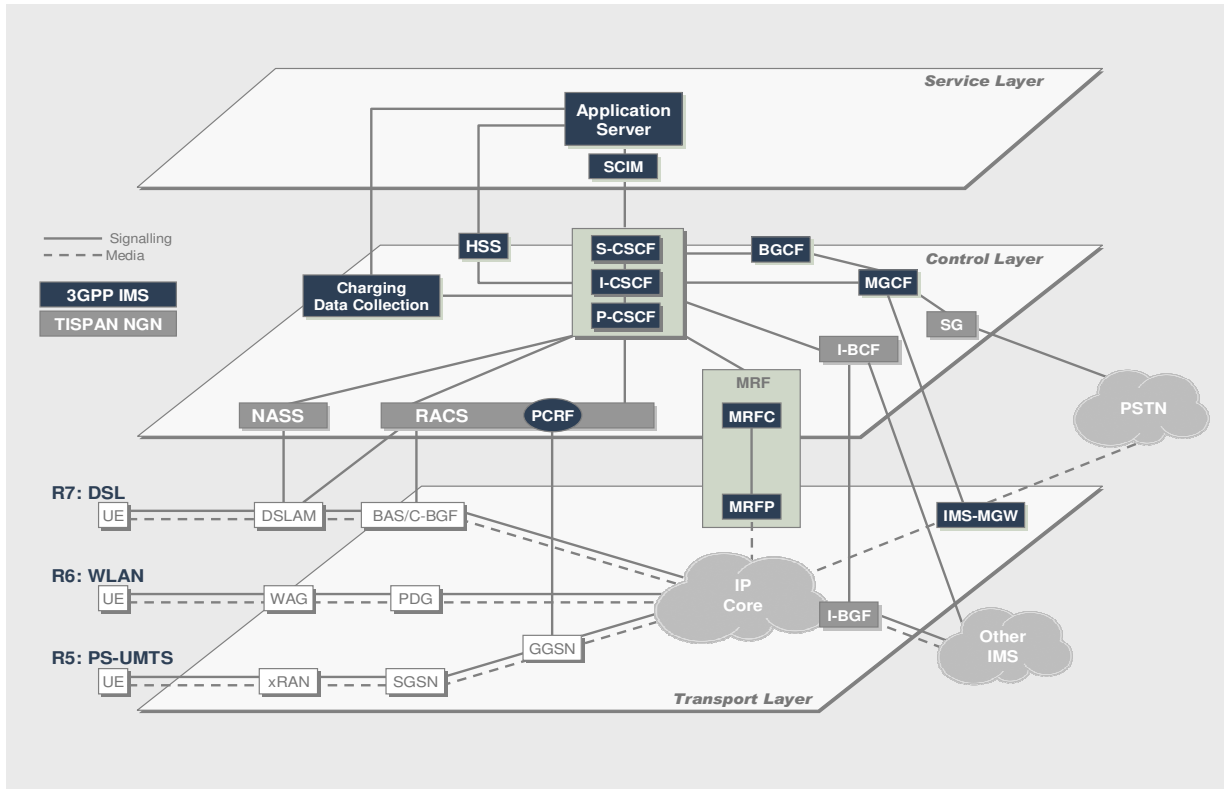


# IMS & SIP Overview

An **Engineer's** Guide to the SIP Protocol & the 3GPP IP Multimedia Subsystem (R'5 – R'8)  
2 Days

## Business Value

You will get a most detailed, up-to-date overview on IMS System Design, the SIP Protocol, Procedures, and Service Scenarios. Plus our extensive training experience on the subject within R&D departments from both vendors and operators.



## Who should attend

The course is designed for engineers in Software-Design, Network-Integration/Verification, End-to-End Planning/Performance Testing, and other technical areas. If you demand details and solid technical know-how in the IMS & SIP field, start with this course.

## Presentation/Exercises

Instructor presentation (whiteboard-60%, transparencies-25%, powerpoint-15%) with the Futurenetz active learning tools. You get a text-book/work-book where you fill out pictures with information during lecture.

Text-based exercises are included.

3D-Memory-Map is a 3-D model of the network used to enhance your understanding with its hands-on, activity-based approach. This method has been proven successful over the last 6 years.

## Content Summary

### 1. SIP in Practice

#### *A compact, practical approach to learning SIP.*

You will get a complete overview of SIP Architectures, Signalling Procedures, and Messages. The goal is to learn what can be done with SIP and get acquainted with message structure needed for protocol analysis.

- UA, Registrar, Location Server, Proxy, B2BUA
- SIP Requests/Responses, Transactions, Dialogs
- INVITE, BYE, REFER, SUBSCRIBE, NOTIFY ...
- Standard Headers and Extensions
- Via, From, To, Contact, Route/Record-Route ...
- SDP for Media Negotiation, m-lines, RTP/AVP ...
- NA(P)T and Firewall Traversal
- High-level procedures: Initiate, Transfer, Call-Forward, Presence...

### 2. 3GPP SIP & IMS System Design

#### *Detailed IMS Functional Architecture and Signalling Procedures*

This is the core section of the course where you get a detailed functional description and you dig deeper into complex SIP messages and procedures.

- P, I, S-CSCF, HSS, MRF, MGCF-MGW, PCRF-PCEF, IBCF, ALG, TrGW, SBC
- DNS NAPTR, SRV
- P-Headers for 3GPP SIP
- Detailed analysis: Registration and Session Initiation flows over PS-UMTS
- Interworking with ISUP: SIP-I, SIP-T

### 3. IMS Applications

#### *Overview of Service Provisioning and Enabler Applications*

This is an overview of the Value-Added layer of IMS. Learn what a SIP Application Server is, when and how it gets involved in the signalling flow. This layer offers a number of possibilities for service development and has different applications depending on various business models.

- SIP AS, HSS Service Profiles, Service Triggers and the Ut interface
- SIP Multiparty (Conferencing) Communication Model
- PoC, Presence, Text-Chat, Combinational Services, VCC ...

## Course Adaptation

This course can be adapted to better meet your requirements and focus. Just let us know what topics you would like to add, or expand.

## Contact

<http://futurenetz.com>

<mailto:kostas.apostolidis@futurenetz.com>