

Tutorial 2

Speaker's Name: Professor Richard Harris

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Speaker's Biodata:

RICHARD HARRIS graduated with a B.Sc.(Hons) from the University of Adelaide in 1971 and this was followed by a Ph.D. (in the area of optimal design of telephone networks) under the supervision of Professor R.B. Potts in 1974. Upon completion of his thesis, he joined the Headquarters Traffic Engineering Section of the Australian Post Office. He became deputy head of the Network Analysis Section in the Switched Networks Research Branch in 1987. In April 1989, he took up an appointment with Bond University as an Associate Professor in the School of Information and Computing Sciences and was Deputy Director of the Centre for Telecommunication Network Research. He moved to RMIT in early 1993 as Director of the Centre for Advanced Technology in Telecommunications (CATT) and Professor of Communication Systems. In 2005 he took up an appointment as Chair in Telecommunications and Network Engineering at Massey University in New Zealand. He is currently teaching students in the fields of teletraffic engineering, communication switching, Internet engineering and conducting research in a variety of topics including network design and optimisation, network traffic management and network performance.

He has participated in many consultancy projects and R & D contracts related to Call Centre design; telephone, ATM and IP network design and optimisation. He has been part of several groups involved in building network planning tools including MINDER (Telecom Australia) and network-planning tools for advanced networks such as ATM (Telekom Malaysia - APTNet) and IP network-planning for QoS. In recent years, he has been involved in the analysis of routing methods for ATM and IP networks including methods for optimal routing in OSPF and MPLS networks.

Tutorial Title: IP-Oriented QoS in Next Generation Networks

Subject Area: IP networks and routing, Quality of Service methods

Duration: Half Day

Tutorial Abstract:

This tutorial will provide an introduction to the concept of Quality of Service in IP-Oriented heterogeneous networks. The tutorial will begin by discussing what is meant by QoS and why it is necessary in IP networks. As IP can be delivered over many different transport technologies there will be a brief description of the principal ones involved, including ATM, SDH, MPLS and emerging wireless technologies. There will be an overview of how each of these (and related technologies) implement QoS and apply traffic management concepts in their respective environments. Many mechanisms and architectures have been proposed to provide QoS in IP networks and among the best-known methods are IntServ and DiffServ. QoS routing is a current *hot topic* as routing plays a very significant role in ensuring application packet delivery to customers in the Internet; the routing issues involved and current research directions in this area will be presented. With the rapid emergence of wireless technologies and the need to replicate fixed wire services in a mobile environment, there has been considerable attention paid in the marketplace to the delivery of Internet services to wireless customers. Some of the issues in QoS delivery and routing for wireless networks will be outlined in this tutorial.

Potential audience: Telecommunications engineers looking to understand the issues for QoS emerging in the Internet. Refresher and upgrade skills in this area.