A LOW−COMPLEXITY APPROACH FOR INCREASING THE GRANULARITY OF PACKED−BASED FIDELITY SCALABILITY IN SCALABLE VIDEO CODING

Author(s) : Heiner Kirchhoffer
(Fraunhofer Institute for Telecommunications – Heinrich Hertz Institute, Germany)
Detlev Marpe
(Fraunhofer Institute for Telecommunications – Heinrich Hertz Institute, Germany)
Heiko Schwarz
(Fraunhofer Institute for Telecommunications – Heinrich Hertz Institute, Germany)
Thomas Wiegand
(Fraunhofer Institute for Telecommunications – Heinrich Hertz Institute, Germany)

Abstract : Packet−based fidelity scalability (PFS) is a desirable feature in many video coding or transmission applications. Any realization of PFS in a hybrid video coding approach, however, requires suitable concepts for controlling drift and for generating sufficiently small increments in bit rate in order to allow progressive refinements of perceptual quality relative to a given base layer quality. This paper addresses those problems in the context of the scalable video coding (SVC) extension of H.264/AVC.
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Thomas Wiegand (Fraunhofer Institute for Telecommunications – Heinrich Hertz Institute, Germany)

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(cont.)
We present an algorithmically simple but yet remarkably well-performing method for packet-based fidelity scalability that is maximally consistent with the existing entropy coding design of H.264/AVC, allows sufficiently small increments in bit rate, and has been adopted as a normative element of SVC. We also discuss the benefits of the key picture concept of SVC in view of our proposed PFS approach. Experimental results are presented that demonstrate the effectiveness of our method for a few selected SVC conforming encoder configurations.