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Well presented. Thank you.



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IMS and PCC System Engineering

Course Description

With the advent of technologies such as LTE and 5G, next generation services and charging are now being controlled by IMS and PCC functions; a critical element in a service provider's requirement to support seamless and rich multimedia services. For those needing to gain an understanding of this service overlay, this course provides a comprehensive technical explanation of how this is achieved. Topics covered include IMS architecture, protocols (SIP and Diameter), Registration, Policy Control and Session Establishment.

This course has no prerequisites.

1 days
(LiveOnsite,
LiveOnline)

6 hours
learning
(OnlineAnytime)

6

CPD Learning
Credits



Level: 2
(Intermediate)

This course will contain the following sections:

1. IMS Concepts and Architecture

Topic areas covered include:

- IMS Drivers:
 - Service Drivers, Open Systems and Seamless Mobility.
- IMS Fundamental Principles.
- Specifications and Standards.
- Interworking with Access Networks.
- Positioning the IMS.
- Control and User Planes.
- IMS Terminal Device Requirements.
- Key Nodes:
 - P-CSCF, S-CSCF, I-CSCF, HSS and Application Servers.
- Additional Architectural Elements:
 - PSTN Breakout - BGCF, MGCF, MGW and Signalling Gateway.
 - Interworking - IBCF and Session Border Controllers.
 - Multimedia - MRFC, MRFP, Media Servers and Brokers.

2. IMS Protocols

Topic areas covered include:

- SIP Fundamentals:
 - Methods, network elements, protocol format.
- Diameter Fundamentals:
 - Routing, Header Format, Messages and AVPs.

3. IMS Registration

Topic areas covered include:

- IMS Initial Procedures:
 - IP-CAN Connectivity, P-CSCF Discovery.
- IMS Identities:
 - IMPU, IMPI, GRUU, PSI.
- Security considerations.
- Service Profiles and ifc (Initial Filter Criteria).
- Detailed Registration Process:
 - Including Implicit Registration.

Activity: detailed analysis of the IMS Registration procedure using Mpirical's NetX.

4. Policy and Charging Control Fundamentals

Topic areas covered include:

- QoS in IP Networks.
- Precursors to PCC:
 - 3GPP Release 5 SBLP and Release 6 FBC.
- Policy and Charging Control:
 - PCC Architecture, Principles, PCC and SAE.
 - PCEF, PCRF, OCS, OFCS, SPR, Gx, Rx.
- PCC Binding Mechanism:
 - Session Binding, Rule Authorization, Bearer Binding.

6

CPD Learning
Credits

ITP

ITP accredited
course



LiveOnsite, LiveOnline,
OnlineAnytime

5. IMS Session Establishment

Topic areas covered include:

- Session Policy and Policy Enforcement:
 - PCC and the Rx Interface.
- SDP Offer/Answer Model.
- IMS Session Establishment.
- Charging Concepts:
 - Offline Charging, Online Charging and Charging Identifiers.

Activity: detailed analysis of an IMS Session Establishment procedure using Mpirical's NetX.



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