

LTE Parameters (TK414)

Prerequisites

Participants must have advanced knowledge and experience of the LTE Air Interface. For background knowledge, we recommend the TEKonsult courses “LTE Air Interface” and “Planning the LTE Radio Network”.

Target groups

Participants should be Network Planning/Performance engineers and Network Engineering and Optimization personnel.

Duration

4.0 days

Course Content

LTE Functionalities and Features Overview

- LTE Radio Network Architecture and its interfaces
- RRM Process
- Overview of main LTE features

Parameter Structure & SIBs

- Physical Radio Resources
- System Information Broadcast in LTE
- SIB Content

Physical Channel Configuration & Random Access

- Physical Channels Overview
- Physical Signals and Channels Structure and Contents
- Random Access Process and Methods
- PRACH Configuration Options and Parameters

Bearer ControlUE State Handling

- UE states: Parameters and Procedures
- DRX/DTX Configuration
- Different State Transitions
- Radio Bearer Overview
- Performance and Optimization Aspects

Admission Control

- RACin LTE
- Default and Dedicated Bearers
- LTE QoS Profiles

Power Control Setting and AMC

- Explain the basics of LTE PC
- Describe UL open loop PC part
- Discuss UL open loop PC part
- Identify DL power settings
- Analyze PSD
- PC impact on network performance and related parameters

MIMO Mode Control

- Multi-Antenna Techniques
- Multi Antenna Modes in LTE
- Single Antenna Port Transmission
- Receive Diversity
- Basics of MIMO Parameters
- Spatial Multiplex vs. Tx diversity
- Beamforming
- RRM impacts

Mobility Management

- Radio Measurements in LTE
- Idle Mode Mobility Management Parameters
- Connected Mode Mobility Management Parameters

UL/DL Scheduler

- UL and DL Scheduler Principle
- Outer Loop Quality Control
- UL and DL Adaptive Modulation and Coding (AMC) Parameters
- Outer Loop Link Adaptation (OLLA)
- Adaptive Transmission Bandwidth (ATB)