Selective Multiple Description Coding of Motion Vector with H.264/AVC Data Partitioning

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Abstract : In this paper, we propose a selective MV–MDC (Multiple Description Coding of Motion Vector) scheme with the data partitioning in the H.264/AVC standard. The proposed MD (Multiple Description) encoder separates the MV (Motion Vector) into two parts of equal priority each of which is transmitted through an independent packet. Additionally, to reduce the size of bitstream, the proposed MD encoder decides either MD or normal mode by using a loss–aware MD mode selection process. In case of the MD mode, the proposed MD decoding scheme utilizes two matching criteria to find an accurate MV when one of the MV descriptions is lost. Simulation results show that compared to simply duplicated bitstream transmission, the proposed MV–MDC scheme reduces a large amount of data without serious visual quality loss of reconstructed picture.