



COMMONWEALTH
TELECOMMUNICATIONS
ORGANISATION

Frequency Planning & Spectrum Management

22 - 26 May 2017, Abuja, Nigeria

Overview

This course provides in-depth knowledge about spectrum management principles, spectrum planning and engineering analysis and technological and regulatory changes that affect spectrum management. Frequency assignment methods, auctions, and spectrum charges will also be addressed in detail.

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Objectives

After this training, audiences are expected to appreciate:

- The requirement of spectrum management
- Licensing including concepts like lightly licensed
- Spectrum management with new technologies like cognitive radio
- ITU frequency allocation - standards and best practices
- Spectrum auctions
- Principles and practice of market based spectrum pricing
- Planning for new allocation or service

Course outline

Spectrum definition

- ITU assignments - international recommendations for harmony in assignments
- Ownership of spectrum
- Spectrum as a natural resource for public use
- Why manage spectrum versus free use

Consumers of spectrum

- Entertainment - broadcast in television and radio
- Emergency and disaster - public protection and disaster relief
- Military and police usage
- Telecom manufacturers
- Citizens at large - services and hobbyists (amateur radio)

Frequency

- Propagation characteristics at different frequencies
- Recommended usage of an ITU assignment
- Planning for future
- Harmonization with international usage at all levels for better use
- Industrial, scientific, and medical radio bands for research and development

Global standards in wireless

- National interests in spectrum management
- Steps for frequency planning - who are the stakeholders
- Technical, national and economic considerations while

- doing frequency planning
- Public and utility services

Managing licenses

- Frequency monitoring
- Spectrum abuse - how to check and prevent
- Regulator roles
- Indian example

Future

- Spectral efficiency
- Frequency reuse
- Cognitive radio and other smart users of spectrum
- Next-generation networks usage - spectrum usage in LTE/4G technologies
- Spectrum re-farming - rolling out 3G services on 2G spectrum
- Allowing innovation
- Spectrum trading

Monitoring & compliance

- Monitoring and methods to achieve compliance

Trainer profile

S N Gupta

S N Gupta graduated in engineering in 1979 from Kurukshetra University, India and did his post graduation in electronics design technology at the Indian Institute of Science, Bangalore and was appointed as project manager at Hartron. In 1981 he joined wireless planning and coordination wing of Ministry of Communications India and was posted as an officer-in-charge of wireless monitoring station and secretary of regional advisory committee of Standing Advisory Committee on Radio Frequency Allocation.

In 1983 he joined Indian Railway Service of Signal Engineers from 1985 to 1989 he held various positions on that railway including one year tenure as senior project manager for passenger reservation computerization system at Bombay. From 1989 to 1994 he worked with Indian Railways Institute for Signal Engineering and Telecom as a faculty for signalling, telecom and computers. Since August 1994 he worked with Ircon International as an additional general-manager and was involved in the execution of optical fibre and other projects dealing with modern telecommunication systems at both national and international level. In 2000, he was heading Ircon's first optical fibre project between Mumbai and Delhi.

In November 2006, he worked as a principal advisor with Telecom Regulatory Authority of India and headed the fixed network division. Earlier he headed the converged network division dealing with regulatory, technical and economic aspects of data networks and services including VoIP, Internet

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services, IPv6, broadband, e-governance, Internet governance, quality of service and next-generation networks.

He is widely travelled abroad to Europe and Asia being chairman of various experts groups of Asia-Pacific and South East Asia in the field of VoIP, Internet telephony, ICT and domain names. He was also deputed as an ITU expert on an United Nations Development Programme assignment on Internet exchange and international VoIP gateway and IP based interconnect exchange for Bangladesh. He was also a member of next-generation networks regulation review group of ITU. Recently he completed his masters in telecom policy and regulation as an ITU scholar from University of West Indies through e-learning. Presently, he is working with BT as a chief regulatory advisor and director of governmental affairs for India, dealing with regulatory, licensing, public policy, security, competition and government affairs and is a visiting consultant for all the training programs pertaining to his domain conducted by Eagle Photonics.

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