), fibre to the curb (FTTC).
- Configuration: active and passive hybrid cables
- FTTH passive optical network.
- Asynchronous transfer mode (ATM) passive optical network (aPON), Ethernet PON (ePON) ITU-T G.983 standard.

Target Audience
Technical staff involved in optical fibre access network design, operation, monitoring, administration and maintenance, especially those involved in broadband access network management areas.

Introduction to GSM systems and LTE

Module Summary
Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
The Universal Mobile Telecommunications System (UMTS) is a globally significant third generation (3G) mobile cellular radio system. It provides a natural progression path for all
GSM/GPRS networks. The use of UMTS and HSPA enables mobile-network operators to offer higher bit rate services and much more flexible radio interface compared with 2G technologies. It is more efficient in terms of spectrum utilisation. The course covers all aspects of 3G operation from the radio air interface through to the core network including planning and optimization. This course would suit engineers who need to add to their existing knowledge on the subject and those who have GSM experience but completely new to this technology. This course also covers the next evolutionary step for 3G networks, High Speed Packet Access (HSPA) and Long Term Evolution (LTE). It is crucial for engineers to appreciate at this early stage the capabilities and implications for this emerging technologies. Emphasis will be given on understanding the fundamentals, radio network design and optimisation.

Key Topics
- Mobile technology Evolution
- End user experience
- Possible services and applications
- Speed and capacity compared to 3G Technology
- LTE model
- Frequencies band
- Voice calls
- Nodes included in both the core and radio networks
- Cellular radio concepts: Frequency Re-use, Co-channel Interference, Propagation environments – rural, semi-rural, urban, Propagation slope and radio planning, Macro – micro – pico - indoor cells, Cell splitting , Other techniques: Power control, Adaptive time advance, Frequency hopping, Discontinuous transmission/reception
- Performance enhancing feature and future directions: Transmission antenna diversity, Adaptive antennas, Interference cancellation
- Introduction to HSDPA: Principals of HSDPA, How does HSDPA work, Challenges for HSDPA deployment.
- Introduction to LTE: What is LTE?, Why do we need LTE?, What LTE can offer
- Regulatory principals: Competition, regulation of operators and licences to operate, Spectrum regulation, Introduction to spectrum management.

Target Audience
This course is primarily designed for those wanting a good understanding of 3G and HSPA. Engineers and managers who support and make decisions on 3G deployment strategies will find this course very useful. This course is also very useful for those working in areas related
to various telecommunication operations such as project and product management, hardware and software development, system engineering, testing and verification, network planning and operations. The course is also well suited for staff members working in regulatory functions since it gives a good overview of skills required for developing regulatory and policy framework for access technologies.

**SS7 Signalling and applications in mobile networks**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completions of coursework, Knowledge test.

**Overview**

Participants will be provided with an understanding of the structure of Signalling System No. 7c (SS7) including an overview of its use in PSTN, IN and mobile networks. The course focuses on the fundamental SS7 protocols, MTP and ISUP, their functions, messages and signalling flows in various situations.

**Key Topics**

- Protocol models
- Introduction to SS7
- MTP (Message Transfer Part)
- MTP over ATM
- ISUP (ISDN User Part)
- ISUP call set-up
- SCCP (Signalling Connection Control Part)
- TCAP (Transaction Capabilities Application Part)
- MAP (Mobile Application Part)
- MAP traffic case
- SS7 over IP
- M3UA protocol, SUA protocol

**Target Audience**

Engineers and technicians requiring in-depth knowledge of the functionality and the structure of the SS7 protocol suite or application software, and individuals who work for SS7-based mobile telecommunications network providers or SS7 network equipment manufacturers. Technical division members of regulatory agencies involved in interconnection issues or quality of service (QoS) or signalling network management will also benefit from attending this course.
AI: Cloud & Edge implementation

Module Summary

Duration: 4 Days

Assessment Pass Mark: 60%

Learning activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Artificial Intelligence: Cloud and Edge Implementations is a pioneering course (previously called Data Science for Internet of Things) which covers AI, edge computing, product development and engineering. This course is designed to create a new breed of engineer, through a solid grounding in artificial intelligence (AI) and edge computing (Internet of Things) for developing systems in production. We incorporate an agile data science methodology adapting agile techniques to AI systems deployed in production. We also cover problem framing and solution deployment through automated machine learning spanning AI and edge.

Topics

- Principles and foundations for artificial intelligence and edge computing
- Robotics (Dobot)
- Cloud based AI implementations - Azure, Google and Amazon
- Architecture for AI applications in production
- Industrial IoT - Industrial IoT (anomaly detection and failure prediction)
- End-to-end agile problem-solving methodology including continuous improvement and delivery for AI models in production

Target Audience

The course is designed for industry practitioners with a background of coding. Previous students have used the course to start a new career, for career progression or to have their skills upgraded by their employer
Session Initiation Protocol (SIP)

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
This course provides an overview of the Session Initiation Protocol (SIP), a protocol used for initiating an interactive user session that involves multimedia elements.

Key Topics
- SIP introduction
- Internet telephony basics
- IP-based multimedia communication
- SIP signalling
- SIP programmability
- SIP robustness
- SIP and security
- SIP telephony infrastructure
- SIP and quality of service (QoS)
- SIP versus H.323
- Interworking with legacy networks
- SIP and mobility

Target Audience
Primarily technical professionals, data communications managers, network managers, design managers, IT/communication managers and others who are involved in internet telephony services, IP Multimedia Subsystem (IMS) services and applications, and who develop value-added services and require an understanding of SIP. Technical division members of regulatory agencies involved in IP-based services or quality of service (QoS) related to IP networks, or non-technical staff of consumer affairs divisions will also benefit from attending this course.

Introduction to 5G
Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test
Overview

The standardization of 5G is now well underway. This short course is designed to provide a concise synopsis of the key areas associated with the 5G system, with focus on the concepts and the drivers, the 5G New Radio and NG-RAN, the end to end system architecture and key procedures associated with registration, PDU sessions and mobility.

Key Topics

- 5G Concepts and Drivers
- 5G New Radio and NG-RAN
- 5G Core Network Architecture
- 5G Initial Procedures
- Utilizing the Network
- Mobility
- 5G New Radio Specifications and Navigation: Technologies, Market & Applications
- 4G-5G Protocol Evolution

Target Audience

5G Wireless Priority Services Training is aimed at government agencies, telecommunications operators, equipment vendors, consultants, and others with interest in Priority Services within the evolving 5G wireless technology.

Broadband Technologies and Multimedia Services

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This course provides a comprehensive technical overview of TCP/IP and broadband technologies, along with the practical experience required to configure a host, employ TCP/IP tools, use application services, access TCP/IP-based internetworks and also identifies protocol functions for multimedia applications.

Key Topics

- Basic Building Blocks of Communication Technologies: Core, transport and access networks, Types of networks: fixed (or wire-line) and mobile (or wireless) networks, Circuit-switched and packet-switched networks
- Evolution of data communication technologies networks: Analogue to digital, Time division multiplexing to Internet Protocol (IP)
- Introduction to Internet Protocol: ISO/OSI and TCP/IP stack and protocols, IP versions, Routing and switching, IP standards
- Broadband technologies: Wireless, Mobile, 3G, UMTS, HSDPA/HSUPA, 4G, LTE, Fixed
- Designing wireline broadband networks: Access network life cycle; Strategy and architecture, Planning and design, Project and implementation, Operation and maintenance
- Overview and introduction to Ethernet: History of Ethernet, Basic Ethernet operation, Using Ethernet; Carrier/Metro Ethernet, MEF
- Applications delivered over broadband networks and things to consider: IP based applications; Network security, Management, CoS

**Target Audience**

This course is designed for technicians, engineers, customer service and technical staff engaged in broadband services

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**Introduction to IPTV**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

The Internet Protocol Television (IPTV) training provides a detailed understanding of the (IPTV) technology, an IP-based technology used to deliver TV service

**Key Topics**

- Introduction to IPTV
- Understanding the New Technology: How IPTV systems work
- IPTV Network Architecture: Servers, Signalling Gateways
- Defining IPTV Services
- Understanding TV Services: IPTV Service Providers (IPTVSP), Managing the TV connections (downloading and streaming), Broadcasting IPTV - multicast versus unicast, Switched digital video/channel selection, Electronic Programming Guides (EPG), Interactive Programming Guides (IPG), Analogue Television Adapters
(ATVA), Internet Protocol TV (IPTV), Video on Demand (VOD), Pay Per View (PPV), Multimedia computers, Mobile phone TV, Triple/quad play services
● TV Formats and Encoding: Assessing video quality, Performance characteristics, Video formats, HDTV Resolutions
● Security in IPTV Networks
● The Challenges of Delivering IPTV Successfully

Target Audience
This course is designed for technicians and engineers from operators, cable TV networks and integrated media outlets who are considering IPTV services.

Voice over IP and MPLS

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
This course provides an understanding of Voice over IP (VoIP) and Multi Protocol Label Switching (MPLS) and how they are integrated to provide one of the most cost-efficient transmission systems today. On completion, participants will have gained a detailed understanding of VoIP and MPLS technologies and architectures, and how they are deployed over legacy and next generation networks (NGNs).

Key Topics
● Configurations of VoIP
● Digital telephony via IP networks
● Overview of VoIP protocols
● Media data protocols (RTP, RTCP)
● Signalling protocol family H.323
● Components of H.323
● Signalling protocols-Session Initiation Protocol (SIP)
● Components of SIP
● Supporting protocols for quality of service (QoS), billing, etc
● VoIP via a firewall and network address translation (NAT)
● Overview of packet-based networks (ATM, Frame Relay, etc)
● Introduction to VoIP networks: standards, components, architecture, deployment, quality of service (QoS)
● Introduction to MPLS (network components and operation)
● Deployment scenarios and integration
**Target Audience**
Network technicians and managers who need to understand VoIP and MPLS and the integration of the two technologies.

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**WiMAX Networks**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**
This highly technical course is a critical step for those planning to take part in the design and deployment of WiMAX networks. With a highly technical content, the course covers all aspects of WiMAX, and provides a comparison with other broadband wireless access technologies, including Evolution-Data Only (EVDO) and Long Term Evolution (LTE). Concepts such as radio frequency planning and capacity planning are discussed in detail.

**Key Topics**
- Overview of broadband wireless access
- Overview of WiMAX (802.16 standard): physical layer, etc
- Channel characteristics
- Network architecture and transmission
- Mobile WiMAX

**Target Audience**
This course primarily targets technicians and engineers.

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**Business Information System**

**Module Summary**

**Duration:** 3 Days
Overview
Today, ideas and partnerships that were once unlikely leverage ICT in innovative ways to drive the industry. This course describes the role of network technologies and information systems in the integration of a range of functions in large businesses and supply chains. The structure and internal functions of business are discussed, followed by an examination of the development of business systems software such as enterprise resource planning (ERP), customer relationship management (CRM), and supply chain management (SCM) systems, and their role in the trend towards a more information-dependent economy and business process integration. The concept of the N-tier architecture is also covered.

Key Topics
- Role of networked technologies and information systems
- Structure and internal functions of a business
- Applications
- Business systems software: enterprise resource planning (ERP), customer relationship management (CRM) and supply chain management (SCM)
- Network-centric world and business process integration
- N-tier architecture

Target Audience
Business and technical managers or engineers who need an understanding of the convergence of networks and information technologies, integrated information management systems, and how integration can lead to new business opportunities.

Cryptographic Techniques in relation to cyber security and cyber criminality

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test
Overview

With advancements constantly being made in telecommunications technology; businesses need to be aware of the many different ways in which communication between third parties can be secured (cryptography). This course was therefore designed to provide participants with an understanding of the techniques, algorithms and protocols used in the process of cryptography in the aid of data security and fraud prevention.

Key Topics

- Introduction to Cryptography
- History of Cryptography
- Fundamentals of Cryptography in Cyber Security
- Cryptanalysis: The Basic Principles
- Weaknesses and Attacks to Hash Algorithms
- How Historical Systems Were Broken
- Using and applying Cryptosystems
- Classical and contemporary Ciphers
- Protocols
- Authentication protocols
- Key exchange protocols
- Secure Communications

Target Audience

This course targets professionals in ministries, national regulatory authorities, network operators and service providers and also individuals in the private sector representing organisations operating in the telecommunications industry. Academics, journalists and others with an interest in the telecommunications legal background would benefit from this course.

Consumer Protection-Electronics Communication

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

With most businesses now offering voice, video and data services so it is imperative that they have the correct policies and regulations in place to ensure that their customers and consumers are adequately protected. This Course was therefore, developed to provide
participants with knowledge regarding the regional and international standards and strategies relating to consumer protection.

Key Topics

- Review of legislations on consumer protection
- Basic Consumer rights and Quality of Service issues in consumer protection
- Provisions in Licence conditions for consumer protection
- Protection of the electronic communications consumers'
- Electronic communications operators' obligations
- Consumer protection: Competition and regulations
- Regulatory approaches on consumer protection - international experience.
- Role of Telecom Regulator: institutional framework for consumer protection in competitive telecom market and measures to protect consumers in case of monopoly, duopoly and market dominance.
- Regulator tools to be implemented in consumer protection
- Issues and Challenges on consumer protection in convergence and Next Generation Network (NGN) services
- Development and capacity building of consumer advocacy groups, consumer advisory councils for consumer protection
- Regulatory approach for industry self-regulation through code of practice in handling consumer complaints and consumer forum
- Consumer education and information.

Target Audience

This course targets professionals in ministries, national regulatory authorities, network operators and service providers and also individuals in the private sector representing organisations operating in the telecommunications industry. Academics, journalists and others with an interest in the telecommunications legal background would benefit from this course.

Mobile Number Portability

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

One of the most significant barriers to competition was the historical need for subscribers to change telephone numbers when changing service providers. This has a huge implication especially to business users for whom a distinctive and recognisable telephone number was
a core brand asset and who often faced significant costs in amending stationery and promotional material, and informing clients. For personal users the disruption was no less and the means even more limited. As a result, many National Regulatory Authorities have mandated the introduction of Number Portability as a pro-competition policy applicable to both fixed-line and mobile sectors. Focusing on Mobile Number Portability (MNP), this training will inform attendees of the technical as well as the legal and regulatory requirements of MNP.

Key Topics

- Introduction and philosophy of Mobile Number Portability
- Managing numbering and addressing codes
- Migrating from 8 – 9 digits numbering plan
- Transition numbers in the porting process
- MNP Architecture and Terminology
- MNP Environment and Global Trends

Target Audience

This course targets professionals in ministries, national regulatory authorities, network operators and service providers and also individuals in the private sector representing organisations operating in the telecommunications industry. Academics, journalists and others with an interest in the telecommunications legal background would benefit from this course.

Cloud Computing

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Cloud Computing relates to the IT infrastructure required developing / hosting / run IT services and applications, on demand, with consumption based pricing, as a resilient service. Communicating over the internet and requiring little or no client end components it provides resource and services to store data and run applications, from many devices,
anytime, anywhere, as a service. The services can in turn be scaled up and down as needed to meet a customer’s variable operational needs, ensuring maximum cost efficiency. This workshop delivers the skills necessary to understand cloud computing, infrastructure, virtualization, strategies, security, case studies & best practices.

**Key Topics**
- Delivering the platform as a service-PaaS
- Exploiting software as a service-SaaS
- Deploying infrastructure as a service-IaaS
- Challenges of the Cloud
- Cloud Development Models
- Impact on various Service Providers
- User Market
- Cloud Deployment Case Studies
- Technical Considerations

**Target Audience**

The course would be of value to professionals seeking to exploit the benefits of technologies in cloud computing including assessing the architecture, components, operations and tools of cloud computing.

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**Analogue to Digital Broadcasting Switchover**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**
This course explains the fundamentals of television broadcast systems and explores the advantages of digital TV, both for production and transmission. The course highlights the value of a national digital transition plan that has to involve all stakeholders in any successful transition from analogue to digital TV before going on to illustrate analogue to digital switch over with a couple of specific case studies. The course concludes with a review of second generation digital TV standards exploring their advantages over the older first generation standards.

**Key Topics**
- Fundamentals of analogue and digital communications
- The Analogue TV signal
- Analogue Terrestrial TV broadcast system: “From lens to screen”
Studio production and production equipment
Distribution network
Broadcast network
Digital TV Fundamentals
Analogue to digital conversion review
Digital video: MPEG2, MPEG4/AVC, SVC, HEVC etc
Digital sound: MPEG, AC3, AAC etc • Need for meta-data
MPEG transport stream multiplexing
Digital Terrestrial (DTTV) Broadcast Systems: “From lens to screen”
Digital production
Digital distribution networks
DTTV broadcast and reception issue
DTTV first generation broadcast standards
DTTV broadcast network topology
DTTV reception issues
Anatomy of a DTV receiver
Domestic aerials, down lead, aerial connector
DTV reception equipment
Provision of EPG
Pay TV enablers
Mobile TV
Interactive TV
Analogue to Digital Switch over (ASO)
DTTV value chain: content provider service provider (broadcaster) multiplex operator
Setting a national ‘Digital Broadcasting Policy’
Provision of HDTV or large multiplex of SDTV services
Pay TV versus free to air models
Public interest needs
Cost-benefit analysis of ASO
Regulatory issues
Technical issues
Take up issues
ASO Examples
ASO in Europe
ASO in Japan and America
Case studies
Other DTV Transmission Standards
Cable: DVB-C • Satellite: DVB-S
Second generation standards: S2, C2, T2
Future

Target Audience
System planners, broadcast systems engineers, telecommunications engineers, as well as communication policymakers and regulators.
Duration: 5 Days
Multimedia Content Development and Strategy

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Multimedia is used exclusively to describe multiple forms of media and content and applies to various areas including but not limited to advertisements, art, education, entertainment, engineering, medicine, mathematics. Developing a multimedia content strategy is key to any organisation and this programme will educate participants with the processes by which organisations can determine strategic and sustainable plans for developing multimedia content.

Key Topics

● Definition of content strategy
● Content strategy formulation
● Content strategy evaluation
● Content creation and publishing
● Multimedia Information security

Target Audience

The course is specifically designed for writers; editors; web managers; marketers; PR and media professionals.

IP Multimedia Subsystem Fundamentals

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test
Overview
The IP Multi-media Subsystem (IMS) as defined by the 3GPP is an architecture that enables network operators to offer their subscribers multimedia services consisting of applications, services and protocols over a Next Generation Network.
This one-week course provides participants with an understanding of how an NGN IP Multimedia Subsystem (IMS) enables the network to carry triple play and quad-play multimedia services and how to plan for its introduction. Covers IMS architecture and how it interacts with the NGN network, including Quality of Service Policies and Management

Key Topics
- **Review of NGN**
  NGN Network Description, Core network, Voice, Data, Multi-media, Transport network, Packet switched versus circuit switched, Access network, Tele-density planning, Service repertoire delivery, Wireline, wireless or mobile access, Service planning and assessment of NGN capability requirements to accommodate new services, Voice, Data, Multi-media, Triple play packaging, Quad-play repertoire, Impairments, Latency, Jitter, Echo, User tolerance models, Voice over IP (VoIP), H.323, SIP (Session Initiation Protocol)
- **IMS Overview**
  What is IMS? Business Drivers for IMS, Fixed-Wireline carriers and applicable platforms, Wireless Carriers, Changing roles for both with IMS, IMS benefits and Technical Advantages of IMS, Feature development process, Technological and Business Advantages of IMS, Operational impact on carriers and service
- **IMS Concepts and Architecture**
  The Three Architectural Layers, The Network (Transport and Access) Layer, The Control Layer, The Service Layer, NGN Platform, SIP concepts and processes, SIP Protocol dynamics, SIP components, SIP Request and Response, HSS (Home Subscriber Server) and its place in the network, Different types of CSCF’s (Call Session Control Functions), Three types of Application Servers, Media Resource Function (MRF), Border Gateway Control Function (BGCF), Session Control in IMS, Registration, Set-up, IMS Protocols
- **IMS in the Mobile Network**
  3GPP IMS Architecture, Major IMS functional elements in a mobile application, Providing Services: Application Server, Inter-working between fixed-wireline and wireless networks, Session flow and charging, IMS offline charging, IMS online charging, Wireless Data, Mobile Positioning and LBS
- **IMS Policy, Quality of Service and KPI**
  Policy, Policy vs. QoS, Policy in IMS, QoS, Methods for managing QoS, QoS and on-demand services, QoS and KPI’s for Voice Services and Interactive Multimedia
- **IMS Applications**
  Framework for Applications, IMS Applications for the Consumer, IMS Applications for the Enterprise and Vertical markets, Push to Talk over Cellular (PoC), FMC-UMA and VCC, Advertising, IMS and WiMAX, Digital Broadcasting, VAS Applications, Why is VAS Important?, Service Delivery Platforms (SDP), Location and Presence, Identity Management
- **Challenges in Transitioning to an IMS Network**
  Convergence Issues, Standards Issues, Who are the players in the IMS Market, IMS and VNO’s, Service Provider Challenges, Wireless and fixed-wireline carriers vis-a-vis content providers, Who owns the customer?, Handset features and distribution,
Service Rollout Challenges, Dealing with HSS, Dealing with QoS, No standard SCM, Content management and regulation, What are the roles?, Network management challenges, Service configuration issues, Revenue distribution, Who gets what?

- **Technology Evolutions impacting IMS**
  
  SDN – Software Defined Networks, NFV – Network Function Virtualization, CSP – Cloud Service Provisioning, Course Review

**Target Audience**

Telecom engineers, senior technicians & technicians, technical staff involved in core and access network planning, management and maintenance, as well as in NGN service planning and introduction

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**Principles of Optical Multiplexing**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

Multiplexing is a technique used to combine a number of channels and send them over the medium to make the best use of transmission medium. This programme will focus on the various multiplexing techniques.

**Key Topics**

- Overview of optical networking and data transmission over fibre
- Basic optical networking elements: fibre optic cable, optical couplers, transmitters and receivers, optical amplifiers, optical cross-connects and optical add/drop multiplexers
- Optical transmission performance parameters
- Advantages of fibre optic systems
- Dense wavelength-division multiplexing (DWDM)
- Digital networking evolution
- Tunable lasers, multiple wavelength laser arrays, tunable optical filters, wavelength division multiplexers, receiver arrays, wavelength-division multiplexing (WDM)/space-division multiplexing (SDM) cross-connect
- Fibre Bragg gratings.
Target Audience

Network engineers expected to take part in the deployment or maintenance of core and last mile fibre optic networks.

Small Cell Technology

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Small cells allows for the extension of networks which improve mobile coverage and network capacity to give users unparallel mobile experience. Small cells have proven to be the solution to network problems faced by Operators. This course seeks to reveal the latest technology that allows for convergence of cellular and WI-FI networks improving 3G and 4G LTE coverage.

Key Topics

- Understanding small cell backhaul needs
- Bandwidth demand and migrating from legacy TDM to true IP backhaul
- Implementing small cell networks
- Revolution and evolution in the operational model of a backhaul network
- Opportunity for using 3.5 GHz, 60 GHz and 80 GHz bands for wireless backhaul of public access small cells
- The implications of public access Small Cells for Mobile backhaul
- Review of current RAN architecture evolution trends
- An analysis of Het-Net backhaul requirements
- Considering the transport requirements for evolved D-RAN and new C-RAN based small cells
- Backhaul architectures under review to deliver a future proof Het –Net
- Innovations in microwave backhaul technologies and how does it support the small cell architecture
- Attractions and drawbacks of microwave backhaul
- Comparison of microwave backhaul to fibre backhaul for indoor and outdoor small cells
- Working in a heterogeneous network with the use of macro, small cells and Wi-Fi

Target Audience

This course is designed for Engineers and Technicians in the telecommunications industry.
Digital Communication-Virtual and Hybrid

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This programme was developed to explain the concept of digital communication and to explore the benefits and disadvantages of both virtual and hybrid technologies.

Key Topics

- A brief history of virtual and hybrid communication
- Future trends for the industry
- The business case for virtual and hybrid communications
- Exploring business opportunities
- Understanding new ways of measuring ROI
- Developing and exploring new communication formats.
- Understanding how to monetise content
- Creating a new content – how to do it.

Target Audience

This course targets participants involved in developing and implementing virtual and hybrid technologies.

Web Development & Application

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Web development plays a central role in the creation of dynamic websites and applications that deliver content in variety of formats for multiple devices. This course is designed to provide participants with the basics needed to design and develop fully functional web applications using techniques such as XHTML, CSS, JavaScript and use of software.
Key Topics

- HTML Text
- HTML List
- HTML Links
- HTML Tables and DIV
- Image in HTML
- HTML Multimedia
- HTML Form
- Working with image in HTML
- CSS in HTML
- Styling text using CSS
- Styling links using CSS
- Creating webpage layout using CSS
- Publishing /uploading website
- Introduction to JavaScript's

- Fundamentals of website development, such as HTML5, XHTML, CSS, JavaScript, Ajax, multimedia, HTTP, and scripting languages.
- Building dynamic, database-driven web applications, such as use of a LAMP framework (Linux, Apache, MySQL, and PHP) and JavaScript (+ Ajax) among others to develop robust online programs.
- Designing, coding, publishing, marketing, and monetization of mobile apps and games using cross-platform tools.
- Core concepts of information management, such as data models, database management systems, unstructured and semi structured data management, or parallel and distributed databases.

Target Audience

The programme targets Professionals such as; web designers; web developers; mobile developers; Web analysts seeking to deepen their skills and expertise.

Dense Wavelength Division Multiplexing (DWDM)

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
This course is designed to introduce the participant to Dense Wavelength Division Multiplexing (DWDM). It covers topics dealing with fixed CSP optical backbones built on DWDM technology.

**Key Topics**
- Basic of optical fibre communication
- Evolution of CSP transmission/transport networks
- Different WDM technologies and their applications
- Understand DWDM networks, their components and operations
- Basic Building Blocks of Communication Technologies
- Core, transport and access networks

**Target Audience**
This course is ideal for telecommunications engineers and technicians.

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**End to End QoS Planning for FTTH/B services-GPON, FTTH Network and IP Core Network**

**Module Summary**

**Duration:** 5 Days  
**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

This course will look at what is required to successfully plan and implement a fibre optic system. It will cover topics such as, what are the Quality of Service requirements for triple play services (voice, data & video), and also what are the Quality of Service requirements for IP core networks.

**Key Topics**
- Introduction to GPON Network Architecture  
- GPON Network Components – OLT, Splitters and ONT  
- Flavors of GPON  
- FTTH Introduction  
- FTTH Services  
- Triple-play service on GPON  
- Meaning of QoS  
- QoS Requirements in today’s Scenario
● Service-wise QoS and its parameters
● QoS Management
● Optimization Technique Introduction to IP Networks
● IP Addressing and Routing
● IP core: MPLS ; IP Core : VPN ; QoS design overview in IP network
● Simplifying QoS ; QoS polishing and shaping techniques and tools
● Bandwidth reservation in IP Network
● Planning for congestion avoidance.
● Understand the need of QoS and its importance to meet out the growing requirement of the customer
● Understand various tools and techniques for improving QoS.
● Understand the how to plan network to avoid congestion

Target Audience

This course is ideal for technical professionals in design, configuration, installation, testing and troubleshooting of fibre optic systems. Fibre communication engineers, managers and telecommunications professionals would find this programme beneficial.

FTTH Network Planning and Optimisation

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Next generation networks require state-of-the-art access facilities to deliver High Speed Internet, Voice, multimedia services and IPTV. Most of these require large access bandwidth most likely to be delivered over Next Generation Wireless or fibre. There are many new options for loop and access aggregation network design, especially utilizing fibre access technology. This course examines the new fibre technologies now available, considers the advantages of each fibre access structure and provides an understanding of how a Next Generation Access network can take advantage of Ethernet over fibre.
Key Topics

- Limitations of copper based external telephone network
- Limitations of wireline technology in terms of bandwidth
- Role of fibre Media in access network
- Design features of high count fibre cable used in FTTH
- Components of GPON & GEPON technologies
- Passive elements in FTTH technologies. Planning of FTTH network in rural and urban areas
- Optimization of FTTH network to ensure minimum use of active elements and maximum use of passive elements

Target Audience

This course is ideal for technical professionals in design, configuration, installation, testing and troubleshooting of fibre optic systems. Fibre communication engineers, managers and telecommunications professionals would find this programme beneficial.

Master Data Management

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This five day programme will equip the participants with the concepts, practices and principles involved in data management. They will explore data domains, information governance and information security, as well as how to make use of customer data integration within their data centres.

Key Topics

- New Approach to Information Architecture
- Data Domains, Information Governance, Information Security
- Cloud Computing – New Delivery Models
- Intelligent Utility Networks
- Master Data Management
- Information Delivery in telecommunications world
- Trends in Business Analytics & Optimization
- Master Data Management (MDM) & Customer Data Integration (CDI)
- CDI Architecture & Data Hub Components
- Data Security, Privacy & Regulatory Compliance
- Information Security & Identity Management
• Implementing CDI for the Enterprise
• Data Governance, Standards, Quality & Validation

Target Audience

This course will provide solid understanding and the skills needed for success in data management. IT professionals will benefit greatly from this programme.

Telecom IT Strategies

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The programme is designed to help participants to better understand telecommunications IT strategy. They will explore and examine current IT strategies, ITIL and COBIT frameworks, IT infrastructure management and capacity planning and disaster recovery.

Key Topics

• IT strategy & infrastructure for business
• IT Governance, Product Life Cycle
• IT Strategies & ERP, CRM, KPO, BPO
• IT security strategies
• IT Infrastructure Management
• Availability, Uptime, Slow Response, Downtime, High Availability
• ITIL Framework
• OBIT Framework
• Capacity Planning & Disaster Recovery
• Business Continuity Management, BS 25999
• Business Impact Analysis, Threats, Risk & Risk Analysis.

Target Audience

This course is ideal for IT professional’s particularly senior manager and managers charged with formulation of strategies in their organisations.
Optimisation Techniques for Frequency Spectrum Engineering and Coordination of Satellite Based Networks

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This programme was designed to address the issues presented by the basic concepts of spectrum management and also to introduce the concepts and fundamental steps required for the use of Satellite based networks.

Key Topics

- Correct spectrum engineering
- Coordination of satellite based networks procedures, methodology, technical analysis
- Calculation and determination of interferences
- Coordination process of earth stations with earth systems and VSAT licensing procedures
- Spectrum management methods, e.g. spectrum trading, spectrum for unlicensed use
- The complicated development of spectrum policy – practice
- Spectrum trading, leasing, band management and secondary spectrum markets

Target Audience

This course targets Engineering professionals from the telecommunications industry.

National Broadband Strategies

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The rapid development of service and applications has called for national authorities to exploit high performance technologies to support strategies for economic and social development. This course seeks to provide an in-depth analysis of current strategic plans to
establish key objectives that will be addressed by enabling access to high performance end user broadband services. Participants will be equipped with the skills to identifying issues and challenges in broadband development, strategy, analysis and potential solutions to consider.

**Key Topics**
- Definition of Broadband
- Review network architecture and model deployment options
- Policy approaches to promoting broadband development strategies
- Law and regulation for a broadband world
- Driving demand for broadband networks and services
- Extending universal broadband access and use
- Development of a high level strategic plan for broadband delivery

**Target Audience**
This course is designed for policy makers, regulators and other relevant stakeholders responsible for addressing issues related to broadband strategy and development.

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**NOC Management**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**
This course was designed, to empower engineers and technical support staff with the administrative skills associated with the management of the network operations centre.

**Key Topics**
- Key Concepts to Effecting Successful Systems Monitoring
- The strategic base for systems monitoring
- Importance of Mission and Vision Statements to the monitoring process
- Link between the strategy and operations
- Process Governance and Management
- Process dimensions
- Process Performance Indicators
Target Audience

Ideal for technical teams responsible for the management of network operations centres.

Coordination of Satellite Network

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This programme was designed to explain the concept of Satellite Networks and the regulations and policies that surround it. Participants will learn how to make the most efficient and effective use of the orbital spectrum as a resource, the practice of international satellite monitoring, general coordination of satellite networks and much more.

Key Topics

- Space Communications Regulation
- ITU-R Regulation in space systems, Equitable access
- Efficient use/effective use of orbit/spectrum resource
- The orbit spectrum allocation procedure
- Coordination of satellite networks
- Earth station coordination
- International satellite monitoring
- ITU-R Space Plans: planned satellite networks Appendix 30, 30A and 30B of the Radio Regulations
- Management of requests, objections and/or agreement under CR/C special section concerning requests for coordination of satellite networks
- Management of interfering foreign satellite networks affecting planned satellite networks
  Software including Space Cap, SpaceCom and other such tools

Target Audience
This training programme is ideal for technical teams responsible for satellite network management systems.

Data Centre Design

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This course looks at how Data Centres are used, and participants will learn how to plan and design data centres based on real time data and operational requirements. They will also learn what codes, standards and best practices they should use and follow.

Key Topics

- Identify key stakeholders and design considerations in development of data centre specifications
- Explain key consideration for data centre site selection
- Data Centre Design
- Data Centre Project Management
- Data Centre Build and Construction
- Management and Monitoring
- Physical Infrastructure
- Modular data centre Infrastructure

Target Audience

Any person involved directly/indirectly in the management/operation of an existing data centre or involved in the exploration, design or build phase of a new project:

Disaster Management

Module Summary
Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This 5 day programme will provide participants with the knowledge required to effectively manage a disaster in the workplace. Participants will review case studies of current and past examples of disaster recovery plans, and risk evaluations. They will also be taught the fundamentals required to greatly reduce the level of damage caused and the application of such.

Key Topics

- Fundamentals of disaster and emergency management
- Legal dimensions of disaster and emergency management
- Social and economical dimensions of disaster
- Risk evaluation
- Field skills
- Relief coordination and planning
- Emergency planning procedures
- Disaster mitigation, preparedness and response
- Industrial risk management
- Environmental problems in disaster management
- Disaster and emergency management

Target Audience

This course is designed for individuals with existing or anticipated responsibilities for disaster management. It is ideally suitable for middle and senior managers.

Managing Information Security

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This course will provide participants with an overview of the processes involved in information security management. Participants will examine examples of security
management programmes and also laws regarding data protection, risk management and compliance

**Key Topics**
- Information Security management principles
- Information risk
- Risk Management and Compliance
- Information security framework
- Security programme development and management
- Procedural/people security control
- Technical security controls
- Security incident management

**Target Audience**

This course is designed for professionals responsible for information security management.

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**Security Management and Frameworks**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completions of coursework, Knowledge test.

**Overview**

With threats to cyber security becoming more and more advanced, it is important for businesses to be ready to counteract such threats should they arise. This five day programme was therefore developed to provide participants with the knowledge required to do so. Participants will learn the "building blocks" of information security, the concepts behind biometric controls for security, and also the legal, ethical and professional issues surrounding information security.

**Key Topics**
- Threats to Information Systems; Information System Security in Organizations; Information Security Management (ISM)
- Building Blocks of Information Security
- Information Security – Risk Analysis
- Physical Security for Information Systems
- Biometric Controls for Security
- Issues & Challenges of Biometrics-Based Security
• Security Investigation Phase
• Legal, Ethical & Professional issues in Information Security
• Risk Management – Identifying, Assessing & Controlling Risk
• Blueprint for Security; Planning for Continuity; Implementing Security Information Security Maintenance
• Laws & Legal Framework for Information Security Security Metrics; Security Best Practices

Target Audience

This course is designed for security professionals seeking to improve their skills and knowledge base. Those who are new to the industry will find this course very beneficial.

Satellite Communications Regulation

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completions of coursework, Knowledge test.

Overview

Today satellites provide a key element of communications for not only the landlocked countries and island states, but for other countries as well, particularly to connect dispersed populations. With the proliferation of satellite communications, its regulation is becoming increasingly important.

Participants of this 5-day programme will gain a deep understanding of regulating satellite communications, through classroom learning as well as by experiencing satellite communications regulation in practical settings.

Key Topics

• Setting the Stage
  o Fundamentals of Satcom Systems
  o Evolution of Satcom Systems
• Legal framework for satellite communications – ITU, RRB, WRC, the UN Outer Space
• Types of communications satellite systems– FSS, MSS, BSS, RDSS, Metsat
- National, Regional and Global satellite systems
- Satellite Design Considerations – design parameters, spectrum, polarisation, beam separation etc
- The Radio Regulations
- Due diligence and regulatory time limits
- ITU Registration of satcom systems—Advance Publication (API), Coordination Requests (CR), Notification, Master International Frequency Register (MIFR)
- Coordination of satellite networks and associated challenges
- Bringing into use and ITU cost recovery regulations
- Role of the RRB
- Spectrum Requirements for satellite communications
- Spectrum Requirements for IMT
- 5G and beyond
- WRC-15 and impact on the satellite industry
- WRC-19: what are the issues for the satellite industry?
- Delivering Broadband – what is the role for satellite communications
- Role of a national regulator in regulating satellite communications
- Regulating satellite space segment
- Regulating ground segments – VSATs, TVROs, GMPCS Satcom
- Satcom Regulations in Practice: case studies:
  - Asia
  - Africa
- Satcom Regulations in Practice: case studies:
  - Americas
  - Europe
- Visit to selected institution
- Satellite Communications – Future Trends
- Satellite Regulations: what is best practice
- MockExercise – Filing a new satellite system

**Target Audience**

Staff of telecommunications regulatory bodies, satellite service providers, telecom operators and regional organisations.

**Cyber Security Governance at National Level**

**Module Summary**

**Duration:** 4 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, Site visits, completion of coursework, Knowledge test

**Overview**

This training course aims to deliver insights regarding the best cyber security governance practices at the national level, including methods, practical examples and lessons learned.
All teaching material is based on illustrative real-life cases, lectures, case studies, and roundtable and group play methods. In addition, the participants will benefit from two site visits, one to the Digital Government facility and another to the state of the art Tier4 data centre.

**Key Topics**

- Global view on international cyber security regulations and initiatives
- Essential drivers, enablers and elements of for national cyber security strategy
- Typical cyber security strategy development path at national level and building block, lifecycle and supervision
- Increasing context within the national cyber security strategy using maturity models
- National cyber security from different views; state secret service, military, government and its organisations, international and local businesses
- Essential elements for national incident handling capabilities
- Lessons learned from establishing national cyber incident handling capabilities
- Best practices on quantification of incident detection at the national level
- Best practices overview: service models and implementation guidelines
- Important vectors: geopolitical issues, international crime, internet as a platform for radicalization and terrorism
- International initiatives: ITU, GFCE, FIRST.org, ECSO, TF-CSIRT, AP-CERT and related
- Best practices on making national cyber security related legislations: general vs. sectorial approach; international vs. local standard
- Budgeting national cyber security initiatives: investments vs return. What really works?
- Site visit of Digital Government facility
- Site visit of state of the art Tier4 data centre

**Target Audience**

This program is for business leaders, general managers, and executives looking to build an action plan for a more cyber resilient organization. Technology and business consultants and others acting as liaisons between technology and business units would greatly benefit from this programme.

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**Cyber Security Issues and Existing Solutions**

**Module Summary**
Duration: 3 Days
Assessment Pass Mark: 60%
Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The collection and transference of tons of data on a daily basis has led to the comprise in the security and integrity of personal information. Cyber criminals on the other has seen this niche as a profitable venture and with so many companies relying on the cloud to store data, ransomware attacks towards cloud breaches will only keep increasing at a steady rate. The need to invest in cyber security services lays at the heart of everything organisation. This programme seeks to educate and enlighten participants on the issues surrounding cyber security i.e. big data breaches, spread of malware, corporate scams, vulnerability in serverless Apps and the existing solutions that can be deployed to curb cyber crime.

Key Topics

- Overview on the information security world trends and realities of the digital society and cyber security standards
- The transformation of the existing concept of automation. It will also consider the classification of the smart home types, as well as approaches to the automation market and its main rules.
- Risk analysis, estimate of risk probability and consequences. The course will consider the risk elements and threat characteristics, the main threats to the network and methods of their neutralization, phases of threat modelling, and classification of offenders.
- Consideration of the social engineering main and inverse model, the issues of obtaining confidential information, and opposition to social engineering
- Effective fight against phishing. It will consider stages of phishing, hacker intelligence methods, as well as stages of the process of protection against phishing.
- Familiarization with the best machine learning technologies and intelligent networks.
- Roundtable will be dedicated to exchange of views and experiences in the sphere of cyber security. Also, the final interrogation of the training participants will be conducted during the roundtable.

Target Population

This training programme is intended for information security specialists, managers and specialists of multi-service network operation departments. The training will also be of interest to executives in the field of ICT, employees of regulatory bodies, representatives of service providing companies, teaching staff of ICT-specialized educational institutions.
Cyber security Awareness and Forensics

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This Cyber Security Awareness & Forensics training course aims to enhance the general participants' awareness of cyber security risks and forensics and data analysis gathering techniques.

Key Topics

- Explain the core information assurance (IA) principles;
- Identify the key components of cyber security network architecture;
- Apply cyber security architecture principles;
- Describe risk management processes and practices;
- Identify security tools and hardening techniques;
- Distinguish system and application security threats and vulnerabilities; Describe different classes of attacks;
- Define types of incidents including categories, responses and timelines for response;
- Describe new and emerging IT and IS technologies;
- Analyze threats and risks within context of the cyber security architecture;
- Computer forensics fundamentals

Target Population

This training programme targets engineers and technical staff from smart city project, regulators, policy makers, telecom operators, industry, and academia.
Emerging Cybercrime Trends: Cybercrime Investigations and Mobile Forensics for Security Intelligence, Investigators & Law Enforcement Officers

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
The course will cover forensic investigation of social media platforms and cell sites analysis workflow. Forensic investigation using Access Data FTK and Encase Steganography and steganalysis among others.

Key Topics
- Introduce to the aspects of cybercrime and cyber laws, legal system of IT
- Introduction to cyber security and cyber forensic investigation
  Outline the different steps and processes of cybercrime investigation.
- Describe how to assess and verify the accuracy and reliability of publicly available information using the tools and techniques of identifying misinformation, disinformation, and fake news.

Target Population
The training programme is intended for information security specialists, managers and specialists of multi-service network operation departments. It will also be of interest to executives in the field of ICT, employees of regulatory bodies, representatives of service providing companies, teaching staff of ICT-specialized educational institutions.

Information and Cyber Security Principles and Practices

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
This training programme provides the knowledge and skills required to manage information security, information assurance or information risk based processes.

Key Topics

- The need for Information Security
- Information Security Management System (ISMS) concepts & definitions
- Information risk management
- Corporate governance
- Organisational responsibilities
- Policies, standards & procedures
- ISO/IEC 27002, 27001 & 13335
- Information security controls
- Incident management
- Legal framework - personal data, DPA, CMA, IPR & copyright, HR & employment issues
- Cryptographic models
- Data Communications & networks
- Physical security
- Auditing & gap analysis
- Training & raising awareness
- Business continuity
- Security investigations & forensics

Target Population

This training programme targets information security management teams, IT Managers, security and systems managers, Information asset owners and employees with legal compliance responsibilities.

Cyber Security Risk Management

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The cyber threat landscape has changed drastically with new and emerging technologies. Cyber criminals have become very sophisticated in their deeds. Organisations should therefore make a priority decision on how to best defend their valuable data assets. Risk management should be the foundational tool used to facilitate thoughtful and purposeful defence strategies. This training programme will equip learners with the necessary skills to
perform regular risk assessments for their organizations. The ability to perform risk management is crucial for organizations hoping to defend their systems.

Key Topics

- Introduction to Risk Assessment and Management
- Characterising System Security Requirements
- Selecting Appropriate Security Controls
- Reducing Risk Through Effective Control Implementation
- Assessing Compliance Scope and Depth
- Authorising System Operation
- Maintaining Continued Compliance

Target Population

This training programme targets Senior Directors, IT Managers, and Security Analysts/Engineer/Architects.

Internet of Things (IoT)

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The Internet of Things (IoT) will be everywhere. It will provide advanced data collection feeding the Big Data lake, connectivity, and analysis of information collected by computers everywhere—taking the concepts of Machine-to-Machine communication farther than ever before. This course provides a foundation in the Internet of Things, including the components, tools, enabling technologies and analysis by teaching the concepts behind the IoT and a look at real-world solutions enabled by IoT, AWS cloud.

Key Topics

- Fundamentals of IoT
- Enabling Technologies, 5G, Cloud, Big Data Infrastructure
- Input sources and collection points
- Open Source and Commercial Examples
- Utilizing IoT Data
  - Smart Cities
  - Smart Health
  - Smart Homes
Target Audience

This training programme targets Executives, Managers, Engineers, Developers, and others at all levels of experience with an interest in understanding concepts, and technologies involved with the Internet of Things.

Internet of Things: Multimedia Technologies and Communication Technologies

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Participants will learn the principles of video and audio codecs used for media content in iTunes, Google Play, YouTube, Netflix, etc. and VoIP systems like Skype work and implement their own app for voice calls and text messages. Session Initiation Protocol (SIP) for session management. Next, they will learn how voice codecs such as Adaptive Multi Rate (AMR) are used in 3G networks and use them for voice traffic in their app. They will also learn the file formats and codec settings for optimizing quality and media bandwidth and apply them in developing a basic media player application.

Key Topics

- Terminology/Cheat sheet beginner
- Codecs
- Computer Vision and our Application
- Terminology/Cheat sheet (Beginner)
- VOIP in a nutshell
- Codecs
- Make VOIP application

Target Audience
This training programme targets Executives, Managers, Engineers, Developers, and others at all levels of experience with an interest in understanding concepts, and technologies involved with the Internet of Things.

Intro to Big Data Analytics

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Big Data and Advanced Analytics are two of today's most ubiquitous business phrases. The consensus is growing: this is not just another fad – there is real business and societal value to be derived from big data and advanced analytics, for private and public sector organizations alike, since it provides a real time insight as opposed to historical view gained from the analysis of structured data. Data can be taken from any source and can be analyzed to find answers that lead to smart decision making. When big data is combined with high-powered analytics, business-related tasks can be accomplished, such as:

- Determining root causes of failures, issues and defects in near-real time.
- Recalculating entire risk portfolios in minutes.
- Detecting fraudulent behaviour before it takes effects.
- Enables decision making based on real-time behaviour rather than historical performance only.

Key Topics

- Describes the nature of Big Data, the enabling technical trends, an overview of Big Data infrastructure and architecture, an overview of applications which make unstructured data suitable for analysis, such as Hadoop
- Dives into the challenges when dealing with Big Data, the vast and rapidly growing amount of unstructured data needs to be captured, stored and reworked into data which is of use to an organization; it covers the architecture of a Big Data lake
- Covers Big Data Analytics; what do we do when we have large data sets, what is the time horizon, the analytical and handling challenges when dealing with large, rapidly changing, multi-source data sets, the resource crunch, the Data Scientist and the regulatory challenges, the use of suitable supporting applications, such as Apache Spark, MapReduce, etc.
- Delves into Data Science, discusses several Big Data Use Cases
- Develops a Big Data Strategy, investigate organizational needs to enable analytic innovation
- Explores the Forrester Model and other approaches of adopter of Big Data Analytics, also reviews some Use Cases
- Covers the experiences of several adopters, also reviews what we have learned so far

**Target Audience**

This course is suited for Executives, Managers, Engineers, Developers, and others at all levels of experience with an interest in understanding concepts, and technologies involved with the Big Data and the associated analytical processes.

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**Artificial Intelligence (AI)**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

Artificial intelligence (AI) is the simulation of human intelligence processes by machines, especially computer systems. These processes include learning (the acquisition of information and rules for using the information), reasoning (using rules to reach approximate or definite conclusions) and self-correction. Particular applications of AI at this time include expert systems, speech recognition and translation as well as machine vision. This 3-day Course explores AI and its applications in functional, non-technical terms. It also explains why there is an urgent need for Regulators and Nations to become involved now in global discussions about Rules and Regulations governing ethical development and deployment of AI;

**Key Topics**

- Describes the nature of Artificial Intelligence (AI), the evolution path of AI from Neural Networks to Deep Learning, and the stages of AI development from reactive machines to self-awareness, it discusses the future of AI and the challenges to Humans
- Dives into the enabling technologies for AI, including 5G, IoT, Blockchain technology and cognitive software
- Covers Applications of AI and challenges, from present day applications to future use; it discusses ethical concerns and regulatory challenges and why Regulators and Countries have to become involved now in the global discussions about further development and deployment of AI
- Reviews several AI Use Cases from HealthTech to Marketing, Operations

**Target Audience**

This course is suited for Executives, Managers, Engineers, Developers, and others at all levels of experience with an interest in understanding concepts, and technologies interested in Artificial Intelligence and its impact on human life.

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**LTE Transmission Planning**

**Module Summary**

**Duration:** 2 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge tests.

**Overview**

This course will provide description on LTE Network architecture and protocols, architecture of the LTE Radio Access Network - Network Elements and Interfaces and Protocols General transmission features. It will also focus on the mostly used transport features IP Planning IPSec and the various options for implementation of IPSec QoS. QoS handling Dimensioning of eNB Interfaces (if Traffic Model available) will be explained in detail as well as Performing link dimensioning Introduction to Transport Monitoring.

**Key Topics**

- Introduction to LTE Transport Features
- Feature Description – Parameters
- IP Planning
- IPSec
- QoS Planning
- Dimensioning

**Target Audience**

This training programme targets Engineers working in E-UTRAN transmission (S1, X2 interfaces).
Cellular Networks: From GSM to LTE

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The course introduces into the most important aspects of 2G and 3G mobile communication networks and the path towards 4G. The standards and their evolution, services, network architecture and the principles of the radio transmission technology of GSM, GPRS/EDGE as well as UMTS/HSPA and LTE will be explained and the system capabilities discussed.

Key Topics

- The Path from 1G to 4G
- 2G: GSM (Phase 1 & 2), GSM Services, GSM Network, Basic GSM Procedures, GSM Air Interface
- 2.5G: GSM Evolution, GSM Phase 2+ Overview, Service Evolution, GPRS, EDGE/E-GPRS
- 3G: UMTS Rel. 99, The UMTS Network and WCDMA Air Interface
- 3.5G: UMTS Evolution, UMTS Evolution – Overview, UMTS Core Network, HSPA and HSPA+
- 4G: LTE/ LTE-Advanced (Overview)

Target Audience

This training programme targets personnel from the technology and management sector requiring a general overview about mobile communications.

HSDPA, HSUPA & HSPA+

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test
Overview
The participant will be informed about principles, network & protocol modifications and physical channels. The evolution beyond Rel. 6 (HSPA+) will be discussed. Several 3GPP Release 7 - 11 features, pushing the HSPA+ peak data rates step by step towards 4G requirements, improving the spectrum efficiency, enabling RT over IP services and leading towards a flat UMTS network architecture will be explained.

Key Topics

- Introduction: 3GPP Air Interface Evolution; Reasons for HSPA
- HSDPA Principles, HSDPA Objectives & Standardization, Adaptive Modulation & Coding AMC, Multi-Code Operation & Data Rates, HSDPA Network & UE Categories
- HSDPA: Protocols & Resource Allocation, MAC-hs tasks; Fast Link Adaptation, HARQ & Packet Scheduling
- HSDPA Physical Channels
- HSDPA Handover
- HSUPA Principles, E-DCH, Adaptive Coding & Data Rates, HSUPA Network & UE Categories
- HSUPA: Protocols & Resource Allocation, MAC-e & MAC-es
- HSUPA Physical Channels
- HSUPA Handover & Power Control
- HSPA+: Rel. 7 HSDPA & HSUPA Enhancements, Higher Order Modulation; MIMO; Network & UE Receiver Evolution, Network Evolution & UE Receiver Types
- HSPA+ Rel. 8 - 11 Enhancements, Higher Order Modulation & MIMO / Dual-Cell DC-HSDPA; Multi-Carrier MC-HSPA

Target Audience
This training programme targets Radio Network Planners, UTRAN System Specialists, UTRAN Network Engineers & Designers and UTRAN Field Engineers.

UMTS Release 4-11 Radio Innovations

Module Summary

Duration: 2 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
The participant learns about the central enhancements of the UMS radio interface in UMTS Rel. 4 – 11 and the ongoing discussion about 4G (Advanced-IMT). Special emphasis is given to the new UMTS frequency ranges and UMTS boosters HSDPA, HSUPA, MIMO & HSPA+pushing UMTS to 3.5G and beyond. Finally, the UMTS Long Term Evolution LTE, paving the path towards 4G, is introduced.
Key Topics

- Why UMTS Release 4 - 11?
- New UMTS Frequency Ranges
- HSDPA (Rel. 5)
- HSUPA (Rel. 6)
- MIMO (Rel. 7)
- HSPA+ (Rel. 7 & beyond)
- WLAN Integration (Rel. 6)
- LTE (Rel. 8) & LTE-Advanced (Rel. 10)

Target Audience

This training targets personnel from the technology and management sector needing to understand the new UMTS Release 4-11 features and their influence onto the capabilities/services of UMTS.

IP Multimedia Subsystem IMS

Module Summary

Duration: 1 Day

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The participant will learn about UMTS Release 4 and UMTS Release 5/6 with an emphasis on the IP Multimedia Subsystem (IMS) as defined in UMTS Release 5 and 6. Related topics such as SIP/SDP and service options are also included.

Key Topics

- UMTS and All IP, Mobile Communications and the Internet, UMTS Release ‘99 Objectives, The Emergence of IMS
- Separation of Concerns in Release 4, Multi-Service Switching Network Architecture, Bearer Independent Circuit Switched Core Network, Bearer Independent Packet Switched Core Network (Optional Feature)
- SIP/SDP
- UMTS Release 5 Core Network Issues, HSS (home Subscriber Server), IMS
- IMS improvements (Release 6 to 10)
Options and Services, Virtual Home Environment (VHE), Open Service Access (OSA), Intra-Domain Connection of RAN Nodes to Multiple CN Nodes

Target Audience

This training programme targets UMTS Network Engineers, UMTS System Specialists and UMTS Field Engineers.

Next Generation Networks (NGN)

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

This course provides detailed information about Next Generation Networks (NGN) with a focus on the IP Multimedia Subsystem (IMS) as an implementation of NGN. The network architecture and elements are examined followed by an in-depth look at signaling and protocols. Different types of access technologies are considered.

Key Topics

- Network Types and Role of IMS
- Evolution of Mobile Networks
- IMS Service Concepts
- NGN Architecture
- NGN Elements, NGN Elements, IMS Implementation
- NGN Services
- NGN Signaling, SIP/SDP, RTP/RTCP, H.323, H.248/MEGACO
- NGN Access Technologies

Target Audience

This course focuses on people who want to understand Next Generation Networks (NGN) including IMS, and the protocols and access technologies involved.
TETRA System
Module Summary

Duration: 3 Days

Credit:

Assessment Pass Mark: 60%

Cost:

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, knowledge test

Overview

The participant will be informed about the TETRA system. This includes a description of the TETRA standard, system architecture, components and interfaces as well as services and the radio transmission.

Key Topics

- The TETRA standard
- TETRA Network architecture, Core Network, Radio Access Network, Mobile, Interfaces
- TETRA Services
- TETRA Transmission, Fixed line transmission, Air Interface Transmission
- Traffic Management, Mobility Management, Call Control, Security Management
- TETRA Release 2, Trunked Mode Operation (TMO) Range Extension, Adaptive Multiple Rate (AMR) Voice Codec, Mixed Excitation Liner Predictive, enhanced (MELPe) Voice Codec, TETRA Enhanced Data Service (TEDS)
- TETRA Enhanced Data Service, Physical layer and lower MAC layer enhancements, Higher protocol layer enhancements & Services and applications, services and applications

Target Audience

This training programme targets personnel requiring a broad technical overview about the TETRA system, transmission, properties & capabilities in comparison to GSM.

Enhancements of WCDMA and LTE towards 5G
Module Summary

Duration: 3 Days
Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This course gives substantial information about the path of enhancement from nowadays WCDMA and LTE to 5th generation mobile networks on the basis of 3GPP. Extensions of the physical layer and the radio resource management still under study as well as specified already from 3GPP R12 onwards are presented in detail. Changes to be expected for the architecture both of the radio access and core network are discussed as well. New types of services and their impact on network requirements are presented.

Key Topics

- Evolution of 5G Mobile Communication, Traffic increase, Services and use cases, Network requirements, 5G Time line
- Antenna Technology, High frequency bands, High order DL MIMO, Beam forming, Active antenna systems
- UE Performance, UE categories, Network assisted interference cancellation and suppression, UL MIMO, Battery power saving
- Multi Cell Operation, Multi carrier aggregation, Coordinated multi point operation, Dual connectivity
- Heterogeneous Network, RRM for small cells, Mobility enhancements, Interference reduction, Interworking with Wi Fi
- Services, Voice, Multimedia broadcast services, Proximity services, Machine type communication
- Miscellaneous RRM Enhancements, Physical channels, State transitions, Application specific congestion control, Licensed assisted access

Target Audience

This training programme targets personnel from technical departments (especially planning and rollout)

Benchmarking HSPA+ and LTE

Module Summary

Duration: 2 Days

Assessment Pass Mark: 60%
**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

The seminar offers a benchmark of LTE and HSPA+ on their way towards 4G. The standards will be compared according to their network architecture and transmission principles. The technical capabilities, strengths, weaknesses, limits, cost aspects and market penetration will be analyzed. The current situation of these standards will be discussed as well as future chances & development trends. The question according to the “Tomorrow” of mobile communications – competition, complementarily, or fight for survival will be worked out with the participants.

**Key Topics**

- 4G (HSPA+, LTE) Standardization, Market & User View,
- 4G Requirements, Standardisation, Candidates
- Worldwide Mobile Market & Forecasts
- Network Architecture trends (CAPEX/ OPEX, performance)
- UMTS/ HSPA vs. LTE/ EPS Network
- Trends in Network Management (SON)
- HSPA+ Air Interface: Principles, Capabilities & Limits
- WCDMA Principle: Fit for the future?
- HSDPA & HSUPA Principles, Data Rates & Capabilities
- HSPA+ Rel. 7 - 11: Boosting HSPA towards 4G
- UMTS/HSPA: Capabilities, Chances, Problems & Limits
- LTE Air Interface Principles
- OFDMA & SC-FDMA for LTE, WiMAX & WLAN
- LTE Air Interface Principles, Key Parameters & Limits
- Benchmarking LTE FDD & TDD Mode
- LTE Transmission: MIMO, Beamforming & other options
- Benchmarking: HSPA+ vs. LTE (FDD & TDD)
- Network Solutions
- Benchmarking the Air Interface Solutions
- Frequency Ranges/ Band & Coverage
- Coverage Aspects & Hierarchical Cellular Structures
- Capacity, Throughput, Spectrum Efficiency & Peak Rates
- Final Discussion: Complement or Competition, Coexistence or Replacement
- Final Discussion: how will the Mobile Market change within the next decade.

**Target Audience**

This training programme targets technical management.
WCDMA Radio and Application, Transport Protocols and Procedures

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The course offers an overview about the WCDMA protocol architecture (core network, UTRAN and radio interface) for R99 and HSPA(+)]. Central aspects are the 4 WCDMA specific interfaces Iu, Iub, Iur and Uu. Examples of important procedures within the WCDMA network are discussed as well as the WCDMA security mechanisms and the WCDMA service concept.

Key Topics

- WCDMA network and identities
- Core Network Protocol Architecture, Circuit Switched Domain, Packet Switched Domain
- UTRAN Protocol Architecture (Iu, Iub & Iur Interface), Transport Network Layer, Control Plane, User Plane
- Radio Protocol Architecture (Uu Interface), Physical layer
- Procedure Examples, RRC establishment and release, Routing Area Update, Mobile originating and terminating call, Inter RNC soft handover and S-RNS relocation, Intra- and Inter-system hard handover
- WCDMA Security, IMEI check, (P-)TMSI Allocation, Authentication, Ciphering & Integrity Check
- WCDMA Service Concept
- VHE, CAMEL and OSA
- WCDMA Architecture and Protocol Stack
- Radio Protocol Architecture and WCDMA Channels
- Signaling Protocols UE – Radio Access Network, Physical layer procedures (layer 1), Medium access control, radio link control and packet data convergence protocol (layer 2), Radio resource control (layer 3)
- Application Protocols, Node B application part (Iub), Radio network subsystem application part (Iur), Radio access network application part (Iu)
- User Plane Protocols, Frame protocols (Iub, Iur), Iu user plane protocol (Iu-CS), GPRS tunneling protocol (Iu-PS)
- WCDMA Architecture and Protocol Stack

Target Audience
This course has been developed for people dealing with UTRAN for planning, diagnosis, optimization and maintenance.

**WCDMA Signalling for Smartphone’s**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

Smartphones introduce several challenges to the networks in which they operate. They have to be always on while the battery consumption has to be kept to a minimum. Often they are used for services like Instant Messaging, Skype, Facebook and so on, which are characterized by frequent signalling transfer, but low effective user data. On the other hand WCDMA signalling has been originally developed for applications like web browsing with low signalling and high user data transfer. This course gives information, how such challenges can be solved and which solutions have been proposed by 3GPP.

**Key Topics**

- Smartphones within WCDMA Networks, 3GPP evolution of related features, UMTS and LTE, WLAN, EGPRS, What are smart phones
- Signalling between UE and Radio Access Network, Radio protocol architecture and WCDMA channels, Layer 2 signalling (MAC, RLC and PDCP), Layer 3 signalling (RRC)
- Smartphone Related Signalling, Signalling challenges, Signalling congestion scenarios, Continuous packet connectivity, Enhanced Cell_FACH state, Fast dormancy
- Procedure Examples, PS RAB setup, PDP context activation , Instant messaging with smart phone, State transition with smart phone
- Usage of Smartphone’s within Femto Cells, CSG cells
- Network elements configuration planning aspects for smartphone dominates areas (up on request)

**Target Audience**

This course has been developed for people dealing with UTRAN for planning, diagnosis, optimization and maintenance.
WCDMA FDD Physical Layer and Procedures

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The course describes the physical layer of the WCDMA FDD mode including the latest HSPA+ features. The radio transmission (modulation, scrambling and spreading) with all relevant physical channels as well as the physical layer procedures (cell search, random access, dedicated channel synchronization, adaptive modulation and coding, fast re-transmission, power control, handover etc.) are explained in detail.

Key Topics

- WCDMA Network Architecture and Protocols
- Spreading & Modulation, Channelization & Scrambling Codes, Code & Time Multiplexing of Control & User Data, WCDMA Modulation methods
- WCDMA FDD Mode Channels, Logical, Transport & Physical Channels, Rel. 99 Physical Channels, HSPA physical channels
- Physical Layer Procedures, R99 procedures (cell search, random access, paging), HSPA procedures (adaptive modulation and coding, fast re-transmission, continuous packet connectivity)
- Multiplexing & Channel Coding, CRC detection, Coding & Interleaving (UMTS & HSDPA), Frame & Slot Segmentation
- Power Control, Open loop, R99 and HSUPA inner and outer loop, HSDPA power handling of user and control data
- Mobility, Intra-frequency (soft handover, serving cell change), Inter-frequency and inter-system handover

Target Audience

This training programmes targets WCDMA FDD planners, radio optimization engineers, personal concerned with performance measurements.

Camel Phase 4 Signalling Protocols for CS Services

Module Summary

Duration: 2 Days

Assessment Pass Mark: 60%
**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

**Overview**

The Participants will get to know in detail the intelligent network procedures for circuit switched services. IN functionalities for PS services, SMS and Any Time Operations are not part of this course.

**Key Topics**

- CAMEL Phase 4 - CS Network Architecture, CAMEL principles and CAMEL network, architecture, Relevant protocols
- TCAP/CAP Protocol Stack, SS7 options (narrowband, broadband, SS7 over IP), SCCP connection-less service (global title translation), SCCP subsystem management, TCAP transaction handling, TCAP dialogues and CAP version negotiation
- Version 4 General Architecture, Basic Call State Models BCSM of all CAMEL versions, Detection Points, Transaction Handling
- CAP Version 4 Operations, CAP operations and parameters

**Target Audience**

This training programme targets people with strong technical background responsible for trouble shooting, development and solution consulting and tracing

**UMTS Core Network Protocols**

**Module Summary**

**Duration:** 4 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

**Overview**

The course explains the core network relevant protocols on the Iu interface and within the core network itself. This covers the protocols SCCP, RANAP, GTP-U and Iu UP protocol on Iu. The MM, GMM, SM and CC protocol between UE and CN are treated, too. The protocols GTP-C, BSSAP+, TCAP/MAP within the CN will be explained together with the UE-CN protocols.

**Key Topics**

- UMTS network and protocols, Network architecture and interfaces, UMTS protocol stacks
● Iu interface – control plane, general aspects, tasks and protocols, Radio Access Bearer, SCCP, RANAP
● UE-CN protocols, General on UE-CN protocols, CS protocols: MM, CC/ PS protocols: GMM, SM, Coordinated mobility management: BSSAP+, Formatting of UE-CN messages
● CN signalling protocols, Bearer independent call control (BICC), Gateway Control Protocol (H.248), Media Gateway Control Protocol (MEGACO) , IP bearer control protocol (IPBCP), Complete sequence
● Service platform protocols / IMS , SIP/SDP and IMS network architecture, DIAMETER protocol, Quality of Service Policy protocol (COPS), IMS signalling procedure

Target Audience

This training programme targets personnel with technical background in mobile communication networks like maintenance personal, technical sales, project integration management and developers.

LTE Protocols and Procedures

Module Summary

Duration: 2 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

The Course describes the UMTS Long Term Evolution LTE and Evolved Packet System EPS network, interfaces and protocol architecture. It introduces the central protocols of the E-UTRA, X2 and S1 interface, giving procedure examples. Finally the central signalling flows, such as Attach, Service Request and Handover are discussed.

Key Topics

● LTE & SAE Network Architecture
● LTE Radio Interface Protocols - Overview
● Non-Access Stratum NAS
● Radio Resource Control RRC
● Data Link Layer L2: PDCP, RLC & MAC
Target Audience

This training programme targets personnel from the technology sector requiring an overview about the LTE & EPS network protocols & procedures.

SIP - Session Initiation Protocol

Module Summary

Duration: 1 Day

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

This course provides detailed information about SIP (Session Initiation Protocol) from IETF and the various protocols that are used with it. Aspects such as security and interworking with legacy networks are considered. Finally, an example of a network where SIP would be used in real life - 3GPP's IMS and the difference between SIP and H.323 protocols will be shown.

Key Topics

- IP-based Multimedia Communication
- Voice over IP
- Introduction to SIP
- SIP Structure and Syntax, SIP Structure, SIP Syntax, Protocols Used with SIP
- SDP - Session Description Protocol, IMS Network Architecture and Elements, Interfaces and Protocol Stacks, Charging in IMS
- Advanced SIP Functions, Advanced SIP Functions, Interworking with Legacy Networks
- SIP and Mobility – IMS, IMS as Next Generation Networking, Elements and interfaces of IMS based on SIP, SIP Signalling Examples in IMS
- SIP versus H.323
- Examples of SIP applications

Target Audience
This training programme targets network engineers requiring an understanding of SIP and related protocols.

**WCDMA Optimization of Radio Networks**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

**Overview**

The participants will learn how to monitor their network with various types of counters and KPIs to detect faults and to analyze the causes of these problems. Based on real life network examples, the troubleshooting of bad cells and node Bs by call phase and root cause drill down will be shown. Finally it will be demonstrated, how to perform a network audit by checking the configuration data bases and analyzing the problems dominating on cluster, RNC or even PLMN level.

**Key Topics**

- Introduction to Optimization, Targets and process, Troubleshooting, Audit
- KPI and Counters, Counter - performance Indicator – KPI, Types by trigger (event - ratios, gauge - histograms), Types by content (traffic, signaling, usage, integrity, air interface), Monitoring process (time and geographical aggregation)
- Troubleshooting, Troubleshooting Process, 3GPP Parameters, End user experience (top KPIs), Signalling (network level KPIs, call phases, call setup, call drop)

**Target Audience**

This training programme targets personnel from performance monitoring and optimization department.

**WCDMA Radio Resource Management, Features and Parameters**

**Module Summary**

**Duration:** 5 Days
Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

The course gives a deep understanding of the WCDMA radio resource management features including HSPA (+) and the related radio parameters on the basis of 3GPP. RRM features like R99 power control, admission control, packet scheduling and handover control and their HSPA (+) counterparts are discussed in detail. A qualitative discussion of different features implementations realized in practice by different vendors is given too.

Key Topics

- Introduction to radio resource management
- Radio channel configuration
- Power control
- Load control
- Admission control
- Packet scheduling
- Code tree management
- PLMN and cell selection
- Handover procedures
- HSDPA protocol features
- HSDPA power resource management
- HSDPA code resource management
- HSDPA mobility
- HSDPA+
- HSUPA protocol features
- HSUPA power resource management
- HSUPA mobility

Target Audience

This training programme targets personnel from planning, optimization and network management department.

WCDMA Troubleshooting of Radio Networks with Life Network Analysis

Module Summary
Duration: 2 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

Based on OSS performance data of the customer’s own network, troubleshooting of the worst cells and node Bs by call phase and root cause drill down will be done. Additionally, a network audit will be given analyzing the problems dominating within the RNC area selected by the customer. This course is considered as additional module to the course "WCDMA Optimization of Radio Networks".

Key Topics

- Report summary about most critical problems detected within customer’s network
- Call flow and root cause analysis for worst cells, RRC and RAB setup and access, RRC and RAB drop, SHO, inter-frequency and inter-system HO
- Audit, Traffic distribution for RRC connection requests, throughput and number of HSPA(+) users, Performance distribution for Ec/Io, RSCP, CQI, SHO overhead and block error ratio, Dominating failure causes during call setup, call release and HO on RNC level

Target Audience

This training programme targets personnel from performance monitoring and optimization department.

WCDMA Counters and Key Performance Indicators

Module Summary

Duration: 4 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview
This course provides guidance on how to monitor the performance of the WCDMA network, especially the UTRAN. Important KPIs are introduced to evaluate accessibility, retainability and mobility procedures as well as the performance of the air interface and the quality of service experienced by the user. Practical sections present the evaluation of 3GPP failure causes and of the air interface performance based on call trace and OSS data.

Key Topics

- WCDMA Network Overview, Quality requirements in WCDMA networks, WCDMA architecture and protocols, Performance data and key performance indicators
- Call and Connection Analysis, Service concept, Call setup and release, PS traffic in UTRAN, Practical protocol trace examples, Optional appendix: NAS procedures
- Mobility, Handover types; Measurements, Soft handover; Hard handover / SRNC relocation, HO parameter verification with TECHtrace®
- Quality, Resources in UTRAN and ATM and IP/Ethernet measurements, Throughput measurements and Radio measurements, Codes and Quality and load related KPIs, Air Interface quality and load verification with TECHtrace®
- HSPA / HSPA+, General aspects, HSDPA (setup and release, serving cell change, throughput, number of users, power and codes,
- CQI), HSUPA (setup and release, soft handover, throughput, number of users, power)
- HSPA+ (higher modulation, MIMO, dual carrier HSPA, F-PDCH, high speed Cell_FACH, Voice over
- HSPA, continuous packet connectivity)
- Practical protocol trace examples

Target Audience

This training programme targets personnel from performance monitoring and optimization / troubleshooting department.

LTE Radio Network Planning

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, knowledge test.

Overview
The participant will learn all fundamental aspects of the LTE air interface needed for LTE radio network planning. LTE coverage and capacity calculation will be explained in detail.

**Key Topics**

- Network architecture and interfaces, LTE objectives and standardization / Architecture overview / EUTRAN and EPC architecture / LTE UE / Interfaces
- LTE radio interface protocols
- E-UTRA and E-UTRAN protocols overview / MAC resource allocation / Logical, transport and physical channels
- E-UTRA layer 1 key aspects and OFDM(A) principles
- E-UTRA transmission ODFMA and SC-FDMA
- LTE and MIMO
- Multi antenna transmission principles in LTE / Spatial multiplexing MIMO principles / Spatial multiplexing MIMO in LTE
- LTE physical channels and procedures
- Physical layer design / Cell search and random access procedures / DL and UL physical channels
- Physical layer overhead
- Dimensioning flow / Generic overhead characteristics / DL and UL signaling overhead
- LTE frequencies, LTE frequencies / Inter cell interference coordination / Frequency hopping / Frequency selective scheduling
- LTE link budget, Principles of coverage calculation / DL and UL link budget / Examples
- LTE capacity, Capacity dimensioning process / LTE capacity / throughput versus SINR / Parameters affecting the LTE capacity
- VoLTE, VoLTE as GBR service / VoLTE codecs / Protocol header overhead / Coverage / Capacity
- Outlook to LTE advanced, The real 4G / LTE R10 technology components / Network architecture enhancements / LTE R11 and beyond forecast
- PCI, PRACH and paging
- PCI and PRACH planning / Page capacity

**Target Audience**

This training programme targets Radio network planners, E-UTRAN system specialists and field engineers.

**LTE Planning and Optimization for Roll Out**

**Module Summary**

**Duration:** 5 Days
Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

The course equips the participants with the technical know-how of shortening the LTE rollout phase. They will get a deep understanding of the initial planning and the related parameter settings, as well as of the performance monitoring of the air interface and user experience required during roll out within a multi-vendor environment. Additionally the reuse of existing 2G/3G sites will be discussed, and how one can predict the LTE performance on basis of the 2G/3G performance at such reused sites. Optionally OSS life data of the customer’s 1/2s network will be discussed, which are summarized as report. Air interface performance (RSRP, RSRQ, CQI) and user experience (throughput, BLER) will be analyzed with a geographical accuracy better than cell level. An analysis of OSS life data of 2G/3G sites to be reused for LTE will also be discussed.

Key Topics

- Coverage Planning, Link budget, Coverage calculation
- Cell Capacity Estimate, Physical channel dimensioning and overhead, Throughput Role of inter-cell interference coordination
- Reuse of Existing 2G/3G Sites, Problems, Prediction of LTE performance
- Fundamental Parameter Settings, Codes (PCI, PRACH root sequence index), Power (cell power, open loop power control), Idle Mode Mobility, Connected Mode Mobility
- Network diagnostics, Air interface performance on DL (RSRP, RSRQ, CQI, cell matrix), Air interface performance on UL (RSSI, SINR, UE power headroom), User experience (throughput, BLER, drop),
- X2 and S1 dimensioning, Introduction to Transport Dimensioning, Based on Air Interface Throughput, Based on Traffic Demand, C-plane and M-plane Dimensioning

Target Audience

This training programme targets Engineers working in E-UTRAN planning, performance monitoring and optimization department as well as experts for technology swaps and upgrades.

LTE Optimization of Radio Networks

Module Summary
Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

The participants will learn how to monitor their network with various types of counters and KPIs to detect faults and to analyze the causes of these problems. Based on numerous real life network examples, the troubleshooting of bad cells and eNodeBs by call phase and root cause drill down will be shown. Finally it will be demonstrated, how to perform a network audit by checking the configuration data bases and analyzing the problems dominating on cluster or even PLMN level.

Key Topics

- Introduction to Optimization
- Optimization targets and process
- Troubleshooting
- Audit, LTE specific features
- Counters and KPIs, Hierarchy of measurements (counter – PI – KPI, aggregation)
- Classification of performance measurements
- Air interface related measurements (CQI, RSRP/RSRQ, UL RSSI/SINR, power headroom)
- Signalling related measurements (accessibility, retainability, mobility)
- Integrity measurements (user throughput, block error ratio, packet loss and delay)
- Traffic measurements (resource block utilization, number of users, cell throughput)
- Optimization and Troubleshooting
- RF optimization (antenna tilt and azimuth, interference, crossed feeders)
- Setup and access failure causes (PRACH procedure, RRC and ERAB establishment)
- Drop causes (network and user view, ERAB and UE context drop)
- User experienced data rate (impacts from high layers, air interface related causes)
- HO failure causes (preparation and execution, event optimization)
- Parameter tuning (UL power control, physical channel configuration)
- Audit, Configuration management (consistency, feature and parameter check)
- Performance management (traffic and radio performance)

Target Audience

This training programme targets personnel from performance monitoring and optimization department.

LTE Radio Resource Management, Features and Parameters

Module Summary
Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The course gives a deep understanding of the LTE radio resource management features and the related radio parameters on the basis of 3GPP. RRM features like physical CH configuration, DRx in idle /connected mode, admission / load control, link adaptation / MIMO, packet scheduling, power control and ICIC, idle / connected mode mobility and SON are discussed in detail. A qualitative discussion of different features implementations realized in practice by different vendors is given too.

Key Topics

- LTE Parameter Database, System Info and Signaling Timer
- Physical Channel Configuration, Channel Overview / LTE Access / DL and UL Physical Channels
- LTE Bearer Handling, Radio Protocols / Bearer Model / Paging / DRx in Connection Mode / QoS Configuration
- LTE Admission and Congestion Control, Admission Control / Preemption / Load Control
- LTE Link Adaptation, MIMO and CoMP, Link Adaptation... / ...on PDSCH and PUSCH / for VoLTE / ...on PDCCH / MIMO / Coordinated Multi-Point Operation
- 6. LTE Packet Scheduling
- Administration / Time Domain Scheduling / Frequency Domain Scheduling / VoIP / Carrier Aggregation
- LTE Power and Interference Control
- UL Power Control and DL Power Settings / ICIC Frequency and Time Division / ICIC State
- Transitions / Dynamic ICIC and Interference Shaping
- LTE Idle Mode Mobility
- Cell (Re)Selection Process / Measurements in Idle Mode / S and R Criterion / Load Balancing in RRC Connection Release
- Speed of UE / Access Restrictions / Closed Subscriber Groups
- Connected Mode Mobility
- Handover Architecture and Process / Measurements in Connected Mode / HO Events
- Redirection / SRVCC and CSFB / Load Balancing / Closed Subscriber Groups
- LTE SON Features and Applications
- SON Architecture / Self Deployment / Automatic PCI Configuration
- Automatic Neighbour Planning and Optimization / Minimization of Drive Test

Target Audience
This training programme targets personnel from planning, optimization and network management department.

LTE Troubleshooting of Radio Networks with Life Network Analysis

Module Summary

Duration: 2 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Based on OSS performance data of the customers own network, troubleshooting of the worst cells and eNodeBs by call phase and root cause drill down will done. Additionally a network audit will be given analyzing the problems dominating within a cluster selected by the customer. This workshop is considered as additional module to the course "LTE Optimization of Radio Networks". Troubleshooting and optimization will be discussed on the basis of OSS data of the customers network, summarized as report. Air interface performance (RSRP, RSRQ, CQI, block error ratio) and traffic distribution (number of RRC connection requests, throughput, number of users) will be analyzed with a geographical accuracy better than cell level.

Key Topics

- Report summary about most critical problems detected within customer’s network, Call flow and root cause analysis for worst cells
- RRC, ERAB and UE context setup and access
- RRC, ERAB and UE context drop
- Intra eNodeB, inter eNodeB and inter-system HO
- Audit, Traffic distribution for RRC connection requests, throughput and number of users, Performance distribution for RSRP, RSCQ, CQI and block error ratio, Dominating failure causes during call setup, call release and HO on cluster level

Target Audience
This training programme targets personnel from performance monitoring and optimization department.

**LTE Counters and Key Performance Indicators**

**Module Summary**

**Duration:** 4 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

This course provides guidance on how to monitor the performance of the LTE radio access network. Important KPIs based on 3GPP are introduced to evaluate accessibility, retainability and mobility procedures as well as the traffic and the performance of the air interface and the quality of service experienced by the user. Specific services and enhanced features like VoLTE, carrier aggregation and SON are included.

**Key Topics**

- Measurement categories, Signalling procedures / Traffic / User experienced quality / Coverage
- Accessibility, Bearers in EPS / RRC connection, UE context and E-RAB
- Retainability (RRC connection, E-RAB and UE context release)
- Mobility, HO options in connected mode / Signalling UE - eNodeB / Intra- and inter-eNodeB HO / Inter-system, PS HO, voice mobility and redirection / KPIs for mobility optimization by SON
- Re-establishment, Signalling flow / Causes / UE context retrieval
- Utilization and traffic, Air interface and HW utilization / User traffic / Throughput and data volume
- Integrity and quality
- Uu interface data link layer / MAC and RLC layer / PDCP packet loss and delay / Instantaneous and experienced speed / QoS for VoLTE
- Availability and coverage
- Cell availability KPIs
- DL and UL related measurements
- Timing advance

**Target Audience**
This training programme targets Engineers working in E-UTRAN performance and QoS monitoring and field engineering.

**GSM/ WCDMA/ LTE System Interworking**

**Module Summary**

**Duration:** 4 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

The course will present the parameter data base concepts as well as the cell re-selection and handover procedures related to mobility between 2G, 3G and 4G networks. The signalling flow coming up during inter-RAT mobility will be discussed, together with the performance measurements needed to monitor the individual phases of these procedures.

**Key Topics**

- Interworking GSM to WCDMA
- Features and Parameters (BSS parameter objects for mobility to 3G, cell re-selection, ISNCCR, ISHO)
- Performance Measurements and KPIs (signalling flow and monitoring for ISHO and ISNCCR)
- Interworking WCDMA to GSM
- Features and Parameters (RAN parameter objects for mobility to 2G, cell re-selection, ISHO)
- Performance Measurements and KPIs (signalling flow and monitoring for ISHO and RNC-BSC-relocation)
- Interworking LTE to GSM and WCDMA
- LTE HO architecture according 3GPP (HO measurements and trigger)
- Features and Parameters (LTE parameter objects for outward mobility, cell re-selection, NACC, HO, redirection, CSFB)
- Performance Measurements and KPIs (signalling flow and monitoring for HO, redirection and CSFB)
- Interworking GSM + WCDMA to LTE
- Interworking of WCDMA with LTE (RNC parameter objects for mobility to 4G, cell re-selection, HO, monitoring)
- Interworking of GSM with LTE (BSS parameter objects for mobility to 4G, cell re-selection, ISNCCR, monitoring)

Target Audience

This training programme targets engineers from planning, performance monitoring and optimization departments who need detailed knowledge about inter-RAT mobility between 2G, 3G and 4G networks.

Multi-technology Coverage Planning for in-building Installations

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The participants will learn how to model RF propagation within buildings. Different types of environment like office buildings, shopping malls and tunnels will be taken into account. Next the link budget for radio access networks from 2nd to 4th generation will be discussed, including cell size estimates for typical in-building installations. Finally it will be shown, how the link budget is modified by repeaters. Limitations arising from processing and propagation delay will be presented as well.

Key Topics

- In-building propagation models
- Types of propagation models
- Tunnels
- In-house environment
- Multi-technology link budgets and in-building cell size estimates, GSM, LTE
- Repeater, GSM Modification of link budget, Limitations due to delays
**Target Audience**

This training programme targets radio network planners and field engineers working especially with in-building installations.

**Network Performance Analysis with TECHtrace OSS/ PRO and Administration**

**Module Summary**

**Duration:** 4 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

The participants will learn to load OSS data to the TECHtrace® OSS/PRO software to obtain presentations of various KPIs in forms of reports, diagrams and geographical distributions. The detection of bad cells by automatic analysis techniques will be discussed. The participant will get an understanding of the interpretation of standard OSS KPIs and new ones generated by the TECHtrace® OSS/PRO software on the basis of real life measurements.

**Key Topics**

- Introduction to TECHtrace®
- Software architecture
- Import of OSS data
- GUI overview
- Working with the software
- Representation of KPIs by reports and diagrams
- Geographical KPI distribution
- Automatic detection of bad cells
- Air Interface Analysis
- User distribution (propagation delay)
- Cell quality and coverage (Ec/lo, RSCP)
- HSDPA quality (CQI)
- Cell overlap (adjacent to own cell interference ratio, SHO overhead)
- DL load (TCP and HSDPA power)
- UL load (RTWP and own cell load)
- Traffic Analysis
- RRC traffic (RT and NRT services, signalling procedures)
- Throughput (RT and NRT services, signalling procedures, R99 and HSPA)
- Number of users and throughput per user
- Channel card utilization
- Topics
- Software architecture and administration work flow
- TTWHClient, TTCommander, TTScript Manager
- Definition of performance indicators, PI editor, Types of PIs and types of data aggregation, Configuration of tabular representation of PIs
- Programming of import scripts, Creation of scripts, Objects used by script engine, Script example
- Programming of reports scripts, Script editor
- Definition of source performance indicators
- Types and definition of diagrams
- Configuration of overall representation
- Programming of geo map scripts, Script editor, Script parameters

Target Population

This training targets personnel from performance monitoring and optimization departments who will analyze the performance of their network on the basis of OSS data.

IPv6

Module Summary

Duration: 1 Day

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

In global networks IPv4 does not work sufficiently any more. These aspects that range from the address exhaustion problem to the support of real time data, are presented in the course. The concepts to overcome these shortcomings in IPv6 are explained. This covers addressing, auto-configuration, real time support and finally the transition and introduction scenarios for IPv6 are presented.

Key Topics

- Introduction: Why not IPv4
- Address Exhaustion; New applications and their requirements; IPv6 packet structure
- IPv6 addressing and routing
- IPv6 addressing
- Address classes
- Routing in IPv6 networks
- Extension Headers for Routing
- Auto Configuration
- Stateless and stateful auto configuration
- Name servers
- IPv6 and the data link layer and Mobility in IPv6
- Routing difference aspects
- Real time applications, QoS realization in IPv6, Packets and flows, Capacity reservation
- Security aspects, Security mechanisms, Ciphering and authentication, Extension Headers for security, Key Infrastructure
- Transition from IPv4 to IPv6
- Double stack, Tunnelling; Interworking; The 6 Bone; Availability of IPv6

**Target Audience**

This training programme targets personnel who need information about the new possibilities, the practical realization and introduction of the new Internet standard.

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**IP Fundamentals for LTE Transmission Planners**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

The training should inform the participants according to the LTE transmission networks: main principles of IP technologies, protocols in IP and LTE transport networks, QoS basics, interfaces in the RAN and Core.

**Key Topics**

- OSI and TCP/IP models, overview of LAN technologies
- LAN technologies, Ethernet standard overview, Layer 2 (data link).
- Internet Protocol (IP) v4: principles, header, addressing, subnetting. Layer 3 (network)
- IP4 routing principles and protocols; IP v6 overview; MPLS Overview
- Protocols of transport layer: TCP, UDP, SCTP. NAT & NAPT. QoS, IPSec
- IP in the LTE networks: interfaces, protocols, signalling, protection, synchronization, QoS

**Target Audience**

This training programme targets engineers who work with LTE transmission networks.
**Spectrum Management**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

As a scarce resource, ensuring that the highest value users have sufficient access maximizes the socio-economic value of spectrum. As it is technically and operationally complex, and value can be destroyed by interference, ensuring this is managed and controlled is vital. But solutions for achieving the allocation of spectrum to the highest value users and ensuring that interference is controlled are evolving quickly as trends in spectrum usage change, and new tools for its management become available. Thus spectrum managers may be able to increase the efficient utilization of this resource. This course will review the regulation and use of spectrum globally; offer deep insight into pricing approaches and post-assignment management, and provide actionable recommendations.

**Key Topics**

- Different approaches to spectrum management
- How to deliver optimal outcomes
- Short-term pricing / long-term welfare trade-offs
- The pros and cons of auction designs
- Secondary trading: benefits and enabling
- Using spectrum to promote broadband access

**Target Audience**

The course is designed for Masters level students and senior executives across the ICT profession: operators, Internet services providers, regulators and government officials.

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**Telecom Pricing, Cost and Financial Analysis**

**Module Summary**
Overview

Participants will learn the key concepts of practical telecom pricing, cost, financial analysis and management. In addition they will learn to perform price analysis and cost analysis and financial modelling to determine price reasonableness in accordance with telecom authorities. Telecom Pricing, Cost and Financial Analysis Training course delves deep into telecom financial analysis and modelling. The programme will cover topics on performing accurate financial analysis, using telecom financial indicators and benchmarks to allocate resources and evaluate potential projects for maximum ROI (return-on-investment).

Key Topics

- Fundamentals of telecom cost and Pricing
- Fundamentals of telecom financial analysis
- Introduction to telecom cost analysis
- Applying price-related factors to telecom products and services
- Advanced techniques for telecom budgeting, cost and price analysis
- Advanced telecom cost modelling, pricing and financial analysis methodologies

Target Audience

Telecom financial analysts, cost accountants, cost analysts, budget analysts, systems analysts, auditors, accountants, accounting managers, financial planners, product developers and marketing professionals.

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Financial Modelling in Telecommunications

Module Summary

Duration: 4 Days

Assessment Pass Mark: 60%
Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, Site visits, completion of coursework, Knowledge test

Overview

Financial models are a key element in most major business decisions. They are useful tools that allow business options and risks to be evaluated in a cost-effective manner against a range of assumptions, identify optimal solutions in evaluating financial returns and understand the impact of resource constraints to make the most effective business decisions. This training programme provides participants with the fundamental concepts, principles, tools and best practices of financial modeling as it applies to the telecommunications sector.

Key topics

- Basic principles of accounting
- Financial models
- Price setting
- Capital project
- Strategic planning process
- Variance analysis on financial results
- Project/product evaluation
- Financial planning best practices and components financial planning and budgeting
- Variance analysis for financial and non-financial results performance management process

Target Audience

This training programme is designed for telecommunications managers and personnel responsible for financial analysis, financial modelling and business valuation.

Effective Telecom Competition – Finding a Balance

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
The telecom environment is in constant evolution and competition is fierce. One of the difficult roles of a regulator is to put in place any needed ex-ante regulation to stimulate competition, but at the same time to not over-intervene, allowing market forces to be the real drivers of competition. This training programme will enable participants to analyze and discuss important current issues related to competition in the telecommunications sector; from competition safeguards such as dominant carrier regulation to the new challenges of digital competition and net neutrality.

**Key Topics**

- Competition and digital disruption
- Fundamental competition policy concepts in telecom
- Anti-competitive practices
- Approaches to regulation
- Anti-competitive remedies
- Wireless competition - Regulation and spectrum policy
- Mergers, acquisitions and joint ventures
- Telco vertical mergers vs OTT video streaming
- Net neutrality and zero-rating
- Case study IoT competitive positioning and business models

**Target Audience**

This training programme is designed for telecommunications managers and personnel involved in telecom regulation and policy-making.

**Best Practices in Telecom Cost Modelling and LRIC**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**
Setting cost-based interconnection and access pricing is one of the main concerns of regulators, even as telecom transitions from being voice-based to broadband driven. For operators, responding to regulatory requirements for cost-based pricing requires significant effort to build, maintain and defend regulatory cost models. For both regulators and operators, understanding telecom cost models is essential.

This 5-day practical course provides participants with best practices to understand develop and implement successful LRIC costing models for voice and data using top-down, bottom-up and hybrid approaches.

**Key Topics**

- Telecomm Industry outlook
- Interconnection Regulation ,
- Cost modelling – what to cost,
- Activity based costing(ABC)
- Key concepts of Long Run Incremental Costing(LRIC)
- LRIC Methodology,
- Practical case study – Developing LRIC model

**Target Audience**

This training programme targets telecommunications managers and personnel working for operators and regulators responsible for evaluating costs and establishing interconnection and wholesale tariffs.

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**Blockchain Solution Architect**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

In the near future, blockchain will fundamentally change business and society. The course will help participants to understand this revolution and how to adapt their organisation’s strategy to apply it.

**Key Topics**
- What is Blockchain?
- How does Blockchain work?
- Types of Blockchains?
- How is Blockchain different from what we have today?
- What are use cases for Blockchain?
- What does a Blockchain app look like?
- How to design a Blockchain app
- How to develop a Blockchain app
- How to test a Blockchain app

**Target Audience**

This training programme is designed for technical leaders who need to make decisions about architecture, environment, and development platforms. The Certified Blockchain Solution Architecture exam is included with class.

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**Certified Fibre Optic Technician Course**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

Fibre Optic course is designed for anyone interested in becoming a Certified Fiber Optic Technician (CFOT). Blended learning approach that incorporates theory and hands-on activities shall be adopted throughout this programme. The course also introduces the participant to industry standards governing outside plant and premises fiber networks.

**Key Topics**

- How Fiber works, advantages and disadvantages of optical Fiber
- Introduction to optical Fiber transmission systems
- Manufacture of optical Fiber cables
- Types, characteristics, classification and structure of optical Fibers
- Optical devices
- Optical Networks
- Safety precautions
- Optical Fiber installation methods

**Target Audience**
Traffic accounting and Revenue Assurance

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This five-day course explains the concepts of traffic accounting and revenue assurance principles and how they are applied within existing operational support systems (OSS) and business support systems (BSS). Participants will learn how to locate, analyse and extract traffic accounting from call data records (CDR), before being introduced to the revenue settlement process.

Key Topics

- Current OSS and BSS.
- 2CDR and mediation servers.
- Traffic accounting from CDR.
- The revenue settlement process.
- Billing and revenue sharing.
- Analysis of a settlement contract between operators.
- Automating the settlement process through electronic data interchange (EDI) systems.
- Fraud management.

Target Audience

Staffs of telecom operating companies engaged in retail and interconnect billing, operator handling, cashiering, credit control and accounting systems.

Broadband Pricing
Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview
This course explains broadband technologies and their applications, including multimedia services, as key drivers of bandwidth demand. Broadband access and broadband service portfolio management are covered extensively, followed by discussions about competitive strategies and regulatory constraints. Pricing methodologies and scenarios are discussed throughout, including application pricing and packet-based pricing.

Key Topics
- Customer segments
- Pricing strategies for broadband access, broadband service and leased lines
- Service level agreements (SLAs)
- Multimedia pricing
- Portfolio management
- Costing and pricing

Target Audience
Marketing and sales staff working on value propositions and product development across the business, for corporate and residential customers.

Diploma in Telecommunications Management Studies

Module Summary

Duration: 6 Weeks

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
The fast moving telecommunications industry driven mainly by rapidly changing technologies, evolving services and increasingly complex consumer demands, generate new business challenges, requiring the professionals in the industry to be constantly updated. This six week course is designed to provide participants with tools that will enhance their ability to master the changes in the business and technical environment to assure operational and business success for their organisations. This course will examine essential elements of technology evolution, the changing institutional/legal/regulatory frameworks and the challenges of creating value through enterprise and effective management practices.
Essential management theories and frameworks will be adopted to suit the ICT sector. The course utilises a practical, hands-on approach and is designed to be challenging and thorough.

Key Topics

Module 1: Telecoms Fundamentals (3 days)

- Overview of telecom networks
- Switching and signalling basics
- Transmission basics (OFC and OFS) and networks (PDH and SDH)
- Data communications
- IP routing, VoIP and MPLS
- Fixed and wireless access technologies
- Broadband fundamentals, including DSL technologies
- NGN, IMS, and soft switch architecture
- Radio cells principles
- GSM and CDMA network architectures
- Call and mobility management
- GPRS, EDGE, 3G & WCDMA, 4G/LTE
- WiBRO-WiFi, WiMAX, and future mobile trends
- Convergence of wired and wireless technologies
- The future market place (4G and beyond)

Module 2: Latest and Evolving ICT technologies and applications

- Internet of Things (IoT)
- Big Data Analytics
- Blockchain Technology
- Artificial Intelligence

Module 3: Planning and Designing of Fixed and Wireless Networks (3 days)

- Key components of fixed and mobile networks
- Strategic planning and network design
- Fixed network optimisation
- Planning of telecom nodes and transmission centres
- Spectrum planning and optimisation
- Spectrum management and pricing
- Call management and mobility management
- Quality of Service monitoring
- Power control in mobile communications
- Mobile networks and standards: GSM and CDMA
- Mobile data networks: GPRS, EDGE, EV-DO and HSDPA
- Mobile network deployment and expansion
- Value Added Service Providers (VAS) and Mobile Virtual Network Operators (MVNOs)
- Wi-Fi, WiMAX, 4G, LTE, and future trends in mobile communications
- Global telecom standards
Module 4: Data Networks (1 day)

- Concept of data communication
- Packet switching
- Message switching
- Transport technologies: ATM, Frame Relay, and X.25
- Access technologies: ISDN and xDSL
- IP networks
- VoIP
- Triple and quad-play networks
- Convergence beyond triple and quad-play

Module 5: Next Generation Networks and Services (1 day)

- Next Generation Networks (NGN)
- NGN principles
- NGN architecture
- Fibre optic cables & systems - Latest trend in access technologies (FTTH, GPON and GEPON)
- Migration of legacy systems to NGN
- Emerging Technologies
- NGN Services - Basic telecom services - voice and data
  - VAS including voice management options
  - IP services such as VoIP, Rich Voice including protocols such as H.323 and SIP
  - Multimedia services including triple play, quad play and IPTV
  - Cloud Services, IaaS, PaaS, SaaS and others
- QoS and its impact on bandwidth provisioning
- Service security policies and management
- Service evolution including Apps, Content Services and OTT

Module 6: Network Interconnect (2 days)

- The need to interconnect, types of interconnects and co-location
- Categories of network interconnect in fixed, wireline and wireless networks
- Essential facilities as specified by global standards
- Interconnect agreements and tariffs
- Security in access to structures/co-location of dominant service providers
- Revenue allocation, measured and non-measured traffic interchange
- Forecasting future requirements for capital planning
- Network interconnect/co-location as a business opportunity

Module 7: Understanding Strategy (1 day)

- A generic approach (Michael Porter)
- A problem based approach (Richard Rumelt)
- Strategic choices informed by vision, mission and objectives (Ansoff, BCG GE-Mckinsey and TOWS Matrix)
- Strategic implementation and valuation
Module 8: Change Management  (1 day)

- Types of change (planed, driven and evolved)
- Change Management Strategies
- Top-down transformation and bottom-up change
- Stages of change
- Forces for change
- Sources of resistance
- Managing the politics of change

Module 9: Project Management (1 day)

- The project concept
- Project planning and project scope
- Project problems and impact on successful implementation
- Project budget and control
- Allocation and levelling of project resources
- Building and sustaining effective project teams
- Project monitoring and tools
- Project risk management
- Project closure

Module 10: Risk Management (1 day)

- Understanding risks within and outside the business
- Emerging threats
- Performing a business impact analysis
- Risk assessment and monitoring
- Developing risk management strategies
- Risks in IT and data

Module 11: Business Continuity Planning (1 day)

- Identification and assessment of key business risk areas
- Corporate risk matrices and profiles
- Development of risk management frameworks
- Disaster management, including action plans
- Business continuity planning: strategy, organisation and procedures

Module 12: Strategic Human Resource Management (2 days)

- Human resource management basics
- Effective communication
- Time management
- Decision making
• Personnel Management
• Job Analysis & Design
• Performance measurement, rewards and feedback
• Recruitment
• Training
• Strategic talent management
• Succession planning
• Stress management
• Conflict management
• Motivation
• Team building
• Leadership and team management
• Managing cross teams
• Emotional intelligence
• HR information management
• Managing diversity strategies
• Succession planning

Module 13: Business Intelligence, Marketing and Sales (2 days)

• The telecommunications business environment
• Competitive intelligence
• Business intelligence, marketing research and customer segmentation
• Decision making
• Marketing management basics and process
• Applying global marketing principles to regulation
• Marketing strategies including effective e-marketing tactics
• Portfolio management
• Marketing of services
• Service positioning, differentiation and consumer buying behaviour (the strategy clock and other models)
• Brand management
• Churn management
• Sales strategy and management
• Sales channels and management
• Supply chain management
• Targeting global markets
• Enterprise marketing management
• Risk management and measurement

Module 14: Strategic Customer Relationship Management (1 day)

• Changing from a technology-centric to a customer-centric approach
• Understanding customer needs and behaviour
• Attitude improvement for CRM
• CRM Basics and its components
• CRM strategy
• Business process management
• CRM measurement
• Customer care
• CRM in a convergent scenario

Module 15: ICT Policy and Regulation (3 days)

• Telecom policy
• National ICT policy
• Policy from a stakeholder’s perspective
• Policy objectives and implementation
• Global standards and compliance
• Regulatory functions and models
• Regulatory governance and independence
• Service and content regulation
• Technology regulation and net-neutrality
• Economic regulation and competition
• Market definition, market analysis and forward planning
• Dominance and anti-competitive behaviour (cross-subsidisation, price discrimination and predatory pricing)
• Price regulation (price cap regulation and rate of return regulation)
• Unbundling and access to essential facility
• The LRIC process and access pricing including interconnection and unbundled access
• Mergers and acquisitions
• Customer care under convergence
• Licensing and market entry
• Spectrum management and development of new services
• Universal access
• Environmental issues
• Data and privacy protection
• e- and m-applications such as e-governance and m-governance
• Dispute resolution
• OTT and other issues presenting today’s regulatory challenges

Module 16: Technology and Financial Management

• Economic Environment of Business
• Accounting Principles
• Financial Management (2 days)
• Financial Management
• Preparation and analysis of General Financial Statements and Ratio Analysis
• Capital structure
• CAPEX vs. OPEX
• Working capital management
• Telecommunications asset management
• Costing and MIS as a tool for accounting
• Preparing business plans
• Cost of migration to new technologies
• Costs and tariffs
• Revenue assurance

Module 17: Telecom Fraud Detection and Management (2 days)
• Description of fraud, evolution of fraud and fraud drivers
• SIM card fraud, Man-in-the Middle and subscription fraud
• Fraud risk identification, identifying weaknesses, grading risks and counter measures
• Vulnerability assessment
• Fraud techniques
• Fraud targets
• Fraud channels
• Fraud mitigation
• External vs. internal fraud
• Detection and Prevention

Module 18: Cyber Issues (1 day)

• Cyber security
• Critical Information Infrastructure Protection
• Cyber crime and cyber threats
• Privacy and data protection
• Protection of children on line
• Global Cyber security initiatives

Module 19: Business Communications (1 day)

• Principles of business and workplace etiquette
• Business communication
• Challenges in a competitive scenario
• Business writing skills

Module 20: Writing a Business Case (1 day)

• Product, service or problem description
• Market research (customers and competitors)
• Operation planning
• Business controls
• Financial analysis
• Developing and presenting a business plan with confidence

Target Audience

This training programme is designed for telecommunications professionals of policy makers, regulatory bodies and operational companies, both fixed and mobile, working in various departments such as planning, strategy, technical, regulatory, legal, marketing, sales and business development.

Introduction to Telecommunications Management Studies
Module Summary
Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The telecommunications landscape is changing. These changes are driven by evolving technologies, powerful user devices, increasing user demand, and forward-looking ICT service providers.

Participants of this five-day programme will review basic telecommunications services and become familiar with evolving services. They will learn to identify service target markets and their applications by utilising service innovation strategies and breaking out of service imitation cycles.

Key Topics

Module 1: Telecommunications market

- Evolving telecommunications and broadcasting
- Global and regional telecommunications organizations
- Standards, recommendations
- Request for comments (RFC)
- Objectives of ICT regulation
- Role of the regulator

Module 2: Telecommunications basics

- Service categories
- Telecommunications
- Broadcasting

Module 3: Telecommunications basics

- Networks and functional content only
- Telecommunications service platforms
- Core network technologies
- Access network technologies
- Broadband access, quality of service (QoS) management,
- Mobility management
- Multiprotocol Label Switching (MPLS)
- Impairments affecting next-generation services, pricing strategies
- Traffic interchange rates and attachment pricing cost allocation
- Network Function Virtualization(NFV)
- Software Defined Networks(SDN)
- Improving network efficiency

Module 4: Competition and interconnect
● Network interconnect
● Infrastructure sharing facilities for fixed wireline and cellular wireless network
● Unbundled network elements, number portability, cost identification of interconnect facilities and services
● Access to right of way (ROW) and attachment rights to towers and poles
● Use of duct
● Revenue sharing and allocation models based on user traffic terminated
● Compliance issues

Module 5: Spectrum management, licensing and frequency utilisation

● ICT networks and wireless spectrum, radio spectrum
● Review of basic frequency utilisation techniques
● National spectrum management
● Spectrum management objectives
● Spectrum pricing
● Handling competitive requirements of operators
● Compliance monitoring and enforcing.

Module 6: Marketing and service development in a competitive market

● Impact of competition on telecom management
● Need for agility
● Service imitation vs service initiation
● Blue Ocean Strategy, using churn management as a marketing tool
● Customer segmentation and targeting
● Market strategic risk management
● ICT tools to improve corporate efficiencies
● Workforce collaboration
● Workforce talent management

Module 7: Issues specific to telecommunication and future development

● Service convergence vs regulatory oversight
● Broadcasting as a telecom regulatory responsibility
● How to treat non-telecom components and providers? Best practices globally
● How is universal service changing? Is broadband access a right? Discussions at the United Nations (UN) and individual countries
● Move from price regulation to deregulation
● Compliance monitoring and enforcement
● Artificial Intelligence (AI): Regulation
● Regulation of the deployment of Blockchain technologies

Target Audience

This training programme targets technical and non-technical staff of telecommunications service providers and sector regulators who require a general understanding of the telecommunications eco-structure.
POLICY AND REGULATION COURSES

Spectrum Pricing

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
This course begins with an introduction to spectrum as a limited and valuable natural resource, and discusses existing spectrum management methods, including the ‘command and control’ approach, unlicensed spectrum, spectrum trading, pricing and leasing, as well as the role of the regulator. The principle of the opportunity cost associated with spectrum, as well as spectrum pricing components are also explained in detail. Spectrum auctions, different types of auctions and rules and procedures for auctions are reviewed with sample cases.

Key Topics
- Spectrum management
- Types of spectrum pricing
- Administered incentive pricing (AIP)
- Spectrum auctions and band management
- Spectrum allocation policy

Target Audience
This training programme targets telecommunications engineers, economists, spectrum management practitioners and other telecommunications professionals with an interest in spectrum pricing

Spectrum Auction – Theory & Practice

Module Summary

Duration: 4 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test
Overview

The radio spectrum is a scarce resource and regulators across the globe have continuously adopted efficient methods of allocation this resource in a way that provides the maximum benefit for the socio-economic growth of their countries.

Auctions are increasingly employed as one of the most efficient and transparent ways of granting spectrum licences.

The course will enable participants to analyse the various issues that come into play in designing an auction system plus sharing experience with experts who have participated in spectrum auctions from their countries.

Key Topics

- **Introduction** – Provide an overview of the workshop and introduction of the use of auctions as a tool for spectrum liberalisation.
- **Types of Auctions** – Explain the various types of Auctions, including: Ascending Clock Auction (ACA), Simultaneous Multiple Round Ascending Auctions (SMRAA), and Combinatorial Clock Auctions (CCA)
- **Critical success factors** – Identify and discuss various critical success factors for successful auction exercises such as Consultation with Operators and Stakeholders, Auction Rules, Spectrum Availability, Regulatory Capacity to support the allocation process, media campaign etc
- **Valuing spectrum and Reserve price** – Discuss the factors which influence the process in valuing spectrum such as market conditions or licence conditions, as well as the practice of specifying a “Reserve Price”
- **Administrative framework** – Examine the various administrative procedures and tools that are required for successful auctions such as paperwork, procedures, information memorandums, etc
- **Case Studies** – Examine a number of case studies from Africa, Americas, Asia and Europe, and discuss key Lessons Learnt from the various experiences.

Target Audience

This course is designed for:

- Regulatory staff members in spectrum departments.
- Staff of telecom operators and broadcasters.
- Staff of public sector users of spectrum e.g. aviation, maritime, emergency services involved in spectrum management.
Frequency Planning and Spectrum Management

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This course addresses the various areas required to manage spectrum based on national requirements. Participants will be introduced to technologies requiring spectrum, spectrum management principles, national spectrum planning, engineering analysis, and computer-aided techniques. In addition, the course will introduce technological and regulatory changes that affect spectrum management, such as digital broadcasting. Frequency assignment methods are emphasised and new market-place forces, such as auctions, and spectrum fees and charges will also be presented.

Key Points

- Appropriate policy options for spectrum management
- Technologies utilising frequency spectrums and their roles in the national development priorities
- Emerging technologies and policy options enabling efficient implementation of new technologies
- Theories of electromagnetic interference (EMI) and electromagnetic compatibility (EMC), and other interferences
- Existing formal analytical tools to solve the optimisation problem of spectrum assignment and the associated problem of giving prices to the radio spectrum
- Formulation and solution of frequency assignment problems
- Economic importance of electromagnetic compatibility
- Electromagnetic compatibility regulations

Target Audience

This course primarily targets individuals who work as planners, radio network engineers or radio optimisation engineers, or personal working on performance measurement disciplines.

Next Generation Markets and Technologies

Module Summary
Overview
This course reviews the evolving global standards in relation to next generation networks (NGNs) and Long Term Evolution (LTE) and investigates global trends for network migration to all-IP backbones. It also explains arising interconnection issues as well as operational and implementation challenges. Participants will take part in a practical project involving developing possible frameworks for regulatory policies and governance.

Key Topics
- Global standards in relation to NGNs and 4G/LTE
- Global trends for traffic migration to IP backbones
- Applications, markets and technologies driving the emergence and adoption of new technologies
- Interconnection issues and solutions
- Policy and regulatory impact of the new technologies
- Development of a framework approach to policies and governance

Target Audience
This course is designed for individuals requiring an overview of NGN technologies, such as engineers and network managers; management staff from regulatory agencies involved in licensing, tariff control or technical compliance.

Consumer Protection

Module Summary
Duration: 3 Days
Assessment Pass Mark: 60%
Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test
Overview
Starting with an in-depth description of different markets and regulatory environments, the course reviews factors that affect the immediate environment of the telecommunications industry, with a focus on consumer interests and the need to protect them. Solutions to a range of ‘unfair’ practices by operators are provided. Best practices for consumer dispute resolution, the development of appropriate consumer protection policies, and the role of the regulatory body in establishing a fair and competitive environment are also included.

Key Topics
- Current market trends and regulatory environments
- The rationale for consumer protection
- Investigating methods: claims, unfair practices and performance data provided by operators
- Best practices for dispute resolution
- Model policies and procedures for a fair and competitive environment in relation to consumer interests

Target Audience
This training programme targets specialist staff in regulatory agencies and government bodies that need the insight into current operator practices and how they affect consumers. Regulatory affairs managers from the private sector will also benefit from understanding current regulatory trends and benchmarks in relation to consumer interests.

Competition and convergence

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
This course explains the policy and regulatory options and models designed to address the convergence of technologies, markets and services in the context of next generation networks (NGN) and long term evolution (LTE), and provides a range of examples of
emerging best practices. Participants learn how to identify anti-competitive risks or behaviours associated with mergers and acquisitions in the ICT sector, and the resulting significant market power (SMP). Practical exercises to develop model regulatory safeguards for access, interconnection and pricing are provided.

**Key Topics**
- Policy and regulatory approaches to convergence, NGNs and LTE
- Examples of regulatory best practices
- Anti-competitive behaviour in a converging environment
- Market-based tests for different types of anti-competitive behaviour and SMP
- Impact of mergers and acquisitions on competition
- Wholesale and retail price regulation and convergence
- Competitive safeguards

**Target Audience**
This course is designed for individuals requiring an overview of the policy and regulatory aspects related to convergence.

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**Licensing in Converged Environment**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**
This five-day training program will showcase the participants different drivers and perspectives of convergence, how regulators have deal with convergence including international case studies, price regulation, and real licensing in a converged environment.

**Key Topics**
- Introduction to Convergence
- Drivers for convergence
- Licensing
- Best practice licensing for interconnection in a converged multi-operator, multi-platform telecommunications markets
- Unified licensing framework and its relevance to regulating interconnection prices
- Licensing and Regulator’s duties
- Licensing implementation
Target Audience

This course is designed for telecommunications regulators, engineers, economists, managers and other professionals with an interest in licensing. The course will build skills in carrying out migration through working group exercises.

Performing a Regulatory Impact Assessment

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This course is designed to provide participants with the necessary tools and methodology to perform ICT regulatory impact assessments. Licensing, consumer interests, quality of service, competition and other key regulatory areas will be analysed and reviewed from a social and economic impact viewpoint

Key Topics

- Telecommunications regulatory objectives
- Dimensions of regulatory effectiveness
- Structural, financial and functionality independence
- Interconnection principles, procedures and financial aspects including interconnection agreements
- Spectrum management and pricing
- Costs and tariffs in telecommunications
- Approaches to regulatory dispute resolution
- Licensing objectives, process and practices
- Explore the future of regulation – OTT, value-added services, Internet, broadcasting, and content competition
- Competition and convergence

Target Audience

This training programme targets telecommunications professionals of operational companies, both fixed and mobile, and regulatory agencies working in various departments
such as planning, strategy, technical, regulatory, legal, marketing, sales and business development

**Interconnection Agreements**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

**Course Overview**

The Course seeks to address the regulatory obligation of network operators to interconnect with each other. It shall also cover the technical and commercial aspects of interconnection as well as the pertinent documents such as the Reference Interconnection Offers and Interconnection Agreements. In addition the course shall delve into aspects of the regulator’s role, market impact, regulatory costing and interconnection charging methods and other pertinent issues which are subject to ongoing regulatory debates around the world. The Course is designed to take learners from introductory to intermediate level.

**Key Topics**

- Introduction and key concepts of interconnection
- Overview of local market
- Economic basis and historical evolution of regulatory frameworks and concepts
- Technical aspects and developments of fixed and mobile networks and how they interconnect with each other.
- Current interconnection agreements for both fixed and mobile networks. Regulated provisions within interconnection agreements versus negotiated ones.
- Pricing principles and cost basis for charging
- Network sharing agreements, legal basis and technical aspects. Conflict and disputes process and resolution
- Impact of NGN (IP) networks and Voice Over IP on interconnection agreements and likely future developments
- Historical perspective and regulatory frameworks
- Historical perspective and evolution of interconnection regulatory frameworks
- Regulatory options and economic impact of regulatory frameworks adopted
- Changing world of digital technology and markets
- Need for End2End Connectivity – importance of a customer perspective
- interconnection options and requirements
• Points of Interconnection and network sharing
• UK market and current position/issues
• How does European model compare to local model - discussion
• The technical developments and impact on interconnection and traffic – drivers of change
• Telephone networks both fixed and mobile
• Technical considerations for fixed and mobile networks (types of joining services)
• Evolution from PSTN to NGN (IP) networks
• Internet Service Providers
• Satellite Industry and greater use of spectrum
• Commercial and competitive impact of technology changes
• Decoupling of networks and services and impact on retail and wholesale pricing
• Network and transmission requirements
• Impact of IP/Voice over IP (VoIP) on interconnection
• Impending developments of higher call quality and net neutrality debate
• The basis for interconnection agreements and charges
• Regulatory principles and competitive impact of interconnection agreements
• Negotiated agreements and instances when they apply and types of provisions to be included
• Billing and operator audit
• Cost orientation and interconnection charging
• Wholesale markets and types of agreements
• Call termination charges
• Non-traffic charges
• Cost based methods e.g. LRIC
• Fixed Termination Rates (FTRs) – examples of wholesale charges
• Mobile Termination Rates (MCTs)
• Current Interconnection Agreements and Dispute Procedures
• Interconnection agreements for regulated markets
• Market reviews and SMP obligations
• Assessing Reference Interconnection Offers and agreements
• Traffic and non-traffic forecasts, content of agreements and specifications
• Information requests, system protection and confidentiality
• Possible conflicts and resolutions.
• Peer-to-peer and negotiated agreements
• Types of Peer to Peer Arrangements
• Transit Arrangements
• Commercially negotiated agreements e.g. ISPs
• Charging principles underpinning commercially negotiated agreements and economic impact of cash flows
• Business developments and growth of new services
• The future of interconnection and call termination
• New commercial and technical developments
• Economic impact of migration to all IP networks
• Regulatory role during transition period to all IP networks
• Business and networks plans and future traffic forecasts
• Likely future changes to peering and negotiated agreements
• Impact of developments on regulatory frameworks, markets and customers
• Future of fixed and mobile termination regulation
• New markets, applications and customers

Target Audience

This training programme targets both technical and non-technical staff from operators and regulatory agencies who work on interoperability or interconnection issues.

Long Run Incremental cost

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

This course provides a good understanding of alternative pricing models such as long run average incremental cost (LRAIC) and total element long run incremental cost (TELRIC). Concepts are discussed in detail, and exercises are provided to help participants develop costing models for telecommunications networks or analyse their existing costing models.

Key Topics

• Reviewing of current pricing policies
• Alternative pricing models (e.g. LRAIC, TELRIC)
• Development of a costing model
• How to implement a costing model

Target Audience

This training course targets individual requiring knowledge of pricing of telecommunications services; staffs from regulatory agencies who want to expand their understanding of pricing models and how these are used by operators.
Fundamentals of Best Practice Broadcast Content Regulation

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

This five-day training programme will equip participants with knowledge and skills to master the regulatory aspects of broadcasting and gain an overview of the licensing along with related compliances.

Key Topics

- Why regulate broadcasting? : Obligations for news to be accurate and impartial, General obligations for impartiality , Rules preventing discrimination, Special rules on religious broadcasting
- Independent regulation : Cultural and consumer protection reasons, Balancing inward investment against national promotion
- Setting up an independent regulator: 1. Key regulatory processes 2. Jurisdiction issues
- Licensing : Starting a licensing process , Licence conditions, Licence awards, Local versus national services, Television and radio, Digital broadcasting
- Content Regulation : Protection of democratic principles, Accurate news, Protection of minors, Watershed, Information and ratings, Offence to human dignity, Taste and decency, Protection against harm, Protection of the individual, Privacy, Protection against crime and disorder, Protection against racial or ethnic hatred, Religious programmes, Generally accepted standards
- The process of content regulation: Codes, Monitoring, Complaints handling, Separate Body, Process of complaints
- Sanctions : Procedure , Fines , Revocation, Suspension
- Advertising : Legality , Honesty , Decency , Truth
- Supporting domestic industry : Ownership, Domestic production quotas, Independent productions

Target Audience

This course is primarily intended for:
- Staff involved in regulatory affairs of telecommunications, media and broadcasting organisations.
- Staff of broadcast policymakers, telecommunications regulators.
- broadcast media practitioner
Building an Information Systems Security Policy

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

Information held on computers and ICT systems is critical for businesses. If data is lost or compromised in any manner, it will not only lead to financial losses but may also create a legal liability on the holder of the data. An Information System Security Policy is an essential requirement to secure data and to recover, in case of data loss.

Key Topics

- Enterprise security management framework: Information security Policy, Standards, Guidelines, Procedures
- Best Practices Frameworks: ISO/IEC 27002, COBIT752, IUT ICT Best Practice
- Internal and External Threats: Environmental threats, Organised crime and civil disruptions, Loss of utilities and services, Equipment or system failure, Serious information security incidents
- Data Loss Prevention and Data Protection: Information system backup, High availability, Recovery techniques, Document the recovery procedures, Setting up an emergency operations centre, Setting incidence response teams, Testing and improving the plan, Disaster recovery awareness by senior management and IT staff
- Access control Policies: Traffic control, Device authentication (Single-sign-On, automatic and manual sign on), User authentication, Session authentication
- Operations Security: The role of operation security department, configuration management, Media controls, Email security, Vulnerability testing
- Physical and Environment Security: Site selection and design considerations, Implement and support Perimeter Security, Implement and support facilities security, Implement and support internal security, Implement and support human and equipment security, Understand employee privacy and safety
- Business Continuity and Disaster Recovery: Business Continuity Planning (BCP) and Disaster Recovery Planning (DRP)
- Backups and availability of DRP testing, training, and awareness
- Continued BCP/DRP maintenance
Target Audience

This course is suitable for:

- Systems and Network administrators
- IT security professionals
- Business continuity teams

Cybercrime Management - A Proactive Approach

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

With governments, enterprises and individuals ever more dependent on the internet for business, services and social interactions, criminals, from individuals to organised crime gangs have found new opportunities and ways of committing crimes. Enterprises need to be aware of these emerging dangers so that they can protect the enterprises as well as their stakeholders.

Key Topics

- Cyber Crime Management: Origin of the internet and transformation of criminal activities, Virtual robberies, frauds, scams and thefts, Hacking, Cracking, Denial of Service
- Violence and offensive communication, Internal and External Threats: Environmental threats, Organised and Civil Disruption, Loss of Utilities and Services
- Cybercrime detection: Intrusion detection technology, Antivirus
- Cybercrime prevention: Firewalls, Intrusion prevention technology
- Policing online behaviour: Maintaining Law and order on the cyber space, The role of operation security department, Creation of cybercrime response team, Media controls, Email Security, Vulnerability Testing
- Physical and Environment Security: Site selection and design considerations, Implement and support Perimeter Security, Implement and support facilities security, Implement and support internal security, Implement and support human and equipment security, Understand employee privacy and safety
Target Audience

This course is suitable for:

- Strategic and senior management
- System and network administrators
- Consumer relations officers
- IT security professional

E-Governance

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

This course defines e-governance, i.e. its concept, its core principles, and its justification for an organisation. It covers the components of e-governance and its best practices, as well as successes and challenges, through case studies. Participants will gain a good understanding of human, technological and process requirements to develop and implement an e-governance programme in an organisation, from design to implementation and control.

Key Topics

- E-governance: concepts, principles and constructs
- Components of e-governance
- Case studies: best practices, successes stories and challenges faced
- E-governance strategy
- Specific governance issues for e-governance and effective strategic measures
- Performance metrics and performance management
- Planning and managing an e-governance programme
- Measuring and managing resistance and obstacles
- Causes of e-governance failure

Target Audience

This course is designed for senior and middle managers and decision makers in any organisation willing to be aware of the benefits and risks of e-governance and how e-governance works.
Child Online Protection - Developing a National Framework

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

A comprehensive framework of law/guidelines is an essential tool for promoting a supportive and safer online environment for children and young people. A national framework to assist in the development of a positive online environment for children and young people helps States achieve these goals. The course will help individual countries plan for their strategies for child online protection in the short, medium and longer term. In order to formulate a national strategy focusing on online child safety, policy makers need to consider a range of strategies, including establishing a legal framework; developing law enforcement capabilities; putting in place appropriate resources and reporting mechanisms; and providing education and awareness resources.

Key Topics

- Risk and vulnerabilities in the Internet World
- Issues and risk for child online protection
- Social Networks and Virtual World of Children
- Development of Internet Safety Guidelines for children of different age groups
- Technical and procedural measures for online safety
- Capacity building and awareness-raising strategies
- Creating a culture of child online protection
- Understanding the Geography and Demography of a country for developing a national framework
- Geography and Demography, Political Environment, Economy and Human Development
- Means and Devices for Internet accessibility to Children
- National Bodies dealing with cybersecurity and their role
- Role of Educators (Parents, Schools), Industry and Policy Maker for COP
- Law Enforcement Resources and Reporting Mechanisms
- Identification of Legal Measures for COP
- International Cooperation for Child Online Protection

Target Audience

This course is designed for policy makers, regulators and other relevant stakeholders responsible for addressing issues related to developing a national framework for child online protection.
Cost Modelling

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

Cost modelling is a common activity for any business but it can be a very challenging activity. It concerns itself with mathematical equations that are used to estimate the costs of a product or project. This programme has been developed to provide participants with the knowledge to better understand the concept and principles of cost modelling within the telecommunications industry. Participants will gain insight into the importance of costing; the different methodologies; how they are used; cost and tariff allocation.

Key Topics

- The importance of costing and the economic rationale
- Cost standards
- Methodologies and their application
- Data Sourcing
- Actual models and model-building
- Using model outputs
- Principles of cost modelling
- Basic elements of cost models
- Anatomy of a cost model
- Dimensioning of a mobile network for a sample PC based bottom up model
- Cost allocation and tariff allocation
- Exercises on the application of a cost model by using an excel based training cost model

Target Audience

The course is designed for those who are responsible for managing the procurement activities in their organisations. Product development and marketing professionals would also benefit greatly from this programme.
Costs and Tariffs in Telecommunications

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

Costing and tariffs usually involves an open contract between a telecommunications service provider and the public filed with a regulatory body. The programme will provide participants with the basic concepts, methodologies and tools to gain an all round understanding of telecomm regulation, costs, tariffs and tasks and to ensure a fair equitable telecomm environment.

Key Topics

- Overview of telecommunication services
- Cost Modelling
- Wholesale Tariff regulation
- Retail tariff regulation
- Filings and agreements
- Benchmarking

Target Audience

This course is designed for professionals in the regulatory function. Those who are responsible for developing products and services as well as marketing professionals, would greatly benefit from this programme.

Citizen Broadband Radio Services (CBRS)

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%
Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Citizen Broadband Radio Services (CBRS), is Spectrum sharing methodology specification released by 3GPP to utilize portion of 3.5 GHz band partially underutilized by some of National security forces. CBRS is not Coordination spectrum access rather then Unlicensed Spectrum access. CBRS opens new opportunity to Mobile operators and Telecom Equipment manufacturer in the domain of Access Network sharing model especially in the space limited scenario like Indoor. CBRS helps to use some of the existing Concept more efficiently, like Unlicensed Spectrum Access, RAN Sharing and Small Cell.

Key Topics
- CBRS Deployment Use cases and Business Models
- CBRS Spectrum Sharing Tiers
- CBRS Spectrum Management
- CBRS Specifications overview
- CBRS Coexistence Specifications Rel-1
- CBRS Functions and Procedures

Target Audience

The course is designed for members constituting the top management of an organisation, Investors and shareholders, human resource directors and professionals responsible for creating a performance-driven, value-based, accountability, and any public sector professional.

Economic Regulations

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

With the current global economy in a state of unstableness, it is important for businesses to have a good understanding of the regulations that are in place to help support the growth of the economy. This programme was developed to provide participants with a better understanding of the economic regulations involved in the telecommunications industry, particularly the relationship between the government and telecommunications regulators.
Key Topics
- Importance of economic regulation
- Formulation Regulatory strategy
- Sector policy
- Cost modelling
- Interconnection
- Retail price regulation and pricing strategy
- Regulatory compliance and assurance
- Cost of capital
- Universal service obligations
- Comparative efficiency analysis

Target Audience
The course is ideal for all professional who are involved in the regulation of information, communication and technology but it is also relevant to economists or those who engage in economic analysis.

Telecommunications Law

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview
It is important for any business within the telecommunications sector to be fully aware of the laws in place that they need to adhere to. This course will provide participants with an overview and introduction to the policies and regulations involved in telecommunications law. It will also explore how the use of telecommunications law affects contracts, service providers, customers and other commercial agreements.

Key Topics
- Introduction to Communications Law
- Communications Technology, Services and Markets
- Communications Law and Policy
- Regulatory structures and bodies
- Authorisation & Licensing
- Cost-based regulation
- Access and Interconnection
- Consumer protection Competition Law
- Communication contracts
- Building international networks
- Convergence

Target Audience
This course is designed for professionals in ministries, national regulatory authorities, network operators and service providers and also individuals in the private sector representing organisations operating in the telecommunications industry. Academics, journalists and others with an interest in the telecommunications legal background would benefit from this course.

Social Media Content Regulation

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

With social media being used more and more as a form of marketing and advertising it is, important that businesses are aware of the rules and regulations they need to follow in order to best make use of and also protect themselves from the potential threats involved in social media. This programme seeks to assist businesses with staying abreast with regulatory guidelines and to have a solid social media policy in place.

Key Topics

- Introduction and definition of Social Media
- Contents in Social Media
- Development, Trends, Significance & Uses of Social Media
- Networked Digital Media Environment – Best Industry Practices
- Social Media Tools & Platforms
- Pros and cons of regulating social media content
- Vulnerability of Social Media Environment to Security threats
- Need for Social Media content Regulation
- Interaction of International Regimes & National Regulation
- Interaction between Media, Activism & Censorship
- Regulatory and Common Challenges with Social Media
- Regulation in Financial Industry, HIPAA, FDA, COPPA
- Regulation in Trade, Labour relation, Copyright
- Videos on Social Media Environment

Target Audience

This course targets professionals in ministries, national regulatory authorities, network operators and service providers and also individuals in the private sector representing organisations operating in the telecommunications industry. Academics, journalists and others with an interest in the telecommunications legal background would benefit from this course.
Telecommunications Regulations

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

It is important for all businesses to be fully aware of the regulations involved in telecommunications. So this course has specifically designed in order to introduce the participants to the fundamentals of telecommunications regulations and the latest trends in the global telecommunications/ICT environment along with their impacts on regulators, authorities and service providers including areas such as interconnection, spectrum management, licensing, pricing and numbering.

Key Topics

- Regulatory objectives
- Dimensions of regulatory effectiveness
- Structural, financial and functionality independence
- Interconnection principles, procedures and financial aspects including interconnection agreements
- Spectrum management and pricing
- Licensing objectives, process and practices including in converged environments
- Costs and tariffs in Telecommunications
- Concepts of competition policies
- Competition and Convergence
- Quality of Service Monitoring
- The Future of Regulation – OTT, Value Added Services, Internet, Broadcasting, Content Competition
- Approaches to regulatory dispute resolution
- Protection of privacy in the age of Big Data Analytics

Target Audience

This course targets professionals in ministries, national regulatory authorities, network operators and service providers and also individuals in the private sector representing organisations operating in the telecommunications industry. Academics, journalists and others with an interest in the telecommunications legal background would benefit from this course.
Advanced Regulatory Programme
Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

This course seeks to strengthen the capacity of regulators and governments to enable them to develop regulatory concepts and frameworks that will benefit their society and consumers. The programme delves deep into the processes, models and principles of regulation.

Key Topics

- Institutional and Legal Framework
- Competition Regulation
- Telecom infrastructure-security
- Consumer protection and transparency
- Spectrum Management
- OTT services regulation
- Licensing
- Regulation in converged markets
- Numbering
- Interconnection and Cost modelling
- Future Regulatory challenges
- Universal services

Target Audience

This training programme targets senior officials, policy makers, board members, lawyers in government institutions responsible for information communication and technology

Postgraduate Certificate in ICT Policy and Regulation
Module Summary

Duration: 3 weeks
Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

This six weeks certificate course will reveal greater insights in all aspects of ICT. It seeks to equip personnel working in the ICT sector who need to have a basic understanding of the economic and technical aspects while an economist needs to have a grasp of the technical and legal side.

Key Topics

- Introduction to ICT policy and regulation
- Market Analysis
- ICT Technology
- Telecommunication of law
- Constitutional and Legal frameworks for ICT/telecoms policy
- Dimensions of regulatory effectiveness
- Legislation and institutions
- Costs and Tariffs in telecommunications
- International governance and regional bodies
- Broadcasting policy
- Quality of service monitoring
- The future of regulation; OTT, Value added services, Internet of Things, AI and Big data
- Competition and convergence
- Spectrum management and pricing
- Interconnection principles, procedures and financial aspects including interconnection agreements
- Licensing objectives, process and practices in converged environments
- Protection of privacy in the age of Big Data analytics

Target Audience

This training programme targets regulators, board members, legal officers, policy makers
Introduction to ICT policy and Regulation

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

Rapid changes and transformation continue to occur in ICTs. This course provides an understanding of the basic trends in telecommunications reform, their drivers, and their implications nationally and internationally. Participants discuss the key process of how policies and regulatory models are developed, and the roles and functions of different stakeholders in their implementation.

Key Points

- Network technologies and markets
- Global trends driving the telecommunications sector
- Policy and regulatory frameworks
- Universal access, universal service and the digital divide
- Licensing and monitoring
- Competition policy and resource management
- Interconnection and facilities leasing
- Cost and tariff regulation
- Quality of service (QoS) and consumer protection
- Internet policy and the internet in effective regulation
- Evolving regulatory challenges, OTT, Privacy issues in Big Data Analytics, Artificial Intelligence

Target Audience

This course targets advisers, managers and specialists involved in regulatory issues within the industry (including telecommunications operators, service providers, manufacturers, broadcasters and civil society).
ICT Regulation—Understanding the Bigger Picture of ICTs

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

Senior level decision makers and influencers such as Board members of regulatory agencies, senior civil servants and parliamentarians come from different specialist backgrounds, but often with limited prior experience of ICTs. In order for them to deliver their important mandates, they must fully understand the complexities of the ICT sector and its regulation in its wider context. It is also paramount for these stakeholders to recognise opportunities and challenges of ICT regulation. The Commonwealth Telecommunications Organisation, with its long history of capacity building, is ideally placed to equip these senior decision makers with the know how to deliver on their core responsibilities, effectively and efficiently. This workshop is held in London at the CTO Training centre.

Key Topics

- Overview of ICT Policy, Regulation and Operation
- Influencing global decisions on ICTs: The role of international organisations
- Internet Governance
- Cyber security
- The economics of regulation and options for action
- Numbering as a public good and a key revenue generator
- Understanding spectrum and the digital dividend
- Standardisation
- The role of ICTs in development
- Postal Regulation
- Universal Service/Access Funds
- Consumer issues and management
- TV White Space
- Cloud
- Big Data
- Mobile Money
- Roaming
Target Audience

This course is specifically designed for senior level decision makers and influencers such as Board members of regulatory agencies, senior civil servants and parliamentarians seeking to gain a broad understanding of ICTs and its regulation.

Strategic Planning for ICT Policy and Regulation

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

Due to rapid changes and transformation in the field of ICT, there is a dire need for service providers to continually plan strategically and stay abreast on the latest technology changes. This course will provide insights on the guidelines to strategy formulation on issues pertaining to policy making and regulation.

Key Topics

- Introduction to strategic planning process and elements of strategic plans
- Current situation in telecommunications/ICT sector-overview of network technologies and market
- SWOT analysis
- Identification of strategic issues
- Setting vision and mission
- Setting strategic objectives and goals
- Target setting
- Institutional Plan
ICT Regulation Drafting

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview
This course is designed to help officials in organisations with a regulatory mandate for ICTs to implement existing legislation through the drafting of key documents such as codes of practice, and the processes that guide this essential aspect of ICT regulation. Participants review the various ICT markets before learning through various exercises and examples how to draft clear, fair, enabling and enforceable rules.

Key Topics
- A review of regulatory trends in ICT
- Key areas of regulatory intervention
- Technology evolution and impact on regulation
- Rule-drafting processes and check-lists
- Regulation-writing techniques

Target Audience
This training programme targets officials with a legal background who have not yet taken part in drafting ICT regulations. Other regulatory officials such as economists, technicians or compliance officers will benefit from this course.

BUSINESS MANAGEMENT COURSES
Social Media Strategy for Business

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test.

Overview

This course seeks to empower learners how to use social media for marketing purposes. Social Media is a crucial business tool, and powerful method of communication, that can be used to advance and increase the prospects of the business. This however brings challenges and therefore requires a considered and structured approach. This course looks at how to get the best from the various social media tools and create an effective, successful social media campaign from business perspective.

Key Topics

- Overview of Social media and its benefits - taking a strategic approach.
- Review of how social media marketing fits in to current marketing activities
- Why social media? Identifying social media audience groups and Understanding keywords.
- Exploration of range of social media channels including blogs, newsletters, niche tools, LinkedIn, Twitter, facebook, Pinterest, Instagram, Google+, videos, podcasts, images, forums, social bookmarking, mobile and other content.
- Content, choosing content or relationship marketing, content ideas, creating a content plan, re-using content.
- Resources needed to carry out the social media? A social media policy, the risks of social media and crisis management.
- Measurement of social media activities to ensure a return on investment.
- Creating a social media strategy. Best practice for social media.

Target Audience

This training programme would be useful for Marketing and Sales professional, Business Development Managers, Personal Assistants/executives as well as others involved in PR, event management and promotion, Brand managers, Product Managers, Account Managers.

Search Engine Optimisation for Business

Module Summary
Overview

This course focuses on the mystery of Search Engine Optimisation (SEO) and helps learners understand how they can use it to their advantage. This course has been created for people in business who have marketing responsibilities, but who don’t have web backgrounds, or in-house teams to learn from. The programme enlightens learners on how SEO can play a part in your marketing strategies.

Key Topics

- The different Search Engines
- Analysis of competitor performance
- Using keywords in social media
- Choosing the right keywords and phrases for your website
- The benefits of link building
- Best practice for local businesses
- Best practice using SEO

Target Audience

SEO for Business is perfect for anyone involved in marketing a business or creating content online, for websites or social media. Suitable for PAs, Office Managers, Marketing /Sales professionals, Business Development Managers, entrepreneurs as well as those involved in PR, event management and promotion.

Marketing Strategy

Module Summary

Duration: 2 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The explosion in social and digital media and the proliferation of mobile devices and applications have revolutionized the way companies communicate with customers, build relationships, conduct business, and stay on top of changing market dynamics. It’s an exciting time to be a marketer, but the challenges are much more complex. Through case discussions, faculty presentations, and small group activities, you will expand your ability to approach marketing from a strategic perspective, ask the right questions at the
right time, sift through the hype, and pursue integrated strategies that make sense for your organization and offerings.

**Key Topics**

- Thinking "outside-in" by first understanding the customer and then building a plan
- Improving familiarity with marketing strategy terminology and execution
- Defining and targeting market segments
- Positioning your offering or brand
- Maintaining focus on the customer
- Exploring the marketing mix that best fits your organization’s goals
- Adding social media and new channels to the mix
- Managing the risks of word-of-mouth marketing
- Understanding your customer through market research and social listening
- Examining the fundamental qualities that great brands share

**Target Audience**

This will help decision makers in both marketing and non-marketing roles build a solid foundation in strategic marketing concepts and best practices as they explore the opportunities presented by digital marketing trends. It also targets Product managers, Strategists and Account Managers.

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**Digital Marketing**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

As digital technologies continue to reshape the competitive landscape, marketers are challenged to stay informed, adapt, and make strategic decisions in a space that’s constantly evolving. This program delivers the proven frameworks and foundational tools you need to design, implement, and manage a successful digital marketing strategy that achieves your business objectives. From day one, you will engage in hands-on exercises that help you build buyer and influencer personas, capture and measure critical data, communicate more effectively, and drive deeper customer loyalty and market share.
Key Topics

Social Media Strategy

- Building and supporting digital communities
- Social listening/monitoring
- Paid social
- Co-creation: user-generated content and influencer outreach
- The need for social media policy in your organization
- Preventing and managing crisis

Storytelling for Marketers

- Overview of content management
- Story: Long and short; timing and cadence
- Customer Journeys
- Creating optimal brand stories

Search Engine Marketing—SEO to SEM

- Organic and paid search
- ROI-based framework
- Analytics and key performance indicators (KPIs)
- Using SERPs
- Why content is king (and why it isn't)

- Working with search agency partners
- Attribution models and frameworks

Influencer Marketing

- Promise and pitfalls
- Influencers vs content creators
- Tools and insights

Target Audience

This training programme targets Business owners, marketing professionals and sales professionals, Account managers, and Product managers.

Strategic Brand Management
Module Summary

Duration: 4 Days

Assessment Pass Mark: 60%
Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Participants will learn how to make their brand stand out in an arena where everyone is jostling for attention. Practical tools to create a distinct identity for your brand and successfully position your brand in a relevant, meaningful and dynamic manner. You will also get an in-depth look at the brand identity development process and brand positioning, brand architecture and the creation of the customer brand experience, consumer behaviour and its influences, and the competitive advantage of strong brands.

Key Topics

- The concept of Strategic Brand Management and its importance, relevance and advantages
- The concept of brand equity and brand value and how to measure it
- The lifetime value of brand loyalty
- The brand identity development process and brand positioning
- How to craft a brand positioning statement and value proposition
- How to reach, create and communicate a positioning map
- How the three brand components of identity, image and personality are built over time
- The launch process for a new brand, the most effective media choices for the introductory campaign and how to track the market penetration of a new brand
- The main growth strategies of established brands and their importance, advantages and influences
- How brand architecture establishes the optimal inter-relationships of brands within a single company
- The process of brand extension and the degree to which a brand can be extended
- How umbrella brands work, how co-branding works and when to shift to a new brand
- The concept of global brands, how brands adapt to foreign markets and the role the internet plays in brand globalisation
- The risks and benefits of foreign brand licensing and the differences between brand equity at home and abroad
- The brand acquisition process, its strategy, influencing factors and the way a firm structures its brand portfolio
- How the same components that build product brands can be applied to national brands and personal brands

Target Audience

This course is designed for Brand managers, strategists, Product managers, Marketing managers, Sales Managers and Account Managers.
Strategic Sales Management

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Effective sales managers can significantly increase revenue. In this intensive Strategic Sales Management program, learners will explore characteristics of exceptional sales managers, and get ideas on how to boost team’s success and drive organization's revenue through their role as a sales manager/Head of Sales/General Manager Sales whether in a business-to-business (B2B) or a business-to-consumer (B2C) setting. You'll develop the skills you need to draw out the strengths of your sales team and drive revenue. Learn to strengthen your personal leadership coaching, train your direct reports, and create a championship culture. This Strategic Sales Management program will challenge you to consider and try approaches and techniques proven in many industries and inspire you to consistently attain high performance from your sales team.

Key Topics

- Identifying characteristics of high performing sales managers
- Applying coaching methods that work with sales people
- Training new and experienced sales people with the persuasion equation
- Continually improving your championship culture including pipeline improvement & tailoring your communication style
- Defining your professional purpose

Target Audience

This training programme is designed for Sales Directors, Sales General Managers, and Heads/Managers of Sales, Account Executives, and Product Managers.

Negotiation Skills - Strategies for Increased Effectiveness

Module Summary

Duration: 2 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test
Overview

Negotiation is an integral part of creating value for an organization. Your success depends on your skills as a negotiator. In this program, learners will gain insight into the habits of dealmakers as you build your skills. Learners will learn how to execute proven tactics, refine their personal negotiating style, and improve their ability to bargain successfully and ethically in any situation.

Key Topics

- Understanding the interests, priorities, and goals of all parties
- Maximizing opportunity through pre-negotiation preparation
- Knowing how personal biases and cultural differences impact negotiations
- Dealing with irrational people and challenging relationships
- Improving communication by listening and asking questions
- Making offers at the right time and in the right way
- Transforming competition into cooperation—and opponents into partners
- Managing teams of negotiators more effectively
- Knowing when to walk away from the table

Target Audience

- Sales professionals
- Hiring managers and HR professionals
- Team leaders
- Counsellors and mental health professionals
- Investors and venture capitalists
- Brokers
- Real estate agents

Beginner & Advanced Negotiation Skills

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

In this program, participants will learn how to become master negotiators and learn how to build value for their organization. Going beyond basic negotiation tactics, this highly interactive program delves into strategic thinking and planning. Learners will also learn how to drive success as a negotiator, whether they’re inking a high-stakes deal for their company or engaging in multiparty negotiations. This fast-paced learning experience includes negotiation exercises, analysis of business cases, and discussion of challenges they may face at the bargaining table. They will develop more sophisticated negotiating skills, learn
how to avoid common deal making pitfalls, and emerge prepared to conduct a wider range of complex negotiations with confidence.

**Key Topics**

- Sales and market evolution of the telecommunication market
- Client Requirements
- Presentation skills
- Valuing Benefits
- Dealing with difficult customers, questions and gaining commitment
- Communications and Body Language
- The Principles and techniques of negotiation
- Preparing for a Negotiation
- Orchestrating the negotiation process
- Sequencing related deals
- Aligning deal making and implementation phases
- Building and managing coalitions across the negotiating process
- Managing your team to gather constituent support
- Choosing how and when to share new information
- Deciding when to present new options for creating value

**Target Audience**

Sales managers, Legal professionals, arbitrators, and mediators, Agents and brokers, Business owners, Purchasing managers, Human resources professionals, Investors and venture capitalists.

**Call Centre Management**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

The Contact Centre Management Training programme will equip learners with the skill set they need to improve their centre's performance. It will provide delegates with the knowledge and skills required to use the available resources and plan for future activities effectively. The course includes planning and managing call-centre resources, providing feedback, encouraging the team, meeting organisational goals, quality service and integrity and many
more. The delegates will learn how to prepare effective management reports and achieve the maximum out of call monitoring technology. Upon completion of this course you will be able to drive effective change for your contact centre and use best practices.

**Key Topics**

- Learn best practices and cutting-edge trends as you benefit from the expertise of our training team
- Learn how to implement improvements that will reduce cost and increase productivity
- Plan practical use of resources available within the call centre
- Make efficient use of busy times to get the best performance
- Develop strategies to motivate call centre team
- Prepare management reports effectively
- React and plan for the bottlenecks in advance
- Give better feedback to call centre agents
- Set goals and targets
- Develop and meet the performance goals
- Evaluate call handling concerning sales
- Understand standards for call waiting and expectations of customers
- Use downtime and outgoing call management
- Provide the best support and develop management skills of leaders, supervisors and staff members
- Quality of service and integrity
- Do’s and Don’ts

**Target Audience**

This training programme is designed for Supervisors, Managers, Executives, Team leaders, Staff members, and Call centre agents.

**Prince2 Foundation Level**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 50%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

Foundation Level equip delegates with a detailed knowledge of the methodology, working through the project lifecycle from pre-project preparation to project closure. Participants will learn how to initiate projects, including creation of the documentation to be produced such
as the Project Initiation Document and the Business Case. Foundation Level also focuses on product delivery and controlling each stage of the project, from the perspective of the Project Manager and the Project Board, as well as addressing the issues surrounding project completion.

**Key Topics**

- To learn the PRINCE2® project management methodology
- To understand the implications of implementing PRINCE2
- To pass the Foundation examination

**Target Audience**

The course is designed for Administrators, Analysts, Team Leaders and anyone interested in Project Management.

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**Prince2 Practitioner Level**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 50%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

Practitioner Level builds on the participants' knowledge of the structure and content of PRINCE and progresses this to an understanding of the practical application of the methodology. Time is given to assessing risks within the project, planning techniques and how to ensure a quality approach is applied throughout the project.

**Key Topics**

- To understand the practical application of PRINCE2
- To be able to undertake risk assessments during a project
- To pass the Practitioner examination

**Target Audience**

The course is designed for Project Managers, Programme Managers, Senior Managers, Project Sponsors, and Project Team Leaders.
Managing Successful Programmes

Module Summary

Duration: 5 Days

Assessment Pass Mark: 50%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Managing Successful Programmes" (MSP®) is a guide that provides and maintains a strategic view over the set of projects, aligning and coordinating them within a programme of business change in support of specific business strategies. This Foundation and Practitioner course with exams provides a clear route to Practitioner status in this approach.

Key Topics

- 12 modules with associated interactive and video presented lessons
- Notes to support each lesson and references to the MSP Manual
- Module level exam simulation directly aligned to the MSP Syllabus
- Online support, forums, chat and progress reports
- MSP exam simulations
- Interactive exercises to consolidate the learning

Target Audience

Any organisation or individual seeing the need for a controlled approach to managing its programmes. The event is suitable for programme managers, experienced project managers, programme support team members and senior managers from any discipline.

Business Analyst Fundamentals

Module Summary

Duration: 5 Days

Assessment Pass Mark: 50%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test
Overview

Delays, cancellations and defects in systems development projects stem in large part from our inability to understand project requirements and the environment in which they exist, as well as our inability to communicate those requirements clearly enough to enlist the collaboration and commitment of stakeholders. In Business Analyst Fundamentals, you will learn key communication skills, interaction techniques, and problem solving skills required to leverage your IT and business knowledge to effectively understand, document, and present the requirements that define a project's scope. This indispensable course solidifies the foundations of business analysis and equips business analysts with the critical thinking, analytical skills, and necessary people skills to thrive in their roles and add measurable value to every project. This training course will give you hands-on experience with proven techniques for discovering, understanding, and documenting the business environment; understanding and depicting project scope; identifying, documenting, and confirming business objectives; modeling current and desired business processes; and communicating all of these expertly to colleagues, sponsors, and business customers. Lively lectures combined with insightful demonstrations and realistic practice exercises provide you with the competence and confidence to improve project outcomes through better project scope and business requirements definition.

Key Topics

- The Business Analysis Profession
- Communication in the Business Analysis Context
- Analytical Thinking and Problem Solving
- Interaction Skills for Business Analysis
- Business Knowledge
- Strategy Analysis
- Project Initiation and Analysis
- Requirements Analysis
- Requirements Collaboration
- Solution Evaluation

Target Audience

This programme is designed for business analysts, system analysts, project managers and systems testers.

Marketing and Pricing of Next Generation Networks
Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
The emergence of increasingly complex high capacity networks brings both challenges and opportunities for operators. This five-day course reviews the underlying technologies in concept; it investigates the importance of broadband access in the provision of next generation multimedia services. It explores the Next Generation Business Model and the impact of current and future APPs, multimedia services and digital content. Pricing is discussed in the context of various licensing environments, including unified licensing, as well as for different operating models and more segmented markets.

Key Topics
● NG (Next Generation) Services, Characteristics and Requirements : Service Descriptions
● NG Service Business Model, markets, customer demands and customer needs : NGN Business Models, NGN APPs in verticals, Consumer markets, SME/SMB market, Enterprise market, Government, Health and education
● NG Technology Platforms: Core network, IMS for multimedia services, CSP Platforms for Cloud Services, Access networks, Interconnection requirements and standards affecting NG services, Network QoS, Network security
● Pricing Strategies: NG Service Value Chain, Cost components, Applications, content, off-premise infrastructure, Price components, Separate access pricing, Interconnection cost components and pricing, Premium pricing, Premium QoS (Bandwidth), Premium security, Flat Rate Pricing vs. Utility Pricing, Impact on uptake, price elasticity
● Regulatory Implications: How far to extend regulation?, Traditional Telecom: Network and Access only?, Application regulation, Telecom operator, Non-telecom operator, Application provider over telecom transport?, Regulatory safeguards necessary to ensure Competitive Compliance by multiple providers of NG Service Components, Equality of access to Telecom Network Resources, Extent of regulation to non-telecom NGN Service Sources, Cloud Service regulation, What are the non-telecom components of Cloud Services?, How far does Cloud Service Regulation by our extend?, What should ideally be regulated?, Other Nations’ examples
● Service Quality Monitoring and Enforcing, including determination of appropriate KPIs

Target Audience
Telecommunications professionals working in marketing and sales as product development or sales executives, and customer account managers, economists, or regulators responsible for tariffs monitoring and control.
Customer care & Service

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
This is a critical and highly focused course for fixed and mobile operators, where key commercial issues such as customer account management and customer relationship management, strategies and plans are discussed in detail and illustrated with a range of landmark case studies. Customer loyalty and retention strategies, negotiation skills as well as revenue maximisation strategies for key customer accounts are covered through various role-play exercises. Participants will gain a solid understanding of ethical behaviour in relation to customer service.

Key Topics
- Strategic principles of account management and customer relationship management
- Sample account management plans and strategies
- Case studies on successful and failed customer relationship management
- Analysing customer data and responding to the customer’s needs
- Negotiation skills to reduce buyer churn
- Verbal and non-verbal communications
- Customer care and team building
- Developing strategies for key accounts
- Introduction to customer service
- Best practices in customer service
- Telecommunications products and services
- Comparison of various skills, attitudes and their outcomes
- Developing approaches to improve customer service

Target Audience
Customer care and call centre managers, supervisors, trainers and team leaders.
Marketing-Creative Briefs

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

In order to have an edge over market competition, it is important that businesses have an effective and creative marketing device, which can be used to capture their specific audience attention. This course was therefore created to provide participants with the information and tools required to produce effective and creative marketing briefs.

Key Topics

- Essentials of a creative brief
- Psychology of persuasive copy.
- Thinking conceptually about propositions - approach to brainstorming and concepts
- Dramatising propositions through words and imagery.
- Content marketing, social media, press releases.
- Adapting tone of voice for different audiences

Target Audience

This course targets those tasked with public relations, communications, marketing, media and advertising responsibilities in their organisations.

Digital Media Campaigns

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
This programme was developed to provide participants with the tools, required to effectively plan and manage a digital media, marketing campaign. Participants will learn the difference between digital and traditional media, how to select the right media channels and formats for a successful advertising campaign.

Key Topics
- Difference between digital and other traditional media opportunities
- Audience behaviour online: trends, challenges
- Online spending analysis
- Selecting the right channels, formats and placements for advertising campaign
- Briefing and developing creative
- Overcoming the key challenges of digital marketing to maximise ROI
- Considerations for direct response versus brand objectives
- The importance of integration with other channels
- Measuring campaign effectiveness and brand metrics

Target Audience
This course is ideal for those with a remit for acquiring customers online or building brand awareness via advertising campaigns. Relevant job roles include brand managers, digital marketing and campaign managers, agency account handlers, and marketing executives.

Marketing Business Plan

Module Summary
Duration: 3 Days
Assessment Pass Mark: 60%
Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
Developing an insightful marketing plan ensures marketers contribute at the strategic level in the organisation. This course is designed to help participants write better marketing business plans by providing a clear framework allowing them to apply the principles presented to a case situation.

Key Topics
- Marketing planning processes
- Marketing audit
- SWOT analysis and key issues
- Generation of growth strategies
- Market segmentation and brand positioning
- Marketing matrix
- Development of the business case
- Elements and steps of a business plan Business model and business case
- Implementation and control
- Action planning and review

**Target Audience**
This course would be useful for marketing managers and specialists having to prepare a plan. Senior managers as well, needing to review and evaluate the plans submitted by the managers would find this course valuable.

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**Content Marketing in a Telco Environment**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

Content marketing is no longer a “nice to have” but it’s now a “must have” as it makes the organisation and its product relevant, accessible and believable. This course was developed to provide an introduction to how content is marketed within the telecommunications industry. Participants will explore the three main concepts of content marketing, which are: formats, distribution and measurement through the use of case studies.

**Key Topics**
- Introduction to content marketing
- Evolution of telecommunication market
- 3 pillars of content marketing – formats, distribution and measurement
- Content management in brand awareness and customer retention
- Understanding the target audiences and their customer journey
Marketing in a Digital Era

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Many organisations tend to forget the basic principles of good marketing and branding in their quest to embrace the digital world. The course is designed to equip the participants with the technical knowhow of developing digital marketing strategies that would help their organisations adapt to the evolving digital landscape.

Key topics

● Digital Marketing in perspective
● Search engine marketing
● Social Media, Online PR and image management
● Email, online advertising
● Digital marketing strategy
● Understand the challenges of digital marketing and integrating digital into a marketing strategy
● Understand the role of different tools: usage, relevance, limits, complimentarily ROI of digital marketing actions
● Real solutions and tactics on social media marketing, content marketing

Target Audience

This course targets professionals in the marketing field particularly those with previous experience in marketing. Business professionals, content managers and digital media consultants would find this programme valuable.

International Marketing

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%
Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Marketing on an international/global scale poses complex problems than those encountered in an organisation’s domestic market. This programme seeks to address the challenges faced in international markets and the fundamental steps that need to be considered when once an organization is interested in marketing its product around the world.

Key topics

● Internationalisation process
● International environment
● Understanding cultural differences
● Export market selection assessment
● Product decisions and policy
● Price considerations
● Overseas communication
● Global companies

Target Audience

This course is relevant for marketing professionals and specialists in the advertising, branding, media and public relations. Those involved in market research would also find the programme rewarding.

Marketing of Telecommunications Services

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This course discusses the role of operators' marketing managers in the context of growing competition, alternative access and end-user solutions, and new applications. It will help participants prepare marketing plans to respond to new market opportunities, using various
research tools. The course also discusses best practices for working with stakeholder groups outside marketing and sales.

Key Topics

- Fixed/mobile market segmentation
- The role of segment marketing managers in the context of changing market trends
- Development of effective marketing plans
- Research tools and their applications
- Best practices for working with groups outside marketing and sales
- Tools and techniques for supporting sales teams.

Target Audience

Anyone involved in selling or promoting telecommunications products and services, including those taking on this responsibility for the first time, with little or no sales and marketing experience, as well as experienced managers who want to maximise their sales and marketing efforts.

Product Life Cycle Management

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Maintenance of the maturity stage for each product is vital as it is the stage where the organisation makes profit. This course will focus on the optimisation of the marketing plan and obtaining maximum profits throughout a product life cycle.

Key Topics

- Utilisation of each stage of the product life cycle to maximise profits
- Positioning of products
- Implementation of effective strategies aimed at managing price
- Increasing the time period of product maturity to reap profits
- Strengthen and sustain the life of current products
Assess, plan and monitor a product life cycle within the organisation

Target Audience
This course would be beneficial to marketing general managers, product development managers, brand managers as well as professionals who are involved in product marketing for the product.

Social Media in Marketing

Module Summary
Duration: 5 Days
Assessment Pass Mark: 60%
Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
With the growth of social media as a form of raising awareness of a business as a good marketing media, it is becoming increasingly more important for businesses to understand how to make the best possible use of it. Therefore this five day course was developed to provide participants with the knowledge and understanding of how to use the many forms of social media (i.e. face book and twitter), as a source of marketing their businesses.

Key Topics
- Concepts, issues and best practices in social networks and their integration into the marketing process
- Overview and issues on social media: key elements, the various existing devices
- Differentiate between the different forms of social media marketing activity
- Assess the value of social media to your business
- Measure the effectiveness of social media
- Monitoring and influencing social networks
- Focus on Facebook and Twitter
- Issues of performance assessment
- Design and implement a "social media" marketing strategy
Target Audience

This course is designed for marketers seeking to expand their knowledge and skills in social media marketing.

Competitive Advantage through Strategic Marketing

Module Summary

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This course was developed to provide participants, with the knowledge required to give them an advantage against competition through the use of strategic marketing. Through the use of case studies and practical scenarios; participants will understand the role of marketing in today's industry, and how to strategically use marketing tools to develop and implement more customer focused marketing plans.

**Key Topics**
- Marketing's role in organisations today
- Structure of a customer-focused marketing plan
- Strategic alignment, operational and tactical level plans
- Concept of customer lifetime value
- Developing the value proposition
- Marketing mix modelling
- Brand strategy and delivering the brand promise
- Real life marketing
- Metrics to improve future performance

Target Audience

This course is relevant for marketing professionals and specialists in the advertising, branding, media and public relations. Those involved in market research would also find the programme rewarding.
Sales Leads

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

A sales lead is one of the keys to sales success. Great sales people know that they must always be mining for opportunities. In this programme participants will know who to target, how to target them and how to remember to do some leads everyday through warming up cold calls, following up on sales leads and networking.

Key Topics

● Offer tools for defining the perfect target customer
● Outline avenues for finding prospective customers
● Review the essential elements of business networking
● Suggest tactics for recovering lost accounts
● Provide techniques for cold calling potential prospects.

Target Audience

Anyone involved in selling or promoting telecommunications products and services, including those taking on this responsibility for the first time, with little or no sales and marketing experience, as well as experienced managers who want to maximise their sales and marketing efforts.

Creating Employer Brand

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
In the highly competitive telecommunications market, it is important for employers to be able to attract and retain employees with the best skills of which a clear and defined employer brand is essential. This course enables participants to identify the key features of an employer brand and to be able to create employment brand that increases engagement, retention and the bottom line.

**Key Topics**

- Definition, benefits, importance
- Employee engagement
- Overview of key brand criteria: purpose, vision, values, mission statement, proposition, positioning, personality and audience
- Employer brand proposition
- Key steps to building your brand
- Communicating the employer brand through workforce and social media
- Brand champion and brand ambassadors
- Sustainability - Recruitment, Induction, Learning and development, Reward and recognition
- Measuring success/Assessing your brand

**Target Audience**

This course targets HR or recruitment professionals, business owners/entrepreneurs, Directors, senior executives and not excluding marketing professionals who maybe dealing with employee performance.

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**Customer Relationship Management**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

Customer relationship management (CRM) is central to the success and survival of any business. This course will reveal the various aspects of customer relationship management including different strategies used to manage effective customer relationships and how these strategies can be adapted to enhance all aspects of the business.

**Key Topics**

- Explain the value of CRM
● Consumer behaviour
● The evolution of the market - B2B and B2C buying behaviour
● Positioning of the organisation
● Customer relationship models
● Review of various CRM Systems
● Communication skills for successful interactions
● Creating value propositions
● Exceeding customer satisfactions
● Customer Satisfaction KPIs
● Retaining customers- reducing churn
● Measuring the success of the relationship management efforts

Target Audience

This course is ideal for anyone in the sales, business development role responsible for managing relationships with customers, clients or sales prospects.

Transforming Customer Experience

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Ensuring that customers have a good experience, every time they interact with a business is very important. This course explains best practices for customer service and illustrates various skills and attitudes and their outcomes. Participants will gain a solid understanding of transforming customer experience by identifying and bridging expectation gaps.

Key Topics

● Defining a customer experience that brings your brand strategy to life
● Modelling the customer journey and identifying the key focus areas
● Setting operational standards to deliver the experience
● Enablers to deliver your strategy
● Assessing organisational capability and culture and identifying the key gaps
● Effective internal communication
● Preparing the customer plan and prioritising the key initiatives
● Developing the personal leadership and communication skills needed to succeed
● Assessing progress and measuring commercial impact

Target Audience
The course is ideal for customer service managers, product managers, front office managers, business owners and supervisors working in a customer service environment.

ICT Development and Management

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

ICT Development and Management is designed for senior managers from public and private sector organisations (i.e. policy-makers, regulators and executives from telecommunications operators and financial institutions) responsible for the development and management of ICT and services. Participants can expect to develop a better understanding of policy, regulatory and management issues in the evolution towards competitive information societies. They will be able to identify issues for consideration when formulating a sector’s policy and regulatory framework. Because of the cross-border and international topics discussed throughout, the course is optimised when provided as a forum for the exchange of ideas and experiences between managers from different countries or regions.

Key Topics

- Sector policy issues
- E-readiness (E-services and applications)
- Legal issues for e-commerce
- Regulatory issues
- Spectrum management
- Interconnection
- Universal access
- Costing and pricing issues
- Telecommunications management in the new environment
- New technologies

Target Audience
Senior managers from both the public and private sector (i.e. policy-makers, regulators and executives from operating entities and financial institutions) responsible for the advancement of ICT services

**Mergers, Acquisitions & Restructuring**

**Module Summary**

**Duration:** 2 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

Across the globe, mergers and acquisitions are reshaping the corporate and competitive landscape. To help companies gain a strategic advantage and expand market share, this M&A program takes you inside the process from strategy and valuation to execution and post-merger management. Whether your company is private or public, or looking to buy or to sell, you will emerge with new ability to broker powerful deals and create shareholder value. Completing a successful merger or acquisition program would enable participants in managing major teams across the organization. In this M&A course, you will acquire a critical cross-functional perspective of the mergers and acquisitions process. Through global case studies on the best practices of leading companies, you will learn how to forge strategic partnerships, navigate complex negotiations, and drive corporate growth.

**Key Topics**

- Linking M&A to Strategy
- Deal Origination
- Business Valuation and Business Case
- Post Merger Integration
- Contract Negotiation & Deal Structure

**Target Audience**

The course is designed for Senior executives in the C-Suite, Directors of public and private companies, Board chairs and directors, Heads of strategy and corporate development, Key executives involved in integration, such as heads of human resources or information
technology, Founders and CEOs of established start-ups, Investment bankers, transactional lawyers, and private equity investors.

Project Management and Appraisal

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
This five-day course discusses the principles, tools and techniques as well as best practices for successful project management appraisal. Project management related topics include the project manager, project teams, project organisations, project planning, scheduling and control, project communications, project risk, quality and costs. Project management software tools will be incorporated as part of the course, supplement with the control of a sample project during class.

Key Topics
- Need for project management, Project management methodologies
- Project appraisal
- Project management process, Project processes, Project control components, Project techniques, Project essentials, Project reports
- Project team management
- Financial control of projects and project budgets, Earned value management

Target Audience
Technical, commercial and financial telecommunications professionals from operators; management staff from regulatory agencies involved in policy formulation, licensing administration, overall economic feasibility assessment or interoperability activities.
Introduction to Telecommunications Management

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The telecommunications landscape is changing. These changes are enabled by evolving technologies, empowered by increasingly more capable, powerful user devices, by user demand, embraced by forward-looking ICT service providers. Participants of this 5-day programme will review basic telecommunications services and become familiar with evolving services. They will learn to identify service target markets and their applications by utilising service innovation strategies and breaking out of service imitation cycles.

Key Topics

- Module 1: Telecommunications Market: Evolving telecommunications and broadcasting, Global and regional telecommunications organizations, Standards, recommendations, Request for Comments (RFC), Objectives of ICT Regulation, Role of the Regulator
- Module 2: Telecommunications Basics – Services: Service categories, Telecommunications, Broadcasting
- Module 3: Telecommunications basics – Networks and functional content only: Telecommunications service platforms, Core Network Technologies, Access Network Technologies, Broadband access, Quality of Service Management, Mobility management, MPLS, Impairments affecting next generation services, Pricing Strategies, traffic interchange rates and attachment pricing, Cost allocation
- Module 4: Competition and Interconnect: Network interconnect, Infrastructure sharing facilities for fixed wire line and cellular wireless network, Unbundled Network Elements, Number Portability, Cost identification of interconnect facilities and services, Access to ROW and attachment rights to towers and poles, use of duct, Revenue sharing and allocation models based on user traffic terminated, Compliance issues
- Module 7: Issues specific to Telecommunication and future development: Service convergence vs. regulatory oversight, Broadcasting as a telecom regulatory responsibility, How to treat non-telecom components and providers? Best practices globally, How is Universal Service changing?, Is broadband access a
Telecommunication Business Process Re-engineering

Module Summary

Duration: 3 Days
Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This five-day training program will provide participants with essential knowledge about the structure of telecommunications businesses in a globalised industry and effective methods to identifying typical symptoms of business process dysfunctions. The training will particularly focus on how BPR role can help maximise service quality and customer satisfaction by matching process design to organisational objectives and customer needs.

Key Topics
- Review and develop process objectives keeping the technologies deployed
- Understand the current business scenarios
- Overview of OSS/BSS
- Implications - design processes which suit your business and market
- Build potential prototypes and propose re-designed processes
- Existing internal and external SLAs
- Implement new processes
- Prepare a list of items on Customer Centricity for all front end operations
- Summary and personal action points

Target Audience

This course is ideal for engineers, IT managers, executives planning to carry out a BPR programme and professionals operating within the quality improvement management
Enterprise Security Management

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Organisations’ dependency on the digital storage of information to maintain efficient business functions is becoming ever-more critical. Compromising data can have a devastating impact on an organisation’s ability to function, highlighting the importance of understanding the systems and procedures for securing data as well as enabling data recovery. This course is a must-attend for network operators, data centres, internet service providers (ISPs) and other organisations heavily dependent on customer data management.

Key Topics

- Enterprise security management frameworks
- Regulatory requirements
- Understanding and assessing security risks and threats
- IT security
- Data protection and recovery planning

Target Audience

Information security management teams, data network managers, and business continuity managers. Senior managers will also benefit from the numerous case studies discussed throughout this course.

Reverse Logistics

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%
Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Sometimes there is a need in businesses, to reuse products that may have been returned by their consumers. Participants, who attend this course, will develop a greater understanding about the concept of reusing the product from the point of consumption to the point of origin.

Key Topics

- Introduction to reverse logistics (diverse returns flows, reasons for initiating a return flow)
- Interest of after-sales service
- Basis of control strategies of returns process flows and after-sales processes
- Service improvement (business development axes, levers and process area optimisation)
- Management of life-cycle related products and associated processes (specific illustrations of warranty management, business opportunities, end-of-life management)
- Understanding the return flow (collection process, business model)
- Key success factors in reverse logistics; Green regulation and its impact at ground level
- Subcontractors and solution integrators reverse logistics

Target Audience

This course is ideal for manufacturers, suppliers, and service providers in the transportation retail and warehousing industry. Individuals involved in the recycling and packaging would really find this programme beneficial.

Supply Chain Management

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

A well managed supply chain is essential to any business that delivers products and services to their customers and consumers. Participants who attend this course will gain a better understanding of how supply chains work and how to best utilise them.

Key Topics

- An introduction to supply and flow management
- Scheduling forecasts and demand
● Understanding the main processes, the supply chain (SC), the links with other responsibilities
● Learning about “make or buy” elements and distribution strategies
● Understanding key performance elements and the challenges of collaborating between contributors (designers, marketing, buyers, suppliers, customers)

Target Audience

This course is ideal for professionals in the purchasing and supplies field. The programme would also benefit experienced individuals with no formal qualification in the field of purchasing and supplies.

Lean Implementation and Quality Management

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Implementation of Lean in an organisation enhances cost and cycle time reduction, improves customer satisfaction and standard of quality. This course was therefore developed to explore the benefits of the lean implementation strategy and equip the participants with the skills to developing a plan to implement Lean across the organisation.

Key Topics

● Lean techniques and tools
● Develop a plan for starting lean in your organisation
● Identifying typical wastes of Lean
● Understand the difference between traditional “push” and the Lean “pull” system
● Recognise how Lean directly addresses the elimination/reduction of operating costs cycle time and non-value added activities
● History of Quality initiatives
● Total Quality Management
● Integration of Lean with quality initiatives
● Value streams maps
● Eliminating barriers
● Empower customers
● continuous improvement

**Target Audience**

This programme is suitable for employees at levels across all fields and industries.

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**Sourcing and Procurement**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

Learners will be taught critical skills that procurement organizations need today, lowering procurement costs without hurting supplier relationships, best practices lead to success in global sourcing; expansion of procurement beyond a cost-savings mindset to include a focus on adding value.

**Key Topics**

- Strategy Development
- Sourcing Strategy Development
- Global Sourcing
- Supplier Relationship Management
- Commodity Sourcing
- Supplier Payment Management
- Contributing to the implementation of improvements in organisational procurement systems and procedures
- Developing procurement plans for supplies and services to be purchased
- Evaluating supplier capability and pre-qualifying potential suppliers
- Organization and Change Management.

**Target Audience**

This course is suitable for professionals responsible for purchasing, procurement and sourcing in their organisations. Project managers would gain valuable insights from this programme.
3D Mentorship - Formulating & Implementing Mentoring Programmes

Module Summary

Duration: 2 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, knowledge test

Overview

This exciting 3-Dimensional Programme is targeted at HR Managers who design and implement enterprise-wide mentoring and coaching programmes. The Course is mainly focused on formulating and developing successful mentoring and coaching programmes that support and drive the talent development agenda in member organizations. At the end of the Course, HR Practitioners must be capable of specifying, formulating, designing and supervising mentoring and coaching programmes for their organizations.

Key Topics

- Mentoring & Coaching (M&C) Programme Design
- Articulating the Objectives, Deliverables and Scorecard
- Mentoring Programme KPI Framework
- Mentor Identification Framework and Criteria
- Mentor Capacity Development - Course Outline
- The Mentee On-boarding Programme – Outline
- Mentoring Agreement – Standard Template
- Effective Pairing - Considerations, Models and Perspectives
- Mentee Satisfaction Surveying - The Survey Tool
- Tools for Successfully Implementing the M&C Programme
- Measurement, Analytics and Reporting of M&C Programmes
- M&C Programme Critical Success Factors

Target Audience

This course is designed for HR practitioners, Line Managers at all levels, Senior and Executive Managers.
Lead Interview Certification Programme - LiCP

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Hiring the right talent has become arguably the single most important opportunity to transform the talent pipelines of our organizations. With its ‘paper hurricane’ processes and the reciprocal frustrations that happen every time a selection effort fails to translate into offer and/or acceptance, hiring remains the most difficult process in the talent delivery value chain. This is exacerbated by the fact that people have so many soft skills that it’s always difficult to predict their contributions to the company until after they are on the job and working on its everyday demands and grinds. So how can you get your executives and senior managers to delve beyond candidates’ professed capabilities and deliver for the organization that seemingly elusive best fit candidate from the long and arduous selection process. How can your organization entrench a hiring culture that amplifies the ‘best fit’ agenda, making executives and line managers not only accountable, but also capable and confident of hiring right. The Lead Interviewer Certification Programme (LiCP) is designed to equip HR and Hiring Managers with the requisite understanding of the agenda, process, tools, deliverables and exigencies of recruiting and selecting talent. LiCP delves into the ‘scientific’ aspects of hiring, explaining the Tools and Frameworks that aid good decision making during the various hiring stages. The Programme also dissects the ‘artistic’ side of hiring, discussing in detail due process and good judgement that managers entrusted with hiring the organization’s talent must demonstrate during selection.

Key Topics

- Introductions and expectations surfacing
- Context for Selection and Interviewing
- The Business case for the Lead Interviewer
- Acquisition and Acquisition Skills Development
- Understanding the Recruitment Market and Recruitment Marketing
- Diversity and Inclusion - Employer Brand and EVP - HR Planning & Talent Econometrics
- The Interview Process – What lead interviewer needs to know and do
- Selection - Synopsis of Selection Methods - Selection Matrix - Psychometrics
- Cognitive and Personality Profiling
- Process Mapping - Interview Types - Interview Preparation List
- Psychology of Interviewing - Communication during Interviews: Interviewer as a Communicator - Framework for Fit - Candidate Experience (CandEX)
Human Resources Planning

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Human Resource Planning is a strategic imperative that drives sustained alignment of HR activities to business priorities. This Course aims at giving HR Managers a strong understanding of the strategic and technical processes of Human Resources Planning. The course approaches Human Resources Planning from a business perspective and strives to align HR Planning to Strategy execution and Business Operating Model fundamentals. Participants will be taken through the systematic process of formulating practical and actionable HR Plans that effectively deliver the mid- and long-term Strategic Plan.

Key Topics

- HR Planning - A Process Overview
- HR Planning - Introduction + Business Case
- Human Resources Delivery Value Chain (HRDVC)
- Understanding HR Plan Drivers
- The Strategy & Business Operating Model (BOM)
- HR Econometrics - Supply / Demand Analysis
- Human Resource Forecasting: TO-BE
- Manpower Forecasting: Quantitation + Qualitation
- Competency Profiling + Competency Frameworks
● Human Resource Auditing: AS-IS
● Manpower and Skills Auditing Process
● Talent Pipeline Analysis (TPA) and Gap Analysis
● Human Resourcing Models
● Internal and External Resourcing Plans
● Succession Planning - a detailed Process
● The Critical Success Factors (CSFs)
● Manpower Planning Metrics, Analytics and Data
● Line Engagement Framework and Capabilities

**Target Audience**

The course is designed for HR Managers/Partners, Organisational Development Managers, Talent Managers, Learning and Development Practitioners.

**Competency Profiling and Skills Auditing**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

Talent management is primarily focused in building two types of capabilities – Competences and Potential. Effective management of Competences strives to create a competency-based culture in the management of human resources. This includes competency-based selection, competency-based training and competency-based deployment, being just some examples of how the concept of ‘competency’ has pervaded human resources management practice. This Master class strives to give Practitioners practical understanding of Job Competency Profiling and Skills Auditing, and unpack what competency-based HR management is really about. The Master class is delivered by ABMC International Limited, in collaboration with Allaboard, RSA. It is targeted at OD Practitioners, Talent Acquisition Specialists, as well as Learning and Development Practitioners, who mostly hire, develop and deploy Competences as part of their work.

**Key Topics**

● Skills Audit Overview & Business Case
● Purpose, Context + Deliverables of Skills Auditing
● The Concepts of ‘Skill’ and ‘Competency’
Target Audience

This training programme targets Talent Managers, HR Managers/Practitioners, Learning and Development Managers, Organisational Development Managers.

Certified Talent Management Practitioner

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

CTP is the only talent management Certification Programme for HR and Talent Practitioners, which awards a ‘Certified’ status globally. The Programme is targeted at Human Capital Planning & Acquisition Managers, L&D Managers, and Human Resources Business Partners, who intend to deepen their appreciation and competences in the strategic field of talent management, whilst earning a unique certification by a globally recognized certification institute - the Global Academy for Finance and Management (GAFM). Headquartered in the USA, GAFM is an ISO 9001 certified global education accrediting institution with a global footprint in America, Europe, Asia and Africa. CTP™ comes with an endorsement seal of the International Board of Standards (IBS). The Programme is crafted on the Talent Management Best Practices™ (TMBP™) Standard, making it practical, hands-on and implementation-focused. CTP™ is delivered by trainers and facilitators who have met the rigorous accreditation standards of GAFM. The learning model employed during the
certification training blends stretchy pre-course assignments, presentations, case analysis, coaching and an in-class examination. Upon completion, you will receive your certification from the GAFM, which is recognized in over 150 countries, and which awards CPD points in various countries worldwide. You will then be able to use the designation ‘Certified Talent Practitioner’ on your business cards and resume. CTP™ is exclusively delivered by Allaboard Africa (RSA), and supervised by ABMC International (Kenya).

Key Topics

- Introduction to TM; Talent Econometrics Concepts, business case, agenda, objectives, deliverables, econometrics
- Talent Management - Business Alignment Board agenda, horizontalization (infrastructure), verticalization (strategy)
- The TDVC™ and TM Infrastructure TDVC™, realigning talent delivery processes, developing TM standards
- Talent Management - Vantage Drivers Brand vantage, process vantage, skills vantage, channel vantage
- Talent Profiling and Pooling Talent profiling, talent pooling, talent conversations, concept of potential
- Talent Management Standards Planning, acquisition, onboarding, deployment, development, succession
- Employer Brand Transformation Brand equity assessment, talent touchpoints, brand driver mapping, EVPs,
- Talent Management Implementation The TM implementation roadmap, metrics and analytics, enterprise skills,
- Talent Metrics and Analytics Metrics, pipeline analytics, bench analytics, brand analytics, relativities
- Talent Practitioner’s Toolkit Tools for profiling, planning, program management, and reporting

Target Audience

This training programme is designed for Talent Management Practitioners, HR Practitioners, Organisational Development Practitioners, Learning & Development Practitioners and Recruitment Specialists.

Talent Management and Succession Planning

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Talent management is essential to all organisations. It is a type of planning where organisations identify internal employees as potential candidates for filling future vacancies
that may arise within the organisation and start training them well ahead of time to perform those roles. If talent is not managed, skills can be wasted and skilled people may decide to go elsewhere, leaving the organisation with low performers. It is an ongoing process that needs to be proactively managed and reviewed.

**Key Topics**
- Why it’s crucial to invest in talent management
- The challenges of developing a talent management strategy
- Defining and refining such a strategy using practical steps
- Developing talent management strategy - ten steps to a talent management strategy
- How to audit and optimise your strategy to maximise return
- Succession planning: an overview of its importance, function and methodology
- The role of HR in setting up a succession planning system
- Forecasting future needs and strategic alignment
- Developing the succession planning process
- Building personal development plans
- Effective monitoring, measuring and follow-up processes
- Development of a comprehensive career development programme
- Integration of the career development plan into the talent management and succession planning strategy
- Leadership guide to strategic talent management

**Target Audience**
This course is designed for HR/HRD professionals who are charged with the responsibilities of creating talent pools and formulation of talent management and succession plans for their organisations.

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**Change Management**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

Change management for an organisation means defining and implementing procedures and or procedures to deal with changes in the business environment and to profit from changing opportunities. It involves different frameworks and ways of approaching and leading change.
at an individual, team, organisational levels. Organisations are consistently changing their focus, expanding and contracting their activities and refining their products and services. Managers have to be able to introduce and manage change and ensuring that organisational goals of change are met and that they gain the commitment of their people both during and after implementation. Successful adaptation to change is crucial in a business environment, the more the organisation adapts to change, the more it is likely to thrive.

**Key topics**
- Why organisations need change
- Why the management of change is important
- Change management process and use of change management curve to manage change
- Identify and assess the forces of change
- Recognising barriers to change and getting rid of them
- Managing individual, team, organisational and leading change
- Develop a change management policy
- Making change management more effective
- Communications skills in a change processes
- HR’s role in change management

**Target Audience**
This course targets project managers, programme or change managers and HR professionals or anyone who’s involved in the change process in their organisations. Participants will gain insights on the tools and methods needed to successfully deal with all aspects of change.

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**Performance Management**

**Module Summary**

**Duration:** 2 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**
Performance management is about creating a culture that encourages the continuous improvement of business processes and of individual skills, behaviour and contributions. This course will show the participants how to get the best out of others and how to develop principles, practices and behaviours to support high performance workers.

**Key Topics**
• Rationale for performance management
• Elements of performance management
• Performance review and development cycle
• Linking performance to business strategy
• The dialogue process
• Managing and reviewing performance
• Handling difficult people
• Handling career discussions and identifying development needs

Target Audience
This course is designed for HR professionals and performance management specialists. Individual employees in supervision of other employees performance will find this course rewarding.

Learning and Development

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
This course is designed for learning and development practitioners whose roles encompass analysing, planning, and evaluating the learning and development process in their organisations. Participants will gain an overview of the learning and development cycle focused on analysing learning needs. It will assist participants attain the knowledge in designing and implementing the learning and development interventions that would bring results.

Key topics
• The role of L&D practitioner in an organisation
• Learning and development needs analysis
• Planning and organising a learning event
• Consulting with internal customers and managing expectations
• Aligning learning needs with the business needs or goals
● Analysis of learning needs
● Formulation of learning outcomes
● Understanding the different learning styles
● Design and selection of the appropriate learning interventions
● Managing the design and delivery process to ensure success
● Monitoring and evaluating learning events and initiatives
● Measurement and evaluation of the learning intervention

Target Audience

This course targets learning and development practitioners, trainers, human resources practitioners, supervisors and managers.

Organisational Design and Development

Module Summary

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

This programme is designed to address the need for organisation development and design capability among HR professionals, L&D specialists, internal and external HR consultants and OD specialists working within the HR function. The programme provides a theoretical understanding of organisation development and design issues, as well as practical knowledge and skills, the qualification will help you gain the competence and confidence to deliver immediate, tangible results to your organisation.

**Key topics**

- HR strategy, HR business partner and OD
- Organizational model as a road map to diagnosis and interventions
- Exploring the systematic balancing of the various organizational elements
- The consequence model, interventions toolkit
- Understanding the theoretical basis of organisation design and development and apply a context in terms of value and contribution to organisational life
- Identify and utilize available design options regarding organisational structures and relationships
- processes and systems necessary to maintain structures and relationships
- methods and procedures of organisation development and review their strategic impact
- Support change management through the application of organization development strategies
- Exhibit an understanding of organisation culture, norms and behaviours
- Recognize the role of HR in advising on these design and development choices and be able to support their implementation.

**Target Audience**

This programme is designed for HR/HRD professionals, learning and development specialists and OD specialists who specialize in HR looking to understand the dynamic relationship between HR and OD and how it can improve organisational and employee effectiveness.

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**Competency Management and Recruitment**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

This course was specifically designed for HR officers and managers, primarily focused in recruitment. Participants will be able to identify the best competency based selection tools to use through the recruitment process, and also provide practical tools and skills development in the preparation and behavioural techniques to achieve successful and strategically beneficial outcomes from selection interviews.

**Key Topics**

- Competency and approach requirements
- Examples of competencies
- Link to the business
- Framing your competency framework for recruitment
- Advertising for competent people
- Defining and agreeing the standards and evidence of performance required for the job
● Formulating evidence based questions
● Designing specific performance assessment scenarios and questions
● Selecting and preparing the assessment panel
● Methods for recording information from the candidate and evaluating it against the behavioural requirements of the role
● Capturing and evaluating interview evidence objectively
● Strengths based interviewing - new era of interviews
● Advantages and use of Strength based interviews
● Critical review of testing and legislation

Target Audience

This course is designed for HR professionals, Line managers with recruitment responsibilities or recruitment specialists.

Strategic Human Resource Management

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Effective human resource management is a key element of any business. This course will reveal how to transform HR from a cost centre to a fully fledged business partner that directly contributes to the delivery of organisational goals.

Key Topics

● Reconceptualising and repositioning HR as a strategic business partner
● Linking HR functions with organisational goals
● From cost centre to strategic partner
● Using metrics and designing strategic initiatives
● Strategic options and choice
● Strategy formulation versus implementation
● Implementation Design Criteria
● HR Value Proposition
● Leadership - style and capability
● Managing Talent for organisation success
Target Audience

This programme targets HR professionals and specialists from various fields of HR.

Employee Relations

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Managing employer and employee relations is fundamental to the success of any business/organisation. This course seeks to assist participants with the knowledge and the skills needed in maintaining good relations and explore the challenges faced while trying to establish good relations.

Key Topics

- The psychological contract and Employee Relations (ER)
- Current challenges in employee relations
- Corporate culture and its impact upon ER
- The line managers’ role in ER
- Designing supportive ER policies and procedures
- Collective bargaining approaches
- Grievance procedures
- Developing an ER strategy

Target Audience

This course is not only limited to HR professionals and specialist but cuts across all levels of supervision and management. This means anyone responsible for supervising, managing and leading a group of people in a work setting will find this course beneficial.
Developing High Impact Learning Culture

Module Summary

Duration: 3 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

In any business there will always be people who will have a wealth of experience and knowledge that they are willing to share with their colleagues to aid in their development. Therefore a learning culture is needed in order to allow employees to learn from each others’ experience. Participants will identify the conditions needed to establish a learning culture within their organisation.

Key Topics

- Establishing the conditions for a learning culture
- Developing learning practices
- Fundamentals of organisational learning
- Evaluating and sustaining organisational learning

Target Audience

This course is ideal for HR professionals and specialist and supervisors and first line managers.

Emotional Intelligence

Module Summary

Duration: 4 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
Assess the key emotional and social competencies that distinguish outstanding leaders and identify the precise areas for their development. Designed for those professionals interested in personal and professional growth in terms of emotional intelligence. EI accounts for higher productivity in those working for them, along with the ability to retain talent under competitive circumstances. EI inspires higher levels of confidence in customers or clients of the business.

**Key Topics**

- Understand the context for Emotional Intelligence
  - Best boss – Worst boss exercise
  - Basics of Emotional Intelligence
- Keys to emotional Intelligence, Understanding & anticipating triggers and reactions
  - Emotional Intelligence framework
- Interpersonal effectiveness; social awareness and relationship
- Leading with courage, Building an emotionally intelligent team
- Applying emotional intelligence

**Target Audience**

This course is ideal for managers, leaders or anyone seeking to broaden and improve their interpersonal skills.

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**Leadership in Management**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

The difference between good and bad leadership has a direct affect on overall performance. Good leadership will motivate, inspire and add to the overall productivity of an organisation and its employees. Whereas bad leadership will do the exact opposite. This training course will help boost participants' leadership abilities; by studying the various ways to build strong relationships with their colleagues inspire them to become more productive.

**Key Topics**
- Key leadership theories and models
- Strategic Management
- Leading organisational change
- Leading in a changing environment
- Financial management
- Marketing for the progressive organisation
- Project management
- Ethical issues involved in leadership practice
- Manage stress and build business networks
- Creation of diverse culture in an organisation
- Understanding team dynamics to resolve group conflicts

**Target Audience**

This course is suitable for all individuals in general or functional management positions across all sectors e.g. general managers, directors, heads of departments, project managers and change managers.

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**Value-Based Leadership**

**Module Summary**

**Duration**: 5 Days

**Assessment Pass Mark**: 60%

**Learning Activities**: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

How others perceive you and your ability will influence their willingness to follow your lead. How you represent yourself, your teams and your function, and express what you stand for either explicitly or implicitly, will influence these mindsets and your levels of success. This impact training course provides techniques to move you into a position where you lead not only by authority, but more importantly by representing something that inspires others to follow your lead.

**Key Topics**

- Building your Personal Brand
- Examining the perceptual positions of those around you
- Understanding your conscious and unconscious messages
- Being your brand - identify, personify, exemplify; Identifying your core values - demonstrating them appropriately for the situation
Creating Powerful Networks
Demonstrating your personal and functional value
Building sustainable relationships across functions
Breaking down barriers between departments/teams
Developing your internal and external personal support base
Self-Management
Communicating to enhance perception; Making time for others and yourself; Developing management mindfulness;
The Emotionally Intelligent Leader, developing your Emotional Intelligence to build leadership credibility
Boardroom Impact; Bracing yourself for the boardroom: personal presence and influence

Target Audience
This course is suitable for all individuals in general or functional management positions across all sectors e.g. general managers, directors, heads of departments, project managers and change managers.

Management Excellence

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
A strong management team can have a very positive impact on the overall success of a business. As the aim of all businesses is to succeed, ensuring that excellent management strategies and a strong management team is essential to achieving this goal. Participants will take part in in-depth discussions and studies to help them clearly understand how leadership affects overall business success. They will also evaluate their own specific style of leadership and how they can use this to communicate and engage with others more effectively.

Key Topics
● Your leadership role
● Recognising your role in business success
● Identifying your leadership style
● Maximising performance levels from your managers through empowerment
● Balancing influencing upwards with the responsibility for performance
● Stepping away from micro-management
● Developing yourself
● Using cognitive, action, relationship and expert skills to succeed in your role
● Self-assurance – knowing your purpose and support systems
● Stakeholder management
● Developing communication skills to build credibility
● Building trust to build networks and coalitions
● Communicating, engaging and working with others
● Delivering your organisation’s strategy
● Understanding the strategy and your role in it
● Distilling your organisation’s strategy by identifying critical success factors
● Getting the buy-in of your managers to achieving collective success
● Leading others through strategic change
● Managing managers
● Clearly defining their role and clarifying expectations
● Defining and discussing information and policies from senior management
● Developing a Leadership Pipeline
● Achieving excellence through effective communication
● Dealing with under-performance

**Target Audience**

This training is for middle managers who need to think strategically whilst still getting directly involved in the day-to-day activities within their organisation.

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**People and Team Management**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**
It is said that people do not leave organisations, but they leave managers. Driving the performance and motivation of individuals and teams is a big responsibility. The training offers the insights required to cultivate a successful working environment from a management perspective. Practical by nature, this training will give anyone managing a team confidence that they are making the most of their people.

**Key Topics**

- Understanding yourself and your role
- Identification of core management skills, along with a personal skills audit
- Exploration of Situational Leadership styles
- Introduction to the Performance Management Cycle and exploring the positive impact of effective performance management
- Developing team performance
- Identification of team stages and associated roles and goals
- Building a Team Charter as your team evolves
- Examining the key building blocks of successful teams
- Developing individual performance
- Motivation theories and modern schools of motivational thinking
- Identifying and applying a model of delegation
- Application of an established coaching model in a practical context
- Delivering feedback using a planned, structured and balanced approach
- Case studies - identifying a strategy to overcome potential conflict along with an opportunity
- Practise dealing with some "live" issues in a safe and supportive environment

**Target Audience**

This training is designed for Managers who need proven, effective techniques to get the best possible results from their teams.

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**Managing Multigenerational Teams**

**Module Summary**

**Duration:** 2 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**
It is common for most businesses and organisations to have a work force comprised of people of different ages and generations. Therefore it is important for these businesses to be properly suited to deal with the challenges that arise as a result. This course will examine the challenges of managing workforces with diverse age groups and identity strategies to develop cohesion across varying age groups.

Key Topics

- Recognise generation’s differences and key behaviours
- Challenges of working with 21st century generation mix
- Cross generational employees
- Coaching, managing and leading employees of different generations
- Managing aging employees
- Developing next generations

Target Audience

This course targets managers at all levels in the organisations and HR professionals.

Strategic Thinking Acumen

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

A person's ability to think is an inherent gift that everybody has. However a few people have the ability to think strategically in relation to business' objectives and goals. Participants will assess what qualities are required to think more strategically in order to see the "big picture" and help achieve an organisation's long and short term goals.

Key Topics

- Steps to developing a strategic mindset
- Effective use of information in strategic thinking
- Effects of SWOT analysis in strategy thinking
- Different levels of strategy
- Techniques to thinking strategically

**Target Audience**

This course is ideal for functional managers, professional, departmental leaders and all individuals in key roles who want to refine their strategic thinking skills.

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**Telecommunications Finance for non-finance Managers**

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

This five-day training course covers vital concepts of practical financial management and how to review financial statements and analysis, along with best practices in budgeting, forecasting, project evaluation and analysis

**Key Topics**

- Understanding telecom operators’ financial statements
- Financial performance measurement
- Ratio analysis techniques
- Best practices for budgeting and forecasting
- Project analysis and evaluation
- Key performance indicators (KPIs)
- Effective financial management and cost control

**Target Audience**

Heads of non-finance divisions such as human resources, network operations, IT, legal, competition, sales and marketing of telecommunications regulatory authorities and operating companies
Financial planning

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview
This course reviews financial statement analysis with particular attention to telecommunications operators. It examines how financial performance is measured and also identifies best practices for budgeting, forecasting, project evaluation and analysis. It also covers the processes of financial management and cost control and strategies for tariffing and negotiation

Key Topics
- Understanding operators’ financial statements
- Financial performance measurement
- Best practices for budgeting and forecasting
- Project analysis and evaluation
- Effective financial management and cost control
- Strategy development for tariffing and negotiation

Target Audience
Telecommunications finance managers; also non-finance group leaders, project managers, programme managers and department heads.

Audit for Revenue

Module Summary

Duration: 2 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test
Overview

Revenue audit concerns itself with the examination and expression of the accuracy of the information and financial figures published in the organisation’s financial statements. This course has been designed specifically to assist participants who work within the finance/accounting department within an organisation and are tasked with conducting internal audit. Lasting two days participants will learn about the revenue cycle and audit objectives and the processes involved in sales transactions and the internal controls around them.

Key Topics

- The revenue cycle and audit objectives sales transaction and internal controls
- Types of Audits
- Financial data interpretation and analysis
- Preparing for an audit
- Conducting an audit and settlement
- Effective audit planning and execution
- Risk Assessment in auditing
- Reporting audit results and follow up

Target Audience

This programme is specifically designed for individuals whose key roles in their organisations includes revenue auditing, this also make provision for those working in the fiancé department. This would allow them to have in depth knowledge of what revenue auditing entails and what’s expected of them by the auditors.

IT Auditing and Systems Control

Module Summary

Duration: 5 Days
Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

This course will provide participants with an overview as to the best practices for IT auditing, how to evaluate and analyse current auditing systems and also what controls need to be put in place to ensure an effective and efficient auditing process.

Key Topics

- IT Governance & Risk Management
• IT Life Cycle Management
• Need for control & Audit of Information systems
• Conducting an Information System Audit
• Types of Audit Procedures
• Evaluating Planning, Organizing, Leading & Controlling functions
• Systems Development Management Controls
• Programming Management Controls
• Data Resource Management Control
• Security, Operations & Quality Assurance Management Controls
• Boundary, Input, Communication, Processing, Database & Output Controls
• Evidence Collection & Audit Software
• Concurrent Auditing Techniques
• Interviews, Questionnaires & Control Flowcharts
• Evaluating asset Safeguarding & Data Integrity
• Evaluating System Effectiveness & System Efficiency
• Managing the Information Systems Audit Function

**Target Audience**

This programme target IT professionals who have an interest in auditing or those who are required by the organisations to conduct audit in this specialised field of information technology.

**Budgeting Concepts**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

A stable cash flow is an essential requirement of any business. Therefore working to a budget is paramount in order to ensure cash flow is continuous and at a profit. This programme will equip the participants with the knowledge and skills on the principles of a budget; capital budgeting process; types of budgeting activities and ultimately the effects they have on the overall master budget.

**Key Topics**
Business Evaluation

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

The valuation of a business or its shares is fundamental to the success of many business strategies. However, it is an area which requires a clear understanding of valuation principles and techniques together with hands-on practice in a range of circumstances, before managers can value businesses with confidence.

Key Topics

- Discounted Cash Flow (DCF); Weighted Average Cost of Capital (WACC), Capital Asset Pricing
- Model (CAPM) and Cost of Debt; Terminal Values;
- Comparable Company Multiples Analysis: P/E Ratios, EV/EBIT, EV/EBITDA, Revenue Multiples
- Assets Basis of Valuation: Dividend Yield and Earnings Yield, Industry Rules of Thumb;
- Comparison of DCF and Multiples; Valuation for an IPO;
- Valuation for Acquisition and Disposal;
- Expert's Valuation: Fair Value vs Market Value

Target Audience
This course targets business development managers and senior managers from all industries.

**Risk Management and Business Continuity Planning**

**Module Summary**

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

This three day course will give insights on the factors involved in risk management and business continuity planning. By the end of the course participants will be able to identify potential risks to a business, how to assess these risks and put a plan on place to manage and deal with them accordingly should they arise.

**Key Topics**

- Risks in project management
- Understanding risks within and outside the business
- Emerging threats
- Performing a business impact analysis
- Risk assessment and monitoring
- Developing risk management strategies
- Risks in IT and data
- Business continuity planning and implementation
- Disaster management, including action plans
- Cyber crime and cyber threats
- Technology selection & migration strategies
- Standardisation, security

**Target Audience**

This course targets compliance officers, administration operations staff in the business continuity and financial services industry.
Credit Control

Module Summary

Duration: 2 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Credit control is vital to any organisation. This comprehensive programme will provide an insight into the methodologies used for credit control in organisations. It seeks to provide participants with the practical skills in maintaining consistent cash flow, avoiding bad debts and minimising late payments.

Key Topics

- The purpose of credit control in an organisation
- Concepts of credit
- Credit rating analysis
- Credit and cash flow analysis
- Terms and conditions of trade
- Customer identity
- Credit assessment and new accounts
- A review of the legal system
- The letter cycle
- Good telephone techniques
- Collecting tough debts
- Query management
- Measuring performance

Target Audience

This programme is suitable for credit controllers who want to improve their knowledge of all aspects of credit and collections. It is also relevant for those who are new to their role and more experienced credit controllers who have had little formal training.
Next Generation and Management Accounting

Module Summary

Duration: 1 Day

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Management accounting has brought a dramatic change to the field of finance. Gone are the days when the finance function played a passive role of just mere financial reporting but it has now evolved into a very proactive role of actually ensuring that the finance function now partners with the business/organization. This intense and comprehensive programme reveals how management accounting role of the finance function now adds much more value than the compliance and regulatory aspects.

Key Topics

- Planning, budgeting and forecasting
- Financial accounting and reporting
- Ethics, governance and risk
- Improving the bottom line using activity based techniques
- Performance measurement and management accounting
- Improving management reporting for enhanced business performance
- The transforming role of finance professional to business partner

Target Audience

This programme is suitable for management accountants; accountants in other disciplines who want to understand management accountant. Finance professional wishing to gain techniques on management accounting would also benefit from this programme.

Strategic Pricing for Finance Professionals
Module Summary

**Duration:** 3 Days

**Assessment Pass Mark:** 60%

**Learning Activities:** Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

**Overview**

This programme introduces participants into the art of and science of pricing. The various subjects that will be covered will introduce the participants to the factors they need to take into consideration when developing a pricing strategy.

**Key Topics**

- The business of pricing
- Pricing structure/pricing challenges
- Cost based pricing
- Competitor based pricing
- Customer based pricing/customer perspective
- Pricing and profitability
- Contribute effectively to strategic planning

**Target Audience**

This course is designed for finance professionals who need confidence to frame business problems in strategic and financial terms.

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Treasury Management

**Module Summary**

**Duration:** 5 Days

**Assessment Pass Mark:** 60%
Overview

The treasury function continues to be significance due to increasing complexity of global markets. Organisations need to establish a state of the art treasury function, to be able to identify financial and commodity risks as early as possible and to take quick and appropriate actions. As telecoms is a very capital intensive industry with operators having to invest heavily on licenses and networks before they make profit, it is critical for organisations to be equipped with the knowledge and skills of managing the treasury function.

Key Topics

- Cash, liquidity and treasury management
- Risk, compliance and governance
- Transaction and exposure management
- House banking, intercompany netting payment factory
- Finance integration
- Planning, reorganising treasury structures, processes and systems
- Defining functional requirements and evaluation of treasury management systems
- Re-engineering policies for financial risk management
- Integrated solutions taking into cognisance all the relevant strategic, technological, financial, operational and regulatory factors/issues

Target Audience

This course targets professionals who work in the treasury function but could be beneficial to those who provide services to individuals working in the treasury function.

Asset Management-Corporate Finance

Module Summary

Duration: 5 Days

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test
Overview

Asset management is concerned with the balancing of costs, opportunities and risks against the desired performance of assets to achieve organisational objectives. This programme would enable participants in their organisations to examine the need for and performance of assets and assets systems at different levels.

Key Topics

- Investment management concepts
- State of the art asset allocation, trends and ideas
- Capital Market fundamentals
- Risk Management
- Equity Products
- Fixed income products
- Explore the main pitfalls and problems facing peers in asset management

Target Audience

The course is designed for investment and asset managers both experienced and inexperienced who are tasked with decision making responsibilities regarding asset management and investment.

Win that Pitch

Module Summary

Duration: 1 Day (classroom) 2 Days (Online)

Assessment Pass Mark: 60%

Learning Activities: Case studies, Panel discussions, Group exercises and presentations, quizzes, completion of coursework, Knowledge test

Overview

Pitching is a critical skill for any individual. From presenting an idea to sharing an elevator pitch during a conversation, responding to a client brief with a proposal and sales presentation to win a new client through to pitching yourself for a promotion. This Continued Professional Development (CPD) Accredited online course will teach you how to master every aspect of the pitch and presentation. Along with practical tips for overcoming presentation nerves, how to craft a compelling story and techniques for making a compelling argument, you will learn best practice methods and tips for all of the key stages of the pitch process. The course covers how to decipher a brief, what goes into writing a winning proposal, how to deliver a perfect pitch and present with confidence through to the all-important follow-up questions.

Key Topics
This fully accredited CPD course will cover the following:

- Deciphering the brief
- Questions to ask before any pitch or presentation
- Identifying red flags
- Writing a winning proposal
- Crafting a compelling story
- Developing your budget
- Developing your sales strategy
- Getting to pitch perfect
- How to overcome presentation nerves
- Developing a compelling call-to-action
- Presenting with gravitas in every situation
- Pitch presentation skills

**Target Audience**

The course is not just for sales teams and covers tips for presenting ideas, convincing colleagues or senior management through to pitching to prospects or existing clients. The lessons from this course will help your achieve success in your career and in your role.