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Abstract

VVC, the latest codec standard jointly developed by ITU-T and MPEG, was finalized in July 2020. Since then, JVET has been actively exploring coding technologies that can achieve higher compression performance compared to VVC. The latest enhanced compression model (ECM) version 13 shows that more than 25% of bitrate savings over VVC in terms of luma PSNR can be achieved in the random access configuration. Two rounds of subjective evaluations have shown that the ECM also provides subjective benefits. Considering regular standard development cycles and the current video industry landscape, this contribution proposes timeline for the development of the next generation video codec standard. This contribution also proposes a set of requirements for this next generation codec standard.

Introduction

JVET has been exploring next generation video coding technologies beyond the capability of VVC since 2021. The exploration activities are primarily conducted in the form of exploration experiments (EE) and Ad hoc Groups (AhG) following two main directions: enhanced compression model (ECM) and neural network video coding (NNVC). Both directions have been consistently delivering improved coding efficiency over VVC. Especially, for the ECM direction, Figure 1 plots the evolution of ECM’s performance (BD rate savings in terms of luma PSNR) in the random access (RA) configuration of the

ECM CTC [1]. As shown, since ECM-2.0, ECM’s performance has been steadily increasing for every version of ECM. After integration of all tools adopted at the 34th JVET meeting, the latest ECM-13.0 achieves average coding performance gain of 25.5% for camera-captured content and 31-40% gain for screen content (class F and class TGM) in terms of luma PSNR in the RA configuration. Table 1 shows the detailed per-class performance of ECM-13.0.

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