



Radio Propagation & Planning (FT4124-01S)

Brief Description

- Radio Propagation and Planning is a course for service. The topics are among others Overview of MW Radio Systems, Radio Link Equation (Friis Formula), Path Propagation Evaluation, Rain Attenuation and Non-availability Calculation, Outage Time Calculation, Diversity Configurations and Performance Objectives. After completing this course, the participant is able to support the network element in the field and to analyze the microwave network's performance objectives.

Target Group

- Planning - Engineering

Learning Target

- The main objective of this course is to enable the participant to analyze the microwave network's performance objectives

Prerequisite

- Participants must have some technical knowledge in telecommunications. Some basic knowledge in PDH & SDH is required.

Contents

- Block diagram of Radio Equipment
- Nyquist Bandwidth and Real Bandwidth
- Threshold Power
- Radio Link Equation (Friis Formula)
 - Antenna Gain and Directivity
 - Free Space Loss
 - Feeder and Branching Loss
 - Calculation of the Received Signal Power (Link Budget)
- Path Propagation Evaluation
 - Refraction and Tropospheric Index
 - Clearance and Fresnel Zones
 - Obstruction Losses
 - Ground Reflections
- Rain Attenuation and Non-availability Calculation
 - Flat Fade Margin
 - Rain Climatic Zone and Hop Rain Attenuation
 - Non-availability due to rain
- Outage Time Calculation



- Signature of a Radio Equipment
 - Outage Time Calculation
- Diversity Configurations
- Frequency Diversity
 - Space Diversity
 - Hot Stand-by
 - Outage Time Improvement for Diversity Configurations
- Performance Objectives
- Quality
 - Availability
- Exercises for all areas mentioned above

Duration

10 days

Maximum number of participants (suggested)

10

Course Type

Theoretical course (expert)
