

COURSE OUTLINE

Introduction to LTE

- 2G to 4G radio and core network evolutions (GSM, UMTS, HSPA, LTE and LTE Advanced)
- 3GPP requirements imposed on LTE (throughputs, network capacity, delays)
- Spectrum bands, bandwidths, system parameters and mobile terminal capabilities
- IMT-Advanced requirements for 4G system

LTE System Overview

- LTE network elements: terminals (mobile phone, laptop, PC), access network, core network and IMS
- IP in the network: All IP and always-on concepts
- QoS concept and parameters
- Security in the LTE network (IPsec and LTE security)
- Common IP intersystem part: IMS and its relation to IP-CANs
- Radio access network technologies (OFDMA, MIMO, spectrum flexibility)

LTE Practical Aspects

- LTE performance requirements
- Practically achievable LTE performance (range, coverage, throughputs, number of users)
- Current status of LTE trials and commercial deployments
- Current status of spectrum auctions
- Possible LTE deployment scenarios
- Available handsets and possible evolution

LTE Services

- Potential 4G services
- Flexibly policy and charging options for operators
- SMS and 2G/3G voice in LTE (problems and solutions)
- Packet services: MBMS (mobile TV), internet access, VoD, online gaming, location services
- LTE as competition for fixed networks

LTE Network versus Other Networks

- Network migration possibilities from 2G/3G to LTE
- LTE interworking with UMTS/GSM and WiMAX/WiFi
- LTE international roaming
- LTE compared to WiMAX
- Evolution of LTE towards 4G system (LTE advanced – features, differences, possibilities)

Note: the course content is subject to minor changes and adaptations to the customer needs.