

# TK211: GSM Air interface

## Duration

4.0 Days

## Course Content

### 1. Structure of GSM Air interface

- 1.1 FDMA/TDMA scheme
- 1.2 Frame structure
- 1.3 Synchronization between uplink and downlink

### 2. Physical and logical channels

- 2.1 Logical channels
  - 2.1.1 Broadcast channels
  - 2.1.2 Common control channels
  - 2.1.3 Traffic channels
  - 2.1.4 Dedicated channels
- 2.2 Physical channels
- 2.3 Mapping of logical channels into physical channels
- 2.4 Frame structure of the logical control channels
- 2.5 Use of common control channel

### 3. Fundamentals of Wireless channels and error control

- 3.1 Propagation phenomena
- 3.2 Path loss
- 3.3 Multipath fading
- 3.4 Noise and interference
- 3.5 Channel errors

3.6 Error control

3.7 Timing advance

#### **4. GSM PHYSICAL LAYER**

4.1 Transmission and reception

4.2 Channel coding and interleaving

4.3 Modulation

4.4 Demodulation

4.5 Air interface (UM)

4.6 Deinterleaving

4.7 Channel decoding