Voice over LTE e2e Realization and RAN Functionality

LZU1089466 R1A

Description
Do you want to have a detailed understanding of the Ericsson Voice over LTE (VoLTE) solution with focus on E-UTRAN?
This course describes the basic VoIP theory, MMTel/IMS/EPC Overview, E-UTRAN functionality and features for VoLTE support and VoIP Radio Network Dimensioning. All this, together with end-user considerations and call procedures will definitely boost your competence and understanding of VoLTE.

Learning objectives
On completion of this course the participants will be able to:

1. Explain the basic idea of VoLTE, including basic VoIP theory
1.1. Explain codecs and protocols used for VoIP
2. Explain, on an overview level, the end-to-end support and QoS for VoIP in E-UTRAN, EPC and IMS
2.1. List the main principles in Ericsson E-UTRAN, EPC and IMS for VoIP support
2.2. List the QoS requirements for voice and VoLTE
2.3. Explain the usage of EPS Bearers and APNs for VoLTE
2.4. Explain PCRF, PCEF and MME QoS concept
2.5. Explain end-to-end call procedures
2.6. Explain end-to-end QoS assurance and measurements such as Mean Opinion Score (MOS) and total delay
3. Detail the E-UTRAN functionality and features from a VoIP perspective
3.1. Explain the QoS framework
3.2. Describe the protocol handling of VoIP traffic
3.3. Explain RLC in Unacknowledged Mode
3.4. Detail Robust Header Compression (RoHC)
3.5. Detail the features related to scheduling, like Service Specific DRX, TTI Bundling, Delay Based Scheduling
3.6. Explain RRC Connection Re-establishment
3.7. Detail the features related to mobility like SRVCC, Service triggered Mobility, Mobility Control at Poor Coverage
3.8. Explain CS Fallback
3.9. Explain how Differentiated and Dynamic Admission Control may be used for VoLTE
3.10. Describe VoIP observability
3.11 List positioning methods
4 Describe the Ericsson VoIP dimensioning methods
4.1 Calculate VoIP coverage
4.2 Calculate VoIP link budget
4.3 Calculate VoIP capacity
4.4 Explain Transport Network Dimensioning for VoIP

Target audience
The target audience for this course is:
Service Design Engineer, Network Design Engineer

Prerequisites
Successful completion of the following courses:
LTE/SAE System Overview LZU 108 7020
LTE L13 Air Interface LZU 108 9102
LTE L13 Protocols and Procedures LZU 108 9103
LTE L13 Radio Network Functionality LZU 108 9104
LTE L13 Radio Network Design LZU 108 9105
Duration and class size
The length of the course is 2 days and the maximum number of participants is 16.

Learning situation
This course is based on theoretical instructor-led lessons and theoretical exercises given in a classroom environment.

Time schedule
The time required always depends on the knowledge of the attending participants and the hours stated below can be used as estimate.

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<thead>
<tr>
<th>Day</th>
<th>Topics in the course</th>
<th>Estimated Time (hours)</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction of the course and Network Solution</td>
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<tr>
<td></td>
<td>Basic VoIP theory</td>
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<td>EPS and IMS basics, QoS</td>
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<td>E-UTRAN features and functionality</td>
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<td>2</td>
<td>E-UTRAN features and functionality</td>
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<td>Radio Network Dimensioning</td>
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<tr>
<td></td>
<td>End-to end considerations and discussions</td>
<td>2</td>
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