5G RAN KPI Performance Troubleshooting - 3 days

CONTENTS

This course introduces the audience in a deep 5G NR RAN performance Accessibility, retainability, Integrity and Mobility analysis for both NSA and SA deployments. The course explores major network performance, troubleshooting analysis and optimization techniques based on RAN KPIs across the radio, mobility, throughput, latency, and reliability dimensions, discussing abnormally detection and ways to improve performance.

TARGET AUDIENCE

Technical audience involved in RAN operations, RAN planning and optimizations and 5G networks and services.

PREREQUISITES

Understanding of 5G RAN technology, Physical layer, 5G RAN signaling and planning procedures.

COURSE OUTCOMES

- Provide detailed information about 5G NSA/SA RAN statistical observability.
- 5G NSA/SA RAN performance analysis, optimization and troubleshooting.
- Introduce RAN planning and optimization hints.

COURSE OUTLINE

5G NSA/SA Statistical Measurements

- 5G NSA architecture
- Basic overview of NSA/SA signaling scenarios
- 5G NSA Statistical measurements on eNodeB
- 5G NSA/SA Statistical measurements on gNB
- General performance analysis on network capacity and availability

5G NSA/SA Accessibility

- 5G NSA RACH procedure
- 5G SA RACH Procedure
- Performance analysis for 5G NSA/SA accessibility success rate
- Performance success rate estimation (math modeling)
- Most Common trouble-shooting analysis based on KPIs

5G NSA/SA Retainability/Mobility

- 5G NSA EN_DC establishment success rate
- 5G NSA EN_DC DRB retainability analysis and troubleshooting
- 5G NSA EN_DC mobility analysis (eNodeB & gNB) and troubleshooting
- 5G SA establishment success rate - analysis and troubleshooting
- 5G SA retainability - analysis and troubleshooting
- 5G SA Mobility analysis - analysis and troubleshooting
- Most Common trouble-shooting analysis based on KPIs

5G NSA/SA Throughput

- 5G NSA EN_DC MAC DRB throughput rate and troubleshooting
- 5G NSA EN_DC PDCP throughput rate and troubleshooting
- 5G SA MAC DRB throughput analysis and troubleshooting
- 5G SA PDCP throughput analysis and troubleshooting
- Most Common trouble-shooting analysis based on KPIs

5G NSA/SA Capacity Performance

- 5G NSA/SA RRC connected users analysis and troubleshooting
- 5G NSA/SA data connected users analysis and troubleshooting
- 5G NSA/SA PUCCH SINR analysis and troubleshooting
- 5G NSA/SA CQI analysis and troubleshooting
- 5G NSA/SA HARQ analysis and troubleshooting
- 5G NSA/SA Interference analysis and troubleshooting

Trace log analysis with examples will support all sections.