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| *Title:* | **RCE1: Cross-verification report for subtest A1 on bypass alignment to 256 (JCTVC-P0060)** | | |
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# Abstract

This contribution presents the results of a cross-verification performed by Qualcomm of subtest B1 of HEVC Range Extensions core experiment 1 (RCE1) on bypass alignment to 256 as proposed in JCTVC-P0060. In the proposed bypass alignment method, the ivlCurrRange in CABAC is set to 256 before the sign coding pass in transform coefficient coding. The BD-rate performance results, average bin counts and worst-case bin count analysis match those provided by the proponent. The implemented algorithm agrees with the description in JCTVC-P0060.

# Introduction

In JCTVC-P0060 results of subtest B1 of HEVC Range Extensions core experiment 1 are reported. P0060 proposes a bypass alignment to 256 to increase the throughput for bypass coded bins. More specifically, the ivlCurrRange in CABAC is set to 256 before the sign coding pass in transform coefficient coding. This allows all the subsequent bypass bins up to the next context-coded bin to be interpreted as raw binary data. Software implementing the method on top of HM12.1-RExt-5.1 was provided by the proponents.

We analyzed the software implementation and the worst-case bin counts. The implemented algorithm agrees with the description from JCTVC-P0060. The worst-case bin count analysis is also accurate.

# Simulation results

The results provided by the proponents were crosschecked under the RCE1 test conditions for AHG18,. The simulation platform is a homogenous LINUX cluster consisting of Intel(R) XEON CPUs.The performance is compared to the anchor in terms of bit-rate savings.



Table : BD-rate results for subtest B1 for AHG18 test conditions



Table : Average bin counts for subtest B1 for AHG18 conditions

# Conclusions

The results of subtest B1 of RCE1 proposed in JCTVC-P0060 have been verified. The implemented algorithm agrees with the description in JCTVC-P0060. The BD-rates match exactly with those provided by the proponents. The encoding and decoding times are within the margin of variability. The proposed bypass alignment to 256 increases the throughput for bypass bins at the cost of moderate BD-rate losses for AHG18 coding conditions and higher BD-rate losses for AHG5 and AHG8 (lossless) conditions.