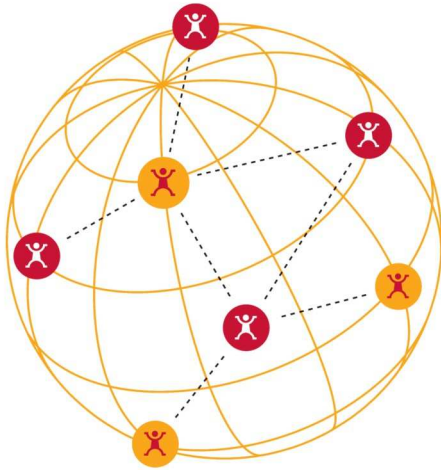


TRAINING PROGRAM OUTLINE



REG-102E SPECTRUM MANAGEMENT

DESCRIPTION

A 5-day Training Program to provide participants with a clear understanding of the radio-frequency spectrum and its management and regulation, to demonstrate how to best allocate and control frequencies, and to present how to deal with future spectrum management decisions to accommodate new technologies as they become available.

OBJECTIVES

- Provide an understanding of the different methods of spectrum management
- Enable the participant to plan, establish and maintain a spectrum management regime according to set goals and needs
- Provide the practical know-how to implement a computerized spectrum management regime
- Prepare for future changes in technology which may affect spectrum management



TOPICS

Part I – General

- Introduction of the radio-frequency spectrum
- Historical development of spectrum usage and management regimes
- Present and future technology of radio spectrum frequencies
 - Current technologies (2G, Wi-Fi, Bluetooth, etc.)
 - Software defined radio (SDR)
 - Wideband/Ultra-wideband (UWB)
 - Mesh networks
- Challenges for current regimes: Why spectrum planning is needed at national and international levels

Part II – Spectrum regulation regimes

- Focus of spectrum regimes (determination of frequencies, areas, time, pricing)
- Command-and-control/licensing/government allocation approach
 - Initial assignment of spectrum
 - Lottery
 - Auction
 - Beauty-contest
 - First-come first-served
 - Possible steps
 - Allocation
 - Adoption
 - Certification
 - Assignment
 - Enforcement
 - Why this is not the best way to allocate frequencies
- Market-based approaches
 - Spectrum: a tradable good

- Incentive-based fees
- Applying market-based approaches - case studies
- Applicability to other markets
- What rights should be licensed - property rights theory

- Free spectrum/commons:
 - Software defined radio (SDR)
 - Wideband/Ultra-wideband (UWB)
 - Mesh networks
 - Incompatibility of new technologies with exclusive property rights

- Evaluation of different spectrum management schemes
 - Interference
 - Efficiency
 - Incentives for innovation
 - Applicability
 - Long-term stability
 - Compatibility
 - Costs
 - Public interest

- International coordination on spectrum management
 - Problem of border crossing interference
 - Role of international organizations like the International Telecommunications Union (ITU)
 - Multinational agreements such as European Union (EU) standards

Part III – Implementation of spectrum management systems

- Technical aspects
 - Development and promotion of standards
 - Compatibility of hardware used
 - Authorization of equipment

- Spectrum monitoring
 - Measurement
 - Engineering analysis

- Enforcement of spectrum allocation and legal system for the resolution of conflicts between spectrum users
- Spectrum trading and transfer of spectrum rights
 - Possible forms of trading
 - Spectrum exchanges
 - Brokering
 - Transfers
 - Should change of purpose be allowed?
 - Trading platforms
 - Leasing and other special forms
 - Need of official/public supervision
- Transition from current licensing approach to market-based approaches
 - Defining property rights
 - Role of governments
 - Possible problems in moving from a government licensing regime to a market-based regime
- Competition framework
 - Prohibition of collusion and abuse
 - Measures to implement adequate competition policy
- Reallocation procedures
- Protection of the public interest in new spectrum management regimes
- Software-aided spectrum management
 - Software capabilities
 - Demonstration

TARGET AUDIENCE

- Telecommunications managers and personnel of operators, regulators, hardware providers and software providers in positions related to spectrum management issues
- Managers looking to complement their skill-set by gaining a good understanding spectrum management

METHODOLOGY

Our Training Programs combine expert presentations, workshops, case studies and discussions on real-life situations faced by participants. Complete training material is provided to all participants for future reference and follow-up action plans.

LOCATION

Our Training Programs are held at regular intervals in selected cities around the world. Upon request, our expert trainers can lead Training Programs at the location of your choice. If interested, please contact us at training@neotelis.com.

EXPERTISE

Neotelis provides consulting and training services to telecommunications organizations worldwide. Its team of experts has trained thousands of executives and managers



working for operators, regulators, policy-makers and governments in over 100 countries around the world.

