

LTE RAN Performance and Optimization – 3 days

CONTENTS

This course provides an end-to-end overview of LTE RAN performance monitoring and optimization. Network concepts and features are analysed against available network measurements and call traffic signalling flows, to infer the use of different counters and KPIs. Performance KPIs within this course are investigated on a vendor independent perspective, focusing on the concepts and applications. Alongside with the analysis of different KPIs classes and monitoring reports, this course also boosts a comprehensive approach to network troubleshooting and optimization tasks.

PREREQUISITES

General LTE and EPC System knowledge is required. For background knowledge, the Apis LTE EPC Overview is recommended.

WHO SHOULD ATTEND

This training is best suited for the 4G network planners, optimisers and quality control teams. After attending this course, participants will understand how different KPIs are obtained, infer possible problems within the network and develop efficient approaches to solve them.

LTE/EPC Introduction

- LTE/EPC architecture
- 3GPP releases
- Comparison of 2G/3G (GSM/GPRS/UMTS) and 4G (LTE EPC)
- Protocols & Interfaces in LTE EPC
- Quality Class Identifiers, QCI

Multimedia over IP

- SIP and SDP
- Multimedia Sessions
- PCRF

E-UTRAN KPI's

- Accessibility
- Retainability
- Integrity
- Availability
- Mobility

EPC KPI's

- Accessibility
- Mobility

E-UTRAN/EPC Signalling

- S1 Setup & Initial Attach
- UE ctx Release & Service Request
- Dedicated Bearer Setup
- Inter-eNB Handover using X2 & S1
- Dedicated Bearer Release & Detach

MAC Scheduler

- UL Scheduling Resources
- DL Scheduling Resources
- Radio Quality Measurements

KPI Monitoring and Control

- Call setup and retainability performance: RRC, E-RAB, S1
- Radio integrity control: BLER, CQI, MCS usage, SINR, retransmission rate, UL RSSI
- Radio capacity monitoring: RB usage, number of users, UL power head room
- PDCCH capacity control: usage, BLER
- Traffic monitoring and control: volumes, throughput
- Mobility performance: intra and inter eNB HO success rate, IRAT success rate