



Really interesting and informative, a lot learnt and opened eyes to other areas which so far haven't encountered.



## 2G to 5G Mobile Networks (Advanced Level - Core)

### Course Description

This curriculum of our Advanced range of courses is designed to provide a very detailed technical analysis of all of the key technologies that comprise today's mobile networks. The curriculum is modular, which means that the 12 days of training can be spread over a number of weeks. Using NetX or the customer's own network captures, detailed signalling analysis will be conducted for all of the major procedures across 2G/3G CS and PS Core, LTE, VoLTE and 5G.

This course has no prerequisites.

**12**

**Days**  
(LiveOnsite, LiveOnline)

**72**

**CPD Learning  
Credits**



**Level: 3  
(Advanced)**

**This course will contain the following sections:**

## **1. Analyzing the 2G and 3G Core Network (3 Days)**

### **Topic areas covered include:**

- Soft Switching and Carrier Grade IP.
- Packet Transport Networks.
- IP Signalling Aspects (Sigtran).
- Media Description (IPBCP and SDP).
- IP Traffic Aspects (RTP and RTCP).
- Quality of Service Issues.
- Media Gateway Control Protocols (H.248 and MGCP).
- Bearer Independent Call Control (BICC).
- Session Initiation Protocol (SIP).
- End to End Call Procedures.
- GPRS Packet Core Fundamentals.

## **2. Analyzing the EPC (3 Days)**

### **Topic areas covered include:**

- EPC Concepts.
- EPC Functional Architecture.
- EPC Protocols.
- EPC Transport Network Architecture.
- Registration Procedures.
- Security in the EPC.
- QoS, Policy and Charging.

## **Analyzing the EPC (cont.)**

- End to End Session Procedures.
- EPC Mobility and Roaming.
- Circuit Switched Fallback.
- Interworking with the PS Domain.
- Non IP Data Delivery and SCEF Interworking.

## **3. Analyzing VoLTE and Vo-Wi-Fi (3 Days)**

### **Topic areas covered include:**

- Monitoring the VoLTE and IMS Network.
- SIP Fundamentals for VoLTE.
- VoLTE Registration.
- VoLTE Media.
- VoLTE Call Procedures.
- VoLTE Service Features.
- VoLTE Breakout Procedures.
- ICS and SRVCC.
- VoWi-Fi.

## **4. Analyzing the 5G Core (3 Days)**

### **Topic areas covered include:**

- 5GC Service Based Architecture.
- 5GC Protocols and APIs.

**12**

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**72**

**CPD Learning  
Credits**



**LiveOnsite,  
LiveOnline**

## Analyzing the 5G Core (cont.)

- 5G Network Slicing.
- 5G Registration Analysis.
- 5G API Security.
- 5G PDU Sessions.
- 5G Policy and Charging Control.
- MEC and 5G.
- Interworking with LTE and Wi-Fi.
- Delivering Voice over New Radio.



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