

TK413: LTE planning

Duration

4.0 Days

Course Content

1. LTE-EPC generalities

- 1.1 Evolution to LTE
- 1.2 LTE-EPC architecture and interfaces
- 1.3 LTE network element
- 1.4 LTE-EPC mobility areas
- 1.5 LTE-UE identification
- 1.6 LTE-UE states
- 1.7 LTE-EPC Bearers
- 1.8 LTE-EPC QoS

2. LTE physical layer

- 2.1 The rectangular pulse
- 2.2 OFDM
 - 2.2.1 OFDM principles
 - 2.2.2 OFDM challenges
- 2.3 Multiples access
 - 2.3.1 OFDMA
 - 2.3.2 SC-FDMA
- 2.4 OFDM transmitter and receiver
- 2.5 LTE radio frame structure

2.5.1 Frame type1

2.5.2 Frame type2

2.6 Modulation schemes

2.7 MIMO

2.8 DL & UL Rel 8 peak bit rates

3. Radio Resource management

3.1 Admission control

3.2 Scheduling

3.3 Power control

3.4 Adaptive modulation and coding

3.5 MIMO operation

3.6 DRx/DTx

3.7 Connected mode mobility

3.8 Idle mode mobility

4. LTE Overhead

4.1 PSS/SSS overhead

4.2 DL reference overhead

4.3 OTDA overhead

4.4 DL control channels overhead

4.5 UL control channels overhead

4.6 DMRS overhead

5. Radio link budget

5.1 Dimensioning process

5.2 Radio link budget

5.3 DL RLB process

5.4 UL RLB model

5.5 RLB parameters

6. Cell range

6.1 Propagation model

6.2 Cell range calculation

6.3 Coverage-based site-count

7. Capacity planning

7.1 capacity dimensioning

7.2 Traffic model

7.3 Cell throughput calculation

7.4 Capacity based site-count

8. Initial parameters planning

8.1 PRACH planning

8.2 PDCCH planning

8.3 PUCCH planning

8.4 PCI planning

8.5 DMRS planning

9. Tracking area planning

7.1 TA dimensioning/planning

7.2 Paging overview