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| *Title:* | **Non-CE1: Modification of palette run coding** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Proposal | | |
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# Abstract

A modification of palette run coding is proposed. It extends the technique of run-to-the-end-of-block proposed in JCTVC-T0034. When the run starts at the start of a line, an end-of-line flag is coded to indicate whether the run ends at the end of the same or another line. When the flag is one, the number of lines is coded. When the flag is zero or when the run does not start at the start of a line, the run coding technique proposed in JCTVC-T0034 is used. It is reported that the method achieves BD-rates in the range of 0.0% to −0.5% for the Y/G component under All-Intra lossy configuration compared with SCM3.0 anchor.

# Technical description

In JCTVC-T0034, a modification of the current palette run coding method is proposed. When the prefix for the palette run mode is truncated, an additional flag is coded to indicate whether the run continues to the end of the block.

Here, we propose an extension of this mechanism. It can be described as follows:

* When a run starts at the beginning of a line, an 'end\_of\_line' flag is coded to indicate whether the run ends at the end of that or any other line.
* If the end\_of\_line flag is one, the number of lines is coded by reusing the code used for **coeff\_abs\_level\_remaining** syntax element. A zero value is interpreted as the run continuing to the end of the block.
* If the end\_of\_line flag is zero, the run coding method proposed in JCTVC-T0034 is used with the variable bPossibleLastRun set to false. The run and maximum run values are adjusted to take into account that the run values that cause the run to end at the end of a line are impossible.
* If the run does not start at the beginning of a line, the method proposed in JCTVC-T0034 is used with bPossibleLastRun set to true.

# Simulation results

The proposed method is implemented on top of SCM3.0 and tested using the common test condition defined in [1]. Table 1 reports the lossy coding performance for All-Intra configuration. The anchor is SCM 3.0. The simulation platform is a mostly homogenous LINUX cluster consisting of Intel(R) XEON CPUs. The BD-rate performance for RA and LD configurations as well as all lossless configurations can be found in the accompanying spreadsheets.



Table 1: BD-rate performance of the proposed method vs. SCM 3.0 (All-Intra lossy configuration)

# Conclusion

The proposed method extends the palette run coding method proposed in JCTVC-T0034. When the run starts at the start of a line, an end-of-line flag is coded to indicate whether the run ends at the end of that or another line. When the flag is one, the number of lines is coded. When the flag is zero or when the run does not start at the start of a line, the run coding technique proposed in JCTVC-T0034 is used. The method achieves BD-rates in the range of 0.0% to −0.5% for the Y/G component under All-Intra lossy configuration compared with SCM3.0 anchor.

# References

1. H. Yu, R. Cohen, K. Rapaka, J. Xu (editors), “Common Test Conditions for Screen Content Coding”, JCTVC-S1015, 19th Meeting: Strasbourg, Oct 2014.

# Patent rights declaration(s)

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