Cinetix VQA,
the Video Quality Analysis tool for Service Providers

Cinetix VQA

The Cinetix Video Quality Analysis VQA is a Video Quality Measurement System, which enables Service Providers to test the quality of the video services transmitted through its Telecommunication Network.
Usually a Service Provider receives the video services from one or more content providers, and then it transmits them to the final customer through its broadband network.

In case of bad quality at the customer premises, first thing to understand is where the problems is: is it in the original content supplied by the content provider or is it in the transmission network?

VQA can help to make this clear. Just testing the same video content that is transmitted to the customer, the system may clearly monitor the quality as perceived by the end user, so enabling the Service Provider to immediately take the corrective actions when needed.

VQA makes use of AccepTV Video Quality Monitor, a powerful software solution to measure and monitor the video quality. VQA is currently used in Telecom Italia, to monitor the quality of all HD video services which are transmitted to its customers, and are supplied by several video providers, such as Sky, Mediaset, … .

The VQA system architecture

The Video Quality Analysis VQA system is made by a central VQA server and several VQA appliances:

- The VQA server is a Linux based server hosting MySQL database and the system main application, in charge of configuration and monitoring functions
- The VQA appliances are distributed in different measurement points of the broadband network and connected to the VQA server via LAN.

The VQA Appliance

Each VQA Appliance is a Windows7 Appliance connected both to the input and to the output port of the Decoder (STB).
It is equipped with one HDMI video acquisition board, where the decoder output is connected, and one IR transmitter capable to simulate the decoder remote control.

A Gbit Ethernet TAP is connected to the decoder input interface, to tap the data traffic and forward it to the VQA Appliance Ethernet port.
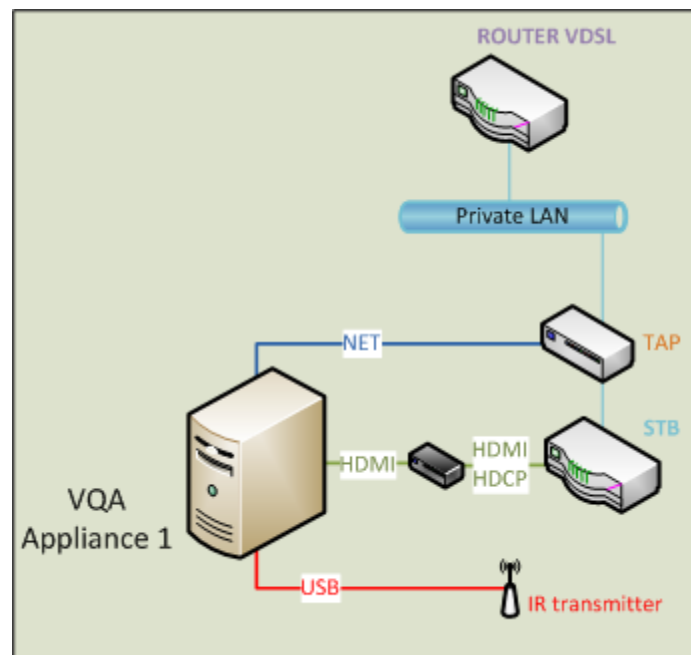
In this way, and using the AccepTV Video Quality Monitor VQM, which is controlled and managed by the Cinetix VQM Manager,

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the VQA Appliance makes possible the measurement and monitoring of the video quality as perceived by the end user.

The VQM Manager is a sofware application provided by Cinetix, which controls all VQA video quality activities:

- It manages and control the VQM activities: Start Measurement, Change Channel, Stop Measurement.
- It manages the alerts generated by VQM and any associated video clip
- It manages the reports produced by VQM
- It makes the continuous monitoring of the Decoder input bitrate.

All these information are stored in the local MySQL Data Base, from which they can be retrieved by the VQA server for further analysis

Moreover, the VQA Appliance makes available a WEB User Interface, through which it is possible:

- Register the VQA Appliance in the Data Base
- Schedule the Appliance monitoring sessions
- Monitor the status of each Appliance
- Prepare the Monitoring Report

Monitoring Sessions

The Monitoring Session is the basis of the VQA Monitoring activity.

The main elements involved in the monitoring session are:

- The Appliance to be used and the related decoder
- The decoder channel to be monitored
- The monitoring start time
- The duration of the monitoring session

It is possible to create different type of sessions:

- The "Event Session": for example a sport event on a specific channel at a specified time, of which a continuous and complete monitoring is required.
- The "Circular Session", made by brief sessions (around 2-3 seconds), to be started regularly on a specific number of different channels

Monitoring Sessions activation

The specific Session, i.e. the "Event Session" or the micro sessions that form the "Circular Session", is activated in the following way:

1. The command Start Measurement is sent to VQM
2. The command ZAP, to set the channel to be monitored and to measure the zapping time, is sent to VQM

The Monitoring Session goes on as scheduled in the configuration phase. In the event of the alert thresholds being exceeded, the alarm is stored in the Data Base, together with the associated clip file.

At the end the STOP Measurement command is sent to VQM, and the reports are generated and stored in the Data Base

Monitoring the Appliance status

By means of the VQA WEB Application it is possible to monitor the Appliance activities status in real time.

For example it is possible to visualize the average values of the quality indexes of the Monitoring Sessions already completed. In case of Circular Session, the average values can be aggregated also based on the monitored channel.