

VQEG-JEG NR hybrid H264

Call for Evidence and Contributions

1. JEG objectives

The Joint Effort Group is a new activity of VQEG group that proposes an alternative collaborative action. Usually VQEG inspects models performance from individual proponents with respects to jointly developed testplans in a competitive manner.

It requires the design of a database (e.g. distorted video contents and associated MOS score) posterior to models submission in order to assess the performance of different submitted models. Once used, the database is useless for further competition, because fair comparison is no longer valid (One could easily submit an overtrained metric on the dataset). This closes any opportunities to falsely improve assessed metrics besides parameters training. Furthermore, the knowledge exchange and the evolvment understanding of what made a model succeed and another model fail, is also very limited

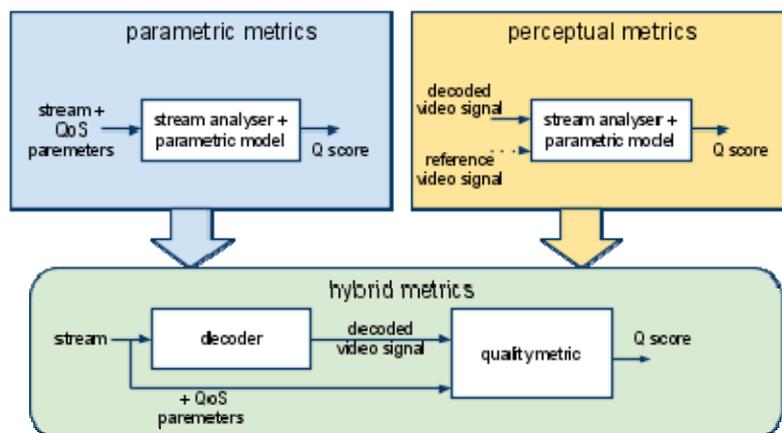
The Joint Effort Group (JEG) is intending to work jointly on both mandatory actions to validate metrics: subjective dataset completion and metrics design. That means that any proposal for improving metrics should be possible to inspect and that it is not necessary to provide a full metric to enter in the process. Therefore, JEG is clearly offering an opportunity to jointly propose quality metrics. In order to maintain fair validation of proposed tool and to avoid precious subjective quality assessment results, the metric has to be designed in a such a way that any contribution is assessed according to the availability of source code to the group.

It is also expected to increase after validation for some purposes, to extend the subjective dataset in order to better identify the limitations or extension of application scope of quality metrics. Regarding this latter comment, JEG could produce quality metrics identified through profile/layer with respect of their application scope.

2. JEG NR hybrid H264

As a first focus of JEG intends to develop a Hybrid No Reference metric suited for H264-AVC. Hybrid metrics are combination of perceptual and parametric metrics, it means that the metric take a bitstream as input, decoded video signal and QoS parameters as shown in the following figure.

As a first profile, The metric is expected to handle parameters of the stream at least at the NAL level. Possible extended profiles could be defined to cover protocol level parameters (UDP, RTP, DVB ...). As a final step, the metric could cover several profiles, e.g. scenario applications.



The main goals that are targeted through this first JEG activity are:

- collection of subjective quality assesment results for evaluation, ideally it should cover several realistic application scenarios
- definition of framework for such hybrid metric that supports possible extension according to application scenarios
- metric design

3. Objectives of the call

The next VQEG meeting will be held at Berlin June 22-26 2009.

This meeting will initiate JEG NR hybrid H264 activities through technical presentation followed by technical discussions sessions.

Topics of technical presentation should cover:

- Models: architecture for NR hybrid model, approaches and results
- Software: PVS generation, bitstream analyser, objective metric tools (parametric, or perceptual)
- QA results
- Quality assessment methodologies and set up
- Use case scenarios of NR hybrid QA metrics
- Source material (reference videos): creation and existing materials

The following technical discussion session will cover: metric framework , software integration and subjective QA campaign.

Proposal for contributions (a title and the amount of time necessary for the presentation) have to be sent to the VQEG JEG Co-chairs Alex Bourret (alex.bourret@bt.com), Kjell Brunnström or Patrick Le Callet (patrick.lecallet@univ-nantes.fr) by **June 12, 2009**

Notifications about acceptance of contributions will be given no later than **June 16, 2009 (noon GMT)**

More information on <http://forum.vqeg-jeg.org/>