|  |  |
| --- | --- |
| **Joint Collaborative Team on Video Coding (JCT-VC)**  **of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11**  15th Meeting: Geneva, CH, 23 Oct. – 1 Nov. 2013 | Document: JCTVC-O0339 |

|  |  |  |  |
| --- | --- | --- | --- |
| *Title:* | **Crosscheck result of JCTVC-O0087 Non-RCE3: Unified lossless residual coding** | | |
| *Status:* | Input Document to JCT-VC | | |
| *Purpose:* | Report | | |
| *Author(s) or Contact(s):* | Jewon Kang  5775 Morehouse Drive San Diego, CA 92121 USA | Tel: Email: | 1-858-651-8457 [jewonk@qti.qualcomm.com](mailto:jewonk@qti.qualcomm.com) |
| *Source:* | Qualcomm Inc. | | |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Abstract

This contribution reports the result of a cross-verification performed by Qualcomm of the unified lossless residual coding proposed in JCTVC-O0087 [1]. Explicit signaling of intra RDPCM modes is presented in a lossless coding, which unifies the intra RDPCM to the inter RDPCM signaling method in the lossless configuration. The signaling method and prediction method in the proposal agree with the description in JCTVC-O0087. The BD-rate saving results match those provided by the proponent.

# Introduction

In JCTVC-O0087, explicit signaling method for intra RDPCM modes is proposed. The signaling methods are identical to the three inter RDPCM modes wherein one flag for the DPCM on/off and the other flag for the DPCM directions are used.

The sample adaptive prediction (SAP) based on a prediction direction in the lossless coding is retained with the one by the explicit signaling in the proposed method.

# Results

The proposed method was tested in a lossless configuration. The simulation platform in decoding is a homogeneous LINUX cluster consisting of Intel (R) XEON CPUs while the encoding time may be not reliable. The performance is compared to the anchor.







Table 1: BD-rate performance of JCTVC-O0087 (lossless configuration)



Table 2: BD-rate performance of JCTVC-O0087 (lossy configuration)

# Conclusion

The results of JCTVC-O0087 have been verified. The implemented algorithm agrees with the description in the proposal. The BD-rates match exactly with those provided by the proponents. The encoding and decoding times are within the margin of variability.

# References

[1] Y. H. Tan and C. Yeo, “Non-RCE3: Unified lossless residual coding,” JCTVC-O0087, Geneva, CH, Oct. 2013.