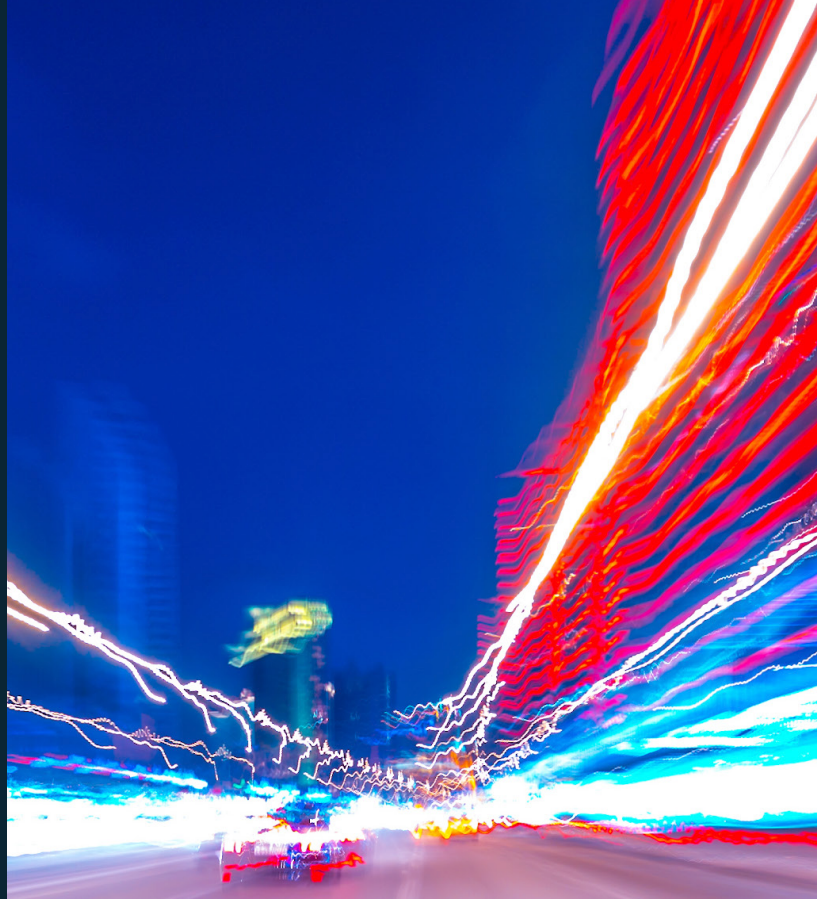




Enjoyed the course, right level at the right time.



Watch our course intro video.



Wi-Fi Calling

Course Description

Often associated with VoLTE (Voice over Long Term Evolution), Wi-Fi Calling is the means by which service providers can support seamless mobility between the LTE and Wi-Fi networks, whilst maintaining voice services. The course builds on the LTE System Engineering and Wi-Fi System Engineering courses and explains in detail the enhancements that need to be made to the network to support VoWi-Fi, before describing how a call is established across Wi-Fi using the services of the EPC (Evolved Packet Core) and IMS (IP Multimedia Subsystem).

Prerequisites: LTE System Engineering, Wi-Fi System Engineering would be advantageous.

1 days
(LiveOnsite,
LiveOnline)

6 hours
learning
(OnlineAnytime)

6

CPD Learning
Credits



Level: 2
(Intermediate)

This course will contain the following sections:

1. Wi-Fi Calling Architecture

Topic areas covered include:

- Wi-Fi Calling Architecture Fundamentals:
 - VoLTE and VoWi-Fi.
 - Deployment Scenarios.
 - Network Architectures:
 - Trusted Non-3GPP Access.
 - Untrusted Non-3GPP Access.
- Mobility Mechanisms:
 - Host Based Mobility.
 - Network Based Mobility:
 - PMIPv6.
 - GTP.
 - Multi Access PDN Connectivity.
 - Non seamless Wi-Fi Offload.
- Network Architecture:
 - Untrusted Non-3GPP Access (GTP):
 - UE, Access Point, ePDG, PDN-GW, AAA Server, PCRF, ANDSF.
 - Protocol Stacks and Reference Points.
 - IP Multimedia Subsystem:
 - P-CSCF, S-CSCF, I-CSCF.
 - IMS Protocols.
- Roaming Architectures:
 - Home Routed.
 - Local Breakout.

2. Initial Procedures

Topic areas covered include:

- Initial Procedures Fundamentals:
 - Bearer Models and Bearer Mapping.

Initial Procedures (cont.)

- Network Discovery and Selection:
 - Network Discovery:
 - RAN Assistance Information.
 - ANDSF Rules.
 - Accessing the Wi-Fi Network:
 - Finding a Wi-Fi Network.
 - Joining a Wi-Fi Network.
 - WPA and Robust Security Networking.
 - ePDG Selection.
- Initial Attach:
 - IKEv2 and IPSec.
 - EAP-AKA:
 - Detailed Signalling Evaluation.
 - Session Creation and Management:
 - Detailed Signalling Evaluation.

3. Making and Receiving Calls over Wi-Fi

Topic areas covered include:

- Making and Receiving Calls Fundamentals.
- IMS Registration:
 - IMS Identities:
 - Private User Identities.
 - Public User Identities.
 - Service Profiles.
 - Initial Registration Phase:
 - Detailed Signalling Evaluation.
 - Registration Security Phase:
 - Detailed Signalling Evaluation.
 - Final Registration Phase:
 - Detailed Signalling Evaluation.

6

**CPD Learning
Credits**

ITP

**ITP accredited
course**



**LiveOnsite, LiveOnline,
OnlineAnytime**

Making and Receiving Calls over Wi-Fi (cont.)

- Mobile Originated Call Setup:
 - VoWi-Fi to VoWi-Fi / VoLTE:
 - Detailed Signalling Evaluation.
 - VoWi-Fi to PSTN:
 - Detailed Signalling Evaluation.
- Mobile Terminated Call Setup:
 - VoWi-Fi / VoLTE to VoWi-Fi:
 - Detailed Signalling Evaluation.
 - PSTN to VoWi-Fi
 - Detailed Signalling Evaluation.
- Emergency Calls.
- Instant Messaging.



4. Mobility and Interworking

Topic areas covered include:

- Mobility and Interworking Fundamentals.
- Wi-Fi Mobility:
 - Access Point Channel Reports.
 - Wi-Fi Reassociation.
 - 802.11 Amendments:
 - 802.11k, 802.11r.
- Wi-Fi to LTE Handover:
 - Detailed Signalling Evaluation.
 - Mobility when LTE Attached.
- LTE to Wi-Fi Handover:
 - Detailed Signalling Evaluation.
- Wi-Fi Calling and Roaming:
 - Home ePDG.
 - Home PDN-GW.
 - Visited PDN-GW.



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