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Troubleshooting VoLTE

Course Description

As a service, VoLTE has a lot of moving parts; between LTE, PCC and IMS operation, there's a number of places in the network that can be the cause of service issues and outages. Using your VoLTE service assurance tools, this course will explain the common KPIs and failure scenarios that are encountered in the network, from registration through to call establishment. In addition, managing voice call quality will also be explored through analysis of RTP voice streams.

Prerequisites: LTE System Engineering, Analyzing VoLTE and VoWiFi, or equivalent knowledge.

2

Days
(LiveOnsite)

12

CPD Learning
Credits



Level: 3
(Advanced)

This course will contain the following sections:

1. Principles of Network Performance Monitoring

Topic areas covered include:

- 3GPP Counters and KPI Definitions.
- KPI Hierarchy.
- Performance Monitoring Reports.
- Example Reports.

Activity: Identifying Key VoLTE/IMS KPIs used for Troubleshooting.

2. Troubleshooting VoLTE Registration

Topic areas covered include:

- VoLTE Registration KPIs:
 - SIP and Diameter KPIs.
- Registration Failures.
- SIP Timers.
- SIP Error Codes.
- Reason Headers/Reason Phases.

Activity: VoLTE Related Registration KPIs, Troubleshooting Registration Issues, Investigating Current Network Issues.

3. Troubleshooting VoLTE Sessions

Topic areas covered include:

- Why do VoLTE Calls Drop?
- Session Success/Failures/Timeout.
- Key Session VoLTE KPIs:
 - SEER, SCR, ACQ, Drops.
- Session Establishment Failures:
 - Server Error.
 - Service Unavailable.
 - PCC Issues.
 - Forbidden.
 - Address Issues.
- Troubleshooting VoLTE Session Issues.

Troubleshooting VoLTE Sessions (cont.)

- Video KPIs.
- VoWi-Fi Related KPIs.

Activity: VoLTE Session KPIs, Troubleshooting Session Issues, Investigating Current Network Issues.

4. Troubleshooting VoLTE RTP Issues

Topic areas covered include:

- Defining RTP/RTCP for AMR and WB-AMR.
- One way media and Gap Detection.
- RTP based KPIs.
- Troubleshooting RTP Issues:
 - RAN Related Issues.
 - Detecting Audio Clipping.
- Monitoring Transcoding.

Activity: RTP KPIs, Troubleshooting RTP Issues, Investigating Current Network Issues.

5. Troubleshooting VoLTE Nodes

Topic areas covered include:

- Monitoring VoLTE Nodes.
- Interfaces and Node Performance.
- Packet Loss on a Node.

Activity: Monitoring a VoLTE Node and Interface Performance.



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