A Tutorial Outline

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QoS and QoE in the Next Generation Networks and Wireless Networks

Tutorial abstract/overview: Emerging Internet Quality of Service (QoS) mechanisms are expected to enable wide spread use of real time services such as VoIP and videoconferencing. Quality of experience (QoE) is a subjective measure of a customer's experiences with a service. The "best effort" Internet delivery cannot be used for the new multimedia applications. New technologies and new standards are necessary to offer QoS/QoE for these multimedia applications. Therefore new communication architectures integrate mechanisms allowing guaranteed QoS/QoE services as well as high rate communications.

The emerging Internet QoS architectures, differentiated services and integrated services, do not consider user mobility. QoS mechanisms enforce a differentiated sharing of bandwidth among services and users. Thus, there must be mechanisms available to identify traffic flows with different QoS parameters, and to make it possible to charge the users based on requested quality. The integration of fixed and mobile wireless access into IP networks presents a cost effective and efficient way to provide seamless end-to-end connectivity and ubiquitous access in a market where the demand for mobile Internet services has grown rapidly and predicted to generate billions of dollars in revenue.

Tutorial Outline

- Concepts of the QoS/QoE
  - Traffic mechanims, congestion
  - Generations of Internet
- Mechanisms and architectures for QoS and QoE
- New communication architectures
- Mechanisms allowing QoS
  - MPLS
  - DiffServ
  - IntServ

- QoS and QoE in Wireless Networks

Mobile Internet applications

Quality for Mobile/Ubiquitous/Pervasive Computing users in gaining network access and satisfying their service requirements

Mobile, satellites and personal communications

Mobile and wireless standardization IEEE 802.11, IEEE 802.16, IEEE 802.20

WLL, WPAN, WLL

Speaker's Biography

Pascal Lorenz (lorenz@ieee.org) received his M.Sc. (1990) and Ph.D. (1994) from the University of Nancy, France. Between 1990 and 1995 he was a research engineer at WorldFIP Europe and at Alcatel-Alsthom. He is a professor at the University of Haute-Alsace, France, since 1995. His research interests include QoS, wireless networks and high-speed networks .He is the author/co-author of 3 books, 3 patents and 200 international publications in refereed journals and conferences.

He was Technical Editor of the IEEE Communications Magazine Editorial Board (2000-2006), Chair of Vertical Issues in Communication Systems Technical Committee Cluster (2008-2009), Chair of the Communications Systems Integration and Modeling Technical Committee (2003-2009) and Chair of the Communications Software Technical Committee (2008-2010). He is Co-Program Chair of ICC'04 and WCNC'12, tutorial chair of WCNC'10 and symposium Co-Chair at Globecom 2009-2007 and ICC 2009-2008. He has served as Co-Guest Editor for special issues of IEEE Communications Magazine, Networks Magazine, Wireless Communications Magazine, Telecommunications Systems and LNCS.

He is senior member of the IEEE, IARIA Fellow and member of many international program committees. He has organized many conferences, chaired several technical sessions and gave tutorials at major international conferences.