

HSPA+ Parameter Optimisation & Troubleshooting on Uu Interface

Course Number: UMTS3500-01EN | Duration: 5 Days

Target Audience

- Network Planning/ Performance Engineering Staff
- Network Engineering and Optimisation Personnel

Prerequisites

- UMTS & HSPA+ Air Interface (UMTS3200-01EN)

Learning Objectives

After completing this course, the students will be able to:

- Evaluate drive-tests logs and critical signaling faults as well as procedure mistakes.
- Analyse RRC parameter settings and their performance impact on Uu.
- Optimise procedures and their related parameters to reach better network performance.
- Debug critical system problems in UE & UTRAN as well as interworking with core and IRAT.
- Improve E2E network KPI and quality of experience (QoE) .

Course Outline

1. Major HSxPA Uu Features in Rel. 5/6
 - 1.1 Hybrid ARQ & Link Adaptation
 - 1.2 E-DCH Scaling and Serving Grant
2. Important Features in Rel. 7/8
 - 2.1 Enhanced Fractional DPCH
 - 2.2 Flexible RLC with MAC-ehs/MAC-i/is
 - 2.3 MIMO & Dual Cell HSDPA
 - 2.4 DTX/DRX in CELL_DCH
 - 2.5 Enhanced FACH/PCH
3. RRC Setup & Radio Bearer Reconfiguration
 - 3.1 RRC Connection Setup with eFDPCH
 - 3.2 Radio Bearer Setup for HSxPA
 - 3.3 Radio Bearer Reconfigurations for TrCH Type Switching
 - 3.4 Physical Channel Reconfiguration
4. Idle Mode Mobility
 - 4.1 Cell Selection & (Priority) Reselection
 - 4.2 Measurement Types
 - 4.3 Paging in Idle and XXX_PCH
 - 4.4 EPLMN and MOCN
5. Connected Mode Mobility
 - 5.1 (S)HO Events and Trigger Parameters
 - 5.2 HSxPA Serving Cell Change Performance (Target Cell Pre-Config)
 - 5.3 Inter-Frequency HO Optimisation
 - 5.4 Inter-RAT HO Parameter Analysis
6. Power Control and Power Setting
 - 6.1 UL Power Control Parameters (Open Loop/Closed Loop)
 - 6.2 DL Power Setting (Open Loop/Closed Loop)
7. E-DCH Scheduling in Uplink
 - 7.1 Reference E-TFCI's & Max Throughput
 - 7.2 BLER-Target and RoT
 - 7.3 High RTWP & Overload Handling
 - 7.4 Non Serving Grant Down
8. TCP/IP and E2E Performance
 - 8.1 Why Duplicate ACK's?
 - 8.2 Why TCP Retransmissions?
 - 8.3 Low Frame Utilization for HSDSCH (high DTX and high Window Size)
 - 8.4 Concurrent Up- & Down-Loads
 - 8.5 Max possible UL/DL Throughput considering Protocol Overhead
9. Enhanced Battery Saving
 - 9.1 Fast Dormancy & SCRI
 - 9.2 Enhanced UE DRX in Rel. 8
 - 9.3 LTE vs. HSPA Energy Consumption
10. Radio Performance Optimisation
 - 10.1 CQI Improvement
 - 10.2 Ideal Iub Flow Control for HSxPA
 - 10.3 Drop Call Reduction & Multi-RAB