

Speech-Quality Evaluation in Telephone Networks

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INTRODUCTION

The technical progress in the past 15 years, resulting in new services and devices for telephone networks, has formed a telecommunication infrastructure that is characterized by an almost infinite number of possible network configurations. Simulations of telephone networks in laboratories can model real effects in networks only to a limited extent. Subjective tests for the evaluation of speech quality are time-consuming and expensive. For the assessment of speech quality in real-life telephone networks other methods are necessary. One approach to investigate real-life telephone links are measurements in the telephone network by means of inservice, non-intrusive measurement devices (INMD). These devices can serve as network monitors that evaluate the quality-of-service parameters of the network under test. A high correlation with subjectively determined quality values is a prerequisite for the use of these devices. This paper gives an overview of signal parameters that are useful for speech quality assessments by means of INMDs. Some algorithms to measure these parameters are presented. For the evaluation, measurement results of an INMD can be used as input parameters to network planning models to get estimations about the speech quality.