

## ACOUSTICS2008/3160 Parametric quality prediction for IP-based audio

Alexander Raake<sup>a</sup>, Marieneige Garcia<sup>a</sup>, Bernhard Feiten<sup>b</sup> and Sebastian Möller<sup>a</sup>

<sup>a</sup>Deutsche Telekom Laboratories, Berlin Institute of Technology, Ernst-Reuter-Platz 7, 10587 Berlin, Germany

<sup>b</sup>T-Systems Enterprise Services GmbH, Goslarer Ufer 35, 13437 Berlin, Germany

Different multimedia services are more and more transmitted over a common network infrastructure, e.g. using the Internet Protocol (IP). Examples are the widespread voice over Internet Protocol (VoIP), and Internet Protocol Television (IPTV). The streaming of pure audio over IP even has a longer tradition, with applications such as internet radio. For an efficient development, planning and monitoring of such services, models can be used that predict user-perceived quality based on technical service characteristics. Speech quality models for telephony are among the most advanced ones in this context, with different model types like the signal-based PESQ (ITU-T Rec. P.862, 2001) or the parametric E-model (ITU-T Rec. G.107, 2005). In this paper, we describe a parametric approach for predicting the quality of IP-based audio. The main parameters are the audio codec, codec bitrate, packet loss characteristics and the audio content. We base our considerations on own listening tests conducted in the framework of IPTV quality assessment, on approaches and test data described in the literature and on complementary knowledge from the fields of speech and video quality models. In this context, we identify similarities and discrepancies between different types of services in the light of a common model framework