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Parametric Packet-based Audiovisual Quality Model for IPTV services

This volume presents a parametric, packet-based, comprehensive model to measure and predict the audiovisual quality of Internet Protocol Television services as it is likely to be perceived by the user. The comprehensive model is divided into three sub-models referred to as the audio model, the video model, and the audiovisual model. The audio and video models take as input a parametric description of the audiovisual processing path, and deliver distinct estimates for both the audio and video quality. These distinct estimates are eventually used as input data for the audiovisual model. This model provides an overall estimate of the perceived audiovisual quality in total. The parametric description can be used as diagnostic information. The quality estimates and diagnostic information can be practically applied to enhance network deployment and operations. Two applications come to mind in particular: Network planning and network service quality monitoring. The audio model can be used indifferently for both applications. However, two variants of the video model have been developed in order to address particular needs of the applications mentioned above. The comprehensive model covers effects due to resolution, coding, and IP-packet loss in case of RTP-type transport. The model applied to quality monitoring is standardized under the ITU-T Recommendations P.1201 and P.1201.2.

This volume presents a parametric packet-based audiovisual quality model for Internet Protocol TeleVision (IPTV) services. The model is composed of three quality modules for the respective audio, video and audiovisual components. The audio and video quality modules take as input a parametric description of the audiovisual processing path, and deliver an estimate of the audio and video quality. These outputs are sent to the audiovisual quality module which provides an estimate of the audiovisual quality. Estimates of perceived quality are typically used both in the network planning phase and as part of the quality monitoring. The same audio quality model is used for both these phases, while two variants of the video quality model have been developed for addressing the two application scenarios. The addressed packetization scheme is MPEG2 Transport Stream over Real-time Transport Protocol over Internet Protocol. In the case of quality monitoring, that is the case for which the network is already set-up, the audiovisual stream is encrypted either at the level of Packetized Elementary Stream or of the Transport Stream. The presented model became standardized under the ITU-T P.1201 and P.1201.2 recommendations
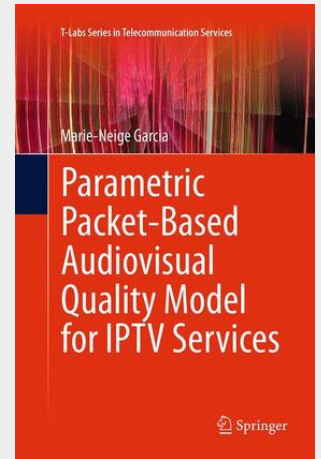
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