

IMS Essentials

Course Duration:

- ▶ 1 day

Course Description:

- ▶ This course addresses the needs of everybody who needs fundamental understanding of the IMS.
- ▶ The course starts with an animated presentation of some new services which offering is enabled through the IMS. After this we explain how basic telephony services are provided in the IMS-environment.
- ▶ The following part provides an overview of the IMS internal architecture and to the related protocols.
- ▶ The course concludes with the presentation of a real-life implementation of an IMS.

Pre-Requisites:

- ▶ Basic IP-knowledge.-
- ▶ Basic telecom knowledge.

Course Target:

- ▶ After the course the student will have basic knowledge about the IMS and its internals including the used protocols.
- ▶ Most importantly, the student is enabled to contribute to IMS-related discussions and work assignments.
- ▶

Some of your questions that will be answered:

- ▶ What are typical IMS-specific applications and services like "See what I see" and how do they work?
- ▶ What are the names and functions of the different network nodes inside the IMS?
- ▶ What are the implications of a split or a centralized IMS-installation?
- ▶ What is a hosted IMS?
- ▶ How can IMS-services be charged?
- ▶ How do real-life implementations of the IMS look like?

Who should attend this class?

- ▶ Managers and everybody else who requires an overview on the IMS and the services that it offers.

Table of Contents:

Introduction to the IMS

- **The IMS within the Overall Network Architecture**
 - ⇒ Typical IP-CAN's
- **Driving Forces behind the NGN-Hype**
 - ⇒ Why should one go for an IMS-based-Solution?
- **IMS-based Services**
 - Overview
 - ⇒ Triple Play and Quadruple Play
 - Initial Situation, Triple Play, Quadruple Play
 - Macro and Micro Mobility
- **Service Types and Service Enablers**
 - ⇒ Conversational Services
 - ⇒ Audiovisual Entertainment Services
 - ⇒ Service Enablers
- **Service Examples**
 - See What I See, Intelligent Address Book (Presence Service)
- **Realization of Legacy Telephone Services**
 - ⇒ IMS-Originating Voice Call – Technical Realization
 - ⇒ 1.6.2 IMS-Terminating Voice Call – Technical Realization

IMS Technology Overview

- ⇒ The IMS-Network Architecture
- ⇒ Centralized and Split Approach for the IMS Implementation
 - Centralized Framework and Overall Network Architecture, Split Framework and Overall Network Architecture, Comparison between Centralized and Split Architecture Approaches
- ⇒ Physical Layouts of IMS-hardware

CSCF Cabinet- Front & Rear View, Applications Servers and Session Border Controllers

- **Functional Description of IMS Network Elements**

- ⇒ Typical User Agents of the IMS
- ⇒ Server Types (generic)
- ⇒ Special Server Types (generic)
- ⇒ Operation of Registrars
- ⇒ Detailed Consideration of SBC and B2BUA
Example: VoD for a Mobile Client with limited Access Rates, Example: SBC for Traffic Inspection
- ⇒ Operation of Event Servers
- ⇒ Generic Servers vs. IMS-specific Servers

- **Protocols within the IMS**

- ⇒ Control Plane
- ⇒ User Plane
- ⇒ Consideration of SIP
Scope of SIP, Session Setup Example through SIP
- ⇒ Consideration of SDP
The Offer/Answer Model
- ⇒ Consideration of the DIAMETER Protocol
IMS-specific Amendments to DIAMETER Protocol
- ⇒ RTP / RTCP

Reviewing a typical IMS-Implementation

- **Architectural Overview**

- ⇒ Overall Network Design
- ⇒ Physical Topology Design
- ⇒ Customer Premises with WIMAX Access
- ⇒ Summary of the Main Components of Network Architecture
- ⇒ Distribution of IMS-Core Network Entities