HIGH-PERFORMANCE LOW-COMPLEXITY BIT-PLANE CODING SCHEME FOR MPEG-4 FGS (ThuAmOR6)

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Abstract:
MPEG-4 FGS (Fine Granularity Scalability) has received tremendous attentions because it has ability to adapt to the network bandwidth variation. In this paper, we present a novel and effective bit-plane coding technique to further improve the coding efficiency of MPEG-4 FGS. The proposed approach reveals three superiorities to the MPEG-4 FGS based bit-plane variable-length coding (VLC): (1) better video quality in about 1.2 dB in terms of average PSNR, (2) less memory requirement, and (3) lower implementation complexity and power dissipation. Thus, it is well suitable for efficient hardware or software implementations.