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Manual on mobile Communication Development 1997 Edition



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Under the Buenos Aires Action Plan, the BDT has developed this manual to assist developing countries in the planning and engineering of mobile Communications taking into consideration all kinds of technologies worldwide with emphasis on the development of a business plan criteria.

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Chapter 1 History of RF Communications

Introduction, Early mobile communications systems, Mobile telephone system (MTS), Improved mobile telephone system (IMTS), drawbacks to MTS/IMTS, Cellular System.

Chapter 2 Introduction to RF Communications

Definition, Transmitter, Frequency modulation (FM), Amplitude modulation (AM), Digital modulation technique – Binary phase shift keying (BPSK), Receiver, Modes of operation.

Chapter 3 Overview of Cellular

Introduction, Cell, Base station, Mobile telephone switching office (MTSO), Frequency concepts, Signalling overview, Antenna configuration, Transmission facilities.

Chapter 4 Technology overview

Introduction, Analogue cellular technologies, AMPS (Advanced mobile phone system), AMPS forward and reverse channels, Other analogue cellular standards, Total access communication system (TACS), Expanded total access communication system (E-TACS), Japanese total access communication system (J-TACS) and narrow-band total access communication system (N-TACS), Universal total access communication system (U-TACS), Nordic mobile telephone (NMT), Time division multiple access (TDMA), GSM – Global system for mobile communications, GSM system features, Key features of GSM, Code division multiple access (CDMA), CDMA development group, CDMA link waveform, CDMA system features, CDMA benefits, Fixed wireless systems, System highlights, PSTN direct connect architecture, PSTN-to-radio interconnect, MTSO/MSC network architecture.

Chapter 5 Network Planning

Introduction, Propagation aspects, Link budget, RF prediction models, Traffic and dimensioning, Traffic growth engineering, System coverage, Sectorization, Controlling interference, Common mistakes in cell implementation, Cell capacity.

Appendix A

Chapter 6 Network Planning Examples

Introduction, AMPS system design example, TACS system design example, GSM system design example, NAMPS system design example, CDMA system design example.

Chapter 7 FR planning and Engineering Tools

Introduction propagation and interference analysis, Site propagation images, Combined propagation images, Interference images, Frequency planning, Plots and reports.

Chapter 8 Business Plan

Introduction, Assess environment, Assess market, Assess competition, Cellular network design, Implementation plan, Other key issues, Business plan tables.

Chapter 9 GSM/DCS Network Dimensioning – BSS and NSS

Preface GSM/DCS networks, BSS – the base station subsystem, NSS – The network subsystem.

Annexes

Biographies

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