Motion Estimator Architecture with Optimized Number of Processing Elements for High Efficiency Video Coding

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Abstract : Motion estimation occupies the heaviest computation in HEVC (high efficiency video coding). Many fast algorithms such as TZS (test zone search) have been proposed to reduce the computation. Still the huge computation of the motion estimation is a critical issue in the implementation of HEVC video codec. In this paper, motion estimator architecture with optimized number of PEs (processing element) is presented by exploiting early termination. It also reduces hardware size by exploiting parallel processing. The presented motion estimator architecture has 8 PEs, and it can efficiently perform TZS with very high utilization of PEs.