



Interesting and informative course.  
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**



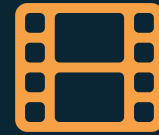
**LiveOnsite, LiveOnline,  
OnlineAnytime**

## 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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- Dedicated trainers to understand your products and training requirements
- Managed training delivery services – administrative aspects including scheduling and liaison
- Customizable learning management system
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