HSPA (HSDPA, HSUPA) (1 day)

3G

3GPP Release 5 & 6 introduce new DL/UL transport channels HSDPA & HSUPA that enhance support for high-performance packet data applications. Together these two technologies are known as High Speed Packet Access (HSPA). This course provides a good understanding of HSDPA & HSUPA air interface features and protocol (e.g. RLC, MAC) changes. A good knowledge of 3GPP UMTS would be beneficial for anyone attending this course.

Who Should Attend

This is advanced level course and suitable for telecom professionals including design, testing , support & sales engineers who already have good understanding of UMTS technologies.

Objective

After completing this course, the audience will be able to:

- Understand HSPA features
- Describe HSDPA/HSUPA channels/technology
- Describe protocols (e.g. RLC, MAC) changes
- Explain Signaling procedures

Course Contents

UMTS Overview

HSPA

- Overview of HSPA
- HSPA goals
- HSPA approach

HSDPA

- HSDPA Basics
- HSDPA in the UTRAN
- HSDPA channels
- HSDPA strategies
- High speed channel usage
- HS-DPCCH, CQI and H-ARQ
- HS-DSCH and HS-SCCH
- HSDPA UE categories
- HSDPA Traffic Operations
- HSDPA data transmission overview
- CQI reporting
- Node B DL scheduling

HSUPA

- Basics
- HSUPA in the UTRAN
- HSUPA channels
- HSUPA strategies
- HSUPA Channels
- Enhanced channel usage
- UL channels (E-DCH and E-DPCCH)
- DL channels (E-AGCH, E-RGCH and E-HICH)
- HSUPA UE categories
- HSUPA Traffic Operations
- HSDPA data transmission overview
- Scheduling request
- Uplink scheduling at Node B
- Grant allocation
- Data transmission and control
- H-ARQ – Node B to UE
- HSUPA Data Call Signaling
- RRC connection
- Radio bearer setup