



ITU-T Workshop on “End-to-End QoE/QoS”

GENEVA, 14-16 JUNE 2006

Introduction

This workshop will bring together experts from all over the world who are involved in the definition and the delivery of end-to-end Quality of Experience (QoE) and Quality of Service (QoS). Several developments have been recently achieved on QoE and QoS, in particular related to NGN, but also in home networking, quality prediction, terminals, interoperability and for new services.

The workshop is organized by ITU-T SG12, which is the lead ITU-T study group on QoS and in charge of the development of Recommendations on quality as perceived by the users.

For users, but also for operators and internet service providers, the end-to-end quality is one of the major factors to be achieved. During recent years, the new term of “QoE” has been introduced to make end-to-end QoS more clearly capture the experience of the users. In this field, several new developments have occurred. QoS now encompasses a wide range of services, including wider bandwidth for audio and speech, as well as new multimedia services such as IPTV. Definition of new performance parameters and values, new assessment methodologies and new quality prediction models are needed. The workshop aims to review recent progress from different standards development organizations (SDOs) and to contribute to future efforts towards international standardization in QoE/QoS.

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Programme

DAY ONE (14 JUNE 2006)

09:30-11:00 SESSION 1: INTRODUCTION AND TUTORIAL SESSION

Session Moderator: Jean-Yves Monfort (ITU-T SG12 Chairman)

Welcome address ITU-T: **Reinhard Scholl** (TSB Deputy Director)

- QoE measurement in the NGN – a market perspective: **Mike Hollier** (Psytechnics)
- A taxonomy of quality prediction models recommended by ITU-T: **Sebastian Möller** and **Alexander Raake** (Deutsche Telekom Labs, TU Berlin)
- Overview of the ITU-T Handbook on QoS and network performance: Volker **Sypli** (Federal Network Agency, Germany)

11:00-11:30 COFFEE BREAK

11:30-13:00 SESSION 2: INTER-DOMAIN QoS

Objectives: This session will give an overview of the recent achievements in inter-domain QoS and of their impact on SLA (Service Level Agreement) for value-added services migrating towards IP (VoIP, TV Broadcast, etc.), in the context of global communication.

Session Moderator: Al Morton (AT&T)

- End-to-end QoS over heterogeneous network: **Olivier Dugeon** (EU QoS Project)
- Border Crossings: Evolving Interdomain QoS in a Heterogeneous World: **Kathleen Nichols** (Pollere LLC)

13:00-14:00 LUNCH BREAK

14:00-15:30 SESSION 3: INTEROPERABILITY TESTING AND TERMINAL ISSUES

Objectives: This session addresses the terminal aspects affecting the QoS, as experienced by end users. This includes subjects such as the interoperability of terminals specified by different regional standards, the assessment of transmission features of terminals currently designed for IP networks and the new opportunities offered by wideband networks to interact with the end-user equipment, in order to monitor and assure the QoS delivered by service providers.

Session Moderator: Rodolfo Ceruti (Telecom Italia)

- The Artificial Ear Dilemma: The challenges of modern handset testing: **Gunnar Rasmussen** (G.R.A.S Sound & Vibration)
- Speech Quality Testing for VoIP Terminals and Gateways: Input from ETSI “Plugtest” Speech Quality Test Events : **Hans Gierlich** (Head Acoustics)
- Terminal Standards – SDOs Mastermind plus Regional Flavors — or What ? : **Joachim Pomy** (Avaya GmbH)
- The TR-069 protocol and its ability to manage QoS policies on the CPE: **William Lupton** (2Wire)

15:30-16:00 COFFEE BREAK

16:00-17:30 SESSION 4: HOME NETWORKING QoS/QoE

Objectives: This session will draw on the results of the task force initiated after the last ITU-T Workshop on Home Networking and will provide an opportunity to review the progress achieved inside and outside of ITU. It will focus on the approach of “mixing” the QoS associated with home, access and core networks/equipment in order to provide the QoS/QoE expected by users of new services.

Session Moderator: Shuichi Matsumoto (KDDI)

- Home Gateway Initiative QoS Architecture: **Duncan Bees** (PMC-Sierra)
- Home Network QoS with UPnP-QoS: **Michael van Hartskamp** (Philips)
- JCA HN Taskforce on QoS and Terminology: **Jean-Yves Monfort** (ITU-T SG 12 Chairman)

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DAY TWO (15 JUNE 2006)

09:00-10:30 SESSION 5: QoE

Objectives: The successful deployment of QoS mechanisms in telecommunications networks requires knowledge of the performance expectations of the end-user, known as Quality of Experience (QoE). QoE for voice has been studied for many years and the requirements are quite well-known. Presentations in this session will provide information on QoE expectations for a number of new non-voice telecommunications applications.

Session Moderator: Paul Coverdale (Industry Canada)

- Perceived quality of channel zapping: **Kamal Ahmed** (TNO Information and Communication Technology, the Netherlands)
- 3GPP Packet Switch Streaming Quality of Experience: **Frederic Gabin** (NEC Technologies)
- Quality of Experience in Mobile TV Services: **Angela Sasse** and **Hendrik Knoche** (University College, London)
- Quality and Security Usability: **Luis Cardoso** (Telecom Portugal)

10:30-11:00 COFFEE BREAK

11:00-12:30 SESSION 6: NEW SERVICES

Objectives: New services present new challenges in defining and measuring QoS and QoE. The objective of this session is to look at some of the forthcoming developments in voice, video and general multimedia services, and to discuss their implications in terms of QoS and QoE. Specific areas addressed include multimedia coding, scalable coding, IPTV and accessibility.

Session Moderator: Paul Barrett (Psytechnics)

- IPTV QoE requirements: IP transport and ADSL access technical challenges: **Riccardo Fiandra** (Fastweb)
- Accessibility considerations for QoE: **Andrea Saks** (Independent Accessibility Consultant)
- Recent developments in QoE aspects of videoconferencing services: **Patrick Luthi** (Tandberg)
- New media coding developments in ITU-T: **Claude Lamblin** (France Telecom)

12:30-14:00 LUNCH BREAK

14:00-15:30 SESSION 7: NGN-RELATED QOS AND THE ACCUMULATION OF NETWORK IMPAIRMENTS

Objectives: This session gives an overview of NGN QoS architecture activities and issues, and then presents some specific methods being considered for controlling the performance of the end-to-end path.

Session Moderator: Charles Dvorak (AT&T)

- Resource and Admission Control for NGN: **Huilan Lu** (Lucent Technologies)
- Ranged Impairment Allocation: **Shihui Hu** (Huawei Technologies Co., Ltd)
- A practical approach to e2e QoS using managed impairment accumulation: **Al Morton** (AT&T)

15:30-16:00 COFFEE BREAK

16:00-17:30 SESSION 8: QUALITY PREDICTION

Objectives: Examine the state of the art on existing methodologies and tools available for the prediction and/or measurement of the quality of audio and video delivered over digital networks.

Session Moderator: Arthur Webster (Rapporteur Q.14/9)

- Recent developments in objective voice and video quality models: **Quan Huynh-Thu** (Psytechnics)
- Standardization activities for multimedia opinion model: G.O MV: **Akira Takahashi** (NTT)
- Quality Assurance for IPTV: **David Hands** (BT)
- End-to-End QoS and Triple Play: **Bruce Adams** (Telchemy Inc.)

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DAY THREE (16 JUNE 2006)

09:00–10:50 SESSION 9: REGULATORY ASPECTS OF QoE/QoS IN NGNS

Objectives: This session addresses the role of regulatory bodies and their importance in QoS issues. This includes subjects such as: how their decisions on inter-working between different networks (e.g. mobile and fixed) can impact the QoS; how they assess the quality provided for telecommunications users; how they can monitor and assure the QoS delivered by the service providers; how they face the future of NGN, as well as what is the role of the regulatory bodies in a liberalized market.

Session Moderator: **Luis Sousa Cardoso** (Telecom Portugal)

- To regulate or not to regulate? **Béla Házkötö** (National Communications Authority, Hungary)
- Role of Regulatory Bodies and Their Importance in QoS issues: **Christine Mugimba** (Uganda Communications Commission)
- Future Networks and Services, Standards and Regulation, private and public domains, general aspects: **Nuno Encarnação** (OFCOM, Federal Office for Communications, Switzerland)
- Regulatory aspects for Quality of public communication services in the Republic of Macedonia: **Slavica Nasteska** (Agency for Electronic Communications of the Republic of Macedonia)
- Regulatory aspects of QoS with regard to IP and NGN: **Volker Sypli** (Federal Network Agency, Germany)

10:50-11:20 COFFEE BREAK

11:20–12:20 SESSION 10: WRAP-UP SESSION

Session Moderator: **Jean-Yves Monfort** (ITU-T SG 12 Chairman)

For updated information, please see: www.itu.int/ITU-T/worksem/qos/200606/index.html

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