



Who Should Attend?

The main target group of this training is network operator staff involved in the optimisation of UMTS + HSPA networks or improving network performance, as well as system vendors involved in second and third level troubleshooting activities.

Course Content

1. UMTS Network.
 - Quality in UMTS Networks.
 - UMTS Evolution.
 - UMTS Protocols.
 - Performance Data.
 - Key Performance Indicators.
2. Call/Connection Analyses.
 - Service Concept, Call Establishment, and Call Release.
 - PS Traffic in UTRAN and Examples of practical protocol trace.
 - NAS Procedures.
3. Mobility.
 - Handover Types and Measurements.
 - Soft and Hard Handover.
 - SRNC Relocation
 - HO Parameter Verification.
4. Quality.
 - Resources in UTRAN.
 - ATM, Throughput measurements, and Radio Measurements.
 - Codes, Quality, and Load-related KPI.
 - Air Interface Quality and Load Verification.
5. HSPA.
 - General Aspects; HSDPA and HSUPA.
 - Examples of practical protocol trace.
6. Optimizing UTRAN.
 - General Aspects.
 - Idle Mode.
 - Connected Mode.
 - Interworking with GSM.
 - Site Configuration Analysis.
 - HCS.

Course Objectives

This course provides guidance on how to measure and optimise end-to-end network performance, service quality and the customer experience of UMTS + HSPA networks, with the main focus on UTRAN. Important KPIs to measure performance in the UTRAN are introduced and evaluated. The course contains a planning part, in which specific parameter



settings and setting combinations which influence the system operation are discussed. The course also contains a section of practical application, in which call flow examples based on protocol traces are analyzed.

Prerequisites

Participants should have a good knowledge of UMTS and HSPA air interface and planning concepts.

Training Structure

Three-day training divided into logical sessions.

Methodology

Instructor-led training.