

Planning the UMTS Radio Network (TK313)

Prerequisites

Participants must have advanced knowledge of UMTS network and technologies. For background knowledge, we recommend the TEKonsult courses "WCDMA in UMTS" and "UTRAN Signaling".

Target groups

Deep technical course designed for telecom professionals getting into UMTS radio network planning, dimensioning and testing, including RF engineers, network engineers, operations personnel, integrators, regulators, manufacturers and managers.

Duration

4.0 days

Course Content

WCDMA Fundamentals

- Introduction to WCDMA Air Interface
- WCDMA Physical Channels
- HSPA Principles
- HSPA Physical Channels
- RRM Functions

Radio Planning Fundamentals

- Radio Propagation Mechanisms
- Fading Phenomena
- Free Space Loss
- NodeB and UE Performance

Radio Network planning process

- Radio Network Planning Process
- Main Steps in Dimensioning Process

Coverage Dimensioning

- Link Budget for Different Services
- Link Budgets and Parameters
- Planning Margins
- Planning Thresholds
- Cell Range Calculation

Capacity Dimensioning

- Basic Traffic Modeling
- Calculation of Air Interface Capacity and Load

Coverage and Capacity Planning and Improvements

- Different Planning Approaches
- Coverage and Capacity Improvement

Initial Tuning

- Scrambling Code Planning
- Neighbor List Planning
- Location, Routing and UTRAN Registration Area Planning