Methods of Artifacts Reduction in DCT-based Mobile Video Coding

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Abstract

Most modern mobile devices have built-in video cameras. As a rule, commonly used lossy video codecs generate low bit-rate video with low quality. In the presentation reconstruction artifacts caused by quantization noise are divided into three types: blocking, ringing and mosquito. Special filtering techniques are applied to reduce each type of artifacts and to increase video frame quality (perceptual visual quality, PSNR etc.). Some non-standard approaches to the problem of blocking level estimation are introduced (2D improvement metric, partial PSNR). It is shown that most distortion occurs on the block corners (corner outliers). The de-blocking algorithm enhancement based on additional corner outliers reducing is proposed.