

Happy Otter Render Quality Metrics (RQM)

How it Works

RQM is a very simple app that compares rendered frames to the original frames. For each frame in the sample, differences between the original and rendered frame are computed for the Red, Green, & Blue components of each pixel. These differences are then aggregated across the RGB components for all pixels. Two measures are computed for each frame: Mean-Squared Error (MSE) and the Peak Signal-to-Noise Ratio (PSNR). The average MSE and PSNR are then computed across all frames in the sample. In Vegas terms, it's a way of accurately quantizing the application of a Difference Squared compositing mode between two tracks.

Since these metrics are frame based, it is necessary to create a sequence of bitmaps (BMPs) for both the original sample and the rendered sample. The recommended procedure is to use Vegas for rendering the required image sequences, although other apps could be used. It is essential, however, that the number of frames be identical for both the original and rendered sample. If this condition is not met, an error will be thrown. Moreover, there must be no frame shift between the two samples.

How to Use

1. Copy the app "RenderQuality.exe" to any convenient location. There is no setup or install procedure.
2. Launch the app and set the folder locations. Although default folder locations are included (sub-folders within the user's Documents folder), it is recommended that the user select folders based upon the system being used. First, make sure that the folder has sufficient storage space (BMPs are very large files, especially from HD or UHD sources.) And second, use a fast storage medium if possible (e.g. an SSD). These storage locations are written to the registry so they need be entered only once. They may be changed at any time.
3. Render BMPs for both the original and rendered footage. First, render a BMP image sequence for your original sample to the Original BMP Folder. Second, perform your test render of the original footage. If you are using internal Vegas render templates, it is recommended that you use the Render to New Track tool (Ctrl-M). This will add the rendered sample to a track above the original sample. Make sure the number of frames for both the original and rendered sample are the same (Vegas sometimes skips the last frame). Third, mute the original sample and then render the image sequence of the test sample to your Test BMP Folder.
4. Return to the app and begin processing. Enter a short description of your comparison. If you tick "Save values for each frame", your description becomes the name of the log file. Select "Start" and then wait. Depending upon the type of footage, the number of frames to be processed, and the speed of your system, this may indeed take awhile. It is suggested that one be judicious in the selection of the sample to be processed—doing a comparison of a two-hour video is NOT recommended. The results are written to a log file which also include the date, time and description of the comparison. A second log file is written in CSV format for easy import into Excel.