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| *Title:* | SCE4: Crosscheck of Test 5.4 Model1 on piecewise linear color space predictor | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Proposal | | |
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# Abstract

This contribution reports the crosschecking results for JCTVC-O0196 on piecewise linear color space predictor. The simulation results reportedly matched those provided by the proponents.

# Introduction

JCTVC-O0196 presents SCE4 test 5.4 results on piecewise linear color space predictor. Let b[c][x][y] be a pixel in the up-sampled base layer reference of color component c at location (x,y). The corresponding predicted pixel p[c][x][y] be of the enhancement layer is determined as the followings.

Let d[c][x][y] = b[c][x][y] – breakpoint[c].

If d[c][x][y] <= 0

p[c][x][y] = (gain1[c]\*d[c][x][y] + offset[c] + (1<<4)) >> 5

else

p[c][x][y] = (gain2[c]\*d[c][x][y] + offset[c] + (1<<4)) >> 5

The prediction parameters gain1[c], gain2[c], offset[c], and breakpoint[c] are optimized for the first frame and applied to the entire sequence.

# Experimental results

We received the source code from the proponents, implemented in SHM-3.0.1, and did a very quick code study to verify that the proposed method was implemented as described. We used the common conditions [1] in our experiments and ran simulations for the cases of AI-2x, RA-2x with SCE4 test sequences [2].

The results matched what was provided by the proponents and are summarized as follows

## RD performance



Please note that the coding time is not reliable.

# Conclusion

In this contribution, we have presented the results of our cross-check of JCTVC-O0196. The implemented algorithm is in line with the proponent’s description, and the simulation results also match those provided by the proponents.

# References

1. [X. Li](mailto:lxiang@qti.qualcomm.com), [J. Boyce](mailto:jill@vidyo.com), [P. Onno](mailto:patrice.onno@crf.canon.fr), [X.](mailto:yan.ye@interdigital.com) Xiu, “Common SHM test conditions and software reference configurations”, JCTVC-N1009, Vienna, Austria, 25 July – 2 Aug. 2013.

1. [A. Segall](mailto:asegall@sharplabs.com), [P. Bordes](mailto:philippe.bordes@technicolor.com), [C. Auyeung](mailto:Cheung.Auyeung@am.sony.com), [X. Li](mailto:lxiang@qti.qualcomm.com), [E. Alshina](mailto:elena_a.alshina@samsung.com), “HEVC Scalable Extensions Core Experiment 4 (SCE4): Color Gamut and Bit-Depth Scalability”, JCTVC-N1104, Vienna, Austria, 25 July – 2 Aug. 2013.