



GSM Cell Planning Principles

2 days

1. Cell Planning Introduction
2. System Description
 - **GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS (GSM)**
 - **NETWORK HARDWARE**
 - **OPERATION AND SUPPORT SYSTEM (OSS)**
 - **SWITCHING SYSTEM (SS)**
 - **BASE STATION SYSTEM (BSS)**
 - **AIR INTERFACE**
3. Traffic
 - **TRAFFIC AND CHANNEL DIMENSIONING**
 - **Erlang's Model**
 - **Traffic Measurements**
 - **Traffic Behavior and Characterization**
 - **CHANNEL UTILIZATION**
4. Nominal Cell Plan
 - **WAVES**
 - **GENERATION OF RADIO WAVES**
 - **SUPERIMPOSING INFORMATION ON RADIO WAVES**
 - **AIR INTERFACE DATA**
 - FREQUENCY SPECTRUM
 - DUPLEX DISTANCE
 - CHANNEL SEPARATION
 - ACCESS METHOD AND TRANSMISSION RATE
 - **RADIO WAVE PROPAGATION**
 - **SIGNAL VARIATIONS**
 - **SYSTEM BALANCING**
 - **CHANNEL LOADING PLAN**
 - INTERFERENCE
 - INTERSYMBOL INTERFERENCE (ISI)
5. Surveys
 - **RADIO NETWORK SURVEY**
 - BASIC CONSIDERATIONS
 - POSITION RELATIVE TO NOMINAL
 - SPACE FOR ANTENNAS
 - ANTENNA SEPARATIONS
 - NEARBY OBSTACLES
 - SPACE FOR RADIO EQUIPMENT
 - POWER SUPPLY/BATTERY BACKUP
 - TRANSMISSION LINK
 - SERVICE AREA STUDY
 - **RADIO MEASUREMENTS**



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- PATH LOSS PARAMETERS
- TIME DISPERSION
- INTERFERING TRANSMITTERS

6. System Tuning

- **SYSTEM DIAGNOSTICS**
 - OSS
 - TEMS
 - HOT SPOT FINDER
- **CELL PARAMETER ADJUSTMENT**
 - CELL PARAMETERS
- **SYSTEM GROWTH**
 - INTRODUCTION
 - CELL SPLIT