End-user QoE Monitoring Agent for IPTV Services

Overview

We have developed a QoE\(^1\) monitoring agent, which is software that is embedded in the STB\(^2\) or other user terminal to estimate the quality of service as experienced by customer (QoE) for IPTV\(^3\). Remote monitoring of QoE data for individual customers from an operation center or other facility allows rapid confirmation of the situation when a customer inquires the audiovisual quality or performance of quality management before a customer complains.

Features

- Represent qualitative customer opinion such as ‘distorted image’ as an objective numerical index
- Because quality is estimated using only packet header information, there is very little computational load and the function can be embedded in the customer terminal
- Highly accurate quality estimation compared to MDI\(^4\) or other existing techniques is achieved by estimating the number of frames over which packet loss errors extend for different types of video frames
- Planned as a proposal for international standardization in 2011

Application scenarios

- Efficient service operation and management through quality monitoring for individual IPTV users without installation of special quality measuring devices
- Specifically, (1) rapid confirmation of the situation when a customer inquires the audiovisual quality, (2) determining the cause of failures, and (3) improved customer satisfaction through averting silent dissatisfaction

*1 QoE: Quality of Experience  
*2 STB: Set-Top Box  
*3 IPTV: Internet Protocol TeleVision  
*4 MDI: Media Delivery Index (a measure of quality specified in RFC4445)