Aarav Tech Solutions

4G 5G VOLTE/VONR PREMIUM PROGRAM

80% Log Analysis
20% Theory

LOG ANAYLSIS AND FAILURE ISSUE DEBUGGING AND FINDING THE FAILURE CAUSE.

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SUMMARY

5G, VONR, 5G CA, **LTE, LTE Advance**, Throughput Analysis Layer wise.

INTERVIEW PREPRATION

Session on Lab setup description, Testing Types, Test cases.
Technical question/answer s discussion.

SUPPORT

Resume preparation.
Naukari profile Optimization.
LinkedIn Profile Optimization.
Dedicated Pre Interview discussion.

WHY CHOOSE US

- Our team consists of professionals who have proven reliable, both in terms of education
- All payment transactions to accounts in the name of the Company
- We are a trusted company with excellent and fast service

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BEST INDUSTRY SERVICE

TRAINING SESSIONS CENTER
Live Classes Recording will be provided for each session.
Interactive Sessions.

TOOLS SESSION
INDUSTRY TOOLS

Content

LTE

Module 1:
Introduction to Modem

- Modem Architecture Explaining Qualcomm Processors.
- Modem Hardware specification.
- Workflow Day by Day routine, Field testing and Lab Testing.
- Live logging scenario with device.

Module 2:
Introduction Log Analysis Tool Protocol level

- QXDM Tool and classification.
- QCAT tool and Classification.
- ELT tool and classification.
- How to configure the tool and windows for analysis the log file.
- Log File converting method and numerology.
- Attach Request
- Type of Attach request
- Attach Request failure case study and why attach Reject and what will be effect over PDN connectivity Request message.
- ESM failure cause during attach request.
- EMM failure cause during attach request.

Module 3:
LTE power on Procedure. PHY Layer

- Initial ACQ procedure and failure case study.
- LTE PHYICAL layer, PSS decoding and, SSS decoding based on Qualcomm tool and window configuration process.
- MIB decoding and its parameters.

Content

LTE

- SIB decoding and it's parameters.
- Introduction to SIB decoding.
- Detailing about SIB Decoding and Information element involved and its configuration.
- RACH procedure (Contention based and Contention free).
- RACH Procedure in Details from PRACH, MAC , ML1 level.
- Rach Attempt and RACH Trigger Process over MAC layer.
- RACH message (M1,M2,M3 and M4) and it's information Element.
- RACH failure decoding parameters and failure case study.

Module 4:
RRC Layer Introduction

- RRC IDLE -> CONNECTED procedures.
- RRC connection Request. (With Information Element).
- RRC Connection Setup. (With Information Element)
- RRC Connection Setup Complete. (With Information Element).
- RRC Connection Re-establishment procedure and why?
- RRC re-establishment failure cause (Handover Specific).

Module 5:
Introduction to NAS

- 3GPP LTE Non-Access Stratum and EPC Architecture
- Overview of Non-Access Stratum Functions
- Security for NAS and AS(RRC) Security.
- Authentication and Security (With Information Element).
- UE capabilities Enquiry (with Information Element).
- UE capabilities information Element (With Information Element).
- RRC connection Reconfiguration.

Content

LTE

- RRC connection Reconfiguration Complete.
- Attach Accept.
- Activate Default EPS Bearer.
- Attach Accept Complete.

Module 6:
LTE Advance.

- Carrier Aggregation.
- How Secondary Cell will be added.
- How we will check RRC connection Reconfiguration message for carrier Aggregation Parameters.
- Secondary cell addition information QXDM specific different -2 layers.

Module 7:
LTE End to End Scenarios

- LTE call flow (CSFB Scenario).
- END-ENDCALL(MO/MT) flow procedure with live log with tool and Information Element.
- SMS call flow in LTE.
- Redirection and HANDOVER with differences.

Module 8:
IMS/VoLTE Parameters.

- Throughput In LTE
- Low Throughput cause , How to Analysis low throughput in Tools
- Layer Wise throughput Log Analysis.
- How data flow layer wise,Data analysis in tool.

Content

LTE

Module 9:
HANDOVER In LTE:

- Handover Procedure/// Call flow X2 HO and S1 HO.
- Frequency HO//// Band HO/// RAT HO.
- Handover failure case study.
- RADIO Link failure case study.
- DUT /// Device Out of service and In service Information.

Module 10:
IMS/VoLTE Parameters.

- IMS Registration Procedure.
- IMS call flow (MO/MT).
- SMS call flow in IMS.
- Conference call procedure.
- IMS Failure case study.
- SRVCC call flow and details about information element.
- SRVCC Failure cause.

Content

5G-NR

Module 1:
Introduction to Modem

- Snapdragon 888 5G Mobile Platform.
- Snapdragon 888+ 5G Mobile Platform.
- Snapdragon 865+ 5G Mobile Platform
- Snapdragon 865 5G Mobile Platform
- MediaTek Dimensity 6020
- MediaTek Dimensity 8000
- The MediaTek Dimensity 9200

Module 2:
Introduction Log Analysis Tool Protocol level

- QXDM Tool and classification hand on Experience over 5G Registration and Call flow.
- QCAT tool and Classification hand on Experience over 5G Registration and Call flow.
- Validate the UE capability and Network Supporting Capability.
- ELT Tool and classification hand on Experience over 5G Registration and Call flow.
- Cell Selection and Reselection rules for 5G NR.
- 5G NR (NSA) cell Acquisition.
- Difference between PCI in 4G LTE and PCI in 5G NR. Significance of MIB - LTE 4G vs 5GNR.

Content

5G-NR

Module 3:
Introduction Log Analysis for ENDC:

- Attach Request LTE/5GNR.
- UE and Network Security Capability (Log Analysis).
- UE capability 4G / 5G Supporting Parameters and differences. RRC Connection reconfiguration.
- MCG and SCG addition for ENDC.

Module 4:
SA Registration Procedure.

- SA registration Procedure.
- Initial ACQ procedure and failure case study.
  Registration Failure case Study (SA Specific) 5G NR Dual Connectivity (DC)
- Radio link monitoring is a procedureperformed by UE.

Module 5:
NSA Registration Procedure.

- Voice Over NR (VoNR) .
- EPS Fallback (IRAT and Redirection Method). Volte/IMS Call drop Logs Analysis.
- What is 5G and why do we need it over existing LTE?
- 2. SA and NSA mode operation
- 3. Sub 6[FR1] and mm Wave [FR2]
- 4. 5G Numerology [SCS/Subcarrier spacing details], RE, RB.

Content

5G-NR

Module 6:
Throughput In 5G NR .

- Throughput calculation in 5G/NR:
- Throughput calculation in 5G/NR and compare with 4G technology.
- Main Differences between Carrier aggregation and Dual connectivity.

Module 7:

- 5G TDD and FDD frame structure?
- 5G NR PDCP ROHC modes and profiles supported?
- Signaling radio bearers and importance of SRB 3?
- 5G NR UE and Network identifiers?
- 5G NR Modulation and Coding Scheme (MCS) Characteristics?
- 5G NR PSS and LTE PSS comparison?
- 5G NR SSS and LTE SSS comparison?

Module 8:

- 5G UE category types?
- 5G NR Transport block size [TBS] calculation?
- 5G NR RACH procedure and RACH types?
- 5G NR CBRA and CFRA RACH?
- 5G NR SCG failure, Beamforming failure, and RLF log analysis and debug?
- 5G NR Measurements: RSRP, RSSI, RSRQ, and SINR?
- Handovers in 5G?
- Explain QOS in 5G?
- 5G NR Logical, Transport, and Physical Channels Mapping?
- 5G NR Radio Network Temporary Identifier (RNTI) and RNTI types?

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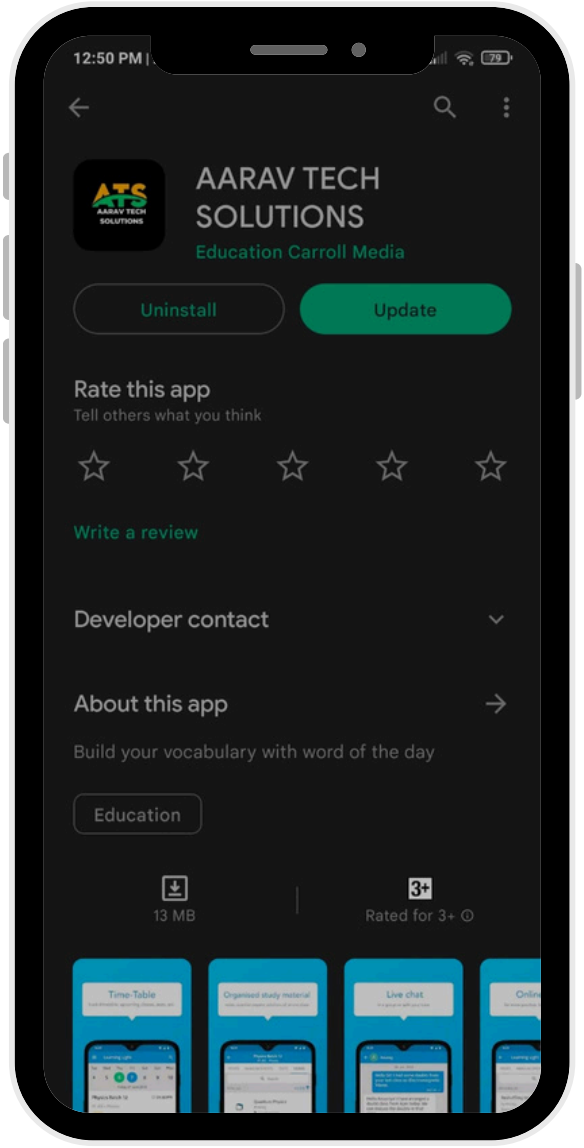

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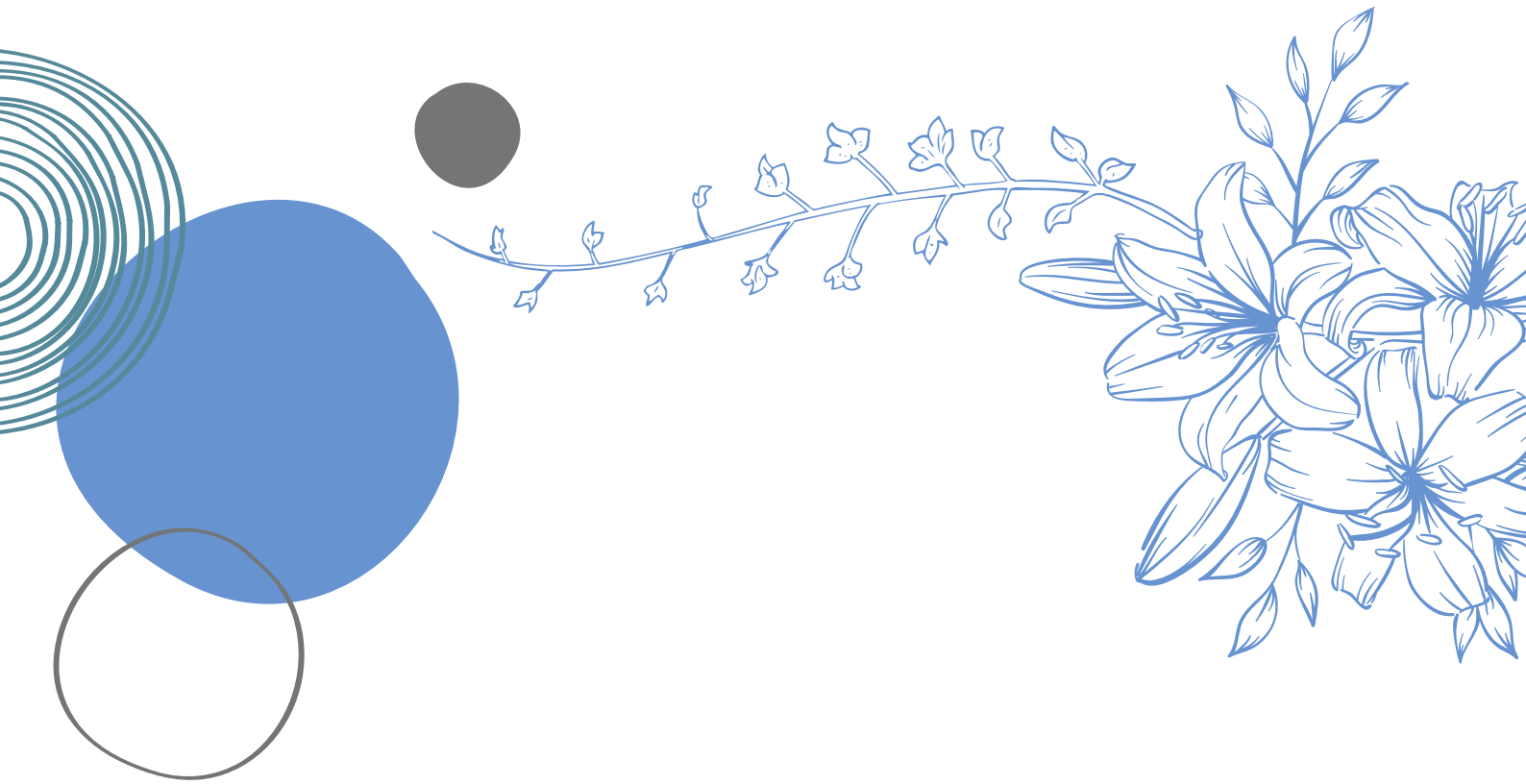

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