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# Video Quality Analysis

## With Accenture StormTest

## The Video Quality Challenge

When it comes to customer perceptions of video quality, research shows that customers are quick to criticize and slow to forgive. If a Video Service Provider doesn't meet a customer's basic expectations for video quality, churn is inevitable. Thus, providers must ensure that subscribers enjoy the best viewing experience. Unfortunately, analyzing video quality is notoriously difficult and monitoring solutions are often complicated to use, which makes understanding a customer's Quality of Experience (QoE) a challenging proposition:

• Customers' assessment of video quality is a subjective judgment, so establishing a reliable quality baseline can be difficult

• Relying solely upon network probe-based Quality of Service (QoS) alarms doesn't take into account that QoS issues do not always impact a customer's video service experience

• Isolating the exact cause and severity of video quality problems involves many performance variables, making it hard to do root-cause analysis

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### Mean Opinion Score

The Mean Opinion Score (MOS) is the mean value of human observers' votes cast during subjective quality assessment tests. In these tests, observers are asked to judge the quality of videos that are presented to them according to the ITU-R BT.500 standard. The MOS values computed by StormTest's VQA feature are highly correlated with the MOS obtained during subjective quality assessment tests with human observers.

## Monitor and Measure Video Quality

Accenture StormTest from Accenture Digital Video, can help Video Service Providers address the QoE challenge. With StormTest Video Quality Analysis (VQA), providers can detect application audio and video quality problems caused by encoding, transcoding and transmission. VQA uses a no-reference metric to examine video frames at the pixel level to determine the customer Quality of Experience (QoE). And it produces a mean opinion score (MOS) on the quality of the video, as experienced on the screen by the customer.

In practice, StormTest captures video and, using VQA, generates metrics on every frame of the video, using heuristic algorithms to assess the quality of each. It then integrates the frame quality over time to take into account the quality of previous frames when calculating a score for the current frame. Importantly, the VQA engine infers video quality from no-reference video quality metrics, which are generated without any context about the video. An available application displays the real-time monitoring of MOS scores.

StormTest's VQA feature gives operators a reliable, repeatable, and automated method to analyze video quality and its impact on the customer experience. It does this by:

• Establishing a baseline standard for video and audio quality delivery

• Consistently evaluating video quality and issues that affect the customer experience, including blockiness, blurring, contrast at macro-block frontiers, and jerkiness

• Generating an MOS to accurately represent the subjective viewing experience

• Setting alerts to send timely alerts based on the severity of video and audio quality issues

• Capturing the impact on perceived quality from unwanted pauses due to re-buffering during video playback

• Providing insights to optimize encoding parameters, such as bitrate

## Staying on top of QoE

VQA delivers powerful benefits to Development and QA teams, who use it to complement traditional functionality testing; as well as Operations groups, who use it to monitor video quality of the "live network" in real-time. Specifically, VQA helps enable users to:

- Quickly assess the severity of video and audio quality problems and troubleshoot accordingly

- Monitor in real time the quality of a linear TV channel or other video services

- Accurately determine consumers' perceived video QoE, offline or in real time

- Set quality thresholds and validate video and audio quality against multiple performance criteria, such as macro-blocking, blurring, etc.

- Respond instantly to poor quality performance with onscreen prompts and triggered alerts

- Isolate and diagnose problems using StormTest's integrated video logging

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## A True End-to-End Validation Platform

Accenture StormTest uses advanced automation technologies to continuously and actively test new service releases across platforms and devices, in development and deployment. The insights it provides helps organizations to accelerate service innovation, optimize development processes and ultimately improve the viewer Quality of Experience.

### Solution Details

StormTest's VQA includes numerous advanced features that enable Video Service Providers to analyze how video quality affects the customer experience:

- Supports HD A/V capture and analysis simultaneously and independently for all devices

- Generates Mean Opinion Scores (MOS) in real time

- Detects black video, frozen video, tiling/ macroblocking, blurriness, and other video distortion

- Centralized results storage and reporting provides detailed report generation and export capabilities across all test activities

- Provides automated 24/7 real-time monitoring of the entire channel line-up

- Sets alarm and alert thresholds to send notifications

## About Accenture Digital Video

Accenture Digital Video is a business unit within Accenture. We deliver business results for companies where video is of strategic importance, helping them pivot to capture new growth opportunities in an ever changing market. Partnering with clients, we use our agile methodologies, deep skills, and open technology platforms and apply them in every phase of a change journey—from thinking to doing. The end result: more predictability in the face of a complex and volatile landscape. Accenture Digital Video has a 20 year track record in driving video innovation through a global workforce of more than 2,000 dedicated professionals across strategy, delivery, business services and operations, all dedicated to helping clients grow profitably.

## About Accenture

Accenture is a leading global professional services company, providing a broad range of services and solutions in strategy, consulting, digital, technology and operations. Combining unmatched experience and specialized skills across more than 40 industries and all business functions—underpinned by the world's largest delivery network— Accenture works at the intersection of business and technology to help clients improve their performance and create sustainable value for their stakeholders. With more than 375,000 people serving clients in more than 120 countries, Accenture drives innovation to improve the way the world works and lives. Visit us at www.accenture.com.

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