Abstract

The objective of this paper is to provide a review of the recent developments in HEVC standardization, particularly focusing on the key features of hybrid coding tools and gives theoretical analysis, summaries of the technological advancements, and compares its performance with the H. 264/ MPEG-4 AVC high-profile standard. High Efficiency Video Coding (HEVC) is a proposed and under development new generation of video compression standard, which enables substantially higher compression capability than the existing state-of-the-art video coding standard and exhibit superior coding performance improvements over its predecessors. Some of the major contributors to the higher compression performance of HEVC are the introduction of quadtree structure, improved techniques to support parallel encoding/decoding, more directional intraprediction modes, support for several integer transforms with square as well as nonsquare transforms, merging of prediction blocks for improved motion information encoding, and extensive In-loop processing on reconstructed pictures. When completed, it unlocks future business not possible with today’s AVC notably suitable for resolutions up to Ultra High Definition (UHD) video coding in the future.


JCT-VC, "Report of Subjective Test Results of Responses to the Joint Call for Proposals (CfP) on Video Coding Technology for High Efficiency Video Coding (HEVC)", Document JCTVC-A204, Dresden, DE, Apr. 2010.


B. Bross, W. J. Han, J. R. Ohm, G. J. Sullivan and T. Weingand, "High efficiency video coding (HEVC) text specification draft 6", JCT-VC Document, JCTVC-H1003-v21, April 2012.

Kemal Ugur, Kenneth Andersson, Arild Fulseth, Gisle Bjøntegaard, Lars Petter Endresen, Jani Lainema, Antti Hallapuro, Justin Ridge, Dmytro Rusanovskyy, Cixun Zhang, Andrey Norkin, Clinton Priddle, Thomas Rusert, Jonatan Samuelsson, Rickard Sjöberg,
- C. -M. Fu, C. -Y. Chen, Y. -W. Huang, and S. Lei, "Sample adaptive offset for
Review of Proposed High Efficiency Video Coding (HEVC) Standard


Index Terms

Computer Science Multimedia

Keywords

H. 264/ MPEG-4 AVC HEVC Quadtree structure Intraprediction modes nonsquare transforms

In-loop processing