



Course Synopsis

Course : Billing for IP and UMTS Applications

Duration: 2 days

ETS Code : ETS421

The Internet Protocol (IP) is the world's dominant data communications protocol and is the core of the emerging UMTS networks. However, traditional ways of billing by telcos don't fit IP. The classic 'time and distance' paradigm used for voice traffic is not applicable to bursty IP traffic. Nevertheless, IP must be billed if carriers are to stay (or, in some cases, become) profitable.

This course examines how billing for both Circuit Switched and Packet Switched traffic can be billed in an UMTS network. It starts by refreshing delegates on the architecture of the UMTS core networks, both the first, Release 99 and all-IP before looking at the IP chain of services necessary to deliver IP-based services to customers before looking at major characteristics of IP. This is not an in-depth IP course but some aspects of IP are essential to understand how to bill IP.

The course then examines a number of UMTS billing models and discusses their possible implementation.

Course Contents

1. An Overview of the UMTS Core Network Architecture

- SGSN
- GGSN
- SMSC
- MSC
- DNS
- Inter NetworkGateway
- Backbone Network
- CAMEL and the IN
- UMTS Interfaces and Protocols for Billing
- UMTS Core Network Evolution

2 The IP Billing Chain

- Voice Billing – An Overview
 - Collecting CDRs
 - Mediation
 - Rating
 - Billing
 - Convergent Billing
 - Interadministration Billing
 - Circuits and Packets
 - Connection Oriented and Connectionless
 - Enter IP and its impact on Billing
 - IP Food Chains

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3. **So what is this 'IP', anyway?**
 - Data Traffic
 - Connection Types
 - Layered Systems
 - IP Features
 - TCP
 - IP Routing
 - The Internet

4. **Voice over IP**
 - Why Voice over IP?
 - Patterns of Use
 - Voice and Data are Different
 - All the Protocols Needed
 - Billing Implications

5. **Call Data Records**
 - S-CDR
 - G-CDR
 - M-CDR
 - S-SMO-CDR
 - S-SMT-CDR

6. **IP Billing Components**
 - Billing
 - Circuit Switched
 - Packet Switched
 - Content or just Bytes
 - Problems and Mediation
 - Viewpoints
 - Online Trading Example
 - What could we charge for?
 - IP Security
 - IP Pricing Models
 - Volume versus Content
 - Impact of QoS/SLA
 - What can go wrong?
 - Billing for Real Time (and Prepaid) Services

7. **Mobile IP Billing**
 - Tariffs
 - Roaming
 - Location-Based Services
 - Prepay and CAMEL
 - Charging Principles
 - Quality