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| *Title:* | **Additional results for CE1 subtest C** | | |
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# Abstract

Additional results for CE1 subtest C are provided to understand how much do the different aspects (encoder, scans) contribute to the overall gain. The scans without any encoder modifications to the way in which runs are calculated show BD-rate improvements in the range of 0.0% to 0.5% for both full frame IBC and 1×4 CTU IBC, All-Intra configurations. The BD-rate gains from encoder modifications to the way in which runs are calculated are in the range of 0.0% to 0.5% for full frame IBC and 0.0% to 0.6% for 1×4 CTU IBC, All-Intra configurations.

# Introduction

In CE1 subtests A and C, modified encoders are used. For subtest C, proposals C1 (JCTVC-T0101) and C2 (JCTVC-T0088) use a common modified encoder. Some CE participants asked how much gain was contributed by the encoder modifications. Here we provide additional results to answer this question. The results are provided for subtest C2, although we expect results for subtest C1 to be very similar. The software used was the one released on 5/14/2015. We changed appropriate macros to obtain the results for the following cases:

1. Encoder only: Only PLT\_RUN\_LENGTH\_CODING\_IMP macro is set to 1, all the additional macros from the CE software are undefined. This macro encapsulates changes in the way the runs and palette sample modes are determined.
2. Scan Only: PLT\_RUN\_LENGTH\_CODING\_IMP macro is set to 0. The rest of the macros are the same as in the released CE software. In this case, one additional RD is used to determine the optimal scan. Only the encoder changes from item 1 are disabled.

Minor software changes were necessary to get rid of compilation errors with different defines.

We attempted to do the same exercise with CE1 subtest A. But, in this case, the encoder changes are not under a macro and were much harder to separate from the normative changes.

# Simulation results

Simulations are carried out under the SCC common test conditions (JCTVC-T1015) on a LINUX cluster. The encoding and decoding times are not reliable. Tables 1 and 2 show the BD-rate results for "encoder-only" case for the All-Intra configuration for full-frame IBC and 1×4 CTU IBC, respectively. The anchor is SCM 4.0. Tables 3 and 4 show the BD-rate results for "scan-only" case for the All-Intra configuration for full-frame IBC and 1×4 CTU IBC, respectively.

Table 1: BD-rate results for the "encoder-only" case, full-frame IBC, All-Intra configuration, anchor SCM 4.0



Table 2: BD-rate results for the "encoder-only" case, 1×4 CTU IBC, All-Intra configuration, anchor SCM 4.0



Table 3: BD-rate results for the "scan-only" case, full-frame IBC, All-Intra configuration, anchor SCM 4.0



Table 4: BD-rate results for the "scan-only" case, 1×4 CTU IBC, All-Intra configuration, anchor SCM 4.0



# Conclusion

Additional results for CE1 subtest C were provided to understand how much of the overall gain was due to the different aspects (encoder, scans). The scans without any encoder modifications in the way that runs are calculated show BD-rate improvements in the range of 0.0% to 0.5% for both full frame and 1×4 CTU IBC, All-Intra configurations. The BD-rate gains from encoder modifications to the way in which runs are calculated are in the range of 0.0% to 0.5% for full frame IBC and 0.0% to 0.6% for 1×4 CTU IBC, All-Intra configurations.

# Patent rights declaration(s)

**Qualcomm Incorporated does not have any current or pending patent rights relating to the technology described in this contribution.**