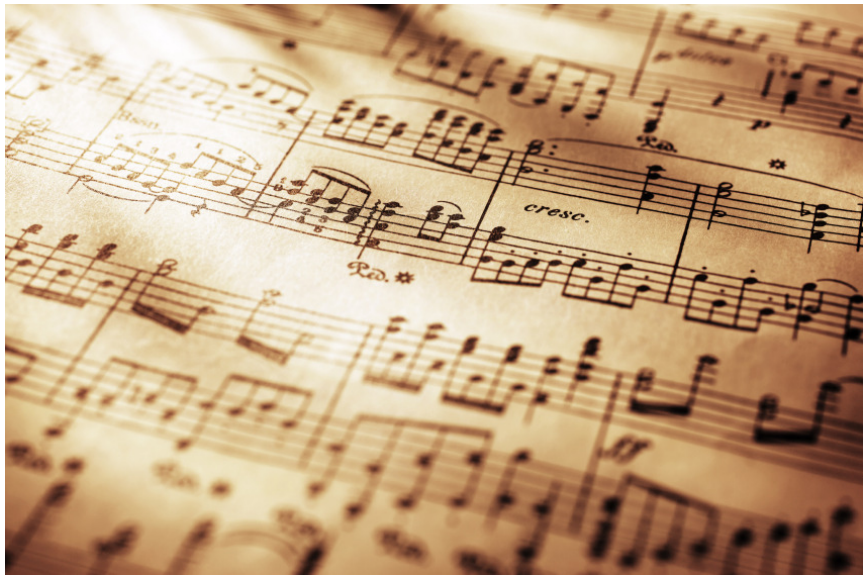
QoS END TO END IN GSM, UMTS AND LTE NETWORKS

Course Description

Mobile networks of today are becoming true multimedia networks, providing telephony, data and video services to mobile end users. Historically, mobile networks have been optimized for mobile telephony services. The data related traffic has by far surpassed the telephony generated traffic. In addition, the end-user expectations on the mobile data services, in terms of high quality, lead to tougher requirements on network performance, such as bandwidth availability, packet losses and low delay.

Operators having ambitions to meet those requirements must understand the network mechanisms behind QoS and the options at hand to optimize the QoS in their systems. The training ”QoS end-to-end in GSM, UMTS and LTE networks” provides a complete overview of the QoS features over the entire GSM/GPRS, UMTS and LTE systems. A description of the mechanisms behind the is provided, and the enhancements by the EDGE, HSPA and LTE implementations are highlighted.

The course perspective is end-to-end quality of service and end-user experience. Typical KPI values for common end user services are presented and major performance optimization suggestions are discussed.



Content

- Network architectures of 2G, 3G and 4G in terms of access, core and service networks
- The role of backbone and transport networks
- QoS implementation in GSM, GPRS, EDGE, UMTS and HSPA systems
- Support for QoS in network infrastructures with IP and ATM (Diffserv, VLAN, MPLS and Traffic classes)
- Dependencies between QoS and the lower layers in the transport network (ATM, IP and MPLS)
- QoS relations to radio capacity, channel allocation and admission control principles
- Important KPIs for end-user data services such as VoIP, Web browsing and PTT
- Mobility management impact on QoS

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- Breaking down the Quality of Experience (QoE) and QoS into QoS parameters, RABs and transport channels for UMTS/HSPA and LTE implementations.
- Major configurable QoS and Performance parameters available in the network
- Major performance enhancing features in GSM, GPRS, EDGE, UMTS, HSPA and LTE systems
- Mobility and channel capacity (control channels and traffic channels)
- How to dimension the channels to ensure QoS and service availability/reliability
- Principles for QoS provisioning
- Principles for QoE and QoS monitoring and service assurance

Target audience

The course is applicable for Engineering Professionals, Quality and Performance Managers, Optimization Engineers, NMC and NOC specialists, Mobile Application Development Managers and other Technical Specialists working for mobile operators.

Pre-requisites

The participants should have working experience from the mobile telecom sector.

Course length

2 days

Widermind communicates the knowledge you need to develop and implement new technologies for current and future network operations. Our clients are telecom operators, system integrators, system suppliers and consultancy firms.

Based in Stockholm, Sweden, we develop courses backed by a comprehensive network of associates. Our instructors employ technical and pedagogical skills that have made Widermind training well known and appreciated as one of the best services in the field.

You are warm welcome to contact our representatives at:

Email: info@widermind.com or telephone: +46 8 410 757 11

Widermind
Drottninggatan 89
113 60 Stockholm
Sweden
Telephone: +46 8 410 757 11
E-mail: info@widermind.com
www.widermind.com

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